FINAL

Supplemental Remedial Investigation for Line 6 at Installation Restoration Program Operable Unit 11, Iowa Army Ammunition Plant, Middletown, Iowa

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1. Introduction

This supplemental remedial investigation (SRI) document presents the results of SRI activities for groundwater at the Line 6 Ammo Production Area (19105.1068; IAAP-007G) under Operable Unit 11 (OU-11). The Line 6 Ammo Production Area is an approximately 95.2-acre area located in the north-central portion of the Iowa Army Ammunition Plant (IAAAP), in Middletown, Iowa as seen in Figure 1. The IAAAP has been placed under the U.S. Department of Defense Installation Restoration Program (IRP), which follows the process under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act. This work was conducted under U.S. Army Corps of Engineers, Louisville District (USACE), Contract W912QR21D0019, Delivery Order W912QR21F0421.

A remedial investigation (RI) report for OU-11 was completed in August 2021 (CH2M, 2021). The OU-11 grouping includes miscellaneous environmental sites that have been determined to have limited or no environmental impacts based on previous investigations and historical data. The OU-11 RI report evaluated the conceptual site models and analytical data for 20 environmental sites and concluded that either there was no evidence of a site release, or site-related chemicals in media did not pose potentially unacceptable noncarcinogenic hazards or carcinogenic risks at any of the sites, with one exception. The human health risk assessment (HHRA) performed in conjunction with the 2021 RI identified potentially unacceptable risks for exposure to historical concentrations of manganese in groundwater at Line 6. However, the 2021 RI report used legacy data from 2005 to 2006, and there was uncertainty as to whether concentrations could be naturally occurring. Therefore, it was recommended that further investigation be conducted at Line 6 to verify that manganese in groundwater is naturally occurring and not site related. To satisfy this data gap, additional data were collected at Line 6 in 2022 and 2023, as summarized in this report.

This document has been prepared to address the data gap presented in the *Uniform Federal Policy–Quality Assurance Project Plan Addendum for Remedial Investigation at Contaminated Waste Processor, Line 3A Sewage Treatment Plant/Drying Beds, and Line 6 Ammo Production (Detonator) Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa* (2022 QAPP addendum) (Jacobs, 2022). The 2022 QAPP addendum identified a need to verify whether the manganese concentrations in groundwater were naturally occurring. This document summarizes the conclusions of these SRI activities and provides recommendations for the site going forward, consistent with the U.S. Environmental Protection Agency's (USEPA's) *Guidance on Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA 1988).

1.1 Installation Description

The IAAAP consists of 19,011 acres adjacent to Middletown, in Des Moines County, Iowa. It is approximately 8 miles west of Burlington. The installation is bordered by Highway 34 to the north, upland agricultural farms to the east and west, and the Skunk River valley to the south (Figure 1).

The IAAAP is an active Joint Munitions Command facility currently operated by civilian contractor American Ordnance, LLC. The current mission of the IAAAP is to load, assemble, and pack ammunition items, including projectiles, mortar rounds, warheads, demolition charges, and munitions components such as fuzes, primers, and boosters. Approximately one third of the IAAAP property is occupied by active or formerly active production or storage facilities. The IAAAP consists of production lines, landfills, disposal areas, burn areas, a demolition area, and a fire training area. The remaining land is either woodlands or property leased for agricultural usage.

Due to explosives-contaminated surface water leaving the installation boundaries, the IAAAP was added to the National Priorities List in August 1990. In September 1990, a Federal Facility Agreement (FFA) was signed by USEPA Region 7 and the U.S. Army; it became effective in December 1990. The 1990 FFA identified 30 Resource Conservation and Recovery Act (RCRA) solid waste management units (SWMUs) at the facility. The 2018 RCRA Permit (USEPA, 2018) stated that the SWMUs listed in the 1990 FFA were being integrated into the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) sites; the integration plan is currently being developed. Through the FFA, the U.S. Army works with USEPA, with support provided by Iowa Department of Natural Resources. The Headquarters Army Environmental System (HQAES) includes 75 IRP sites at the IAAAP.

1.2 IAAP-007G_Line 6 Ammo Production (Detonator) Groundwater (19105.1068) Description and Operational History

The Line 6 Ammo Production Area includes four HQAES database sites (Detonator site, IAAP-007 and IAAP-007G; Inside Blast Radius site, IAAP-002-R-01; and Outside Blast Radius site, IAAP-002-R-02). These sites will collectively be referred to as Line 6 throughout this document. Of these four environmental sites, only one falls under OU-11 (Line 6 Ammo Production ([Detonator] Groundwater). The HQAES identification for this site is 19105.1068 and the Army Environmental Database identification is IAAP-007G. Details for the other HQAES database sites in the Line 6 Ammo Production Area are provided in the OU-11 RI report (CH2M, 2021).

Line 6 is in the north-central portion of the IAAAP facility, within the Brush Creek watershed, as shown on Figure 2. It encompasses approximately 95.2 acres that historically included 34 buildings and 97 structures, most of which have been demolished (Figure 3). Line 6 is bounded by Line 9 to the south and agricultural lands and vegetated drainage ditches to the north, south, east, and west.

Operations at Line 6 began in 1941 with the production, storage, and shipping of detonators, delays, and relays. These operations were temporarily ceased between 1945 and 1949 to prepare for extended storage, during which time buildings, equipment, and sumps were cleaned, and some wooden structures were burned. Prior to 1960, mercury fulminate was used for site operations at Buildings 6-91, 6-89, and 6-90. Between 1956 and 1963, Line 6 operated only sporadically for special production contracts (TN & Associates, 2003). Following this period, Line 6 produced primers, detonators, and rocket igniters until the late 1960s, when the focus of production shifted to a combination of detonators, grenade fuses, and mines.

During the 1980s, a range of munitions was produced. A black powder–destroying facility was installed to desensitize black powder using a water-soaking method (JAYCOR, 1996; TN & Associates, 2003). When Building 6-68 was operational, it contained 20 RCRA-permitted aboveground tanks that were used for the treatment of waste black powder. Outside of the building, two in-ground tanks were used for the treatment of supernatant liquids generated during the treatment of waste black powder. Wastewater from the black powder–desensitizing process flowed from the operation areas through stainless steel troughs to treatment sumps. The treated water was emptied into limestone gravel filter beds (also referred to as seepage pits), allowing the desensitized wastewater to percolate into the surrounding soil. To avoid overflow out of the filter beds, surface drainage ditches were created to direct the water leaving the filter beds into an intermittent tributary of Brush Creek (JAYCOR, 1996). A National Pollutant Discharge Elimination System permit once existed for these desensitized wastes from the Line 6 area (TN & Associates, 2003).

Production had decreased at Line 6 in the late 1980s. By 1992, operations had ended, and the building floors, equipment, and sumps were cleaned. Line 6 remains in extended storage (TN & Associates, 2003). All buildings at Line 6 have been demolished, and no wastewater is generated.

1.3 Environmental Setting

Topography at Line 6 is relatively flat, sloping in a general south-southeasterly direction. Surface drainage is provided by a series of ditches that flow southward into an intermittent tributary of Brush Creek (Figure 2). Line 6 is primarily underlain by stiff/dense clayey glacial till and occasional occurrences of loess (overburden), and interbedded limestone and shale (bedrock), as shown on Figure 4 (T-30/T-29 are within Line 6). Where the loess is present, it forms the surface layer overlying the till to depths ranging from 8 to 17 feet and consists of medium to stiff silty clay with a trace of sand grading upward to a clayey silty loam at the surface. The glacial till, which is more prominent at the Line 6, consists of medium to hard (generally stiff to very stiff) sandy silty clay with occasional interspersed sand seams (TN & Associates 2003). The depth of the till is estimated at 88 feet and greater (TN & Associates, 2003).

The depth to groundwater at the site ranges from approximately 4 to 25 feet below ground surface in overburden and 25 to 48 feet below ground surface in the bedrock, based on gauging data collected in 2015. Groundwater in both the overburden and bedrock flows generally to the south (Figures 5 and 6); refer to Figure 7 for a localized potentiometric surface figure of the Line 6 shallow overburden groundwater (data collected in May 2017). The horizontal hydraulic gradient is estimated on average to be 0.005 foot per foot. Groundwater elevation data at monitoring well clusters indicate that the vertical groundwater gradient has a downward flow. The hydraulic conductivity in the aquifer is relatively low, ranging from 8.1×10^{-6} to 4.5×10^{-4} centimeters per second (cm/s) in the overburden and 3.5×10^{-6} to 8.5×10^{-5} cm/s in the bedrock (Tetra, Tech 2012).

1.4 Summary of RI for Line 6

Line 6 has been under environmental investigation since 1985 and was most recently evaluated under OU-11. The final RI report for OU-11 (CH2M, 2021) includes a summary of all the previous investigations and actions at Line 6.

As part of the OU-11 RI, the most recent groundwater data available for Line 6 were evaluated; this included data from 2005 and 2006. During the 2005/2006 sampling events, manganese was detected in groundwater at three monitoring wells (T-12, T-19, and T-31) above its site characterization project action limit (PAL), which was 430 micrograms per liter (µg/L) at the time of the report, and its groundwater background threshold value (BTV) of 580 µg/L (Figure 8). The MCL is used for the PAL; however, when no MCL is available, the greater of the health advisory level (HAL) and regional screening level (RSL) is used. The RSLs were revised in May 2023, and the latest value for manganese is 43 µg/L (based on a hazard quotient of 0.1). Since there is no MCL for manganese, the HAL of 300 µg/L must be used for the PAL as of May 2023.

Monitoring well T-12 is along the upgradient site boundary; T-19 is downgradient of former Building 6-68, in the southeast area of the site; and T-31 is downgradient of former Building 6-91, in the southwest area of the site. Total manganese concentrations during the prior groundwater sampling events (October 1992 and 1993) at these three wells were an order of magnitude lower than the 2005–2006 concentrations, which indicates that the elevated concentrations may have been temporal and not associated with a historical site release. Prior to 2005–2006, manganese exceedances occurred in wells on the eastern side of Line 6 (T-12, T-17, and T-20): T-12 is along the upgradient site boundary; T-17 is adjacent to former buildings 6-35, 6-11, and 6-69-6; and T-20 is south/downgradient of former building 6-68. Even though the exceedances occurred on the eastern side of Line 6, manganese concentrations in well clusters adjacent to these wells did not exceed the PAL or BTV. Refer to Table 3 for a historical concentration data comparison.

The HHRA that was conducted under the OU-11 RI concluded that there were potentially unacceptable risks for future hypothetical residents from exposure to manganese in groundwater at Line 6. However, elevated manganese concentrations in groundwater are considered to be associated with temporary, localized geochemical conditions rather than a site release. This was based on several lines of evidence:

- Manganese was not associated with historical site operations and was not identified as a chemical of concern (COC) in soil at Line 6 (USACE and Dawson Solutions, 2021).
- The distribution of manganese concentrations in groundwater in 2005–2006 were not indicative of a site-related release. That is, elevated concentrations are present in various unrelated areas of Site 6, including an upgradient well (T-12; well locations and historical data are shown on Figure 8).
- There were also no manganese exceedances in wells (T-10 and T-22) located next to wells with exceedances (T-12, T-19, and T-31).
- Manganese concentrations in groundwater samples that were collected when the site was operational in the 1990s were comparable to or less than the groundwater BTV of 580 µg/L, further indicating that a release did not occur as part of site operations.

The OU-11 RI report recommended further investigation at Line 6 to verify that manganese in groundwater is naturally occurring and is not site-related.

1.5 Objectives of the SRI

The objective of the SRI is to evaluate manganese concentrations in Line 6 groundwater, assess whether it is naturally occurring, and if not to delineate the extent of the elevated manganese concentrations. Based on the results of the SRI, the following decisions will be made, as documented in the 2022 QAPP addendum:

- Are manganese concentrations in groundwater below the BTV for IAAAP, or are concentrations statistically similar to background concentrations at IAAAP?
  - If current manganese concentrations in groundwater at Line 6 are less than the BTV or statistically similar to background, then no action for groundwater at Line 6 will be warranted.
  - If current manganese concentrations in groundwater at Line 6 are greater than the BTV and not statistically similar to background, then the HHRA for Line 6 groundwater will be updated.
- Do current manganese concentrations in groundwater pose potentially unacceptable risk to human health (that is, do risks exceed an excess lifetime cancer risk of 1×10^{-4} or a noncancer hazard quotient of 1)?
  - If the HHRA concludes that there are no unacceptable risks or hazards, then no action for groundwater at Line 6 will be warranted.
  - If the HHRA concludes that there are potentially unacceptable risks or hazards, then a feasibility study for groundwater will be recommended.

This SRI will determine the recommendation for groundwater at Line 6.

2. SRI Field Activities

This section describes the methodology of the field investigation activities conducted as part of the SRI for Line 6. The rationale for the SRI was detailed in the QAPP addendum (CH2M, 2021); wells were selected for sampling based on manganese concentrations in exceedance of the PAL and BTV. The groundwater PALs identified in the QAPP addendum are based on the maximum contaminant level (MCL); if no MCL is

available, the greater of the HAL and the tap water RSL will be used. There is no primary MCL value for manganese. Therefore, the noncarcinogenic lifetime HAL of 300 µg/L was identified as the PAL (CH2M, 2021). The BTV for manganese in groundwater at IAAAP is 580 µg/L (CH2M, 2020a).

The field activities conducted during this SRI consisted of the following activities:

- August 2022: redevelopment and groundwater sampling of six existing monitoring wells (T-12, T-17, T-18, T-19, T-20, and T-31) with historical manganese concentrations in exceedance of the PAL and BTV.
- January 2023: redevelopment and groundwater sampling of one existing monitoring well (T-21) as part of a contingency sampling event.
  - The 2022 QAPP addendum stated that if current manganese concentrations exceeded both the PAL and BTV at one of the six proposed wells, then existing clustered wells immediately adjacent to the well with the exceedance would be sampled to refine the current vertical extent of manganese above and/or below the screened interval with the exceedance.
  - Of the six proposed wells, only T-20 exceeded both the PAL and BTV, triggering the contingency sampling at an adjacent well.
- August 2022 through May 2023: decontamination and waste management.
- Data management.

Field activities were conducted in accordance with the 2022 QAPP addendum. Appendix A contains field documentation, and Appendix B includes laboratory reports and the data quality evaluation.

2.1 Monitoring Well Development

Given the number of years since existing wells at Line 6 had been sampled, existing wells were redeveloped prior to sampling to remove sediments that may have settled in the wells over time. These sediments can increase sample turbidity and elevate concentrations. As documented in the 2022 QAPP addendum (SOP-01), the target turbidity for the well development was 25 or fewer nephelometric turbidity units (NTUs).

Jacobs geologists and Roberts Environmental Drilling field crews mobilized to IAAAP on August 15, 2022. Roberts Environmental Drilling began redevelopment of existing wells on August 19, 2022, using a surge block and submersible pump (Monsoon pump with a 130-feet lead and tubing placed approximately 2 feet above the well bottom). Each well received several aggressive surges between purges. Monitoring wells T-17, T-19, T-20, and T-31 were able to achieve target turbidity values ranging from 8.7 to 17.6 NTUs. Due to slow recharge rates, monitoring wells T-12, T-18, and T-31 required several days of surging, purging, and recharging before development was completed. Monitoring wells T-12 and T-18 were developed for three consecutive days, two times per day; each well was purged until dry (each well was purged until the pump automatically shutoff due to absence of water). The final turbidity values for these locations remained elevated: T-12 had a final turbidity value of 78.6 NTUs after seven well volumes were purged; and T-18 had fluctuating turbidity values during the final development that ranged from 130 to 344 NTUs after five well volumes were purged. (Refer to Appendix A for field forms including well development logs.) All wells were allowed to equilibrate for at least 24 hours after development before low-flow groundwater sample collection.

Monitoring well T-21 was redeveloped and sampled during a subsequent mobilization, January 9–11, 2023. The redevelopment of T-21 required multiple surges, purges, and recharges, and it never reached target turbidity values after 11 well volumes were purged. Turbidity values collected during the final purge

were over the instrument range of 1,000 NTUs. T-21 was allowed to equilibrate and recharge for 46 hours prior to sampling; Table 1 and Appendix A provide additional details. These monitoring wells are shown on Figure 3.

2.2 Low-flow Groundwater Sampling

Groundwater samples were collected from seven monitoring wells during the two mobilizations, using low-flow purge and sample techniques (Table 1). Peristaltic pumps were used at wells with static shallow groundwater (top of groundwater measured at 15 feet below top of casing or less during the depth to water survey); submersible bladder pumps were used at monitoring wells with static groundwater deeper than 15 feet below top of casing. The bladder pump malfunctioned during the sampling of T-12, so a variable speed Mini-Monsoon pump was used to low-flow sample this location.

Groundwater quality parameters (pH, specific conductance, turbidity, dissolved oxygen, temperature, salinity, and oxidation-reduction potential) were collected using a water quality meter and were recorded on purge logs. Groundwater quality parameters were allowed to stabilize for three consecutive readings before each well was sampled. Refer to Appendix A for field documentation, including purge logs.

Groundwater samples were collected for manganese analysis in laboratory-prepared sampling containers that were pre-preserved with nitric acid (based on the SW-846 Method 6020A analytical requirement for metals analysis); the dissolved manganese samples were field-filtered using a one-time-use 0.45-micron filter. Samples were packaged in coolers on ice and shipped via FedEx overnight to Eurofins Denver.

2.3 Decontamination and Investigation-derived Waste Management

Decontamination and waste management activities were conducted in accordance with the final basewide environmental and waste management plan (CH2M, 2018). Investigation-derived waste (IDW) generated during the RI included well development and purge water, and decontamination fluids used to decontaminate nondisposable sampling equipment. New, United Nations–approved 55-gallon steel drums were used to contain waste generated during the field activities.

Groundwater generated during well development and groundwater sampling was temporarily stored in labeled drums or portable tanks. Downhole and nondisposable sampling equipment was decontaminated immediately after each use, which generated decontamination water. Groundwater and decontamination water were disposed of at the onsite Inert Disposal Area (IDA) groundwater treatment facility with approval from IAAAP.

PPE, tubing, and disposable sampling materials were consolidated in an IDW drum and temporarily stored at the installation-approved staging location, the IDA, and properly labeled. Based on the analytical results and in accordance with 40 CFR Part 261 Subpart C, this IDW was classified as nonhazardous. The waste was removed by Green Rock on May 11, 2023, and delivered to the Valicor Environmental Services disposal facility in Monroe, Ohio.

2.4 Data Management and Evaluation

2.4.1 Data Tracking

Data management and tracking were conducted from the time of field collection to receipt of validated electronic analytical results. Field samples and their corresponding analytical tests were recorded on the chain-of-custody forms submitted with the samples to the laboratory. Chain-of-custody entries were checked against the site-specific project instructions and work plans to verify that the designated field

samples had been collected and submitted for the appropriate analysis. Upon receipt of the samples by the laboratory, a comparison to the field information was conducted to verify that each sample was analyzed for the correct parameters and that appropriate quality assurance/quality control samples were collected.

2.4.2 Data Quality Evaluation

Jacobs performed a data review and verification as described in the UFP-QAPP (CH2M, 2017). The data quality of analytical results from the samples collected during the field investigation was assessed. Analytical data were validated as Stage 2B level evaluations. Qualifier flags were applied to the data to reflect data usability limitations. The data review and verification efforts are documented in the data quality evaluation report (Appendix B).

The data quality evaluation concluded that the data can be used for project decisions taking into consideration the validation flags applied to the samples (detailed in Appendix B). Based on the verification effort, the data appear to accurately represent the conditions of the environmental media analyzed at the time of collection. The analytical techniques were properly performed and documented, and the laboratory procedures applicable to each method were followed and documented. Standard industry laboratory methods were used to analyze the data as prescribed in the approved UFP-QAPP (CH2M, 2017). Summary tables of the reported data, including both detections and nondetects, are included in Table 3.

2.5 Deviations

Two deviations were notable during the 2022–2023 groundwater sampling events:

- Well development took longer than expected, and achieving target turbidity values after extensive development was difficult. The wells that had issues with achieving target turbidity (T-12, T-18, and T-21) still successfully achieved well development criteria based on SOP-01, defined in the UFP-QAPP (CH2M, 2017), as these wells were purged dry multiple times.
- A malfunctioning bladder pump required the use of a Mini-Monsoon pump for one sampling location (T-12).

The minor deviations outlined above did not impact the data quality and still conformed to the field activities specified in the 2022 QAPP addendum.

3. SRI Groundwater Sampling Results

3.1 Depth-to-Groundwater Survey

Prior to low-flow purge and sampling, the wells associated with the SRI at Line 6 were gauged for depth-to-groundwater measurements. Table 1 summarizes the well details, including the depth-to-groundwater measurements and groundwater elevations at Line 6 monitoring wells included in the SRI. Due to the limited number of wells that were gauged, the varying depths of screen intervals included, and monitoring well T-12 being measured months apart from the other wells, there are not enough representative data to accurately generate a new localized potentiometric surface figure from the data collected during the SRI. However, based on the limited groundwater elevation data collected during the SRI, overburden groundwater appears to flow generally to the south; and vertical gradients between shallow and intermediate overburden, and between intermediate overburden and shallow bedrock show downward flow at clustered wells. These groundwater flow patterns are consistent with historical trends (CH2M, 2021 and Tetra Tech 2012). Depth-to-water ranges observed were between 9.19 and 22.07 feet below top of

casing in overburden; and between 31.70 feet and 52.34 feet below top of casing in shallow bedrock. These values are also consistent with historical depth-to-water ranges observed.

3.2 Groundwater Parameters

Groundwater geochemical parameters were collected prior to groundwater sample collection. The geochemical parameters are summarized in Table 2. In general, groundwater parameters observed during the SRI are indicative of aerobic conditions: dissolved oxygen concentrations were all greater than 1.00 milligrams per liter (mg/L) (concentrations ranged from 1.96 mg/L to 7.66 mg/L), and oxidation-reduction potential values were all positive (values ranged from 53.3 millivolts [mV] to 203 mV). The geochemical parameters observed in 2005/2006 were notably less aerobic and generally exhibited reducing conditions: ORP was negative at both T-19 and T-31 (-70.3 mV and -136.8 mV, respectively), and DO concentrations at T-12 and T-19 were significantly less than those observed in 2022/2023 (2.7 mg/L at T-12 and 0 at T-19).

The pH of the groundwater was generally neutral (values ranged from 6.31 to 7.41 standard units). Specific conductivity values ranged from 258 microsiemens (µS/cm) to 874 µS/cm (maximum observed at T-20) during the SRI, which is similar to the values observed in 2005–2006, when the maximum specific conductivity value was 833 µS/cm (observed at T-12).

As discussed in Section 2.1, turbidity values were variable during development; however, during low-flow sampling, six of the seven monitoring wells had final turbidity values ranging from 2.9 NTUs to 16.3 NTUs, while monitoring well T-18 reached a minimum turbidity value of 109 NTUs. (As described in Section 2.1, the turbidity in this well never decreased even after 3 days of redevelopment). Additionally, four of the sampled wells had turbidity values less than 10 NTUs, meeting the goal identified in the 2022 QAPP addendum; turbidity values at the remaining two wells were just over 10 NTUs (12.7 NTU and 16.3 NTU).

3.3 Groundwater Analytical Results

Groundwater analytical results are summarized in Table 3. Three locations (T-12, T-19, and T-31) were sampled during both the 2022–2023 SRI and the 2005–2006 groundwater sampling events. These locations are also shown in Table 3 for historical comparison. Of the seven monitoring wells redeveloped and sampled during the 2022–2023 SRI, two locations (T-20 and T-21) had manganese in groundwater at levels which exceeded both the screening criterion (HAL, which is 300 µg/L) and BTV (580 µg/L). However, both exceedances were similar to the BTV: manganese concentrations observed at T-20 were 600 µg/L for total manganese and 640 µg/L for dissolved; and at T-21, concentrations of manganese were observed at 620 µg/L total manganese and 660 µg/L dissolved manganese. These locations were not sampled during the 2005–2006 event, but concentrations of total manganese during the 2022/2023 events were similar to those observed during the 1992 event at T-20 (624 µg/L in 1992 compared to 600 µg/L in 2022) and had increased at T-21 (163 µg/L in 1992 compared to 620 µg/L in 2023). Dissolved manganese was not sampled in 1992 or 1993. Dissolved manganese does not have an established BTV; therefore, the PAL of 300 µg/L alone is used to determine an exceedance. During the 2022/2023 events, locations T-17 and T-18 had dissolved manganese concentrations exceeding the PAL; however, both locations were equal to or less than the total manganese concentrations observed at the same location and sampling event; furthermore, both locations had total manganese concentrations below the BTV. Therefore, it is assumed that the dissolved manganese observed at T-17 and T-18 are attributed to natural sources.

4. Nature and Extent of Manganese in Groundwater

Analytical data from the Line 6 SRI were compared to the human health PAL, which is the HAL for manganese (see Section 2), and the BTV to assess whether the detected concentrations were consistent with the background concentrations for metals. USEPA's (2002) *Role of Background in the CERCLA Cleanup Program* states that risk management and remedial actions for CERCLA sites should account for the influence of natural and anthropogenic background conditions, and that cleanup goals for COCs from an identified CERCLA release should not be set for levels less than their corresponding background concentrations. Background concentrations for natural and anthropogenic chemicals are also used for comparison to site data to support the identifications of a site-related release. BTVs were calculated for groundwater at IAAAP and documented in the final *Evaluation of Background Concentrations of Metals in Groundwater* (CH2M, 2020a), and the BTV established for total manganese in groundwater was 580 µg/L; a BTV for dissolved manganese has not been established.

During the SRI events, manganese (total and dissolved) was detected in all seven monitoring wells sampled. However, only two locations had manganese concentrations that exceeded the PAL (300 µg/L) and BTV (580 µg/L): intermediate overburden well T-20 and shallow bedrock well T-21, part of a clustered well pair. These wells are located at the southeast corner of Line 6 (Figure 8). The shallow overburden wells (T-19 and T-31), which are both screened from 10 to 20 feet below ground surface, contained the lowest concentrations of total and dissolved manganese. The highest concentrations of total and dissolved manganese observed during the SRI were at T-20 and T-21, which are part of a well cluster with shallow monitoring well T-19, which had the lowest concentrations of total and dissolved manganese observed during the SRI.

In general, manganese concentrations (both total and dissolved) have decreased significantly since the 2005–2006 sampling events (Table 3), when T-12, T-19, and T-31 all exceeded screening criteria and BTV. During the 2005–2006 event, total manganese at these three locations was observed at concentrations three times that of the screening criteria, and more than double the BTV. All three of these locations had manganese concentrations below screening criteria in 2022–2023; T-19 and T-31 decreased by more than an order of magnitude since 2005.

The final OU-11 RI report (CH2M, 2021) concluded that elevated concentrations in groundwater were likely associated with temporary, localized geochemical conditions rather than a site release. This was based on the distribution of manganese in groundwater, since monitoring wells with exceedances during the 2005–2006 events (T-12, T-19, and T-31) were located in different areas across the site, and there was no apparent spatial pattern or source associated with the elevated concentrations (Figure 8). Monitoring well T-12 is along the upgradient site boundary; T-19 is downgradient of former Building 6-68, in the southeast area of the site; and T-31 is downgradient of former Building 6-91, in the southwest area of the site. Total manganese concentrations prior to the 2005–2006 groundwater sampling events at these three wells were significantly lower than the 2005–2006 concentrations (Table 3). Based on the most recent SRI sampling results, concentrations of total and dissolved manganese have returned to levels similar to those that were observed prior to the 2005–2006 events, which further indicates that the elevated concentrations may have been temporal and not associated with a site release. Prior to 2005, manganese exceedances occurred in wells on the north and eastern sides of Line 6 (T-12, T-17, and T-20); however, manganese concentrations in well clusters adjacent to these wells did not exceed the PAL and BTV. In addition, there are no records of manganese being used as part of line operations and there were no soil sources identified in this area (CH2M, 2021).

5. Fate and Transport of Manganese in Groundwater

The properties of chemicals and the environment are used to understand and predict chemical fate and transport. An understanding of the fate and transport is part of the overall assessment of the potential for a chemical to cause an adverse human health or environmental effect.

5.1 Chemical Mobility and Persistence

Due to the complexity of metals and their variable forms in the environment, predicting their chemical mobility and persistence can be difficult. Typically, they are not volatile under normal temperature and pressure conditions. Their sorption potential is a complex function of pH, organic content, oxide coatings, and other factors; therefore, K_d is not easily estimated by methods other than site-specific testing (USEPA, 1996). Generally, metal adsorption increases with pH. Metals most often sorb to clay minerals, organic matter, and iron and manganese oxyhydroxides. Metals may be sorbed on the surface of the soil or fixed to the interior of the soil, where they are unavailable for release to groundwater. After available sorption sites are filled, most metals are incorporated into the structures of major mineral precipitates as coprecipitates (ERG, 2005).

The solubilities of metals are also dependent on several factors. In general, solubility is highly dependent on the oxidation state of the metal (USEPA, 2007). The solubility of cations (positively charged ions) decreases as pH increases. Some cations may complex with oxygen and hydroxide, forming insoluble oxyhydroxides, or with phosphate, sulfate, and carbonate, forming insoluble mineral precipitates. Metal sulfide complexes, which form in reducing environments, are extremely insoluble and tend to reduce the total metals concentrations (ERG, 2005).

The solid form of manganese (manganese oxides) is present in the natural soil matrix. If insufficient amounts of oxygen and nitrate are present in the subsurface, then manganese oxides will be used as electron acceptors during metabolic activity and dissolve under reducing conditions into soluble forms. Sulfides present in groundwater can also result in the dissolution of manganese hydroxides. Several metals (such as arsenic) tend to sorb to these manganese oxides. If these manganese compounds are dissolved, the metals that are bound to these hydroxides and oxides (e.g., chromium and arsenic) will also be released.

Subsurface conditions are likely to become more reduced in areas that have substantial carbon available. Several metabolic processes can use naturally occurring organic carbon or anthropogenic organic compound contamination as an electron donor or electron acceptor. Manganese concentrations and those metals that tend to desorb from manganese oxyhydroxides when they are reduced to their more soluble forms are also frequently higher in areas of organic contamination (such as explosives or volatile organic compound plumes) because of the reducing conditions that are created during biodegradation of these chemicals (USEPA, 2017).

5.2 Chemical Transport

Primary potential migration pathway for manganese in groundwater at Line 6 is advection of dissolved contaminants with groundwater flow. Manganese was not used in site operations at Line 6, and there are no soil sources near the wells with groundwater exceedances. Contaminants in the overburden aquifer can be transported through advection and dispersion. Advection is the primary transport mechanism and includes the transport of dissolved contaminants by the bulk motion of flowing groundwater. Dispersion is the spreading of dissolved contaminants from the path they would be expected to follow during advection due to the spatial variation in aquifer permeability, fluid mixing, and molecular diffusion.

Groundwater flow in the overburden aquifer is influenced by the hydrologic watersheds. At Line 6, groundwater flows in a southerly direction. Overburden aquifer groundwater can also flow downward toward the bedrock aquifer. This would be indicated by downward vertical gradients. However, contaminant migration between the aquifers would be limited due to physical differences between the surficial (overburden) geology and the primary bedrock matrix and pressure (head). Groundwater in bedrock flows primarily through secondary porosity features, like fractures. Where the bedrock crops close to the surface, groundwater flow is also influenced by the watersheds.

Contaminants typically will not move as rapidly as groundwater because of retardation, or the adsorption of the contaminant to the solid media. Retardation can be a significant factor for groundwater chemicals of potential concern (COPCs)within the overburden aquifer, which is composed primarily of clays and silts. Retardation will not be important where sand lenses are present from the glacial meltwater.

6. Risk Assessment Update

6.1 Potential Receptors and Exposure Pathways

An HHRA and an ecological risk assessment (ERA) were conducted for groundwater at Line 6 as part of the 2021 RI to evaluate potential current and future health risks and hazards from exposure to chemicals in site groundwater. The HHRA identified potentially unacceptable risks and hazards for future residential receptors exposed to manganese in groundwater. The ERA did not identify complete exposure pathways for ecological receptors; therefore, the process was terminated with the conclusion that there are no adverse effects to ecological receptors since there are no complete exposure pathways.

There are no potential receptors or potentially complete exposure pathways identified under current site conditions. The 2021 HHRA derived the following conclusions for future human receptors:

- **Future Hypothetical Residents.** For groundwater, potentially unacceptable risks and hazards were identified from exposure to manganese.
- **Future Site Workers.** No potentially unacceptable risks or hazards were identified for exposure to groundwater.

6.2 Updated Risk Assessment and Hazard Index

The HHRA for Line 6 was updated using the SRI data, given that these data are more current than the 2005 and 2006 data, and the SRI has shown that the 2005 and 2006 manganese results were temporarily elevated. The conceptual exposure model, exposure assessment, toxicity assessment, risk characterization, and uncertainty analysis for Line 6 were included in the previous HHRA (CH2M, 2021). The HHRA update included screening the 2022–2023 manganese data against USEPA's tap water RSL (USEPA, 2023), identifying an exposure point concentration, and calculating receptor-specific HIs.

As indicated in Section 2.4.2, the 2022–2023 manganese data are considered usable and representative of drinking water regardless of screen interval or aquifer sampled. Manganese was the only analyte evaluated in this HHRA.

Groundwater is not currently being used as a potable water source, and there are no plans to use groundwater for potable purposes in the future. Therefore, the HHRA for Line 6 evaluates potential exposures to groundwater due to its potential future use as a drinking water source. This entails the evaluation of future residential exposures to groundwater.

The following potential future human receptors were identified in the HHRA for Line 6:

- **Future Site Workers.** Future site workers could contact groundwater based on potential future use as a drinking water source at Line 6.

- **Future Hypothetical Residents.** Future hypothetical residents could contact groundwater based on potential future use as a drinking water source at Line 6.

Results from the 2021 HHRA (CH2M, 2021) showed that there were no risk exceedances for the future site worker; therefore, risks were not reassessed for this receptor in the SRI. Risk conclusions for the future site worker would not change (i.e., not risk exceedance) because manganese concentrations from 2022-2023 are less than those used in the 2021 HHRA. Because the hypothetical future resident (adult and child) was the only receptor in the 2021 RI with potentially unacceptable risks and hazards, the resident is the only receptor evaluated in the updated HHRA.

The results of the HHRA update are included in Appendix C. The screening process for a hypothetical future resident potentially exposed to groundwater is presented in Appendix C-2, Table 2.1. The maximum manganese concentration, for both the total and dissolved forms (620 µg/L and 660 µg/L, respectively), exceeded the tap water RSL of 43 µg/L (based on HQ = 0.1); therefore, noncarcinogenic hazards were calculated for manganese. A sufficient number of samples and detected concentrations were not available for manganese (i.e., there were fewer than eight samples) to calculate a 95 percent upper confidence level on the mean, so the maximum detected concentration was selected as the exposure point concentration (Appendix C-2, Table 3.1).

The exposure factors used in the intake calculations for the residential scenario were included in the 2021 HHRA. The primary references for the exposure factor values are the standard default exposure factors for residents (adult and child) presented in the Human Health Evaluation Manual *Update of Standard Default Exposure Factors* (USEPA, 2014). The oral toxicity values and inhalation toxicity values used in the updated HHRA were obtained from the USEPA standard hierarchy of toxicity value sources (USEPA, 2003) and are presented in Appendix C-2, Table 7.1. The newly calculated hazard index was based on maximum total manganese concentrations observed in 2022 and 2023 (Appendix C-2, Table 7.1). The updated risk assessment is summarized in Table 4:

Table 4. Updated Risk Assessment Summary

Total Manganese	EPC µg/L	Adult Resident HI	Child Resident HI
2023 EPC (Maximum)	640	0.9	1

EPC = exposure point concentration
HI = hazard index
µg/L = micrograms per litter

Using the new total manganese data collected during the SRI, the updated HI does not exceed 1 for an adult or a child resident. Therefore, the manganese concentrations observed in groundwater at Line 6 do not pose an unacceptable risk to potential future residents. Therefore, there are no COCs for Line 6 groundwater, and this site qualifies for a No Further Action decision for groundwater based on the results of the HHRA.

Although risks were not quantified for site workers, the manganese concentrations observed in groundwater at Line 6 would not pose an unacceptable risk to potential future site workers. The standard default exposure factors for a site worker are lower than those for a resident; thus, the hypothetical resident scenario is protective of the worker scenario.

6.3 Uncertainty Analysis

The HHRA has inherent uncertainty. Site-specific uncertainties associated with the HHRA for Line 6 are discussed below.

The maximum detected concentration was used as the EPC for manganese because there were fewer than eight samples (i.e., the minimum number of samples used to calculate the upper confidence limit of the mean) in the 2022–2023 data set. The use of the maximum detected concentration as the EPC likely overestimates the hazards associated with potential exposures to groundwater because it is not likely that a receptor would be exposed to the maximum detected concentration for the full assumed exposure duration (20 years for an adult and 6 years for a child).

Potential excess lifetime cancer risks for ingestion and dermal contact exposures to manganese in groundwater could not be estimated because oral and dermal cancer slope factors have not been established for this chemical. Therefore, if manganese is a potential carcinogen, it is possible that carcinogenic risks could be underestimated in the HHRA. The current USEPA weight of evidence for cancer classification for manganese is "D" (not classifiable as to human carcinogenicity).

Total and dissolved manganese were analyzed in the groundwater samples. The total manganese concentrations ranged from 23 µg/L to 620 µg/L, while the dissolved manganese concentrations ranged from 30 µg/L to 660 µg/L (Appendix C, Table 2.1). The child HIs for total manganese and dissolved manganese were 1 (Appendix C, Table 2.1) and 2 (Appendix C, Table 7.2), respectively. USEPA recommends that data from unfiltered water samples be used in the HHRA.

For the Line 6 HHRA conducted in 2021, risk estimates were calculated for five chemicals (arsenic, chromium, cobalt, manganese, and vanadium) identified as COPCs (i.e., chemicals exceeding screening levels). Excluding four COPCs from the updated HHRA can underestimate risks. However, three of the COPCs (arsenic, chromium, and vanadium) from the 2021 HHRA were determined to be within background (i.e., naturally occurring), and the fourth COPC (cobalt) had HIs for the future hypothetical resident of 0.1 (adult) and 0.2 (child), which are less than the USEPA's threshold HI of 1.

7. Conclusions

Concentrations of manganese in groundwater at Line 6 remain comparable to background levels observed in the region. There were only two monitoring wells with exceedances of the total manganese BTV; however, manganese concentrations in both wells were within the same order of magnitude of the BTV. The groundwater sampling events in 2005 and 2006 observed abnormally elevated concentrations of manganese in groundwater that triggered a supplemental groundwater sampling event, which was performed in 2022 and 2023. Results from the 2022 and 2023 SRI are similar to those observed prior to the 2005 and 2006 groundwater events; therefore, elevated manganese concentrations in groundwater during the 2005–2006 events were likely associated with temporary, localized geochemical conditions rather than a site release. Geochemical parameters in 2005 and 2006 were notably less aerobic and more reducing when compared to those for 2022 and 2023; this could have caused the spike in manganese concentrations during the 2005 and 2006 events. Additionally, in 2005 and 2006, there was no apparent spatial pattern or source associated with the elevated concentrations, and no localized or source trends could be identified.

The HHRA for Line 6 was updated using the more current SRI data that was collected in 2022 and 2023. The newly calculated, and more appropriate HI, resulting from the current data indicates that no unacceptable risks are associated with manganese in groundwater at Line 6. Therefore, NFA for

groundwater at Line 6 is warranted. It is recommended that NFA be presented as the preferred remedy in an OU-11 proposed plan.

8. References

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Tables

Table 1. Monitoring Well Details—Line 6

Iowa Army Ammunition Plant, Middletown, IA

Sample Location	Screen Interval (ft bgs)	TOC Elevation (ft amsl)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)	Pump Intake (ft bgs)	Sampling Method	Well Redevelopment Date	GW Elevation and Sample Collection Date
T-12	111–121	725.12	52.34	672.78	116	Mini-Monsoon	8/19/22 to 8/21/22	8/22/2022
T-17	60–70	717.84	22.07	695.77	65	Bladder Pump	8/19/2022	8/21/2022
T-18	100–115	717.54	46.65	670.89	110	Bladder Pump	8/19/22 to 8/21/22	8/22/2022
T-19	10–20	717.21	10.64	706.57	15	Peristaltic	8/18/2022	8/20/2022
T-20	60–70	717.03	17.8	699.23	65	Bladder Pump	8/19/2022	8/20/2022
T-21	111–124	716.79	31.7	685.09	120	Bladder Pump	1/9/2023	1/11/2023
T-31	10–20	715.28	9.19	706.09	15	Peristaltic Pump	8/18/22 to 8/19/22	8/21/2022

Notes:

amsl = above mean sea level

bgs = below ground surface

btoc = below top of casing

ft = feet

gw = groundwater

toc = top of casing

Table 2. Groundwater Quality Parameters—Line 6

Iowa Army Ammunition Plant, Middletown, IA

Sample Location	Sample Date	Depth to Water (ft btoc)	pH (pH Units)	Temperature (°C)	Conductivity (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)
T-12	**4/21/2006**	--	**7.35**	**12.7**	**833**	**22.3**	**2.7**	**7.34**
	8/22/2022	70.31	7.17	17.65	805	81	7.66	16.3
T-17	8/21/2022	22.91	7.21	15.43	827	81	1.96	4.3
T-18	8/22/2022	51.59	7.47	22.81	846	102	6.08	109
T-19	10/4/2005	--	7.31	--	455	-70.3	0	1.4
	8/20/2022	11.08	6.31	18.27	258	203	6.47	2.9
T-20	8/20/2022	21.92	7.13	17.13	874	163	3.51	3.35
T-21	1/11/2023	36.11	7.07	12.1	624	53.3	3.51	12.7
T-31	10/4/2005	--	7.34	19.9	6.8*	-136.8	5.99	3.62
	8/21/2022	10.14	7.24	15.55	446	204	5.37	5.21

Notes:

Water quality parameters were measured in the field using a YSI multi-meter (2022/2023 event).

* = Conductance of T-31 in 2005 possibly recorded with the incorrect units; likely true value of 680 µS/cm

°C = degrees Celsius

µg/L = microgram(s) per liter

µS/cm = microsiemen(s) per centimeter

btoc = below top of casing

DO = dissolved oxygen

ft = feet

mV = millivolt(s)

NTU = nephelometric turbidity unit

ORP = oxidation-reduction potential

Table 3. Groundwater Analytical Data for Manganese—Line 6
Iowa Army Ammunition Plant, Middletown, IA

Analytical Results from 1990s, 2000s, and 2020s					Location	T-12			T-17		T-18		T-19		
					Sample ID	R07GW0901-	S06-T-12-GW-REG	OU11-T-12-082222	T-17-19921022	OU11-T-17-082122	T-18-19921022	OU11-T-18-082222	T-19-19921021	F05-T-19-GW-REG	OU11-T-19-082022
					Sample Date	10/23/1992	4/21/2006	8/22/2022	10/22/1992	8/21/2022	10/22/1992	8/22/2022	10/21/1992	10/4/2005	8/20/2022
Test Group	CAS	Analyte	Unit	Screening Level[a]	Background Threshold Value (UTL95-95[b])										
METALS	7439-96-5	Manganese	µg/L	300	580	***584***	***1440***	**240**	***1060***	***420***	***548***	***460***	**77.5**	***1740***	**23**
METALS-DISSOLVED	7439-96-5	Manganese	µg/L	300	—	—	***672***	**260**	—	***420***	—	***420***	—	***1560***	**20**

Notes:
J1 = Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria
Q = One or more quality control criteria failed
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
Bold indicates the analyte was detected
italics indicate the analyte exceeded screening criteria
Shading indicates the result exceeded screening criteria and background threshold value (BTV), if available; No BTV exists for dissolved manganese; therefore, manganese results exceeding screening criteria (HAL) are shaded
— = Not Analyzed
µg/L = micrograms per liter
MCL = Maximum contaminant level
RSL = Regional screening level
HAL = Health Advisory Level

[a] Screening level is the MCL. If no MCL is available, the greater of the HAL and the tap water RSL is selected as the delineation screening level; For the purposes of this report, the screening level is the HAL, which is 300 µg/L.

Source: EPA's Regional Screening Levels (May 2023). Available online: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Source: EPA's MCLs and HALs (March 2018). Available online: https://www.epa.gov/sdwa/2018-drinking-water-standards-and-advisory-tables.

Source: Background threshold values (BTVs) from *Evaluation of Background Concentrations of Metals in Groundwater* (CH2M, 2020a)

[b] UTLs were calculated as 95% upper confidence bounds of the 95th percentiles of the background data. UTLs calculated without a definitive distributional assumption of the data (i.e., normal, gamma, or lognormal) for sample sizes less than 59 have a coverage probability less than 95%.

Table 3. Groundwater Analytical Data for Manganese—Line 6

Iowa Army Ammunition Plant, Middletown, IA

Analytical Results from 1990s, 2000s, and 2020s					Location	T-20		T-21		T-31		
					Sample ID	T-20-19921021	OU11-T-20-082022	T-21-19921021	OU11-T-21-011123	T-31-19931203	F05-T-31-GW-REG	OU11-T-31-082122
					Sample Date	10/21/1992	8/20/2022	10/21/1992	1/11/2023	10/2/1993	10/4/2005	8/21/2022
Test Group	CAS	Analyte	Unit	Screening Level[a]	Background Threshold Value (UTL95-95[b])							
METALS	7439-96-5	Manganese	µg/L	300	580	***624***	***600***	**163**	***620*** *J1*	**184**	***1740***	**35** J
METALS-DISSOLVED	7439-96-5	Manganese	µg/L	300	—	—	***640***	—	***660*** *J1*	**142**	***1550***	**49** J

Notes:

J1 = Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria

Q = One or more quality control criteria failed

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Bold indicates the analyte was detected

italics indicate the analyte exceeded screening criteria

Shading indicates the result exceeded screening criteria and background threshold value (BTV), if available; No BTV exists for dissolved manganese; therefore, manganese results exceeding screening criteria (HAL) are shaded

— = Not Analyzed

µg/L = micrograms per liter

MCL = Maximum contaminant level

RSL = Regional screening level

HAL = Health Advisory Level

[a] Screening level is the MCL. If no MCL is available, the greater of the HAL and the tap water RSL is selected as the delineation screening level; For the purposes of this report, the screening level is the HAL, which is 300 µg/L.

Source: EPA's Regional Screening Levels (May 2023). Available online: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Source: EPA's MCLs and HALs (March 2018). Available online: https://www.epa.gov/sdwa/2018-drinking-water-standards-and-advisory-tables.

Source: Background threshold values (BTVs) from *Evaluation of Background Concentrations of Metals in Groundwater* (CH2M, 2020a)

[b] UTLs were calculated as 95% upper confidence bounds of the 95th percentiles of the background data. UTLs calculated without a definitive distributional assumption of the data (i.e., normal, gamma, or lognormal) for sample sizes less than 59 have a coverage probability less than 95%.

Figures

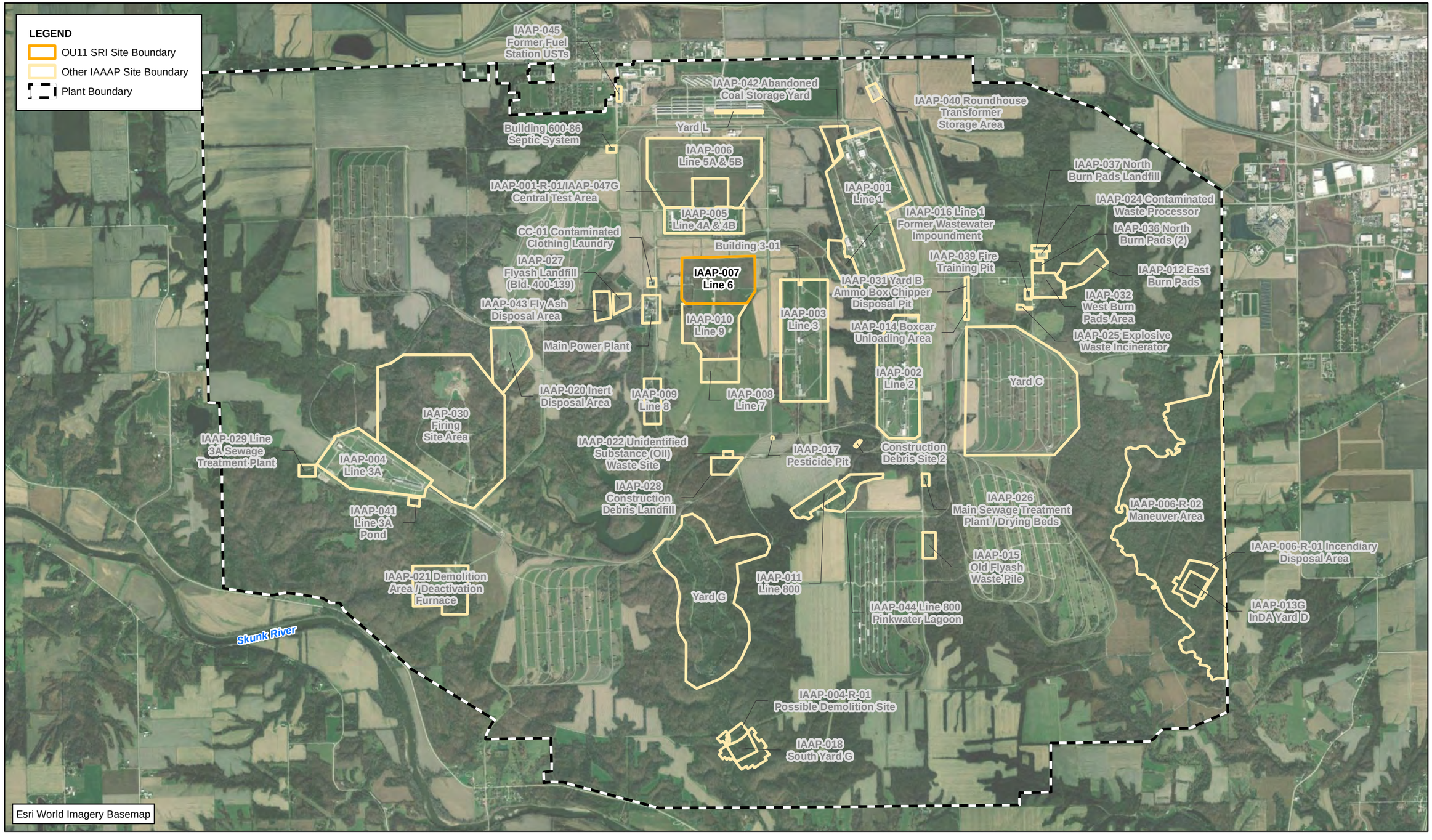

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FIGURE 1
Site Boundaries
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs

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FIGURE 2
Watershed Boundaries
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs

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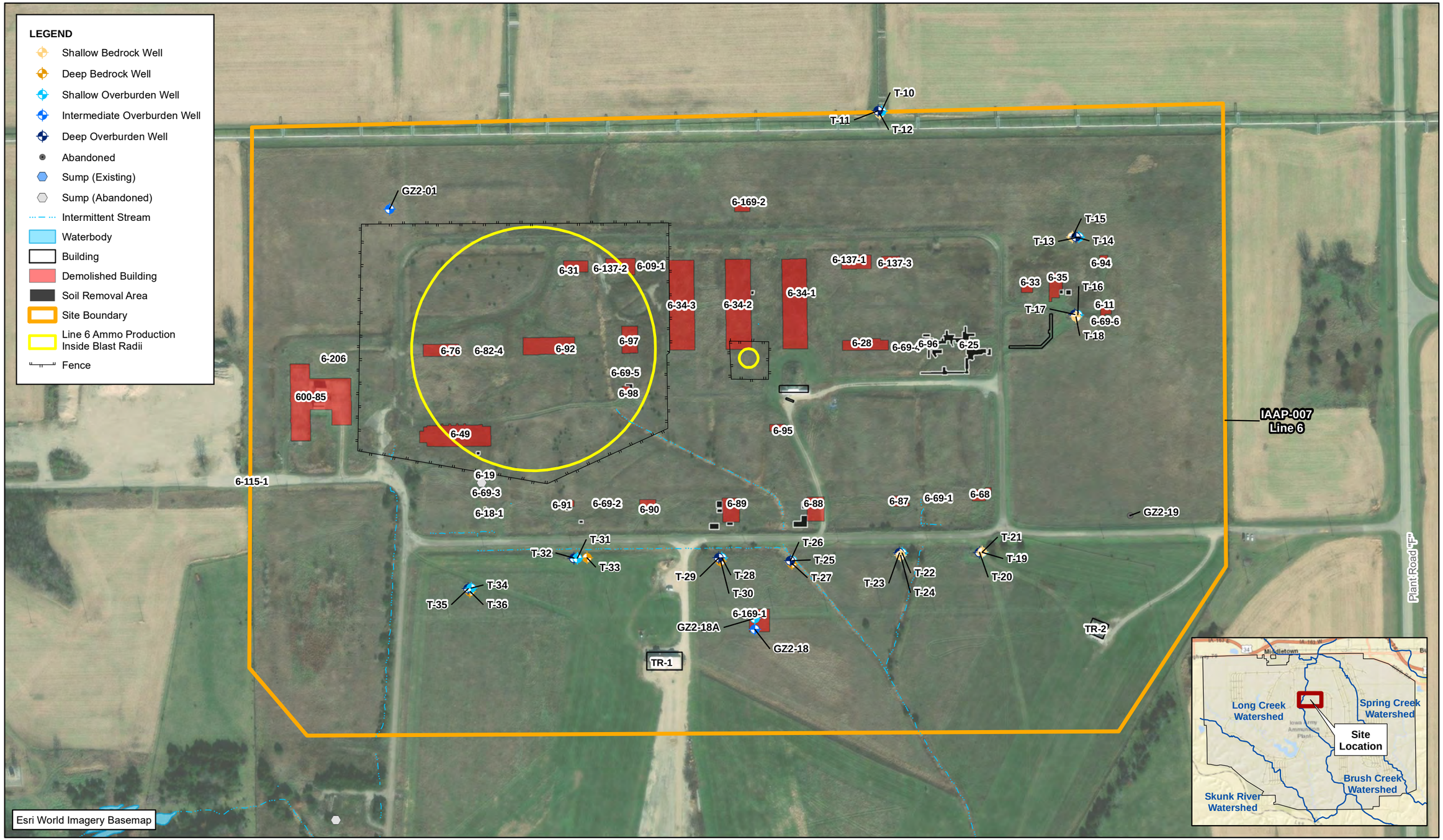

Notes:
1. Sump locations are approximated based on historical information.
2. Historic explosions occurred at Buildings 6-34-2 and 6-92.
3. Active structures at Line 6 are currently only used for storage.

Summary of Line 6 sites:
- IAAP-007 – Soil associated with Line 6. Also serves as the Line 6 site boundary
- IAAP-007G – Groundwater associated with Line 6
- Inside blast radii (IAAP-002-R-01) are areas within the yellow circles. Both blast radii are within IAAP-007
- Outside blast radii (IAAP-002-R-2) is area outside of yellow circles and within the IAAP-007 site boundary

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Figure 3
Line 6 Site Layout
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs

\\DC1VS01\GISPROJ\U\USACE\IAAAP_679172\MAPFILES\LINE_6\FIG_3_LINE6_SITELAYOUTOU11.MXD GTWIGG 8/21/2023 3:01:33 PM

A **A'**

NORTH **SOUTH**

ELEVATION (FEET ABSL)

750 740 730 720 710 700 690 680 670 660 650 640 630 620 610 600 590 580 570

5A-MW3 JAW-609 GZ3-04 T-30/T-29 L9-MW2 JAW-10 14-C 14-F

LOESS

SAND LENS

GLACIAL TILL

BEDROCK

PDS-MW4 G-21

ALLUVIUM

?

560 550 540 530 520 510 500 490 480 470 460 450

LEGEND

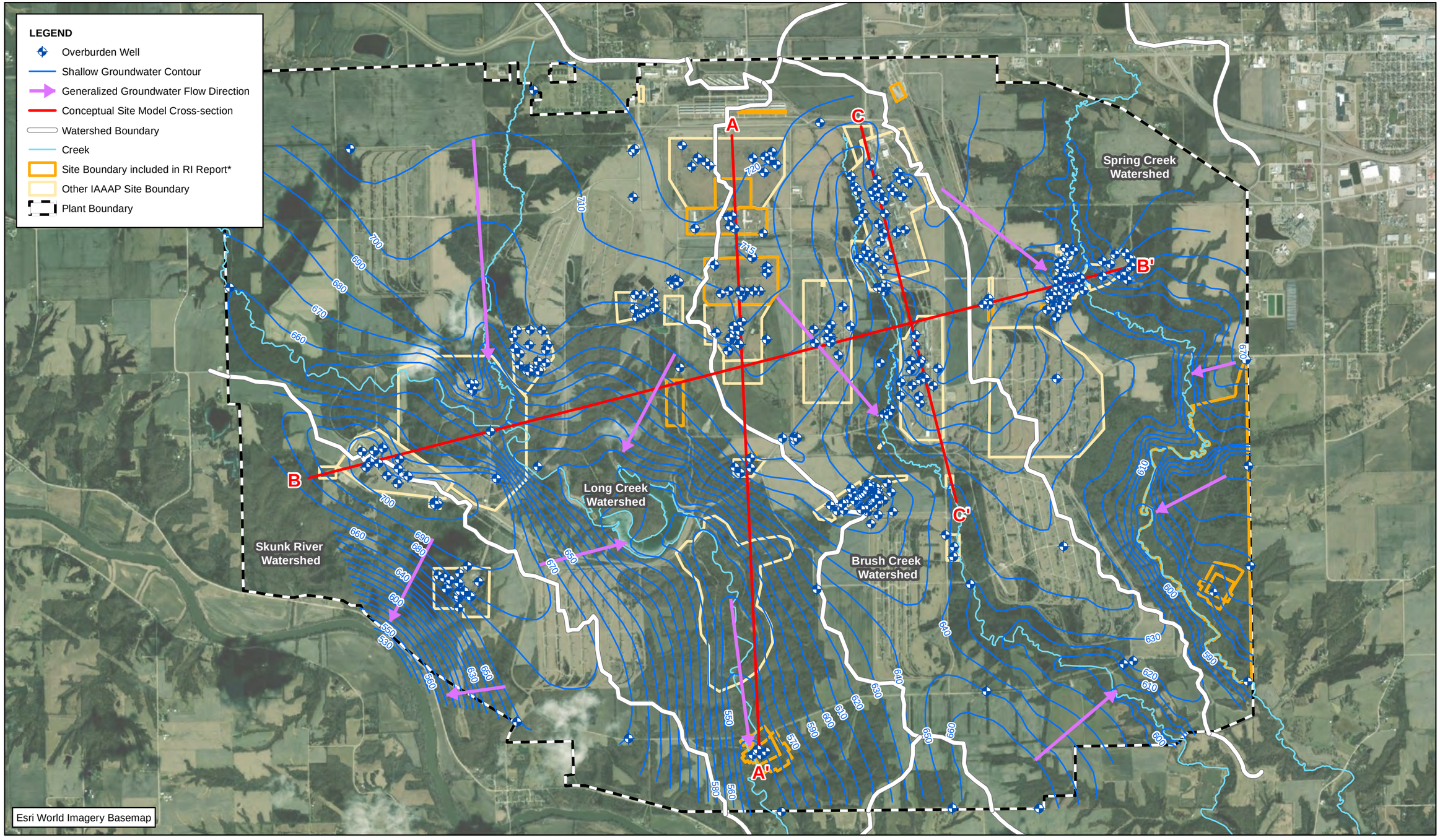
- Alluvium
- Loess
- Glacial Till (Predominantly Clay)
- Glacial Till (Sand Lenses)
- Bedrock (Interbedded Limestone and Shale)
- Water Table

Notes:

1. Water level elevations estimated based on previous facility investigations.
2. Bedrock monitoring wells 14-C and 14-F not included in water level elevation estimation.
3. Geologic contacts are dashed where inferred.

FIGURE 4
Cross Section A-A'
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs



Notes:
1. Shallow groundwater contours based on 2016 water elevation data.
2. * = The IAAAP sites included in this report currently fall under various operable units (OUs; such as, OU-5, OU-6, or OU-7) or are not assigned to an OU. It is proposed that sites (IAAP-014/IAAP-014G, IAAP-047G, IAAP-025/IAAP-025G, Yard L, IAAP-005G, IAAP-007G, IAAP-009G, IAAP-006-R-02, IAAP-018G, IAAP-040G, IAAP-022/IAAP-022G, and IAAP-013G) be transferred to a new OU (OU-11) to facilitate future site management.

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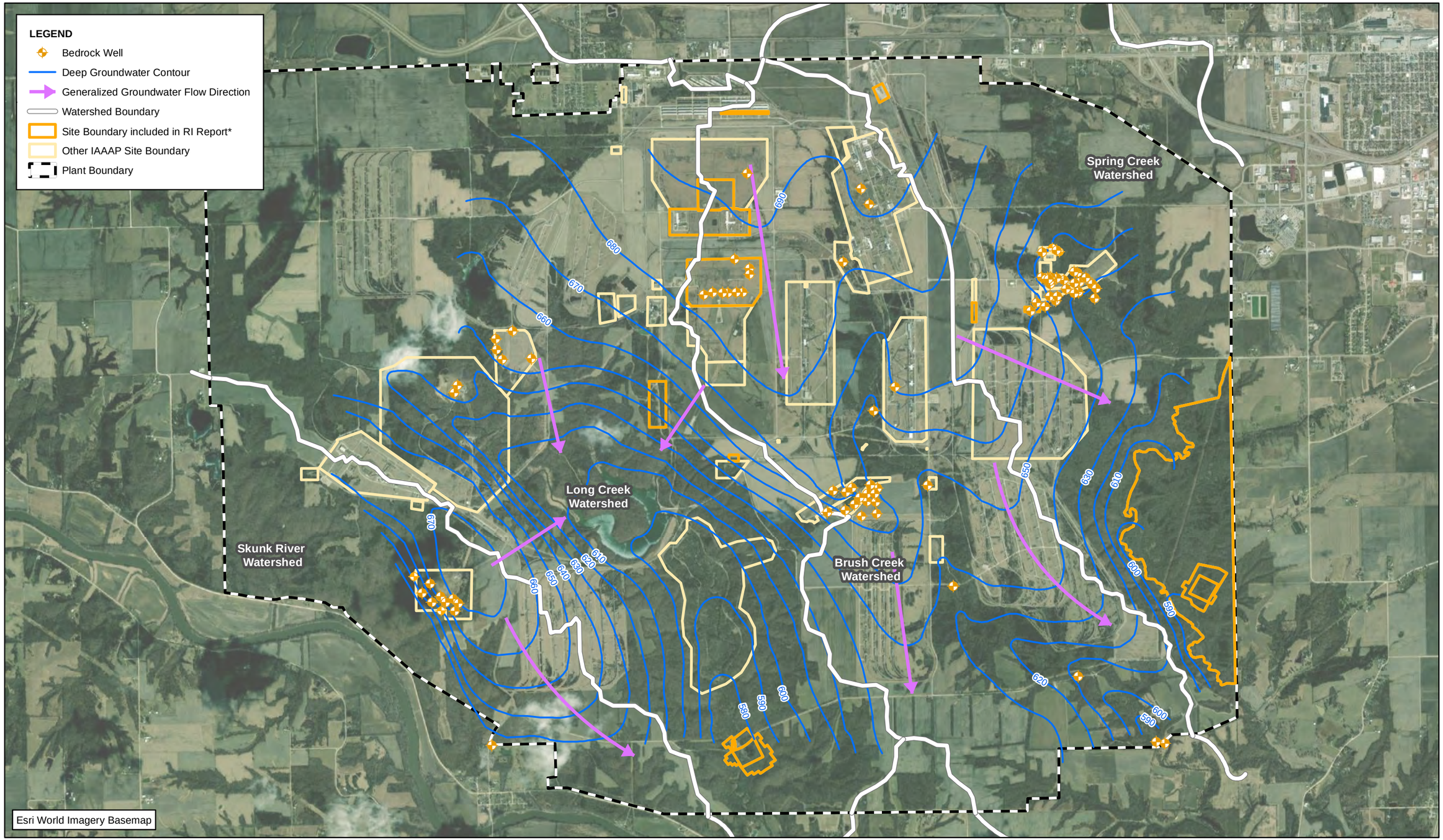
FIGURE 5
IAAAP Overburden Potentiometric Map
Iowa Army Ammunition Plant Middletown, Iowa

Jacobs

\\DC1VS01\GISPROJ\U\USACE\IAAAP_679172\MAPFILES\SITEWIDE\FIGURE_2-2_SW_OVERBURDENPOTMAP.MXD GTWIGG 10/15/2020 9:24:17 AM



Notes:
1. Deep groundwater contours based on 2016 water elevation data.
2. * = The IAAAP sites included in this report currently fall under various operable units (OUs; such as, OU-5, OU-6, or OU-7) or are not assigned to an OU. It is proposed that sites (IAAP-014/IAAP-014G, IAAP-047G, IAAP-025/IAAP-025G, Yard L, IAAP-005G, IAAP-007G, IAAP-009G, IAAP-006-R-02, IAAP-018G, IAAP-040G, IAAP-022/IAAP-022G, and IAAP-013G) be transferred to a new OU (OU-11) to facilitate future site management.

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FIGURE 6
IAAAP Bedrock Potentiometric Map
Iowa Army Ammunition Plant Middletown, Iowa

Jacobs

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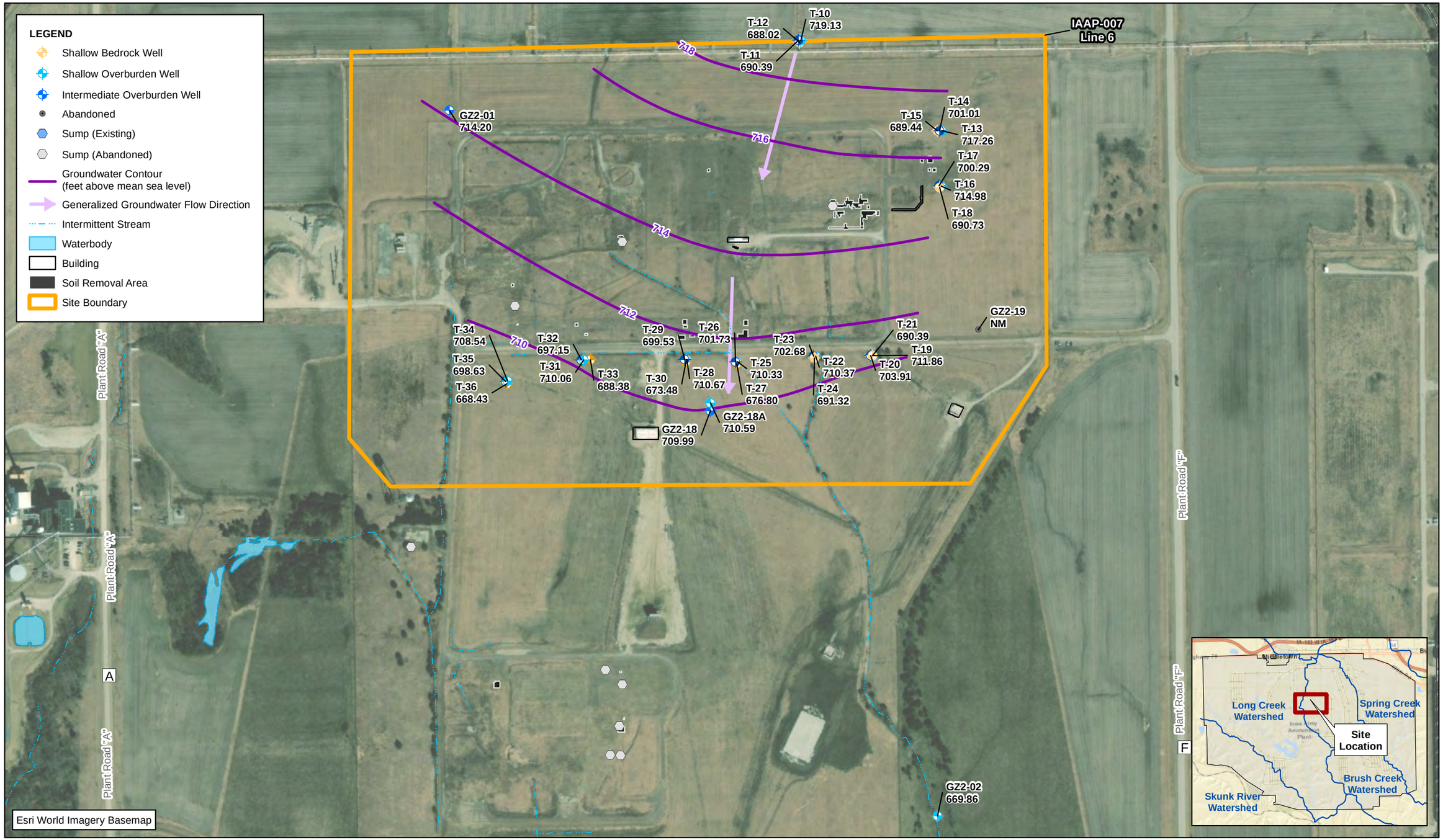

Notes:
1. Groundwater elevations are from May 2017.
2. NM = Not Measured
3. Sump locations are approximated based on historical information.

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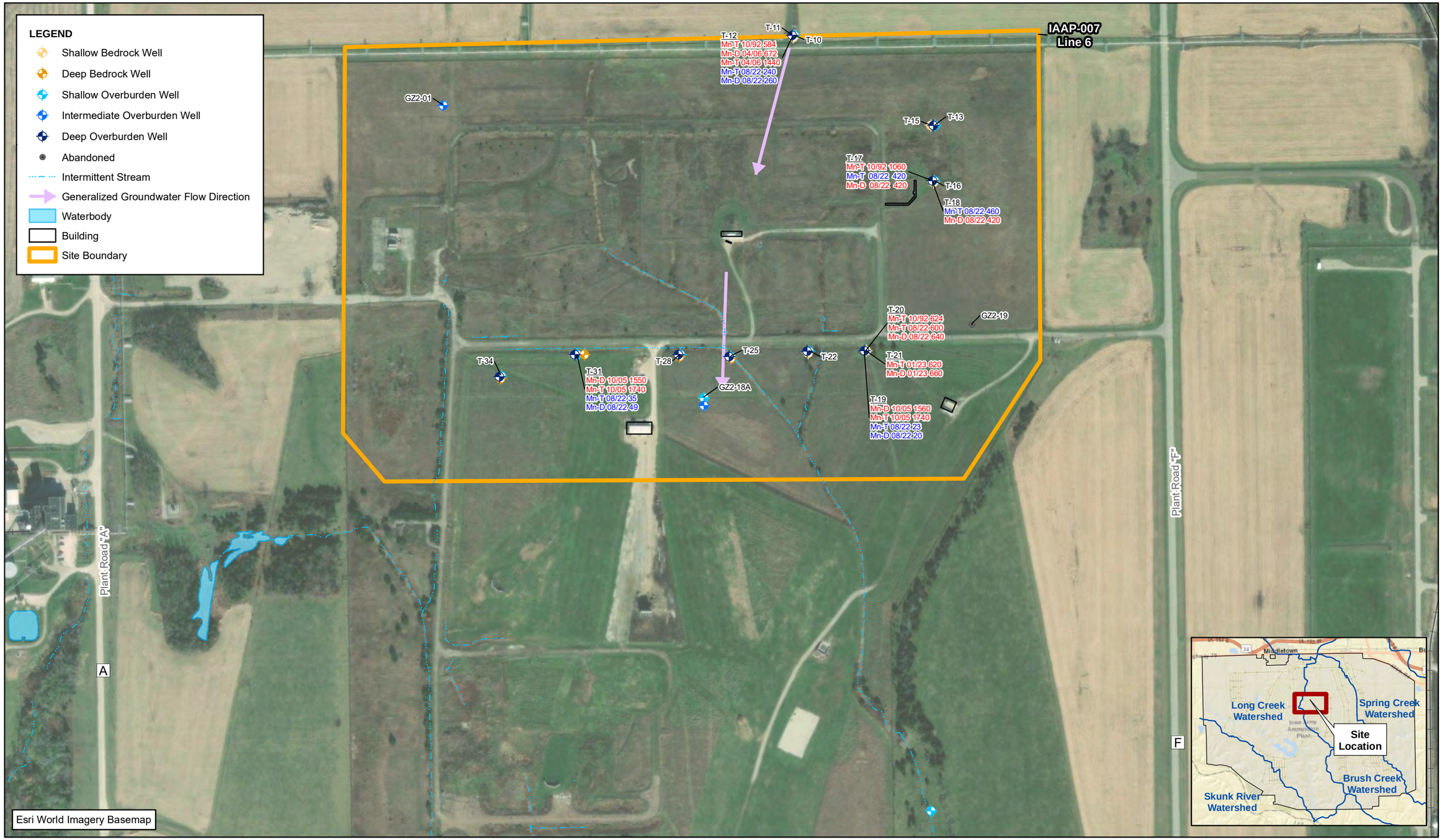
Figure 7
Line 6 Potentiometric Surface
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs

\\DC1VS01\GISPROJ\U\USACE\IAAAP_679172\MAPFILES\LINE_6\FIG_5_7-2_LINE6_POT_MAP_MAY2017.MXD GTWIGG 9/18/2020 4:42:12 PM



N

0 350

Feet

Notes:
1. Concentration data is shown in micrograms per liter (µg/L).
2. Mn-D - Manganese, dissolved
3. Mn-T - Manganese, total
4. Wells were sampled in October 1992, October 2005, April 2006, August 2022 and January 2023, as indicated.
5. Generalized groundwater flow direction elevation data are from May 2017
6. Red data indicates an exceedance in both project action level (PAL; 300 µg/L) and Background Threshold Value (BTV; 580 µg/L) for Mn-T; red also indicates an exceedance in PAL for Mn-D, as a BTV is not available; blue data indicates the Mn-T concentrations observed in 2022/2023 did not exceed BTV. Only non-exceedances from the 2022/2023 events are displayed for reference; historical non-exceedances are not shown on this figure.

Project Action Levels
Mn-D and Mn-T = 300 µg/L

Background Threshold Values
Mn-T = 580 µg/L

Figure 8
Line 6 Manganese Exceedances in Groundwater
Iowa Army Ammunition Plant
Middletown, Iowa

Jacobs

\\DC1VS01\GISPROJ\U\USACE\IAAAP_679172\MAPFILES\LINE_6\FIG_4_LINE6_PLUMEMAPOU11.MXD TSALSBUR 8/7/2023 5:49:50 PM

Appendix A
Field Documentation and Records

ch2m

PROJECT NUMBER	WELL NUMBER	SHEET 1 OF 2
	T-12	

WELL DEVELOPMENT LOG

PROJECT: IAAAP
LOCATION: middletown IA
DEVELOPMENT CONTRACTOR: Roberts Drilling
LOGGER: Spies
DEVELOPMENT METHOD AND EQUIPMENT USED: Surge Block, Monsoon pump, Horiba U-52
START: 8-19-22
END:

- 2" well Sched 80
- pump & tubing Assembly removed from well
* Surge screen w/ pump

START WATER LEVELS: 51.73
WELL DEPTH: N/A WL meter only 100 ft
WELL VOLUME: 1in4
MAXIMUM DRAWDOWN DURING DEVELOPMENT: Dry
TOTAL QUANTITY OF WATER DISCHARGED:
DISPOSITION OF DISCHARGE WATER:

	Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
* 1520 GS	~~1320~~	Start	50.82					
1525	~~1325~~		76.12	1360	18.93	8.15	0.811	organic/saltwater odor, milky grey, floating organic material, translucent
1530	~~1330~~		95.36	408	16.75	7.89	0.799	SAA opaque
1535	~~1335~~	16	Dry	318	17.15	7.80	0.688	SAA more organics
			leave to recharge					
	1600	—	93.43 — leave to recharge overnight					
8-20	800	—	53.34					
Rd 2	810	Start						
*	815		74.20	291	16.25	5.89	0.900	SAA, little grey sheen
	820		86.52	118	15.22	6.48	0.848	SAA less organics Clearer Translucent
**	825		94.11	165	15.80	6.98	0.841	SAA less odorous
***	830		100+	397	15.22	7.13	0.835	milky grey, full of ants & organic matter, no odor, opaque
	834	43	Dry	135	15.40	7.23	0.824	SAA clearer less ants
* Rds	1145	—	86.72					
	1205	Start	86.72	587	18.55	6.22	0.914	milky grey opaque, little organics & ants, no odor
	1210		100+	over	17.36	6.55	0.843	SAA
	1215		100+	over	16.41	6.81	0.837	SAA

Cont'd pg 2

** 1.5L/min
*** full speed at 827

ch2m:

PROJECT NUMBER	WELL NUMBER I-12	SHEET 2 OF 2

WELL DEVELOPMENT LOG

PROJECT:
LOCATION:
DEVELOPMENT CONTRACTOR:
LOGGER:
DEVELOPMENT METHOD AND EQUIPMENT USED:
START:
END:

See pg 1

START WATER LEVELS:
WELL DEPTH:
WELL VOLUME:
MAXIMUM DRAWDOWN DURING DEVELOPMENT:
TOTAL QUANTITY OF WATER DISCHARGED:
DISPOSITION OF DISCHARGE WATER:

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
1220		100+	430	17.00	7.04	0.835	SAA
1225		100+	364	17.94	7.16	0.845	SAA
1230	51	100+	285	17.84	7.23	0.843	SAA, no organics
1240	—	Dry	—	—	—	—	—
8-21-22 810	—	57.90	—	—	—	—	—
* Rd 4 840		53.84	over	15.78	5.95	0.864	milky grey, suspended sed, no odor, opaque
845		68.73	552	16.51	6.49	0.829	SAA
850		84.30	102	16.13	6.74	0.823	light milky grey, translucent, suspended sed, no odor
900		100+	83.7	15.83	7.03	0.828	SAA Clearer
910	71	100+	78.6	15.55	7.22	0.833	SAA Clearer
914		Dry	—	—	—	—	—
			FS				

ch2m

PROJECT NUMBER	WELL NUMBER I-17	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT IAAAP
LOCATION Middletown IA
DEVELOPMENT CONTRACTOR Roberts Drilling
LOGGER Spies
DEVELOPMENT METHOD AND EQUIPMENT USED Surge Block, Monsoon pump, WQM
START 8-19-22
END 8-19-22

START WATER LEVELS 21.88
WELL DEPTH 73.02
WELL VOLUME
MAXIMUM DRAWDOWN DURING DEVELOPMENT 60.48
TOTAL QUANTITY OF WATER DISCHARGED 64
DISPOSITION OF DISCHARGE WATER Clear no color

* Surge Screen
- 4" well
- Stainless Steel ~~Bailer~~ Bailer pulled from well

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
1102	Start	21.88					
1107		34.11	over	17.83	8.57	0.782	Brown, Turbid, & floating organics
1112		41.07	198	14.79	8.55	0.601	light Brown, Turbid, no odor
1117		47.08	115	14.94	8.52	0.642	SAA floating organics, * Transducer
1122		51.93	45.6	15.31	8.46	0.685	SAA Clearer
1127		55.50	26.5	15.35	8.39	0.729	very light brown, clearer, few suspended particles
1132		57.72	21.6	15.07	8.35	0.748	SAA
1137		59.40	10.2	14.86	8.34	0.765	Clear no color
1142	64	60.48	8.7	14.79	8.34	0.770	SAA

ch2m:

PROJECT NUMBER	WELL NUMBER	SHEET 1 OF 1
	I-18	

WELL DEVELOPMENT LOG

PROJECT: IAAAP
LOCATION: Middletown IA
DEVELOPMENT CONTRACTOR: Roberts Drilling
LOGGER: Spies
DEVELOPMENT METHOD AND EQUIPMENT USED: Surge Block, monsoon pump, Horiba U-52
START: 8-19-22
END:

* Surge screen w/ pump
- 2" well
- pump & tubing RSteadily pulled from well

START WATER LEVELS: 40.72
WELL DEPTH: N/A - WL meter only 100ft
WELL VOLUME: 13.5 gal
MAXIMUM DRAWDOWN DURING DEVELOPMENT: Dry
TOTAL QUANTITY OF WATER DISCHARGED:
DISPOSITION OF DISCHARGE WATER:

** Field Quality check done to pH - parameters off - re calibrate Horiba

	Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
Surge *	1300	Start	40.72					
	1305		57.8	145	18.32	13.41	3.05	milky grey, suspended sed, mild odor
	1310		73.11	128	17.11	13.80	3.25	SAA
	1315							**
1330	1330	20	~~71.53~~ Dry	130	17.45	12.75	3.10	pH is actually that high
	1430	—	90.15	leave to recharge longer				
8-20-22	935	—	43.81					
* Rd 2	943	Start	42.19	154	17.38	8.02	0.864	milky grey, translucent, suspended sed very faint odor
	948		55.90	142	17.30	7.79	0.876	SAA
	953		65.23	174	17.11	7.66	0.882	SAA
	958		71.47	261	16.23	7.62	0.833	SAA
***	1003		97.62	192	16.19	9.03	0.527	SAA
	1008	42	100+	173	16.04	9.58	0.496	SAA
	1009	—	Dry					
**** * Rd 3	1940	—	72.53					
	1423	42	Start	130	18.22	7.75	0.845	SAA
	1428		88.40	271	16.74	7.60	0.832	SAA more sed
	1433		100+	344	16.53	7.64	0.729	SAA

Cont'd on pg 2

*** Bump up flow rate @ 958
**** Check WQM against standards

	Standard	Reading
Turbidity	0	0
pH	4	4.02
Conductivity	4.49	4.46

ch2m:

PROJECT NUMBER	WELL NUMBER T-18	SHEET 2 of 2

WELL DEVELOPMENT LOG

PROJECT:
DEVELOPMENT CONTRACTOR:
DEVELOPMENT METHOD AND EQUIPMENT USED:
START:
END:

START WATER LEVELS:
WELL DEPTH:
WELL VOLUME:
MAXIMUM DRAWDOWN DURING DEVELOPMENT:
TOTAL QUANTITY OF WATER DISCHARGED:
DISPOSITION OF DISCHARGE WATER:

LOCATION:
LOGGER:

See pg 1

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
1438	48	Dry					
1515	—	93.04					
8/21-22 1030	—	46.81					
1050		43.5					
1055		55.72	98.2	18.14	7.73	0.869	milky gray, [illegible] translucent, suspended sediment/very fine sand [illegible]
1100		—	256	16.52	7.54	0.861	SAA
1110		96.20	332	15.79	7.44	0.884	SAA
1115		100+	447	17.15	7.62	0.916	SAA
1123	67	Dry	674				

JS

2020_WellDevelopmentForm_IAAAP.xls

ch2m:

PROJECT NUMBER	WELL NUMBER	SHEET 1 OF 1
	T-19	

WELL DEVELOPMENT LOG

PROJECT: IAAAP
LOCATION: Middletown IA
DEVELOPMENT CONTRACTOR: Roberts drilling
LOGGER: Spies
DEVELOPMENT METHOD AND EQUIPMENT USED: Whale pump & WQM Horiba U-52
START: 8-18-22 1520
END:
✓ pump & tubing in well removed until Development & Sampling are complete
- 4" well no Jplug

START WATER LEVELS: 11.44
WELL DEPTH: 22.96 Soft
WELL VOLUME: 7.5 gal
MAXIMUM DRAWDOWN DURING DEVELOPMENT: Dry
TOTAL QUANTITY OF WATER DISCHARGED: 26 gal
DISPOSITION OF DISCHARGE WATER: light grey, Sulfur odor, little Suspended Sed

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
1520	Start	11.44					
1523	5	13.53	19	17.07	8.38	0.501	Grey, Some suspended sed, Sulfur odor
1528	17	20.70	27.3	15.18	8.11	0.242	SAA
1530	18	Dry					
Rd2 1548	18	16.52	28.4	16.01	7.84	0.281	SAA
1551	24	21.63	17.6	14.57	7.78	0.295	SAA Clear
1553	26	Dry					
			JS				

ch2m:

PROJECT NUMBER	WELL NUMBER T-20	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT IAAAP
LOCATION Middletown IA
DEVELOPMENT CONTRACTOR Roberts Drilling
LOGGER Spies
DEVELOPMENT METHOD AND EQUIPMENT USED Surge Block Monsoon pump & Horiba U-52
START 8-19-22
END

- 4" Well, Stainless Steel Bailer removed
- Screen Surged

START WATER LEVELS 17.12
WELL DEPTH 73.08 Sch
WELL VOLUME 36
MAXIMUM DRAWDOWN DURING DEVELOPMENT Dry
TOTAL QUANTITY OF WATER DISCHARGED 48
DISPOSITION OF DISCHARGE WATER

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
902	Start	17.12					
907		32.80	203	16.44	7.98	0.612	light greish Brown, turbid, no odor
912		41.97	34.8	14.87	8.28	0.384	Very light grey Brown, no odor, light suspended sed
917		55.08	15.5	14.23	8.74	0.385	SAA clear
922		63.52	16.3	14.05	8.92	0.356	SAA
927		67.22	16.6	14.53	8.89	0.750	SAA
932	48	Dry					

ch2m.

PROJECT NUMBER	WELL NUMBER	SHEET 1 OF 1
	I-31	

WELL DEVELOPMENT LOG

PROJECT IAAAP
LOCATION Middletown IA
DEVELOPMENT CONTRACTOR Roberts Drilling
LOGGER Spies
DEVELOPMENT METHOD AND EQUIPMENT USED Whale pump Horiba U-52
START 8-18-22 1255
END

START WATER LEVELS 10.11
WELL DEPTH 22.95
WELL VOLUME 8.5 gals
MAXIMUM DRAWDOWN DURING DEVELOPMENT Dry
TOTAL QUANTITY OF WATER DISCHARGED
DISPOSITION OF DISCHARGE WATER

- Well Diameter - 4"
- Tubing in well removed until development & Sampling are complete
* Surge screen

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)
Start 1255	—	10.25	over	19.72	6.70	0.560	Dark brown/black, organic odor
1300	10	15.26	59	17.36	7.18	0.520	organic odor, little sheen, Saddle Creek
1305	20	21.10	63	17.24	7.25	0.511	Some suspended sed, grey, organic odor
Dry — leave to recharge							SAA
Rd 2 1328	20	17.10					
1330	28	19.42	58	16.21	7.91	0.467	SAA No sheen
1335	26	Dry	47.2	14.92	7.93	0.470	SAA
Rd 3 1350	26	18.53					
1353	28	20.58	74.2	16.16	8.13	0.465	SAA
1356	30	Dry	163	15.55	8.25	0.466	turbid, Brownish gray, organic odor
* 8-19-22 Rd 4 1003	Start	9.83					
1008		17.35	over	16.38	9.05	0.476	Grey/ish Brown, opaque, organics floating No odor
1013	50	Dry	over	15.38	8.70	0.494	SAA
Rd 5 1400	50	9.03	16.8				
1403		15.08		17.53	9.52	0.435	
1405		16.82	8.9	17.59	8.92	0.429	
1409	68	Dry		17.14	8.78	0.476	

ch2m

PROJECT NUMBER	WELL NUMBER	
	T-21	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT: OU11 LIHELO IAAAP
LOCATION: LITE 6
DEVELOPMENT CONTRACTOR: JACOBS
LOGGER: SALSBURG
DEVELOPMENT METHOD AND EQUIPMENT USED: WATERRA
START: 1/9/23 1230
END:

START WATER LEVELS: 31.21' BTOC
WELL DEPTH: ~~123.75~~ 123.90
WELL VOLUME: 11
MAXIMUM DRAWDOWN DURING DEVELOPMENT:
TOTAL QUANTITY OF WATER DISCHARGED:
DISPOSITION OF DISCHARGE WATER: GREY, CLOUDY

DO mg/L	Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Specific Conductivity (mS/cm)	Remarks (color, odor, sheen, sediment, etc.)	ORP
2.10	1305	1	44.0	24.5	11.4	6.82	0.783	DEAD ANTS CLEAR	-50
1.10	1310	2	53.06	963	11.6	6.99	0.739	LIGHT GREY CLOUDY	-117
1.55	1320	4.5	70.53	OVER	11.9	7.00	0.745	GRAY OPAQUE	-192
1.09	1335	7	84.40	OVER	12.1	7.03	0.740	"	-195
1.40	1340	10	98.2	OVER	12.0	7.04	0.749	ORGANIC DECAY ODOR	-205
1.20	1345	13	107.7	OVER	12.1	7.05	0.747	ORGANIC DECAY ODOR	-209
start 1440	1350	16	116.3	OVER	11.9	7.12	0.740	GRAY + DECAY ODOR	
	ALLOW RECHARGE								
2.32	1442	17	105	over	11.7	7.23	0.734	SAA	-139
2.60	1447	19	116.7	over	11.6	7.20	0.716	SAA	-146
3.43	1452	21	~~121.9~~ 121.9	over	11.7	7.18	0.710	SAA	-115
←	1453	DRY							

2.1 L/MIN AVG PURGE RATE, FLUCTUATE 1.5 → 2.5 L/MIN
H_2S MAX IN BUCKET 6.2 PPM, VOC 1.2 PPM

Depth to Groundwater Synoptic Field Form
IAAAP - OU11 & OU12 Data Gap Remedial Investigation
Middletown, Iowa

Staff: Ryan Zsamba
Date: 8/24/22

Location ID	Time	PID (ppm)	Depth to Water	Depth to Bottom	Soft/Hard	Comments
T-12	1605	1.0	76.21	NA	NA	Interface Probe only 100', DTB > 100.0 ft
T-17	1430	0.0	22.07	73.08	Hard	
T-18	1130	0.0	46.65	NA	NA	Interface Probe only 100' long, DTB > 100.0 ft
T-19	1655	0.0	10.64	22.40	Hard	
T-20	1656	0.0	17.80	74.40	Hard	
T-31	1645	0.0	9.19	23.00	Hard	
L3ASTP-MW01						
L3ASTP-MW02						

ch2m

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-12	Site: IAAAP
Field Crew: Spies	Date: 8-22-22 Project #:
Well Depth (ft.): 121' bgs	Purge Methodology: low flow
DTW (ft.): 52.34	mini monsoon
Water Column (ft.): 72	
Well Diameter (in.): 2" Sched 80	
Gal. per ft.: 0.163	Water Quality Meter: Horiba U-52
Well Volume (gal.): 11.74	Hach 2100Q

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2)	163	5"	1.020
3"	367	6"	1.469
4"	653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume ~~(gal)~~ L	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (Surface) (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1000	52.34	300	—							
	1005	56.88	225	1.0	6.18	16.15	0.839	93	7.48	14.3	Clear no odor No color
	1010	60.03	250	2.2	6.38	16.49	0.835	68	7.20	18.4	Clear No odor No color
	1015	61.21	150	2.9	6.62	17.57	0.818	74	6.72	15.9	SAA
	1020	62.38	100	3.4	6.80	18.68	0.825	63	6.62	14.8	SAA
	1025	65.42	225	4.3	6.86	19.15	0.832	65	6.70	16.5	SAA
	1030	67.81	125	5	6.94	18.90	0.844	64	6.54	19.6	SAA
	1035	71.03	400	7	6.99	16.96	0.832	66	7.32	17.3	SAA
	1040	73.92	350	8.6	6.92	16.41	0.828	60	7.17	16.6	SAA
	1045	76.75	350	10.3	6.91	16.38	0.832	60	7.39	13.2	SAA
	1050	79.47	400	12.3	6.91	15.29	0.831	59	7.48	10.3	SAA
Post-Purge				leave to recharge, parameters stable & clear besides drawdown							

Remarks: Pump Intake Depth: 115 Control Box Setting (Hz): Variable Controller Sampling: (Sample at 100-250 ml/min)
Constantly adjust to keep low flow

Reading Before Sampling	~~1235~~ 1230	70.31	200	18.5	7.17	17.65	0.805	81	7.66	16.3	SAA

SAMPLING

Depth to Water Before Sampling: 70.31	
Sample Methodology: low flow	
Sample Name: QU-11-T-12-082222	QC Sample: N/A
Sample Date/Time: 8-22-22 / 1230	
Sampler / Signature: Spies	
Filtered Metals Collected: (Y) N	Filter Size: 0.45 micron
Sample Observations: Stable & clear	
Parameters: Total & Dissolved Mn	

ch2m·

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-18		Site: IAAAP	
Field Crew: Ryan Zeuch		Date: 8/29/19 Project #:	
Well Depth (ft.): 115	Purge Methodology: Low Flow	Diameter / Gal. Per Foot	Diameter / Gal. Per Foot
DTW (ft.): 46.65		2" .163	5" 1.020
Water Column (ft.):		3" .367	6" 1.469
Well Diameter (in.): 2		4" .653	8" 2.611
Gal. per ft.: 0.163	Water Quality Meter: Horiba		
Well Volume (gal.):			

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
1145 Initial	~~46.97~~	44.91	100		7.98	26.40	0.645	54	3.61	15.60	
	1150	45.02	140		7.62	25.28	0.935	60	3.28	22.72	
	1155	45.07	100		7.49	26.16	6.918	93	3.37	-	
	1200	-	-	-	-	-	-	-	-	-	
	1205	45.41	200		7.46	28.96	0.930	95	3.50	62.4	
	1210	~~45.93~~ ~~45.92~~	100		7.43	27.67	0.936	131	3.93	930	
	1215	46.41	100	1	7.39	28.48	0.922	148	3.78	Odor/Lunge	
	1220	46.56	100		7.40	28.78	0.918	149	3.78	875	
	1225	46.92	100		7.42	27.81	0.902	134	4.13	617	
	1230	47.71	100		7.42	25.84	0.401	134	4.33	596	
	1235	47.91	100		7.46	24.33	0.904	141	4.61	611	
Post-Purge	1240	48.28	100		7.41	24.77	0.714	142	4.62	483	

Remarks: Pump Intake Depth: 107.5 Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min)

After DTW Initial, Probe which touched water covered in grey, turbid liquid/sediment. At 1155, 100 Filter. Call Joe Spies and Solve at 1200. Due to high turbidity and irregular flow (manually cycling flow due to deficient compressor), Taylor Sullivan authorized Sampling after pH, Cond, ORP, and DO are Stable. ?

SAMPLING

Depth to Water Before Sampling:	51.54
Sample Methodology:	Low Flow
Sample Name:	QUI1-T-18-082919 QC Sample: None
Sample Date/Time:	8/29/19, 1325
Sampler / Signature:	
Filtered Metals Collected:	(Y) / N Filter Size: 0.45um
Sample Observations:	Cloudy one time, Very turbid overall. No odor
Parameters:	Total Mn & Dissolved Mn

ch2m·

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-18	Site: IAAAP
Field Crew: ZSamba	Date: 8-22-22 Project #:

Well Depth (ft.): ~
DTW (ft.): PSZ
Water Column (ft.):
Well Diameter (in.):
Gal. per ft.:
Well Volume (gal.):

Purge Methodology: Low flow

Water Quality Meter: Horiba-U52

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1245	48.96	100		7.55	25.03	0.902	141	4.91	427	
	1250	49.41	100		7.52	23.91	0.873	137	6.54	287	
	1255	49.70	100		7.50	22.94	0.875	131	5.78	240	
	1300	50.10	100		7.49	21.96	0.907	121	6.04	211	
	1305	50.56	100		7.48	21.26	0.900	109	6.34	187	
	1310	50.81	100		7.49	20.81	0.897	95	6.54	171	
	1315	51.28	100	2	7.44	21.21	0.891	99	6.37	135	
	1320	51.59	100		7.47	22.81	0.896	102	6.08	104	
Post-Purge											

Remarks: Pump Intake Depth: Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min)

Tly to resolve with Taylor S. and Kevin M., unable to resolve Compressor issues. Sampled per Taylors Direction

SAMPLING

Depth to Water Before Sampling:
Sample Methodology:
Sample Name: QC Sample:
Sample Date/Time:
Sampler / Signature:
Filtered Metals Collected: Y / N Filter Size:
Sample Observations:
Parameters:

ch2m.

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-17	Site: IAAAP
Field Crew: Ryan Esumbu	Date: 8/21/22 Project #:
Well Depth (ft): 70	Purge Methodology: Low flow
DTW (ft.): 22.05	
Water Column (ft.): 47.95	
Well Diameter (in.): 4	
Gal. per ft.: 0.653	Water Quality Meter:
Well Volume (gal.): 31.31	Horiba

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1050	22.04	180		7.30	18.22	0.709	157	3.00	8.57	Clear, No odor
	1055	22.35	200		7.27	15.96	0.804	98	2.14	5.30	
	1100	22.51	206		7.23	15.48	0.825	83	1.93	5.10	
	1105	22.64	200		7.211	15.48	0.826	80	1.90	6.11	
	1110	22.75	200		7.23	15.24	0.828	80	1.93	4.12	
	1115	22.80	206		7.21	15.08	0.831	81	2.00	4.48	
	1120	22.91	200		7.21	15.43	0.827	81	1.96	4.36	
	~~1125~~										
Post-Purge											

Remarks: Pump Intake Depth: 70 Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min) 200 mL/min

SAMPLING

Depth to Water Before Sampling:	22.91
Sample Methodology:	Low flow
Sample Name:	OU11-T-17-082122
QC Sample:	OU11-FD01-082122
Sample Date/Time:	8/21/22, 1125
Sampler / Signature:	
Filtered Metals Collected:	(Y) N Filter Size: 0.45 µM
Sample Observations:	Clear/ No Odor
Parameters:	

ch2m·

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-31	Site: IAAAP
Field Crew: Kylan Zamba	Date: 8/21/22 Project #:

Well Depth (ft.): 20
DTW (ft.): 9.05
Water Column (ft.): 10.95
Well Diameter (in.): 4
Gal. per ft: 0.653
Well Volume (gal.): 7.15

Purge Methodology: Low Flow

Water Quality Meter: Horiba

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	0845	9.21	200		9.26	16.38	0.542	121	8.30	8.15	Clear, No odor
	0850	9.45	200		8.32	15.55	0.503	158	7.12	8.61	
	0855	9.64	200		7.89	15.21	0.483	177	6.54	7.11	
	0900	9.91	200	1	7.64	14.99	0.469	192	6.40	7.94	
	0905	10.02	206		7.53	15.20	0.464	197	6.25	6.35	
	0910	10.10	200		7.46	15.27	0.463	200	6.18	6.27	
	0915	10.17	206		7.34	15.34	0.458	202	6.07	7.14	
	0920	10.14	200	2	7.33	15.43	0.451	202	5.72	4.94	
	0925	10.14	200		7.27	15.52	0.448	203	5.34	5.40	
	0930	10.14	200		7.24	15.55	0.446	204	5.37	5.21	
Post-Purge											

Remarks: Pump Intake Depth: 15 Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min) 200 mL/min

SAMPLING

Depth to Water Before Sampling: 10.14
Sample Methodology: Low Flow
Sample Name: OU11-T-31-082122 QC Sample: OU11-T-31-082122-MS / OU11-T-31-082122-MSD
Sample Date/Time: 8/21/22 0935
Sampler / Signature: [signature]
Filtered Metals Collected: (Y) / N Filter Size: 0.45 uM
Sample Observations: Clear / No Odor
Parameters:

ch2m.

Low-Flow Groundwater Sampling: Field Data Sheet

Page 1

Well Number: I-20
Field Crew: Ryan Smith

Site: IAAAP
Date: 8/20/22 Project #:

Well Depth (ft.): ~~10.44~~ 70
DTW (ft.): ~~10.44~~ 17.62
Water Column (ft.): 52.38
Well Diameter (in.): 4
Gal. per ft.: .653
Well Volume (gal.): 34.2

Purge Methodology: Low flow

Water Quality Meter: Horiba U-52

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1415	17.41	100		7.44	25.81	0.864	156	5.05	105	Clear, No Odor
	1420	18.06	200		7.31	24.23	0.872	162	5.47	12.6	
	1425	18.42	200		7.28	18.44	0.855	165	5.59	5.68	
	1430	18.88	220		7.20	17.40	0.862	166	5.15	5.47	
	1435	19.28	220	1	7.18	17.15	0.875	167	4.15	5.35	
	1440	19.65	220		7.16	17.11	0.870	167	4.40	5.21	
	1445	20.10	220		7.17	16.98	0.864	166	4.08	3.79	
	1450	20.35	110		7.16	16.78	0.873	166	3.98	5.34	
	1455	20.61	110	2	7.14	16.97	0.868	167	3.89	3.14	
	1500	20.84	110		7.15	16.83	0.873	167	3.73	3.59	
	1505	21.02	110		7.14	16.91	0.877	167	3.84	4.15	
Post-Purge	1510	21.12	~~110~~ 160		7.13	17.10	0.871	168	3.78	4.14	

Remarks: Pump Intake Depth: 65ft Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min)

DTO = 74.90

Continued on Page 2

SAMPLING

Depth to Water Before Sampling: 21.92
Sample Methodology: Low flow
Sample Name: QUII-I-20-082022 QC Sample: No
Sample Date/Time: 8/20/22 1540
Sampler / Signature:
Filtered Metals Collected: (Y) / N Filter Size: .45 um
Sample Observations: Clear / No Odor
Parameters:

ch2m·

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-26
Field Crew:
Site:
Date: 8/20/12 Project #:

Well Depth (ft.):
DTW (ft.):
Water Column (ft.):
Well Diameter (in.): See Page 1
Gal. per ft.:
Well Volume (gal.):

Purge Methodology:

Water Quality Meter:

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1515	21.35	160	3	7.14	17.17	~~0.8~~ 0.871	168	3.81	2.74	
	1526	21.51	210		7.13	17.02	0.871	167	3.68	4.12	
	1525	21.71	210		7.13	17.00	0.870	165	3.72	4.03	
	1530	21.92	210		7.13	17.13	0.874	163	3.51	3.35	
Post-Purge											

Remarks: Pump Intake Depth: Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min)

See Page 1

SAMPLING

Depth to Water Before Sampling:
Sample Methodology:
Sample Name: QC Sample:
Sample Date/Time:
Sampler / Signature:
Filtered Metals Collected: Y / N Filter Size:
Sample Observations:
Parameters:

ch2m

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-19
Field Crew: Ryan, Isamba
Site: IAAAP
Date: 8/20/22 Project #:

Well Depth (ft.): 20
DTW (ft.): 10.41
Water Column (ft): 9.54
Well Diameter (in.): 4
Gal. per ft.: .653
Well Volume (gal.): 6.26

Purge Methodology: Low flow
Water Quality Meter: Horiba

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1030	10.71	200		6.31	19.96	0.262	180	8.98	18.1	Clear / No Odor
	1035	10.84	200		6.37	18.84	0.258	193	7.38	5.6	
	1040	10.40	200		6.36	18.76	0.258	195	6.76	5.0	
	1045	10.93	200	1 gal	6.33	18.40	0.258	197	6.81	4.8	
	1050	10.95	200		6.32	18.41	0.257	197	6.72	3.6	
	1055	11.04	200		6.32	18.33	0.257	199	6.54	3.2	
	1100	11.08	200		6.31	18.27	0.258	203	6.47	2.9	
Post-Purge											

Remarks: Pump Intake Depth: 15 ft (15.21) Control Box Setting (Hz): Sampling: (Sample at 100-250 ml/min) 200 mL/min

DTB after sample = 22.90 ft.

SAMPLING

Depth to Water Before Sampling: 11.08
Sample Methodology: Low flow
Sample Name: OU11-T-19-082022 QC Sample: No
Sample Date/Time: ~~OU11-T-19-082022~~ 8/20/22, 1105
Sampler / Signature:
Filtered Metals Collected: (Y) / N, Filter Size: .45 uM
Sample Observations: Clear / No Odor
Parameters:

ch2m:

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: T-21	Site: OU11 LITE 6
Field Crew: SALSBURG	Date: 1/11/23 Project #:
Well Depth (ft.): NOT MEASURED DUE TO NTUs	Purge Methodology:
DTW (ft.): 31.70	
Water Column (ft.): 95.3	
Well Diameter (in.): 2	
Gal. per ft.: 0.163	Water Quality Meter:
Well Volume (gal.): 15.54	YSI PRODSS

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	.163	5"	1.020
3"	.367	6"	1.469
4"	.653	8"	2.611

Field Parameters

	Time	DTW (tic)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/l)	Turbidity (NTU)	Color/Odor
	Stabilization	< 0.3'	Purge at 200-500		+/- 0.1		+/- 3 %	+/- 10 mV	+/- 10%	+/- 10%	
Initial	1455	29.30	150	-	7.20	12.4	0.643	38.3	4.32	14.0	CLEAR
	1500	30.52	180	0.2	7.12	12.2	0.624	58.2	6.09	12.3	WHITE SUSPENDED PARTICLES
	1505	31.09	180	0.4	7.09	12.0	0.626	61.1	5.02	17.0	CLEAR
	1510	32.08	180	0.6	7.08	11.8	0.624	61.7	4.00	15.0	
	1515	33.45	180	0.8	7.07	11.9	0.625	60.9	3.62	14.2	CLEAR
	1520	35.04	180	1.0	7.07	12.0	0.626	53.6	3.70	13.6	
	1525	36.11	180	1.2	7.07	12.1	0.624	53.3	3.51	12.7	CLEAR
	1530										
Post-Purge											

Remarks: Pump Intake Depth: 120 Control Box Setting (Hz): 40 SEC OFF Sampling: (Sample at 100-250 ml/min) 20 SEC PURGE

SAMPLING

Depth to Water Before Sampling:	36.11
Sample Methodology:	BLADDER
Sample Name:	OU11-T-21-011123
QC Sample:	FD 1230 MS/MSD 1530
Sample Date/Time:	1530
Sampler / Signature:	
Filtered Metals Collected:	(Y) / N Filter Size:
Sample Observations:	CLEAR
Parameters:	TOTAL + DISS Mn

Appendix B
Laboratory Analytical Results and Data Quality Evaluation

Data Quality Evaluation Report, Iowa Army Ammunition Plant, Middletown, Iowa

Prepared for

U.S. Army Corps of Engineers
Louisville District

600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202-2232

June 2023

Contents

Tables

Abbreviations and Acronyms

DL	Detection limit
EB	Equipment blank
EPA	U.S. Environmental Protection Agency
FD	field duplicate
ICS	interference check standard
LCS	laboratory control sample
LOD	Limit of detection
LOQ	Limit of quantitation
MS/MSD	matrix spike/matrix spike duplicate
PARCC	precision, accuracy, representativeness, completeness and comparability
QAPP	Uniform Federal Policy–Quality Assurance Project Plan Addendum for Remedial Investigation at Contaminated Waste Processor, Line 3A Sewage Treatment Plant/Drying Beds, and Line 6 Ammo Production (Detonator) Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa (CH2M, 2022)
RPD	Relative percent difference
SDG	sample delivery group

Data Quality Evaluation Report

1. Introduction

This Data Quality Evaluation Report contains an assessment of the quality and usability of analytical data from groundwater samples collected at the Iowa Ammunition Plant, OU11, Middletown, Iowa project site. CH2M collected the samples August 21 through August 22, 2022 and January 11, 2023.

The analytical work was conducted in accordance with the project-specific Quality Assurance Project Plan Addendum for Remedial Investigation at Contaminated Waste Processor, Line 3A Sewage Treatment Plant/Drying Beds, and Line 6 Ammo Production (Detonator) Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa (CH2M, 2022).

The analytical results were evaluated using the criteria of precision, accuracy, representativeness, comparability and completeness (PARCC) as described in the QAPP. This report is intended as a general data quality assessment designed to summarize data issues.

2. Analytical Laboratories and Analytical Methods

CH2M collected seven groundwater samples, two field duplicates (FD), two matrix spike (MS)/matrix spike duplicates (MSD), and two equipment blanks (EB). The data were reported in two sample delivery groups (SDG). The list of samples and collection dates is provided in Table 1. The samples were collected and shipped via overnight carrier to Eurofins TestAmerica Laboratory in Denver, Colorado. The samples were analyzed for total and dissolved manganese by Method SW6020.

3. Data Review and Validation Process

Analytical data from this investigation were evaluated as described in the QAPP. One hundred percent of definitive analytical results were validated, Stage 2B. The assessment of definitive data includes a review of the following laboratory summary forms as defined in the QAPP:

- Chain-of-custody documentation
- Holding time compliance
- Sample results and detection limit checks
- QC sample frequencies
- Blanks (method, field, calibration)
- Laboratory control sample recoveries
- Surrogate spike recoveries
- MS/MSD recoveries and precision

- Initial and continuing calibration summary information
- Internal Standards
- Tuning criteria
- Confirmation column criteria (where applicable) precision
- Interference check standards
- Field duplicate precision
- Serial dilutions
- Post digestion spikes
- Case narrative review, laboratory flagging review, and other method specific criteria

Data flags were assigned according to the QAPP. These flags, as well as the reason for each flag, are entered into the electronic database. Multiple flags are routinely applied to specific sample method/matrix/analyte combinations. The data reported will be qualified by a single flag that reflects the most conservative of the applied validation qualifiers.

4. Data Validation Findings

The summary of the data validation is contained in the following sections below. Final qualified data is presented in Table 2 and Table 3. Table 2 presents the final qualified data for each sample. Table 3 presents each validation flag applied to a method/matrix/analyte as a percentage of the results impacted by a specific data quality condition, with respect to the total results available for any target analyte/matrix.

4.1 Holding Time

Holding time and preservation criteria were met.

4.2 Calibrations

Initial and continuing calibration analyses were performed as required by the methods and acceptance criteria were met with the following exception:

- The percent difference (%D) for total manganese was greater than criteria in one low level continuing calibration verification (CCVL), indicating a possible high bias. As the associated sample concentration was significantly greater than the CCVL concentration, the data were not qualified.

4.3 Blanks

Method blanks, calibration blanks and field blanks were analyzed as required and were free of contamination with the following exception:

- Dissolved manganese was detected at a concentration less than the limit of quantitation (LOQ) in the equipment blanks. The data were not qualified because the concentrations in the samples were significantly greater than the blank concentration and LOQ.

4.4 Laboratory Control Sample

LCS/LCSDs were analyzed as required and accuracy and precision criteria were met.

4.5 Matrix Spike/Matrix Spike Duplicate

MS/MSD samples were analyzed as required and accuracy and precision criteria were met with the following exception:

- Dissolved and total manganese were recovered at concentrations greater than the upper control limit in the MS/MSD for sample OU11-T-21-011123; however, the parent sample concentrations were greater than four times the spike concentrations. The data were not qualified per the QAPP.

4.6 Post Digestion Spikes/Serial Dilutions

Post digestion spike (PDS) samples and/or serial dilutions were analyzed as required and accuracy and precision criteria were met.

4.7 Interference Check Standards

Interference Check Standards (ICS) were analyzed as required and accuracy criteria were met.

4.8 Internal Standards

Internal standards were added to the samples for methods requiring their use and acceptance criteria were met.

4.9 Field Duplicates

FDs were collected at the required frequency and precision criteria were met.

4.10 Sample Quantitation

The relative percent difference between the dissolved and total concentration exceeded criteria in sample OU11-T-31-082122. The data were qualified as estimated and flagged "J" in the sample.

4.11 Chain of Custody

One of two chain of custodies associated with SDG 280-165769-1 was not signed by the field team in error. As the unsigned COC was included in the same cooler as the signed COC and the laboratory analyzed the associated sample for the requested methods, there is no impact to data quality.

5. Overall Assessment

The quality of the field sampling efforts and laboratory results were evaluated for compliance with project data quality objectives through a review of overall precision, accuracy, representativeness, comparability, and completeness (PARCC). Procedures used to assess PARCC are in accordance with the respective analytical methods and the QAPP requirements.

5.1 Precision

Precision of the data were verified through the review of the field and laboratory data quality indicators that include FD, LCS/LCSD, MS/MSD and serial dilution RPDs. Precision was in control.

5.2 Accuracy

Accuracy of the data was verified through the review of the calibration data, LCS/LCSD, internal standard, post digestion spike, ICS and MS/MSD recoveries, as well as the evaluation of method/calibration/field blank data. Accuracy was acceptable.

5.3 Representativeness

Sample data are representative of the site conditions at the time of sample collection and was verified through the sample's collection, storage and preservation procedures and the verification of holding-time compliance. No issues were noted for sample collection, storage or preservation procedures. Analytical data were reported from an analysis within the project-specified hold-time.

5.4 Comparability

Comparability of the data was verified through the use of standard EPA analytical procedures and standard units for reporting. Results obtained are comparable to industry standards in that the collection and analytical techniques followed approved, documented procedures.

5.5 Completeness

Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to planned measurements. Valid data are defined as all data that are not qualified "X." All data

were considered valid. The completeness goal of 90 percent was met for all method/analytes combinations.

5.6 Sensitivity

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. Sensitivity was acceptable as the selected laboratory method LOQs met the project specific objectives.

6. Conclusions

During data validation, no data were rejected, and only two results were qualified as estimated due to dissolved concentrations being greater than total concentrations for manganese. The data are determined to be usable for project decisions with the validation flags applied to the samples.

7. References

CH2M. 2022. *Uniform Federal Policy–Quality Assurance Project Plan Addendum for Remedial Investigation at Contaminated Waste Processor, Line 3A Sewage Treatment Plant/Drying Beds, and Line 6 Ammo Production (Detonator) Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa*.

TABLE 1. Sample Summary by COC - Data Summary

CoC Number	Sample Date	Matrix	QAQC Type	Sample Identification	SDG	Laboratory
280-165769-1	08/21/2022	WATER	EB	EB01-082122	280-165769-1	TAMQ
	08/22/2022		EB	EB01-082222	280-165769-1	TAMQ
	08/21/2022		EB	EB02-082122	280-165769-1	TAMQ
			FD	OU11-FD01-082122	280-165769-1	TAMQ
	08/22/2022		N	OU11-T-12-082222	280-165769-1	TAMQ
	08/21/2022		N	OU11-T-17-082122	280-165769-1	TAMQ
	08/22/2022		N	OU11-T-18-082222	280-165769-1	TAMQ
	08/20/2022		N	OU11-T-19-082022	280-165769-1	TAMQ
			N	OU11-T-20-082022	280-165769-1	TAMQ
	08/21/2022		N	OU11-T-31-082122	280-165769-1	TAMQ
280-171373-1	01/11/2023	WATER	EB	EB01-011123	280-171373-1	TAMQ
			FD	OU11-FD01-011123	280-171373-1	TAMQ
			N	OU11-T-21-011123	280-171373-1	TAMQ
			MS	OU11-T-21-011123MS	280-171373-1	TAMQ
			SD	OU11-T-21-011123SD	280-171373-1	TAMQ

SDG = Sample delivery group

TAMQ = TestAmerica Denver

QAQC Type

EB = Equipment (Rinsate) Blank

FD = Field Duplicate

MS = Matrix Spike

N = Normal

SD = Matrix Spike Duplicate

Table 2. Data Quality Summary

Method	NativeID	COC Number	Analyte	Units	Final Result	Validation Flag	Validation Reason
SW6020	OU11-T-31-082122	280-165769-1	Manganese	µg/L	35	J	D_Metals>T_Metals
SW6020	OU11-T-31-082122	280-165769-1	Manganese, Dissolved	µg/L	49	J	D_Metals>T_Metals

µg/L = microgram(s) per liter

D_Metals>T_Metals = The dissolved concentration was greater than total concentration and greater than criteria.

TABLE 3. Site Completeness by Analyte - Flagging Statistics

Matrix / Method	Number of Samples	Analyte				
WATER						
SW6020	18	**Manganese**				
Validation Flag Category: Miscellaneous	1	J	Flags	(5.56%)	for	Dissolved metals greater than total metals
Validation Flag Category: Miscellaneous	1	J	Flags	(5.56%)	for	Dissolved metals greater than total metals

Note: The total number of validation flags may exceed the actual number of samples if multiple flags were applied to the same sample. Consequently, the percentage of total flags (flags applied/number of samples) may exceed 100 percent.

* The most severe flag for each analyte becomes the final validation flag.

Qualifier Description:

J = The analyte was positively identified, the quantitation is an estimate.

ANALYTICAL REPORT

Job Number: 280-165769-1

Job Description: Iowa Army Ammunition Plant RI/FS, IA

For:
Jacobs Engineering Group, Inc.
501 North Broadway
St. Louis, MO 63102

Attention: Shane Lowe

Approved for release.
Patrick J McEntee
Client Service Manager
9/1/2022 5:08 PM

Patrick J McEntee, Client Service Manager
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0107
Patrick.McEntee@et.eurofinsus.com
09/01/2022

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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Qualifiers

Metals

Qualifier	Qualifier Description
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: Jacobs Engineering Group, Inc.

Project: Iowa Army Ammunition Plant RI/FS, IA

Report Number: 280-165769-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/23/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.1º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The 2nd page of the COCs is not relinquished.

DISSOLVED METALS (ICP/MS)

Samples OU11-T-12-082222 (280-165769-1), OU11-T-17-082122 (280-165769-2), OU11-T-18-082222 (280-165769-3), OU11-T-19-082022 (280-165769-4), OU11-T-20-082022 (280-165769-5), OU11-T-31-082122 (280-165769-6), OU11-FD01-082122 (280-165769-7), EB01-082122 (280-165769-8), EB02-082122 (280-165769-9) and EB01-082222 (280-165769-10) were analyzed for dissolved metals (ICP/MS) in accordance with 6020A. The samples were prepared on 08/25/2022 and analyzed on 08/29/2022.

It was noted that dissolved Mn exceeded total Mn in sample OU11-T-31-082122 (280-165769-6); however, analysis of raw sample from respective bottles indicated higher Mn level in field filtered bottle vs unfiltered bottle.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP/MS)

Samples OU11-T-12-082222 (280-165769-1), OU11-T-17-082122 (280-165769-2), OU11-T-18-082222 (280-165769-3), OU11-T-19-082022 (280-165769-4), OU11-T-20-082022 (280-165769-5), OU11-T-31-082122 (280-165769-6), OU11-FD01-082122 (280-165769-7), EB01-082122 (280-165769-8), EB02-082122 (280-165769-9) and EB01-082222 (280-165769-10) were analyzed for total metals (ICP/MS) in accordance with 6020A. The samples were prepared and analyzed on 08/24/2022.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID: OU11-T-12-082222 Lab Sample ID: 280-165769-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	240		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	260		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-T-17-082122 Lab Sample ID: 280-165769-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	420		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	420		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-T-18-082222 Lab Sample ID: 280-165769-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	460		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	420		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-T-19-082022 Lab Sample ID: 280-165769-4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	23		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	20		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-T-20-082022 Lab Sample ID: 280-165769-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	600		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	640		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-T-31-082122 Lab Sample ID: 280-165769-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	35		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	49		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-FD01-082122 Lab Sample ID: 280-165769-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	430		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Manganese	430		3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: EB01-082122 Lab Sample ID: 280-165769-8

No Detections.

Client Sample ID: EB02-082122 Lab Sample ID: 280-165769-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.48	J	3.5	0.95	0.31	ug/L	1		6020A	Dissolved

Client Sample ID: EB01-082222 Lab Sample ID: 280-165769-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: OU11-T-12-082222 — Lab Sample ID: 280-165769-1

Date Collected: 08/22/22 12:30 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	240		3.5	0.95	0.31	ug/L		08/24/22 18:09	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	260		3.5	0.95	0.31	ug/L		08/29/22 15:06	1

Client Sample ID: OU11-T-17-082122 — Lab Sample ID: 280-165769-2

Date Collected: 08/21/22 11:25 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	420		3.5	0.95	0.31	ug/L		08/24/22 18:13	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	420		3.5	0.95	0.31	ug/L		08/29/22 12:54	1

Client Sample ID: OU11-T-18-082222 — Lab Sample ID: 280-165769-3

Date Collected: 08/22/22 13:25 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	460		3.5	0.95	0.31	ug/L		08/24/22 18:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	420		3.5	0.95	0.31	ug/L		08/29/22 12:58	1

Client Sample ID: OU11-T-19-082022 — Lab Sample ID: 280-165769-4

Date Collected: 08/20/22 11:05 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	23		3.5	0.95	0.31	ug/L		08/24/22 18:20	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	20		3.5	0.95	0.31	ug/L		08/29/22 13:02	1

Client Sample ID: OU11-T-20-082022 — Lab Sample ID: 280-165769-5

Date Collected: 08/20/22 15:40 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	600		3.5	0.95	0.31	ug/L		08/24/22 18:23	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	640		3.5	0.95	0.31	ug/L		08/29/22 13:06	1

Client Sample ID: OU11-T-31-082122 — Lab Sample ID: 280-165769-6

Date Collected: 08/21/22 09:35 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	35		3.5	0.95	0.31	ug/L		08/24/22 18:37	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	49		3.5	0.95	0.31	ug/L		08/29/22 13:21	1

Client Sample ID: OU11-FD01-082122 — Lab Sample ID: 280-165769-7

Date Collected: 08/21/22 15:30 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	430		3.5	0.95	0.31	ug/L		08/24/22 18:55	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	430		3.5	0.95	0.31	ug/L		08/29/22 13:39	1

Client Sample ID: EB01-082122 — Lab Sample ID: 280-165769-8

Date Collected: 08/21/22 13:20 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/24/22 18:59	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/29/22 13:47	1

Client Sample ID: EB02-082122 — Lab Sample ID: 280-165769-9

Date Collected: 08/21/22 13:05 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/24/22 19:02	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.48	J	3.5	0.95	0.31	ug/L		08/29/22 15:10	1

Client Sample ID: EB01-082222 — Lab Sample ID: 280-165769-10

Date Collected: 08/22/22 07:55 **Matrix: Water**
Date Received: 08/23/22 09:50

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/24/22 19:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/29/22 13:58	1

Default Detection Limits

Client: Jacobs Engineering Group, Inc.
Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Method: 6020A - Metals (ICP/MS)

Prep: 3020A

Analyte	LOQ	DL	Units
Manganese	3.5	0.31	ug/L

Method: 6020A - Metals (ICP/MS) - Dissolved

Prep: 3005A

Analyte	LOQ	DL	Units
Manganese	3.5	0.31	ug/L

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-584879/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 585049 — **Prep Batch: 584879**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/24/22 18:02	1

Lab Sample ID: LCS 280-584879/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 585049 — **Prep Batch: 584879**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			40.0	38.6		ug/L		97	87 - 115		

Lab Sample ID: 280-165769-6 MS — **Client Sample ID: OU11-T-31-082122**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 585049 — **Prep Batch: 584879**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	35		40.0	72.9		ug/L		95	87 - 115		

Lab Sample ID: 280-165769-6 MSD — **Client Sample ID: OU11-T-31-082122**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 585049 — **Prep Batch: 584879**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	35		40.0	77.1		ug/L		106	87 - 115	6	20

Lab Sample ID: MB 280-584924/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 585440 — **Prep Batch: 584924**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.95	U	3.5	0.95	0.31	ug/L		08/29/22 12:43	1

Lab Sample ID: LCS 280-584924/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 585440 — **Prep Batch: 584924**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			40.0	41.9		ug/L		105	87 - 115		

Lab Sample ID: 280-165769-6 MS — **Client Sample ID: OU11-T-31-082122**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 585440 — **Prep Batch: 584924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	49		40.0	88.5		ug/L		99	87 - 115		

Lab Sample ID: 280-165769-6 MSD — **Client Sample ID: OU11-T-31-082122**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 585440 — **Prep Batch: 584924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	49		40.0	84.1		ug/L		88	87 - 115	5	20

Metals

Prep Batch: 584879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-165769-1	OU11-T-12-082222	Total/NA	Water	3020A	
280-165769-2	OU11-T-17-082122	Total/NA	Water	3020A	
280-165769-3	OU11-T-18-082222	Total/NA	Water	3020A	
280-165769-4	OU11-T-19-082022	Total/NA	Water	3020A	
280-165769-5	OU11-T-20-082022	Total/NA	Water	3020A	
280-165769-6	OU11-T-31-082122	Total/NA	Water	3020A	
280-165769-7	OU11-FD01-082122	Total/NA	Water	3020A	
280-165769-8	EB01-082122	Total/NA	Water	3020A	
280-165769-9	EB02-082122	Total/NA	Water	3020A	
280-165769-10	EB01-082222	Total/NA	Water	3020A	
MB 280-584879/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-584879/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-165769-6 MS	OU11-T-31-082122	Total/NA	Water	3020A	
280-165769-6 MSD	OU11-T-31-082122	Total/NA	Water	3020A	

Prep Batch: 584924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-165769-1	OU11-T-12-082222	Dissolved	Water	3005A	
280-165769-2	OU11-T-17-082122	Dissolved	Water	3005A	
280-165769-3	OU11-T-18-082222	Dissolved	Water	3005A	
280-165769-4	OU11-T-19-082022	Dissolved	Water	3005A	
280-165769-5	OU11-T-20-082022	Dissolved	Water	3005A	
280-165769-6	OU11-T-31-082122	Dissolved	Water	3005A	
280-165769-7	OU11-FD01-082122	Dissolved	Water	3005A	
280-165769-8	EB01-082122	Dissolved	Water	3005A	
280-165769-9	EB02-082122	Dissolved	Water	3005A	
280-165769-10	EB01-082222	Dissolved	Water	3005A	
MB 280-584924/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-584924/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-165769-6 MS	OU11-T-31-082122	Dissolved	Water	3005A	
280-165769-6 MSD	OU11-T-31-082122	Dissolved	Water	3005A	

Analysis Batch: 585049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-165769-1	OU11-T-12-082222	Total/NA	Water	6020A	584879
280-165769-2	OU11-T-17-082122	Total/NA	Water	6020A	584879
280-165769-3	OU11-T-18-082222	Total/NA	Water	6020A	584879
280-165769-4	OU11-T-19-082022	Total/NA	Water	6020A	584879
280-165769-5	OU11-T-20-082022	Total/NA	Water	6020A	584879
280-165769-6	OU11-T-31-082122	Total/NA	Water	6020A	584879
280-165769-7	OU11-FD01-082122	Total/NA	Water	6020A	584879
280-165769-8	EB01-082122	Total/NA	Water	6020A	584879
280-165769-9	EB02-082122	Total/NA	Water	6020A	584879
280-165769-10	EB01-082222	Total/NA	Water	6020A	584879
MB 280-584879/1-A	Method Blank	Total/NA	Water	6020A	584879
LCS 280-584879/2-A	Lab Control Sample	Total/NA	Water	6020A	584879
280-165769-6 MS	OU11-T-31-082122	Total/NA	Water	6020A	584879
280-165769-6 MSD	OU11-T-31-082122	Total/NA	Water	6020A	584879

Metals

Analysis Batch: 585440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-165769-1	OU11-T-12-082222	Dissolved	Water	6020A	584924
280-165769-2	OU11-T-17-082122	Dissolved	Water	6020A	584924
280-165769-3	OU11-T-18-082222	Dissolved	Water	6020A	584924
280-165769-4	OU11-T-19-082022	Dissolved	Water	6020A	584924
280-165769-5	OU11-T-20-082022	Dissolved	Water	6020A	584924
280-165769-6	OU11-T-31-082122	Dissolved	Water	6020A	584924
280-165769-7	OU11-FD01-082122	Dissolved	Water	6020A	584924
280-165769-8	EB01-082122	Dissolved	Water	6020A	584924
280-165769-9	EB02-082122	Dissolved	Water	6020A	584924
280-165769-10	EB01-082222	Dissolved	Water	6020A	584924
MB 280-584924/1-A	Method Blank	Total Recoverable	Water	6020A	584924
LCS 280-584924/2-A	Lab Control Sample	Total Recoverable	Water	6020A	584924
280-165769-6 MS	OU11-T-31-082122	Dissolved	Water	6020A	584924
280-165769-6 MSD	OU11-T-31-082122	Dissolved	Water	6020A	584924

Client Sample ID: OU11-T-12-082222 — Lab Sample ID: 280-165769-1

Date Collected: 08/22/22 12:30 — **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 15:06	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:09	LMT	EET DEN

Client Sample ID: OU11-T-17-082122 — Lab Sample ID: 280-165769-2

Date Collected: 08/21/22 11:25 — **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 12:54	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:13	LMT	EET DEN

Client Sample ID: OU11-T-18-082222 — Lab Sample ID: 280-165769-3

Date Collected: 08/22/22 13:25 — **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 12:58	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:16	LMT	EET DEN

Client Sample ID: OU11-T-19-082022 — Lab Sample ID: 280-165769-4

Date Collected: 08/20/22 11:05 — **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:02	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:20	LMT	EET DEN

Client Sample ID: OU11-T-20-082022 — Lab Sample ID: 280-165769-5

Date Collected: 08/20/22 15:40 — **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:06	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:23	LMT	EET DEN

Lab Chronicle

Client: Jacobs Engineering Group, Inc. Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID: OU11-T-31-082122 — Lab Sample ID: 280-165769-6

Date Collected: 08/21/22 09:35 **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:21	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:37	LMT	EET DEN

Client Sample ID: OU11-FD01-082122 — Lab Sample ID: 280-165769-7

Date Collected: 08/21/22 15:30 **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:39	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:55	LMT	EET DEN

Client Sample ID: EB01-082122 — Lab Sample ID: 280-165769-8

Date Collected: 08/21/22 13:20 **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:47	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 18:59	LMT	EET DEN

Client Sample ID: EB02-082122 — Lab Sample ID: 280-165769-9

Date Collected: 08/21/22 13:05 **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 15:10	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 19:02	LMT	EET DEN

Client Sample ID: EB01-082222 — Lab Sample ID: 280-165769-10

Date Collected: 08/22/22 07:55 **Matrix: Water**
Date Received: 08/23/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	584924	08/25/22 08:50	KMS	EET DEN
Dissolved	Analysis	6020A		1			585440	08/29/22 13:58	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	584879	08/24/22 08:26	KMS	EET DEN
Total/NA	Analysis	6020A		1			585049	08/24/22 19:06	LMT	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
Iowa	State	IA#370	12-02-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Manganese
6020A	3020A	Water	Manganese

Method Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
3020A	Preparation, Total Metals	SW846	EET DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-165769-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-165769-1	OU11-T-12-082222	Water	08/22/22 12:30	08/23/22 09:50
280-165769-2	OU11-T-17-082122	Water	08/21/22 11:25	08/23/22 09:50
280-165769-3	OU11-T-18-082222	Water	08/22/22 13:25	08/23/22 09:50
280-165769-4	OU11-T-19-082022	Water	08/20/22 11:05	08/23/22 09:50
280-165769-5	OU11-T-20-082022	Water	08/20/22 15:40	08/23/22 09:50
280-165769-6	OU11-T-31-082122	Water	08/21/22 09:35	08/23/22 09:50
280-165769-7	OU11-FD01-082122	Water	08/21/22 15:30	08/23/22 09:50
280-165769-8	EB01-082122	Water	08/21/22 13:20	08/23/22 09:50
280-165769-9	EB02-082122	Water	08/21/22 13:05	08/23/22 09:50
280-165769-10	EB01-082222	Water	08/22/22 07:55	08/23/22 09:50

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ms 77 cal std_02754	08/25/22	08/24/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
.CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 cal std_02758	08/30/22	08/29/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
.CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 ccv_02762	08/25/22	08/24/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	200 mL	ms 77 cal std_02754	100 mL	Manganese	50 ug/L
.ms 77 cal std_02754	08/25/22	08/24/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
..CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 ccv_02766	08/30/22	08/29/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	200 mL	ms 77 cal std_02758	100 mL	Manganese	50 ug/L
.ms 77 cal std_02758	08/30/22	08/29/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
..CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 icsa_00626	08/30/22	08/23/22	2%HNO3/0.5% HCl, Lot 212725/22c66200	100 mL	MS ICSA STOCK_00048	5 mL	Al	100 mg/L
							Mo	2 mg/L
					MS ICSA STOCK_00050	5 mL	Al	100 mg/L
							Mo	2 mg/L
.MS ICSA STOCK_00048	08/08/23		CPI, Lot 1208135-1		(Purchased Reagent)		Al	1000 mg/L
							Mo	20 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Mo	20 mg/L
ms 77 icsab_00620	08/30/22	08/23/22	2%HNO3/0.5% HCl, Lot 212725/22c66200	100 mL	ICV MIX-1a_00001	0.1 mL	As	0.1 mg/L
							Ba	0.1 mg/L
							Be	0.1 mg/L
							Cd	0.1 mg/L
							Co	0.1 mg/L
							Cr	0.1 mg/L
							Cu	0.1 mg/L
							Manganese	0.1 mg/L
							Ni	0.1 mg/L
							Pb	0.1 mg/L
							Se	0.1 mg/L
							Sr	0.2 mg/L
							Tl	0.1 mg/L
							V	0.1 mg/L
					ICV MIX-1B_00001	0.1 mL	Mo	2.1 mg/L
							Sb	0.1 mg/L
							Sn	0.1 mg/L
					MS ICSA STOCK_00047	10 mL	Al	102 mg/L
							Mo	2.1 mg/L
					MS ICVMIX--3_00005	0.1 mL	U	0.1 mg/L
							W	0.1 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MS ICVMIX--5_00002	0.1 mL	Ag	0.1 mg/L
							Sr	0.2 mg/L
							Th	0.1 mg/L
							Zn	0.1 mg/L
					MS ICVMIX-2_00005	0.1 mL	Al	102 mg/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L
							Cu	100 mg/L
							Manganese	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Se	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.ICV MIX-1B_00001	08/05/23		IV, Lot t2-meb722099		(Purchased Reagent)		Mo	100 mg/L
							Sb	100 mg/L
							Sn	100 mg/L
.MS ICSA STOCK_00047	06/03/23		CPI, Lot 1136841		(Purchased Reagent)		Al	1000 mg/L
							Mo	20 mg/L
.MS ICVMIX--3_00005	03/10/23		CPI, Lot 1072838-1		(Purchased Reagent)		U	100 mg/L
							W	100 mg/L
.MS ICVMIX--5_00002	08/01/23		IV, Lot t2-meb721663		(Purchased Reagent)		Ag	100 mg/L
							Sr	100 mg/L
							Th	100 mg/L
							Zn	100 mg/L
.MS ICVMIX-2_00005	05/16/23		CPI, Lot 1146029-1		(Purchased Reagent)		Al	2000 mg/L
ms 77 icv_02760	08/25/22	08/24/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	ICV MIX-1a_00001	0.1 mL	Manganese	40 ug/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		Manganese	100 mg/L
ms 77 icv_02764	08/30/22	08/29/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	250 mL	ICV MIX-1a_00001	0.1 mL	Manganese	40 ug/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		Manganese	100 mg/L
MS 77 LLCCV_02578	08/25/22	08/24/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	100 mL	MS LLCCV_00007	1 mL	Manganese	0.001 mg/L
.MS LLCCV_00007	09/30/23		CPI, Lot 220602		(Purchased Reagent)		Manganese	0.1 mg/L
MS 77 LLCCV_02582	08/30/22	08/29/22	2%HNO3/0.5% HCl, Lot 215109/22c166207	100 mL	MS LLCCV_00007	1 mL	Manganese	0.001 mg/L
.MS LLCCV_00007	09/30/23		CPI, Lot 220602		(Purchased Reagent)		Manganese	0.1 mg/L
ms pds1 cpi_00007	09/15/22	03/15/22	1% HNO3, Lot 215109	100 mL	MS icvMIX-1_00005	20 mL	Manganese	20 mg/L
.MS icvMIX-1_00005	02/26/23		CPI, Lot 1128717-1		(Purchased Reagent)		Manganese	100 mg/L
ms spike 1_00014	01/20/23	07/20/22	1% HNO3, Lot 261535	500 mL	CALSTD-1_00002	100 mL	As	20000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ba	20000 ug/L
							Be	20000 ug/L
							Cd	20000 ug/L
							Co	20000 ug/L
							Cr	20000 ug/L
							Cu	20000 ug/L
							Li	20000 ug/L
							Manganese	20000 ug/L
							Mo	20000 ug/L
							Ni	20000 ug/L
							Pb	20000 ug/L
							Sb	20000 ug/L
							Se	20000 ug/L
							Si	200000 ug/L
							SiO2	428000 ug/L
							Sn	20000 ug/L
							Sr	20000 ug/L
							Tl	20000 ug/L
							V	20000 ug/L
					CALSTD-2_00001	100 mL	Al	400000 ug/L
							Ca	400000 ug/L
							Fe	400000 ug/L
							K	400000 ug/L
							Mg	400000 ug/L
							Na	400000 ug/L
.CALSTD-1_00002	08/08/23		CPI, Lot 1148545-1		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L
							Cu	100 mg/L
							Li	100 mg/L
							Manganese	100 mg/L
							Mo	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Sb	100 mg/L
							Se	100 mg/L
							Si	1000 mg/L
							SiO2	2140 mg/L
							Sn	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.CALSTD-2_00001	06/27/23		CPI, Lot 1146028-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	2000 mg/L
							Mg	2000 mg/L
							Na	2000 mg/L
MS spike 2_00100	11/24/22	06/08/22	1% HNO3, Lot 275002	500 mL	1000 Ag_00017	10 mL	Ag	20 mg/L
					1000 Sr_00015	10 mL	Sr	20 mg/L
					1000 U_00043	10 mL	U	20 mg/L
					1000 Zn_00027	10 mL	Zn	20 mg/L
					10000 Th_00027	1 mL	Th	20 mg/L
.1000 Ag_00017	11/24/22	CPI, Lot 1026960-69			(Purchased Reagent)		Ag	1000 mg/L
.1000 Sr_00015	03/13/23	CPI, Lot 1096004-19			(Purchased Reagent)		Sr	1000 mg/L
.1000 U_00043	05/16/23	CPI, Lot 1062807-9			(Purchased Reagent)		U	1000 mg/L
.1000 Zn_00027	11/24/22	CPI, Lot 1095528-11			(Purchased Reagent)		Zn	1000 mg/L
.10000 Th_00027	09/24/23	CPI, Lot 1161822-1			(Purchased Reagent)		Th	10000 mg/L

Reagent

1000 Ag_00017

CPI INTERNATIONAL

6811937
ID: 1000 Ag_00017
Exp:11/24/22 Prpd:LRD Opn:08/24/21
1000 Ag CPI

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-1000511

SE Std Silver (Ag) – 1000 µg/mL

Product Lot #: 1026960-69

Matrix: 5% HNO_3

Source Material Lot #: T26E048/R22A010

Element	Certified Concentration & Uncertainty
Ag	1010 ± 4 µg/mL (w/v)
	1008 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure silver (Ag) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #160729**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	13	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	0.7	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	2	Cu	2	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	3
Bi	0.9	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 24, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

1000 Sr_00015

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Strontium (Sr) – 1000 µg/mL

Matrix: 5% HNO_3

6969200
ID: 1000 Sr_00015
Exp:03/13/23 Prpd:PNS Opn:12/01/21
1000 Sr CPI

Product #: TA-1000531

Lot #: 1096004-19

Source Material Lot #: SRZ082018A1

Element	Certified Concentration & Uncertainty
Sr	997.0 ± 6.0 µg/mL (w/v)
	993.0 ± 6.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	2	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	104	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	3
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	2	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	0.6	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 13, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

1000 u_00043

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Uranium (U) – 1000 µg/mL

Matrix: 5% HNO_3

Product #: TA-1000641

Product Lot #: 1112440-6

Source Material Lot #: AP18-81UX

Element	Certified Concentration & Uncertainty
U	996.0 ± 5.0 µg/mL (w/v)
	990.0 ± 5.0 µg/g (w/w)

7023033
ID: 1000 U_00043
Exp:05/15/23 Prpd:MAB Opn:01/14/22
1000 U CPI

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001, ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% Uranyl (VI) Nitrate Hexahydrate dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 10M64-1D, lot# 1733101**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	2	Hf	<0.2	Mg	<5	Pb	4	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	54	Pt	<0.5	Sm	<0.2	V	<1
Ba	5	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 16, 2021
Certification Date

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This RM was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

1000 Zn_00027

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-1000681

SE Std Zinc (Zn) – 1000 µg/mL

Lot #: 1095528-11

Matrix: 5% HNO_3

Source Material Lot #: L17Y005/Y28D045

Element	Certified Concentration & Uncertainty
Zn	998 ± 2 µg/mL (w/v)
	989 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	3	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 24, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br-	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl-	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

10000 Th_00027

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous RM

Thorium (Th) – 10,000 µg/mL

Matrix: 3% HNO_3

7084654
ID: 10000 Th_00027
Exp:09/24/23 Prpd:LRD Opn:03/07/22
10,000 Th CPI

Product #: S4400-10M591

Lot #: 1161822-1

Element	Certified Concentration & Uncertainty
Th	9971 ± 49 µg/mL (w/v)
	9064 ± 44 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to, **ISO 17034**, **ISO/IEC 17025** and **ISO 9001**. This RM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using pure thorium nitrate [$Th(NO_3)_4$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable method against an alternate lot as NIST SRM is not available. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	7	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	5	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	15	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	17	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	31	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 24, 2022
Certification Date

USA
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F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034:2016 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025:2017 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001:2015 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

CAL STD 1_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

ICP ICPMS CAL Mix # 1

7043158
ID: ICP CAL STD 1_00013
Exp: 06/27/23 Prpd: LRD
ICP CAL STD 1 PRIMARY

Product #: TA-CAL1

Lot #: 1148545-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.98 ± 0.50 mg/L	Li	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.1 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Sr	99.98 ± 0.50 mg/L
Cd	100.1 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.1 ± 0.5 mg/L
Co	99.96 ± 0.50 mg/L	Pb	99.96 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.91 ± 0.50 mg/L	Sb	100.1 ± 0.5 mg/L	V	99.98 ± 0.50 mg/L
Cu	99.96 ± 0.50 mg/L	Se	99.97 ± 0.50 mg/L		

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
As	992330R	Li	170238	Si	1004988
Ba	994427	Mn	985946	Sn	1031164
Be	992601	Mo	1086465	Sr	1051374
Cd	173172	Ni	1070210R	Ti	984754
Co	983064	Pb	983061	Tl	1059794
Cr	1099019	Sb	660984R	V	154977
Cu	1140336R	Se	993619		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

December 27, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Safety Data Sheet (SDS).

:o be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35.
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:ainties.

rnational for further information about this material.

)ared under a quality management system that is registered/accredited to the following:
Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of

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al Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and

ment Systems, Certificate Registration No. 56 100 19560101 – Requirements

T SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Hf	3122	-	S	3154	2770
Hg	3133	3133	Sb	3102a	3102a
Ho	3123a	-	Sc	3148a	3148a
In	3124a	3124a	Se	3149	3149
K	3141a	3141a	Si	3150	-
La	3127a	3127a	Sm	3147a	-
Li	3129a	3129a	Sn	3161a	-
Lu	3130a	-	SO_4^{-2}	3181	-
Mg	3131a	3131a	Sr	3153a	3153a
Mn	3132	3132	Ta	3155	-
Mo	3134	3134	Tb	3157a	-
Na	3152a	-	Te	3156	-
Nb	3137	-	Th	-	-
Nd	3135a	-	Ti	3162a	3162a
Ni	3136	-	Tl	3158	3158
NO_3^-	3185	-	Tm	3160a	-
P	3139a	3139a	U	3164	-
Pb	3128	-	V	3165	-
Pd	3138	-	W	3163	3163

Reagent

CALSTD-1_00002

CPI INTERNATIONAL

7150070
ID: CALSTD-1_00002
Exp:09/08/23 Prpd:LMT Opn:04/18/22
ICP-MS Cal Std 1 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1

ICP ICPMS CAL Mix # 1

Lot #: 1148545-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.98 ± 0.50 mg/L	Li	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.1 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Sr	99.98 ± 0.50 mg/L
Cd	100.1 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.1 ± 0.5 mg/L
Co	99.96 ± 0.50 mg/L	Pb	99.96 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.91 ± 0.50 mg/L	Sb	100.1 ± 0.5 mg/L	V	99.98 ± 0.50 mg/L
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Co	983064	Pb	983061	Tl	1059794
Cr	1099019	Sb	660984R	V	154977
Cu	1140336R	Se	993619		

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Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 8, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

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- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br-	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl-	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

09/01/2022

Reagent

CALSTD-2_00001

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

ICP ICPMS CAL Mix # 2

Matrix: 5% HNO_3

7043162
ID: MS CALSTD-2_00102
Exp:05/27/23 Prpd:LRD Opn:02/02/22
ICP-MS Cal Std 2 CPI new

Product #: TA-CAL2

Lot #: 1146028-1

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	1077624	Fe	1114543	Mg	1013351
Ca	1121798	K	1073557	Na	1122654

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

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Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

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Chuck Goudreau

Chuck Goudreau, Certifying Officer

December 27, 2021
Certification Date

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This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

ICV MIX-1a_00001

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-67795-A
Lot Number:	T2-MEB722098
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	100 µg/mL ea:

Arsenic, Barium,
Beryllium, Cadmium,
Cobalt, Chromium,
Copper, Lithium,
Manganese, Nickel,
Lead, Selenium,
Strontium, Thallium,
Vanadium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**100.0 ± 0.6 µg/mL**	**Barium, Ba**	**100.0 ± 0.4 µg/mL**
Beryllium, Be	**100.1 ± 0.5 µg/mL**	**Cadmium, Cd**	**100.0 ± 0.4 µg/mL**
Chromium, Cr	**100.0 ± 0.5 µg/mL**	**Cobalt, Co**	**100.0 ± 0.4 µg/mL**
Copper, Cu	**100.0 ± 0.4 µg/mL**	**Lead, Pb**	**100.0 ± 0.6 µg/mL**
Lithium, Li	**100.0 ± 0.4 µg/mL**	**Manganese, Mn**	**100.0 ± 0.5 µg/mL**
Nickel, Ni	**100.0 ± 0.6 µg/mL**	**Selenium, Se**	**100.0 ± 0.7 µg/mL**
Strontium, Sr	**100.0 ± 0.4 µg/mL**	**Thallium, Tl**	**100.0 ± 0.6 µg/mL**
Vanadium, V	**100.0 ± 0.4 µg/mL**		

Density: 1.031 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	traceable to 3103a	R2-AS691113
Ba	ICP Assay	3104a	140909
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	IC Assay	3165	160906
V	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 28, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 28, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

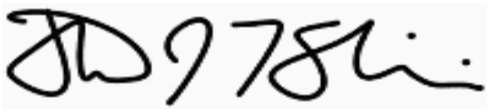
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

ICV MIX-1B_00001

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-5065
Lot Number:	T2-MEB722099
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Silicon, 100 µg/mL ea: Tin, Titanium, Molybdenum, Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**100.0 ± 0.8 µg/mL**	**Molybdenum, Mo**	**100.0 ± 0.7 µg/mL**
Silicon, Si	**1 000 ± 6 µg/mL**	**Tin, Sn**	**100.0 ± 0.7 µg/mL**
Titanium, Ti	**100.0 ± 0.7 µg/mL**		

Density: 1.030 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 28, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 28, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

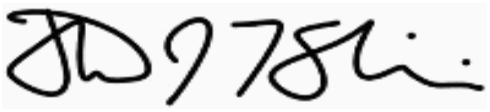
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS ICSA STOCK_00047

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br-	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl-	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

CPI INTERNATIONAL

7041550
ID: MS ICSA STOCK_00047
Exp:05/03/23 Prod:LMT Opn:02/01/22
ICP-MS ICS-0A STOCK SOLUT

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICPMS-ICSA

ICPMS ICSA Mix

Lot #: 1136841-1

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Na	1000 ± 5 mg/L
C	2000 ± 10 mg/L	K	1000 ± 5 mg/L	P	1000 ± 5 mg/L
Ca	1000 ± 5 mg/L	Mg	1000 ± 5 mg/L	S	1000 ± 5 mg/L
Cl	9998 ± 50 mg/L	Mo	20.00 ± 0.10 mg/L	Ti	19.99 ± 0.10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	1077624	Fe	1114543	Na	1122654
C	P12G045	K	1073557	P	1107349
Ca	1121798	Mg	1013351	S	1051383
Cl	203610	Mo	1120495	Ti	1010581

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Trace Concentrations (µg/L)

Ag	3	Co	3	Ge	2	Lu	<0.2	P	MAJOR	Sb	2	Te	<1
Al	MAJOR	Cs	1	Hf	<0.2	Mg	MAJOR	Pb	2	Sc	<5	Ti	MAJOR
As	<2	Cr	6	Hg	<0.5	Mn	4	Pd	<0.5	Se	<2	Tl	2
Au	<0.5	Cu	5	Ho	<0.2	Mo	MAJOR	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	MAJOR	Pt	<0.5	Sm	<0.2	V	<1
Ba	14	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	9	Sn	3	W	2
Bi	0.7	Eu	<0.2	K	MAJOR	Nd	<0.2	Re	0.5	Sr	26	Y	8
Ca	MAJOR	Fe	MAJOR	La	0.8	Ni	3	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	3	Ga	39	Li	4	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	8
Ce	<0.2	Gd	0.3										

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1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

December 3, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Reagent

MS ICSA STOCK_00048

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br^-	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl^-	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F^-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 8, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICPMS-ICSA

ICPMS ICSA Mix

Lot #: 1208135-1

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Na	1000 ± 5 mg/L
C	1997 ± 10 mg/L	K	1000 ± 5 mg/L	P	1000 ± 5 mg/L
Ca	999.6 ± 5.0 mg/L	Mg	1000 ± 5 mg/L	S	1000 ± 5 mg/L
Cl	9999 ± 50 mg/L	Mo	20.01 ± 0.10 mg/L	Ti	19.98 ± 0.10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	1077624	Fe	1114543	Na	1122654
C	P12G045	K	1156013	P	1107349
Ca	1121798	Mg	1075231	S	1154886
Cl	213900	Mo	1053794	Ti	1095555

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Trace Concentrations (µg/L)

Ag	<0.5	Co	2	Ge	<0.5	Lu	<0.2	P	MAJOR	Sb	21	Te	<1
Al	MAJOR	Cs	<0.5	Hf	<0.2	Mg	MAJOR	Pb	71	Sc	<5	Ti	MAJOR
As	<2	Cr	3	Hg	<0.5	Mn	<1	Pd	2	Se	38	Tl	<0.5
Au	44	Cu	<1	Ho	<0.2	Mo	MAJOR	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	MAJOR	Pt	<0.5	Sm	<0.2	V	<1
Ba	27	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	10	Sn	4	W	2
Bi	2	Eu	<0.2	K	MAJOR	Nd	<0.2	Re	8	Sr	21	Y	7
Ca	MAJOR	Fe	MAJOR	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	10	Ga	33	Li	18	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

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F: 707.545.7901

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	S2-MEB706044
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride,
	2 000 µg/mL ea: Carbon,
	1 000 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur,
	20 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	**1 000 ± 3 µg/mL**	**Calcium, Ca**	**1 000 ± 4 µg/mL**
Carbon, C	**2 001 ± 4 µg/mL**	**Chloride, Cl**	**10 000.0 ± 50.0 µg/mL**
Iron, Fe	**1 000 ± 4 µg/mL**	**Magnesium, Mg**	**1 000 ± 4 µg/mL**
Molybdenum, Mo	**20.01 ± 0.12 µg/mL**	**Phosphorus, P**	**1 000 ± 6 µg/mL**
Potassium, K	**1 000 ± 4 µg/mL**	**Sodium, Na**	**1 000 ± 4 µg/mL**
Sulfur, S	**1 000 ± 4 µg/mL**	**Titanium, Ti**	**20.01 ± 0.14 µg/mL**

Density: 1.031 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000260	O	Cu	<	0.007300	M	La	<	0.000120	M	Pr	<	0.000010	M	Ta		0.000230
s	Al	<		M	Dy	<	0.000360	O	Li		0.002200	M	Pt	<	0.000120	M	Tb	<	0.000040
O	As	<	0.029000	M	Er	<	0.000040	M	Lu	<	0.000010	M	Rb		0.052000	M	Te	<	0.000860
M	Au	<	0.000240	M	Eu	<	0.000010	s	Mg	<		M	Re	<	0.000040	M	Th	<	0.000060
M	B	<	0.007400	s	Fe	<		M	Mn		0.002400	M	Rh	<	0.000080	s	Ti	<	
M	Ba		0.004600	M	Ga		0.026000	s	Mo	<		M	Ru	<	0.000290	M	Tl	<	0.000050
M	Be	<	0.000070	M	Gd	<	0.000100	s	Na	<		s	S	<		M	Tm	<	0.000010
M	Bi	<	0.000220	M	Ge	<	0.003100	M	Nb	<	0.000100	M	Sb		0.000540	M	U		0.000180
s	Ca	<		M	Hf	<	0.000100	M	Nd	<	0.000040	O	Sc	<	0.000520	O	V	<	0.002900
O	Cd	<	0.001100	M	Hg	<	0.000260	O	Ni		0.002500	M	Se	<	0.002400	M	W		0.001600
M	Ce	<	0.000220	M	Ho	<	0.000100	M	Os	<	0.000020	M	Si	<	0.024000	M	Y	<	0.000120
M	Co		0.002200	M	In	<	0.000260	s	P	<		M	Sm	<	0.000080	M	Yb	<	0.000020
M	Cr		0.020000	M	Ir	<	0.000010	M	Pb		0.000480	M	Sn		0.000430	M	Zn		0.005600
M	Cs		0.000700	s	K	<		M	Pd	<	0.000060	O	Sr		0.005800	M	Zr		0.000960

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 06, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 06, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

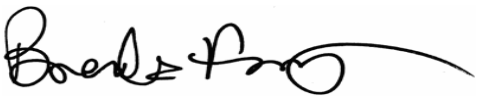
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS ICVMIX--3_00005

6939098
ID: MS ICVMIX--3_00005
Exp:03/10/23 Prpd:LMT Opn:11/11/21
ICP-MS ICV Std 3 CPI reve

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL3-SS

Lot #: 1072838-1

ICP ICPMS CAL Mix # 3

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	1000 ± 5 mg/L	U	100.1 ± 0.5 mg/L
S	1000 ± 5 mg/L	W	100.1 ± 0.5 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #
P	AQ18-51PX	U	AN17-162UX
S	AM17-68SX	W	AH17-138WX

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 10, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Europe
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1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM
Ag	3151	-
Al	3101a	-
As	3103a	3103a
Au	3121	-
B	3107	3107
Ba	3104a	-
Be	3105a	3105a
Bi	3106	3106
Br-	3184	-
Ca	3109a	3109a
Cd	3108	-
Ce	3110	3110
Cl-	3182	1818a
Co	3113	3113
Cr	3112a	-
Cs	3111a	-
Cu	3114	-
Dy	3115a	-
Er	3116a	-
Eu	3117a	-
F-	3183	-
Fe	3126a	-
Ga	3119a	-
Gd	3118a	-
Ge	3120a	-

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-
PO_4^{-3}	3186	-
Pr	3142a	-
Pt	3140	3140
Rb	3145a	-
Re	3143	-
Rh	3144	3144

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163
Y	3167a	3167a
Yb	3166a	-
Zn	3168a	3168a
Zr	3169	3169

Reagent

MS ICVMIX--5_00002

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Certificate of Analysis

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F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-67385
Lot Number:	T2-MEB721663
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 1 000 µg/mL ea: Phosphorus, Boron, 100 µg/mL ea: Silver, Lithium, Strontium, Thorium, Zinc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	**1 000 ± 6 µg/mL**	**Calcium, Ca**	**5 000 ± 22 µg/mL**
Lithium, Li	**100.0 ± 0.4 µg/mL**	**Magnesium, Mg**	**5 000 ± 21 µg/mL**
Phosphorus, P	**1 000 ± 5 µg/mL**	**Potassium, K**	**5 000 ± 22 µg/mL**
Silver, Ag	**100.0 ± 0.4 µg/mL**	**Sodium, Na**	**5 000 ± 22 µg/mL**
Strontium, Sr	**100.0 ± 0.4 µg/mL**	**Thorium, Th**	**100.0 ± 0.5 µg/mL**
Zinc, Zn	**100.0 ± 0.4 µg/mL**		

Density: 1.087 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
B	ICP Assay	3107	190605
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Na	ICP Assay	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

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Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 19, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 19, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

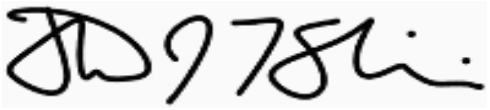
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS icvMIX-1_00005

CPI INTERNATIONAL

6836948
ID: MS icvMIX-1_00005
Exp:02/26/23 Prpd:LMT Opn:09/13/21
ICP-MS ICV Std 1 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1-SS

ICP ICPMS CAL Mix # 1

Lot #: 1128717-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.80 ± 0.50 mg/L	Li	99.89 ± 0.50 mg/L	Si	999.9 ± 5.0 mg/L
Ba	99.98 ± 0.50 mg/L	Mn	99.86 ± 0.50 mg/L	Sn	99.86 ± 0.50 mg/L
Be	100.0 ± 0.5 mg/L	Mo	99.96 ± 0.50 mg/L	Sr	99.97 ± 0.50 mg/L
Cd	99.97 ± 0.50 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	99.99 ± 0.50 mg/L
Co	99.99 ± 0.50 mg/L	Pb	99.98 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.98 ± 0.50 mg/L	Sb	99.97 ± 0.50 mg/L	V	99.89 ± 0.50 mg/L
Cu	99.97 ± 0.50 mg/L	Se	99.99 ± 0.50 mg/L		

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
As	AM18-92ASX	Li	AY18-54LIX	Si	AQ18-71SIX
Ba	AO18-63BAX	Mn	AO18-58MNX	Sn	AI18-100SNX
Be	AQ18-86BEX	Mo	2011930	Sr	AP18-82SRX
Cd	AP18-90CDX	Ni	AQ18-40NIX	Ti	1929801
Co	AQ18-68COX	Pb	AQ18-65PBX	Tl	1927327
Cr	AL18-66CRX	Sb	1916107	V	AM18-32VX
Cu	AV18-101CUX	Se	AO18-110SEX		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiintl.com

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 26, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM
Ag	3151	-
Al	3101a	-
As	3103a	3103a
Au	3121	-
B	3107	3107
Ba	3104a	-
Be	3105a	3105a
Bi	3106	3106
Br-	3184	-
Ca	3109a	3109a
Cd	3108	-
Ce	3110	3110
Cl-	3182	1818a
Co	3113	3113
Cr	3112a	-
Cs	3111a	-
Cu	3114	-
Dy	3115a	-
Er	3116a	-
Eu	3117a	-
F-	3183	-
Fe	3126a	-
Ga	3119a	-
Gd	3118a	-
Ge	3120a	-

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-
PO_4^{-3}	3186	-
Pr	3142a	-
Pt	3140	3140
Rb	3145a	-
Re	3143	-
Rh	3144	3144

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163
Y	3167a	3167a
Yb	3166a	-
Zn	3168a	3168a
Zr	3169	3169

Reagent

MS ICVMIX-2_00005

7129049
ID: MS ICVMIX-2_00005
Exp:05/16/23 Prpd:LMT Opn:04/06/22
ICP-MS ICV Std 2 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL2-SS

ICP ICPMS CAL Mix # 2

Lot #: 1146029-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	AP18-72ALX	Fe	AR18-89FEX	Mg	AQ18-136MGX
Ca	AZ18-49CAX	K	AY18-96KX	Na	AT18-84NAX

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 16, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

MS LLCCV_00007

CPI INTERNATIONAL

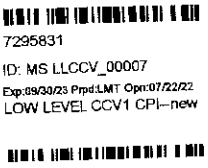
Certificate of Analysis

ICP-MS Low Level CCV

Catalog Number: TA-CM-APR19-DEN2
Lot Number: 220602
Manufacture Date: 07/12/22

Expiration: 09/30/2023
Matrix: 2% HNO3/Tr. HF
Hazards: Irritant, Corrosive

Analyte	Certified Concentration (ppm)
Aluminum (Al)	5.00 ± 0.029
Antimony (Sb)	0.200 ± 0.001
Arsenic (As)	0.500 ± 0.003
Barium (Ba)	0.100 ± 0.001
Beryllium (Be)	0.100 ± 0.001
Boron (B)	0.100 ± 0.001
Cadmium (Cd)	0.100 ± 0.001
Calcium (Ca)	5.00 ± 0.029
Chromium (Cr)	0.200 ± 0.001
Cobalt (Co)	0.100 ± 0.001
Copper (Cu)	0.200 ± 0.001
Iron (Fe)	5.00 ± 0.029
Lead (Pb)	0.100 ± 0.001
Lithium (Li)	1.00 ± 0.006
Magnesium (Mg)	5.00 ± 0.029
Manganese (Mn)	0.100 ± 0.001
Molybdenum (Mo)	0.200 ± 0.001
Nickel (Ni)	0.200 ± 0.001
Potassium (K)	10.0 ± 0.058
Selenium (Se)	0.500 ± 0.003
Silver (Ag)	0.100 ± 0.001
Sodium (Na)	5.00 ± 0.029
Strontium (Sr)	0.100 ± 0.001
Thallium (Tl)	0.100 ± 0.001
Thorium (Th)	0.200 ± 0.001
Tin (Sn)	1.00 ± 0.006
Titanium (Ti)	0.100 ± 0.001
Tungsten (W)	0.500 ± 0.003
Uranium (U)	0.100 ± 0.001
Vanadium (V)	0.500 ± 0.003
Zinc (Zn)	1.00 ± 0.006



CPI INTERNATIONAL

Catalog Number: TA-CM-APR19-DEN2
Lot Number: 220602

Packaging, Storage, Instructions For Use

Store at room temperature (15-30°C).

This certified reference material (CRM) is packaged in HDPE as a whole volume ready to use sample. No secondary preparative steps are necessary. Allow to equilibrate to room temperature before use. Small aliquots should be poured out of the bottle rather than directly pipetted out of bottle in order to prevent contamination or premature degradation. This CRM was manufactured by NSI Lab Solutions following quality procedures meeting the requirements of ISO 9001, ISO 17025, and ISO 17034.

Traceability Information

Analyte Source Materials: The highest purity analyte source materials are used in the manufacture of this CRM.

Method: This CRM was verified by ICP.

Balance: All analytical balances are calibrated on a semiannual basis by an ISO 17025 accredited calibration laboratory and are traceable to NIST. Traceable Calibration Certificate available upon request.

All balances are checked daily by an in-house standard operating procedure. The weights used for this daily verification are calibrated annually by an ISO 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calibration and Traceability available upon request.

Thermometer: All thermometers are NIST traceable through thermometers that are calibrated annually by an ISO 17025 accredited calibration laboratory.

Glassware: All glassware used in the manufacture of our CRMs is Class A. An in-house standard operating procedure is used to verify all glassware prior to it being placed into service. Volumetric pipetors are calibrated every four months by an ISO 17025 accredited calibration laboratory.

Intended Uses

- Calibration of analytical instruments
- Validation of analytical methods
- Preparation of working level reference materials, i.e. "check standards"
- Detection limit studies

Uncertainty

The ± uncertainty associated with the concentration is the expanded manufacturing uncertainty at 95% confidence interval (CI) with K=2.

Homogeneity

This CRM was thoroughly mixed in production and is guaranteed homogeneous.

Ewart Morris

Ewart Morris, Inorganics Technical Manager

Mark Hammersla

Mark Hammersla, President

METALS

COVER PAGE
METALS

Lab Name: Eurofins Denver Job Number: 280-165769-1

SDG No.:

Project: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID	Lab Sample ID
OU11-T-12-082222	280-165769-1
OU11-T-17-082122	280-165769-2
OU11-T-18-082222	280-165769-3
OU11-T-19-082022	280-165769-4
OU11-T-20-082022	280-165769-5
OU11-T-31-082122	280-165769-6
OU11-FD01-082122	280-165769-7
EB01-082122	280-165769-8
EB02-082122	280-165769-9
EB01-082222	280-165769-10

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-12-082222 Lab Sample ID: 280-165769-1

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 12:30

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	240	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-12-082222 Lab Sample ID: 280-165769-1

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 12:30

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	260	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-17-082122 Lab Sample ID: 280-165769-2

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 11:25

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	420	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-17-082122 Lab Sample ID: 280-165769-2

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 11:25

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	420	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-18-082222 Lab Sample ID: 280-165769-3

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 13:25

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	460	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-18-082222 Lab Sample ID: 280-165769-3

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 13:25

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	420	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-19-082022 Lab Sample ID: 280-165769-4

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/20/2022 11:05

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	23	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-19-082022 Lab Sample ID: 280-165769-4

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/20/2022 11:05

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	20	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-20-082022 Lab Sample ID: 280-165769-5

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/20/2022 15:40

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	600	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-20-082022 Lab Sample ID: 280-165769-5

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/20/2022 15:40

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	640	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-31-082122 Lab Sample ID: 280-165769-6

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 09:35

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	35	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-31-082122 Lab Sample ID: 280-165769-6

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 09:35

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	49	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-FD01-082122 Lab Sample ID: 280-165769-7

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 15:30

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	430	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-FD01-082122 Lab Sample ID: 280-165769-7

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 15:30

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	430	3.5	0.95	0.31	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: EB01-082122 Lab Sample ID: 280-165769-8

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 13:20

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.95	3.5	0.95	0.31	ug/L	U		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: EB01-082122 Lab Sample ID: 280-165769-8

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 13:20

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.95	3.5	0.95	0.31	ug/L	U		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: EB02-082122 Lab Sample ID: 280-165769-9

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 13:05

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.95	3.5	0.95	0.31	ug/L	U		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: EB02-082122 Lab Sample ID: 280-165769-9

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/21/2022 13:05

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.48	3.5	0.95	0.31	ug/L	J		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: EB01-082222 Lab Sample ID: 280-165769-10

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 07:55

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.95	3.5	0.95	0.31	ug/L	U		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: EB01-082222 Lab Sample ID: 280-165769-10

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG ID.:

Matrix: Water Date Sampled: 08/22/2022 07:55

Reporting Basis: WET Date Received: 08/23/2022 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.95	3.5	0.95	0.31	ug/L	U		1	6020A

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02764 Concentration Units: ug/L

CCV Source: ms 77 ccv_02766

Analyte	ICV 280-585440/13 08/29/2022 10:20				CCV 280-585440/45 08/29/2022 12:32				CCV 280-585440/55 08/29/2022 13:09			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	40.3		40.0	101	50.5		50.0	101	47.5		50.0	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02764 Concentration Units: ug/L

CCV Source: ms 77 ccv_02766

Analyte	CCV 280-585440/69 08/29/2022 14:02				CCV 280-585440/80 08/29/2022 14:44				CCV 280-585440/88 08/29/2022 15:14			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	48.8		50.0	98	47.6		50.0	95	47.9		50.0	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02764 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02582

Analyte	ICV 280-585440/13 08/29/2022 10:20				CCVL 280-585440/47 08/29/2022 12:39				CCVL 280-585440/57 08/29/2022 13:17			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	40.3		40.0	101	1.04	J	1.00	104	1.13	J	1.00	113

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02764 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02582

Analyte	CCVL 280-585440/71 08/29/2022 14:09				CCVL 280-585440/82 08/29/2022 14:51				CCVL 280-585440/90 08/29/2022 15:22			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	1.10	J	1.00	110	1.15	J	1.00	115	1.21	J	1.00	121

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02760 Concentration Units: ug/L

CCV Source: ms 77 ccv_02762

Analyte	ICV 280-585049/13 08/24/2022 13:35				CCV 280-585049/71 08/24/2022 17:51				CCV 280-585049/81 08/24/2022 18:27			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	39.1		40.0	98	47.0		50.0	94	48.2		50.0	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02760 Concentration Units: ug/L

CCV Source: ms 77 ccv_02762

Analyte	CCV 280-585049/93 08/24/2022 19:09											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	46.0		50.0	92								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02760 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02578

Analyte	ICV 280-585049/13 08/24/2022 13:35				CCVL 280-585049/73 08/24/2022 17:58				CCVL 280-585049/83 08/24/2022 18:34			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	39.1		40.0	98	1.12	J	1.00	112	1.29	J	1.00	129

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

ICV Source: ms 77 icv_02760 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02578

Analyte	CCVL 280-585049/95 08/24/2022 19:16											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	1.11	J	1.00	111								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Method: 6020A Instrument ID: MT_077

Lab Sample ID: CRI 280-585440/15 Concentration Units: ug/L

CRQL Check Standard Source: MS 77 LLCCV_02582

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	1.00	1.12	J	112	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Method: 6020A Instrument ID: MT_078

Lab Sample ID: CRI 280-585049/15 Concentration Units: ug/L

CRQL Check Standard Source: MS 77 LLCCV_02578

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	1.00	1.14	J	114	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-585440/14 08/29/2022 10:24		CCB 280-585440/46 08/29/2022 12:36		CCB 280-585440/56 08/29/2022 13:13		CCB 280-585440/70 08/29/2022 14:06	
		Found	C	Found	C	Found	C	Found	C
Manganese	3.5	0.95	U	0.95	U	0.95	U	0.95	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 280-585440/81 08/29/2022 14:47		CCB 280-585440/89 08/29/2022 15:18					
		Found	C	Found	C	Found	C	Found	C
Manganese	3.5	0.95	U	0.95	U				

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-585049/14 08/24/2022 13:40		CCB 280-585049/72 08/24/2022 17:55		CCB 280-585049/82 08/24/2022 18:30		CCB 280-585049/94 08/24/2022 19:13	
		Found	C	Found	C	Found	C	Found	C
Manganese	3.5	0.95	U	0.95	U	0.95	U	0.95	U

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 280-584879/1-A

Instrument Code: MT_078 Batch No.: 585049

CAS No.	Analyte	Concentration	C	Q	Method
7439-96-5	Manganese	0.95	U		6020A_DOD5

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 280-584924/1-A

Instrument Code: MT_077 Batch No.: 585440

CAS No.	Analyte	Concentration	C	Q	Method
7439-96-5	Manganese	0.95	U		6020A_DOD5

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Lab Sample ID: ICSA 280-585440/16 Instrument ID: MT_077

Lab File ID: 016ICSA.d ICS Source: ms 77 icsa_00626

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.566**	
Aluminum	*100000*	*98607*	*99*
Antimony		*0.0890*	
Arsenic		*0.0360*	
Beryllium		*0.0160*	
Cadmium		*0.259*	
Chromium		*1.29*	
Cobalt		*0.213*	
Copper		*0.133*	
Lead		*0.124*	
Molybdenum	*2000*	*2185*	*109*
Nickel		*0.263*	
Selenium		*0.0200*	
Silver		*0.0590*	
Strontium		*1.58*	
Thallium		*-0.0650*	
Tin		*0.188*	
Tungsten		*0.143*	
Uranium		*0.0150*	
Vanadium		*-0.0510*	
Zinc		*1.63*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Lab Sample ID: ICSAB 280-585440/17 Instrument ID: MT_077

Lab File ID: 017ICSB.d ICS Source: ms 77 icsab_00620

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**97.8**	**98**
Aluminum	*102000*	*101103*	*99*
Antimony	*100*	*103*	*103*
Arsenic	*100*	*98.3*	*98*
Barium	*100*	*111*	*111*
Beryllium	*100*	*99.7*	*100*
Cadmium	*100*	*103*	*103*
Chromium	*100*	*98.9*	*99*
Cobalt	*100*	*94.6*	*95*
Copper	*100*	*96.7*	*97*
Lead	*100*	*98.0*	*98*
Molybdenum	*2100*	*2338*	*111*
Nickel	*100*	*93.7*	*94*
Selenium	*100*	*102*	*102*
Silver	*100*	*101*	*101*
Strontium	*200*	*198*	*99*
Thallium	*100*	*97.6*	*98*
Thorium	*100*	*117*	*117*
Tin	*100*	*103*	*103*
Tungsten	*100*	*98.4*	*98*
Uranium	*100*	*98.8*	*99*
Vanadium	*100*	*99.8*	*100*
Zinc	*100*	*95.7*	*96*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Lab Sample ID: ICSA 280-585049/16 Instrument ID: MT_078

Lab File ID: 016ICSA.d ICS Source: ms 77 icsa_00626

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.418**	
Aluminum	*100000*	*96239*	*96*
Antimony		*0.0670*	
Arsenic		*0.0040*	
Beryllium		*-0.0080*	
Cadmium		*0.313*	
Chromium		*1.45*	
Cobalt		*0.231*	
Copper		*0.261*	
Lead		*0.0890*	
Molybdenum	*2000*	*1900*	*95*
Nickel		*0.512*	
Selenium		*0.0860*	
Silver		*0.0670*	
Strontium		*1.73*	
Thallium		*-0.171*	
Tin		*0.0460*	
Tungsten		*0.259*	
Uranium		*-0.0280*	
Vanadium		*0.0350*	
Zinc		*1.23*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Lab Sample ID: ICSAB 280-585049/17 Instrument ID: MT_078

Lab File ID: 017ICSB.d ICS Source: ms 77 icsab_00620

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**102**	**102**
Aluminum	*102000*	*104938*	*103*
Antimony	*100*	*103*	*103*
Arsenic	*100*	*93.4*	*93*
Barium	*100*	*111*	*111*
Beryllium	*100*	*99.1*	*99*
Cadmium	*100*	*98.9*	*99*
Chromium	*100*	*101*	*101*
Cobalt	*100*	*94.6*	*95*
Copper	*100*	*92.7*	*93*
Lead	*100*	*95.3*	*95*
Molybdenum	*2100*	*2113*	*101*
Nickel	*100*	*93.9*	*94*
Selenium	*100*	*104*	*104*
Silver	*100*	*96.5*	*97*
Strontium	*200*	*206*	*103*
Thallium	*100*	*95.9*	*96*
Thorium	*100*	*117*	*117*
Tin	*100*	*110*	*110*
Tungsten	*100*	*100*	*100*
Uranium	*100*	*103*	*103*
Vanadium	*100*	*103*	*103*
Zinc	*100*	*91.1*	*91*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OU11-T-31-082122 MS
Lab ID: 280-165769-6 MS
Lab Name: Eurofins Denver
Job No.: 280-165769-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	72.9		35		40.0	95	87-115		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-31-082122 MS
Lab ID: 280-165769-6 MS
Lab Name: Eurofins Denver
Job No.: 280-165769-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	88.5		49		40.0	99	87-115		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: OU11-T-31-082122 MSD
Lab ID: 280-165769-6 MSD
Lab Name: Eurofins Denver
Job No.: 280-165769-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Manganese	77.1		40.0	106	87-115	6	20		6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-31-082122 MSD
Lab ID: 280-165769-6 MSD
Lab Name: Eurofins Denver
Job No.: 280-165769-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Manganese	84.1		40.0	88	87-115	5	20		6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OU11-T-31-082122 PDS
Lab ID: 280-165769-6 PDS
Lab Name: Eurofins Denver
Job No.: 280-165769-1
SDG No.:
Matrix: Water
Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	232		35		200	99	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-31-082122 PDS Lab ID: 280-165769-6 PDS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	265		49		200	108	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-584879/2-A

Lab Name: Eurofins Denver Job No.: 280-165769-1

Sample Matrix: Water LCS Source: ms spike 1_00014

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Manganese	40.0	38.6		97	87	115		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 280-584924/2-A

Lab Name: Eurofins Denver Job No.: 280-165769-1

Sample Matrix: Water LCS Source: ms spike 1_00014

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Manganese	40.0	41.9		105	87	115		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-165769-6

SDG No:

Lab Name: Eurofins Denver Job No: 280-165769-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Manganese	35		41.4		NC	D	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 280-165769-6

SDG No:

Lab Name: Eurofins Denver Job No: 280-165769-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Manganese	49		48.5		NC	D	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins Denver Job Number: 280-165769-1

SDG Number:

Matrix: Water Instrument ID: MT_078

Method: 6020A DL Date: 07/14/2019 00:00

Prep Method: 3020A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Manganese	55	3.5	0.31

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins Denver Job Number: 280-165769-1

SDG Number:

Matrix: Water Instrument ID: MT_078

Method: 6020A XMDL Date: 07/14/2019 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Manganese		3.5	0.31

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins Denver Job Number: 280-165769-1

SDG Number:

Matrix: Water Instrument ID: MT_077

Method: 6020A DL Date: 07/14/2019 00:00

Prep Method: 3005A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Manganese	55	3.5	0.31

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins Denver Job Number: 280-165769-1

SDG Number:

Matrix: Water Instrument ID: MT_077

Method: 6020A XMDL Date: 07/14/2019 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Manganese		3.5	0.31

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins Denver Job No: 280-165769-1

SDG No.:

Instrument ID: MT_077 Date: 01/15/2020 09:21

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Manganese		18000	6020A

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins Denver Job No: 280-165769-1

SDG No.:

Instrument ID: MT_078 Date: 01/15/2020 09:22

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Manganese			6020A

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Prep Method: 3020A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-584879/1-A	08/24/2022 08:26	584879		50	50
LCS 280-584879/2-A	08/24/2022 08:26	584879		50	50
280-165769-1	08/24/2022 08:26	584879		50	50
280-165769-2	08/24/2022 08:26	584879		50	50
280-165769-3	08/24/2022 08:26	584879		50	50
280-165769-4	08/24/2022 08:26	584879		50	50
280-165769-5	08/24/2022 08:26	584879		50	50
280-165769-6	08/24/2022 08:26	584879		50	50
280-165769-6 MS	08/24/2022 08:26	584879		50	50
280-165769-6 MSD	08/24/2022 08:26	584879		50	50
280-165769-7	08/24/2022 08:26	584879		50	50
280-165769-8	08/24/2022 08:26	584879		50	50
280-165769-9	08/24/2022 08:26	584879		50	50
280-165769-10	08/24/2022 08:26	584879		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-584924/1-A	08/25/2022 08:50	584924		50	50
LCS 280-584924/2-A	08/25/2022 08:50	584924		50	50
280-165769-1	08/25/2022 08:50	584924		50	50
280-165769-2	08/25/2022 08:50	584924		50	50
280-165769-3	08/25/2022 08:50	584924		50	50
280-165769-4	08/25/2022 08:50	584924		50	50
280-165769-5	08/25/2022 08:50	584924		50	50
280-165769-6	08/25/2022 08:50	584924		50	50
280-165769-6 MS	08/25/2022 08:50	584924		50	50
280-165769-6 MSD	08/25/2022 08:50	584924		50	50
280-165769-7	08/25/2022 08:50	584924		50	50
280-165769-8	08/25/2022 08:50	584924		50	50
280-165769-9	08/25/2022 08:50	584924		50	50
280-165769-10	08/25/2022 08:50	584924		50	50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_077 Analysis Method: 6020A

Start Date: 08/29/2022 09:35 End Date: 08/29/2022 17:51

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
RINSE 280-585440/1			09:35	
RINSE 280-585440/2			09:39	
RINSE 280-585440/3			09:43	
RINSE 280-585440/4			09:46	
RINSE 280-585440/5			09:50	
RINSE 280-585440/6			09:54	
RINSE 280-585440/7			09:58	
RINSE 280-585440/8			10:01	
RINSE 280-585440/9			10:05	
ICIS 280-585440/10			10:09	X
IC 280-585440/11	1		10:13	X
IC 280-585440/12	1		10:16	X
ICV 280-585440/13	1		10:20	X
ICB 280-585440/14	1		10:24	X
CRI 280-585440/15	1		10:34	X
ICSA 280-585440/16	1		10:38	X
ICSAB 280-585440/17	1		10:42	X
RINSE 280-585440/18			10:46	
ZZZZZZ			10:49	
RINSE 280-585440/20			10:53	
RINSE 280-585440/21			10:57	
CCV 280-585440/22			11:01	
CCB 280-585440/23			11:04	
CCVL 280-585440/24			11:08	
CCVL 280-585440/25			11:14	
CCVL 280-585440/26			11:18	
ZZZZZZ			11:22	
ZZZZZZ			11:26	
ZZZZZZ			11:29	
ZZZZZZ			11:33	
ZZZZZZ			11:37	
ZZZZZZ			11:41	
ZZZZZZ			11:44	
ZZZZZZ			11:48	
CCV 280-585440/35			11:52	
CCB 280-585440/36			11:58	
CCVL 280-585440/37			12:02	
ZZZZZZ			12:06	
ZZZZZZ			12:09	
ZZZZZZ			12:13	
ZZZZZZ			12:17	
ZZZZZZ			12:21	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_077 Analysis Method: 6020A

Start Date: 08/29/2022 09:35 End Date: 08/29/2022 17:51

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
ZZZZZZ			12:24	
ZZZZZZ			12:28	
CCV 280-585440/45	1		12:32	X
CCB 280-585440/46	1		12:36	X
CCVL 280-585440/47	1		12:39	X
MB 280-584924/1-A	1	R	12:43	X
ZZZZZZ			12:47	
ZZZZZZ			12:51	
280-165769-2	1	D	12:54	X
280-165769-3	1	D	12:58	X
280-165769-4	1	D	13:02	X
280-165769-5	1	D	13:06	X
CCV 280-585440/55	1		13:09	X
CCB 280-585440/56	1		13:13	X
CCVL 280-585440/57	1		13:17	X
280-165769-6	1	D	13:21	X
280-165769-6 SD	5	D	13:24	X
280-165769-6 MS	1	D	13:28	X
280-165769-6 MSD	1	D	13:32	X
280-165769-6 PDS	1	D	13:36	X
280-165769-7	1	D	13:39	X
LCS 280-584924/2-A	1	R	13:43	X
280-165769-8	1	D	13:47	X
ZZZZZZ			13:51	
ZZZZZZ			13:54	
280-165769-10	1	D	13:58	X
CCV 280-585440/69	1		14:02	X
CCB 280-585440/70	1		14:06	X
CCVL 280-585440/71	1		14:09	X
ZZZZZZ			14:13	
ZZZZZZ			14:17	
ZZZZZZ			14:21	
ZZZZZZ			14:25	
ZZZZZZ			14:28	
ZZZZZZ			14:32	
ZZZZZZ			14:36	
ZZZZZZ			14:40	
CCV 280-585440/80	1		14:44	X
CCB 280-585440/81	1		14:47	X
CCVL 280-585440/82	1		14:51	X
ZZZZZZ			14:55	
ZZZZZZ			14:59	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_077 Analysis Method: 6020A

Start Date: 08/29/2022 09:35 End Date: 08/29/2022 17:51

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			15:02																									
280-165769-1	1	D	15:06	X																								
280-165769-9	1	D	15:10	X																								
CCV 280-585440/88	1		15:14	X																								
CCB 280-585440/89	1		15:18	X																								
CCVL 280-585440/90	1		15:22	X																								
ZZZZZZ			15:25																									
ZZZZZZ			15:29																									
ZZZZZZ			15:33																									
ZZZZZZ			15:37																									
ZZZZZZ			15:40																									
ZZZZZZ			15:44																									
ZZZZZZ			15:48																									
ZZZZZZ			15:52																									
ZZZZZZ			15:55																									
ZZZZZZ			15:59																									
CCV 280-585440/101			16:03																									
CCB 280-585440/102			16:07																									
ZZZZZZ			16:10																									
ZZZZZZ			16:14																									
ZZZZZZ			16:19																									
ZZZZZZ			16:23																									
ZZZZZZ			16:27																									
ZZZZZZ			16:30																									
ZZZZZZ			16:34																									
ZZZZZZ			16:38																									
ZZZZZZ			16:42																									
ZZZZZZ			16:45																									
ZZZZZZ			16:49																									
CCV 280-585440/114			16:53																									
CCB 280-585440/115			16:57																									
CCVL 280-585440/116			17:00																									
ZZZZZZ			17:10																									
ZZZZZZ			17:13																									
ZZZZZZ			17:17																									
ZZZZZZ			17:21																									
ZZZZZZ			17:25																									
ZZZZZZ			17:28																									
ZZZZZZ			17:32																									
ZZZZZZ			17:36																									
ZZZZZZ			17:40																									
CCV 280-585440/126			17:43																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_077 Analysis Method: 6020A

Start Date: 08/29/2022 09:35 End Date: 08/29/2022 17:51

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
CCB 280-585440/127			17:47																									
CCVL 280-585440/128			17:51																									

Prep Types:
D = Dissolved
R = Total Recoverable

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_078 Analysis Method: 6020A

Start Date: 08/24/2022 12:52 End Date: 08/24/2022 22:05

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
RINSE 280-585049/1			12:52																									
RINSE 280-585049/2			12:56																									
RINSE 280-585049/3			13:00																									
RINSE 280-585049/4			13:03																									
RINSE 280-585049/5			13:07																									
RINSE 280-585049/6			13:10																									
RINSE 280-585049/7			13:14																									
RINSE 280-585049/8			13:17																									
RINSE 280-585049/9			13:21																									
ICIS 280-585049/10			13:24	X																								
IC 280-585049/11	1		13:28	X																								
IC 280-585049/12	1		13:32	X																								
ICV 280-585049/13	1		13:35	X																								
ICB 280-585049/14	1		13:40	X																								
CRI 280-585049/15	1		13:52	X																								
ICSA 280-585049/16	1		13:58	X																								
ICSAB 280-585049/17	1		14:01	X																								
RINSE 280-585049/18			14:05																									
LRA 280-585049/19			14:08																									
RINSE 280-585049/20			14:12																									
CCV 280-585049/21			14:15																									
CCB 280-585049/22			14:19																									
CCVL 280-585049/23			14:34																									
ZZZZZZ			14:38																									
ZZZZZZ			14:41																									
ZZZZZZ			14:45																									
ZZZZZZ			14:48																									
ZZZZZZ			14:52																									
ZZZZZZ			14:55																									
ZZZZZZ			14:59																									
CCV 280-585049/31			15:02																									
CCB 280-585049/32			15:06																									
ZZZZZZ			15:09																									
ZZZZZZ			15:13																									
ZZZZZZ			15:16																									
ZZZZZZ			15:20																									
ZZZZZZ			15:23																									
ZZZZZZ			15:27																									
ZZZZZZ			15:30																									
CCV 280-585049/40			15:36																									
CCB 280-585049/41			16:05																									
ZZZZZZ			16:08																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_078 Analysis Method: 6020A

Start Date: 08/24/2022 12:52 End Date: 08/24/2022 22:05

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
ZZZZZZ			16:12	
ZZZZZZ			16:15	
ZZZZZZ			16:19	
ZZZZZZ			16:22	
ZZZZZZ			16:26	
ZZZZZZ			16:29	
ZZZZZZ			16:33	
ZZZZZZ			16:36	
CCV 280-585049/51			16:40	
CCB 280-585049/52			16:44	
ZZZZZZ			16:47	
ZZZZZZ			16:51	
ZZZZZZ			16:54	
ZZZZZZ			16:58	
ZZZZZZ			17:01	
ZZZZZZ			17:05	
ZZZZZZ			17:08	
ZZZZZZ			17:12	
ZZZZZZ			17:16	
ZZZZZZ			17:19	
CCV 280-585049/63			17:23	
CCB 280-585049/64			17:26	
ZZZZZZ			17:30	
ZZZZZZ			17:34	
ZZZZZZ			17:37	
ZZZZZZ			17:41	
ZZZZZZ			17:44	
ZZZZZZ			17:48	
CCV 280-585049/71	1		17:51	X
CCB 280-585049/72	1		17:55	X
CCVL 280-585049/73	1		17:58	X
MB 280-584879/1-A	1	T	18:02	X
LCS 280-584879/2-A	1	T	18:05	X
280-165769-1	1	T	18:09	X
280-165769-2	1	T	18:13	X
280-165769-3	1	T	18:16	X
280-165769-4	1	T	18:20	X
280-165769-5	1	T	18:23	X
CCV 280-585049/81	1		18:27	X
CCB 280-585049/82	1		18:30	X
CCVL 280-585049/83	1		18:34	X
280-165769-6	1	T	18:37	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_078 Analysis Method: 6020A

Start Date: 08/24/2022 12:52 End Date: 08/24/2022 22:05

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
280-165769-6 SD	5	T	18:41	X																								
280-165769-6 MS	1	T	18:45	X																								
280-165769-6 MSD	1	T	18:48	X																								
280-165769-6 PDS	1	T	18:52	X																								
280-165769-7	1	T	18:55	X																								
280-165769-8	1	T	18:59	X																								
280-165769-9	1	T	19:02	X																								
280-165769-10	1	T	19:06	X																								
CCV 280-585049/93	1		19:09	X																								
CCB 280-585049/94	1		19:13	X																								
CCVL 280-585049/95	1		19:16	X																								
ZZZZZZ			19:20																									
ZZZZZZ			19:24																									
ZZZZZZ			19:27																									
ZZZZZZ			19:30																									
ZZZZZZ			19:34																									
CCV 280-585049/101			19:37																									
CCB 280-585049/102			19:41																									
ZZZZZZ			19:44																									
ZZZZZZ			19:48																									
ZZZZZZ			19:51																									
ZZZZZZ			19:55																									
ZZZZZZ			19:58																									
ZZZZZZ			20:02																									
ZZZZZZ			20:05																									
CCV 280-585049/110			20:09																									
CCB 280-585049/111			20:12																									
CCVL 280-585049/112			20:16																									
ZZZZZZ			20:19																									
ZZZZZZ			20:23																									
ZZZZZZ			20:27																									
ZZZZZZ			20:30																									
ZZZZZZ			20:34																									
ZZZZZZ			20:37																									
CCV 280-585049/119			20:40																									
CCB 280-585049/120			20:44																									
CCVL 280-585049/121			20:48																									
ZZZZZZ			20:51																									
ZZZZZZ			20:55																									
ZZZZZZ			20:58																									
ZZZZZZ			21:02																									
ZZZZZZ			21:05																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Instrument ID: MT_078 Analysis Method: 6020A

Start Date: 08/24/2022 12:52 End Date: 08/24/2022 22:05

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			21:08																									
ZZZZZZ			21:12																									
ZZZZZZ			21:16																									
CCV 280-585049/130			21:19																									
CCB 280-585049/131			21:23																									
CCVL 280-585049/132			21:26																									
ZZZZZZ			21:30																									
ZZZZZZ			21:33																									
ZZZZZZ			21:37																									
ZZZZZZ			21:40																									
ZZZZZZ			21:44																									
ZZZZZZ			21:47																									
ZZZZZZ			21:51																									
ZZZZZZ			21:54																									
CCV 280-585049/141			21:58																									
CCB 280-585049/142			22:01																									
CCVL 280-585049/143			22:05																									

Prep Types:
T = Total/NA

FORM XIII-IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6/1	Q	Element Li-6/2	Q	Element Li-6/3	Q	Element Sc/1	Q	Element Sc/2	Q
IC 280-585440/11	10:13	93		93		97		99		104	
IC 280-585440/12	10:16	99		99		101		103		105	
ICV 280-585440/13	10:20	98		98		100		101		104	
ICB 280-585440/14	10:24	99		99		100		101		103	
CRI 280-585440/15	10:34	99		97		100		100		103	
ICSA 280-585440/16	10:38	91		90		93		95		97	
ICSAB 280-585440/17	10:42	91		91		92		96		99	
CCV 280-585440/45	12:32	93		96		96		95		100	
CCB 280-585440/46	12:36	98		99		98		97		100	
CCVL 280-585440/47	12:39	97		97		99		96		100	
MB 280-584924/1-A	12:43	95		98		96		96		97	
280-165769-2	12:54	93		96		96		96		100	
280-165769-3	12:58	92		96		94		97		100	
280-165769-4	13:02	93		97		96		95		100	
280-165769-5	13:06	92		97		95		96		100	
CCV 280-585440/55	13:09	96		97		97		98		100	
CCB 280-585440/56	13:13	98		102		100		98		101	
CCVL 280-585440/57	13:17	99		101		99		97		101	
280-165769-6	13:21	92		96		95		94		98	
280-165769-6 SD	13:24	94		97		97		93		99	
280-165769-6 MS	13:28	92		97		94		94		97	
280-165769-6 MSD	13:32	91		97		94		94		97	
280-165769-6 PDS	13:36	90		94		93		93		95	
280-165769-7	13:39	90		96		94		94		97	
LCS 280-584924/2-A	13:43	93		102		98		95		99	
280-165769-8	13:47	99		100		98		97		98	
280-165769-10	13:58	94		99		99		94		98	
CCV 280-585440/69	14:02	93		95		96		95		99	
CCB 280-585440/70	14:06	96		97		100		96		99	
CCVL 280-585440/71	14:09	98		103		100		97		101	
CCV 280-585440/80	14:44	94		97		97		96		100	
CCB 280-585440/81	14:47	96		101		99		96		100	
CCVL 280-585440/82	14:51	97		102		101		96		101	
280-165769-1	15:06	92		99		95		97		102	
280-165769-9	15:10	97		103		101		100		105	
CCV 280-585440/88	15:14	92		96		96		96		100	
CCB 280-585440/89	15:18	97		100		99		98		104	
CCVL 280-585440/90	15:22	97		103		102		98		103	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ho-165 165	Element Ir 193	Element Sc/1 45	Element Sc/2 45
Manganese	55					
Aluminum	27					X
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Lead	208		X			
Molybdenum	95	X				
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					
Thallium	205		X			
Thorium	232			X		
Tin	120	X				
Tungsten	182		X			
Uranium	238			X		
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal standard	Ho-165	Ir (IS)	Sc (IS)	Sc (IS)

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Sc/3	Q	Element Ge/1	Q	Element Ge/2	Q	Element In	Q	Element Ho-165	Q
IC 280-585440/11	10:13	102		99		102		100		100	
IC 280-585440/12	10:16	102		104		104		104		102	
ICV 280-585440/13	10:20	104		103		104		104		103	
ICB 280-585440/14	10:24	101		102		103		104		101	
CRI 280-585440/15	10:34	101		101		102		103		100	
ICSA 280-585440/16	10:38	97		97		98		94		97	
ICSAB 280-585440/17	10:42	97		97		98		94		98	
CCV 280-585440/45	12:32	98		97		100		99		99	
CCB 280-585440/46	12:36	98		98		100		100		100	
CCVL 280-585440/47	12:39	98		97		100		102		101	
MB 280-584924/1-A	12:43	97		96		98		99		99	
280-165769-2	12:54	98		97		102		101		102	
280-165769-3	12:58	97		98		102		101		101	
280-165769-4	13:02	99		98		101		101		101	
280-165769-5	13:06	99		98		101		100		102	
CCV 280-585440/55	13:09	99		99		102		101		102	
CCB 280-585440/56	13:13	100		99		102		102		103	
CCVL 280-585440/57	13:17	99		99		101		102		103	
280-165769-6	13:21	96		96		100		100		100	
280-165769-6 SD	13:24	97		95		98		98		98	
280-165769-6 MS	13:28	97		97		100		99		100	
280-165769-6 MSD	13:32	96		96		100		99		100	
280-165769-6 PDS	13:36	95		95		98		98		99	
280-165769-7	13:39	96		95		99		98		99	
LCS 280-584924/2-A	13:43	97		97		100		100		101	
280-165769-8	13:47	97		99		100		100		100	
280-165769-10	13:58	98		96		100		100		100	
CCV 280-585440/69	14:02	97		98		100		100		102	
CCB 280-585440/70	14:06	99		97		101		101		102	
CCVL 280-585440/71	14:09	98		98		101		103		102	
CCV 280-585440/80	14:44	99		98		101		101		101	
CCB 280-585440/81	14:47	98		98		101		103		102	
CCVL 280-585440/82	14:51	101		98		104		103		104	
280-165769-1	15:06	99		98		104		103		103	
280-165769-9	15:10	103		101		107		106		105	
CCV 280-585440/88	15:14	99		98		103		101		101	
CCB 280-585440/89	15:18	100		100		105		104		103	
CCVL 280-585440/90	15:22	102		100		104		106		103	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Analyte	Mass	Internal Standard Used:				
		Element Sc/3 45	Element Li-6/1 6	Element Li-6/2 6	Element Li-6/3 6	Element Ge/1 72
Manganese	55					
Aluminum	27					
Antimony	121					
Arsenic	75					
Barium	137					
Beryllium	9		X			
Cadmium	111					
Chromium	52					
Cobalt	59					
Copper	63					
Lead	208					
Molybdenum	95					
Nickel	60					
Selenium	78					X
Silver	107					
Strontium	88					
Thallium	205					
Thorium	232					
Tin	120					
Tungsten	182					
Uranium	238					
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		Sc (IS)	Li-6 Internal standard	Li-6 Internal standard	Li-6 Internal standard	Ge Internal standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ir	Q	Element	Q	Element	Q	Element	Q	Element	Q
IC 280-585440/11	10:13	97									
IC 280-585440/12	10:16	100									
ICV 280-585440/13	10:20	101									
ICB 280-585440/14	10:24	101									
CRI 280-585440/15	10:34	100									
ICSA 280-585440/16	10:38	95									
ICSAB 280-585440/17	10:42	94									
CCV 280-585440/45	12:32	99									
CCB 280-585440/46	12:36	101									
CCVL 280-585440/47	12:39	101									
MB 280-584924/1-A	12:43	99									
280-165769-2	12:54	98									
280-165769-3	12:58	99									
280-165769-4	13:02	97									
280-165769-5	13:06	98									
CCV 280-585440/55	13:09	100									
CCB 280-585440/56	13:13	103									
CCVL 280-585440/57	13:17	102									
280-165769-6	13:21	97									
280-165769-6 SD	13:24	97									
280-165769-6 MS	13:28	97									
280-165769-6 MSD	13:32	97									
280-165769-6 PDS	13:36	96									
280-165769-7	13:39	96									
LCS 280-584924/2-A	13:43	101									
280-165769-8	13:47	101									
280-165769-10	13:58	100									
CCV 280-585440/69	14:02	99									
CCB 280-585440/70	14:06	102									
CCVL 280-585440/71	14:09	103									
CCV 280-585440/80	14:44	100									
CCB 280-585440/81	14:47	102									
CCVL 280-585440/82	14:51	103									
280-165769-1	15:06	100									
280-165769-9	15:10	104									
CCV 280-585440/88	15:14	98									
CCB 280-585440/89	15:18	102									
CCVL 280-585440/90	15:22	103									

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585440

ICP-MS Instrument ID: MT_077 Start Date: 08/29/2022 End Date: 08/29/2022

Analyte	Mass	Internal Standard Used:				
		Element Ge/272	Element	Element	Element	Element
Manganese	55	X				
Aluminum	27					
Antimony	121					
Arsenic	75	X				
Barium	137					
Beryllium	9					
Cadmium	111					
Chromium	52	X				
Cobalt	59	X				
Copper	63	X				
Lead	208					
Molybdenum	95					
Nickel	60	X				
Selenium	78					
Silver	107					
Strontium	88	X				
Thallium	205					
Thorium	232					
Tin	120					
Tungsten	182					
Uranium	238					
Vanadium	51	X				
Zinc	66	X				
Internal Standard Name on Instrument		Ge Internal standard				

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585049

ICP-MS Instrument ID: MT_078 Start Date: 08/24/2022 End Date: 08/24/2022

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Li-6	Q	Element Sc/1	Q	Element Sc/2	Q	Element Sc/3	Q
IC 280-585049/11	13:28	96		95		109		108		105	
IC 280-585049/12	13:32	96		100		105		106		98	
ICV 280-585049/13	13:35	98		92		105		103		98	
ICB 280-585049/14	13:40	98		95		104		105		102	
CRI 280-585049/15	13:52	99		90		105		105		98	
ICSA 280-585049/16	13:58	88		89		105		108		102	
ICSAB 280-585049/17	14:01	80		88		92		107		104	
CCV 280-585049/71	17:51	97		91		103		100		96	
CCB 280-585049/72	17:55	100		97		96		98		93	
CCVL 280-585049/73	17:58	98		90		93		97		91	
MB 280-584879/1-A	18:02	97		91		97		100		99	
LCS 280-584879/2-A	18:05	97		92		98		100		95	
280-165769-1	18:09	96		86		96		104		98	
280-165769-2	18:13	95		93		99		104		95	
280-165769-3	18:16	92		88		99		103		95	
280-165769-4	18:20	93		91		99		103		93	
280-165769-5	18:23	101		86		102		103		95	
CCV 280-585049/81	18:27	93		86		98		100		94	
CCB 280-585049/82	18:30	95		90		98		99		93	
CCVL 280-585049/83	18:34	98		90		93		100		92	
280-165769-6	18:37	96		87		97		101		93	
280-165769-6 SD	18:41	100		89		98		101		95	
280-165769-6 MS	18:45	94		89		96		103		95	
280-165769-6 MSD	18:48	97		91		99		101		96	
280-165769-6 PDS	18:52	98		89		101		100		93	
280-165769-7	18:55	97		90		98		103		92	
280-165769-8	18:59	94		89		94		99		93	
280-165769-9	19:02	98		91		97		100		91	
280-165769-10	19:06	100		90		97		101		93	
CCV 280-585049/93	19:09	94		86		97		102		92	
CCB 280-585049/94	19:13	96		92		96		97		93	
CCVL 280-585049/95	19:16	97		90		97		100		92	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585049

ICP-MS Instrument ID: MT_078 Start Date: 08/24/2022 End Date: 08/24/2022

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ho-165 165	Element Ir 193	Element Sc/1 45	Element Sc/2 45
Manganese	55					
Aluminum	27					X
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Lead	208		X			
Molybdenum	95	X				
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					X
Thallium	205		X			
Thorium	232			X		
Tin	120	X				
Tungsten	182		X			
Uranium	238			X		
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal standard	Ho-165	Ir (IS)	Sc (IS)	Sc (IS)

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585049

ICP-MS Instrument ID: MT_078 Start Date: 08/24/2022 End Date: 08/24/2022

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/1	Q	Element Ge/2	Q	Element In	Q	Element Ho-165	Q	Element Ir	Q
IC 280-585049/11	13:28	106		100		105		101		95	
IC 280-585049/12	13:32	108		101		104		103		100	
ICV 280-585049/13	13:35	105		104		104		103		99	
ICB 280-585049/14	13:40	106		103		105		102		100	
CRI 280-585049/15	13:52	108		101		104		101		101	
ICSA 280-585049/16	13:58	103		97		100		100		93	
ICSAB 280-585049/17	14:01	101		102		99		96		91	
CCV 280-585049/71	17:51	102		100		104		102		94	
CCB 280-585049/72	17:55	101		99		103		100		96	
CCVL 280-585049/73	17:58	97		99		103		100		97	
MB 280-584879/1-A	18:02	96		96		106		100		96	
LCS 280-584879/2-A	18:05	97		98		108		101		95	
280-165769-1	18:09	98		101		105		102		93	
280-165769-2	18:13	101		101		105		100		92	
280-165769-3	18:16	101		98		105		100		90	
280-165769-4	18:20	99		99		108		100		93	
280-165769-5	18:23	100		101		104		103		92	
CCV 280-585049/81	18:27	102		99		107		102		95	
CCB 280-585049/82	18:30	100		100		105		101		93	
CCVL 280-585049/83	18:34	96		98		105		101		93	
280-165769-6	18:37	97		100		107		100		93	
280-165769-6 SD	18:41	100		98		105		100		92	
280-165769-6 MS	18:45	97		99		105		101		93	
280-165769-6 MSD	18:48	99		98		105		100		91	
280-165769-6 PDS	18:52	101		100		107		100		90	
280-165769-7	18:55	98		100		105		101		90	
280-165769-8	18:59	98		99		108		103		94	
280-165769-9	19:02	97		100		105		101		93	
280-165769-10	19:06	96		99		108		101		93	
CCV 280-585049/93	19:09	100		99		108		99		92	
CCB 280-585049/94	19:13	99		101		105		101		94	
CCVL 280-585049/95	19:16	99		100		106		101		93	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.: Analysis Batch No.: 585049

ICP-MS Instrument ID: MT_078 Start Date: 08/24/2022 End Date: 08/24/2022

Analyte	Mass	Internal Standard Used:				
		Element Sc/3 45	Element Li-6 6	Element Li-6 6	Element Ge/1 72	Element Ge/2 72
Manganese	55					X
Aluminum	27					
Antimony	121					
Arsenic	75					X
Barium	137					
Beryllium	9		X			
Cadmium	111					
Chromium	52					X
Cobalt	59					X
Copper	63					X
Lead	208					
Molybdenum	95					
Nickel	60					X
Selenium	78				X	
Silver	107					
Strontium	88					
Thallium	205					
Thorium	232					
Tin	120					
Tungsten	182					
Uranium	238					
Vanadium	51					X
Zinc	66					X
Internal Standard Name on Instrument		Sc (IS)	Li-6 Internal standard	Li-6 Internal standard	Ge Internal standard	Ge Internal standard

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Batch Number: 584879 Batch Start Date: 08/24/22 08:26 Batch Analyst: Snowden, Kristen M

Batch Method: 3020A Batch End Date: 08/24/22 14:56

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ms spike 1 00014	MS spike 2 00100	
MB 280-584879/1		3020A, 6020A		<2	50 mL	50 mL			
LCS 280-584879/2		3020A, 6020A		<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-A-1	OU11-T-12-082222	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-2	OU11-T-17-082122	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-3	OU11-T-18-082222	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-4	OU11-T-19-082022	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-5	OU11-T-20-082022	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-6	OU11-T-31-082122	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-6 MS	OU11-T-31-082122	3020A, 6020A	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-A-6 MSD	OU11-T-31-082122	3020A, 6020A	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-A-7	OU11-FD01-082122	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-8	EB01-082122	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-9	EB02-082122	3020A, 6020A	T	<2	50 mL	50 mL			
280-165769-A-10	EB01-082222	3020A, 6020A	T	<2	50 mL	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Batch Number: 584879 Batch Start Date: 08/24/22 08:26 Batch Analyst: Snowden, Kristen M

Batch Method: 3020A Batch End Date: 08/24/22 14:56

Batch Notes	
Digestion Tube/Cup ID	2202231
Pipette/Syringe/Dispenser ID	MET88
Analyst ID - Spike Analyst	PM
Sufficient Volume for Batch QC	YES
Lot # of Nitric Acid	205109-8/23
Digestion Unit ID	04
Thermometer ID	941284
Thermometer Location ID	A6
Digestion Start Time	08:26
Temperature - Uncorrected - Start	90 Degrees C
Temperature - Corrected - Start	90 Degrees C
Temperature - Uncorrected - End	95 Degrees C
Temperature - Corrected - End	95 Degrees C
Digestion End Time	14:56

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Batch Number: 584924 Batch Start Date: 08/25/22 08:50 Batch Analyst: Snowden, Kristen M

Batch Method: 3005A Batch End Date: 08/25/22 14:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ms spike 1 00014	MS spike 2 00100	
MB 280-584924/1		3005A, 6020A			50 mL	50 mL			
LCS 280-584924/2		3005A, 6020A			50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-B-1	OU11-T-12-082222	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-2	OU11-T-17-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-3	OU11-T-18-082222	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-4	OU11-T-19-082022	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-5	OU11-T-20-082022	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-6	OU11-T-31-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-6 MS	OU11-T-31-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-B-6 MSD	OU11-T-31-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-165769-B-7	OU11-FD01-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-8	EB01-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-9	EB02-082122	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-165769-B-10	EB01-082222	3005A, 6020A	D	<2 SU	50 mL	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-165769-1

SDG No.:

Batch Number: 584924 Batch Start Date: 08/25/22 08:50 Batch Analyst: Snowden, Kristen M

Batch Method: 3005A Batch End Date: 08/25/22 14:40

Batch Notes	
Digestion Tube/Cup ID	2202231
Pipette/Syringe/Dispenser ID	MET88
Analyst ID - Spike Analyst	MAB
Sufficient Volume for Batch QC	YES
Hydrochloric Acid ID	218779-8/23
Nitric Acid ID	205109-8/23
Digestion Unit ID	05
Thermometer ID	5636125
Thermometer Location ID	B1
Temperature - Uncorrected - Start	93 Degrees C
Temperature - Corrected - Start	92 Degrees C
Digestion Start Time	08/25/2022 08:50
Digestion End Time	08/25/2022 14:40
Temperature - Uncorrected - End	92 Degrees C
Temperature - Corrected - End	91 Degrees C

Basis	Basis Description
D	Dissolved

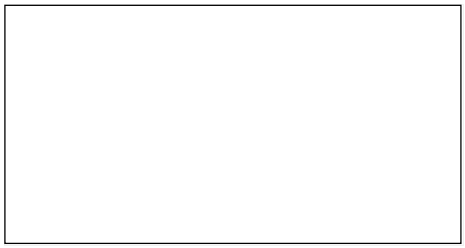
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	8/29/2022 9:08:04 AM
Instrument Name	G3281A JP09320047
Batch Folder	D:\Agilent\ICPMH\1\DATA\ALL082922.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	100000	12758	12758	0.000
2	6	100000	12122	12122	0.000
3	59	100000	15885	15885	0.000
4	63	5000	2025	2025	0.000
5	70	5000	956	956	0.000
6	75	10000	7212	7212	0.000
7	89	100000	24046	24046	0.000
8	105	1000	73	73	0.000
9	118	2000	1072	1072	0.000
10	137	20000	3157	3157	0.000
11	140	200000	27094	27094	0.000
12	205	100000	17964	17964	0.000
13	238	10000	31231	31231	0.000
14	70/140	5	3.529 %	3.529 %	0.000
15	156/140	2	0.738 %	0.738 %	0.000

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.66 L/min	Dilution Gas	0.23 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-52 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	17.2 V
Omega Bias	-85 V	Cell Focus	---	Plate Bias	-50 V
Omega Lens	8.8 V	Cell Entrance	-20 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	0.0 mL/min	OctP Bias	-8.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-5.0 V
Mass Offset	127	Axis Offset	0.03		

Current Signal

Torch

Torch H	-1.2 mm	Torch V	0.4 mm		

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Meter

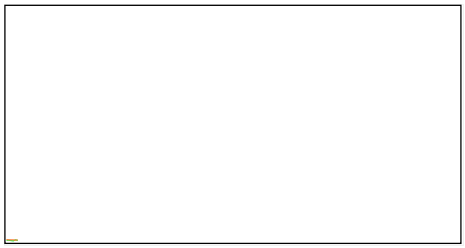
Name	Value	Unit
Analyzer Press	1.16E-4	Pa
Water RF/WC/IF	1.30	L/min
Nebulizer Gas(BP)	2.68E+2	kPa
Reflected Power	4	W
Plasma Freq.	27.29	MHz

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	8/29/2022 9:08:21 AM
Instrument Name	G3281A JP09320047
Batch Folder	D:\Agilent\ICPMH\1\DATA\ALL082922.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	50	21	16	34.689
2	51	10000	67	69	17.367
3	53	10000	92	89	10.397
4	59	500	3753	3700	3.136
5	66	500	850	909	6.532
6	70	50	158	160	11.106
7	78	20	0	1	84.274
8	115	10000	3552	3453	2.473
9	118	200	194	200	5.565
10	137	2000	542	524	3.243
11	140	20000	8444	8583	1.520
12	205	20000	9165	8858	2.794
13	51/59	100	1.785 %	1.871 %	19.125
14	70/140	2	1.871 %	1.869 %	11.710
15	156/140	1	0.178 %	0.274 %	22.168

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.66 L/min	Dilution Gas	0.23 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-62 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	0.8 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	9.2 V	Cell Entrance	-36 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	5.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	0.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-15.0 V
Mass Offset	127	Axis Offset	0.03		

Current Signal

Torch

Torch H	-1.2 mm	Torch V	0.4 mm		

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Meter

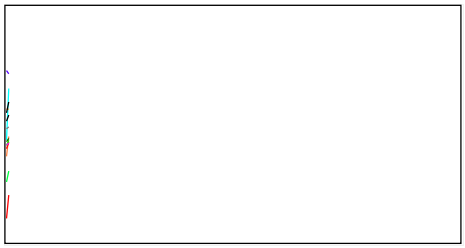
Name	Value	Unit
Analyzer Press	1.54E-4	Pa
Water RF/WC/IF	1.29	L/min
Nebulizer Gas(BP)	2.68E+2	kPa
Reflected Power	3	W
Plasma Freq.	27.29	MHz

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	8/29/2022 9:08:33 AM
Instrument Name	G3281A JP09320047
Batch Folder	D:\Agilent\ICPMH\1\DATA\ALL082922.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	500	326	272	28.391
2	9	5000	1508	1393	11.633
3	59	10000	4483	4064	14.562
4	63	200	338	307	14.282
5	70	1000	539	526	3.496
6	78	20	4	3	47.140
7	89	50000	21211	20524	4.730
8	115	50000	21581	21038	3.653
9	118	500	942	932	1.518
10	137	5000	2828	2824	0.226
11	140	50000	22011	21670	2.226
12	205	20000	14313	14444	1.285
13	238	50000	21054	20822	1.577
14	70/140	5	2.449 %	2.427 %	1.270
15	156/140	2	1.190 %	1.144 %	5.763

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.66 L/min	Dilution Gas	0.23 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-70 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	2.2 V
Omega Bias	-100 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	8.4 V	Cell Entrance	-24 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	4.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-15.0 V
Mass Offset	127	Axis Offset	0.03		

Current Signal

Torch

Torch H	-1.2 mm	Torch V	0.4 mm		

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Meter

Name	Value	Unit
Analyzer Press	2.87E-4	Pa
Water RF/WC/IF	1.30	L/min
Nebulizer Gas(BP)	2.68E+2	kPa
Reflected Power	5	W
Plasma Freq.	27.29	MHz

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq. Date-Time	8/29/2022 9:15:54 AM
Report Comment	---
Instrument Name	G3281A JP09320047

[HMI H2]

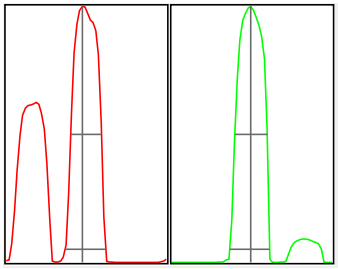
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7		229	2287.64	2.201	5.000	
9		1092	10915.12	0.600	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	224	226	225	233	236
9	1088	1085	1087	1100	1096

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	416.72	6.95	6.90 - 7.10	
9	1915.37	9.00	8.90 - 9.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.57	0.754	0.900	
9	0.60	0.734	0.900	

Integration Time [sec] 0.1
Acquisition Time [sec] 60.9
Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.23 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.4 V	Deflect	2.2 V

US EPA Tune Check Report

Extract 2	-195.0 V	Cell Entrance	-24 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	4.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-15.0 V
Mass Offset	127	Axis Offset	0.03		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Torch

Torch H	-1.2 mm	Torch V	0.4 mm

[HMI He]

Sensitivity

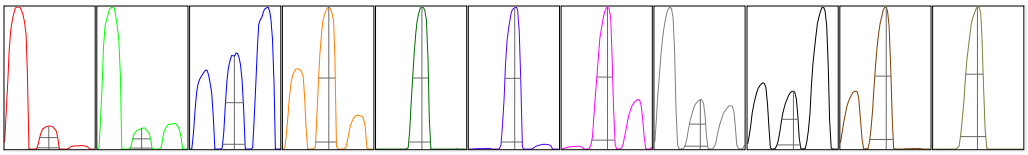
Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
24		539	5392.42	2.050	5.000	
25		77	770.86	3.341	5.000	
26		95	951.58	4.131	5.000	
59		2058	20575.35	1.505	5.000	
103		5122	51220.12	0.967	5.000	
115		1886	18862.09	2.025	5.000	
205		4828	48276.83	0.996	5.000	
206		1694	16944.08	0.751	5.000	
207		1501	15012.10	0.798	5.000	
208		3645	36446.78	1.116	5.000	
238		8538	85379.20	1.446	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	555	536	527	534	545
25	80	76	78	73	78
26	101	98	93	93	91
59	2005	2055	2074	2083	2070
103	5036	5148	5134	5130	5161
115	1825	1882	1908	1890	1926
205	4756	4807	4851	4842	4882
206	1673	1698	1694	1701	1706
207	1482	1502	1503	1504	1515
208	3577	3665	3670	3638	3675
238	8353	8483	8584	8598	8672

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	942.80	24.00	23.90 - 24.10	
25	136.36	25.00	24.90 - 25.10	
26	165.16	26.00	25.90 - 26.10	
59	3862.31	59.05	58.90 - 59.10	
103	10178.07	103.05	102.90 - 103.10	
115	3719.96	115.05	114.90 - 115.10	
205	9380.01	205.05	204.90 - 205.10	
206	3262.49	206.05	205.90 - 206.10	
207	2853.70	207.05	206.90 - 207.10	
208	7000.74	208.05	207.90 - 208.10	
238	15334.76	238.00	237.90 - 238.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
24	0.59	0.736	0.900	
25	0.59	0.728	0.900	
26	0.59	0.733	0.900	
59	0.55	0.687	0.900	
103	0.52	0.722	0.900	
115	0.52	0.688	0.900	
205	0.52	0.763	0.900	
206	0.53	0.759	0.900	
207	0.54	0.768	0.900	
208	0.53	0.776	0.900	
238	0.57	0.831	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 283.400000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode --- Nebulizer Gas Dilution Gas 0.23 L/min

US EPA Tune Check Report

RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.2 V	Deflect	0.8 V
Extract 2	-195.0 V	Cell Entrance	-36 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-62 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	5.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-15.0 V
Mass Offset	127	Axis Offset	0.03		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Torch

Torch H	-1.2 mm	Torch V	0.4 mm		

[No Gas]

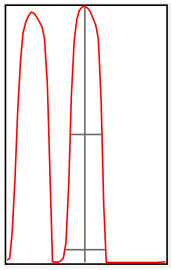
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	10.00	7026	70257.73	0.653	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	7087	7047	7033	6990	6972

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	12234.94	7.00	6.90 - 7.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.59	0.762	0.900	

Integration Time [sec] 0.1

US EPA Tune Check Report

Acquisition Time [sec]	36.9
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.23 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.8 V	Deflect	17.2 V
Extract 2	-195.0 V	Cell Entrance	-20 V	Plate Bias	-50 V
Omega Bias	-85 V	Cell Exit	-52 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0029	QP Bias	-5.0 V
Mass Offset	127	Axis Offset	0.03		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1801 V	Pulse HV	1744 V

Torch

Torch H	-1.2 mm	Torch V	0.4 mm

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	6	Li	0.093093	☑
	9	Be	0.105470	☑
	23	Na	0.115789	☑
	24	Mg	0.119988	☑
	27	Al	0.119855	☑
	39	K	0.124195	☑
	45	Sc	0.124920	☑
	48	Ti	0.124891	☑
	51	V	0.127380	☑
	52	Cr	0.126401	☑
	55	Mn	0.130926	☑
	59	Co	0.134108	☑
	60	Ni	0.131330	☑
	63	Cu	0.132806	☑
	66	Zn	0.132810	☑
	72	Ge	0.131650	☑
	75	As	0.131348	☑
	88	Sr	0.137105	☑
	89		0.131873	☑
	98	Mo	0.132937	☑
	102	Ru	0.138050	☑
	106	Pd	0.136153	☑
	114	Cd	0.141924	☑
	115	In	0.142325	☑
	118	Sn	0.135446	☑

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	121	Sb	0.141588	☑
	138	Ba	0.142312	☑
	175	Lu	0.142979	☑
	193	Ir	0.145611	☑
	205		0.144344	☑
	208	Pb	0.147463	☑
	209	Bi	0.147849	☑
	232	Th	0.143914	☑
	238	U	0.145030	☑

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:35:32-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:39:15-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:43:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:46:47-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:50:33-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:54:18-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	007SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T09:58:03-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	008SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:01:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	009SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:05:33-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name	icis-7343166
Data File Name	010CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:09:18-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	3525099	0.00
Be	9	1	HMI H2	63	62.74
B	11	1	HMI H2	1000	1.15
Na	23	2	HMI He	21991	0.01
Mg	24	2	HMI He	490	2.16
Al	27	2	HMI He	393	6.63
K	39	2	HMI He	43326	0.01
Ti	47	2	HMI He	0	#VALUE!
V	51	2	HMI He	913	0.37
Cr	52	2	HMI He	843	1.26
Mn	55	2	HMI He	97	12.36
(Fe)	57	2	HMI He	383	1.57
Co	59	2	HMI He	17	415.69
Ni	60	2	HMI He	390	6.86
Cu	63	2	HMI He	773	1.19
Zn	66	2	HMI He	553	3.27
As	75	2	HMI He	59	46.15
Se	78	1	HMI H2	19	463.94
Sr	88	2	HMI He	70	88.95
Zr	90	2	HMI He	720	1.39
Nb	93	2	HMI He	3	5196.15
Mo	95	2	HMI He	37	113.62
Pd	105	2	HMI He	93	40.32
Ag	107	2	HMI He	63	71.97
Cd	111	2	HMI He	10	1732.05
Sn	120	2	HMI He	523	4.39
Sb	121	2	HMI He	33	207.85
Ba	137	2	HMI He	63	100.76
W	182	2	HMI He	3240	0.17
Pt	195	2	HMI He	43	81.35
Tl	205	2	HMI He	1590	0.14
Pb	208	2	HMI He	1900	0.63
Th	232	2	HMI He	8079	0.04
U	238	2	HMI He	407	1.85

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal standard	6	1	HMI H2	832675	0.15
Sc (IS)	45	1	HMI H2	22691138	0.49
Sc (IS)	45	2	HMI He	1329086	0.85
Sc (IS)	45	3	No Gas	40115962	0.61
Ge Internal standard	72	1	HMI H2	11471213	0.18
Ge Internal standard	72	2	HMI He	1582627	1.71
In Internal standard	115	2	HMI He	4772525	0.78
Ho-165	165	2	HMI He	18341213	0.56
Ir (IS)	193	2	HMI He	14005392	0.81

Calibration Standard Report

Sample Table

Sample Name	ic-7343172
Data File Name	011CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:13:03-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	cal 4
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	3362759	0.00
Be	9	1	HMI H2	57	17.98
B	11	1	HMI H2	1157	1.08
Na	23	2	HMI He	24724347	0.00
Mg	24	2	HMI He	2387499	0.00
Al	27	2	HMI He	783	1.80
K	39	2	HMI He	1833767	0.00
Ti	47	2	HMI He	3	5196.15
V	51	2	HMI He	1270	1.06
Cr	52	2	HMI He	1010	0.61
Mn	55	2	HMI He	233	7.42
(Fe)	57	2	HMI He	587	1.31
Co	59	2	HMI He	97	44.55
Ni	60	2	HMI He	463	3.88
Cu	63	2	HMI He	1067	1.26
Zn	66	2	HMI He	1227	0.19
As	75	2	HMI He	63	57.43
Se	78	1	HMI H2	15	387.09
Sr	88	2	HMI He	777	2.19
Zr	90	2	HMI He	867	0.20
Nb	93	2	HMI He	33	187.35
Mo	95	2	HMI He	73	21.47
Pd	105	2	HMI He	103	23.57
Ag	107	2	HMI He	67	56.62
Cd	111	2	HMI He	10	1000.00
Sn	120	2	HMI He	573	3.65
Sb	121	2	HMI He	73	91.73
Ba	137	2	HMI He	217	10.72
Nd	146	2	HMI He	10	0.00
Sm	147	2	HMI He	7	1299.04
Sm	147	1	HMI H2	47	70.14
Gd	156	1	HMI H2	297	3.47
Gd	157	1	HMI H2	160	20.67
W	182	2	HMI He	4404	0.22
Pt	195	2	HMI He	77	64.41
Tl	205	2	HMI He	1343	0.66
Pb	208	2	HMI He	2740	0.06
Th	232	2	HMI He	8529	0.07
U	238	2	HMI He	370	4.56

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	774921	0.51	832675	93.06	60	120	
Sc (IS)	45	1	HMI H2	22344179	0.33	22691138	98.47	60	120	
Sc (IS)	45	2	HMI He	1387273	0.50	1329086	104.38	60	120	
Sc (IS)	45	3	No Gas	40872514	1.01	40115962	101.89	60	120	
Ge Internal standard	72	1	HMI H2	11324142	0.80	11471213	98.72	60	120	
Ge Internal standard	72	2	HMI He	1617144	0.14	1582627	102.18	60	120	
In Internal standard	115	2	HMI He	4756623	0.47	4772525	99.67	60	120	
Ho-165	165	2	HMI He	18351939	0.24	18341213	100.06	60	120	
Ir (IS)	193	2	HMI He	13587251	0.77	14005392	97.01	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7343170
Data File Name	012CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:16:48-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	cal1
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	5435628	0.00
Be	9	1	HMI H2	36403	0.00
B	11	1	HMI H2	283851	0.00
Na	23	2	HMI He	512146	0.00
Mg	24	2	HMI He	223291	0.00
Al	27	2	HMI He	66031	0.00
K	39	2	HMI He	206834	0.00
Ti	47	2	HMI He	3564	0.05
V	51	2	HMI He	145711	0.00
Cr	52	2	HMI He	190299	0.00
Mn	55	2	HMI He	80390	0.00
(Fe)	57	2	HMI He	74875	0.00
Co	59	2	HMI He	314870	0.00
Ni	60	2	HMI He	91313	0.00
Cu	63	2	HMI He	241557	0.00
Zn	66	2	HMI He	43668	0.00
As	75	2	HMI He	35062	0.00
Se	78	1	HMI H2	31855	0.00
Sr	88	2	HMI He	186588	0.00
Zr	90	2	HMI He	23007	0.05
Nb	93	2	HMI He	17	749.40
Mo	95	2	HMI He	116461	0.00
Pd	105	2	HMI He	143	24.01
Ag	107	2	HMI He	385986	0.00
Cd	111	2	HMI He	55687	0.00
Sn	120	2	HMI He	140645	0.00
Sb	121	2	HMI He	155737	0.00
Ba	137	2	HMI He	45336	0.00
Nd	146	2	HMI He	17	549.91
Sm	147	2	HMI He	3	5196.15
Sm	147	1	HMI H2	70	88.96
Gd	156	1	HMI H2	350	0.82
Gd	157	1	HMI H2	243	7.62
W	182	2	HMI He	429708	0.00
Pt	195	2	HMI He	90	56.57
Tl	205	2	HMI He	810646	0.00
Pb	208	2	HMI He	1111081	0.00
Th	232	2	HMI He	1103190	0.00
U	238	2	HMI He	1480101	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	827764	0.44	832675	99.41	60	120	
Sc (IS)	45	1	HMI H2	23269341	0.92	22691138	102.55	60	120	
Sc (IS)	45	2	HMI He	1391163	1.51	1329086	104.67	60	120	
Sc (IS)	45	3	No Gas	41085854	0.69	40115962	102.42	60	120	
Ge Internal standard	72	1	HMI H2	11894736	0.24	11471213	103.69	60	120	
Ge Internal standard	72	2	HMI He	1639409	0.42	1582627	103.59	60	120	
In Internal standard	115	2	HMI He	4953808	0.97	4772525	103.80	60	120	
Ho-165	165	2	HMI He	18664672	0.54	18341213	101.76	60	120	
Ir (IS)	193	2	HMI He	14033026	0.55	14005392	100.20	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7343176
Data File Name	013_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:20:32-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	113.718	ppb	12.313	4703151	80	142.1	90	110	>+\-10%
Be	9	1	6	41.563	ppb	6.841	14924	40	103.9	90	110	
B	11	1	6	818.072	ppb	1.165	228652	400	204.5	90	110	>+\-10%
Na	23	2	45	12877.842	ppb	0.748	3179423	12800	100.6	90	110	
Mg	24	2	45	4398.374	ppb	1.246	521390	4800	91.6	90	110	
Al	27	2	45	800.925	ppb	2.969	26415	800	100.1	90	110	
Si	28	2	45	40.252	ppb	7.418	17900	40	100.6	90	110	
P	31	2	45	1214.915	ppb	1.601	4577	2400	50.6	90	110	>+\-10%
K	39	2	45	4253.083	ppb	0.969	422272	4800	88.6	90	110	>+\-10%
Ca	40	1	45	4517.054	ppb	0.728	18603299	4800	94.1	90	110	
(Ca)	44	1	45	4602.594	ppb	0.671	566754	4800	95.9	10	110	
Ti	47	2	45	39.225	ppb	5.300	1383	40	98.1	90	110	
V	51	2	72	40.692	ppb	1.878	59847	40	101.7	90	110	
Cr	52	2	72	39.871	ppb	1.221	76394	40	99.7	90	110	
Mn	55	2	72	40.262	ppb	0.927	32425	40	100.7	90	110	
Fe	56	1	72	797.168	ppb	0.180	6286581	800	99.6	90	110	
(Fe)	56	2	72	753.106	ppb	0.129	1198706	800	94.1	90	110	
(Fe)	57	2	72	792.345	ppb	2.590	29901	800	99.0	90	110	
Co	59	2	72	39.795	ppb	0.402	125301	40	99.5	90	110	
Ni	60	2	72	40.671	ppb	1.217	37376	40	101.7	90	110	
Cu	63	2	72	40.484	ppb	0.282	98259	40	101.2	90	110	
Zn	66	2	72	78.199	ppb	1.735	34273	80	97.7	90	110	
As	75	2	72	39.770	ppb	1.062	13980	40	99.4	90	110	
Se	78	1	72	40.888	ppb	2.421	12940	40	102.2	90	110	
Sr	88	2	72	118.683	ppb	0.503	110743	80	148.4	90	110	>+\-10%
Zr	90	2	72	19.686	ppb	15.276	5128	40	49.2	90	110	>+\-10%
Nb	93	2	72	65.878	ppb	104.400	23	80	82.3	90	110	>+\-10%
Mo	95	2	115	42.302	ppb	2.470	49232	40	105.8	90	110	
Pd	105	2	115	408.009	ppb	103.613	140	40	1020.0	90	110	>+\-10%
Ag	107	2	115	79.706	ppb	2.388	307294	80	99.6	90	110	
Cd	111	2	115	38.918	ppb	2.229	21655	40	97.3	90	110	
Sn	120	2	115	41.496	ppb	0.778	58619	40	103.7	90	110	
Sb	121	2	115	40.933	ppb	1.572	63701	40	102.3	90	110	
Ba	137	2	115	40.863	ppb	1.131	18548	40	102.2	90	110	
W	182	2	165	41.117	ppb	0.492	180425	40	102.8	90	110	
Pt	195	2	165	161.883	ppb	0.823	100	40	404.7	90	110	>+\-10%
Tl	205	2	165	39.808	ppb	0.566	326955	40	99.5	90	110	
Pb	208	2	165	39.979	ppb	0.898	449850	40	99.9	90	110	
Th	232	2	193	78.783	ppb	2.466	873621	80	98.5	90	110	
U	238	2	193	37.444	ppb	0.422	556199	40	93.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	814456	0.26	832675	97.81	60	120	
Sc (IS)	45	1	HMI H2	23007760	0.12	22691138	101.40	60	120	
Sc (IS)	45	2	HMI He	1376638	0.90	1329086	103.58	60	120	
Sc (IS)	45	3	No Gas	41575374	0.84	40115962	103.64	60	120	
Ge Internal standard	72	1	HMI H2	11807290	0.35	11471213	102.93	60	120	
Ge Internal standard	72	2	HMI He	1639274	0.61	1582627	103.58	60	120	
In Internal standard	115	2	HMI He	4948393	1.08	4772525	103.69	60	120	
Ho-165	165	2	HMI He	18853383	0.45	18341213	102.79	60	120	
Ir (IS)	193	2	HMI He	14076816	0.76	14005392	100.51	60	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	icb-7343166
Data File Name	014_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:24:16-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	-3.970	ppb	-138.2	3536569	10	
Be	9	1	-0.026	ppb	-227.1	53	0.5	
B	11	1	17.709	ppb	11.6	5975	0.5	>RL
Na	23	2	13.153	ppb	32.9	25911	25	
Mg	24	2	-0.648	ppb	-134.1	430	25	
Al	27	2	1.025	ppb	74.7	440	15	
K	39	2	18.111	ppb	35.0	46318	50	
Ti	47	2	0.191	ppb	86.6	7	0.5	
V	51	2	0.101	ppb	45.5	1087	1	
Cr	52	2	-0.003	ppb	-1329.5	863	1	
Mn	55	2	0.113	ppb	58.0	190	0.5	
(Fe)	57	2	1.229	ppb	268.2	440	25	
Co	59	2	0.012	ppb	69.0	53	0.5	
Ni	60	2	-0.070	ppb	-235.6	340	1	
Cu	63	2	0.037	ppb	138.2	887	1	
Zn	66	2	0.122	ppb	75.8	623	5	
As	75	2	-0.024	ppb	-89.2	53	1	
Se	78	1	0.012	ppb	249.5	23	1	
Sr	88	2	0.023	ppb	227.7	93	0.5	
Zr	90	2	-0.564	ppb	-109.8	617	1	
Nb	93	2	43.883	ppb	43.0	17	2	>RL
Mo	95	2	0.663	ppb	22.4	810	0.5	>RL
Pd	105	2	-160.402	ppb	-212.9	80	1	
Ag	107	2	0.035	ppb	41.1	200	1	
Cd	111	2	-0.019	ppb	0.0	0	0.5	
Sn	120	2	0.704	ppb	21.7	1530	1	
Sb	121	2	0.104	ppb	19.6	197	0.6	
Ba	137	2	0.053	ppb	178.2	90	0.5	
W	182	2	0.561	ppb	9.7	5648	1	
Pt	195	2	49.060	ppb	282.0	60	1	>RL
Tl	205	2	-0.021	ppb	-22.8	1440	0.1	
Pb	208	2	0.037	ppb	74.5	2323	0.5	
Th	232	2	4.821	ppb	7.4	61346	1	>RL
U	238	2	0.069	ppb	31.5	1440	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	824187	0.68	832675	98.98	60	120	
Sc (IS)	45	1	HMI H2	22927649	0.45	22691138	101.04	60	120	
Sc (IS)	45	2	HMI He	1371930	1.28	1329086	103.22	60	120	
Sc (IS)	45	3	No Gas	40660873	1.79	40115962	101.36	60	120	
Ge Internal standard	72	1	HMI H2	11666784	0.25	11471213	101.70	60	120	
Ge Internal standard	72	2	HMI He	1630555	0.55	1582627	103.03	60	120	
In Internal standard	115	2	HMI He	4956373	0.63	4772525	103.85	60	120	
Ho-165	165	2	HMI He	18527044	1.04	18341213	101.01	60	120	
Ir (IS)	193	2	HMI He	14134963	0.61	14005392	100.93	60	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	cri-7343178
Data File Name	015LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:34:48-06:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	8.245	ppb	58.373	3620381	50	16.5	80	120	>+/-30%
Be	9	1	6	0.844	ppb	5.078	370	1	84.4	80	120	
Na	23	2	45	53.584	ppb	9.079	35771	50	107.2	80	120	>+/-30%
Mg	24	2	45	46.050	ppb	3.073	5938	50	92.1	80	120	
Al	27	2	45	50.749	ppb	12.006	2047	30	169.2	80	120	>+/-30%
K	39	2	45	118.532	ppb	11.788	55170	100	118.5	80	120	
Ca	40	1	45	52.169	ppb	1.169	272502	50	104.3	80	120	
V	51	2	72	4.939	ppb	3.134	7949	5	98.8	80	120	
Cr	52	2	72	2.092	ppb	9.373	4748	2	104.6	80	120	
Mn	55	2	72	1.120	ppb	15.016	980	1	112.0	80	120	
(Fe)	57	2	72	53.060	ppb	9.505	2330	50	106.1	80	120	
Co	59	2	72	1.102	ppb	6.162	3420	1	110.2	80	120	
Ni	60	2	72	2.122	ppb	5.868	2290	2	106.1	80	120	
Cu	63	2	72	2.202	ppb	4.683	5988	2	110.1	80	120	
Zn	66	2	72	11.006	ppb	8.394	5218	10	110.1	80	120	
As	75	2	72	5.229	ppb	1.830	1857	5	104.6	80	120	
Se	78	1	72	5.417	ppb	1.064	1699	5	108.3	80	120	
Sr	88	2	72	0.963	ppb	22.519	953	1	96.3	80	120	
Zr	90	2	72	12.210	ppb	20.943	3401	0.5	2441.9	80	120	>+/-30%
Nb	93	2	72	22.266	ppb	151.107	10	2	1113.3	80	120	>+/-30%
Mo	95	2	115	2.305	ppb	6.381	2690	2	115.3	80	120	
Pd	105	2	115	-88.512	ppb	-376.243	87	1	-8851.2	80	120	>+/-30%
Ag	107	2	115	1.038	ppb	5.190	4024	1	103.8	80	120	
Cd	111	2	115	1.115	ppb	10.863	623	1	111.5	80	120	
Sn	120	2	115	10.587	ppb	2.067	15194	10	105.9	80	120	
Sb	121	2	115	2.073	ppb	4.889	3224	2	103.7	80	120	
Ba	137	2	115	1.151	ppb	3.466	580	1	115.1	80	120	
W	182	2	165	5.235	ppb	1.794	25218	1	523.5	80	120	>+/-30%
Pt	195	2	165	29.429	ppb	326.380	53	1	2942.9	80	120	>+/-30%
Tl	205	2	165	0.933	ppb	0.725	9023	1	93.3	80	120	
Pb	208	2	165	1.087	ppb	4.587	13773	1	108.7	80	120	
Th	232	2	193	11.556	ppb	8.590	134344	2	577.8	80	120	>+/-30%
U	238	2	193	0.964	ppb	0.671	14628	1	96.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	828081	1.21	832675	99.45	60	120	
Sc (IS)	45	1	HMI H2	22691855	0.69	22691138	100.00	60	120	
Sc (IS)	45	2	HMI He	1371061	0.70	1329086	103.16	60	120	
Sc (IS)	45	3	No Gas	40360180	0.79	40115962	100.61	60	120	
Ge Internal standard	72	1	HMI H2	11587776	0.37	11471213	101.02	60	120	
Ge Internal standard	72	2	HMI He	1609186	1.15	1582627	101.68	60	120	
In Internal standard	115	2	HMI He	4894712	0.44	4772525	102.56	60	120	
Ho-165	165	2	HMI He	18374483	1.41	18341213	100.18	60	120	
Ir (IS)	193	2	HMI He	13998141	0.89	14005392	99.95	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7335817
Data File Name	016ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:38:34-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-14.455	ppb	-45.1	3290003	1	
Be	9	1	6	0.016	ppb	761.4	63	1	
B	11	1	6	5.205	ppb	11.6	2264	1	>RL or LOD
Ti	47	2	45	2051.219	ppb	1.9	67824	1	>RL or LOD
V	51	2	72	-0.051	ppb	-28.5	827	1	
Cr	52	2	72	1.291	ppb	0.7	3144	1	>RL or LOD
Mn	55	2	72	0.566	ppb	32.5	527	0.95	
Co	59	2	72	0.213	ppb	25.7	650	0.2	>RL or LOD
Ni	60	2	72	0.263	ppb	21.1	610	1	
Cu	63	2	72	0.133	ppb	53.8	1060	1	
Zn	66	2	72	1.627	ppb	16.7	1207	1	>RL or LOD
As	75	2	72	0.036	ppb	48.5	71	1	
Se	78	1	72	0.020	ppb	177.1	24	1	
Sr	88	2	72	1.581	ppb	17.7	1463	1	>RL or LOD
Zr	90	2	72	7.105	ppb	16.8	2204	1	>RL or LOD
Nb	93	2	72	92.948	ppb	64.3	30	1	>RL or LOD
Mo	95	2	115	2184.564	ppb	1.1	2303077	2000	>RL or LOD
Pd	105	2	115	-152.346	ppb	-236.3	73	1	
Ag	107	2	115	0.059	ppb	20.5	267	1	
Cd	111	2	115	0.259	ppb	33.0	140	1	
Sn	120	2	115	0.188	ppb	25.2	730	1	
Sb	121	2	115	0.089	ppb	52.2	157	1	
Ba	137	2	115	1.732	ppb	19.2	770	0.95	>RL or LOD
W	182	2	165	0.143	ppb	25.9	3717	1	
Pt	195	2	165	242.182	ppb	34.2	120	1	>RL or LOD
Tl	205	2	165	-0.065	ppb	-20.0	1037	1	
Pb	208	2	165	0.124	ppb	24.9	3147	1	
Th	232	2	193	8.956	ppb	14.3	100140	1	>RL or LOD
U	238	2	193	0.015	ppb	52.9	597	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	759641	0.71	832675	91.23	60	120	
Sc (IS)	45	1	HMI H2	21658236	0.58	22691138	95.45	60	120	
Sc (IS)	45	2	HMI He	1290556	0.14	1329086	97.10	60	120	
Sc (IS)	45	3	No Gas	38864773	1.04	40115962	96.88	60	120	
Ge Internal standard	72	1	HMI H2	11096682	0.47	11471213	96.74	60	120	
Ge Internal standard	72	2	HMI He	1552688	1.73	1582627	98.11	60	120	
In Internal standard	115	2	HMI He	4485380	0.79	4772525	93.98	60	120	
Ho-165	165	2	HMI He	17753626	0.70	18341213	96.80	60	120	
Ir (IS)	193	2	HMI He	13237134	0.88	14005392	94.51	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7335818
Data File Name	017ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:42:18-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	176.801	ppb	1.722	4944935	100	176.8	80	120	>+\-20%
Be	9	1	6	99.733	ppb	0.774	33042	100	99.7	80	120	
B	11	1	6	1046.050	ppb	1.576	270188	100	1046.0	80	120	>+\-20%
V	51	2	72	99.755	ppb	1.959	137746	100	99.8	80	120	
Cr	52	2	72	98.855	ppb	0.282	178288	100	98.9	80	120	
Mn	55	2	72	97.821	ppb	1.867	74526	100	97.8	80	120	
Co	59	2	72	94.642	ppb	0.724	282408	100	94.6	80	120	
Ni	60	2	72	93.699	ppb	1.419	81107	100	93.7	80	120	
Cu	63	2	72	96.650	ppb	0.500	221262	100	96.6	80	120	
Zn	66	2	72	95.663	ppb	1.761	39611	100	95.7	80	120	
As	75	2	72	98.285	ppb	0.345	32660	100	98.3	80	120	
Se	78	1	72	102.274	ppb	0.969	30514	100	102.3	80	120	
Sr	88	2	72	197.842	ppb	0.632	174916	100	197.8	80	120	>+\-20%
Zr	90	2	72	14.031	ppb	15.991	3667	100	14.0	80	120	>+\-20%
Nb	93	2	72	4137.424	ppb	33.992	1194	100	4137.4	80	120	>+\-20%
Mo	95	2	115	2337.521	ppb	1.830	2474796	100	2337.5	80	120	>+\-20%
Pd	105	2	115	-86.076	ppb	-429.341	80	100	-86.1	80	120	>+\-20%
Ag	107	2	115	100.573	ppb	0.665	352996	100	100.6	80	120	
Cd	111	2	115	102.603	ppb	1.142	51962	100	102.6	80	120	
Sn	120	2	115	102.894	ppb	1.040	131578	100	102.9	80	120	
Sb	121	2	115	103.409	ppb	0.701	146452	100	103.4	80	120	
Ba	137	2	115	110.711	ppb	1.061	45640	100	110.7	80	120	
W	182	2	165	98.352	ppb	0.595	408028	100	98.4	80	120	
Pt	195	2	165	491.127	ppb	46.598	203	100	491.1	80	120	>+\-20%
Tl	205	2	165	97.633	ppb	0.362	764093	100	97.6	80	120	
Pb	208	2	165	97.958	ppb	0.177	1050742	100	98.0	80	120	
Th	232	2	193	117.033	ppb	0.866	1209226	100	117.0	80	120	
U	238	2	193	98.808	ppb	4.003	1371085	100	98.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	753322	0.42	832675	90.47	60	120	
Sc (IS)	45	1	HMI H2	21850812	0.81	22691138	96.30	60	120	
Sc (IS)	45	2	HMI He	1309849	1.40	1329086	98.55	60	120	
Sc (IS)	45	3	No Gas	38891673	0.38	40115962	96.95	60	120	
Ge Internal standard	72	1	HMI H2	11140604	0.17	11471213	97.12	60	120	
Ge Internal standard	72	2	HMI He	1553600	0.39	1582627	98.17	60	120	
In Internal standard	115	2	HMI He	4504478	0.69	4772525	94.38	60	120	
Ho-165	165	2	HMI He	18018208	0.10	18341213	98.24	60	120	
Ir (IS)	193	2	HMI He	13156451	0.47	14005392	93.94	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	018SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:46:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-11.163	ppb	-11.163	-15.47	3506236	50000	
Be	9	1	6	0.013	ppb	0.013	544.10	67	2000	
B	11	1	6	16.486	ppb	16.486	11.31	5588	2000	
Na	23	2	45	73.854	ppb	73.854	12.57	41381	400000	
Mg	24	2	45	20.781	ppb	20.781	12.98	3004	400000	
Al	27	2	45	17.247	ppb	17.247	15.43	980	400000	
Si	28	2	45	-0.277	ppb	-0.277	-1115.12	9510	10000	
P	31	2	45	26.909	ppb	26.909	21.98	169	10000	
K	39	2	45	87.011	ppb	87.011	22.03	53235	400000	
Ca	40	1	45	36.934	ppb	36.934	5.49	213939	400000	
Ti	47	2	45	3.923	ppb	3.923	8.45	140	4000	
V	51	2	72	0.134	ppb	0.134	4.41	1143	2000	
Cr	52	2	72	0.033	ppb	0.033	113.55	940	5000	
Mn	55	2	72	0.133	ppb	0.133	71.93	207	10000	
Fe	56	1	72	63.387	ppb	63.387	6.08	562359	10000	
(Fe)	57	2	72	90.201	ppb	90.201	11.85	3764	400000	
Co	59	2	72	0.021	ppb	0.021	90.66	83	2000	
Ni	60	2	72	0.117	ppb	0.117	78.15	513	5000	
Cu	63	2	72	0.074	ppb	0.074	5.07	983	5000	
Zn	66	2	72	0.504	ppb	0.504	17.39	793	5000	
As	75	2	72	-0.027	ppb	-0.027	-72.97	52	2000	
Se	78	1	72	0.028	ppb	0.028	77.89	28	2000	
Sr	88	2	72	0.065	ppb	0.065	102.54	133	4000	
Zr	90	2	72	-0.391	ppb	-0.391	-42.97	660	1000	
Nb	93	2	72	195.411	ppb	195.411	101.90	63	200	
Mo	95	2	115	29.323	ppb	29.323	7.99	34347	2000	
Pd	105	2	115	-259.066	ppb	-259.066	-189.72	70	100	
Ag	107	2	115	0.029	ppb	0.029	15.85	180	100	
Cd	111	2	115	0.041	ppb	0.041	50.37	33	2000	
Sn	120	2	115	0.122	ppb	0.122	62.99	717	2000	
Sb	121	2	115	0.910	ppb	0.910	16.93	1460	1000	
Ba	137	2	115	0.082	ppb	0.082	62.44	103	5000	
W	182	2	165	1.820	ppb	1.820	10.91	11024	100	
Pt	195	2	165	57.158	ppb	57.158	164.79	63	100	
Tl	205	2	165	0.003	ppb	0.003	889.23	1637	2000	
Pb	208	2	165	0.061	ppb	0.061	22.41	2600	5000	
Th	232	2	193	1.599	ppb	1.599	3.78	25994	2000	
U	238	2	193	0.113	ppb	0.113	14.34	2107	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	816939	1.32	832675	98.11	60	120	
Sc (IS)	45	1	HMI H2	23025149	0.11	22691138	101.47	60	120	
Sc (IS)	45	2	HMI He	1393816	1.31	1329086	104.87	60	120	
Sc (IS)	45	3	No Gas	41061557	1.23	40115962	102.36	60	120	
Ge Internal standard	72	1	HMI H2	11797688	0.51	11471213	102.85	60	120	
Ge Internal standard	72	2	HMI He	1643385	1.63	1582627	103.84	60	120	
In Internal standard	115	2	HMI He	4973409	1.87	4772525	104.21	60	120	
Ho-165	165	2	HMI He	18597953	1.58	18341213	101.40	60	120	
Ir (IS)	193	2	HMI He	14240972	0.43	14005392	101.68	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7316798
Data File Name	019_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:49:46-06:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	2024.767	ppb	0.771	704729	2000	101.2	90	110	
V	51	2	72	2188.288	ppb	1.350	2870402	2000	109.4	90	110	
Cr	52	2	72	5211.906	ppb	2.031	8943244	5000	104.2	90	110	
(Cr)	53	2	72	5174.462	ppb	1.854	1083020	5000	103.5	90	110	
Mn	55	2	72	10606.744	ppb	2.830	7713343	10000	106.1	90	110	
Co	59	2	72	2180.315	ppb	1.961	6217877	2000	109.0	90	110	
Ni	60	2	72	5237.463	ppb	1.879	4313063	5000	104.7	90	110	
Cu	63	2	72	5564.077	ppb	1.676	12133953	5000	111.3	90	110	LRS Main CR1 Failed
Zn	66	2	72	5441.787	ppb	1.269	2124704	5000	108.8	90	110	
As	75	2	72	2107.261	ppb	1.817	668129	2000	105.4	90	110	
Se	78	1	72	2086.970	ppb	0.773	619079	2000	104.3	90	110	
(Se)	82	1	72	2664.246	ppb	0.800	272990	2000	133.2	90	110	LRS Main CR1 Failed
Mo	95	2	115	2262.413	ppb	1.226	2376704	2000	113.1	90	110	LRS Main CR1 Failed
Cd	111	2	115	2146.912	ppb	1.051	1078559	2000	107.3	90	110	
(Cd)	114	2	115	2313.261	ppb	0.502	2939538	2000	115.7	90	110	LRS Main CR1 Failed
Sn	120	2	115	2304.392	ppb	1.556	2913339	2000	115.2	90	110	LRS Main CR1 Failed
Sb	121	2	115	1160.096	ppb	1.033	1629890	1000	116.0	90	110	LRS Main CR1 Failed
Ba	137	2	115	5683.508	ppb	0.489	2321732	5000	113.7	90	110	LRS Main CR1 Failed
Tl	205	2	165	1102.032	ppb	2.365	8429926	1000	110.2	90	110	LRS Main CR1 Failed
(Pb)	206	2	165	5551.405	ppb	2.625	14401647	5000	111.0	90	110	LRS Main CR1 Failed
(Pb)	207	2	165	5590.537	ppb	2.739	12609230	5000	111.8	90	110	LRS Main CR1 Failed
Pb	208	2	165	5606.807	ppb	2.770	58786971	5000	112.1	90	110	LRS Main CR1 Failed
Th	232	2	193	1235.000	ppb	1.489	13324233	1000	123.5	90	110	LRS Main CR1 Failed
U	238	2	193	1951.286	ppb	1.710	28426317	2000	97.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	792750	0.73	832675	95.21	60	120	
Sc (IS)	45	1	HMI H2	21816921	0.41	22691138	96.15	60	120	
Sc (IS)	45	2	HMI He	1161393	3.67	1329086	87.38	60	120	
Sc (IS)	45	3	No Gas	36392039	2.38	40115962	90.72	60	120	
Ge Internal standard	72	1	HMI H2	11083327	0.68	11471213	96.62	60	120	
Ge Internal standard	72	2	HMI He	1485122	1.11	1582627	93.84	60	120	
In Internal standard	115	2	HMI He	4469521	0.80	4772525	93.65	60	120	
Ho-165	165	2	HMI He	17648076	1.45	18341213	96.22	60	120	
Ir (IS)	193	2	HMI He	13816569	0.52	14005392	98.65	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	020SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:53:27-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	5.741	ppb	5.741	60.50	3420879	50000	
Be	9	1	6	1.169	ppb	1.169	20.99	463	2000	
B	11	1	6	38.881	ppb	38.881	0.62	11391	2000	
Na	23	2	45	15.169	ppb	15.169	52.04	23614	400000	
Mg	24	2	45	4.876	ppb	4.876	35.23	963	400000	
Al	27	2	45	6.703	ppb	6.703	38.93	557	400000	
Si	28	2	45	1.330	ppb	1.330	207.97	8683	10000	
P	31	2	45	2.653	ppb	2.653	43.96	69	10000	
K	39	2	45	68.910	ppb	68.910	50.46	45452	400000	
Ca	40	1	45	4.503	ppb	4.503	8.73	74420	400000	
Ti	47	2	45	0.305	ppb	0.305	173.21	10	4000	
V	51	2	72	0.283	ppb	0.283	12.17	1250	2000	
Cr	52	2	72	1.506	ppb	1.506	6.52	3434	5000	
Mn	55	2	72	2.078	ppb	2.078	0.93	1630	10000	
Fe	56	1	72	9.970	ppb	9.970	5.07	134164	10000	
(Fe)	57	2	72	15.399	ppb	15.399	32.05	897	400000	
Co	59	2	72	0.337	ppb	0.337	14.95	993	2000	
Ni	60	2	72	0.914	ppb	0.914	23.73	1137	5000	
Cu	63	2	72	1.318	ppb	1.318	8.42	3661	5000	
Zn	66	2	72	1.350	ppb	1.350	30.09	1063	5000	
As	75	2	72	0.413	ppb	0.413	7.79	190	2000	
Se	78	1	72	0.803	ppb	0.803	5.52	251	2000	
Sr	88	2	72	0.330	ppb	0.330	14.48	350	4000	
Zr	90	2	72	0.221	ppb	0.221	79.32	733	1000	
Nb	93	2	72	24.519	ppb	24.519	3.01	10	200	
Mo	95	2	115	33.604	ppb	33.604	6.80	36472	2000	
Pd	105	2	115	-482.669	ppb	-482.669	-80.99	43	100	
Ag	107	2	115	0.011	ppb	0.011	81.41	100	100	
Cd	111	2	115	0.473	ppb	0.473	35.43	253	2000	
Sn	120	2	115	15.960	ppb	15.960	7.25	21345	2000	
Sb	121	2	115	2.446	ppb	2.446	6.44	3584	1000	
Ba	137	2	115	0.631	ppb	0.631	21.95	327	5000	
W	182	2	165	-0.120	ppb	-0.120	-93.40	2677	100	
Pt	195	2	165	-8.306	ppb	-8.306	-605.33	40	100	
Tl	205	2	165	0.544	ppb	0.544	14.17	5788	2000	
Pb	208	2	165	1.209	ppb	1.209	14.89	14747	5000	
Th	232	2	193	7.527	ppb	7.527	6.84	90579	2000	
U	238	2	193	1.777	ppb	1.777	4.84	26702	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	786278	0.44	832675	94.43	60	120	
Sc (IS)	45	1	HMI H2	21230400	0.16	22691138	93.56	60	120	
Sc (IS)	45	2	HMI He	1229917	5.46	1329086	92.54	60	120	
Sc (IS)	45	3	No Gas	38373377	0.42	40115962	95.66	60	120	
Ge Internal standard	72	1	HMI H2	10838555	0.57	11471213	94.48	60	120	
Ge Internal standard	72	2	HMI He	1511065	2.08	1582627	95.48	60	120	
In Internal standard	115	2	HMI He	4613197	2.73	4772525	96.66	60	120	
Ho-165	165	2	HMI He	17975991	2.02	18341213	98.01	60	120	
Ir (IS)	193	2	HMI He	14038563	1.82	14005392	100.24	60	120	

Sample Table

Sample Name	rinse
Data File Name	021SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T10:57:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1.045	ppb	1.045	388.64	3391484	50000	
Be	9	1	6	0.299	ppb	0.299	33.13	167	2000	
B	11	1	6	16.078	ppb	16.078	3.32	5384	2000	
Na	23	2	45	7.852	ppb	7.852	32.79	23150	400000	
Mg	24	2	45	2.975	ppb	2.975	36.57	807	400000	
Al	27	2	45	6.515	ppb	6.515	36.74	580	400000	
Si	28	2	45	-2.102	ppb	-2.102	-85.35	8449	10000	
P	31	2	45	-0.396	ppb	-0.396	-268.27	61	10000	
K	39	2	45	29.246	ppb	29.246	57.30	44469	400000	
Ca	40	1	45	3.928	ppb	3.928	6.86	74033	400000	
Ti	47	2	45	0.101	ppb	0.101	173.21	3	4000	
V	51	2	72	-0.076	ppb	-0.076	-93.77	793	2000	
Cr	52	2	72	0.647	ppb	0.647	20.54	1990	5000	
Mn	55	2	72	1.118	ppb	1.118	11.92	947	10000	
Fe	56	1	72	3.478	ppb	3.478	1.96	90156	10000	
(Fe)	57	2	72	5.199	ppb	5.199	60.86	560	400000	
Co	59	2	72	0.150	ppb	0.150	18.42	463	2000	
Ni	60	2	72	0.370	ppb	0.370	38.46	703	5000	
Cu	63	2	72	0.707	ppb	0.707	10.48	2374	5000	
Zn	66	2	72	0.519	ppb	0.519	30.52	757	5000	
As	75	2	72	0.058	ppb	0.058	41.26	78	2000	
Se	78	1	72	0.261	ppb	0.261	22.98	96	2000	
Sr	88	2	72	0.091	ppb	0.091	86.12	150	4000	
Zr	90	2	72	-0.588	ppb	-0.588	-104.69	583	1000	
Nb	93	2	72	46.436	ppb	46.436	155.05	17	200	
Mo	95	2	115	3.988	ppb	3.988	12.07	4484	2000	
Pd	105	2	115	-158.185	ppb	-158.185	-203.48	77	100	
Ag	107	2	115	0.001	ppb	0.001	434.69	67	100	
Cd	111	2	115	0.069	ppb	0.069	15.30	47	2000	
Sn	120	2	115	2.869	ppb	2.869	13.33	4374	2000	
Sb	121	2	115	0.512	ppb	0.512	24.22	797	1000	
Ba	137	2	115	0.378	ppb	0.378	29.66	227	5000	
W	182	2	165	-0.125	ppb	-0.125	-41.01	2710	100	
Pt	195	2	165	60.220	ppb	60.220	25.27	63	100	
Tl	205	2	165	0.147	ppb	0.147	27.63	2747	2000	
Pb	208	2	165	0.500	ppb	0.500	9.76	7324	5000	
Th	232	2	193	4.333	ppb	4.333	13.89	55496	2000	
U	238	2	193	0.271	ppb	0.271	6.90	4414	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	804306	0.65	832675	96.59	60	120	
Sc (IS)	45	1	HMI H2	21756373	0.14	22691138	95.88	60	120	
Sc (IS)	45	2	HMI He	1290061	1.22	1329086	97.06	60	120	
Sc (IS)	45	3	No Gas	38495777	1.01	40115962	95.96	60	120	
Ge Internal standard	72	1	HMI H2	11142289	0.53	11471213	97.13	60	120	
Ge Internal standard	72	2	HMI He	1554876	0.64	1582627	98.25	60	120	
In Internal standard	115	2	HMI He	4747082	1.10	4772525	99.47	60	120	
Ho-165	165	2	HMI He	18302812	1.42	18341213	99.79	60	120	
Ir (IS)	193	2	HMI He	14026972	1.13	14005392	100.15	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	022_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:01:00-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	93.256	ppb	4.381	4191259	100	93.3	90	110	
Be	9	1	6	51.045	ppb	1.184	17106	50	102.1	90	110	
B	11	1	6	533.434	ppb	0.833	139577	50	1066.9	90	110	>+\-10%
Na	23	2	45	53011.022	ppb	0.449	12450559	51000	103.9	90	110	
Mg	24	2	45	11479.715	ppb	0.683	1300830	11000	104.4	90	110	
Al	27	2	45	962.704	ppb	3.793	30301	1000	96.3	90	110	
Si	28	2	45	50.854	ppb	8.236	19238	500	10.2	90	110	>+\-10%
P	31	2	45	2498.538	ppb	1.385	8933	2500	99.9	90	110	
K	39	2	45	10209.190	ppb	0.657	909427	11000	92.8	90	110	
Ca	40	1	45	11181.626	ppb	0.910	43008731	11000	101.7	90	110	
(Ca)	44	1	45	11863.193	ppb	2.101	1364593	11000	107.8	90	110	
Ti	47	2	45	53.484	ppb	12.524	1804	50	107.0	90	110	
V	51	2	72	49.474	ppb	1.025	69357	50	98.9	90	110	
Cr	52	2	72	49.344	ppb	0.229	90171	50	98.7	90	110	
Mn	55	2	72	49.570	ppb	1.515	38134	50	99.1	90	110	
Fe	56	1	72	1018.653	ppb	0.580	7509691	1000	101.9	90	110	
(Fe)	56	2	72	1014.308	ppb	0.707	1538493	1000	101.4	90	110	
(Fe)	57	2	72	989.035	ppb	3.903	35572	1000	98.9	90	110	
Co	59	2	72	49.409	ppb	2.891	148682	50	98.8	90	110	
Ni	60	2	72	48.988	ppb	0.881	42950	50	98.0	90	110	
Cu	63	2	72	49.389	ppb	0.846	114414	50	98.8	90	110	
Zn	66	2	72	50.020	ppb	3.021	21147	50	100.0	90	110	
As	75	2	72	48.980	ppb	2.472	16442	50	98.0	90	110	
Se	78	1	72	49.577	ppb	0.552	14699	50	99.2	90	110	
Sr	88	2	72	97.410	ppb	0.487	86894	100	97.4	90	110	
Zr	90	2	72	7.678	ppb	24.144	2347	50	15.4	90	110	>+\-10%
Nb	93	2	72	137.528	ppb	71.784	43	100	137.5	90	110	>+\-10%
Mo	95	2	115	53.086	ppb	0.552	57396	50	106.2	90	110	
Pd	105	2	115	844.862	ppb	17.398	173	50	1689.7	90	110	>+\-10%
Ag	107	2	115	50.732	ppb	1.863	181725	50	101.5	90	110	
Cd	111	2	115	50.250	ppb	2.499	25968	50	100.5	90	110	
Sn	120	2	115	53.537	ppb	0.962	70105	50	107.1	90	110	
Sb	121	2	115	51.716	ppb	1.384	74753	50	103.4	90	110	
Ba	137	2	115	52.433	ppb	2.307	22086	50	104.9	90	110	
W	182	2	165	51.769	ppb	0.547	215275	50	103.5	90	110	
Pt	195	2	165	95.020	ppb	38.016	73	50	190.0	90	110	>+\-10%
Tl	205	2	165	50.246	ppb	1.262	392146	50	100.5	90	110	
Pb	208	2	165	50.339	ppb	0.530	538346	50	100.7	90	110	
Th	232	2	193	65.555	ppb	0.854	706552	50	131.1	90	110	>+\-10%
U	238	2	193	46.445	ppb	0.868	669137	50	92.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	760726	0.23	832675	91.36	60	120	
Sc (IS)	45	1	HMI H2	21531555	0.74	22691138	94.89	60	120	
Sc (IS)	45	2	HMI He	1316748	1.42	1329086	99.07	60	120	
Sc (IS)	45	3	No Gas	38596212	0.73	40115962	96.21	60	120	
Ge Internal standard	72	1	HMI H2	11063914	0.21	11471213	96.45	60	120	
Ge Internal standard	72	2	HMI He	1566884	0.90	1582627	99.01	60	120	
In Internal standard	115	2	HMI He	4596855	1.38	4772525	96.32	60	120	
Ho-165	165	2	HMI He	17934779	0.73	18341213	97.78	60	120	
Ir (IS)	193	2	HMI He	13655737	0.78	14005392	97.50	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	023_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:04:45-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-1.158	ppb	-96.1	3449611	10	
Be	9	1	6	0.137	ppb	88.9	110	0.5	
B	11	1	6	15.864	ppb	3.7	5334	0.5	>RL
Na	23	2	45	31.338	ppb	7.9	29563	25	>RL
Mg	24	2	45	2.238	ppb	17.7	750	25	
Al	27	2	45	-2.092	ppb	-160.8	330	15	
K	39	2	45	38.819	ppb	19.6	46886	50	
Ti	47	2	45	0.097	ppb	173.2	3	0.5	
V	51	2	72	-0.034	ppb	-197.4	853	1	
Cr	52	2	72	0.293	ppb	48.8	1360	1	
Mn	55	2	72	0.447	ppb	31.6	437	0.5	
(Fe)	57	2	72	2.214	ppb	81.6	457	25	
Co	59	2	72	0.054	ppb	40.6	177	0.5	
Ni	60	2	72	0.182	ppb	43.0	543	1	
Cu	63	2	72	0.359	ppb	3.4	1587	1	
Zn	66	2	72	0.024	ppb	235.9	557	5	
As	75	2	72	0.037	ppb	21.0	71	1	
Se	78	1	72	0.107	ppb	101.4	51	1	
Sr	88	2	72	0.019	ppb	90.7	87	0.5	
Zr	90	2	72	-0.726	ppb	-79.7	557	1	
Nb	93	2	72	23.255	ppb	147.7	10	2	>RL
Mo	95	2	115	1.061	ppb	5.2	1223	0.5	>RL
Pd	105	2	115	-488.681	ppb	-23.7	43	1	
Ag	107	2	115	0.025	ppb	29.6	157	1	
Cd	111	2	115	0.056	ppb	33.4	40	0.5	
Sn	120	2	115	1.076	ppb	13.1	1970	1	>RL
Sb	121	2	115	0.167	ppb	22.6	283	0.6	
Ba	137	2	115	0.123	ppb	54.6	117	0.5	
W	182	2	165	0.355	ppb	19.9	4674	1	
Pt	195	2	165	32.355	ppb	242.7	53	1	>RL
Tl	205	2	165	-0.016	ppb	-86.4	1447	0.1	
Pb	208	2	165	0.173	ppb	19.2	3737	0.5	
Th	232	2	193	3.100	ppb	8.3	41844	1	>RL
U	238	2	193	0.111	ppb	1.6	2037	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	805666	0.72	832675	96.76	60	120	
Sc (IS)	45	1	HMI H2	21991460	1.07	22691138	96.92	60	120	
Sc (IS)	45	2	HMI He	1335909	0.07	1329086	100.51	60	120	
Sc (IS)	45	3	No Gas	39372744	0.66	40115962	98.15	60	120	
Ge Internal standard	72	1	HMI H2	11218761	0.99	11471213	97.80	60	120	
Ge Internal standard	72	2	HMI He	1560853	0.54	1582627	98.62	60	120	
In Internal standard	115	2	HMI He	4760952	0.73	4772525	99.76	60	120	
Ho-165	165	2	HMI He	18128305	1.14	18341213	98.84	60	120	
Ir (IS)	193	2	HMI He	13965122	0.16	14005392	99.71	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	024LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:08:30-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	8.819	ppb	15.901	3545615	50	17.6	70	130	>+/-30%
Be	9	1	6	1.023	ppb	6.480	423	1	102.3	70	130	
Na	23	2	45	62.201	ppb	5.034	37004	50	124.4	70	130	
Mg	24	2	45	47.167	ppb	11.581	5928	50	94.3	70	130	
Al	27	2	45	58.802	ppb	5.710	2257	50	117.6	70	130	
K	39	2	45	103.757	ppb	15.056	52616	100	103.8	70	130	
V	51	2	72	4.984	ppb	7.419	7862	5	99.7	70	130	
Cr	52	2	72	2.133	ppb	4.098	4734	2	106.6	70	130	
Mn	55	2	72	1.323	ppb	13.413	1120	1	132.3	70	130	>+/-30%
(Fe)	57	2	72	48.440	ppb	7.291	2120	50	96.9	70	130	
Co	59	2	72	1.051	ppb	7.246	3204	1	105.1	70	130	
Ni	60	2	72	2.277	ppb	15.233	2384	2	113.9	70	130	
Cu	63	2	72	2.269	ppb	1.698	6035	2	113.4	70	130	
Zn	66	2	72	11.081	ppb	9.773	5154	10	110.8	70	130	
As	75	2	72	5.125	ppb	2.577	1788	5	102.5	70	130	
Se	78	1	72	5.414	ppb	6.113	1651	5	108.3	70	130	
Sr	88	2	72	0.979	ppb	12.042	950	1	97.9	70	130	
Zr	90	2	72	3.321	ppb	33.722	1430	0.5	664.2	70	130	>+/-30%
Nb	93	2	72	102.857	ppb	134.595	33	2	5142.9	70	130	>+/-30%
Mo	95	2	115	2.560	ppb	6.726	2920	2	128.0	70	130	
Pd	105	2	115	-524.134	ppb	-19.002	40	1	-52413.4	70	130	>+/-30%
Ag	107	2	115	0.980	ppb	9.412	3724	1	98.0	70	130	
Cd	111	2	115	0.915	ppb	11.690	503	1	91.5	70	130	
Sn	120	2	115	10.808	ppb	3.485	15178	10	108.1	70	130	
Sb	121	2	115	2.195	ppb	5.711	3340	2	109.8	70	130	
Ba	137	2	115	1.103	ppb	8.849	547	1	110.3	70	130	
W	182	2	165	5.223	ppb	3.694	24868	1	522.3	70	130	>+/-30%
Pt	195	2	165	82.302	ppb	128.202	70	1	8230.2	70	130	>+/-30%
Tl	205	2	165	0.953	ppb	3.737	9070	1	95.3	70	130	
Pb	208	2	165	1.207	ppb	4.434	14903	1	120.7	70	130	
Th	232	2	193	9.835	ppb	7.771	115644	2	491.8	70	130	>+/-30%
U	238	2	193	0.984	ppb	1.588	14938	1	98.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	806285	0.40	832675	96.83	60	120	
Sc (IS)	45	1	HMI H2	22006180	0.45	22691138	96.98	60	120	
Sc (IS)	45	2	HMI He	1339874	2.02	1329086	100.81	60	120	
Sc (IS)	45	3	No Gas	39469999	0.85	40115962	98.39	60	120	
Ge Internal standard	72	1	HMI H2	11264048	0.70	11471213	98.19	60	120	
Ge Internal standard	72	2	HMI He	1579295	0.35	1582627	99.79	60	120	
In Internal standard	115	2	HMI He	4792924	0.58	4772525	100.43	60	120	
Ho-165	165	2	HMI He	18154674	0.52	18341213	98.98	60	120	
Ir (IS)	193	2	HMI He	14006994	0.97	14005392	100.01	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	025LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:14:43-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	9.651	ppb	55.682	3549239	50	19.3	70	130	>+/-30%
Be	9	1	6	1.401	ppb	32.230	553	1	140.1	70	130	>+/-30%
Na	23	2	45	63.337	ppb	9.015	36096	50	126.7	70	130	
Mg	24	2	45	51.387	ppb	9.807	6208	50	102.8	70	130	
Al	27	2	45	55.167	ppb	3.137	2074	50	110.3	70	130	
K	39	2	45	111.605	ppb	10.995	51626	100	111.6	70	130	
V	51	2	72	4.960	ppb	4.697	7739	5	99.2	70	130	
Cr	52	2	72	2.200	ppb	7.411	4801	2	110.0	70	130	
Mn	55	2	72	1.219	ppb	13.811	1027	1	121.9	70	130	
(Fe)	57	2	72	47.076	ppb	8.951	2047	50	94.2	70	130	
Co	59	2	72	1.124	ppb	6.460	3387	1	112.4	70	130	
Ni	60	2	72	2.220	ppb	10.132	2307	2	111.0	70	130	
Cu	63	2	72	2.164	ppb	5.506	5725	2	108.2	70	130	
Zn	66	2	72	10.846	ppb	4.823	4998	10	108.5	70	130	
As	75	2	72	5.278	ppb	3.451	1818	5	105.6	70	130	
Se	78	1	72	5.037	ppb	3.590	1521	5	100.7	70	130	
Sr	88	2	72	0.996	ppb	8.969	953	1	99.6	70	130	
Zr	90	2	72	3.078	ppb	19.048	1363	0.5	615.7	70	130	>+/-30%
Nb	93	2	72	92.027	ppb	74.330	30	2	4601.3	70	130	>+/-30%
Mo	95	2	115	2.438	ppb	8.623	2760	2	121.9	70	130	
Pd	105	2	115	-521.322	ppb	-32.654	40	1	-52132.2	70	130	>+/-30%
Ag	107	2	115	1.030	ppb	5.878	3877	1	103.0	70	130	
Cd	111	2	115	0.985	ppb	6.326	537	1	98.5	70	130	
Sn	120	2	115	10.941	ppb	3.202	15234	10	109.4	70	130	
Sb	121	2	115	2.240	ppb	5.136	3380	2	112.0	70	130	
Ba	137	2	115	1.097	ppb	6.358	540	1	109.7	70	130	
W	182	2	165	5.073	ppb	2.563	24093	1	507.3	70	130	>+/-30%
Pt	195	2	165	11.381	ppb	749.605	47	1	1138.1	70	130	>+/-30%
Tl	205	2	165	0.978	ppb	6.439	9210	1	97.8	70	130	
Pb	208	2	165	1.173	ppb	5.551	14437	1	117.3	70	130	
Th	232	2	193	7.100	ppb	7.189	85187	2	355.0	70	130	>+/-30%
U	238	2	193	0.964	ppb	2.254	14561	1	96.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	800280	0.13	832675	96.11	60	120	
Sc (IS)	45	1	HMI H2	21760771	0.50	22691138	95.90	60	120	
Sc (IS)	45	2	HMI He	1297799	2.14	1329086	97.65	60	120	
Sc (IS)	45	3	No Gas	39431464	0.73	40115962	98.29	60	120	
Ge Internal standard	72	1	HMI H2	11150311	0.90	11471213	97.20	60	120	
Ge Internal standard	72	2	HMI He	1561622	1.17	1582627	98.67	60	120	
In Internal standard	115	2	HMI He	4755127	1.07	4772525	99.64	60	120	
Ho-165	165	2	HMI He	18040910	1.50	18341213	98.36	60	120	
Ir (IS)	193	2	HMI He	13923113	0.66	14005392	99.41	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	026LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:18:28-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	5.677	ppb	54.982	3583436	50	11.4	70	130	>+/-30%
Be	9	1	6	0.927	ppb	12.247	387	1	92.7	70	130	
Na	23	2	45	59.283	ppb	7.781	35598	50	118.6	70	130	
Mg	24	2	45	51.523	ppb	5.224	6305	50	103.0	70	130	
Al	27	2	45	52.646	ppb	5.109	2020	50	105.3	70	130	
K	39	2	45	106.249	ppb	8.645	51803	100	106.2	70	130	
V	51	2	72	5.395	ppb	4.215	8212	5	107.9	70	130	
Cr	52	2	72	2.166	ppb	2.972	4668	2	108.3	70	130	
Mn	55	2	72	1.407	ppb	5.917	1153	1	140.7	70	130	>+/-30%
(Fe)	57	2	72	50.515	ppb	8.027	2137	50	101.0	70	130	
Co	59	2	72	1.069	ppb	15.127	3174	1	106.9	70	130	
Ni	60	2	72	2.151	ppb	6.004	2214	2	107.5	70	130	
Cu	63	2	72	2.374	ppb	2.975	6111	2	118.7	70	130	
Zn	66	2	72	10.536	ppb	4.013	4798	10	105.4	70	130	
As	75	2	72	5.232	ppb	4.627	1775	5	104.6	70	130	
Se	78	1	72	5.175	ppb	3.289	1565	5	103.5	70	130	
Sr	88	2	72	1.148	ppb	13.913	1073	1	114.8	70	130	
Zr	90	2	72	2.239	ppb	15.403	1167	0.5	447.8	70	130	>+/-30%
Nb	93	2	72	94.630	ppb	112.377	30	2	4731.5	70	130	>+/-30%
Mo	95	2	115	2.079	ppb	5.290	2337	2	104.0	70	130	
Pd	105	2	115	-484.649	ppb	-11.313	43	1	-48464.9	70	130	>+/-30%
Ag	107	2	115	1.012	ppb	2.876	3774	1	101.2	70	130	
Cd	111	2	115	1.052	ppb	10.922	567	1	105.2	70	130	
Sn	120	2	115	10.719	ppb	5.176	14787	10	107.2	70	130	
Sb	121	2	115	2.106	ppb	6.505	3150	2	105.3	70	130	
Ba	137	2	115	1.049	ppb	22.766	513	1	104.9	70	130	
W	182	2	165	5.104	ppb	3.158	24137	1	510.4	70	130	>+/-30%
Pt	195	2	165	104.428	ppb	73.114	77	1	10442.8	70	130	>+/-30%
Tl	205	2	165	0.922	ppb	1.783	8740	1	92.2	70	130	
Pb	208	2	165	1.174	ppb	4.379	14400	1	117.4	70	130	
Th	232	2	193	5.310	ppb	8.732	65517	2	265.5	70	130	>+/-30%
U	238	2	193	0.944	ppb	1.820	14221	1	94.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	800810	0.59	832675	96.17	60	120	
Sc (IS)	45	1	HMI H2	21807116	0.97	22691138	96.10	60	120	
Sc (IS)	45	2	HMI He	1313488	1.06	1329086	98.83	60	120	
Sc (IS)	45	3	No Gas	40202681	0.57	40115962	100.22	60	120	
Ge Internal standard	72	1	HMI H2	11173315	1.25	11471213	97.40	60	120	
Ge Internal standard	72	2	HMI He	1537513	0.86	1582627	97.15	60	120	
In Internal standard	115	2	HMI He	4707951	0.52	4772525	98.65	60	120	
Ho-165	165	2	HMI He	17976853	0.47	18341213	98.01	60	120	
Ir (IS)	193	2	HMI He	13881114	0.48	14005392	99.11	60	120	

Blank Report

Sample Table

Sample Name	mb 280-584924/1-a
Data File Name	027_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:22:14-06:00
Sample Type	Blank
Dilution	1
Comment	584924 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-2.334	ppb	-238.1334581	3442395	10
Be	9	1	6	0.007	ppb	1550.469299	63	0.5
B	11	1	6	7.772	ppb	3.346858268	3077	0.5
Na	23	2	45	-3.204	ppb	-97.51906586	21284	25
Mg	24	2	45	2.985	ppb	13.9095203	833	25
Al	27	2	45	6.427	ppb	51.77772491	597	15
K	39	2	45	-1.359	ppb	-930.0149829	43300	50
Ti	47	2	45	0.195	ppb	173.2050808	7	0.5
V	51	2	72	-0.283	ppb	-8.684620991	517	1
Cr	52	2	72	0.206	ppb	8.797314891	1217	1
Mn	55	2	72	0.346	ppb	33.58498085	363	0.5
(Fe)	57	2	72	8.048	ppb	15.18355558	670	25
Co	59	2	72	0.022	ppb	73.82922404	83	0.5
Ni	60	2	72	0.138	ppb	100.5780413	510	1
Cu	63	2	72	0.112	ppb	29.67765692	1030	1
Zn	66	2	72	0.921	ppb	52.8471621	933	5
As	75	2	72	-0.066	ppb	-33.00661492	37	1
Se	78	1	72	0.020	ppb	137.5091146	24	1
Sr	88	2	72	0.048	ppb	34.87134314	113	0.5
Zr	90	2	72	-0.394	ppb	-94.27682434	633	1
Nb	93	2	72	68.843	ppb	76.69351182	23	2
Mo	95	2	115	0.221	ppb	36.03258949	283	0.5
Pd	105	2	115	-423.360	ppb	-60.81139229	50	1
Ag	107	2	115	0.001	ppb	1179.300282	67	1
Cd	111	2	115	-0.006	ppb	-171.7216148	7	0.5
Sn	120	2	115	0.325	ppb	16.28411883	957	1
Sb	121	2	115	0.118	ppb	48.11686603	210	0.6
Ba	137	2	115	0.031	ppb	151.688113	77	0.5
W	182	2	165	0.649	ppb	4.561823478	5968	1
Pt	195	2	165	69.113	ppb	160.9606651	67	1
Tl	205	2	165	-0.095	ppb	-19.54927955	833	0.1
Pb	208	2	165	0.089	ppb	26.52572159	2874	0.5
Th	232	2	193	2.754	ppb	9.059930718	38558	1
U	238	2	193	0.010	ppb	57.85867056	557	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	797912	0.75	832675	95.83	60	120	
Sc (IS)	45	1	HMI H2	21842535	0.24	22691138	96.26	60	120	
Sc (IS)	45	2	HMI He	1332042	0.10	1329086	100.22	60	120	
Sc (IS)	45	3	No Gas	39406207	1.03	40115962	98.23	60	120	
Ge Internal standard	72	1	HMI H2	11104527	1.14	11471213	96.80	60	120	
Ge Internal standard	72	2	HMI He	1576772	0.56	1582627	99.63	60	120	
In Internal standard	115	2	HMI He	4749915	0.50	4772525	99.53	60	120	
Ho-165	165	2	HMI He	18366063	1.42	18341213	100.14	60	120	
Ir (IS)	193	2	HMI He	14133821	1.83	14005392	100.92	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-584924/2-a
Data File Name	028_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:26:01-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584924 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	45.823	45.823	ppb	4.592	3894763	400	11.5	80	120	>+/-20%
Be	9	1	6	42.121	42.121	ppb	1.330	14760	40	105.3	80	120	
Na	23	2	45	801.826	801.826	ppb	1.535	212663	40	2004.6	80	120	>+/-20%
Mg	24	2	45	792.237	792.237	ppb	2.226	91473	40	1980.6	80	120	>+/-20%
Al	27	2	45	836.668	836.668	ppb	3.063	26738	40	2091.7	80	120	>+/-20%
K	39	2	45	735.009	735.009	ppb	0.718	106751	40	1837.5	80	120	>+/-20%
V	51	2	72	42.296	42.296	ppb	1.517	59382	40	105.7	80	120	
Cr	52	2	72	42.873	42.873	ppb	0.668	78396	40	107.2	80	120	
Mn	55	2	72	41.369	41.369	ppb	0.141	31818	40	103.4	80	120	
(Fe)	57	2	72	842.309	842.309	ppb	1.077	30335	40	2105.8	80	120	>+/-20%
Co	59	2	72	42.795	42.795	ppb	0.915	128696	40	107.0	80	120	
Ni	60	2	72	43.511	43.511	ppb	3.096	38165	40	108.8	80	120	
Cu	63	2	72	44.141	44.141	ppb	1.935	102253	40	110.4	80	120	
Zn	66	2	72	43.223	43.223	ppb	1.024	18337	40	108.1	80	120	
As	75	2	72	41.928	41.928	ppb	1.771	14075	40	104.8	80	120	
Se	78	1	72	42.334	42.334	ppb	1.597	12550	40	105.8	80	120	
Nb	93	2	72	69.161	69.161	ppb	103.594	23	40	172.9	80	120	>+/-20%
Mo	95	2	115	43.596	43.596	ppb	1.956	48163	40	109.0	80	120	
Pd	105	2	115	-350.562	-350.562	ppb	-17.729	57	40	-876.4	80	120	>+/-20%
Ag	107	2	115	42.483	42.483	ppb	1.326	155487	40	106.2	80	120	
Cd	111	2	115	42.166	42.166	ppb	5.225	22263	40	105.4	80	120	
Sn	120	2	115	42.783	42.783	ppb	2.871	57334	40	107.0	80	120	
Sb	121	2	115	42.482	42.482	ppb	3.173	62738	40	106.2	80	120	
Ba	137	2	115	43.767	43.767	ppb	2.694	18845	40	109.4	80	120	
W	182	2	165	0.844	0.844	ppb	12.186	6748	40	2.1	80	120	>+/-20%
Pt	195	2	165	60.772	60.772	ppb	151.679	63	40	151.9	80	120	>+/-20%
Tl	205	2	165	42.585	42.585	ppb	0.785	338666	40	106.5	80	120	
Pb	208	2	165	43.567	43.567	ppb	0.906	474662	40	108.9	80	120	
Th	232	2	193	41.186	41.186	ppb	1.101	460094	40	103.0	80	120	
U	238	2	193	37.455	37.455	ppb	1.147	555741	40	93.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	794909	0.59	832675	95.46	60	120	
Sc (IS)	45	1	HMI H2	21830496	0.49	22691138	96.21	60	120	
Sc (IS)	45	2	HMI He	1334793	0.50	1329086	100.43	60	120	
Sc (IS)	45	3	No Gas	39721996	0.34	40115962	99.02	60	120	
Ge Internal standard	72	1	HMI H2	11060408	0.52	11471213	96.42	60	120	
Ge Internal standard	72	2	HMI He	1565668	0.18	1582627	98.93	60	120	
In Internal standard	115	2	HMI He	4696346	0.92	4772525	98.40	60	120	
Ho-165	165	2	HMI He	18261028	0.04	18341213	99.56	60	120	
Ir (IS)	193	2	HMI He	14061793	0.56	14005392	100.40	60	120	

Sample Report

Sample Table

Sample Name	165756-1 bottle
Data File Name	029SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:29:47-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.885	ppb	-15.885	-41.79	3486720	50000	
Be	9	1	6	0.008	ppb	0.008	422.17	63	2000	
B	11	1	6	13.203	ppb	13.203	0.75	4547	2000	
Na	23	2	45	10088.662	ppb	10088.662	0.24	2482618	400000	
Mg	24	2	45	13321.062	ppb	13321.062	1.06	1569768	400000	
Al	27	2	45	0.221	ppb	0.221	995.49	413	400000	
Si	28	2	45	1177.403	ppb	1177.403	0.47	254984	10000	
P	31	2	45	93.810	ppb	93.810	16.98	413	10000	
K	39	2	45	659.725	ppb	659.725	2.49	102867	400000	
Ca	40	1	45	32967.456	ppb	32967.456	0.49	130939115	400000	
Ti	47	2	45	0.094	ppb	0.094	173.21	3	4000	
V	51	2	72	0.412	ppb	0.412	24.36	1520	2000	
Cr	52	2	72	0.335	ppb	0.335	4.26	1487	5000	
Mn	55	2	72	0.238	ppb	0.238	24.40	287	10000	
Fe	56	1	72	0.457	ppb	0.457	89.46	69736	10000	
(Fe)	57	2	72	3.688	ppb	3.688	34.16	527	400000	
Co	59	2	72	0.033	ppb	0.033	26.14	120	2000	
Ni	60	2	72	3.492	ppb	3.492	5.02	3527	5000	
Cu	63	2	72	13.271	ppb	13.271	2.44	32272	5000	
Zn	66	2	72	128.883	ppb	128.883	1.21	55296	5000	
As	75	2	72	0.403	ppb	0.403	10.53	200	2000	
Se	78	1	72	0.579	ppb	0.579	15.35	196	2000	
Sr	88	2	72	56.262	ppb	56.262	0.72	51773	4000	
Zr	90	2	72	-0.190	ppb	-0.190	-78.84	693	1000	
Nb	93	2	72	-0.076	ppb	-0.076	-25483.03	3	200	
Mo	95	2	115	0.538	ppb	0.538	9.53	650	2000	
Pd	105	2	115	-529.026	ppb	-529.026	-35.94	40	100	
Ag	107	2	115	0.042	ppb	0.042	30.53	223	100	
Cd	111	2	115	0.024	ppb	0.024	157.51	23	2000	
Sn	120	2	115	0.458	ppb	0.458	22.76	1160	2000	
Sb	121	2	115	0.310	ppb	0.310	7.84	507	1000	
Ba	137	2	115	398.985	ppb	398.985	0.61	176807	5000	
W	182	2	165	-0.462	ppb	-0.462	-8.19	1327	100	
Pt	195	2	165	86.547	ppb	86.547	111.68	73	100	
Tl	205	2	165	-0.094	ppb	-0.094	-13.94	857	2000	
Pb	208	2	165	0.965	ppb	0.965	1.61	12639	5000	
Th	232	2	193	0.150	ppb	0.150	11.16	9564	2000	
U	238	2	193	0.071	ppb	0.071	11.16	1430	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	796030	1.21	832675	95.60	60	120	
Sc (IS)	45	1	HMI H2	22252550	0.48	22691138	98.07	60	120	
Sc (IS)	45	2	HMI He	1369384	0.73	1329086	103.03	60	120	
Sc (IS)	45	3	No Gas	41356360	3.61	40115962	103.09	60	120	
Ge Internal standard	72	1	HMI H2	11441447	0.74	11471213	99.74	60	120	
Ge Internal standard	72	2	HMI He	1615424	0.73	1582627	102.07	60	120	
In Internal standard	115	2	HMI He	4846999	1.56	4772525	101.56	60	120	
Ho-165	165	2	HMI He	18665558	0.71	18341213	101.77	60	120	
Ir (IS)	193	2	HMI He	13786510	0.15	14005392	98.44	60	120	

Sample Report

Sample Table

Sample Name	280-165756-B-1-G
Data File Name	030SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:33:32-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585098 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-11.050	ppb	-11.050	-61.00	3382691	50000	
Be	9	1	6	0.014	ppb	0.014	795.06	63	2000	
B	11	1	6	14.299	ppb	14.299	9.02	4697	2000	
Na	23	2	45	9631.436	ppb	9631.436	1.63	2331263	400000	
Mg	24	2	45	12575.544	ppb	12575.544	0.87	1457200	400000	
Al	27	2	45	4.874	ppb	4.874	52.31	553	400000	
Si	28	2	45	1125.819	ppb	1125.819	0.29	240144	10000	
P	31	2	45	101.010	ppb	101.010	6.97	432	10000	
K	39	2	45	640.383	ppb	640.383	5.47	99450	400000	
Ca	40	1	45	30857.996	ppb	30857.996	1.60	121211025	400000	
Ti	47	2	45	0.288	ppb	0.288	173.21	10	4000	
V	51	2	72	0.416	ppb	0.416	26.69	1510	2000	
Cr	52	2	72	0.435	ppb	0.435	11.99	1657	5000	
Mn	55	2	72	0.382	ppb	0.382	8.65	397	10000	
Fe	56	1	72	2.066	ppb	2.066	12.16	81244	10000	
(Fe)	57	2	72	5.685	ppb	5.685	26.20	593	400000	
Co	59	2	72	0.032	ppb	0.032	14.38	117	2000	
Ni	60	2	72	0.611	ppb	0.611	14.33	937	5000	
Cu	63	2	72	6.794	ppb	6.794	3.62	16739	5000	
Zn	66	2	72	20.921	ppb	20.921	2.73	9353	5000	
As	75	2	72	0.348	ppb	0.348	12.61	179	2000	
Se	78	1	72	0.497	ppb	0.497	16.89	169	2000	
Sr	88	2	72	53.848	ppb	53.848	1.89	49045	4000	
Zr	90	2	72	-0.141	ppb	-0.141	-469.36	697	1000	
Nb	93	2	72	44.770	ppb	44.770	155.42	17	200	
Mo	95	2	115	0.411	ppb	0.411	23.38	507	2000	
Pd	105	2	115	-370.304	ppb	-370.304	-90.80	57	100	
Ag	107	2	115	-0.001	ppb	-0.001	-425.78	60	100	
Cd	111	2	115	-0.007	ppb	-0.007	-161.86	7	2000	
Sn	120	2	115	0.347	ppb	0.347	35.26	1010	2000	
Sb	121	2	115	0.146	ppb	0.146	25.12	257	1000	
Ba	137	2	115	373.974	ppb	373.974	1.00	166295	5000	
W	182	2	165	1.838	ppb	1.838	4.34	10951	100	
Pt	195	2	165	119.680	ppb	119.680	51.84	83	100	
Tl	205	2	165	-0.100	ppb	-0.100	-4.98	797	2000	
Pb	208	2	165	0.168	ppb	0.168	10.10	3730	5000	
Th	232	2	193	12.717	ppb	12.717	14.11	141850	2000	
U	238	2	193	0.025	ppb	0.025	14.10	750	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	771720	1.15	832675	92.68	60	120	
Sc (IS)	45	1	HMI H2	22010264	1.54	22691138	97.00	60	120	
Sc (IS)	45	2	HMI He	1346506	1.11	1329086	101.31	60	120	
Sc (IS)	45	3	No Gas	39599074	0.62	40115962	98.71	60	120	
Ge Internal standard	72	1	HMI H2	11351026	0.83	11471213	98.95	60	120	
Ge Internal standard	72	2	HMI He	1598962	0.83	1582627	101.03	60	120	
In Internal standard	115	2	HMI He	4863406	0.31	4772525	101.90	60	120	
Ho-165	165	2	HMI He	18354496	0.98	18341213	100.07	60	120	
Ir (IS)	193	2	HMI He	13508136	0.07	14005392	96.45	60	120	

Sample Report

Sample Table

Sample Name	280-165756-B-1
Data File Name	031SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:37:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	0.927	ppb	0.927	574.12	3137362	50000	
Be	9	1	6	-0.044	ppb	-0.044	-156.27	47	2000	
B	11	1	6	10.770	ppb	10.770	7.14	4011	2000	
Na	23	2	45	9825.213	ppb	9825.213	1.97	2501615	400000	
Mg	24	2	45	12694.603	ppb	12694.603	2.35	1547434	400000	
Al	27	2	45	1.683	ppb	1.683	135.26	477	400000	
Si	28	2	45	1141.494	ppb	1141.494	2.48	256000	10000	
P	31	2	45	74.736	ppb	74.736	10.79	354	10000	
K	39	2	45	633.364	ppb	633.364	3.94	104000	400000	
Ca	40	1	45	31965.096	ppb	31965.096	0.50	133009088	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.266	ppb	0.266	34.11	1383	2000	
Cr	52	2	72	0.285	ppb	0.285	15.51	1467	5000	
Mn	55	2	72	0.187	ppb	0.187	7.68	260	10000	
Fe	56	1	72	-0.289	ppb	-0.289	-29.74	67252	10000	
(Fe)	57	2	72	0.123	ppb	0.123	489.62	417	400000	
Co	59	2	72	0.015	ppb	0.015	81.20	67	2000	
Ni	60	2	72	0.574	ppb	0.574	26.25	960	5000	
Cu	63	2	72	6.730	ppb	6.730	1.52	17643	5000	
Zn	66	2	72	20.410	ppb	20.410	1.82	9723	5000	
As	75	2	72	0.324	ppb	0.324	19.58	182	2000	
Se	78	1	72	0.438	ppb	0.438	32.70	160	2000	
Sr	88	2	72	53.898	ppb	53.898	0.67	52224	4000	
Zr	90	2	72	-0.438	ppb	-0.438	-68.48	673	1000	
Nb	93	2	72	83.755	ppb	83.755	75.78	30	200	
Mo	95	2	115	0.168	ppb	0.168	55.00	240	2000	
Pd	105	2	115	-637.296	ppb	-637.296	-14.86	30	100	
Ag	107	2	115	-0.003	ppb	-0.003	-133.61	57	100	
Cd	111	2	115	0.017	ppb	0.017	184.39	20	2000	
Sn	120	2	115	-0.053	ppb	-0.053	-62.26	480	2000	
Sb	121	2	115	0.053	ppb	0.053	53.44	120	1000	
Ba	137	2	115	381.396	ppb	381.396	2.16	176763	5000	
W	182	2	165	-0.444	ppb	-0.444	-3.09	1457	100	
Pt	195	2	165	106.399	ppb	106.399	109.39	83	100	
Tl	205	2	165	-0.127	ppb	-0.127	-5.64	617	2000	
Pb	208	2	165	0.185	ppb	0.185	8.48	4134	5000	
Th	232	2	193	0.041	ppb	0.041	58.71	8673	2000	
U	238	2	193	0.009	ppb	0.009	75.60	550	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	821673	0.65	832675	98.68	60	120	
Sc (IS)	45	1	HMI H2	23312830	0.43	22691138	102.74	60	120	
Sc (IS)	45	2	HMI He	1416793	1.64	1329086	106.60	60	120	
Sc (IS)	45	3	No Gas	35631959	4.73	40115962	88.82	60	120	
Ge Internal standard	72	1	HMI H2	12004457	0.54	11471213	104.65	60	120	
Ge Internal standard	72	2	HMI He	1700991	1.48	1582627	107.48	60	120	
In Internal standard	115	2	HMI He	5069894	1.35	4772525	106.23	60	120	
Ho-165	165	2	HMI He	19352647	0.82	18341213	105.51	60	120	
Ir (IS)	193	2	HMI He	14236371	0.47	14005392	101.65	60	120	

Sample Report

Sample Table

Sample Name	280-165801-B-4-A
Data File Name	032SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:41:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585098 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1.484	ppb	1.484	99.52	3543584	50000	
Be	9	1	6	-0.062	ppb	-0.062	-118.21	40	2000	
B	11	1	6	14.024	ppb	14.024	4.13	4908	2000	
Na	23	2	45	700.859	ppb	700.859	1.50	194102	400000	
Mg	24	2	45	4251.485	ppb	4251.485	0.74	502797	400000	
Al	27	2	45	3.078	ppb	3.078	18.41	507	400000	
Si	28	2	45	62.208	ppb	62.208	1.03	22445	10000	
P	31	2	45	-3.779	ppb	-3.779	-139.83	53	10000	
K	39	2	45	388.497	ppb	388.497	3.65	79155	400000	
Ca	40	1	45	9204.393	ppb	9204.393	0.85	37532774	400000	
Ti	47	2	45	0.380	ppb	0.380	86.61	13	4000	
V	51	2	72	0.205	ppb	0.205	50.08	1227	2000	
Cr	52	2	72	-0.009	ppb	-0.009	-735.67	847	5000	
Mn	55	2	72	0.596	ppb	0.596	38.76	570	10000	
Fe	56	1	72	4.115	ppb	4.115	3.69	99584	10000	
(Fe)	57	2	72	2.943	ppb	2.943	38.03	500	400000	
Co	59	2	72	0.029	ppb	0.029	38.59	107	2000	
Ni	60	2	72	0.476	ppb	0.476	17.25	827	5000	
Cu	63	2	72	0.225	ppb	0.225	26.53	1327	5000	
Zn	66	2	72	26.237	ppb	26.237	0.74	11725	5000	
As	75	2	72	-0.029	ppb	-0.029	-121.00	51	2000	
Se	78	1	72	-0.001	ppb	-0.001	-2241.16	19	2000	
Sr	88	2	72	72.291	ppb	72.291	0.79	66600	4000	
Zr	90	2	72	-0.405	ppb	-0.405	-128.84	647	1000	
Nb	93	2	72	-0.153	ppb	-0.153	-12521.06	3	200	
Mo	95	2	115	0.473	ppb	0.473	6.90	587	2000	
Pd	105	2	115	-630.466	ppb	-630.466	-14.86	30	100	
Ag	107	2	115	-0.003	ppb	-0.003	-95.29	53	100	
Cd	111	2	115	0.047	ppb	0.047	95.47	37	2000	
Sn	120	2	115	-0.070	ppb	-0.070	-70.71	443	2000	
Sb	121	2	115	0.034	ppb	0.034	106.32	87	1000	
Ba	137	2	115	14.766	ppb	14.766	2.47	6728	5000	
W	182	2	165	-0.426	ppb	-0.426	-3.84	1487	100	
Pt	195	2	165	75.486	ppb	75.486	41.54	70	100	
Tl	205	2	165	-0.127	ppb	-0.127	-8.38	597	2000	
Pb	208	2	165	0.047	ppb	0.047	40.67	2464	5000	
Th	232	2	193	0.019	ppb	0.019	45.70	8379	2000	
U	238	2	193	0.295	ppb	0.295	2.94	4818	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	818899	0.19	832675	98.35	60	120	
Sc (IS)	45	1	HMI H2	22820284	1.10	22691138	100.57	60	120	
Sc (IS)	45	2	HMI He	1373328	0.77	1329086	103.33	60	120	
Sc (IS)	45	3	No Gas	40176835	1.17	40115962	100.15	60	120	
Ge Internal standard	72	1	HMI H2	11699634	0.32	11471213	101.99	60	120	
Ge Internal standard	72	2	HMI He	1617797	0.84	1582627	102.22	60	120	
In Internal standard	115	2	HMI He	4936874	0.48	4772525	103.44	60	120	
Ho-165	165	2	HMI He	18755973	1.13	18341213	102.26	60	120	
Ir (IS)	193	2	HMI He	14156125	0.30	14005392	101.08	60	120	

Sample Report

Sample Table

Sample Name	280-165801-B-4-B MS
Data File Name	033SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:44:50-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585098 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	66.062	ppb	66.062	1.38	3968463	50000	
Be	9	1	6	39.490	ppb	39.490	2.07	13529	2000	
B	11	1	6	58.153	ppb	58.153	1.32	16372	2000	
Na	23	2	45	4905.592	ppb	4905.592	5.42	1158893	400000	
Mg	24	2	45	25664.125	ppb	25664.125	1.69	2876064	400000	
Al	27	2	45	819.212	ppb	819.212	2.19	25553	400000	
Si	28	2	45	399.008	ppb	399.008	1.56	88121	10000	
P	31	2	45	10.634	ppb	10.634	26.16	101	10000	
K	39	2	45	3031.355	ppb	3031.355	2.25	296954	400000	
Ca	40	1	45	51605.846	ppb	51605.846	0.84	199443730	400000	
Ti	47	2	45	45.134	ppb	45.134	10.02	1507	4000	
V	51	2	72	40.214	ppb	40.214	1.52	56178	2000	
Cr	52	2	72	39.915	ppb	39.915	1.61	72624	5000	
Mn	55	2	72	42.793	ppb	42.793	2.67	32720	10000	
Fe	56	1	72	809.330	ppb	809.330	0.48	6017976	10000	
(Fe)	57	2	72	813.268	ppb	813.268	2.30	29133	400000	
Co	59	2	72	38.696	ppb	38.696	0.88	115702	2000	
Ni	60	2	72	40.342	ppb	40.342	2.51	35208	5000	
Cu	63	2	72	38.864	ppb	38.864	1.15	89604	5000	
Zn	66	2	72	182.407	ppb	182.407	2.00	75184	5000	
As	75	2	72	40.108	ppb	40.108	0.34	13388	2000	
Se	78	1	72	38.258	ppb	38.258	3.00	11420	2000	
Sr	88	2	72	477.930	ppb	477.930	1.06	423276	4000	
Zr	90	2	72	8.859	ppb	8.859	25.61	2580	1000	
Nb	93	2	72	81.248	ppb	81.248	65.19	27	200	
Mo	95	2	115	43.591	ppb	43.591	2.01	48032	2000	
Pd	105	2	115	-449.207	ppb	-449.207	-12.63	47	100	
Ag	107	2	115	43.386	ppb	43.386	0.68	158408	100	
Cd	111	2	115	40.578	ppb	40.578	0.54	21378	2000	
Sn	120	2	115	40.861	ppb	40.861	1.94	54651	2000	
Sb	121	2	115	40.028	ppb	40.028	0.20	58980	1000	
Ba	137	2	115	122.244	ppb	122.244	1.39	52401	5000	
W	182	2	165	1.778	ppb	1.778	3.55	10631	100	
Pt	195	2	165	111.316	ppb	111.316	0.61	80	100	
Tl	205	2	165	39.959	ppb	39.959	1.30	317481	2000	
Pb	208	2	165	39.976	ppb	39.976	1.20	435155	5000	
Th	232	2	193	51.285	ppb	51.285	1.05	555599	2000	
U	238	2	193	41.921	ppb	41.921	0.85	605273	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	776823	1.43	832675	93.29	60	120	
Sc (IS)	45	1	HMI H2	21657436	0.85	22691138	95.44	60	120	
Sc (IS)	45	2	HMI He	1302583	1.16	1329086	98.01	60	120	
Sc (IS)	45	3	No Gas	38698825	0.49	40115962	96.47	60	120	
Ge Internal standard	72	1	HMI H2	11134886	0.47	11471213	97.07	60	120	
Ge Internal standard	72	2	HMI He	1556669	0.09	1582627	98.36	60	120	
In Internal standard	115	2	HMI He	4684788	0.80	4772525	98.16	60	120	
Ho-165	165	2	HMI He	18238812	0.28	18341213	99.44	60	120	
Ir (IS)	193	2	HMI He	13683951	0.49	14005392	97.70	60	120	

Sample Table

Sample Name	280-165801-B-4-A
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:48:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585098 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	67.893	ppb	67.893	4.25	3947331	50000	
Be	9	1	6	38.837	ppb	38.837	2.66	13379	2000	
B	11	1	6	61.475	ppb	61.475	3.89	17349	2000	
Na	23	2	45	5114.627	ppb	5114.627	1.57	1204339	400000	
Mg	24	2	45	26072.135	ppb	26072.135	0.79	2913780	400000	
Al	27	2	45	855.258	ppb	855.258	3.20	26582	400000	
Si	28	2	45	399.641	ppb	399.641	0.78	87996	10000	
P	31	2	45	9.201	ppb	9.201	16.44	95	10000	
K	39	2	45	3020.268	ppb	3020.268	1.99	295188	400000	
Ca	40	1	45	52432.111	ppb	52432.111	0.80	201891770	400000	
Ti	47	2	45	43.890	ppb	43.890	5.27	1460	4000	
V	51	2	72	41.233	ppb	41.233	1.02	57302	2000	
Cr	52	2	72	40.677	ppb	40.677	1.05	73639	5000	
Mn	55	2	72	42.976	ppb	42.976	1.31	32703	10000	
Fe	56	1	72	825.543	ppb	825.543	1.40	6114145	10000	
(Fe)	57	2	72	822.997	ppb	822.997	0.86	29336	400000	
Co	59	2	72	39.364	ppb	39.364	1.14	117132	2000	
Ni	60	2	72	42.237	ppb	42.237	1.74	36668	5000	
Cu	63	2	72	39.822	ppb	39.822	2.22	91347	5000	
Zn	66	2	72	180.125	ppb	180.125	2.88	73888	5000	
As	75	2	72	40.590	ppb	40.590	0.67	13484	2000	
Se	78	1	72	40.096	ppb	40.096	4.36	11919	2000	
Sr	88	2	72	485.232	ppb	485.232	0.53	427688	4000	
Zr	90	2	72	9.538	ppb	9.538	10.06	2710	1000	
Nb	93	2	72	151.696	ppb	151.696	93.47	47	200	
Mo	95	2	115	45.349	ppb	45.349	0.83	49186	2000	
Pd	105	2	115	-340.811	ppb	-340.811	-16.12	57	100	
Ag	107	2	115	40.558	ppb	40.558	0.59	145763	100	
Cd	111	2	115	41.440	ppb	41.440	2.51	21492	2000	
Sn	120	2	115	41.534	ppb	41.534	0.93	54671	2000	
Sb	121	2	115	42.101	ppb	42.101	0.91	61064	1000	
Ba	137	2	115	123.910	ppb	123.910	0.44	52284	5000	
W	182	2	165	1.398	ppb	1.398	4.21	9056	100	
Pt	195	2	165	30.674	ppb	30.674	204.99	53	100	
Tl	205	2	165	40.929	ppb	40.929	0.30	325485	2000	
Pb	208	2	165	41.076	ppb	41.076	0.89	447536	5000	
Th	232	2	193	48.544	ppb	48.544	0.36	527177	2000	
U	238	2	193	39.135	ppb	39.135	0.43	565958	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	781164	0.65	832675	93.81	60	120	
Sc (IS)	45	1	HMI H2	21576289	0.55	22691138	95.09	60	120	
Sc (IS)	45	2	HMI He	1298934	1.29	1329086	97.73	60	120	
Sc (IS)	45	3	No Gas	38341769	0.74	40115962	95.58	60	120	
Ge Internal standard	72	1	HMI H2	11093030	1.02	11471213	96.70	60	120	
Ge Internal standard	72	2	HMI He	1549213	0.53	1582627	97.89	60	120	
In Internal standard	115	2	HMI He	4611309	1.16	4772525	96.62	60	120	
Ho-165	165	2	HMI He	18256914	0.12	18341213	99.54	60	120	
Ir (IS)	193	2	HMI He	13705939	0.76	14005392	97.86	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	035_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:52:22-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	97.809	ppb	2.700	4227496	100	97.8	90	110	
Be	9	1	6	50.199	ppb	4.354	17403	50	100.4	90	110	
B	11	1	6	500.416	ppb	2.226	135488	50	1000.8	90	110	>+\-10%
Na	23	2	45	54500.553	ppb	1.500	12417080	51000	106.9	90	110	
Mg	24	2	45	11947.286	ppb	2.276	1313246	11000	108.6	90	110	
Al	27	2	45	1015.895	ppb	4.100	30986	1000	101.6	90	110	
Si	28	2	45	56.414	ppb	10.264	19746	500	11.3	90	110	>+\-10%
P	31	2	45	2502.666	ppb	4.392	8681	2500	100.1	90	110	
K	39	2	45	10408.534	ppb	1.700	898663	11000	94.6	90	110	
Ca	40	1	45	10943.289	ppb	0.533	42543323	11000	99.5	90	110	
(Ca)	44	1	45	11829.532	ppb	0.179	1375353	11000	107.5	90	110	
Ti	47	2	45	49.543	ppb	8.990	1620	50	99.1	90	110	
V	51	2	72	50.025	ppb	0.975	69417	50	100.0	90	110	
Cr	52	2	72	49.348	ppb	0.680	89277	50	98.7	90	110	
Mn	55	2	72	48.507	ppb	1.803	36948	50	97.0	90	110	
Fe	56	1	72	999.828	ppb	0.679	7413262	1000	100.0	90	110	
(Fe)	56	2	72	1012.872	ppb	1.433	1520899	1000	101.3	90	110	
(Fe)	57	2	72	979.062	ppb	1.430	34871	1000	97.9	90	110	
Co	59	2	72	48.162	ppb	2.418	143475	50	96.3	90	110	
Ni	60	2	72	48.898	ppb	2.993	42438	50	97.8	90	110	
Cu	63	2	72	48.525	ppb	0.776	111294	50	97.1	90	110	
Zn	66	2	72	50.189	ppb	1.222	21011	50	100.4	90	110	
As	75	2	72	48.964	ppb	2.462	16272	50	97.9	90	110	
Se	78	1	72	49.996	ppb	1.840	14906	50	100.0	90	110	
Sr	88	2	72	98.005	ppb	2.223	86536	100	98.0	90	110	
Zr	90	2	72	8.754	ppb	17.539	2547	50	17.5	90	110	>+\-10%
Nb	93	2	72	150.831	ppb	47.390	47	100	150.8	90	110	>+\-10%
Mo	95	2	115	51.911	ppb	1.600	56479	50	103.8	90	110	
Pd	105	2	115	698.999	ppb	42.461	160	50	1398.0	90	110	>+\-10%
Ag	107	2	115	50.791	ppb	0.371	183101	50	101.6	90	110	
Cd	111	2	115	51.596	ppb	2.517	26837	50	103.2	90	110	
Sn	120	2	115	51.956	ppb	1.688	68481	50	103.9	90	110	
Sb	121	2	115	51.792	ppb	0.745	75341	50	103.6	90	110	
Ba	137	2	115	50.652	ppb	2.380	21475	50	101.3	90	110	
W	182	2	165	51.496	ppb	1.141	215965	50	103.0	90	110	
Pt	195	2	165	93.102	ppb	100.325	73	50	186.2	90	110	>+\-10%
Tl	205	2	165	49.611	ppb	0.994	390500	50	99.2	90	110	
Pb	208	2	165	50.066	ppb	1.133	539971	50	100.1	90	110	
Th	232	2	193	47.060	ppb	4.772	513334	50	94.1	90	110	
U	238	2	193	46.401	ppb	1.512	673860	50	92.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	786876	0.56	832675	94.50	60	120	
Sc (IS)	45	1	HMI H2	21760850	0.23	22691138	95.90	60	120	
Sc (IS)	45	2	HMI He	1277539	1.59	1329086	96.12	60	120	
Sc (IS)	45	3	No Gas	38572402	0.33	40115962	96.15	60	120	
Ge Internal standard	72	1	HMI H2	11125764	0.40	11471213	96.99	60	120	
Ge Internal standard	72	2	HMI He	1551245	1.14	1582627	98.02	60	120	
In Internal standard	115	2	HMI He	4625746	0.36	4772525	96.92	60	120	
Ho-165	165	2	HMI He	18086674	0.49	18341213	98.61	60	120	
Ir (IS)	193	2	HMI He	13765906	1.18	14005392	98.29	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	036_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T11:58:35-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	6.238	ppb	46.0	3519119	10	
Be	9	1	6	-0.071	ppb	-81.1	37	0.5	
B	11	1	6	5.770	ppb	12.5	2584	0.5	>RL
Na	23	2	45	10.165	ppb	34.6	24612	25	
Mg	24	2	45	3.052	ppb	35.1	847	25	
Al	27	2	45	0.083	ppb	358.4	400	15	
K	39	2	45	-0.957	ppb	-1447.7	43614	50	
Ti	47	2	45	0.195	ppb	173.2	7	0.5	
V	51	2	72	0.845	ppb	13.0	2087	1	
Cr	52	2	72	0.003	ppb	1776.2	847	1	
Mn	55	2	72	0.052	ppb	146.3	137	0.5	
(Fe)	57	2	72	1.130	ppb	274.2	423	25	
Co	59	2	72	0.023	ppb	35.5	87	0.5	
Ni	60	2	72	-0.026	ppb	-17.1	367	1	
Cu	63	2	72	-0.032	ppb	-218.2	697	1	
Zn	66	2	72	-0.027	ppb	-1613.4	540	5	
As	75	2	72	0.058	ppb	9.1	79	1	
Se	78	1	72	-0.007	ppb	-507.3	16	1	
Sr	88	2	72	0.015	ppb	155.4	83	0.5	
Zr	90	2	72	-0.452	ppb	-126.5	620	1	
Nb	93	2	72	45.996	ppb	44.4	17	2	>RL
Mo	95	2	115	0.496	ppb	13.2	600	0.5	
Pd	105	2	115	-496.358	ppb	-67.8	43	1	
Ag	107	2	115	0.015	ppb	46.4	120	1	
Cd	111	2	115	-0.013	ppb	-83.8	3	0.5	
Sn	120	2	115	0.762	ppb	19.4	1570	1	
Sb	121	2	115	0.184	ppb	17.0	313	0.6	
Ba	137	2	115	-0.002	ppb	-2043.4	63	0.5	
W	182	2	165	0.303	ppb	42.4	4528	1	
Pt	195	2	165	69.384	ppb	27.4	67	1	>RL
Tl	205	2	165	-0.098	ppb	-16.0	817	0.1	
Pb	208	2	165	0.045	ppb	18.9	2404	0.5	
Th	232	2	193	1.740	ppb	4.3	27360	1	>RL
U	238	2	193	0.057	ppb	22.4	1263	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	814166	0.58	832675	97.78	60	120	
Sc (IS)	45	1	HMI H2	21897632	1.11	22691138	96.50	60	120	
Sc (IS)	45	2	HMI He	1340650	0.28	1329086	100.87	60	120	
Sc (IS)	45	3	No Gas	39425203	1.09	40115962	98.28	60	120	
Ge Internal standard	72	1	HMI H2	11103180	0.32	11471213	96.79	60	120	
Ge Internal standard	72	2	HMI He	1577699	1.52	1582627	99.69	60	120	
In Internal standard	115	2	HMI He	4827826	0.55	4772525	101.16	60	120	
Ho-165	165	2	HMI He	18402461	1.07	18341213	100.33	60	120	
Ir (IS)	193	2	HMI He	14139632	0.57	14005392	100.96	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	037LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:02:20-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	16.588	ppb	34.176	3607117	50	33.2	70	130	>+/-30%
Be	9	1	6	0.926	ppb	7.790	377	1	92.6	70	130	
Na	23	2	45	52.198	ppb	4.658	33918	50	104.4	70	130	
Mg	24	2	45	51.014	ppb	3.243	6245	50	102.0	70	130	
Al	27	2	45	54.513	ppb	4.963	2077	50	109.0	70	130	
K	39	2	45	82.920	ppb	28.911	49788	100	82.9	70	130	
V	51	2	72	5.767	ppb	3.703	8806	5	115.3	70	130	
Cr	52	2	72	1.991	ppb	0.651	4401	2	99.5	70	130	
Mn	55	2	72	0.970	ppb	17.306	833	1	97.0	70	130	
(Fe)	57	2	72	50.933	ppb	10.403	2174	50	101.9	70	130	
Co	59	2	72	1.054	ppb	2.280	3160	1	105.4	70	130	
Ni	60	2	72	1.951	ppb	11.471	2064	2	97.6	70	130	
Cu	63	2	72	2.179	ppb	6.098	5728	2	108.9	70	130	
Zn	66	2	72	10.535	ppb	9.152	4844	10	105.3	70	130	
As	75	2	72	5.203	ppb	4.792	1784	5	104.1	70	130	
Se	78	1	72	5.420	ppb	11.109	1559	5	108.4	70	130	
Sr	88	2	72	1.008	ppb	11.670	960	1	100.8	70	130	
Zr	90	2	72	2.779	ppb	26.884	1293	0.5	555.8	70	130	>+/-30%
Nb	93	2	72	12.027	ppb	334.489	7	2	601.3	70	130	>+/-30%
Mo	95	2	115	1.970	ppb	6.351	2234	2	98.5	70	130	
Pd	105	2	115	-749.841	ppb	-27.275	17	1	-74984.1	70	130	>+/-30%
Ag	107	2	115	1.001	ppb	5.798	3764	1	100.1	70	130	
Cd	111	2	115	0.969	ppb	0.772	527	1	96.9	70	130	
Sn	120	2	115	10.623	ppb	1.641	14777	10	106.2	70	130	
Sb	121	2	115	2.070	ppb	11.113	3120	2	103.5	70	130	
Ba	137	2	115	1.131	ppb	17.394	553	1	113.1	70	130	
W	182	2	165	4.981	ppb	2.187	24127	1	498.1	70	130	>+/-30%
Pt	195	2	165	39.584	ppb	216.701	57	1	3958.4	70	130	>+/-30%
Tl	205	2	165	0.882	ppb	0.904	8609	1	88.2	70	130	
Pb	208	2	165	1.138	ppb	3.230	14313	1	113.8	70	130	
Th	232	2	193	6.532	ppb	7.451	80389	2	326.6	70	130	>+/-30%
U	238	2	193	0.959	ppb	1.135	14738	1	95.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	781319	3.13	832675	93.83	60	120	
Sc (IS)	45	1	HMI H2	20705167	3.01	22691138	91.25	60	120	
Sc (IS)	45	2	HMI He	1312355	0.79	1329086	98.74	60	120	
Sc (IS)	45	3	No Gas	39398213	0.21	40115962	98.21	60	120	
Ge Internal standard	72	1	HMI H2	10650914	3.27	11471213	92.85	60	120	
Ge Internal standard	72	2	HMI He	1553267	0.67	1582627	98.14	60	120	
In Internal standard	115	2	HMI He	4744956	0.41	4772525	99.42	60	120	
Ho-165	165	2	HMI He	18352762	0.63	18341213	100.06	60	120	
Ir (IS)	193	2	HMI He	14171759	0.82	14005392	101.19	60	120	

Sample Report

Sample Table

Sample Name	MB 280-584962/1-A
Data File Name	038SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:06:09-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	6.823	ppb	6.823	4.78	3434451	50000	
Be	9	1	6	-0.115	ppb	-0.115	-25.26	20	2000	
B	11	1	6	4.674	ppb	4.674	22.39	2200	2000	
Na	23	2	45	1.764	ppb	1.764	120.48	21815	400000	
Mg	24	2	45	2.928	ppb	2.928	40.14	803	400000	
Al	27	2	45	5.462	ppb	5.462	25.37	550	400000	
Si	28	2	45	2.182	ppb	2.182	171.06	9320	10000	
P	31	2	45	5.646	ppb	5.646	78.09	83	10000	
K	39	2	45	-11.500	ppb	-11.500	-170.85	41221	400000	
Ca	40	1	45	16.918	ppb	16.918	0.73	121806	400000	
Ti	47	2	45	0.201	ppb	0.201	173.21	7	4000	
V	51	2	72	0.156	ppb	0.156	28.42	1097	2000	
Cr	52	2	72	0.150	ppb	0.150	38.38	1083	5000	
Mn	55	2	72	0.323	ppb	0.323	23.74	337	10000	
Fe	56	1	72	14.201	ppb	14.201	1.01	164691	10000	
(Fe)	57	2	72	17.943	ppb	17.943	18.45	997	400000	
Co	59	2	72	0.002	ppb	0.002	290.59	23	2000	
Ni	60	2	72	0.061	ppb	0.061	152.93	430	5000	
Cu	63	2	72	1.715	ppb	1.715	2.10	4611	5000	
Zn	66	2	72	1.453	ppb	1.453	23.97	1123	5000	
As	75	2	72	-0.068	ppb	-0.068	-27.55	35	2000	
Se	78	1	72	-0.015	ppb	-0.015	-54.21	13	2000	
Sr	88	2	72	0.025	ppb	0.025	75.56	90	4000	
Zr	90	2	72	-0.933	ppb	-0.933	-25.21	503	1000	
Nb	93	2	72	47.778	ppb	47.778	113.16	17	200	
Mo	95	2	115	0.107	ppb	0.107	13.27	153	2000	
Pd	105	2	115	-347.668	ppb	-347.668	-16.57	57	100	
Ag	107	2	115	0.002	ppb	0.002	381.48	70	100	
Cd	111	2	115	-0.012	ppb	-0.012	-88.07	3	2000	
Sn	120	2	115	0.206	ppb	0.206	36.31	783	2000	
Sb	121	2	115	0.073	ppb	0.073	65.85	140	1000	
Ba	137	2	115	0.050	ppb	0.050	69.73	83	5000	
W	182	2	165	0.386	ppb	0.386	13.22	4838	100	
Pt	195	2	165	10.047	ppb	10.047	744.44	47	100	
Tl	205	2	165	-0.127	ppb	-0.127	-1.63	577	2000	
Pb	208	2	165	0.037	ppb	0.037	42.31	2297	5000	
Th	232	2	193	2.825	ppb	2.825	10.52	39050	2000	
U	238	2	193	0.000	ppb	0.000	382.72	413	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	786412	0.34	832675	94.44	60	120	
Sc (IS)	45	1	HMI H2	21293841	0.19	22691138	93.84	60	120	
Sc (IS)	45	2	HMI He	1293799	0.95	1329086	97.35	60	120	
Sc (IS)	45	3	No Gas	38421984	0.55	40115962	95.78	60	120	
Ge Internal standard	72	1	HMI H2	10852900	0.18	11471213	94.61	60	120	
Ge Internal standard	72	2	HMI He	1533471	0.97	1582627	96.89	60	120	
In Internal standard	115	2	HMI He	4668937	0.56	4772525	97.83	60	120	
Ho-165	165	2	HMI He	18260685	0.92	18341213	99.56	60	120	
Ir (IS)	193	2	HMI He	14036112	0.34	14005392	100.22	60	120	

Sample Report

Sample Table

Sample Name	LCS 280-584962/2-A
Data File Name	039SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:09:55-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	45.176	ppb	45.176	3.88	3797300	50000	
Be	9	1	6	39.733	ppb	39.733	1.63	13659	2000	
B	11	1	6	3.538	ppb	3.538	19.23	1880	2000	
Na	23	2	45	820.081	ppb	820.081	0.92	207722	400000	
Mg	24	2	45	801.254	ppb	801.254	1.07	88551	400000	
Al	27	2	45	842.279	ppb	842.279	0.87	25763	400000	
Si	28	2	45	42.536	ppb	42.536	9.36	17056	10000	
P	31	2	45	1.533	ppb	1.533	258.80	67	10000	
K	39	2	45	727.096	ppb	727.096	3.15	101532	400000	
Ca	40	1	45	819.610	ppb	819.610	0.78	3141436	400000	
Ti	47	2	45	43.773	ppb	43.773	12.74	1433	4000	
V	51	2	72	41.960	ppb	41.960	0.94	57452	2000	
Cr	52	2	72	41.151	ppb	41.151	0.91	73411	5000	
Mn	55	2	72	40.883	ppb	40.883	2.52	30662	10000	
Fe	56	1	72	857.029	ppb	857.029	0.47	6141920	10000	
(Fe)	57	2	72	826.945	ppb	826.945	1.09	29049	400000	
Co	59	2	72	41.389	ppb	41.389	1.36	121381	2000	
Ni	60	2	72	42.789	ppb	42.789	0.58	36604	5000	
Cu	63	2	72	43.343	ppb	43.343	0.36	97927	5000	
Zn	66	2	72	41.864	ppb	41.864	1.87	17336	5000	
As	75	2	72	41.143	ppb	41.143	1.88	13470	2000	
Se	78	1	72	41.947	ppb	41.947	3.70	12075	2000	
Sr	88	2	72	83.875	ppb	83.875	1.63	72910	4000	
Zr	90	2	72	3.194	ppb	3.194	17.98	1357	1000	
Nb	93	2	72	35.803	ppb	35.803	150.55	13	200	
Mo	95	2	115	42.707	ppb	42.707	2.33	46337	2000	
Pd	105	2	115	-408.653	ppb	-408.653	-42.22	50	100	
Ag	107	2	115	41.175	ppb	41.175	0.38	148024	100	
Cd	111	2	115	42.538	ppb	42.538	2.43	22063	2000	
Sn	120	2	115	42.199	ppb	42.199	1.02	55561	2000	
Sb	121	2	115	41.975	ppb	41.975	0.41	60894	1000	
Ba	137	2	115	43.107	ppb	43.107	0.59	18234	5000	
W	182	2	165	0.611	ppb	0.611	1.15	5708	100	
Pt	195	2	165	12.103	ppb	12.103	769.84	47	100	
Tl	205	2	165	42.064	ppb	42.064	1.11	330646	2000	
Pb	208	2	165	42.751	ppb	42.751	0.88	460395	5000	
Th	232	2	193	40.205	ppb	40.205	2.46	447091	2000	
U	238	2	193	36.842	ppb	36.842	0.41	543967	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	779708	1.25	832675	93.64	60	120	
Sc (IS)	45	1	HMI H2	21093836	0.40	22691138	92.96	60	120	
Sc (IS)	45	2	HMI He	1277735	0.53	1329086	96.14	60	120	
Sc (IS)	45	3	No Gas	38784124	0.63	40115962	96.68	60	120	
Ge Internal standard	72	1	HMI H2	10738053	0.77	11471213	93.61	60	120	
Ge Internal standard	72	2	HMI He	1526813	0.59	1582627	96.47	60	120	
In Internal standard	115	2	HMI He	4612571	0.78	4772525	96.65	60	120	
Ho-165	165	2	HMI He	18048773	0.24	18341213	98.41	60	120	
Ir (IS)	193	2	HMI He	13992210	0.36	14005392	99.91	60	120	

Sample Report

Sample Table

Sample Name	280-163260-A-12-F
Data File Name	040SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:13:40-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1.143	ppb	1.143	74.18	3322616	50000	
Be	9	1	6	0.045	ppb	0.045	233.20	73	2000	
B	11	1	6	29.731	ppb	29.731	4.00	8696	2000	
Na	23	2	45	25462.448	ppb	25462.448	1.08	5921038	400000	
Mg	24	2	45	7283.860	ppb	7283.860	0.57	815886	400000	
Al	27	2	45	5.892	ppb	5.892	35.55	567	400000	
Si	28	2	45	1854.702	ppb	1854.702	1.15	376543	10000	
P	31	2	45	61.569	ppb	61.569	7.37	279	10000	
K	39	2	45	2911.138	ppb	2911.138	1.15	286606	400000	
Ca	40	1	45	22749.984	ppb	22749.984	0.79	86023822	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	29.212	ppb	29.212	1.35	41068	2000	
Cr	52	2	72	7.768	ppb	7.768	3.29	14807	5000	
Mn	55	2	72	3.075	ppb	3.075	10.54	2440	10000	
Fe	56	1	72	48.159	ppb	48.159	0.87	410505	10000	
(Fe)	57	2	72	55.880	ppb	55.880	7.09	2354	400000	
Co	59	2	72	0.224	ppb	0.224	16.36	687	2000	
Ni	60	2	72	12.363	ppb	12.363	6.86	11061	5000	
Cu	63	2	72	0.741	ppb	0.741	11.21	2457	5000	
Zn	66	2	72	1.900	ppb	1.900	16.09	1323	5000	
As	75	2	72	3.239	ppb	3.239	1.00	1135	2000	
Se	78	1	72	3.070	ppb	3.070	3.83	915	2000	
Sr	88	2	72	99.090	ppb	99.090	0.58	87843	4000	
Zr	90	2	72	0.149	ppb	0.149	164.13	740	1000	
Nb	93	2	72	92.764	ppb	92.764	74.80	30	200	
Mo	95	2	115	10.809	ppb	10.809	4.27	11908	2000	
Pd	105	2	115	-414.983	ppb	-414.983	-23.45	50	100	
Ag	107	2	115	0.029	ppb	0.029	39.32	167	100	
Cd	111	2	115	0.019	ppb	0.019	197.13	20	2000	
Sn	120	2	115	0.962	ppb	0.962	17.41	1784	2000	
Sb	121	2	115	0.416	ppb	0.416	11.20	643	1000	
Ba	137	2	115	29.357	ppb	29.357	7.16	12602	5000	
W	182	2	165	2.311	ppb	2.311	0.41	12819	100	
Pt	195	2	165	111.854	ppb	111.854	53.77	80	100	
Tl	205	2	165	-0.109	ppb	-0.109	-7.35	717	2000	
Pb	208	2	165	0.057	ppb	0.057	76.07	2497	5000	
Th	232	2	193	6.440	ppb	6.440	9.82	76222	2000	
U	238	2	193	2.699	ppb	2.699	2.96	39103	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	765485	0.48	832675	91.93	60	120	
Sc (IS)	45	1	HMI H2	21181165	0.35	22691138	93.35	60	120	
Sc (IS)	45	2	HMI He	1301272	0.82	1329086	97.91	60	120	
Sc (IS)	45	3	No Gas	37702342	1.33	40115962	93.98	60	120	
Ge Internal standard	72	1	HMI H2	10914850	0.48	11471213	95.15	60	120	
Ge Internal standard	72	2	HMI He	1557179	0.14	1582627	98.39	60	120	
In Internal standard	115	2	HMI He	4672494	0.52	4772525	97.90	60	120	
Ho-165	165	2	HMI He	18192419	0.46	18341213	99.19	60	120	
Ir (IS)	193	2	HMI He	13603584	0.07	14005392	97.13	60	120	

Sample Report

Sample Table

Sample Name	280-163260-A-12-Fsd@5
Data File Name	041SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:17:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.706	ppb	-3.706	-33.87	3398507	50000	
Be	9	1	6	-0.069	ppb	-0.069	-103.41	37	2000	
B	11	1	6	8.989	ppb	8.989	15.95	3420	2000	
Na	23	2	45	5435.080	ppb	5435.080	1.26	1295407	400000	
Mg	24	2	45	1479.340	ppb	1479.340	0.46	167969	400000	
Al	27	2	45	3.111	ppb	3.111	70.02	487	400000	
Si	28	2	45	372.629	ppb	372.629	1.09	83732	10000	
P	31	2	45	14.866	ppb	14.866	40.99	117	10000	
K	39	2	45	599.640	ppb	599.640	1.21	93762	400000	
Ca	40	1	45	4598.958	ppb	4598.958	0.65	17959251	400000	
Ti	47	2	45	0.395	ppb	0.395	86.60	13	4000	
V	51	2	72	6.707	ppb	6.707	4.34	10227	2000	
Cr	52	2	72	1.546	ppb	1.546	10.71	3647	5000	
Mn	55	2	72	0.775	ppb	0.775	6.50	693	10000	
Fe	56	1	72	12.328	ppb	12.328	2.65	156698	10000	
(Fe)	57	2	72	11.515	ppb	11.515	21.94	793	400000	
Co	59	2	72	0.057	ppb	0.057	29.15	190	2000	
Ni	60	2	72	2.873	ppb	2.873	5.79	2897	5000	
Cu	63	2	72	0.269	ppb	0.269	24.25	1393	5000	
Zn	66	2	72	1.388	ppb	1.388	23.77	1127	5000	
As	75	2	72	0.699	ppb	0.699	4.97	294	2000	
Se	78	1	72	0.573	ppb	0.573	18.94	191	2000	
Sr	88	2	72	20.356	ppb	20.356	1.76	18294	4000	
Zr	90	2	72	-0.588	ppb	-0.588	-27.61	590	1000	
Nb	93	2	72	56.859	ppb	56.859	118.57	20	200	
Mo	95	2	115	2.088	ppb	2.088	10.13	2384	2000	
Pd	105	2	115	-718.964	ppb	-718.964	-13.35	20	100	
Ag	107	2	115	0.005	ppb	0.005	318.99	80	100	
Cd	111	2	115	-0.013	ppb	-0.013	-85.70	3	2000	
Sn	120	2	115	0.453	ppb	0.453	22.69	1137	2000	
Sb	121	2	115	0.078	ppb	0.078	18.06	150	1000	
Ba	137	2	115	5.991	ppb	5.991	2.05	2680	5000	
W	182	2	165	0.226	ppb	0.226	30.99	4204	100	
Pt	195	2	165	49.105	ppb	49.105	3.99	60	100	
Tl	205	2	165	-0.134	ppb	-0.134	-9.19	530	2000	
Pb	208	2	165	0.055	ppb	0.055	35.86	2510	5000	
Th	232	2	193	1.278	ppb	1.278	5.47	21794	2000	
U	238	2	193	0.562	ppb	0.562	6.13	8603	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	800846	0.53	832675	96.18	60	120	
Sc (IS)	45	1	HMI H2	21817056	0.24	22691138	96.15	60	120	
Sc (IS)	45	2	HMI He	1316001	0.24	1329086	99.02	60	120	
Sc (IS)	45	3	No Gas	39041370	0.66	40115962	97.32	60	120	
Ge Internal standard	72	1	HMI H2	11242246	0.54	11471213	98.00	60	120	
Ge Internal standard	72	2	HMI He	1573640	1.52	1582627	99.43	60	120	
In Internal standard	115	2	HMI He	4780205	1.13	4772525	100.16	60	120	
Ho-165	165	2	HMI He	18425691	1.09	18341213	100.46	60	120	
Ir (IS)	193	2	HMI He	13839013	0.52	14005392	98.81	60	120	

Sample Report

Sample Table

Sample Name	280-163260-A-12-G MS
Data File Name	042SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:21:09-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	39.552	ppb	39.552	16.64	3705843	50000	
Be	9	1	6	41.354	ppb	41.354	4.37	13929	2000	
B	11	1	6	30.829	ppb	30.829	3.66	8966	2000	
Na	23	2	45	26382.275	ppb	26382.275	1.50	6124644	400000	
Mg	24	2	45	8101.660	ppb	8101.660	0.97	906020	400000	
Al	27	2	45	841.801	ppb	841.801	4.91	26174	400000	
Si	28	2	45	1893.479	ppb	1893.479	1.59	383612	10000	
P	31	2	45	65.696	ppb	65.696	2.86	293	10000	
K	39	2	45	3642.124	ppb	3642.124	2.49	347345	400000	
Ca	40	1	45	23427.081	ppb	23427.081	0.79	89405699	400000	
Ti	47	2	45	46.125	ppb	46.125	10.59	1537	4000	
V	51	2	72	71.543	ppb	71.543	1.46	98561	2000	
Cr	52	2	72	49.199	ppb	49.199	0.82	88711	5000	
Mn	55	2	72	43.089	ppb	43.089	1.98	32723	10000	
Fe	56	1	72	868.261	ppb	868.261	0.40	6363047	10000	
(Fe)	57	2	72	846.944	ppb	846.944	4.14	30115	400000	
Co	59	2	72	40.934	ppb	40.934	0.95	121555	2000	
Ni	60	2	72	52.628	ppb	52.628	0.64	45499	5000	
Cu	63	2	72	43.233	ppb	43.233	2.34	98906	5000	
Zn	66	2	72	42.838	ppb	42.838	0.97	17950	5000	
As	75	2	72	45.187	ppb	45.187	1.63	14973	2000	
Se	78	1	72	42.824	ppb	42.824	0.71	12605	2000	
Sr	88	2	72	182.557	ppb	182.557	0.73	160614	4000	
Zr	90	2	72	5.462	ppb	5.462	9.76	1850	1000	
Nb	93	2	72	81.897	ppb	81.897	24.82	27	200	
Mo	95	2	115	53.002	ppb	53.002	2.09	58088	2000	
Pd	105	2	115	-613.013	ppb	-613.013	-43.45	30	100	
Ag	107	2	115	41.080	ppb	41.080	1.36	149199	100	
Cd	111	2	115	42.820	ppb	42.820	0.85	22440	2000	
Sn	120	2	115	42.614	ppb	42.614	0.89	56678	2000	
Sb	121	2	115	42.994	ppb	42.994	0.91	63015	1000	
Ba	137	2	115	72.525	ppb	72.525	1.33	30951	5000	
W	182	2	165	2.552	ppb	2.552	2.52	13707	100	
Pt	195	2	165	124.247	ppb	124.247	51.62	83	100	
Tl	205	2	165	42.596	ppb	42.596	0.57	334695	2000	
Pb	208	2	165	42.842	ppb	42.842	0.21	461206	5000	
Th	232	2	193	45.201	ppb	45.201	0.98	482788	2000	
U	238	2	193	41.778	ppb	41.778	2.16	593521	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	764063	0.47	832675	91.76	60	120	
Sc (IS)	45	1	HMI H2	21378259	0.65	22691138	94.21	60	120	
Sc (IS)	45	2	HMI He	1299322	1.21	1329086	97.76	60	120	
Sc (IS)	45	3	No Gas	38337615	0.67	40115962	95.57	60	120	
Ge Internal standard	72	1	HMI H2	10981962	0.60	11471213	95.73	60	120	
Ge Internal standard	72	2	HMI He	1546023	0.53	1582627	97.69	60	120	
In Internal standard	115	2	HMI He	4659978	0.52	4772525	97.64	60	120	
Ho-165	165	2	HMI He	18042248	0.39	18341213	98.37	60	120	
Ir (IS)	193	2	HMI He	13465797	0.78	14005392	96.15	60	120	

Sample Report

Sample Table

Sample Name	280-163260-A-12-H MSD
Data File Name	043SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:24:55-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	35.039	ppb	35.039	15.51	3691126	50000	
Be	9	1	6	42.047	ppb	42.047	6.16	14130	2000	
B	11	1	6	31.128	ppb	31.128	2.40	9026	2000	
Na	23	2	45	27188.676	ppb	27188.676	0.55	6279592	400000	
Mg	24	2	45	8342.492	ppb	8342.492	0.26	928240	400000	
Al	27	2	45	821.447	ppb	821.447	0.30	25430	400000	
Si	28	2	45	1962.438	ppb	1962.438	0.62	395271	10000	
P	31	2	45	73.438	ppb	73.438	12.74	319	10000	
K	39	2	45	3793.754	ppb	3793.754	0.70	358267	400000	
Ca	40	1	45	24198.935	ppb	24198.935	1.41	91999012	400000	
Ti	47	2	45	40.464	ppb	40.464	2.85	1340	4000	
V	51	2	72	72.529	ppb	72.529	1.09	100338	2000	
Cr	52	2	72	48.579	ppb	48.579	1.41	87980	5000	
Mn	55	2	72	44.486	ppb	44.486	0.76	33925	10000	
Fe	56	1	72	872.421	ppb	872.421	0.91	6365582	10000	
(Fe)	57	2	72	849.408	ppb	849.408	1.36	30332	400000	
Co	59	2	72	41.070	ppb	41.070	0.75	122485	2000	
Ni	60	2	72	54.459	ppb	54.459	2.07	47271	5000	
Cu	63	2	72	42.845	ppb	42.845	0.64	98450	5000	
Zn	66	2	72	43.471	ppb	43.471	3.52	18284	5000	
As	75	2	72	44.822	ppb	44.822	1.13	14917	2000	
Se	78	1	72	43.624	ppb	43.624	1.20	12785	2000	
Sr	88	2	72	183.846	ppb	183.846	0.47	162449	4000	
Zr	90	2	72	4.854	ppb	4.854	12.36	1730	1000	
Nb	93	2	72	70.006	ppb	70.006	29.84	23	200	
Mo	95	2	115	53.912	ppb	53.912	0.49	60115	2000	
Pd	105	2	115	-618.818	ppb	-618.818	-15.82	30	100	
Ag	107	2	115	40.293	ppb	40.293	0.66	148898	100	
Cd	111	2	115	41.487	ppb	41.487	0.70	22119	2000	
Sn	120	2	115	42.310	ppb	42.310	1.05	57257	2000	
Sb	121	2	115	42.440	ppb	42.440	0.72	63286	1000	
Ba	137	2	115	73.516	ppb	73.516	1.26	31920	5000	
W	182	2	165	2.528	ppb	2.528	4.72	13740	100	
Pt	195	2	165	20.985	ppb	20.985	250.58	50	100	
Tl	205	2	165	41.932	ppb	41.932	1.08	332672	2000	
Pb	208	2	165	42.073	ppb	42.073	0.54	457329	5000	
Th	232	2	193	48.413	ppb	48.413	1.41	514405	2000	
U	238	2	193	41.990	ppb	41.990	0.97	594141	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	762543	0.85	832675	91.58	60	120	
Sc (IS)	45	1	HMI H2	21298773	1.13	22691138	93.86	60	120	
Sc (IS)	45	2	HMI He	1292682	0.55	1329086	97.26	60	120	
Sc (IS)	45	3	No Gas	38591902	1.74	40115962	96.20	60	120	
Ge Internal standard	72	1	HMI H2	10934844	0.41	11471213	95.32	60	120	
Ge Internal standard	72	2	HMI He	1552744	1.00	1582627	98.11	60	120	
In Internal standard	115	2	HMI He	4741156	0.63	4772525	99.34	60	120	
Ho-165	165	2	HMI He	18216473	0.71	18341213	99.32	60	120	
Ir (IS)	193	2	HMI He	13410756	0.78	14005392	95.75	60	120	

Sample Report

Sample Table

Sample Name	280-163260-A-12-F pds
Data File Name	044SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:28:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584962 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	215.698	ppb	215.698	1.47	5259457	50000	
Be	9	1	6	211.049	ppb	211.049	0.75	71806	2000	
B	11	1	6	30.377	ppb	30.377	4.18	8969	2000	
Na	23	2	45	26132.750	ppb	26132.750	5.06	5932519	400000	
Mg	24	2	45	7485.359	ppb	7485.359	4.92	818592	400000	
Al	27	2	45	2221.191	ppb	2221.191	2.83	67002	400000	
Si	28	2	45	2105.408	ppb	2105.408	5.14	416138	10000	
P	31	2	45	2208.594	ppb	2208.594	5.36	7626	10000	
K	39	2	45	2991.076	ppb	2991.076	5.27	286401	400000	
Ca	40	1	45	22297.723	ppb	22297.723	0.69	85611212	400000	
Ti	47	2	45	237.699	ppb	237.699	6.50	7735	4000	
V	51	2	72	241.006	ppb	241.006	2.24	330025	2000	
Cr	52	2	72	219.962	ppb	219.962	1.30	393935	5000	
Mn	55	2	72	217.064	ppb	217.064	2.08	164508	10000	
Fe	56	1	72	57.182	ppb	57.182	1.29	480523	10000	
(Fe)	57	2	72	65.253	ppb	65.253	12.84	2667	400000	
Co	59	2	72	211.488	ppb	211.488	1.89	628167	2000	
Ni	60	2	72	219.869	ppb	219.869	0.85	188973	5000	
Cu	63	2	72	219.514	ppb	219.514	2.20	499290	5000	
Zn	66	2	72	219.875	ppb	219.875	2.57	89923	5000	
As	75	2	72	218.098	ppb	218.098	2.28	72069	2000	
Se	78	1	72	211.370	ppb	211.370	0.24	62412	2000	
Sr	88	2	72	315.096	ppb	315.096	2.10	277271	4000	
Zr	90	2	72	46.725	ppb	46.725	12.74	10530	1000	
Nb	93	2	72	116.618	ppb	116.618	45.86	37	200	
Mo	95	2	115	231.508	ppb	231.508	2.00	252425	2000	
Pd	105	2	115	1666.367	ppb	1666.367	14.39	257	100	>LDR
Ag	107	2	115	55.628	ppb	55.628	1.77	201088	100	
Cd	111	2	115	217.139	ppb	217.139	2.16	113223	2000	
Sn	120	2	115	221.724	ppb	221.724	1.37	291388	2000	
Sb	121	2	115	220.552	ppb	220.552	2.09	321600	1000	
Ba	137	2	115	249.633	ppb	249.633	0.69	105896	5000	
W	182	2	165	81.511	ppb	81.511	2.51	337203	100	
Pt	195	2	165	83.477	ppb	83.477	164.91	70	100	
Tl	205	2	165	237.718	ppb	237.718	1.41	1850128	2000	
Pb	208	2	165	220.282	ppb	220.282	1.76	2350138	5000	
Th	232	2	193	103.942	ppb	103.942	13.83	1091187	2000	
U	238	2	193	225.645	ppb	225.645	2.21	3177969	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	774340	0.85	832675	92.99	60	120	
Sc (IS)	45	1	HMI H2	21506418	0.17	22691138	94.78	60	120	
Sc (IS)	45	2	HMI He	1272196	4.27	1329086	95.72	60	120	
Sc (IS)	45	3	No Gas	38732408	0.66	40115962	96.55	60	120	
Ge Internal standard	72	1	HMI H2	11029144	0.65	11471213	96.15	60	120	
Ge Internal standard	72	2	HMI He	1546880	1.85	1582627	97.74	60	120	
In Internal standard	115	2	HMI He	4638815	1.11	4772525	97.20	60	120	
Ho-165	165	2	HMI He	17942866	1.87	18341213	97.83	60	120	
Ir (IS)	193	2	HMI He	13358205	1.50	14005392	95.38	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	045_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:32:22-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	90.313	ppb	7.593	4247366	100	90.3	90	110	
Be	9	1	6	50.294	ppb	3.704	17159	50	100.6	90	110	
B	11	1	6	509.813	ppb	1.195	135868	50	1019.6	90	110	>+\-10%
Na	23	2	45	52692.653	ppb	0.863	12544406	51000	103.3	90	110	
Mg	24	2	45	11366.888	ppb	1.138	1305567	11000	103.3	90	110	
Al	27	2	45	1003.832	ppb	2.945	31994	1000	100.4	90	110	
Si	28	2	45	59.782	ppb	9.372	21320	500	12.0	90	110	>+\-10%
P	31	2	45	2443.582	ppb	2.654	8858	2500	97.7	90	110	
K	39	2	45	10290.253	ppb	0.672	928782	11000	93.5	90	110	
Ca	40	1	45	11163.713	ppb	0.409	43045633	11000	101.5	90	110	
(Ca)	44	1	45	11934.993	ppb	1.535	1376377	11000	108.5	90	110	
Ti	47	2	45	51.956	ppb	8.193	1777	50	103.9	90	110	
V	51	2	72	51.681	ppb	0.446	72799	50	103.4	90	110	
Cr	52	2	72	50.230	ppb	0.164	92267	50	100.5	90	110	
Mn	55	2	72	50.497	ppb	1.594	39053	50	101.0	90	110	
Fe	56	1	72	1018.816	ppb	0.173	7565736	1000	101.9	90	110	
(Fe)	56	2	72	1023.495	ppb	1.137	1560648	1000	102.3	90	110	
(Fe)	57	2	72	987.993	ppb	1.549	35732	1000	98.8	90	110	
Co	59	2	72	49.067	ppb	1.009	148460	50	98.1	90	110	
Ni	60	2	72	49.352	ppb	2.381	43498	50	98.7	90	110	
Cu	63	2	72	48.070	ppb	1.181	111970	50	96.1	90	110	
Zn	66	2	72	49.420	ppb	4.207	21014	50	98.8	90	110	
As	75	2	72	49.934	ppb	0.181	16853	50	99.9	90	110	
Se	78	1	72	50.738	ppb	1.179	15152	50	101.5	90	110	
Sr	88	2	72	101.089	ppb	2.148	90652	100	101.1	90	110	
Zr	90	2	72	3.881	ppb	17.232	1547	50	7.8	90	110	>+\-10%
Nb	93	2	72	206.170	ppb	83.914	63	100	206.2	90	110	>+\-10%
Mo	95	2	115	52.864	ppb	2.765	58931	50	105.7	90	110	
Pd	105	2	115	888.889	ppb	37.882	183	50	1777.8	90	110	>+\-10%
Ag	107	2	115	50.922	ppb	0.759	188147	50	101.8	90	110	
Cd	111	2	115	50.226	ppb	2.053	26770	50	100.5	90	110	
Sn	120	2	115	54.442	ppb	1.946	73507	50	108.9	90	110	
Sb	121	2	115	53.684	ppb	0.768	80041	50	107.4	90	110	
Ba	137	2	115	50.214	ppb	4.636	21816	50	100.4	90	110	
W	182	2	165	53.291	ppb	1.120	225101	50	106.6	90	110	
Pt	195	2	165	-49.643	ppb	-70.396	27	50	-99.3	90	110	>+\-10%
Tl	205	2	165	50.297	ppb	0.401	398923	50	100.6	90	110	
Pb	208	2	165	50.700	ppb	0.650	550987	50	101.4	90	110	
Th	232	2	193	45.333	ppb	3.768	497158	50	90.7	90	110	
U	238	2	193	46.856	ppb	1.132	683562	50	93.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	774566	0.78	832675	93.02	60	120	
Sc (IS)	45	1	HMI H2	21583943	0.56	22691138	95.12	60	120	
Sc (IS)	45	2	HMI He	1334608	0.34	1329086	100.42	60	120	
Sc (IS)	45	3	No Gas	39351955	0.31	40115962	98.10	60	120	
Ge Internal standard	72	1	HMI H2	11144694	0.25	11471213	97.15	60	120	
Ge Internal standard	72	2	HMI He	1575260	0.38	1582627	99.53	60	120	
In Internal standard	115	2	HMI He	4740769	1.45	4772525	99.33	60	120	
Ho-165	165	2	HMI He	18225126	0.11	18341213	99.37	60	120	
Ir (IS)	193	2	HMI He	13827572	0.33	14005392	98.73	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	046_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:36:05-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-0.620	ppb	-866.5	3433536	10	
Be	9	1	6	0.014	ppb	627.0	67	0.5	
B	11	1	6	9.586	ppb	8.0	3637	0.5	>RL
Na	23	2	45	32.514	ppb	15.1	29606	25	>RL
Mg	24	2	45	3.540	ppb	11.3	893	25	
Al	27	2	45	2.244	ppb	17.5	463	15	
K	39	2	45	14.958	ppb	139.9	44479	50	
Ti	47	2	45	0.193	ppb	173.2	7	0.5	
V	51	2	72	0.795	ppb	38.0	2020	1	
Cr	52	2	72	0.044	ppb	157.9	923	1	
Mn	55	2	72	0.100	ppb	136.7	173	0.5	
(Fe)	57	2	72	2.205	ppb	62.7	463	25	
Co	59	2	72	0.036	ppb	44.4	127	0.5	
Ni	60	2	72	0.129	ppb	58.2	503	1	
Cu	63	2	72	0.063	ppb	101.9	920	1	
Zn	66	2	72	-0.185	ppb	-126.0	477	5	
As	75	2	72	0.016	ppb	237.0	65	1	
Se	78	1	72	0.099	ppb	46.9	48	1	
Sr	88	2	72	0.025	ppb	28.0	93	0.5	
Zr	90	2	72	-0.585	ppb	-62.9	593	1	
Nb	93	2	72	10.958	ppb	350.2	7	2	>RL
Mo	95	2	115	0.585	ppb	16.2	697	0.5	>RL
Pd	105	2	115	-459.844	ppb	-74.5	47	1	
Ag	107	2	115	0.048	ppb	76.4	243	1	
Cd	111	2	115	0.031	ppb	91.6	27	0.5	
Sn	120	2	115	1.110	ppb	11.1	2030	1	>RL
Sb	121	2	115	0.453	ppb	16.2	717	0.6	
Ba	137	2	115	0.053	ppb	23.8	87	0.5	
W	182	2	165	0.520	ppb	22.1	5438	1	
Pt	195	2	165	39.108	ppb	113.9	57	1	>RL
Tl	205	2	165	-0.071	ppb	-13.5	1030	0.1	
Pb	208	2	165	0.064	ppb	21.5	2604	0.5	
Th	232	2	193	1.805	ppb	7.4	28191	1	>RL
U	238	2	193	0.093	ppb	5.3	1810	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	812638	0.52	832675	97.59	60	120	
Sc (IS)	45	1	HMI H2	22089717	0.80	22691138	97.35	60	120	
Sc (IS)	45	2	HMI He	1325992	2.09	1329086	99.77	60	120	
Sc (IS)	45	3	No Gas	39136975	0.45	40115962	97.56	60	120	
Ge Internal standard	72	1	HMI H2	11249896	0.93	11471213	98.07	60	120	
Ge Internal standard	72	2	HMI He	1583010	2.40	1582627	100.02	60	120	
In Internal standard	115	2	HMI He	4793155	0.66	4772525	100.43	60	120	
Ho-165	165	2	HMI He	18408013	1.04	18341213	100.36	60	120	
Ir (IS)	193	2	HMI He	14199676	0.39	14005392	101.39	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	047LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:39:48-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	10.707	ppb	38.050	3554198	50	21.4	70	130	>+/-30%
Be	9	1	6	0.913	ppb	30.648	387	1	91.3	70	130	
Na	23	2	45	59.132	ppb	3.345	35868	50	118.3	70	130	
Mg	24	2	45	50.090	ppb	6.084	6198	50	100.2	70	130	
Al	27	2	45	47.094	ppb	7.935	1864	50	94.2	70	130	
K	39	2	45	100.527	ppb	13.840	51760	100	100.5	70	130	
V	51	2	72	5.867	ppb	5.147	9096	5	117.3	70	130	
Cr	52	2	72	1.970	ppb	4.485	4437	2	98.5	70	130	
Mn	55	2	72	1.038	ppb	4.275	900	1	103.8	70	130	
(Fe)	57	2	72	51.571	ppb	18.361	2230	50	103.1	70	130	
Co	59	2	72	1.056	ppb	5.519	3220	1	105.6	70	130	
Ni	60	2	72	2.052	ppb	9.811	2187	2	102.6	70	130	
Cu	63	2	72	2.224	ppb	7.372	5931	2	111.2	70	130	
Zn	66	2	72	10.589	ppb	3.236	4951	10	105.9	70	130	
As	75	2	72	5.211	ppb	2.568	1818	5	104.2	70	130	
Se	78	1	72	5.091	ppb	2.976	1537	5	101.8	70	130	
Sr	88	2	72	1.067	ppb	5.538	1030	1	106.7	70	130	
Zr	90	2	72	0.801	ppb	44.867	890	0.5	160.2	70	130	>+/-30%
Nb	93	2	72	44.700	ppb	216.598	17	2	2235.0	70	130	>+/-30%
Mo	95	2	115	2.467	ppb	6.627	2850	2	123.4	70	130	
Pd	105	2	115	-561.085	ppb	-35.716	37	1	-56108.5	70	130	>+/-30%
Ag	107	2	115	1.018	ppb	2.565	3911	1	101.8	70	130	
Cd	111	2	115	1.100	ppb	6.518	610	1	110.0	70	130	
Sn	120	2	115	10.562	ppb	2.594	15021	10	105.6	70	130	
Sb	121	2	115	2.234	ppb	17.887	3441	2	111.7	70	130	
Ba	137	2	115	1.028	ppb	16.425	520	1	102.8	70	130	
W	182	2	165	5.205	ppb	1.245	25261	1	520.5	70	130	>+/-30%
Pt	195	2	165	59.050	ppb	261.057	63	1	5905.0	70	130	>+/-30%
Tl	205	2	165	0.915	ppb	6.637	8940	1	91.5	70	130	
Pb	208	2	165	1.127	ppb	0.277	14300	1	112.7	70	130	
Th	232	2	193	6.489	ppb	8.179	80092	2	324.4	70	130	>+/-30%
U	238	2	193	0.949	ppb	5.293	14618	1	94.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	810818	0.51	832675	97.38	60	120	
Sc (IS)	45	1	HMI H2	21793596	0.45	22691138	96.04	60	120	
Sc (IS)	45	2	HMI He	1324588	0.63	1329086	99.66	60	120	
Sc (IS)	45	3	No Gas	39384130	1.05	40115962	98.18	60	120	
Ge Internal standard	72	1	HMI H2	11151518	0.70	11471213	97.21	60	120	
Ge Internal standard	72	2	HMI He	1580142	1.60	1582627	99.84	60	120	
In Internal standard	115	2	HMI He	4850425	0.15	4772525	101.63	60	120	
Ho-165	165	2	HMI He	18497371	0.87	18341213	100.85	60	120	
Ir (IS)	193	2	HMI He	14202526	0.67	14005392	101.41	60	120	

Blank Report

Sample Table

Sample Name	mb 280-584924/1-a
Data File Name	048_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:43:33-06:00
Sample Type	Blank
Dilution	1
Comment	584924 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-6.352	ppb	-64.96536004	3357488	10
Be	9	1	6	-0.077	ppb	-77.15420566	33	0.5
B	11	1	6	3.417	ppb	5.973724641	1874	0.5
Na	23	2	45	-3.447	ppb	-69.66874019	20580	25
Mg	24	2	45	2.165	ppb	9.188314835	717	25
Al	27	2	45	2.097	ppb	51.81986784	447	15
K	39	2	45	7.382	ppb	69.8391822	42692	50
Ti	47	2	45	0.199	ppb	86.60439581	7	0.5
V	51	2	72	0.146	ppb	73.93174748	1100	1
Cr	52	2	72	0.221	ppb	14.1215281	1227	1
Mn	55	2	72	0.296	ppb	23.36466554	320	0.5
(Fe)	57	2	72	25.176	ppb	13.73335249	1267	25
Co	59	2	72	0.012	ppb	87.6639001	53	0.5
Ni	60	2	72	0.123	ppb	30.87117777	490	1
Cu	63	2	72	0.028	ppb	236.075032	827	1
Zn	66	2	72	1.576	ppb	20.68066921	1190	5
As	75	2	72	-0.037	ppb	-98.17048867	46	1
Se	78	1	72	-0.016	ppb	-177.2960538	13	1
Sr	88	2	72	0.019	ppb	315.424412	87	0.5
Zr	90	2	72	0.136	ppb	221.3939078	737	1
Nb	93	2	72	46.949	ppb	113.5066863	17	2
Mo	95	2	115	0.112	ppb	15.44165339	160	0.5
Pd	105	2	115	-221.940	ppb	-86.56927724	70	1
Ag	107	2	115	-0.001	ppb	-1165.676246	60	1
Cd	111	2	115	-0.006	ppb	-348.2207865	7	0.5
Sn	120	2	115	0.200	ppb	8.901482682	783	1
Sb	121	2	115	0.179	ppb	52.53648236	297	0.6
Ba	137	2	115	-0.015	ppb	-635.2934373	57	0.5
W	182	2	165	1.159	ppb	9.620450479	8016	1
Pt	195	2	165	41.498	ppb	149.726092	57	1
Tl	205	2	165	-0.132	ppb	-4.848224691	537	0.1
Pb	208	2	165	0.047	ppb	20.13835091	2384	0.5
Th	232	2	193	2.999	ppb	12.29454299	40520	1
U	238	2	193	0.010	ppb	23.32385348	547	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	791013	0.69	832675	95.00	60	120	
Sc (IS)	45	1	HMI H2	21705602	0.31	22691138	95.66	60	120	
Sc (IS)	45	2	HMI He	1291082	2.36	1329086	97.14	60	120	
Sc (IS)	45	3	No Gas	38832874	0.29	40115962	96.80	60	120	
Ge Internal standard	72	1	HMI H2	11053395	0.70	11471213	96.36	60	120	
Ge Internal standard	72	2	HMI He	1555548	1.01	1582627	98.29	60	120	
In Internal standard	115	2	HMI He	4715663	2.05	4772525	98.81	60	120	
Ho-165	165	2	HMI He	18159970	1.63	18341213	99.01	60	120	
Ir (IS)	193	2	HMI He	13889404	0.66	14005392	99.17	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-584924/2-a
Data File Name	049_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:47:19-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584924 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	29.967	29.967	ppb	1.454	5718398	400	7.5	80	120	>+/-20%
Be	9	1	6	-0.161	-0.161	ppb	-6.392	7	40	-0.4	80	120	>+/-20%
Na	23	2	45	-39.625	-39.625	ppb	-1.885	18327	40	-99.1	80	120	>+/-20%
Mg	24	2	45	-1.396	-1.396	ppb	-9.798	480	40	-3.5	80	120	>+/-20%
Al	27	2	45	-3.719	-3.719	ppb	-31.829	403	40	-9.3	80	120	>+/-20%
K	39	2	45	-242.166	-242.166	ppb	-2.681	32793	40	-605.4	80	120	>+/-20%
V	51	2	72	-0.214	-0.214	ppb	-38.123	880	40	-0.5	80	120	>+/-20%
Cr	52	2	72	-0.148	-0.148	ppb	-32.127	820	40	-0.4	80	120	>+/-20%
Mn	55	2	72	0.041	0.041	ppb	38.970	183	40	0.1	80	120	>+/-20%
(Fe)	57	2	72	-2.245	-2.245	ppb	-70.122	433	40	-5.6	80	120	>+/-20%
Co	59	2	72	0.001	0.001	ppb	164.018	30	40	0.0	80	120	>+/-20%
Ni	60	2	72	-0.070	-0.070	ppb	-111.727	470	40	-0.2	80	120	>+/-20%
Cu	63	2	72	-0.107	-0.107	ppb	-5.937	750	40	-0.3	80	120	>+/-20%
Zn	66	2	72	-0.244	-0.244	ppb	-39.975	647	40	-0.6	80	120	>+/-20%
As	75	2	72	-0.069	-0.069	ppb	-37.996	52	40	-0.2	80	120	>+/-20%
Se	78	1	72	0.000	0.000	ppb	-24081.441	24	40	0.0	80	120	>+/-20%
Nb	93	2	72	28.879	28.879	ppb	98.546	17	40	72.2	80	120	>+/-20%
Mo	95	2	115	0.096	0.096	ppb	107.946	213	40	0.2	80	120	>+/-20%
Pd	105	2	115	-156.599	-156.599	ppb	-79.852	113	40	-391.5	80	120	>+/-20%
Ag	107	2	115	0.003	0.003	ppb	64.699	107	40	0.0	80	120	>+/-20%
Cd	111	2	115	-0.010	-0.010	ppb	-137.457	7	40	0.0	80	120	>+/-20%
Sn	120	2	115	-0.080	-0.080	ppb	-123.524	607	40	-0.2	80	120	>+/-20%
Sb	121	2	115	0.062	0.062	ppb	99.684	187	40	0.2	80	120	>+/-20%
Ba	137	2	115	-0.035	-0.035	ppb	-47.881	70	40	-0.1	80	120	>+/-20%
W	182	2	165	-0.302	-0.302	ppb	-22.815	3014	40	-0.8	80	120	>+/-20%
Pt	195	2	165	74.914	74.914	ppb	124.540	103	40	187.3	80	120	>+/-20%
Tl	205	2	165	-0.134	-0.134	ppb	-1.476	797	40	-0.3	80	120	>+/-20%
Pb	208	2	165	-0.001	-0.001	ppb	-340.237	2874	40	0.0	80	120	>+/-20%
Th	232	2	193	0.220	0.220	ppb	82.982	16304	40	0.5	80	120	>+/-20%
U	238	2	193	0.002	0.002	ppb	669.274	673	40	0.0	80	120	>+/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1292531	8.78	832675	155.23	60	120	IS Failed
Sc (IS)	45	1	HMI H2	31149715	10.99	22691138	137.28	60	120	IS Failed
Sc (IS)	45	2	HMI He	1930255	1.88	1329086	145.23	60	120	IS Failed
Sc (IS)	45	3	No Gas	60492894	3.35	40115962	150.80	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	15919955	11.13	11471213	138.78	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2261211	2.29	1582627	142.88	60	120	IS Failed
In Internal standard	115	2	HMI He	6967028	2.41	4772525	145.98	60	120	IS Failed
Ho-165	165	2	HMI He	27919658	2.18	18341213	152.22	60	120	IS Failed
Ir (IS)	193	2	HMI He	21750680	1.55	14005392	155.30	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165769-b-1-a
Data File Name	050SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:51:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	38.679	ppb	38.679	6.60	5783347	50000	
Be	9	1	6	-0.127	ppb	-0.127	-32.73	27	2000	
B	11	1	6	0.570	ppb	0.570	105.82	1814	2000	
Na	23	2	45	-42.670	ppb	-42.670	-15.63	17373	400000	
Mg	24	2	45	-1.463	ppb	-1.463	-2.45	473	400000	
Al	27	2	45	-2.467	ppb	-2.467	-38.03	463	400000	
Si	28	2	45	-13.342	ppb	-13.342	-26.19	9400	10000	
P	31	2	45	-4.756	ppb	-4.756	-55.17	69	10000	
K	39	2	45	-256.262	ppb	-256.262	-6.67	31246	400000	
Ca	40	1	45	-4.837	ppb	-4.837	-37.85	56656	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.268	ppb	-0.268	-16.91	787	2000	
Cr	52	2	72	-0.162	ppb	-0.162	-19.69	797	5000	
Mn	55	2	72	0.002	ppb	0.002	1356.70	143	10000	
Fe	56	1	72	-0.571	ppb	-0.571	-411.18	84023	10000	
(Fe)	57	2	72	-1.123	ppb	-1.123	-52.55	500	400000	
Co	59	2	72	-0.001	ppb	-0.001	-12.39	20	2000	
Ni	60	2	72	-0.130	ppb	-0.130	-42.19	403	5000	
Cu	63	2	72	-0.090	ppb	-0.090	-16.67	823	5000	
Zn	66	2	72	-0.150	ppb	-0.150	-109.05	717	5000	
As	75	2	72	-0.084	ppb	-0.084	-9.01	46	2000	
Se	78	1	72	-0.038	ppb	-0.038	-23.57	9	2000	
Sr	88	2	72	-0.040	ppb	-0.040	-29.70	50	4000	
Zr	90	2	72	-0.403	ppb	-0.403	-136.97	927	1000	
Nb	93	2	72	-3.253	ppb	-3.253	-422.99	3	200	
Mo	95	2	115	0.153	ppb	0.153	92.46	307	2000	
Pd	105	2	115	-389.138	ppb	-389.138	-88.38	80	100	
Ag	107	2	115	-0.004	ppb	-0.004	-138.22	70	100	
Cd	111	2	115	-0.014	ppb	-0.014	-52.15	3	2000	
Sn	120	2	115	0.012	ppb	0.012	1566.15	793	2000	
Sb	121	2	115	0.064	ppb	0.064	102.32	190	1000	
Ba	137	2	115	-0.020	ppb	-0.020	-92.30	80	5000	
W	182	2	165	-0.265	ppb	-0.265	-31.84	3307	100	
Pt	195	2	165	-14.655	ppb	-14.655	-331.95	60	100	
Tl	205	2	165	-0.156	ppb	-0.156	-7.68	543	2000	
Pb	208	2	165	-0.017	ppb	-0.017	-58.59	2660	5000	
Th	232	2	193	0.181	ppb	0.181	99.19	15840	2000	
U	238	2	193	0.006	ppb	0.006	260.52	783	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1313599	11.29	832675	157.76	60	120	IS Failed
Sc (IS)	45	1	HMI H2	31308515	13.54	22691138	137.98	60	120	IS Failed
Sc (IS)	45	2	HMI He	1947202	4.33	1329086	146.51	60	120	IS Failed
Sc (IS)	45	3	No Gas	59959167	2.62	40115962	149.46	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	15910424	13.10	11471213	138.70	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2310501	2.69	1582627	145.99	60	120	IS Failed
In Internal standard	115	2	HMI He	7043659	2.69	4772525	147.59	60	120	IS Failed
Ho-165	165	2	HMI He	28460649	2.38	18341213	155.17	60	120	IS Failed
Ir (IS)	193	2	HMI He	22102200	2.03	14005392	157.81	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165769-b-2-a
Data File Name	051SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:54:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	13.908	ppb	13.908	34.67	3588674	50000	
Be	9	1	6	-0.095	ppb	-0.095	-47.59	27	2000	
B	11	1	6	73.077	ppb	73.077	3.82	20172	2000	
Na	23	2	45	26804.565	ppb	26804.565	1.89	6371768	400000	
Mg	24	2	45	39509.005	ppb	39509.005	3.10	4521679	400000	
Al	27	2	45	11.487	ppb	11.487	33.25	753	400000	
Si	28	2	45	1325.796	ppb	1325.796	3.09	277753	10000	
P	31	2	45	10.422	ppb	10.422	43.12	102	10000	
K	39	2	45	1501.474	ppb	1501.474	2.65	172126	400000	
Ca	40	1	45	102357.491	ppb	102357.491	0.16	397795554	400000	
Ti	47	2	45	0.587	ppb	0.587	2.05	20	4000	
V	51	2	72	0.392	ppb	0.392	18.43	1483	2000	
Cr	52	2	72	0.195	ppb	0.195	11.94	1217	5000	
Mn	55	2	72	421.597	ppb	421.597	0.82	331637	10000	
Fe	56	1	72	73.057	ppb	73.057	0.43	603318	10000	
(Fe)	57	2	72	83.192	ppb	83.192	11.87	3424	400000	
Co	59	2	72	0.713	ppb	0.713	7.28	2217	2000	
Ni	60	2	72	1.737	ppb	1.737	3.39	1944	5000	
Cu	63	2	72	0.541	ppb	0.541	4.30	2060	5000	
Zn	66	2	72	12.631	ppb	12.631	3.93	5895	5000	
As	75	2	72	1.777	ppb	1.777	7.02	670	2000	
Se	78	1	72	-0.007	ppb	-0.007	-187.60	16	2000	
Sr	88	2	72	425.150	ppb	425.150	0.78	388413	4000	
Zr	90	2	72	0.074	ppb	0.074	273.31	747	1000	
Nb	93	2	72	111.398	ppb	111.398	141.70	37	200	
Mo	95	2	115	2.884	ppb	2.884	9.01	3307	2000	
Pd	105	2	115	-495.763	ppb	-495.763	-62.25	43	100	
Ag	107	2	115	0.002	ppb	0.002	180.49	70	100	
Cd	111	2	115	0.209	ppb	0.209	33.99	123	2000	
Sn	120	2	115	0.668	ppb	0.668	4.68	1440	2000	
Sb	121	2	115	0.178	ppb	0.178	49.87	303	1000	
Ba	137	2	115	78.032	ppb	78.032	3.98	34452	5000	
W	182	2	165	1.241	ppb	1.241	6.67	8583	100	
Pt	195	2	165	66.929	ppb	66.929	136.62	67	100	
Tl	205	2	165	-0.132	ppb	-0.132	-7.06	550	2000	
Pb	208	2	165	0.052	ppb	0.052	29.54	2507	5000	
Th	232	2	193	4.033	ppb	4.033	11.03	51304	2000	
U	238	2	193	8.060	ppb	8.060	0.66	117496	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	770833	0.38	832675	92.57	60	120	
Sc (IS)	45	1	HMI H2	21780637	0.32	22691138	95.99	60	120	
Sc (IS)	45	2	HMI He	1330722	2.06	1329086	100.12	60	120	
Sc (IS)	45	3	No Gas	39452603	1.20	40115962	98.35	60	120	
Ge Internal standard	72	1	HMI H2	11160562	0.25	11471213	97.29	60	120	
Ge Internal standard	72	2	HMI He	1605696	0.68	1582627	101.46	60	120	
In Internal standard	115	2	HMI He	4822916	1.11	4772525	101.06	60	120	
Ho-165	165	2	HMI He	18649119	0.57	18341213	101.68	60	120	
Ir (IS)	193	2	HMI He	13779016	0.68	14005392	98.38	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-3-a
Data File Name	052SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T12:58:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	23.679	ppb	23.679	11.48	3635219	50000	
Be	9	1	6	-0.143	ppb	-0.143	-0.08	10	2000	
B	11	1	6	247.573	ppb	247.573	0.97	65555	2000	
Na	23	2	45	43490.004	ppb	43490.004	2.05	10331622	400000	
Mg	24	2	45	43858.242	ppb	43858.242	2.83	5023279	400000	
Al	27	2	45	8.985	ppb	8.985	30.23	677	400000	
Si	28	2	45	418.519	ppb	418.519	3.09	94004	10000	
P	31	2	45	10.203	ppb	10.203	1.91	101	10000	
K	39	2	45	3394.140	ppb	3394.140	1.76	334686	400000	
Ca	40	1	45	94712.752	ppb	94712.752	0.95	371046888	400000	
Ti	47	2	45	0.197	ppb	0.197	86.61	7	4000	
V	51	2	72	1.045	ppb	1.045	31.33	2420	2000	
Cr	52	2	72	0.113	ppb	0.113	62.83	1070	5000	
Mn	55	2	72	416.913	ppb	416.913	0.63	329454	10000	
Fe	56	1	72	37.256	ppb	37.256	1.92	339980	10000	
(Fe)	57	2	72	42.197	ppb	42.197	9.02	1937	400000	
Co	59	2	72	2.036	ppb	2.036	3.67	6325	2000	
Ni	60	2	72	9.665	ppb	9.665	1.87	9043	5000	
Cu	63	2	72	2.513	ppb	2.513	1.82	6742	5000	
Zn	66	2	72	4.030	ppb	4.030	10.17	2274	5000	
As	75	2	72	1.352	ppb	1.352	5.22	526	2000	
Se	78	1	72	0.077	ppb	0.077	25.34	41	2000	
Sr	88	2	72	777.033	ppb	777.033	0.46	713022	4000	
Zr	90	2	72	0.898	ppb	0.898	76.29	930	1000	
Nb	93	2	72	111.280	ppb	111.280	45.42	37	200	
Mo	95	2	115	3.843	ppb	3.843	4.59	4377	2000	
Pd	105	2	115	-330.763	ppb	-330.763	-78.43	60	100	
Ag	107	2	115	-0.004	ppb	-0.004	-429.21	50	100	
Cd	111	2	115	0.314	ppb	0.314	9.71	180	2000	
Sn	120	2	115	0.086	ppb	0.086	45.39	643	2000	
Sb	121	2	115	1.349	ppb	1.349	14.88	2070	1000	
Ba	137	2	115	202.793	ppb	202.793	2.29	89115	5000	
W	182	2	165	6.570	ppb	6.570	2.41	31146	100	
Pt	195	2	165	17.907	ppb	17.907	283.94	50	100	
Tl	205	2	165	-0.008	ppb	-0.008	-207.52	1543	2000	
Pb	208	2	165	0.055	ppb	0.055	64.12	2534	5000	
Th	232	2	193	2.731	ppb	2.731	13.43	37653	2000	
U	238	2	193	0.867	ppb	0.867	6.06	13126	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	764025	0.40	832675	91.76	60	120	
Sc (IS)	45	1	HMI H2	21956721	0.87	22691138	96.76	60	120	
Sc (IS)	45	2	HMI He	1331541	1.40	1329086	100.18	60	120	
Sc (IS)	45	3	No Gas	39033281	1.76	40115962	97.30	60	120	
Ge Internal standard	72	1	HMI H2	11181780	0.69	11471213	97.48	60	120	
Ge Internal standard	72	2	HMI He	1612977	0.52	1582627	101.92	60	120	
In Internal standard	115	2	HMI He	4804889	0.48	4772525	100.68	60	120	
Ho-165	165	2	HMI He	18568276	0.67	18341213	101.24	60	120	
Ir (IS)	193	2	HMI He	13912833	1.00	14005392	99.34	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-4-a
Data File Name	053SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:02:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-10.254	ppb	-10.254	-36.80	3396394	50000	
Be	9	1	6	-0.074	ppb	-0.074	-163.24	33	2000	
B	11	1	6	21.169	ppb	21.169	9.58	6508	2000	
Na	23	2	45	12329.684	ppb	12329.684	1.91	2923785	400000	
Mg	24	2	45	11415.344	ppb	11415.344	1.26	1298639	400000	
Al	27	2	45	9.334	ppb	9.334	15.39	683	400000	
Si	28	2	45	1039.838	ppb	1039.838	2.71	218409	10000	
P	31	2	45	22.729	ppb	22.729	21.51	145	10000	
K	39	2	45	253.552	ppb	253.552	1.79	64701	400000	
Ca	40	1	45	35133.570	ppb	35133.570	1.13	135772965	400000	
Ti	47	2	45	0.398	ppb	0.398	115.71	13	4000	
V	51	2	72	1.160	ppb	1.160	18.09	2574	2000	
Cr	52	2	72	0.236	ppb	0.236	28.20	1293	5000	
Mn	55	2	72	19.789	ppb	19.789	2.45	15648	10000	
Fe	56	1	72	23.535	ppb	23.535	2.91	239318	10000	
(Fe)	57	2	72	24.860	ppb	24.860	15.62	1293	400000	
Co	59	2	72	0.136	ppb	0.136	10.45	437	2000	
Ni	60	2	72	2.704	ppb	2.704	11.11	2800	5000	
Cu	63	2	72	0.978	ppb	0.978	10.71	3087	5000	
Zn	66	2	72	4.718	ppb	4.718	7.72	2554	5000	
As	75	2	72	0.947	ppb	0.947	17.65	385	2000	
Se	78	1	72	2.801	ppb	2.801	12.65	859	2000	
Sr	88	2	72	94.483	ppb	94.483	3.44	86294	4000	
Zr	90	2	72	-0.266	ppb	-0.266	-322.01	673	1000	
Nb	93	2	72	67.984	ppb	67.984	126.97	23	200	
Mo	95	2	115	0.200	ppb	0.200	17.53	263	2000	
Pd	105	2	115	-558.377	ppb	-558.377	-19.86	37	100	
Ag	107	2	115	-0.002	ppb	-0.002	-307.60	57	100	
Cd	111	2	115	0.092	ppb	0.092	53.44	60	2000	
Sn	120	2	115	0.049	ppb	0.049	151.66	593	2000	
Sb	121	2	115	0.158	ppb	0.158	8.01	273	1000	
Ba	137	2	115	65.379	ppb	65.379	0.32	28804	5000	
W	182	2	165	1.192	ppb	1.192	8.08	8309	100	
Pt	195	2	165	58.269	ppb	58.269	128.53	63	100	
Tl	205	2	165	-0.129	ppb	-0.129	-5.57	567	2000	
Pb	208	2	165	0.089	ppb	0.089	9.73	2897	5000	
Th	232	2	193	1.845	ppb	1.845	17.15	27356	2000	
U	238	2	193	0.082	ppb	0.082	4.07	1573	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	771268	0.94	832675	92.63	60	120	
Sc (IS)	45	1	HMI H2	21652840	0.61	22691138	95.42	60	120	
Sc (IS)	45	2	HMI He	1322033	1.61	1329086	99.47	60	120	
Sc (IS)	45	3	No Gas	39680056	0.16	40115962	98.91	60	120	
Ge Internal standard	72	1	HMI H2	11214635	0.77	11471213	97.76	60	120	
Ge Internal standard	72	2	HMI He	1604860	1.63	1582627	101.40	60	120	
In Internal standard	115	2	HMI He	4809566	0.66	4772525	100.78	60	120	
Ho-165	165	2	HMI He	18503943	0.17	18341213	100.89	60	120	
Ir (IS)	193	2	HMI He	13563866	0.21	14005392	96.85	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-5-a
Data File Name	054SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:06:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.117	ppb	11.117	52.60	3583423	50000	
Be	9	1	6	-0.094	ppb	-0.094	-48.09	27	2000	
B	11	1	6	63.828	ppb	63.828	2.50	17600	2000	
Na	23	2	45	27520.000	ppb	27520.000	0.58	6530506	400000	
Mg	24	2	45	41413.612	ppb	41413.612	0.40	4732621	400000	
Al	27	2	45	7.423	ppb	7.423	56.66	627	400000	
Si	28	2	45	1380.655	ppb	1380.655	0.10	288441	10000	
P	31	2	45	40.591	ppb	40.591	20.90	210	10000	
K	39	2	45	1668.786	ppb	1668.786	1.39	186169	400000	
Ca	40	1	45	112649.730	ppb	112649.730	0.80	437302713	400000	
Ti	47	2	45	0.197	ppb	0.197	173.21	7	4000	
V	51	2	72	1.803	ppb	1.803	3.84	3477	2000	
Cr	52	2	72	0.198	ppb	0.198	16.54	1220	5000	
Mn	55	2	72	642.647	ppb	642.647	1.03	504412	10000	
Fe	56	1	72	8.705	ppb	8.705	4.04	129463	10000	
(Fe)	57	2	72	15.893	ppb	15.893	5.25	967	400000	
Co	59	2	72	1.110	ppb	1.110	2.40	3434	2000	
Ni	60	2	72	3.650	ppb	3.650	4.85	3641	5000	
Cu	63	2	72	0.445	ppb	0.445	8.29	1830	5000	
Zn	66	2	72	21.114	ppb	21.114	2.65	9456	5000	
As	75	2	72	0.297	ppb	0.297	22.54	162	2000	
Se	78	1	72	-0.016	ppb	-0.016	-191.79	13	2000	
Sr	88	2	72	552.129	ppb	552.129	1.39	503349	4000	
Zr	90	2	72	0.202	ppb	0.202	246.81	773	1000	
Nb	93	2	72	45.657	ppb	45.657	215.69	17	200	
Mo	95	2	115	3.555	ppb	3.555	1.13	4037	2000	
Pd	105	2	115	-523.168	ppb	-523.168	-81.70	40	100	
Ag	107	2	115	-0.008	ppb	-0.008	-103.60	33	100	
Cd	111	2	115	0.428	ppb	0.428	44.83	240	2000	
Sn	120	2	115	0.166	ppb	0.166	45.49	750	2000	
Sb	121	2	115	0.128	ppb	0.128	63.82	227	1000	
Ba	137	2	115	130.459	ppb	130.459	1.66	57148	5000	
W	182	2	165	0.946	ppb	0.946	1.62	7309	100	
Pt	195	2	165	7.853	ppb	7.853	215.42	47	100	
Tl	205	2	165	-0.122	ppb	-0.122	-7.77	633	2000	
Pb	208	2	165	0.044	ppb	0.044	43.33	2414	5000	
Th	232	2	193	1.552	ppb	1.552	7.70	24481	2000	
U	238	2	193	10.277	ppb	10.277	0.89	148691	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	764849	0.60	832675	91.85	60	120	
Sc (IS)	45	1	HMI H2	21756948	0.56	22691138	95.88	60	120	
Sc (IS)	45	2	HMI He	1328214	0.52	1329086	99.93	60	120	
Sc (IS)	45	3	No Gas	39665917	0.93	40115962	98.88	60	120	
Ge Internal standard	72	1	HMI H2	11213797	0.59	11471213	97.76	60	120	
Ge Internal standard	72	2	HMI He	1602416	1.19	1582627	101.25	60	120	
In Internal standard	115	2	HMI He	4787900	0.97	4772525	100.32	60	120	
Ho-165	165	2	HMI He	18608954	0.25	18341213	101.46	60	120	
Ir (IS)	193	2	HMI He	13686039	1.12	14005392	97.72	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	055_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:09:50-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	95.619	ppb	3.441	4331814	100	95.6	90	110	
Be	9	1	6	46.033	ppb	1.273	16138	50	92.1	90	110	
B	11	1	6	491.809	ppb	1.204	134635	50	983.6	90	110	>+\-10%
Na	23	2	45	52548.844	ppb	1.821	12498318	51000	103.0	90	110	
Mg	24	2	45	11273.068	ppb	1.979	1293694	11000	102.5	90	110	
Al	27	2	45	961.703	ppb	3.270	30642	1000	96.2	90	110	
Si	28	2	45	57.426	ppb	0.769	20827	500	11.5	90	110	>+\-10%
P	31	2	45	2430.588	ppb	1.461	8803	2500	97.2	90	110	
K	39	2	45	10204.765	ppb	0.757	920691	11000	92.8	90	110	
Ca	40	1	45	10785.503	ppb	0.283	42884801	11000	98.1	90	110	
(Ca)	44	1	45	11585.027	ppb	1.000	1377557	11000	105.3	90	110	
Ti	47	2	45	49.354	ppb	12.828	1687	50	98.7	90	110	
V	51	2	72	48.899	ppb	2.060	70750	50	97.8	90	110	
Cr	52	2	72	48.057	ppb	2.415	90641	50	96.1	90	110	
Mn	55	2	72	47.543	ppb	0.887	37750	50	95.1	90	110	
Fe	56	1	72	986.422	ppb	1.632	7490218	1000	98.6	90	110	
(Fe)	56	2	72	978.250	ppb	1.549	1531702	1000	97.8	90	110	
(Fe)	57	2	72	942.519	ppb	0.417	35011	1000	94.3	90	110	
Co	59	2	72	46.967	ppb	3.239	145850	50	93.9	90	110	
Ni	60	2	72	46.855	ppb	1.219	42411	50	93.7	90	110	
Cu	63	2	72	46.715	ppb	1.631	111713	50	93.4	90	110	
Zn	66	2	72	47.819	ppb	2.331	20897	50	95.6	90	110	
As	75	2	72	48.199	ppb	1.367	16700	50	96.4	90	110	
Se	78	1	72	48.257	ppb	3.058	14732	50	96.5	90	110	
Sr	88	2	72	97.896	ppb	1.966	90111	100	97.9	90	110	
Zr	90	2	72	5.006	ppb	14.977	1834	50	10.0	90	110	>+\-10%
Nb	93	2	72	210.968	ppb	65.327	67	100	211.0	90	110	>+\-10%
Mo	95	2	115	49.912	ppb	2.024	56509	50	99.8	90	110	
Pd	105	2	115	669.606	ppb	51.377	163	50	1339.2	90	110	>+\-10%
Ag	107	2	115	49.114	ppb	0.583	184250	50	98.2	90	110	
Cd	111	2	115	48.250	ppb	2.387	26119	50	96.5	90	110	
Sn	120	2	115	51.154	ppb	2.672	70172	50	102.3	90	110	
Sb	121	2	115	50.255	ppb	0.923	76079	50	100.5	90	110	
Ba	137	2	115	51.354	ppb	1.232	22657	50	102.7	90	110	
W	182	2	165	50.191	ppb	0.856	218022	50	100.4	90	110	
Pt	195	2	165	212.878	ppb	7.883	117	50	425.8	90	110	>+\-10%
Tl	205	2	165	48.170	ppb	0.500	392614	50	96.3	90	110	
Pb	208	2	165	48.651	ppb	0.145	543315	50	97.3	90	110	
Th	232	2	193	43.212	ppb	3.857	482305	50	86.4	90	110	>+\-10%
U	238	2	193	45.414	ppb	0.627	673789	50	90.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	795489	0.92	832675	95.53	60	120	
Sc (IS)	45	1	HMI H2	22256256	0.84	22691138	98.08	60	120	
Sc (IS)	45	2	HMI He	1333636	1.73	1329086	100.34	60	120	
Sc (IS)	45	3	No Gas	39700014	0.16	40115962	98.96	60	120	
Ge Internal standard	72	1	HMI H2	11393991	1.16	11471213	99.33	60	120	
Ge Internal standard	72	2	HMI He	1617097	1.23	1582627	102.18	60	120	
In Internal standard	115	2	HMI He	4813631	0.32	4772525	100.86	60	120	
Ho-165	165	2	HMI He	18725681	0.09	18341213	102.10	60	120	
Ir (IS)	193	2	HMI He	14062434	0.58	14005392	100.41	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	056_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:13:34-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-2.905	ppb	-45.5	3510569	10	
Be	9	1	6	-0.099	ppb	-106.6	27	0.5	
B	11	1	6	10.089	ppb	6.8	3801	0.5	>RL
Na	23	2	45	19.913	ppb	23.2	26992	25	
Mg	24	2	45	5.146	ppb	12.1	1090	25	
Al	27	2	45	-1.099	ppb	-257.0	363	15	
K	39	2	45	9.071	ppb	133.1	44566	50	
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5	
V	51	2	72	0.390	ppb	24.2	1490	1	
Cr	52	2	72	-0.022	ppb	-101.9	820	1	
Mn	55	2	72	0.065	ppb	78.9	150	0.5	
(Fe)	57	2	72	-0.680	ppb	-501.4	367	25	
Co	59	2	72	0.018	ppb	51.6	73	0.5	
Ni	60	2	72	0.023	ppb	304.2	420	1	
Cu	63	2	72	0.008	ppb	556.9	810	1	
Zn	66	2	72	-0.094	ppb	-113.9	527	5	
As	75	2	72	-0.002	ppb	-1141.6	60	1	
Se	78	1	72	0.045	ppb	28.3	32	1	
Sr	88	2	72	0.016	ppb	307.1	87	0.5	
Zr	90	2	72	-0.300	ppb	-159.0	670	1	
Nb	93	2	72	22.225	ppb	150.1	10	2	>RL
Mo	95	2	115	0.388	ppb	9.0	483	0.5	
Pd	105	2	115	-660.166	ppb	-21.8	27	1	
Ag	107	2	115	0.021	ppb	134.5	143	1	
Cd	111	2	115	0.006	ppb	499.3	13	0.5	
Sn	120	2	115	0.615	ppb	34.0	1387	1	
Sb	121	2	115	0.186	ppb	18.5	320	0.6	
Ba	137	2	115	0.011	ppb	705.7	70	0.5	
W	182	2	165	0.395	ppb	16.4	5041	1	
Pt	195	2	165	113.406	ppb	142.5	83	1	>RL
Tl	205	2	165	-0.098	ppb	-16.5	837	0.1	
Pb	208	2	165	0.021	ppb	37.8	2187	0.5	
Th	232	2	193	1.690	ppb	5.5	27313	1	>RL
U	238	2	193	0.056	ppb	8.4	1270	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	817635	0.52	832675	98.19	60	120	
Sc (IS)	45	1	HMI H2	22319207	0.81	22691138	98.36	60	120	
Sc (IS)	45	2	HMI He	1343248	0.24	1329086	101.07	60	120	
Sc (IS)	45	3	No Gas	40246699	0.97	40115962	100.33	60	120	
Ge Internal standard	72	1	HMI H2	11346808	0.65	11471213	98.92	60	120	
Ge Internal standard	72	2	HMI He	1616687	0.50	1582627	102.15	60	120	
In Internal standard	115	2	HMI He	4885242	1.15	4772525	102.36	60	120	
Ho-165	165	2	HMI He	18878228	0.62	18341213	102.93	60	120	
Ir (IS)	193	2	HMI He	14402446	0.72	14005392	102.84	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	057LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:17:19-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	9.350	ppb	41.969	3585502	50	18.7	70	130	>+/-30%
Be	9	1	6	0.919	ppb	24.517	397	1	91.9	70	130	
Na	23	2	45	52.316	ppb	6.513	34636	50	104.6	70	130	
Mg	24	2	45	51.599	ppb	6.878	6435	50	103.2	70	130	
Al	27	2	45	54.667	ppb	2.561	2124	50	109.3	70	130	
K	39	2	45	83.842	ppb	10.983	50874	100	83.8	70	130	
V	51	2	72	5.169	ppb	2.033	8212	5	103.4	70	130	
Cr	52	2	72	1.950	ppb	4.766	4451	2	97.5	70	130	
Mn	55	2	72	1.132	ppb	6.791	983	1	113.2	70	130	
(Fe)	57	2	72	55.584	ppb	5.946	2404	50	111.2	70	130	
Co	59	2	72	0.995	ppb	2.882	3070	1	99.5	70	130	
Ni	60	2	72	1.975	ppb	12.163	2144	2	98.7	70	130	
Cu	63	2	72	2.053	ppb	1.062	5598	2	102.7	70	130	
Zn	66	2	72	10.023	ppb	4.891	4768	10	100.2	70	130	
As	75	2	72	5.116	ppb	2.519	1805	5	102.3	70	130	
Se	78	1	72	5.043	ppb	7.307	1552	5	100.9	70	130	
Sr	88	2	72	1.092	ppb	8.389	1063	1	109.2	70	130	
Zr	90	2	72	1.275	ppb	23.776	1003	0.5	255.1	70	130	>+/-30%
Nb	93	2	72	78.935	ppb	65.552	27	2	3946.8	70	130	>+/-30%
Mo	95	2	115	2.075	ppb	8.688	2410	2	103.8	70	130	
Pd	105	2	115	-721.548	ppb	-13.491	20	1	-72154.8	70	130	>+/-30%
Ag	107	2	115	1.037	ppb	4.377	3994	1	103.7	70	130	
Cd	111	2	115	1.012	ppb	9.896	563	1	101.2	70	130	
Sn	120	2	115	10.469	ppb	4.723	14938	10	104.7	70	130	
Sb	121	2	115	2.245	ppb	3.340	3467	2	112.2	70	130	
Ba	137	2	115	0.994	ppb	21.226	507	1	99.4	70	130	
W	182	2	165	4.938	ppb	1.948	24534	1	493.8	70	130	>+/-30%
Pt	195	2	165	6.653	ppb	1351.479	47	1	665.3	70	130	>+/-30%
Tl	205	2	165	0.909	ppb	1.033	9040	1	90.9	70	130	
Pb	208	2	165	1.095	ppb	3.263	14183	1	109.5	70	130	
Th	232	2	193	6.198	ppb	7.073	77149	2	309.9	70	130	>+/-30%
U	238	2	193	0.958	ppb	3.456	14798	1	95.8	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	825080	2.77	832675	99.09	60	120	
Sc (IS)	45	1	HMI H2	21967942	0.77	22691138	96.81	60	120	
Sc (IS)	45	2	HMI He	1339002	1.23	1329086	100.75	60	120	
Sc (IS)	45	3	No Gas	39862213	0.34	40115962	99.37	60	120	
Ge Internal standard	72	1	HMI H2	11362830	0.89	11471213	99.06	60	120	
Ge Internal standard	72	2	HMI He	1597291	0.19	1582627	100.93	60	120	
In Internal standard	115	2	HMI He	4865750	0.80	4772525	101.95	60	120	
Ho-165	165	2	HMI He	18803109	0.47	18341213	102.52	60	120	
Ir (IS)	193	2	HMI He	14245695	0.84	14005392	101.72	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-6-a
Data File Name	058SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:21:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-7.425	ppb	-7.425	-25.54	3333699	50000	
Be	9	1	6	-0.124	ppb	-0.124	-50.06	17	2000	
B	11	1	6	18.815	ppb	18.815	4.39	5821	2000	
Na	23	2	45	18747.987	ppb	18747.987	0.71	4347164	400000	
Mg	24	2	45	18269.339	ppb	18269.339	1.03	2037039	400000	
Al	27	2	45	16.093	ppb	16.093	22.65	877	400000	
Si	28	2	45	764.161	ppb	764.161	1.65	159712	10000	
P	31	2	45	29.869	ppb	29.869	5.39	167	10000	
K	39	2	45	380.860	ppb	380.860	3.22	74049	400000	
Ca	40	1	45	58648.278	ppb	58648.278	0.57	224223490	400000	
Ti	47	2	45	0.300	ppb	0.300	173.21	10	4000	
V	51	2	72	0.775	ppb	0.775	22.26	1997	2000	
Cr	52	2	72	0.151	ppb	0.151	2.21	1120	5000	
Mn	55	2	72	49.050	ppb	49.050	2.20	38108	10000	
Fe	56	1	72	9.880	ppb	9.880	1.92	136297	10000	
(Fe)	57	2	72	12.336	ppb	12.336	19.67	827	400000	
Co	59	2	72	0.150	ppb	0.150	3.71	473	2000	
Ni	60	2	72	5.827	ppb	5.827	11.85	5504	5000	
Cu	63	2	72	0.360	ppb	0.360	1.87	1610	5000	
Zn	66	2	72	2.457	ppb	2.457	20.51	1577	5000	
As	75	2	72	0.100	ppb	0.100	64.80	93	2000	
Se	78	1	72	0.011	ppb	0.011	451.32	21	2000	
Sr	88	2	72	138.247	ppb	138.247	0.53	124509	4000	
Zr	90	2	72	-0.311	ppb	-0.311	-113.93	653	1000	
Nb	93	2	72	91.289	ppb	91.289	99.07	30	200	
Mo	95	2	115	0.318	ppb	0.318	19.78	393	2000	
Pd	105	2	115	-520.981	ppb	-520.981	-38.30	40	100	
Ag	107	2	115	0.002	ppb	0.002	297.80	70	100	
Cd	111	2	115	0.112	ppb	0.112	49.33	70	2000	
Sn	120	2	115	0.051	ppb	0.051	175.69	590	2000	
Sb	121	2	115	0.102	ppb	0.102	25.40	187	1000	
Ba	137	2	115	94.359	ppb	94.359	1.71	41135	5000	
W	182	2	165	1.251	ppb	1.251	10.71	8456	100	
Pt	195	2	165	-19.711	ppb	-19.711	-235.65	37	100	
Tl	205	2	165	-0.119	ppb	-0.119	-2.27	643	2000	
Pb	208	2	165	0.043	ppb	0.043	39.42	2364	5000	
Th	232	2	193	4.408	ppb	4.408	11.85	54486	2000	
U	238	2	193	0.655	ppb	0.655	1.82	9757	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	762903	0.39	832675	91.62	60	120	
Sc (IS)	45	1	HMI H2	21424834	0.64	22691138	94.42	60	120	
Sc (IS)	45	2	HMI He	1295844	1.08	1329086	97.50	60	120	
Sc (IS)	45	3	No Gas	38663452	0.29	40115962	96.38	60	120	
Ge Internal standard	72	1	HMI H2	11063554	0.90	11471213	96.45	60	120	
Ge Internal standard	72	2	HMI He	1582375	0.35	1582627	99.98	60	120	
In Internal standard	115	2	HMI He	4762518	0.93	4772525	99.79	60	120	
Ho-165	165	2	HMI He	18287287	0.63	18341213	99.71	60	120	
Ir (IS)	193	2	HMI He	13559439	0.42	14005392	96.82	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-6-aSD@5
Data File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:24:52-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-5.221	ppb	-5.221	-101.16	3373884	50000	
Be	9	1	6	-0.115	ppb	-0.115	-51.03	20	2000	
B	11	1	6	5.457	ppb	5.457	23.52	2397	2000	
Na	23	2	45	3378.996	ppb	3378.996	1.28	809601	400000	
Mg	24	2	45	3252.657	ppb	3252.657	1.37	366931	400000	
Al	27	2	45	8.247	ppb	8.247	34.40	643	400000	
Si	28	2	45	150.126	ppb	150.126	1.57	38945	10000	
P	31	2	45	7.059	ppb	7.059	49.59	89	10000	
K	39	2	45	67.756	ppb	67.756	12.30	48403	400000	
Ca	40	1	45	11344.549	ppb	11344.549	0.10	42745196	400000	
Ti	47	2	45	0.297	ppb	0.297	99.26	10	4000	
V	51	2	72	0.466	ppb	0.466	9.46	1537	2000	
Cr	52	2	72	0.132	ppb	0.132	76.56	1067	5000	
Mn	55	2	72	9.702	ppb	9.702	1.98	7479	10000	
Fe	56	1	72	18.746	ppb	18.746	0.97	198523	10000	
(Fe)	57	2	72	19.662	ppb	19.662	9.22	1070	400000	
Co	59	2	72	0.049	ppb	0.049	41.74	163	2000	
Ni	60	2	72	1.222	ppb	1.222	5.01	1437	5000	
Cu	63	2	72	0.127	ppb	0.127	57.84	1050	5000	
Zn	66	2	72	0.724	ppb	0.724	16.26	840	5000	
As	75	2	72	0.029	ppb	0.029	117.04	68	2000	
Se	78	1	72	0.012	ppb	0.012	232.08	21	2000	
Sr	88	2	72	26.979	ppb	26.979	1.93	23915	4000	
Zr	90	2	72	-0.018	ppb	-0.018	-3043.73	703	1000	
Nb	93	2	72	58.436	ppb	58.436	60.33	20	200	
Mo	95	2	115	0.146	ppb	0.146	37.88	197	2000	
Pd	105	2	115	-681.238	ppb	-681.238	-17.03	23	100	
Ag	107	2	115	0.003	ppb	0.003	227.49	73	100	
Cd	111	2	115	0.063	ppb	0.063	44.76	43	2000	
Sn	120	2	115	0.143	ppb	0.143	36.21	703	2000	
Sb	121	2	115	0.093	ppb	0.093	31.40	170	1000	
Ba	137	2	115	18.698	ppb	18.698	8.28	8082	5000	
W	182	2	165	1.151	ppb	1.151	13.56	7936	100	
Pt	195	2	165	43.015	ppb	43.015	165.71	57	100	
Tl	205	2	165	-0.138	ppb	-0.138	-9.06	483	2000	
Pb	208	2	165	0.038	ppb	0.038	25.11	2277	5000	
Th	232	2	193	4.034	ppb	4.034	15.17	50462	2000	
U	238	2	193	0.135	ppb	0.135	3.85	2317	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	781654	0.43	832675	93.87	60	120	
Sc (IS)	45	1	HMI H2	21091867	0.36	22691138	92.95	60	120	
Sc (IS)	45	2	HMI He	1309686	1.13	1329086	98.54	60	120	
Sc (IS)	45	3	No Gas	38910518	0.58	40115962	97.00	60	120	
Ge Internal standard	72	1	HMI H2	10921354	0.48	11471213	95.21	60	120	
Ge Internal standard	72	2	HMI He	1553847	0.80	1582627	98.18	60	120	
In Internal standard	115	2	HMI He	4691353	0.73	4772525	98.30	60	120	
Ho-165	165	2	HMI He	18041848	1.12	18341213	98.37	60	120	
Ir (IS)	193	2	HMI He	13542083	0.56	14005392	96.69	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-6-b ms
Data File Name	060SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:28:37-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	39.520	ppb	39.520	12.86	3760519	50000	
Be	9	1	6	43.666	ppb	43.666	2.54	14670	2000	
B	11	1	6	16.408	ppb	16.408	11.36	5194	2000	
Na	23	2	45	19683.630	ppb	19683.630	0.32	4538477	400000	
Mg	24	2	45	19151.249	ppb	19151.249	0.85	2123818	400000	
Al	27	2	45	866.266	ppb	866.266	1.12	26715	400000	
Si	28	2	45	807.068	ppb	807.068	2.37	167268	10000	
P	31	2	45	25.518	ppb	25.518	10.28	151	10000	
K	39	2	45	1145.970	ppb	1145.970	2.57	137200	400000	
Ca	40	1	45	59727.272	ppb	59727.272	0.20	228004763	400000	
Ti	47	2	45	45.045	ppb	45.045	15.53	1487	4000	
V	51	2	72	43.689	ppb	43.689	0.91	62193	2000	
Cr	52	2	72	43.084	ppb	43.084	0.62	79917	5000	
Mn	55	2	72	88.503	ppb	88.503	1.10	68939	10000	
Fe	56	1	72	865.958	ppb	865.958	0.57	6416049	10000	
(Fe)	57	2	72	833.991	ppb	833.991	3.70	30469	400000	
Co	59	2	72	41.054	ppb	41.054	1.47	125240	2000	
Ni	60	2	72	46.206	ppb	46.206	0.44	41088	5000	
Cu	63	2	72	41.242	ppb	41.242	0.70	96968	5000	
Zn	66	2	72	44.538	ppb	44.538	0.55	19152	5000	
As	75	2	72	42.203	ppb	42.203	2.34	14370	2000	
Se	78	1	72	42.057	ppb	42.057	3.34	12514	2000	
Sr	88	2	72	222.336	ppb	222.336	1.36	200940	4000	
Zr	90	2	72	3.296	ppb	3.296	7.47	1433	1000	
Nb	93	2	72	79.780	ppb	79.780	107.77	27	200	
Mo	95	2	115	44.458	ppb	44.458	1.79	49543	2000	
Pd	105	2	115	-618.423	ppb	-618.423	-15.92	30	100	
Ag	107	2	115	42.038	ppb	42.038	0.88	155224	100	
Cd	111	2	115	43.241	ppb	43.241	3.92	23037	2000	
Sn	120	2	115	44.130	ppb	44.130	1.32	59652	2000	
Sb	121	2	115	44.055	ppb	44.055	0.58	65642	1000	
Ba	137	2	115	140.876	ppb	140.876	1.38	61062	5000	
W	182	2	165	1.142	ppb	1.142	10.73	8032	100	
Pt	195	2	165	49.893	ppb	49.893	159.84	60	100	
Tl	205	2	165	43.596	ppb	43.596	0.61	348391	2000	
Pb	208	2	165	43.714	ppb	43.714	0.25	478629	5000	
Th	232	2	193	42.946	ppb	42.946	2.51	463831	2000	
U	238	2	193	41.120	ppb	41.120	0.78	590273	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	762299	1.46	832675	91.55	60	120	
Sc (IS)	45	1	HMI H2	21392121	0.18	22691138	94.28	60	120	
Sc (IS)	45	2	HMI He	1288831	1.02	1329086	96.97	60	120	
Sc (IS)	45	3	No Gas	38907945	0.08	40115962	96.99	60	120	
Ge Internal standard	72	1	HMI H2	11103079	0.91	11471213	96.79	60	120	
Ge Internal standard	72	2	HMI He	1588305	0.68	1582627	100.36	60	120	
In Internal standard	115	2	HMI He	4737585	0.02	4772525	99.27	60	120	
Ho-165	165	2	HMI He	18351781	0.19	18341213	100.06	60	120	
Ir (IS)	193	2	HMI He	13604681	0.24	14005392	97.14	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-6-c msd
Data File Name	061SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:32:22-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	34.862	ppb	34.862	11.77	3690643	50000	
Be	9	1	6	43.216	ppb	43.216	7.09	14463	2000	
B	11	1	6	16.789	ppb	16.789	5.88	5268	2000	
Na	23	2	45	19407.285	ppb	19407.285	1.19	4489561	400000	
Mg	24	2	45	18848.998	ppb	18848.998	1.65	2097012	400000	
Al	27	2	45	864.357	ppb	864.357	1.87	26742	400000	
Si	28	2	45	796.760	ppb	796.760	3.32	165754	10000	
P	31	2	45	29.037	ppb	29.037	6.76	164	10000	
K	39	2	45	1126.927	ppb	1126.927	3.06	136054	400000	
Ca	40	1	45	59423.489	ppb	59423.489	0.44	224886143	400000	
Ti	47	2	45	43.827	ppb	43.827	8.61	1453	4000	
V	51	2	72	44.044	ppb	44.044	2.56	62460	2000	
Cr	52	2	72	42.276	ppb	42.276	1.09	78152	5000	
Mn	55	2	72	84.119	ppb	84.119	1.31	65291	10000	
Fe	56	1	72	871.138	ppb	871.138	0.23	6401245	10000	
(Fe)	57	2	72	823.889	ppb	823.889	1.56	29998	400000	
Co	59	2	72	40.799	ppb	40.799	1.81	124007	2000	
Ni	60	2	72	46.056	ppb	46.056	0.90	40807	5000	
Cu	63	2	72	41.495	ppb	41.495	1.34	97206	5000	
Zn	66	2	72	43.845	ppb	43.845	2.90	18795	5000	
As	75	2	72	41.764	ppb	41.764	0.99	14171	2000	
Se	78	1	72	42.291	ppb	42.291	2.23	12482	2000	
Sr	88	2	72	222.883	ppb	222.883	0.90	200720	4000	
Zr	90	2	72	2.809	ppb	2.809	50.93	1323	1000	
Nb	93	2	72	23.032	ppb	23.032	149.07	10	200	
Mo	95	2	115	44.154	ppb	44.154	2.49	49002	2000	
Pd	105	2	115	-518.152	ppb	-518.152	-19.40	40	100	
Ag	107	2	115	41.988	ppb	41.988	1.07	154415	100	
Cd	111	2	115	43.189	ppb	43.189	1.01	22917	2000	
Sn	120	2	115	44.482	ppb	44.482	1.24	59880	2000	
Sb	121	2	115	44.348	ppb	44.348	2.10	65806	1000	
Ba	137	2	115	137.954	ppb	137.954	1.51	59553	5000	
W	182	2	165	1.222	ppb	1.222	6.04	8326	100	
Pt	195	2	165	90.771	ppb	90.771	37.36	73	100	
Tl	205	2	165	43.023	ppb	43.023	0.59	342196	2000	
Pb	208	2	165	43.100	ppb	43.100	0.96	469680	5000	
Th	232	2	193	48.576	ppb	48.576	1.47	520370	2000	
U	238	2	193	40.899	ppb	40.899	0.90	583470	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	759285	0.22	832675	91.19	60	120	
Sc (IS)	45	1	HMI H2	21207327	0.23	22691138	93.46	60	120	
Sc (IS)	45	2	HMI He	1293148	1.88	1329086	97.30	60	120	
Sc (IS)	45	3	No Gas	38599226	0.43	40115962	96.22	60	120	
Ge Internal standard	72	1	HMI H2	11011907	0.11	11471213	96.00	60	120	
Ge Internal standard	72	2	HMI He	1582535	0.62	1582627	99.99	60	120	
In Internal standard	115	2	HMI He	4718509	0.75	4772525	98.87	60	120	
Ho-165	165	2	HMI He	18264719	0.60	18341213	99.58	60	120	
Ir (IS)	193	2	HMI He	13521231	0.66	14005392	96.54	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-6-aPDS
Data File Name	062SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:36:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	239.558	ppb	239.558	2.66	5366435	50000	
Be	9	1	6	220.475	ppb	220.475	0.27	72813	2000	
B	11	1	6	17.306	ppb	17.306	1.56	5348	2000	
Na	23	2	45	18626.236	ppb	18626.236	1.07	4223992	400000	
Mg	24	2	45	18246.081	ppb	18246.081	0.98	1989705	400000	
Al	27	2	45	2303.350	ppb	2303.350	0.86	69234	400000	
Si	28	2	45	975.768	ppb	975.768	1.70	197056	10000	
P	31	2	45	2261.795	ppb	2261.795	2.88	7790	10000	
K	39	2	45	390.088	ppb	390.088	5.32	73165	400000	
Ca	40	1	45	57757.140	ppb	57757.140	0.19	217338863	400000	
Ti	47	2	45	252.744	ppb	252.744	4.01	8209	4000	
V	51	2	72	221.147	ppb	221.147	1.93	304890	2000	
Cr	52	2	72	220.266	ppb	220.266	0.98	397078	5000	
Mn	55	2	72	265.035	ppb	265.035	1.42	202167	10000	
Fe	56	1	72	60.488	ppb	60.488	0.80	498505	10000	
(Fe)	57	2	72	58.833	ppb	58.833	8.79	2457	400000	
Co	59	2	72	215.303	ppb	215.303	1.49	643714	2000	
Ni	60	2	72	217.179	ppb	217.179	2.02	187856	5000	
Cu	63	2	72	217.602	ppb	217.602	0.80	498228	5000	
Zn	66	2	72	224.674	ppb	224.674	1.87	92480	5000	
As	75	2	72	223.937	ppb	223.937	0.95	74494	2000	
Se	78	1	72	219.954	ppb	219.954	1.31	64159	2000	
Sr	88	2	72	366.654	ppb	366.654	0.99	324764	4000	
Zr	90	2	72	37.761	ppb	37.761	11.49	8693	1000	
Nb	93	2	72	324.008	ppb	324.008	43.69	97	200	
Mo	95	2	115	234.618	ppb	234.618	0.46	257171	2000	
Pd	105	2	115	2220.736	ppb	2220.736	21.28	313	100	>LDR
Ag	107	2	115	58.455	ppb	58.455	1.35	212421	100	
Cd	111	2	115	224.864	ppb	224.864	0.94	117863	2000	
Sn	120	2	115	236.293	ppb	236.293	0.37	312133	2000	
Sb	121	2	115	234.542	ppb	234.542	1.12	343796	1000	
Ba	137	2	115	329.087	ppb	329.087	1.04	140299	5000	
W	182	2	165	134.526	ppb	134.526	1.06	559829	100	
Pt	195	2	165	132.623	ppb	132.623	139.45	87	100	
Tl	205	2	165	249.240	ppb	249.240	1.56	1958273	2000	
Pb	208	2	165	241.581	ppb	241.581	1.28	2602126	5000	
Th	232	2	193	264.383	ppb	264.383	0.80	2767243	2000	
U	238	2	193	235.125	ppb	235.125	0.21	3316124	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	751659	0.26	832675	90.27	60	120	
Sc (IS)	45	1	HMI H2	21086954	0.51	22691138	92.93	60	120	
Sc (IS)	45	2	HMI He	1267348	1.05	1329086	95.35	60	120	
Sc (IS)	45	3	No Gas	38038046	0.90	40115962	94.82	60	120	
Ge Internal standard	72	1	HMI H2	10895397	0.24	11471213	94.98	60	120	
Ge Internal standard	72	2	HMI He	1556866	1.11	1582627	98.37	60	120	
In Internal standard	115	2	HMI He	4662759	0.74	4772525	97.70	60	120	
Ho-165	165	2	HMI He	18112643	0.60	18341213	98.75	60	120	
Ir (IS)	193	2	HMI He	13374076	0.11	14005392	95.49	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-7-a
Data File Name	063SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:39:52-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	20.361	ppb	20.361	7.61	3551358	50000	
Be	9	1	6	0.079	ppb	0.079	121.03	83	2000	
B	11	1	6	69.242	ppb	69.242	4.14	18671	2000	
Na	23	2	45	27448.281	ppb	27448.281	2.08	6332234	400000	
Mg	24	2	45	40492.016	ppb	40492.016	1.66	4498645	400000	
Al	27	2	45	13.580	ppb	13.580	13.21	797	400000	
Si	28	2	45	1396.398	ppb	1396.398	1.32	283528	10000	
P	31	2	45	18.610	ppb	18.610	37.84	127	10000	
K	39	2	45	1526.094	ppb	1526.094	3.89	169090	400000	
Ca	40	1	45	104269.928	ppb	104269.928	0.90	395253714	400000	
Ti	47	2	45	1.213	ppb	1.213	51.37	40	4000	
V	51	2	72	0.284	ppb	0.284	35.21	1303	2000	
Cr	52	2	72	0.193	ppb	0.193	9.43	1190	5000	
Mn	55	2	72	429.718	ppb	429.718	0.56	331189	10000	
Fe	56	1	72	89.720	ppb	89.720	0.44	706550	10000	
(Fe)	57	2	72	94.583	ppb	94.583	5.98	3761	400000	
Co	59	2	72	0.843	ppb	0.843	4.99	2564	2000	
Ni	60	2	72	1.740	ppb	1.740	2.86	1907	5000	
Cu	63	2	72	0.335	ppb	0.335	6.66	1543	5000	
Zn	66	2	72	13.914	ppb	13.914	6.46	6305	5000	
As	75	2	72	1.822	ppb	1.822	1.21	671	2000	
Se	78	1	72	0.095	ppb	0.095	59.10	45	2000	
Sr	88	2	72	439.639	ppb	439.639	0.67	393500	4000	
Zr	90	2	72	-0.137	ppb	-0.137	-149.61	687	1000	
Nb	93	2	72	103.163	ppb	103.163	19.53	33	200	
Mo	95	2	115	4.721	ppb	4.721	9.26	5241	2000	
Pd	105	2	115	-514.765	ppb	-514.765	-39.59	40	100	
Ag	107	2	115	0.042	ppb	0.042	21.24	217	100	
Cd	111	2	115	0.127	ppb	0.127	47.16	77	2000	
Sn	120	2	115	2.191	ppb	2.191	3.30	3424	2000	
Sb	121	2	115	2.030	ppb	2.030	14.15	3027	1000	
Ba	137	2	115	81.999	ppb	81.999	1.71	35244	5000	
W	182	2	165	3.448	ppb	3.448	3.42	17541	100	
Pt	195	2	165	81.547	ppb	81.547	73.48	70	100	
Tl	205	2	165	-0.060	ppb	-0.060	-23.82	1100	2000	
Pb	208	2	165	0.115	ppb	0.115	28.89	3124	5000	
Th	232	2	193	5.903	ppb	5.903	9.39	69801	2000	
U	238	2	193	8.474	ppb	8.474	0.77	120689	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	750869	0.64	832675	90.18	60	120	
Sc (IS)	45	1	HMI H2	21244915	0.35	22691138	93.63	60	120	
Sc (IS)	45	2	HMI He	1291528	1.84	1329086	97.17	60	120	
Sc (IS)	45	3	No Gas	38437127	0.56	40115962	95.82	60	120	
Ge Internal standard	72	1	HMI H2	10859137	0.54	11471213	94.66	60	120	
Ge Internal standard	72	2	HMI He	1573182	0.29	1582627	99.40	60	120	
In Internal standard	115	2	HMI He	4694077	1.20	4772525	98.36	60	120	
Ho-165	165	2	HMI He	18189809	0.55	18341213	99.17	60	120	
Ir (IS)	193	2	HMI He	13463967	0.28	14005392	96.13	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-584924/2-a
Data File Name	064_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:43:37-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584924 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	45.216	45.216	ppb	5.293	3810328	400	11.3	80	120	>+/-20%
Be	9	1	6	41.391	41.391	ppb	1.719	14180	40	103.5	80	120	
Na	23	2	45	803.748	803.748	ppb	1.597	209647	40	2009.4	80	120	>+/-20%
Mg	24	2	45	784.142	784.142	ppb	1.768	89060	40	1960.4	80	120	>+/-20%
Al	27	2	45	848.463	848.463	ppb	4.489	26672	40	2121.2	80	120	>+/-20%
K	39	2	45	722.455	722.455	ppb	1.220	103955	40	1806.1	80	120	>+/-20%
V	51	2	72	41.131	41.131	ppb	0.901	58215	40	102.8	80	120	
Cr	52	2	72	41.027	41.027	ppb	0.981	75634	40	102.6	80	120	
Mn	55	2	72	41.900	41.900	ppb	2.242	32472	40	104.8	80	120	
(Fe)	57	2	72	799.664	799.664	ppb	0.798	29039	40	1999.2	80	120	>+/-20%
Co	59	2	72	41.806	41.806	ppb	1.450	126690	40	104.5	80	120	
Ni	60	2	72	41.485	41.485	ppb	1.649	36684	40	103.7	80	120	
Cu	63	2	72	41.816	41.816	ppb	0.572	97655	40	104.5	80	120	
Zn	66	2	72	41.046	41.046	ppb	3.903	17576	40	102.6	80	120	
As	75	2	72	41.435	41.435	ppb	2.150	14016	40	103.6	80	120	
Se	78	1	72	41.079	41.079	ppb	3.055	12186	40	102.7	80	120	
Nb	93	2	72	45.682	45.682	ppb	155.371	17	40	114.2	80	120	
Mo	95	2	115	43.131	43.131	ppb	0.547	48610	40	107.8	80	120	
Pd	105	2	115	-523.884	-523.884	ppb	-32.438	40	40	-1309.7	80	120	>+/-20%
Ag	107	2	115	41.397	41.397	ppb	0.776	154585	40	103.5	80	120	
Cd	111	2	115	40.844	40.844	ppb	1.042	22009	40	102.1	80	120	
Sn	120	2	115	42.939	42.939	ppb	2.259	58709	40	107.3	80	120	
Sb	121	2	115	42.351	42.351	ppb	0.833	63822	40	105.9	80	120	
Ba	137	2	115	43.309	43.309	ppb	2.570	19029	40	108.3	80	120	
W	182	2	165	1.722	1.722	ppb	4.699	10567	40	4.3	80	120	>+/-20%
Pt	195	2	165	-11.205	-11.205	ppb	-274.044	40	40	-28.0	80	120	>+/-20%
Tl	205	2	165	42.270	42.270	ppb	0.670	341137	40	105.7	80	120	
Pb	208	2	165	43.236	43.236	ppb	0.161	478040	40	108.1	80	120	
Th	232	2	193	38.284	38.284	ppb	3.050	431812	40	95.7	80	120	
U	238	2	193	37.454	37.454	ppb	0.162	560435	40	93.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	777020	0.55	832675	93.32	60	120	
Sc (IS)	45	1	HMI H2	21551438	0.62	22691138	94.98	60	120	
Sc (IS)	45	2	HMI He	1313136	0.87	1329086	98.80	60	120	
Sc (IS)	45	3	No Gas	38913636	1.04	40115962	97.00	60	120	
Ge Internal standard	72	1	HMI H2	11068342	0.57	11471213	96.49	60	120	
Ge Internal standard	72	2	HMI He	1577718	0.25	1582627	99.69	60	120	
In Internal standard	115	2	HMI He	4791438	1.15	4772525	100.40	60	120	
Ho-165	165	2	HMI He	18531345	0.85	18341213	101.04	60	120	
Ir (IS)	193	2	HMI He	14180544	0.65	14005392	101.25	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-8-a
Data File Name	065SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:47:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-1.207	ppb	-1.207	-314.33	3423136	50000	
Be	9	1	6	-0.110	ppb	-0.110	-53.08	23	2000	
B	11	1	6	2.000	ppb	2.000	33.75	1543	2000	
Na	23	2	45	0.087	ppb	0.087	1001.43	21574	400000	
Mg	24	2	45	7.791	ppb	7.791	10.41	1353	400000	
Al	27	2	45	10.179	ppb	10.179	81.76	697	400000	
Si	28	2	45	6.404	ppb	6.404	30.95	10217	10000	
P	31	2	45	1.136	ppb	1.136	483.71	67	10000	
K	39	2	45	3.416	ppb	3.416	39.60	42738	400000	
Ca	40	1	45	20.176	ppb	20.176	9.65	138445	400000	
Ti	47	2	45	0.201	ppb	0.201	86.62	7	4000	
V	51	2	72	-0.101	ppb	-0.101	-25.52	770	2000	
Cr	52	2	72	0.150	ppb	0.150	11.13	1113	5000	
Mn	55	2	72	0.286	ppb	0.286	49.81	317	10000	
Fe	56	1	72	10.303	ppb	10.303	10.14	142619	10000	
(Fe)	57	2	72	9.660	ppb	9.660	34.70	727	400000	
Co	59	2	72	0.015	ppb	0.015	44.42	63	2000	
Ni	60	2	72	0.034	ppb	0.034	223.72	420	5000	
Cu	63	2	72	0.291	ppb	0.291	14.54	1443	5000	
Zn	66	2	72	1.967	ppb	1.967	25.16	1367	5000	
As	75	2	72	-0.077	ppb	-0.077	-20.83	33	2000	
Se	78	1	72	0.018	ppb	0.018	208.87	24	2000	
Sr	88	2	72	0.074	ppb	0.074	39.74	137	4000	
Zr	90	2	72	-0.274	ppb	-0.274	-227.14	660	1000	
Nb	93	2	72	0.158	ppb	0.158	12481.04	3	200	
Mo	95	2	115	0.408	ppb	0.408	30.90	497	2000	
Pd	105	2	115	-784.376	ppb	-784.376	-6.94	13	100	
Ag	107	2	115	0.033	ppb	0.033	20.27	187	100	
Cd	111	2	115	0.012	ppb	0.012	87.12	17	2000	
Sn	120	2	115	1.111	ppb	1.111	8.91	2030	2000	
Sb	121	2	115	0.522	ppb	0.522	8.96	820	1000	
Ba	137	2	115	0.068	ppb	0.068	119.02	93	5000	
W	182	2	165	1.489	ppb	1.489	4.88	9513	100	
Pt	195	2	165	29.361	ppb	29.361	118.87	53	100	
Tl	205	2	165	-0.121	ppb	-0.121	-11.05	633	2000	
Pb	208	2	165	0.043	ppb	0.043	63.75	2377	5000	
Th	232	2	193	5.937	ppb	5.937	11.30	73465	2000	
U	238	2	193	0.041	ppb	0.041	8.15	1020	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	823062	6.82	832675	98.85	60	120	
Sc (IS)	45	1	HMI H2	21993978	2.94	22691138	96.93	60	120	
Sc (IS)	45	2	HMI He	1302457	1.55	1329086	98.00	60	120	
Sc (IS)	45	3	No Gas	39075988	0.38	40115962	97.41	60	120	
Ge Internal standard	72	1	HMI H2	11333959	3.78	11471213	98.80	60	120	
Ge Internal standard	72	2	HMI He	1576730	1.32	1582627	99.63	60	120	
In Internal standard	115	2	HMI He	4791161	1.09	4772525	100.39	60	120	
Ho-165	165	2	HMI He	18410289	0.65	18341213	100.38	60	120	
Ir (IS)	193	2	HMI He	14094691	0.59	14005392	100.64	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-1-a
Data File Name	066SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:51:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	42.747	ppb	42.747	2.17	5716355	50000	
Be	9	1	6	-0.120	ppb	-0.120	-38.78	30	2000	
B	11	1	6	-0.298	ppb	-0.298	-213.88	1397	2000	
Na	23	2	45	-43.710	ppb	-43.710	-5.86	16852	400000	
Mg	24	2	45	-0.036	ppb	-0.036	-4902.08	707	400000	
Al	27	2	45	0.195	ppb	0.195	1658.17	580	400000	
Si	28	2	45	-13.437	ppb	-13.437	-15.03	9270	10000	
P	31	2	45	-5.269	ppb	-5.269	-60.67	66	10000	
K	39	2	45	-259.518	ppb	-259.518	-1.60	30485	400000	
Ca	40	1	45	1.759	ppb	1.759	295.79	94066	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.369	ppb	-0.369	-14.07	577	2000	
Cr	52	2	72	-0.189	ppb	-0.189	-8.12	723	5000	
Mn	55	2	72	0.044	ppb	0.044	36.45	190	10000	
Fe	56	1	72	-0.960	ppb	-0.960	-169.16	82480	10000	
(Fe)	57	2	72	-2.483	ppb	-2.483	-40.12	427	400000	
Co	59	2	72	0.003	ppb	0.003	165.03	37	2000	
Ni	60	2	72	-0.200	ppb	-0.200	-13.57	313	5000	
Cu	63	2	72	-0.063	ppb	-0.063	-111.00	910	5000	
Zn	66	2	72	-0.239	ppb	-0.239	-13.16	660	5000	
As	75	2	72	-0.096	ppb	-0.096	-13.50	39	2000	
Se	78	1	72	0.007	ppb	0.007	164.69	29	2000	
Sr	88	2	72	-0.007	ppb	-0.007	-444.30	93	4000	
Zr	90	2	72	-0.120	ppb	-0.120	-282.14	1007	1000	
Nb	93	2	72	4.516	ppb	4.516	301.39	7	200	
Mo	95	2	115	0.091	ppb	0.091	195.51	207	2000	
Pd	105	2	115	-517.556	ppb	-517.556	-37.40	60	100	
Ag	107	2	115	0.008	ppb	0.008	34.87	140	100	
Cd	111	2	115	-0.015	ppb	-0.015	-49.62	3	2000	
Sn	120	2	115	0.084	ppb	0.084	457.73	940	2000	
Sb	121	2	115	0.108	ppb	0.108	128.99	290	1000	
Ba	137	2	115	-0.021	ppb	-0.021	-123.88	80	5000	
W	182	2	165	-0.298	ppb	-0.298	-29.29	3087	100	
Pt	195	2	165	63.462	ppb	63.462	31.76	100	100	
Tl	205	2	165	-0.148	ppb	-0.148	-3.21	647	2000	
Pb	208	2	165	-0.014	ppb	-0.014	-95.07	2710	5000	
Th	232	2	193	0.355	ppb	0.355	116.70	18497	2000	
U	238	2	193	0.006	ppb	0.006	373.08	757	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1284486	7.92	832675	154.26	60	120	IS Failed
Sc (IS)	45	1	HMI H2	31749086	8.79	22691138	139.92	60	120	IS Failed
Sc (IS)	45	2	HMI He	1921051	2.09	1329086	144.54	60	120	IS Failed
Sc (IS)	45	3	No Gas	58708892	1.64	40115962	146.35	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16166900	8.90	11471213	140.93	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2295988	1.16	1582627	145.07	60	120	IS Failed
In Internal standard	115	2	HMI He	7025516	1.85	4772525	147.21	60	120	IS Failed
Ho-165	165	2	HMI He	28439119	1.37	18341213	155.06	60	120	IS Failed
Ir (IS)	193	2	HMI He	21734629	2.38	14005392	155.19	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165769-b-9-a
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:54:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	35.954	ppb	35.954	19.23	5781858	50000	
Be	9	1	6	-0.132	ppb	-0.132	-18.58	23	2000	
B	11	1	6	-0.708	ppb	-0.708	-30.91	1223	2000	
Na	23	2	45	-46.428	ppb	-46.428	-1.52	15821	400000	
Mg	24	2	45	-0.659	ppb	-0.659	-119.29	597	400000	
Al	27	2	45	-0.250	ppb	-0.250	-1285.81	557	400000	
Si	28	2	45	-11.686	ppb	-11.686	-3.56	9720	10000	
P	31	2	45	-6.007	ppb	-6.007	-32.41	62	10000	
K	39	2	45	-260.059	ppb	-260.059	-3.20	30248	400000	
Ca	40	1	45	-4.356	ppb	-4.356	-17.93	58671	400000	
Ti	47	2	45	0.135	ppb	0.135	173.21	7	4000	
V	51	2	72	-0.371	ppb	-0.371	-7.37	573	2000	
Cr	52	2	72	-0.173	ppb	-0.173	-4.02	763	5000	
Mn	55	2	72	0.048	ppb	0.048	96.82	193	10000	
Fe	56	1	72	-1.857	ppb	-1.857	-7.79	70608	10000	
(Fe)	57	2	72	-4.069	ppb	-4.069	-20.46	343	400000	
Co	59	2	72	0.004	ppb	0.004	189.35	40	2000	
Ni	60	2	72	-0.194	ppb	-0.194	-3.03	320	5000	
Cu	63	2	72	-0.064	ppb	-0.064	-55.59	907	5000	
Zn	66	2	72	-0.223	ppb	-0.223	-68.31	670	5000	
As	75	2	72	-0.099	ppb	-0.099	-30.85	38	2000	
Se	78	1	72	-0.015	ppb	-0.015	-120.52	19	2000	
Sr	88	2	72	-0.027	ppb	-0.027	-57.36	67	4000	
Zr	90	2	72	-0.582	ppb	-0.582	-48.51	863	1000	
Nb	93	2	72	20.428	ppb	20.428	178.41	13	200	
Mo	95	2	115	0.155	ppb	0.155	40.29	307	2000	
Pd	105	2	115	-624.809	ppb	-624.809	-32.16	43	100	
Ag	107	2	115	0.003	ppb	0.003	183.67	107	100	
Cd	111	2	115	-0.006	ppb	-0.006	-4.42	10	2000	
Sn	120	2	115	0.214	ppb	0.214	49.60	1180	2000	
Sb	121	2	115	0.190	ppb	0.190	20.19	463	1000	
Ba	137	2	115	0.033	ppb	0.033	181.71	113	5000	
W	182	2	165	-0.266	ppb	-0.266	-3.25	3234	100	
Pt	195	2	165	7.661	ppb	7.661	672.47	70	100	
Tl	205	2	165	-0.151	ppb	-0.151	-4.45	593	2000	
Pb	208	2	165	-0.017	ppb	-0.017	-116.76	2610	5000	
Th	232	2	193	0.318	ppb	0.318	20.40	17873	2000	
U	238	2	193	0.014	ppb	0.014	54.87	943	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1278029	7.08	832675	153.48	60	120	IS Failed
Sc (IS)	45	1	HMI H2	30350718	9.31	22691138	133.76	60	120	IS Failed
Sc (IS)	45	2	HMI He	1909909	2.01	1329086	143.70	60	120	IS Failed
Sc (IS)	45	3	No Gas	60328384	2.75	40115962	150.38	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	15441564	9.49	11471213	134.61	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2294931	1.17	1582627	145.01	60	120	IS Failed
In Internal standard	115	2	HMI He	6929894	2.02	4772525	145.20	60	120	IS Failed
Ho-165	165	2	HMI He	27919122	1.67	18341213	152.22	60	120	IS Failed
Ir (IS)	193	2	HMI He	21660494	1.85	14005392	154.66	60	120	IS Failed

Sample Table

Sample Name	280-165769-b-10-a
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T13:58:35-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1.505	ppb	1.505	438.12	3451002	50000	
Be	9	1	6	-0.135	ppb	-0.135	-24.88	13	2000	
B	11	1	6	2.157	ppb	2.157	37.97	1520	2000	
Na	23	2	45	17.448	ppb	17.448	6.04	25526	400000	
Mg	24	2	45	8.603	ppb	8.603	0.78	1440	400000	
Al	27	2	45	8.308	ppb	8.308	47.30	640	400000	
Si	28	2	45	7.586	ppb	7.586	19.48	10420	10000	
P	31	2	45	6.725	ppb	6.725	40.97	87	10000	
K	39	2	45	8.936	ppb	8.936	67.81	43072	400000	
Ca	40	1	45	34.817	ppb	34.817	1.09	190910	400000	
Ti	47	2	45	0.200	ppb	0.200	173.21	7	4000	
V	51	2	72	-0.221	ppb	-0.221	-25.86	607	2000	
Cr	52	2	72	0.227	ppb	0.227	35.24	1260	5000	
Mn	55	2	72	0.270	ppb	0.270	5.05	307	10000	
Fe	56	1	72	6.952	ppb	6.952	4.71	114140	10000	
(Fe)	57	2	72	6.354	ppb	6.354	53.16	613	400000	
Co	59	2	72	0.011	ppb	0.011	29.00	50	2000	
Ni	60	2	72	0.055	ppb	0.055	174.15	440	5000	
Cu	63	2	72	0.268	ppb	0.268	19.97	1400	5000	
Zn	66	2	72	1.578	ppb	1.578	23.80	1213	5000	
As	75	2	72	-0.082	ppb	-0.082	-34.21	32	2000	
Se	78	1	72	0.007	ppb	0.007	499.45	20	2000	
Sr	88	2	72	0.203	ppb	0.203	18.30	253	4000	
Zr	90	2	72	-0.439	ppb	-0.439	-47.77	627	1000	
Nb	93	2	72	22.669	ppb	22.669	149.47	10	200	
Mo	95	2	115	0.048	ppb	0.048	50.68	90	2000	
Pd	105	2	115	-489.857	ppb	-489.857	-22.42	43	100	
Ag	107	2	115	-0.002	ppb	-0.002	-312.12	57	100	
Cd	111	2	115	-0.019	ppb	-0.019	0.00	0	2000	
Sn	120	2	115	0.301	ppb	0.301	17.05	927	2000	
Sb	121	2	115	0.209	ppb	0.209	20.29	347	1000	
Ba	137	2	115	0.085	ppb	0.085	70.85	100	5000	
W	182	2	165	1.754	ppb	1.754	5.62	10571	100	
Pt	195	2	165	140.950	ppb	140.950	119.76	90	100	
Tl	205	2	165	-0.150	ppb	-0.150	-5.90	397	2000	
Pb	208	2	165	0.048	ppb	0.048	16.79	2420	5000	
Th	232	2	193	3.912	ppb	3.912	12.12	50645	2000	
U	238	2	193	0.002	ppb	0.002	405.89	433	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	784859	0.62	832675	94.26	60	120	
Sc (IS)	45	1	HMI H2	21417737	0.39	22691138	94.39	60	120	
Sc (IS)	45	2	HMI He	1298607	0.86	1329086	97.71	60	120	
Sc (IS)	45	3	No Gas	39126112	1.38	40115962	97.53	60	120	
Ge Internal standard	72	1	HMI H2	10990479	0.50	11471213	95.81	60	120	
Ge Internal standard	72	2	HMI He	1585140	0.92	1582627	100.16	60	120	
In Internal standard	115	2	HMI He	4760317	1.19	4772525	99.74	60	120	
Ho-165	165	2	HMI He	18308517	0.60	18341213	99.82	60	120	
Ir (IS)	193	2	HMI He	13948362	0.24	14005392	99.59	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	069_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:02:20-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	100.022	ppb	3.029	4300966	100	100.0	90	110	
Be	9	1	6	49.696	ppb	1.804	16909	50	99.4	90	110	
B	11	1	6	502.780	ppb	1.501	133611	50	1005.6	90	110	>+\-10%
Na	23	2	45	53735.632	ppb	0.992	12581855	51000	105.4	90	110	
Mg	24	2	45	11642.693	ppb	1.257	1315304	11000	105.8	90	110	
Al	27	2	45	1027.590	ppb	2.618	32205	1000	102.8	90	110	
Si	28	2	45	57.317	ppb	6.866	20476	500	11.5	90	110	>+\-10%
P	31	2	45	2503.081	ppb	3.578	8922	2500	100.1	90	110	
K	39	2	45	10411.279	ppb	0.503	923787	11000	94.6	90	110	
Ca	40	1	45	11271.670	ppb	0.516	43489409	11000	102.5	90	110	
(Ca)	44	1	45	12078.966	ppb	1.766	1393733	11000	109.8	90	110	
Ti	47	2	45	52.620	ppb	7.214	1770	50	105.2	90	110	
V	51	2	72	50.131	ppb	0.768	70957	50	100.3	90	110	
Cr	52	2	72	49.691	ppb	1.470	91690	50	99.4	90	110	
Mn	55	2	72	48.783	ppb	0.130	37900	50	97.6	90	110	
Fe	56	1	72	1020.289	ppb	0.846	7602479	1000	102.0	90	110	
(Fe)	56	2	72	1002.366	ppb	0.904	1535545	1000	100.2	90	110	
(Fe)	57	2	72	972.692	ppb	0.722	35342	1000	97.3	90	110	
Co	59	2	72	48.997	ppb	0.943	148904	50	98.0	90	110	
Ni	60	2	72	48.454	ppb	1.603	42906	50	96.9	90	110	
Cu	63	2	72	48.827	ppb	0.689	114226	50	97.7	90	110	
Zn	66	2	72	49.644	ppb	1.768	21201	50	99.3	90	110	
As	75	2	72	49.129	ppb	1.208	16657	50	98.3	90	110	
Se	78	1	72	49.755	ppb	2.589	14908	50	99.5	90	110	
Sr	88	2	72	100.675	ppb	1.932	90692	100	100.7	90	110	
Zr	90	2	72	3.123	ppb	23.808	1390	50	6.2	90	110	>+\-10%
Nb	93	2	72	170.908	ppb	46.677	53	100	170.9	90	110	>+\-10%
Mo	95	2	115	51.419	ppb	1.353	57620	50	102.8	90	110	
Pd	105	2	115	685.923	ppb	72.267	163	50	1371.8	90	110	>+\-10%
Ag	107	2	115	50.189	ppb	0.427	186362	50	100.4	90	110	
Cd	111	2	115	49.179	ppb	1.935	26349	50	98.4	90	110	
Sn	120	2	115	52.614	ppb	0.754	71424	50	105.2	90	110	
Sb	121	2	115	51.861	ppb	1.622	77706	50	103.7	90	110	
Ba	137	2	115	51.902	ppb	3.414	22664	50	103.8	90	110	
W	182	2	165	51.522	ppb	1.436	222770	50	103.0	90	110	
Pt	195	2	165	37.290	ppb	123.359	57	50	74.6	90	110	>+\-10%
Tl	205	2	165	49.428	ppb	1.277	401129	50	98.9	90	110	
Pb	208	2	165	49.815	ppb	1.027	553931	50	99.6	90	110	
Th	232	2	193	48.497	ppb	1.649	532227	50	97.0	90	110	
U	238	2	193	47.224	ppb	1.715	690023	50	94.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	772374	1.29	832675	92.76	60	120	
Sc (IS)	45	1	HMI H2	21597835	0.50	22691138	95.18	60	120	
Sc (IS)	45	2	HMI He	1312721	0.47	1329086	98.77	60	120	
Sc (IS)	45	3	No Gas	39068595	0.91	40115962	97.39	60	120	
Ge Internal standard	72	1	HMI H2	11182719	0.93	11471213	97.49	60	120	
Ge Internal standard	72	2	HMI He	1582278	0.63	1582627	99.98	60	120	
In Internal standard	115	2	HMI He	4764521	0.19	4772525	99.83	60	120	
Ho-165	165	2	HMI He	18647576	0.58	18341213	101.67	60	120	
Ir (IS)	193	2	HMI He	13850114	0.52	14005392	98.89	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	070_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:06:04-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	3.673	ppb	133.1	3532928	10	
Be	9	1	6	-0.060	ppb	-142.5	40	0.5	
B	11	1	6	9.498	ppb	12.8	3571	0.5	>RL
Na	23	2	45	9.749	ppb	41.6	23971	25	
Mg	24	2	45	2.983	ppb	15.4	820	25	
Al	27	2	45	0.371	ppb	531.2	400	15	
K	39	2	45	6.891	ppb	196.9	43310	50	
Ti	47	2	45	0.397	ppb	86.6	13	0.5	
V	51	2	72	0.035	ppb	374.9	973	1	
Cr	52	2	72	0.025	ppb	94.3	900	1	
Mn	55	2	72	0.105	ppb	117.6	180	0.5	
(Fe)	57	2	72	3.000	ppb	55.2	497	25	
Co	59	2	72	0.028	ppb	29.1	103	0.5	
Ni	60	2	72	-0.006	ppb	-2221.8	390	1	
Cu	63	2	72	-0.031	ppb	-41.4	710	1	
Zn	66	2	72	0.039	ppb	633.8	577	5	
As	75	2	72	0.003	ppb	1088.0	61	1	
Se	78	1	72	0.002	ppb	1629.5	19	1	
Sr	88	2	72	0.035	ppb	187.1	103	0.5	
Zr	90	2	72	-0.421	ppb	-91.7	637	1	
Nb	93	2	72	56.174	ppb	120.3	20	2	>RL
Mo	95	2	115	0.369	ppb	8.8	457	0.5	
Pd	105	2	115	-400.191	ppb	-36.2	53	1	
Ag	107	2	115	0.022	ppb	48.5	147	1	
Cd	111	2	115	0.012	ppb	177.8	17	0.5	
Sn	120	2	115	0.731	ppb	11.1	1530	1	
Sb	121	2	115	0.205	ppb	37.7	347	0.6	
Ba	137	2	115	0.089	ppb	115.8	103	0.5	
W	182	2	165	0.527	ppb	18.2	5555	1	
Pt	195	2	165	36.708	ppb	49.2	57	1	>RL
Tl	205	2	165	-0.093	ppb	-19.9	867	0.1	
Pb	208	2	165	0.009	ppb	99.2	2040	0.5	
Th	232	2	193	2.069	ppb	6.7	31331	1	>RL
U	238	2	193	0.064	ppb	14.4	1380	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	803018	0.07	832675	96.44	60	120	
Sc (IS)	45	1	HMI H2	21833441	0.44	22691138	96.22	60	120	
Sc (IS)	45	2	HMI He	1310907	0.16	1329086	98.63	60	120	
Sc (IS)	45	3	No Gas	39837074	0.52	40115962	99.30	60	120	
Ge Internal standard	72	1	HMI H2	11172008	0.53	11471213	97.39	60	120	
Ge Internal standard	72	2	HMI He	1600452	0.63	1582627	101.13	60	120	
In Internal standard	115	2	HMI He	4840133	0.40	4772525	101.42	60	120	
Ho-165	165	2	HMI He	18702107	0.72	18341213	101.97	60	120	
Ir (IS)	193	2	HMI He	14293233	0.55	14005392	102.06	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	071LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:09:49-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	15.998	ppb	26.503	3600255	50	32.0	70	130	>+/-30%
Be	9	1	6	1.017	ppb	28.711	423	1	101.7	70	130	
Na	23	2	45	44.666	ppb	4.449	32913	50	89.3	70	130	
Mg	24	2	45	46.080	ppb	4.144	5821	50	92.2	70	130	
Al	27	2	45	49.638	ppb	14.708	1970	50	99.3	70	130	
K	39	2	45	75.671	ppb	33.211	50329	100	75.7	70	130	
V	51	2	72	4.827	ppb	4.930	7742	5	96.5	70	130	
Cr	52	2	72	2.073	ppb	14.310	4684	2	103.6	70	130	
Mn	55	2	72	1.097	ppb	11.722	957	1	109.7	70	130	
(Fe)	57	2	72	46.873	ppb	9.452	2090	50	93.7	70	130	
Co	59	2	72	0.957	ppb	7.088	2957	1	95.7	70	130	
Ni	60	2	72	1.941	ppb	13.212	2117	2	97.0	70	130	
Cu	63	2	72	2.151	ppb	9.672	5835	2	107.6	70	130	
Zn	66	2	72	10.078	ppb	5.179	4798	10	100.8	70	130	
As	75	2	72	4.991	ppb	3.806	1765	5	99.8	70	130	
Se	78	1	72	5.080	ppb	2.104	1548	5	101.6	70	130	
Sr	88	2	72	1.179	ppb	8.828	1143	1	117.9	70	130	
Zr	90	2	72	0.594	ppb	24.427	857	0.5	118.7	70	130	
Nb	93	2	72	45.133	ppb	155.879	17	2	2256.6	70	130	>+/-30%
Mo	95	2	115	2.213	ppb	6.600	2584	2	110.6	70	130	
Pd	105	2	115	-501.273	ppb	-39.348	43	1	-50127.3	70	130	>+/-30%
Ag	107	2	115	0.978	ppb	1.693	3794	1	97.8	70	130	
Cd	111	2	115	0.975	ppb	4.081	547	1	97.5	70	130	
Sn	120	2	115	10.773	ppb	2.600	15451	10	107.7	70	130	
Sb	121	2	115	2.147	ppb	3.180	3337	2	107.3	70	130	
Ba	137	2	115	1.114	ppb	21.727	563	1	111.4	70	130	
W	182	2	165	5.220	ppb	2.740	25609	1	522.0	70	130	>+/-30%
Pt	195	2	165	95.475	ppb	17.427	77	1	9547.5	70	130	>+/-30%
Tl	205	2	165	0.902	ppb	5.681	8933	1	90.2	70	130	
Pb	208	2	165	1.102	ppb	3.551	14186	1	110.2	70	130	
Th	232	2	193	7.053	ppb	7.338	87695	2	352.6	70	130	>+/-30%
U	238	2	193	0.959	ppb	2.824	15005	1	95.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	812304	1.50	832675	97.55	60	120	
Sc (IS)	45	1	HMI H2	21968400	0.86	22691138	96.81	60	120	
Sc (IS)	45	2	HMI He	1343268	0.45	1329086	101.07	60	120	
Sc (IS)	45	3	No Gas	39381377	0.94	40115962	98.17	60	120	
Ge Internal standard	72	1	HMI H2	11251603	0.61	11471213	98.09	60	120	
Ge Internal standard	72	2	HMI He	1599628	0.37	1582627	101.07	60	120	
In Internal standard	115	2	HMI He	4895168	0.35	4772525	102.57	60	120	
Ho-165	165	2	HMI He	18704136	0.49	18341213	101.98	60	120	
Ir (IS)	193	2	HMI He	14420729	0.32	14005392	102.97	60	120	

Blank Report

Sample Table

Sample Name	MB 280-584087/1-A
Data File Name	072_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:13:34-06:00
Sample Type	Blank
Dilution	1
Comment	584087 6020a
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	1.503	ppb	378.3725423	3389165	10
Be	9	1	6	-0.095	ppb	-89.52971283	27	0.5
B	11	1	6	3.331	ppb	13.87318086	1807	0.5
Na	23	2	45	-10.248	ppb	-29.5733804	19055	25
Mg	24	2	45	1.612	ppb	46.29123077	657	25
Al	27	2	45	1.537	ppb	192.166569	430	15
K	39	2	45	-6.788	ppb	-330.719585	41612	50
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5
V	51	2	72	-0.157	ppb	-78.78858608	687	1
Cr	52	2	72	0.308	ppb	34.5096073	1393	1
Mn	55	2	72	0.123	ppb	18.35940843	190	0.5
(Fe)	57	2	72	15.098	ppb	17.07461481	917	25
Co	59	2	72	0.008	ppb	0.230259512	40	0.5
Ni	60	2	72	0.019	ppb	174.2758586	403	1
Cu	63	2	72	0.351	ppb	7.050128491	1573	1
Zn	66	2	72	0.626	ppb	28.53746011	807	5
As	75	2	72	-0.075	ppb	-35.289531	34	1
Se	78	1	72	0.013	ppb	346.0996916	21	1
Sr	88	2	72	0.012	ppb	98.30653219	80	0.5
Zr	90	2	72	-0.406	ppb	-163.7412583	627	1
Nb	93	2	72	69.085	ppb	114.8908055	23	2
Mo	95	2	115	0.159	ppb	47.06812679	213	0.5
Pd	105	2	115	-584.850	ppb	-42.39657959	33	1
Ag	107	2	115	0.006	ppb	48.03953952	87	1
Cd	111	2	115	0.000	ppb	16329.33357	10	0.5
Sn	120	2	115	0.234	ppb	40.76870247	830	1
Sb	121	2	115	0.099	ppb	27.20550689	180	0.6
Ba	137	2	115	-0.037	ppb	-131.0675668	47	0.5
W	182	2	165	3.000	ppb	2.509552688	15866	1
Pt	195	2	165	59.438	ppb	117.5447907	63	1
Tl	205	2	165	-0.152	ppb	-6.634961947	383	0.1
Pb	208	2	165	0.042	ppb	46.72338192	2364	0.5
Th	232	2	193	9.962	ppb	13.75417588	115926	1
U	238	2	193	0.003	ppb	239.0379411	450	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	772471	0.42	832675	92.77	60	120	
Sc (IS)	45	1	HMI H2	21046663	0.38	22691138	92.75	60	120	
Sc (IS)	45	2	HMI He	1294454	1.18	1329086	97.39	60	120	
Sc (IS)	45	3	No Gas	38423645	0.28	40115962	95.78	60	120	
Ge Internal standard	72	1	HMI H2	10835545	0.31	11471213	94.46	60	120	
Ge Internal standard	72	2	HMI He	1566914	0.14	1582627	99.01	60	120	
In Internal standard	115	2	HMI He	4726205	0.23	4772525	99.03	60	120	
Ho-165	165	2	HMI He	18403532	0.63	18341213	100.34	60	120	
Ir (IS)	193	2	HMI He	13884793	0.57	14005392	99.14	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584087/2-A
Data File Name	073_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:17:18-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584087 6020a
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	51.288	51.288	ppb	5.691	3814953	400	12.8	80	120	>+/-20%
Be	9	1	6	41.143	41.143	ppb	4.235	14090	40	102.9	80	120	
Na	23	2	45	778.721	778.721	ppb	2.350	202589	40	1946.8	80	120	>+/-20%
Mg	24	2	45	783.963	783.963	ppb	2.496	88501	40	1959.9	80	120	>+/-20%
Al	27	2	45	850.309	850.309	ppb	1.714	26565	40	2125.8	80	120	>+/-20%
K	39	2	45	713.867	713.867	ppb	1.920	102613	40	1784.7	80	120	>+/-20%
V	51	2	72	42.096	42.096	ppb	1.931	59035	40	105.2	80	120	
Cr	52	2	72	42.311	42.311	ppb	3.117	77278	40	105.8	80	120	
Mn	55	2	72	42.094	42.094	ppb	0.655	32335	40	105.2	80	120	
(Fe)	57	2	72	809.585	809.585	ppb	2.663	29133	40	2024.0	80	120	>+/-20%
Co	59	2	72	41.763	41.763	ppb	1.211	125441	40	104.4	80	120	
Ni	60	2	72	41.987	41.987	ppb	0.888	36795	40	105.0	80	120	
Cu	63	2	72	42.476	42.476	ppb	1.026	98309	40	106.2	80	120	
Zn	66	2	72	40.873	40.873	ppb	4.761	17346	40	102.2	80	120	
As	75	2	72	40.785	40.785	ppb	3.541	13674	40	102.0	80	120	
Se	78	1	72	41.123	41.123	ppb	1.438	11907	40	102.8	80	120	
Nb	93	2	72	23.390	23.390	ppb	147.719	10	40	58.5	80	120	>+/-20%
Mo	95	2	115	42.923	42.923	ppb	0.998	47597	40	107.3	80	120	
Pd	105	2	115	-682.807	-682.807	ppb	-8.469	23	40	-1707.0	80	120	>+/-20%
Ag	107	2	115	41.904	41.904	ppb	1.940	153952	40	104.8	80	120	
Cd	111	2	115	42.306	42.306	ppb	3.615	22426	40	105.8	80	120	
Sn	120	2	115	43.717	43.717	ppb	1.167	58803	40	109.3	80	120	
Sb	121	2	115	43.477	43.477	ppb	1.128	64457	40	108.7	80	120	
Ba	137	2	115	45.224	45.224	ppb	2.613	19546	40	113.1	80	120	
W	182	2	165	2.440	2.440	ppb	9.985	13450	40	6.1	80	120	>+/-20%
Pt	195	2	165	150.197	150.197	ppb	89.930	93	40	375.5	80	120	>+/-20%
Tl	205	2	165	42.291	42.291	ppb	0.322	337442	40	105.7	80	120	
Pb	208	2	165	42.947	42.947	ppb	0.384	469469	40	107.4	80	120	
Th	232	2	193	48.127	48.127	ppb	0.431	532716	40	120.3	80	120	>+/-20%
U	238	2	193	38.202	38.202	ppb	1.103	563068	40	95.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	776806	0.20	832675	93.29	60	120	
Sc (IS)	45	1	HMI H2	21133455	0.24	22691138	93.14	60	120	
Sc (IS)	45	2	HMI He	1305503	2.07	1329086	98.23	60	120	
Sc (IS)	45	3	No Gas	38431692	0.25	40115962	95.80	60	120	
Ge Internal standard	72	1	HMI H2	10802531	0.81	11471213	94.17	60	120	
Ge Internal standard	72	2	HMI He	1563785	0.55	1582627	98.81	60	120	
In Internal standard	115	2	HMI He	4713985	0.40	4772525	98.77	60	120	
Ho-165	165	2	HMI He	18320846	0.16	18341213	99.89	60	120	
Ir (IS)	193	2	HMI He	13968636	0.36	14005392	99.74	60	120	

Sample Report

Sample Table

Sample Name	160-46608-A-6-A@2
Data File Name	074SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:21:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	18.724	ppb	18.724	12.55	3612722	50000	
Be	9	1	6	-0.066	ppb	-0.066	-142.55	37	2000	
B	11	1	6	46.031	ppb	46.031	3.38	13219	2000	
Na	23	2	45	4716.607	ppb	4716.607	4.60	1127635	400000	
Mg	24	2	45	5752.538	ppb	5752.538	1.60	652058	400000	
Al	27	2	45	18.026	ppb	18.026	38.51	950	400000	
Si	28	2	45	131.376	ppb	131.376	4.31	35388	10000	
P	31	2	45	38.714	ppb	38.714	12.22	201	10000	
K	39	2	45	1100.161	ppb	1100.161	2.16	136293	400000	
Ca	40	1	45	23158.191	ppb	23158.191	0.64	88387119	400000	
Ti	47	2	45	0.496	ppb	0.496	92.15	17	4000	
V	51	2	72	0.176	ppb	0.176	39.81	1160	2000	
Cr	52	2	72	0.410	ppb	0.410	18.62	1593	5000	
Mn	55	2	72	8.527	ppb	8.527	3.49	6708	10000	
Fe	56	1	72	16.318	ppb	16.318	1.11	182869	10000	
(Fe)	57	2	72	15.663	ppb	15.663	13.05	947	400000	
Co	59	2	72	0.053	ppb	0.053	18.33	177	2000	
Ni	60	2	72	0.314	ppb	0.314	49.83	667	5000	
Cu	63	2	72	2.639	ppb	2.639	9.30	6908	5000	
Zn	66	2	72	7.273	ppb	7.273	16.12	3581	5000	
As	75	2	72	0.104	ppb	0.104	6.70	95	2000	
Se	78	1	72	0.115	ppb	0.115	31.04	52	2000	
Sr	88	2	72	73.718	ppb	73.718	0.93	66459	4000	
Zr	90	2	72	-0.450	ppb	-0.450	-205.93	623	1000	
Nb	93	2	72	56.980	ppb	56.980	119.50	20	200	
Mo	95	2	115	12.470	ppb	12.470	4.13	14020	2000	
Pd	105	2	115	-718.333	ppb	-718.333	-13.63	20	100	
Ag	107	2	115	0.036	ppb	0.036	34.49	197	100	
Cd	111	2	115	0.099	ppb	0.099	27.89	63	2000	
Sn	120	2	115	0.793	ppb	0.793	11.62	1593	2000	
Sb	121	2	115	0.471	ppb	0.471	16.87	740	1000	
Ba	137	2	115	27.645	ppb	27.645	1.43	12118	5000	
W	182	2	165	0.801	ppb	0.801	12.27	6595	100	
Pt	195	2	165	120.036	ppb	120.036	87.89	83	100	
Tl	205	2	165	-0.129	ppb	-0.129	-5.27	563	2000	
Pb	208	2	165	0.065	ppb	0.065	32.52	2607	5000	
Th	232	2	193	3.596	ppb	3.596	11.73	46555	2000	
U	238	2	193	25.097	ppb	25.097	0.35	364361	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	780663	1.03	832675	93.75	60	120	
Sc (IS)	45	1	HMI H2	21379625	0.34	22691138	94.22	60	120	
Sc (IS)	45	2	HMI He	1316749	1.12	1329086	99.07	60	120	
Sc (IS)	45	3	No Gas	39255000	0.61	40115962	97.85	60	120	
Ge Internal standard	72	1	HMI H2	11033840	0.04	11471213	96.19	60	120	
Ge Internal standard	72	2	HMI He	1583186	0.24	1582627	100.04	60	120	
In Internal standard	115	2	HMI He	4771265	0.63	4772525	99.97	60	120	
Ho-165	165	2	HMI He	18334947	0.23	18341213	99.97	60	120	
Ir (IS)	193	2	HMI He	13753850	0.62	14005392	98.20	60	120	

Sample Report

Sample Table

Sample Name	160-46608-A-6-Asd@10
Data File Name	075SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:25:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3.578	ppb	3.578	55.83	3502795	50000	
Be	9	1	6	-0.135	ppb	-0.135	-32.25	13	2000	
B	11	1	6	11.149	ppb	11.149	14.12	4014	2000	
Na	23	2	45	989.254	ppb	989.254	0.54	253307	400000	
Mg	24	2	45	1295.433	ppb	1295.433	2.63	146977	400000	
Al	27	2	45	10.657	ppb	10.657	5.03	720	400000	
Si	28	2	45	29.963	ppb	29.963	16.44	15024	10000	
P	31	2	45	9.099	ppb	9.099	48.12	96	10000	
K	39	2	45	246.987	ppb	246.987	6.96	63764	400000	
Ca	40	1	45	5039.456	ppb	5039.456	0.41	19661500	400000	
Ti	47	2	45	0.689	ppb	0.689	64.15	23	4000	
V	51	2	72	0.155	ppb	0.155	30.49	1140	2000	
Cr	52	2	72	0.050	ppb	0.050	100.43	943	5000	
Mn	55	2	72	2.040	ppb	2.040	16.59	1693	10000	
Fe	56	1	72	6.257	ppb	6.257	2.76	111503	10000	
(Fe)	57	2	72	4.492	ppb	4.492	58.80	550	400000	
Co	59	2	72	0.022	ppb	0.022	53.65	83	2000	
Ni	60	2	72	0.323	ppb	0.323	51.93	680	5000	
Cu	63	2	72	0.567	ppb	0.567	11.59	2110	5000	
Zn	66	2	72	2.670	ppb	2.670	7.24	1680	5000	
As	75	2	72	0.010	ppb	0.010	541.54	63	2000	
Se	78	1	72	-0.016	ppb	-0.016	-260.96	13	2000	
Sr	88	2	72	16.434	ppb	16.434	0.79	14997	4000	
Zr	90	2	72	-0.399	ppb	-0.399	-63.78	640	1000	
Nb	93	2	72	22.904	ppb	22.904	257.89	10	200	
Mo	95	2	115	2.771	ppb	2.771	1.88	3194	2000	
Pd	105	2	115	-753.485	ppb	-753.485	-7.34	17	100	
Ag	107	2	115	0.005	ppb	0.005	108.63	83	100	
Cd	111	2	115	0.048	ppb	0.048	153.53	37	2000	
Sn	120	2	115	0.106	ppb	0.106	85.68	677	2000	
Sb	121	2	115	0.107	ppb	0.107	24.62	197	1000	
Ba	137	2	115	6.326	ppb	6.326	4.29	2867	5000	
W	182	2	165	0.024	ppb	0.024	119.01	3387	100	
Pt	195	2	165	165.519	ppb	165.519	52.61	100	100	
Tl	205	2	165	-0.148	ppb	-0.148	-5.91	420	2000	
Pb	208	2	165	0.037	ppb	0.037	40.90	2330	5000	
Th	232	2	193	0.683	ppb	0.683	13.14	15452	2000	
U	238	2	193	5.475	ppb	5.475	2.03	80749	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	800826	0.41	832675	96.18	60	120	
Sc (IS)	45	1	HMI H2	21803148	0.55	22691138	96.09	60	120	
Sc (IS)	45	2	HMI He	1314555	1.38	1329086	98.91	60	120	
Sc (IS)	45	3	No Gas	39504977	0.82	40115962	98.48	60	120	
Ge Internal standard	72	1	HMI H2	11232926	0.96	11471213	97.92	60	120	
Ge Internal standard	72	2	HMI He	1596656	0.82	1582627	100.89	60	120	
In Internal standard	115	2	HMI He	4847232	1.04	4772525	101.57	60	120	
Ho-165	165	2	HMI He	18598253	0.67	18341213	101.40	60	120	
Ir (IS)	193	2	HMI He	13919502	0.93	14005392	99.39	60	120	

Sample Report

Sample Table

Sample Name	160-46608-A-6-B MS@2
Data File Name	076SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:28:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	40.857	ppb	40.857	0.83	3735769	50000	
Be	9	1	6	20.323	ppb	20.323	6.94	6998	2000	
B	11	1	6	50.240	ppb	50.240	3.06	14286	2000	
Na	23	2	45	5734.847	ppb	5734.847	2.74	1348967	400000	
Mg	24	2	45	6558.549	ppb	6558.549	1.22	733992	400000	
Al	27	2	45	431.653	ppb	431.653	5.21	13619	400000	
Si	28	2	45	156.840	ppb	156.840	1.76	39991	10000	
P	31	2	45	62.235	ppb	62.235	5.84	281	10000	
K	39	2	45	1521.959	ppb	1521.959	2.58	169918	400000	
Ca	40	1	45	25335.504	ppb	25335.504	0.73	96016289	400000	
Ti	47	2	45	21.219	ppb	21.219	2.95	707	4000	
V	51	2	72	21.545	ppb	21.545	4.01	30776	2000	
Cr	52	2	72	20.953	ppb	20.953	2.87	38849	5000	
Mn	55	2	72	29.716	ppb	29.716	1.14	22946	10000	
Fe	56	1	72	447.173	ppb	447.173	1.08	3308260	10000	
(Fe)	57	2	72	412.162	ppb	412.162	2.74	15081	400000	
Co	59	2	72	20.439	ppb	20.439	0.20	61648	2000	
Ni	60	2	72	21.045	ppb	21.045	0.99	18711	5000	
Cu	63	2	72	23.320	ppb	23.320	2.36	54540	5000	
Zn	66	2	72	27.228	ppb	27.228	1.56	11788	5000	
As	75	2	72	21.256	ppb	21.256	0.99	7185	2000	
Se	78	1	72	21.112	ppb	21.112	1.67	6224	2000	
Sr	88	2	72	119.353	ppb	119.353	0.93	106670	4000	
Zr	90	2	72	0.263	ppb	0.263	268.80	770	1000	
Nb	93	2	72	68.930	ppb	68.930	125.08	23	200	
Mo	95	2	115	34.784	ppb	34.784	1.24	38770	2000	
Pd	105	2	115	-322.621	ppb	-322.621	-31.88	60	100	
Ag	107	2	115	21.081	ppb	21.081	1.10	77868	100	
Cd	111	2	115	20.849	ppb	20.849	3.80	11111	2000	
Sn	120	2	115	21.972	ppb	21.972	0.72	29962	2000	
Sb	121	2	115	21.330	ppb	21.330	1.79	31799	1000	
Ba	137	2	115	50.220	ppb	50.220	0.18	21809	5000	
W	182	2	165	1.083	ppb	1.083	7.10	7746	100	
Pt	195	2	165	151.117	ppb	151.117	70.09	93	100	
Tl	205	2	165	21.261	ppb	21.261	0.47	169916	2000	
Pb	208	2	165	21.588	ppb	21.588	0.26	236212	5000	
Th	232	2	193	19.996	ppb	19.996	3.08	222375	2000	
U	238	2	193	46.372	ppb	46.372	0.65	672416	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	777683	0.55	832675	93.40	60	120	
Sc (IS)	45	1	HMI H2	21230846	0.93	22691138	93.56	60	120	
Sc (IS)	45	2	HMI He	1300109	0.89	1329086	97.82	60	120	
Sc (IS)	45	3	No Gas	38533582	0.18	40115962	96.06	60	120	
Ge Internal standard	72	1	HMI H2	10983147	0.22	11471213	95.75	60	120	
Ge Internal standard	72	2	HMI He	1570106	0.37	1582627	99.21	60	120	
In Internal standard	115	2	HMI He	4737805	1.15	4772525	99.27	60	120	
Ho-165	165	2	HMI He	18265495	0.44	18341213	99.59	60	120	
Ir (IS)	193	2	HMI He	13744249	1.04	14005392	98.14	60	120	

Sample Report

Sample Table

Sample Name	160-46608-A-6-C MSD@2
Data File Name	077SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:32:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	44.386	ppb	44.386	9.43	3776102	50000	
Be	9	1	6	21.053	ppb	21.053	4.58	7152	2000	
B	11	1	6	51.843	ppb	51.843	3.34	14520	2000	
Na	23	2	45	5788.357	ppb	5788.357	0.19	1352379	400000	
Mg	24	2	45	6669.976	ppb	6669.976	0.53	741478	400000	
Al	27	2	45	446.716	ppb	446.716	0.51	13990	400000	
Si	28	2	45	151.409	ppb	151.409	1.91	38655	10000	
P	31	2	45	55.904	ppb	55.904	9.17	257	10000	
K	39	2	45	1575.709	ppb	1575.709	0.17	173261	400000	
Ca	40	1	45	25855.833	ppb	25855.833	0.88	96875935	400000	
Ti	47	2	45	21.459	ppb	21.459	13.36	710	4000	
V	51	2	72	21.498	ppb	21.498	2.66	31096	2000	
Cr	52	2	72	21.247	ppb	21.247	0.92	39875	5000	
Mn	55	2	72	30.334	ppb	30.334	2.47	23714	10000	
Fe	56	1	72	462.465	ppb	462.465	0.45	3411157	10000	
(Fe)	57	2	72	427.029	ppb	427.029	0.80	15805	400000	
Co	59	2	72	20.902	ppb	20.902	1.48	63832	2000	
Ni	60	2	72	20.446	ppb	20.446	2.32	18417	5000	
Cu	63	2	72	23.246	ppb	23.246	0.22	55045	5000	
Zn	66	2	72	27.924	ppb	27.924	3.80	12225	5000	
As	75	2	72	20.942	ppb	20.942	2.60	7168	2000	
Se	78	1	72	21.475	ppb	21.475	4.82	6315	2000	
Sr	88	2	72	119.725	ppb	119.725	0.31	108337	4000	
Zr	90	2	72	0.649	ppb	0.649	40.96	863	1000	
Nb	93	2	72	45.449	ppb	45.449	155.76	17	200	
Mo	95	2	115	35.345	ppb	35.345	1.32	39319	2000	
Pd	105	2	115	-617.596	ppb	-617.596	-42.37	30	100	
Ag	107	2	115	21.325	ppb	21.325	0.30	78623	100	
Cd	111	2	115	21.799	ppb	21.799	5.96	11598	2000	
Sn	120	2	115	22.713	ppb	22.713	0.97	30894	2000	
Sb	121	2	115	21.976	ppb	21.976	1.73	32698	1000	
Ba	137	2	115	52.702	ppb	52.702	3.15	22837	5000	
W	182	2	165	1.126	ppb	1.126	3.07	7929	100	
Pt	195	2	165	80.814	ppb	80.814	65.43	70	100	
Tl	205	2	165	21.567	ppb	21.567	0.98	172444	2000	
Pb	208	2	165	21.816	ppb	21.816	1.43	238833	5000	
Th	232	2	193	24.283	ppb	24.283	1.24	265519	2000	
U	238	2	193	47.539	ppb	47.539	0.09	681943	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	767511	0.78	832675	92.17	60	120	
Sc (IS)	45	1	HMI H2	20989788	0.59	22691138	92.50	60	120	
Sc (IS)	45	2	HMI He	1291378	0.64	1329086	97.16	60	120	
Sc (IS)	45	3	No Gas	38638773	0.81	40115962	96.32	60	120	
Ge Internal standard	72	1	HMI H2	10957084	0.44	11471213	95.52	60	120	
Ge Internal standard	72	2	HMI He	1589704	0.17	1582627	100.45	60	120	
In Internal standard	115	2	HMI He	4728618	0.57	4772525	99.08	60	120	
Ho-165	165	2	HMI He	18277139	0.48	18341213	99.65	60	120	
Ir (IS)	193	2	HMI He	13596589	0.44	14005392	97.08	60	120	

Sample Table

Sample Name	160-46608-A-6-Apds@2
Data File Name	078SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:36:15-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	302.964	ppb	302.964	0.80	5967312	50000	
Be	9	1	6	253.505	ppb	253.505	0.52	84700	2000	
B	11	1	6	49.293	ppb	49.293	3.86	13723	2000	
Na	23	2	45	4726.298	ppb	4726.298	3.67	1099300	400000	
Mg	24	2	45	5867.173	ppb	5867.173	0.94	647032	400000	
Al	27	2	45	2657.961	ppb	2657.961	1.22	80694	400000	
Si	28	2	45	396.373	ppb	396.373	2.21	86130	10000	
P	31	2	45	2640.219	ppb	2640.219	0.82	9181	10000	
K	39	2	45	1145.072	ppb	1145.072	0.91	136306	400000	
Ca	40	1	45	23326.933	ppb	23326.933	0.85	87487739	400000	
Ti	47	2	45	273.766	ppb	273.766	2.71	8986	4000	
V	51	2	72	256.376	ppb	256.376	1.00	355555	2000	
Cr	52	2	72	252.956	ppb	252.956	0.72	458713	5000	
Mn	55	2	72	265.464	ppb	265.464	0.63	203768	10000	
Fe	56	1	72	23.396	ppb	23.396	0.42	230729	10000	
(Fe)	57	2	72	22.318	ppb	22.318	6.58	1173	400000	
Co	59	2	72	251.068	ppb	251.068	0.22	755375	2000	
Ni	60	2	72	244.898	ppb	244.898	0.57	213131	5000	
Cu	63	2	72	257.262	ppb	257.262	0.53	592590	5000	
Zn	66	2	72	259.420	ppb	259.420	0.94	107373	5000	
As	75	2	72	259.771	ppb	259.771	0.04	86942	2000	
Se	78	1	72	254.271	ppb	254.271	1.46	73909	2000	
Sr	88	2	72	331.104	ppb	331.104	1.19	295124	4000	
Zr	90	2	72	31.904	ppb	31.904	14.53	7499	1000	
Nb	93	2	72	172.463	ppb	172.463	11.25	53	200	
Mo	95	2	115	279.825	ppb	279.825	0.97	310153	2000	
Pd	105	2	115	2745.568	ppb	2745.568	23.24	370	100	>LDR
Ag	107	2	115	67.361	ppb	67.361	0.12	247504	100	
Cd	111	2	115	258.077	ppb	258.077	0.84	136791	2000	
Sn	120	2	115	272.689	ppb	272.689	0.45	364172	2000	
Sb	121	2	115	268.278	ppb	268.278	1.23	397675	1000	
Ba	137	2	115	294.693	ppb	294.693	0.80	127058	5000	
W	182	2	165	109.444	ppb	109.444	17.09	457935	100	
Pt	195	2	165	294.632	ppb	294.632	72.83	140	100	
Tl	205	2	165	286.947	ppb	286.947	0.26	2265284	2000	
Pb	208	2	165	281.338	ppb	281.338	1.16	3044680	5000	
Th	232	2	193	62.274	ppb	62.274	7.93	668405	2000	
U	238	2	193	290.221	ppb	290.221	1.30	4161174	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	760535	0.68	832675	91.34	60	120	
Sc (IS)	45	1	HMI H2	21009830	0.87	22691138	92.59	60	120	
Sc (IS)	45	2	HMI He	1281003	0.97	1329086	96.38	60	120	
Sc (IS)	45	3	No Gas	38454974	1.37	40115962	95.86	60	120	
Ge Internal standard	72	1	HMI H2	10857942	0.36	11471213	94.65	60	120	
Ge Internal standard	72	2	HMI He	1566546	0.29	1582627	98.98	60	120	
In Internal standard	115	2	HMI He	4715041	0.30	4772525	98.80	60	120	
Ho-165	165	2	HMI He	18199967	0.87	18341213	99.23	60	120	
Ir (IS)	193	2	HMI He	13596658	0.75	14005392	97.08	60	120	

Sample Report

Sample Table

Sample Name	160-46610-A-5-A
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:40:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.257	ppb	-3.257	-29.56	3363592	50000	
Be	9	1	6	0.096	ppb	0.096	31.76	90	2000	
B	11	1	6	7.753	ppb	7.753	4.40	2937	2000	
Na	23	2	45	1386.819	ppb	1386.819	0.74	341690	400000	
Mg	24	2	45	19315.279	ppb	19315.279	1.85	2155086	400000	
Al	27	2	45	49.712	ppb	49.712	12.63	1907	400000	
Si	28	2	45	401.477	ppb	401.477	0.96	88211	10000	
P	31	2	45	27.557	ppb	27.557	5.22	159	10000	
K	39	2	45	944.753	ppb	944.753	2.12	121234	400000	
Ca	40	1	45	33635.010	ppb	33635.010	0.22	127166991	400000	
Ti	47	2	45	2.002	ppb	2.002	29.91	67	4000	
V	51	2	72	0.296	ppb	0.296	12.63	1317	2000	
Cr	52	2	72	2.058	ppb	2.058	7.89	4571	5000	
Mn	55	2	72	9.601	ppb	9.601	1.33	7479	10000	
Fe	56	1	72	108.344	ppb	108.344	1.70	845796	10000	
(Fe)	57	2	72	110.688	ppb	110.688	2.59	4327	400000	
Co	59	2	72	0.297	ppb	0.297	15.08	910	2000	
Ni	60	2	72	1.414	ppb	1.414	10.46	1620	5000	
Cu	63	2	72	1.739	ppb	1.739	7.82	4781	5000	
Zn	66	2	72	14.020	ppb	14.020	2.78	6338	5000	
As	75	2	72	0.314	ppb	0.314	25.16	165	2000	
Se	78	1	72	0.313	ppb	0.313	25.16	109	2000	
Sr	88	2	72	27.712	ppb	27.712	0.69	24823	4000	
Zr	90	2	72	0.136	ppb	0.136	180.43	743	1000	
Nb	93	2	72	286.394	ppb	286.394	12.87	87	200	
Mo	95	2	115	2.104	ppb	2.104	9.43	2377	2000	
Pd	105	2	115	-584.843	ppb	-584.843	-26.06	33	100	
Ag	107	2	115	0.541	ppb	0.541	15.02	2060	100	
Cd	111	2	115	0.439	ppb	0.439	2.11	243	2000	
Sn	120	2	115	1.269	ppb	1.269	16.34	2217	2000	
Sb	121	2	115	2.603	ppb	2.603	9.79	3907	1000	
Ba	137	2	115	82.075	ppb	82.075	3.49	35571	5000	
W	182	2	165	5.641	ppb	5.641	4.49	26757	100	
Pt	195	2	165	50.954	ppb	50.954	158.74	60	100	
Tl	205	2	165	-0.040	ppb	-0.040	-53.20	1263	2000	
Pb	208	2	165	1.138	ppb	1.138	4.84	14240	5000	
Th	232	2	193	2.851	ppb	2.851	9.72	38418	2000	
U	238	2	193	5.876	ppb	5.876	1.21	85328	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	762866	0.18	832675	91.62	60	120	
Sc (IS)	45	1	HMI H2	21182726	0.96	22691138	93.35	60	120	
Sc (IS)	45	2	HMI He	1296869	1.56	1329086	97.58	60	120	
Sc (IS)	45	3	No Gas	38596013	0.99	40115962	96.21	60	120	
Ge Internal standard	72	1	HMI H2	10932057	0.30	11471213	95.30	60	120	
Ge Internal standard	72	2	HMI He	1570233	1.26	1582627	99.22	60	120	
In Internal standard	115	2	HMI He	4734060	0.51	4772525	99.19	60	120	
Ho-165	165	2	HMI He	18262742	0.50	18341213	99.57	60	120	
Ir (IS)	193	2	HMI He	13706992	0.59	14005392	97.87	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	080_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:44:04-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	101.361	ppb	4.614	4366791	100	101.4	90	110	
Be	9	1	6	48.782	ppb	0.800	16772	50	97.6	90	110	
B	11	1	6	500.751	ppb	1.072	134471	50	1001.5	90	110	>+\-10%
Na	23	2	45	53303.523	ppb	1.356	12625323	51000	104.5	90	110	
Mg	24	2	45	11635.310	ppb	2.256	1329632	11000	105.8	90	110	
Al	27	2	45	985.730	ppb	4.661	31259	1000	98.6	90	110	
Si	28	2	45	54.813	ppb	2.006	20209	500	11.0	90	110	>+\-10%
P	31	2	45	2472.620	ppb	1.064	8917	2500	98.9	90	110	
K	39	2	45	10442.446	ppb	2.163	937075	11000	94.9	90	110	
Ca	40	1	45	11253.850	ppb	0.457	43562691	11000	102.3	90	110	
(Ca)	44	1	45	12007.210	ppb	1.670	1389983	11000	109.2	90	110	
Ti	47	2	45	57.473	ppb	15.946	1954	50	114.9	90	110	>+\-10%
V	51	2	72	49.993	ppb	0.551	71794	50	100.0	90	110	
Cr	52	2	72	49.470	ppb	1.695	92611	50	98.9	90	110	
Mn	55	2	72	47.553	ppb	2.647	37486	50	95.1	90	110	
Fe	56	1	72	1019.895	ppb	0.802	7596760	1000	102.0	90	110	
(Fe)	56	2	72	1005.004	ppb	1.121	1561815	1000	100.5	90	110	
(Fe)	57	2	72	965.420	ppb	1.043	35589	1000	96.5	90	110	
Co	59	2	72	48.568	ppb	1.573	149742	50	97.1	90	110	
Ni	60	2	72	47.553	ppb	0.411	42725	50	95.1	90	110	
Cu	63	2	72	47.900	ppb	1.503	113699	50	95.8	90	110	
Zn	66	2	72	51.211	ppb	1.511	22172	50	102.4	90	110	
As	75	2	72	50.195	ppb	1.092	17264	50	100.4	90	110	
Se	78	1	72	48.763	ppb	2.282	14609	50	97.5	90	110	
Sr	88	2	72	99.905	ppb	1.323	91298	100	99.9	90	110	
Zr	90	2	72	2.108	ppb	19.415	1190	50	4.2	90	110	>+\-10%
Nb	93	2	72	134.632	ppb	38.712	43	100	134.6	90	110	>+\-10%
Mo	95	2	115	50.631	ppb	1.675	57533	50	101.3	90	110	
Pd	105	2	115	468.886	ppb	156.092	143	50	937.8	90	110	>+\-10%
Ag	107	2	115	49.478	ppb	1.805	186281	50	99.0	90	110	
Cd	111	2	115	49.952	ppb	0.833	27137	50	99.9	90	110	
Sn	120	2	115	52.490	ppb	2.556	72251	50	105.0	90	110	
Sb	121	2	115	51.712	ppb	3.292	78560	50	103.4	90	110	
Ba	137	2	115	50.188	ppb	1.087	22226	50	100.4	90	110	
W	182	2	165	52.357	ppb	1.355	225362	50	104.7	90	110	
Pt	195	2	165	136.571	ppb	56.899	90	50	273.1	90	110	>+\-10%
Tl	205	2	165	49.904	ppb	0.850	403240	50	99.8	90	110	
Pb	208	2	165	50.824	ppb	1.544	562676	50	101.6	90	110	
Th	232	2	193	40.634	ppb	4.104	451580	50	81.3	90	110	>+\-10%
U	238	2	193	47.043	ppb	2.084	693935	50	94.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	780366	0.41	832675	93.72	60	120	
Sc (IS)	45	1	HMI H2	21668559	0.56	22691138	95.49	60	120	
Sc (IS)	45	2	HMI He	1328006	1.18	1329086	99.92	60	120	
Sc (IS)	45	3	No Gas	39556105	0.83	40115962	98.60	60	120	
Ge Internal standard	72	1	HMI H2	11179177	0.92	11471213	97.45	60	120	
Ge Internal standard	72	2	HMI He	1605235	0.54	1582627	101.43	60	120	
In Internal standard	115	2	HMI He	4831266	0.79	4772525	101.23	60	120	
Ho-165	165	2	HMI He	18566957	0.42	18341213	101.23	60	120	
Ir (IS)	193	2	HMI He	13982789	0.76	14005392	99.84	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	081_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:47:49-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	0.307	ppb	950.0	3467923	10	
Be	9	1	6	-0.060	ppb	-94.9	40	0.5	
B	11	1	6	9.253	ppb	4.6	3504	0.5	>RL
Na	23	2	45	9.894	ppb	30.3	24361	25	
Mg	24	2	45	2.288	ppb	51.6	753	25	
Al	27	2	45	0.535	ppb	747.3	410	15	
K	39	2	45	-9.891	ppb	-51.3	42498	50	
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5	
V	51	2	72	-0.081	ppb	-74.9	810	1	
Cr	52	2	72	-0.007	ppb	-1295.1	840	1	
Mn	55	2	72	0.083	ppb	30.5	163	0.5	
(Fe)	57	2	72	4.469	ppb	56.5	550	25	
Co	59	2	72	0.027	ppb	30.5	100	0.5	
Ni	60	2	72	-0.025	ppb	-127.8	373	1	
Cu	63	2	72	-0.007	ppb	-255.3	767	1	
Zn	66	2	72	0.059	ppb	355.8	587	5	
As	75	2	72	-0.035	ppb	-42.8	48	1	
Se	78	1	72	0.010	ppb	546.6	21	1	
Sr	88	2	72	0.010	ppb	228.7	80	0.5	
Zr	90	2	72	-0.530	ppb	-23.7	613	1	
Nb	93	2	72	56.170	ppb	1.3	20	2	>RL
Mo	95	2	115	0.469	ppb	18.4	580	0.5	
Pd	105	2	115	-692.090	ppb	-8.2	23	1	
Ag	107	2	115	0.039	ppb	51.5	213	1	
Cd	111	2	115	0.011	ppb	243.4	17	0.5	
Sn	120	2	115	0.745	ppb	19.8	1573	1	
Sb	121	2	115	0.347	ppb	9.8	570	0.6	
Ba	137	2	115	0.026	ppb	58.5	77	0.5	
W	182	2	165	0.551	ppb	3.1	5655	1	
Pt	195	2	165	105.660	ppb	74.3	80	1	>RL
Tl	205	2	165	-0.097	ppb	-3.0	837	0.1	
Pb	208	2	165	0.023	ppb	65.3	2193	0.5	
Th	232	2	193	1.514	ppb	7.8	25055	1	>RL
U	238	2	193	0.080	ppb	12.4	1617	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	802980	0.85	832675	96.43	60	120	
Sc (IS)	45	1	HMI H2	21866207	0.13	22691138	96.36	60	120	
Sc (IS)	45	2	HMI He	1330003	1.69	1329086	100.07	60	120	
Sc (IS)	45	3	No Gas	39435629	0.49	40115962	98.30	60	120	
Ge Internal standard	72	1	HMI H2	11243304	0.39	11471213	98.01	60	120	
Ge Internal standard	72	2	HMI He	1601933	1.09	1582627	101.22	60	120	
In Internal standard	115	2	HMI He	4916441	1.34	4772525	103.02	60	120	
Ho-165	165	2	HMI He	18688988	0.40	18341213	101.90	60	120	
Ir (IS)	193	2	HMI He	14247680	1.00	14005392	101.73	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	082LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:51:35-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	4.695	ppb	112.608	3599924	50	9.4	70	130	>+/-30%
Be	9	1	6	1.083	ppb	18.916	443	1	108.3	70	130	
Na	23	2	45	41.242	ppb	11.440	32084	50	82.5	70	130	
Mg	24	2	45	50.723	ppb	5.638	6355	50	101.4	70	130	
Al	27	2	45	46.373	ppb	4.359	1867	50	92.7	70	130	
K	39	2	45	87.805	ppb	8.197	51382	100	87.8	70	130	
V	51	2	72	4.706	ppb	4.758	7759	5	94.1	70	130	
Cr	52	2	72	1.794	ppb	10.500	4271	2	89.7	70	130	
Mn	55	2	72	1.154	ppb	10.316	1027	1	115.4	70	130	
(Fe)	57	2	72	46.552	ppb	15.990	2130	50	93.1	70	130	
Co	59	2	72	1.010	ppb	8.830	3197	1	101.0	70	130	
Ni	60	2	72	1.883	ppb	18.165	2117	2	94.2	70	130	
Cu	63	2	72	2.030	ppb	10.505	5688	2	101.5	70	130	
Zn	66	2	72	9.940	ppb	7.375	4858	10	99.4	70	130	
As	75	2	72	4.708	ppb	3.616	1709	5	94.2	70	130	
Se	78	1	72	5.172	ppb	4.986	1575	5	103.4	70	130	
Sr	88	2	72	1.130	ppb	17.626	1127	1	113.0	70	130	
Zr	90	2	72	0.334	ppb	51.714	820	0.5	66.8	70	130	>+/-30%
Nb	93	2	72	10.743	ppb	353.757	7	2	537.2	70	130	>+/-30%
Mo	95	2	115	2.151	ppb	6.958	2534	2	107.5	70	130	
Pd	105	2	115	-630.500	ppb	-14.832	30	1	-63050.0	70	130	>+/-30%
Ag	107	2	115	0.987	ppb	4.974	3861	1	98.7	70	130	
Cd	111	2	115	1.008	ppb	15.780	570	1	100.8	70	130	
Sn	120	2	115	10.334	ppb	7.134	14968	10	103.3	70	130	
Sb	121	2	115	2.115	ppb	7.781	3317	2	105.8	70	130	
Ba	137	2	115	1.170	ppb	13.029	593	1	117.0	70	130	
W	182	2	165	4.948	ppb	2.926	24861	1	494.8	70	130	>+/-30%
Pt	195	2	165	33.627	ppb	261.452	57	1	3362.7	70	130	>+/-30%
Tl	205	2	165	0.878	ppb	7.989	8883	1	87.8	70	130	
Pb	208	2	165	1.065	ppb	1.631	14003	1	106.5	70	130	
Th	232	2	193	5.605	ppb	4.878	71538	2	280.3	70	130	>+/-30%
U	238	2	193	0.924	ppb	2.478	14494	1	92.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	804249	0.37	832675	96.59	60	120	
Sc (IS)	45	1	HMI H2	21788124	1.17	22691138	96.02	60	120	
Sc (IS)	45	2	HMI He	1343092	0.80	1329086	101.05	60	120	
Sc (IS)	45	3	No Gas	40491326	1.62	40115962	100.94	60	120	
Ge Internal standard	72	1	HMI H2	11242940	1.34	11471213	98.01	60	120	
Ge Internal standard	72	2	HMI He	1639124	0.30	1582627	103.57	60	120	
In Internal standard	115	2	HMI He	4936646	0.46	4772525	103.44	60	120	
Ho-165	165	2	HMI He	19019222	0.55	18341213	103.70	60	120	
Ir (IS)	193	2	HMI He	14446580	0.31	14005392	103.15	60	120	

Sample Table

Sample Name	160-46612-A-5-A
Data File Name	083SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:55:20-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.960	ppb	-3.960	-105.04	3403974	50000	
Be	9	1	6	-0.047	ppb	-0.047	-34.42	43	2000	
B	11	1	6	7.543	ppb	7.543	5.88	2947	2000	
Na	23	2	45	652.432	ppb	652.432	1.28	176323	400000	
Mg	24	2	45	14566.984	ppb	14566.984	2.75	1665180	400000	
Al	27	2	45	371.157	ppb	371.157	2.82	12025	400000	
Si	28	2	45	411.245	ppb	411.245	2.03	92343	10000	
P	31	2	45	16.990	ppb	16.990	21.08	125	10000	
K	39	2	45	683.972	ppb	683.972	1.34	101881	400000	
Ca	40	1	45	24630.510	ppb	24630.510	0.21	95899775	400000	
Ti	47	2	45	5.787	ppb	5.787	23.86	197	4000	
V	51	2	72	0.837	ppb	0.837	6.64	2100	2000	
Cr	52	2	72	8.311	ppb	8.311	3.33	16170	5000	
Mn	55	2	72	9.045	ppb	9.045	9.62	7158	10000	
Fe	56	1	72	445.619	ppb	445.619	0.83	3369203	10000	
(Fe)	57	2	72	429.598	ppb	429.598	2.40	15948	400000	
Co	59	2	72	0.324	ppb	0.324	7.17	1010	2000	
Ni	60	2	72	3.155	ppb	3.155	7.14	3184	5000	
Cu	63	2	72	1.059	ppb	1.059	6.12	3260	5000	
Zn	66	2	72	8.049	ppb	8.049	3.63	3934	5000	
As	75	2	72	0.486	ppb	0.486	11.89	225	2000	
Se	78	1	72	0.112	ppb	0.112	0.90	52	2000	
Sr	88	2	72	18.626	ppb	18.626	0.65	16970	4000	
Zr	90	2	72	0.116	ppb	0.116	693.72	750	1000	
Nb	93	2	72	721.546	ppb	721.546	11.33	217	200	
Mo	95	2	115	0.407	ppb	0.407	26.40	500	2000	
Pd	105	2	115	-689.305	ppb	-689.305	-21.17	23	100	
Ag	107	2	115	0.544	ppb	0.544	8.26	2114	100	
Cd	111	2	115	0.006	ppb	0.006	485.99	13	2000	
Sn	120	2	115	0.176	ppb	0.176	48.25	770	2000	
Sb	121	2	115	0.425	ppb	0.425	23.01	680	1000	
Ba	137	2	115	167.958	ppb	167.958	2.86	74286	5000	
W	182	2	165	5.221	ppb	5.221	4.89	25522	100	
Pt	195	2	165	37.573	ppb	37.573	201.26	57	100	
Tl	205	2	165	-0.125	ppb	-0.125	-6.12	603	2000	
Pb	208	2	165	0.853	ppb	0.853	0.21	11385	5000	
Th	232	2	193	9.421	ppb	9.421	14.94	110424	2000	
U	238	2	193	0.118	ppb	0.118	13.07	2144	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	779907	0.81	832675	93.66	60	120	
Sc (IS)	45	1	HMI H2	21810851	0.73	22691138	96.12	60	120	
Sc (IS)	45	2	HMI He	1328597	1.10	1329086	99.96	60	120	
Sc (IS)	45	3	No Gas	39128119	0.65	40115962	97.54	60	120	
Ge Internal standard	72	1	HMI H2	11224040	0.58	11471213	97.85	60	120	
Ge Internal standard	72	2	HMI He	1594922	0.88	1582627	100.78	60	120	
In Internal standard	115	2	HMI He	4835641	0.69	4772525	101.32	60	120	
Ho-165	165	2	HMI He	18642290	0.80	18341213	101.64	60	120	
Ir (IS)	193	2	HMI He	13941742	1.41	14005392	99.55	60	120	

Sample Report

Sample Table

Sample Name	160-46612-A-12-A
Data File Name	084SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T14:59:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.435	ppb	-3.435	-210.26	3437643	50000	
Be	9	1	6	-0.076	ppb	-0.076	-156.12	33	2000	
B	11	1	6	5.743	ppb	5.743	8.87	2457	2000	
Na	23	2	45	1052.907	ppb	1052.907	1.64	271281	400000	
Mg	24	2	45	10473.556	ppb	10473.556	2.56	1198432	400000	
Al	27	2	45	302.412	ppb	302.412	2.84	9880	400000	
Si	28	2	45	456.678	ppb	456.678	0.38	101624	10000	
P	31	2	45	10.600	ppb	10.600	23.76	103	10000	
K	39	2	45	1275.737	ppb	1275.737	2.54	152676	400000	
Ca	40	1	45	18377.900	ppb	18377.900	1.42	71280256	400000	
Ti	47	2	45	5.087	ppb	5.087	17.51	173	4000	
V	51	2	72	0.672	ppb	0.672	26.36	1897	2000	
Cr	52	2	72	1.749	ppb	1.749	6.72	4141	5000	
Mn	55	2	72	24.638	ppb	24.638	3.20	19666	10000	
Fe	56	1	72	432.724	ppb	432.724	1.66	3279458	10000	
(Fe)	57	2	72	408.951	ppb	408.951	1.78	15454	400000	
Co	59	2	72	0.355	ppb	0.355	4.12	1123	2000	
Ni	60	2	72	1.438	ppb	1.438	8.13	1693	5000	
Cu	63	2	72	0.476	ppb	0.476	12.88	1927	5000	
Zn	66	2	72	10.570	ppb	10.570	6.73	5071	5000	
As	75	2	72	0.243	ppb	0.243	14.76	145	2000	
Se	78	1	72	0.095	ppb	0.095	46.44	47	2000	
Sr	88	2	72	17.101	ppb	17.101	1.31	15845	4000	
Zr	90	2	72	0.466	ppb	0.466	36.21	840	1000	
Nb	93	2	72	654.482	ppb	654.482	8.91	200	200	
Mo	95	2	115	0.207	ppb	0.207	25.22	273	2000	
Pd	105	2	115	-212.010	ppb	-212.010	-140.51	73	100	
Ag	107	2	115	0.003	ppb	0.003	174.07	77	100	
Cd	111	2	115	0.043	ppb	0.043	124.54	33	2000	
Sn	120	2	115	0.056	ppb	0.056	49.04	610	2000	
Sb	121	2	115	0.163	ppb	0.163	32.31	283	1000	
Ba	137	2	115	39.410	ppb	39.410	3.12	17557	5000	
W	182	2	165	3.544	ppb	3.544	2.96	18362	100	
Pt	195	2	165	106.338	ppb	106.338	26.98	80	100	
Tl	205	2	165	-0.134	ppb	-0.134	-9.81	530	2000	
Pb	208	2	165	0.735	ppb	0.735	1.89	10062	5000	
Th	232	2	193	4.796	ppb	4.796	12.58	59636	2000	
U	238	2	193	0.143	ppb	0.143	12.66	2480	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	776583	0.63	832675	93.26	60	120	
Sc (IS)	45	1	HMI H2	21724807	1.15	22691138	95.74	60	120	
Sc (IS)	45	2	HMI He	1329685	0.79	1329086	100.05	60	120	
Sc (IS)	45	3	No Gas	39465156	0.36	40115962	98.38	60	120	
Ge Internal standard	72	1	HMI H2	11244902	0.98	11471213	98.03	60	120	
Ge Internal standard	72	2	HMI He	1621285	0.85	1582627	102.44	60	120	
In Internal standard	115	2	HMI He	4857654	1.32	4772525	101.78	60	120	
Ho-165	165	2	HMI He	18617583	0.38	18341213	101.51	60	120	
Ir (IS)	193	2	HMI He	13802906	0.30	14005392	98.55	60	120	

Sample Report

Sample Table

Sample Name	160-46612-A-18-A
Data File Name	085SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:02:53-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584087 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-1.173	ppb	-1.173	-147.75	3507542	50000	
Be	9	1	6	0.143	ppb	0.143	35.04	110	2000	
B	11	1	6	5.448	ppb	5.448	14.66	2430	2000	
Na	23	2	45	1896.851	ppb	1896.851	0.86	482816	400000	
Mg	24	2	45	482.088	ppb	482.088	3.53	57012	400000	
Al	27	2	45	14.168	ppb	14.168	33.45	860	400000	
Si	28	2	45	480.887	ppb	480.887	1.54	109171	10000	
P	31	2	45	8.291	ppb	8.291	18.41	97	10000	
K	39	2	45	1424.756	ppb	1424.756	1.57	169568	400000	
Ca	40	1	45	1070.039	ppb	1070.039	0.81	4290484	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.101	ppb	-0.101	-76.59	807	2000	
Cr	52	2	72	1.911	ppb	1.911	0.09	4541	5000	
Mn	55	2	72	4.070	ppb	4.070	2.24	3404	10000	
Fe	56	1	72	56.852	ppb	56.852	1.44	492551	10000	
(Fe)	57	2	72	58.086	ppb	58.086	8.12	2587	400000	
Co	59	2	72	0.023	ppb	0.023	76.21	90	2000	
Ni	60	2	72	1.191	ppb	1.191	2.64	1503	5000	
Cu	63	2	72	0.196	ppb	0.196	26.99	1287	5000	
Zn	66	2	72	10.417	ppb	10.417	9.99	5114	5000	
As	75	2	72	-0.069	ppb	-0.069	-19.10	38	2000	
Se	78	1	72	0.080	ppb	0.080	19.12	43	2000	
Sr	88	2	72	2.498	ppb	2.498	1.91	2427	4000	
Zr	90	2	72	-0.256	ppb	-0.256	-68.29	697	1000	
Nb	93	2	72	184.730	ppb	184.730	31.69	60	200	
Mo	95	2	115	0.145	ppb	0.145	5.94	210	2000	
Pd	105	2	115	-450.050	ppb	-450.050	-54.09	50	100	
Ag	107	2	115	-0.007	ppb	-0.007	-74.13	40	100	
Cd	111	2	115	0.022	ppb	0.022	163.78	23	2000	
Sn	120	2	115	0.011	ppb	0.011	291.95	567	2000	
Sb	121	2	115	0.106	ppb	0.106	27.38	203	1000	
Ba	137	2	115	11.295	ppb	11.295	5.83	5254	5000	
W	182	2	165	2.007	ppb	2.007	6.62	12129	100	
Pt	195	2	165	148.751	ppb	148.751	49.38	97	100	
Tl	205	2	165	-0.140	ppb	-0.140	-3.07	493	2000	
Pb	208	2	165	0.075	ppb	0.075	32.25	2830	5000	
Th	232	2	193	2.282	ppb	2.282	13.00	33336	2000	
U	238	2	193	0.004	ppb	0.004	104.39	470	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	793560	0.06	832675	95.30	60	120	
Sc (IS)	45	1	HMI H2	22161011	0.56	22691138	97.66	60	120	
Sc (IS)	45	2	HMI He	1362760	0.79	1329086	102.53	60	120	
Sc (IS)	45	3	No Gas	40035354	0.24	40115962	99.80	60	120	
Ge Internal standard	72	1	HMI H2	11362004	0.38	11471213	99.05	60	120	
Ge Internal standard	72	2	HMI He	1656671	1.76	1582627	104.68	60	120	
In Internal standard	115	2	HMI He	5024160	0.74	4772525	105.27	60	120	
Ho-165	165	2	HMI He	19096184	0.74	18341213	104.12	60	120	
Ir (IS)	193	2	HMI He	14131618	0.83	14005392	100.90	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-1-a
Data File Name	086SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:06:39-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	55.088	ppb	55.088	5.55	3969982	50000	
Be	9	1	6	-0.143	ppb	-0.143	-20.81	10	2000	
B	11	1	6	371.245	ppb	371.245	0.79	97577	2000	
Na	23	2	45	58815.767	ppb	58815.767	0.34	14229290	400000	
Mg	24	2	45	40021.279	ppb	40021.279	1.04	4671060	400000	
Al	27	2	45	6.491	ppb	6.491	17.96	610	400000	
Si	28	2	45	365.020	ppb	365.020	0.68	84739	10000	
P	31	2	45	15.685	ppb	15.685	32.39	123	10000	
K	39	2	45	4651.508	ppb	4651.508	0.90	450966	400000	
Ca	40	1	45	69688.102	ppb	69688.102	0.59	273226889	400000	
Ti	47	2	45	0.191	ppb	0.191	86.61	7	4000	
V	51	2	72	-0.018	ppb	-0.018	-301.11	927	2000	
Cr	52	2	72	0.317	ppb	0.317	33.74	1483	5000	
Mn	55	2	72	255.907	ppb	255.907	1.21	206883	10000	
Fe	56	1	72	76.169	ppb	76.169	0.54	631796	10000	
(Fe)	57	2	72	81.922	ppb	81.922	7.06	3471	400000	
Co	59	2	72	1.605	ppb	1.605	9.57	5101	2000	
Ni	60	2	72	3.553	ppb	3.553	9.18	3657	5000	
Cu	63	2	72	11.835	ppb	11.835	2.36	29484	5000	
Zn	66	2	72	11.296	ppb	11.296	6.09	5478	5000	
As	75	2	72	0.072	ppb	0.072	106.07	88	2000	
Se	78	1	72	0.019	ppb	0.019	243.61	24	2000	
Sr	88	2	72	688.173	ppb	688.173	0.88	645957	4000	
Zr	90	2	72	0.160	ppb	0.160	129.56	787	1000	
Nb	93	2	72	239.059	ppb	239.059	33.50	77	200	
Mo	95	2	115	2.600	ppb	2.600	5.92	3044	2000	
Pd	105	2	115	-565.531	ppb	-565.531	-48.72	37	100	
Ag	107	2	115	0.001	ppb	0.001	920.00	70	100	
Cd	111	2	115	0.023	ppb	0.023	118.41	23	2000	
Sn	120	2	115	-0.026	ppb	-0.026	-180.53	503	2000	
Sb	121	2	115	2.120	ppb	2.120	5.07	3314	1000	
Ba	137	2	115	130.636	ppb	130.636	0.75	58817	5000	
W	182	2	165	27.889	ppb	27.889	1.07	123331	100	
Pt	195	2	165	35.523	ppb	35.523	126.48	57	100	
Tl	205	2	165	-0.140	ppb	-0.140	-3.39	493	2000	
Pb	208	2	165	0.013	ppb	0.013	107.44	2100	5000	
Th	232	2	193	0.805	ppb	0.805	14.89	16807	2000	
U	238	2	193	0.136	ppb	0.136	3.39	2410	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	761968	0.24	832675	91.51	60	120	
Sc (IS)	45	1	HMI H2	21971647	0.20	22691138	96.83	60	120	
Sc (IS)	45	2	HMI He	1356564	1.00	1329086	102.07	60	120	
Sc (IS)	45	3	No Gas	39655924	0.42	40115962	98.85	60	120	
Ge Internal standard	72	1	HMI H2	11259291	0.35	11471213	98.15	60	120	
Ge Internal standard	72	2	HMI He	1649976	1.03	1582627	104.26	60	120	
In Internal standard	115	2	HMI He	4920781	1.16	4772525	103.11	60	120	
Ho-165	165	2	HMI He	18834592	0.47	18341213	102.69	60	120	
Ir (IS)	193	2	HMI He	13935728	1.61	14005392	99.50	60	120	

Sample Report

Sample Table

Sample Name	280-165769-b-9-a
Data File Name	087SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:10:25-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584924 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-6.495	ppb	-6.495	-19.24	3558561	50000	
Be	9	1	6	-0.136	ppb	-0.136	-23.98	13	2000	
B	11	1	6	7.476	ppb	7.476	4.70	3027	2000	
Na	23	2	45	48.769	ppb	48.769	7.27	35280	400000	
Mg	24	2	45	13.613	ppb	13.613	13.01	2154	400000	
Al	27	2	45	5.524	ppb	5.524	18.81	597	400000	
Si	28	2	45	2.099	ppb	2.099	50.35	10050	10000	
P	31	2	45	-1.032	ppb	-1.032	-753.16	64	10000	
K	39	2	45	-0.496	ppb	-0.496	-2230.95	45529	400000	
Ca	40	1	45	60.497	ppb	60.497	3.86	305879	400000	
Ti	47	2	45	0.932	ppb	0.932	35.04	33	4000	
V	51	2	72	-0.240	ppb	-0.240	-16.16	617	2000	
Cr	52	2	72	0.271	ppb	0.271	19.54	1427	5000	
Mn	55	2	72	0.477	ppb	0.477	19.35	497	10000	
Fe	56	1	72	25.007	ppb	25.007	0.11	258399	10000	
(Fe)	57	2	72	21.548	ppb	21.548	25.89	1233	400000	
Co	59	2	72	0.035	ppb	0.035	23.17	130	2000	
Ni	60	2	72	1.002	ppb	1.002	5.33	1353	5000	
Cu	63	2	72	0.649	ppb	0.649	25.28	2430	5000	
Zn	66	2	72	2.345	ppb	2.345	2.28	1630	5000	
As	75	2	72	-0.062	ppb	-0.062	-52.82	41	2000	
Se	78	1	72	-0.013	ppb	-0.013	-279.20	15	2000	
Sr	88	2	72	0.273	ppb	0.273	21.65	337	4000	
Zr	90	2	72	-0.309	ppb	-0.309	-210.66	697	1000	
Nb	93	2	72	202.124	ppb	202.124	59.91	67	200	
Mo	95	2	115	0.108	ppb	0.108	63.62	167	2000	
Pd	105	2	115	-236.516	ppb	-236.516	-159.33	73	100	
Ag	107	2	115	-0.008	ppb	-0.008	-70.74	37	100	
Cd	111	2	115	-0.007	ppb	-0.007	-149.38	7	2000	
Sn	120	2	115	0.009	ppb	0.009	1196.06	563	2000	
Sb	121	2	115	0.165	ppb	0.165	13.60	297	1000	
Ba	137	2	115	0.210	ppb	0.210	19.54	163	5000	
W	182	2	165	0.404	ppb	0.404	18.24	5161	100	
Pt	195	2	165	42.145	ppb	42.145	181.74	60	100	
Tl	205	2	165	-0.153	ppb	-0.153	-3.59	390	2000	
Pb	208	2	165	0.053	ppb	0.053	18.13	2594	5000	
Th	232	2	193	0.030	ppb	0.030	7.64	8720	2000	
U	238	2	193	0.001	ppb	0.001	542.44	437	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	806070	0.57	832675	96.80	60	120	
Sc (IS)	45	1	HMI H2	22669015	0.61	22691138	99.90	60	120	
Sc (IS)	45	2	HMI He	1398103	0.63	1329086	105.19	60	120	
Sc (IS)	45	3	No Gas	41174735	2.45	40115962	102.64	60	120	
Ge Internal standard	72	1	HMI H2	11580061	0.49	11471213	100.95	60	120	
Ge Internal standard	72	2	HMI He	1686413	0.42	1582627	106.56	60	120	
In Internal standard	115	2	HMI He	5033953	1.31	4772525	105.48	60	120	
Ho-165	165	2	HMI He	19193223	0.56	18341213	104.65	60	120	
Ir (IS)	193	2	HMI He	14517944	1.09	14005392	103.66	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	088_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:14:11-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	82.872	ppb	4.097	4232980	100	82.9	90	110	>+\-10%
Be	9	1	6	48.682	ppb	1.326	16438	50	97.4	90	110	
B	11	1	6	503.850	ppb	3.317	132848	50	1007.7	90	110	>+\-10%
Na	23	2	45	53081.611	ppb	1.635	12545155	51000	104.1	90	110	
Mg	24	2	45	11534.425	ppb	2.033	1315253	11000	104.9	90	110	
Al	27	2	45	979.783	ppb	4.202	31012	1000	98.0	90	110	
Si	28	2	45	53.466	ppb	0.209	19892	500	10.7	90	110	>+\-10%
P	31	2	45	2467.885	ppb	2.352	8880	2500	98.7	90	110	
K	39	2	45	10429.167	ppb	1.103	933948	11000	94.8	90	110	
Ca	40	1	45	11117.988	ppb	1.031	43318884	11000	101.1	90	110	
(Ca)	44	1	45	11868.133	ppb	0.505	1382985	11000	107.9	90	110	
Ti	47	2	45	56.470	ppb	11.478	1917	50	112.9	90	110	>+\-10%
V	51	2	72	49.269	ppb	2.237	71747	50	98.5	90	110	
Cr	52	2	72	47.475	ppb	0.941	90152	50	95.0	90	110	
Mn	55	2	72	47.933	ppb	2.230	38308	50	95.9	90	110	
Fe	56	1	72	1010.197	ppb	0.383	7553960	1000	101.0	90	110	
(Fe)	56	2	72	979.537	ppb	0.516	1543779	1000	98.0	90	110	
(Fe)	57	2	72	952.504	ppb	2.010	35605	1000	95.3	90	110	
Co	59	2	72	47.323	ppb	1.876	147939	50	94.6	90	110	
Ni	60	2	72	47.280	ppb	4.368	43063	50	94.6	90	110	
Cu	63	2	72	46.544	ppb	0.197	112038	50	93.1	90	110	
Zn	66	2	72	49.663	ppb	2.556	21818	50	99.3	90	110	
As	75	2	72	48.288	ppb	0.928	16840	50	96.6	90	110	
Se	78	1	72	48.222	ppb	3.384	14500	50	96.4	90	110	
Sr	88	2	72	99.620	ppb	2.170	92294	100	99.6	90	110	
Zr	90	2	72	2.096	ppb	25.378	1203	50	4.2	90	110	>+\-10%
Nb	93	2	72	165.907	ppb	42.264	53	100	165.9	90	110	>+\-10%
Mo	95	2	115	50.621	ppb	0.944	57325	50	101.2	90	110	
Pd	105	2	115	1700.196	ppb	29.334	270	50	3400.4	90	110	>+\-10%
Ag	107	2	115	49.554	ppb	1.012	185937	50	99.1	90	110	
Cd	111	2	115	50.432	ppb	0.343	27304	50	100.9	90	110	
Sn	120	2	115	51.541	ppb	1.859	70710	50	103.1	90	110	
Sb	121	2	115	51.789	ppb	0.810	78416	50	103.6	90	110	
Ba	137	2	115	51.575	ppb	5.022	22760	50	103.1	90	110	
W	182	2	165	51.399	ppb	0.876	221084	50	102.8	90	110	
Pt	195	2	165	176.280	ppb	75.344	103	50	352.6	90	110	>+\-10%
Tl	205	2	165	49.459	ppb	0.354	399260	50	98.9	90	110	
Pb	208	2	165	49.543	ppb	0.938	548021	50	99.1	90	110	
Th	232	2	193	41.377	ppb	4.236	452412	50	82.8	90	110	>+\-10%
U	238	2	193	46.944	ppb	0.381	681756	50	93.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	766352	0.67	832675	92.03	60	120	
Sc (IS)	45	1	HMI H2	21810797	0.62	22691138	96.12	60	120	
Sc (IS)	45	2	HMI He	1325017	0.49	1329086	99.69	60	120	
Sc (IS)	45	3	No Gas	39830245	1.33	40115962	99.29	60	120	
Ge Internal standard	72	1	HMI H2	11221604	0.43	11471213	97.82	60	120	
Ge Internal standard	72	2	HMI He	1627565	0.88	1582627	102.84	60	120	
In Internal standard	115	2	HMI He	4814604	0.60	4772525	100.88	60	120	
Ho-165	165	2	HMI He	18548627	0.33	18341213	101.13	60	120	
Ir (IS)	193	2	HMI He	13765144	0.46	14005392	98.28	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	089_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:18:15-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-5.839	ppb	-89.3	3456112	10	
Be	9	1	6	-0.079	ppb	-73.9	33	0.5	
B	11	1	6	8.921	ppb	7.5	3417	0.5	>RL
Na	23	2	45	6.809	ppb	76.0	24428	25	
Mg	24	2	45	2.643	ppb	34.6	820	25	
Al	27	2	45	0.175	ppb	1846.8	413	15	
K	39	2	45	9.218	ppb	105.9	45652	50	
Ti	47	2	45	0.093	ppb	173.2	3	0.5	
V	51	2	72	-0.143	ppb	-26.5	747	1	
Cr	52	2	72	-0.021	ppb	-355.2	843	1	
Mn	55	2	72	0.143	ppb	49.5	217	0.5	
(Fe)	57	2	72	3.835	ppb	133.4	547	25	
Co	59	2	72	0.006	ppb	196.7	37	0.5	
Ni	60	2	72	0.092	ppb	51.9	493	1	
Cu	63	2	72	0.030	ppb	55.1	883	1	
Zn	66	2	72	0.549	ppb	41.8	820	5	
As	75	2	72	-0.056	ppb	-87.5	42	1	
Se	78	1	72	0.013	ppb	373.2	23	1	
Sr	88	2	72	-0.018	ppb	-92.8	57	0.5	
Zr	90	2	72	-0.447	ppb	-15.7	653	1	
Nb	93	2	72	75.534	ppb	24.0	27	2	>RL
Mo	95	2	115	0.412	ppb	22.7	520	0.5	
Pd	105	2	115	-570.462	ppb	-24.9	37	1	
Ag	107	2	115	0.016	ppb	15.1	130	1	
Cd	111	2	115	0.005	ppb	203.1	13	0.5	
Sn	120	2	115	0.598	ppb	17.7	1387	1	
Sb	121	2	115	0.223	ppb	18.5	383	0.6	
Ba	137	2	115	0.089	ppb	51.5	107	0.5	
W	182	2	165	0.463	ppb	15.1	5344	1	
Pt	195	2	165	24.758	ppb	357.6	53	1	>RL
Tl	205	2	165	-0.100	ppb	-4.5	820	0.1	
Pb	208	2	165	0.007	ppb	152.1	2037	0.5	
Th	232	2	193	1.488	ppb	5.9	24802	1	>RL
U	238	2	193	0.052	ppb	12.4	1190	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	804363	0.70	832675	96.60	60	120	
Sc (IS)	45	1	HMI H2	22224610	0.20	22691138	97.94	60	120	
Sc (IS)	45	2	HMI He	1375705	1.01	1329086	103.51	60	120	
Sc (IS)	45	3	No Gas	39922134	0.84	40115962	99.52	60	120	
Ge Internal standard	72	1	HMI H2	11443281	0.35	11471213	99.76	60	120	
Ge Internal standard	72	2	HMI He	1656808	0.95	1582627	104.69	60	120	
In Internal standard	115	2	HMI He	4978483	0.31	4772525	104.32	60	120	
Ho-165	165	2	HMI He	18923444	0.43	18341213	103.17	60	120	
Ir (IS)	193	2	HMI He	14267148	0.69	14005392	101.87	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	090LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:22:01-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	4.191	ppb	34.306	3624107	50	8.4	70	130	>+/-30%
Be	9	1	6	0.830	ppb	23.153	357	1	83.0	70	130	
Na	23	2	45	37.852	ppb	10.622	31884	50	75.7	70	130	
Mg	24	2	45	49.490	ppb	0.616	6335	50	99.0	70	130	
Al	27	2	45	52.097	ppb	18.148	2087	50	104.2	70	130	
K	39	2	45	95.043	ppb	1.694	53017	100	95.0	70	130	
V	51	2	72	4.958	ppb	4.717	8159	5	99.2	70	130	
Cr	52	2	72	1.985	ppb	3.019	4654	2	99.2	70	130	
Mn	55	2	72	1.214	ppb	11.327	1080	1	121.4	70	130	
(Fe)	57	2	72	49.418	ppb	4.509	2247	50	98.8	70	130	
Co	59	2	72	1.073	ppb	7.553	3410	1	107.3	70	130	
Ni	60	2	72	2.114	ppb	6.328	2337	2	105.7	70	130	
Cu	63	2	72	2.123	ppb	4.520	5938	2	106.1	70	130	
Zn	66	2	72	10.176	ppb	3.733	4981	10	101.8	70	130	
As	75	2	72	5.069	ppb	0.999	1844	5	101.4	70	130	
Se	78	1	72	5.086	ppb	4.232	1583	5	101.7	70	130	
Sr	88	2	72	1.068	ppb	20.237	1073	1	106.8	70	130	
Zr	90	2	72	0.631	ppb	153.634	890	0.5	126.1	70	130	
Nb	93	2	72	98.151	ppb	51.403	33	2	4907.5	70	130	>+/-30%
Mo	95	2	115	2.128	ppb	2.301	2560	2	106.4	70	130	
Pd	105	2	115	-327.991	ppb	-32.194	63	1	-32799.1	70	130	>+/-30%
Ag	107	2	115	0.952	ppb	8.728	3804	1	95.2	70	130	
Cd	111	2	115	0.982	ppb	27.532	567	1	98.2	70	130	
Sn	120	2	115	10.378	ppb	4.873	15355	10	103.8	70	130	
Sb	121	2	115	2.090	ppb	3.904	3347	2	104.5	70	130	
Ba	137	2	115	1.084	ppb	11.704	567	1	108.4	70	130	
W	182	2	165	4.878	ppb	0.774	24484	1	487.8	70	130	>+/-30%
Pt	195	2	165	-4.315	ppb	-1692.405	43	1	-431.5	70	130	>+/-30%
Tl	205	2	165	0.897	ppb	3.253	9016	1	89.7	70	130	
Pb	208	2	165	1.042	ppb	3.030	13710	1	104.2	70	130	
Th	232	2	193	5.595	ppb	6.311	70959	2	279.7	70	130	>+/-30%
U	238	2	193	0.947	ppb	1.288	14755	1	94.7	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	810280	0.47	832675	97.31	60	120	
Sc (IS)	45	1	HMI H2	22323496	0.62	22691138	98.38	60	120	
Sc (IS)	45	2	HMI He	1369196	0.89	1329086	103.02	60	120	
Sc (IS)	45	3	No Gas	40811224	0.73	40115962	101.73	60	120	
Ge Internal standard	72	1	HMI H2	11490109	0.68	11471213	100.16	60	120	
Ge Internal standard	72	2	HMI He	1646567	0.41	1582627	104.04	60	120	
In Internal standard	115	2	HMI He	5041575	0.74	4772525	105.64	60	120	
Ho-165	165	2	HMI He	18963333	0.70	18341213	103.39	60	120	
Ir (IS)	193	2	HMI He	14351277	0.84	14005392	102.47	60	120	

Blank Report

Sample Table

Sample Name	mb 280-585030/1-a
Data File Name	091_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:25:46-06:00
Sample Type	Blank
Dilution	1
Comment	585030 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-4.261	ppb	-79.57868063	3448690	10
Be	9	1	6	-0.134	ppb	-25.36086146	13	0.5
B	11	1	6	4.352	ppb	7.444507965	2087	0.5
Na	23	2	45	-2.046	ppb	-197.314524	22142	25
Mg	24	2	45	3.331	ppb	24.71568835	897	25
Al	27	2	45	4.638	ppb	116.4053471	557	15
K	39	2	45	-0.565	ppb	-3250.203481	44540	50
Ti	47	2	45	0.191	ppb	173.2050808	7	0.5
V	51	2	72	-0.179	ppb	-14.41915911	690	1
Cr	52	2	72	0.316	ppb	29.71804236	1477	1
Mn	55	2	72	0.326	ppb	32.11655909	363	0.5
(Fe)	57	2	72	16.199	ppb	21.79543381	1003	25
Co	59	2	72	0.021	ppb	8.823001849	83	0.5
Ni	60	2	72	17.595	ppb	3.138974652	16455	1
Cu	63	2	72	0.022	ppb	249.9361759	857	1
Zn	66	2	72	3.440	ppb	6.358075575	2064	5
As	75	2	72	-0.070	ppb	-7.727684032	37	1
Se	78	1	72	-0.008	ppb	-178.6641637	16	1
Sr	88	2	72	0.029	ppb	98.41681322	100	0.5
Zr	90	2	72	-0.442	ppb	-216.5064743	650	1
Nb	93	2	72	10.697	ppb	177.268559	7	2
Mo	95	2	115	0.112	ppb	15.55677221	170	0.5
Pd	105	2	115	-478.030	ppb	-22.54198508	47	1
Ag	107	2	115	0.013	ppb	50.70899375	117	1
Cd	111	2	115	0.005	ppb	205.9325381	13	0.5
Sn	120	2	115	0.502	ppb	13.89652374	1257	1
Sb	121	2	115	0.099	ppb	32.57576268	190	0.6
Ba	137	2	115	0.008	ppb	956.5980276	70	0.5
W	182	2	165	3.020	ppb	9.550525477	16336	1
Pt	195	2	165	93.864	ppb	65.59787092	77	1
Tl	205	2	165	-0.151	ppb	-3.443150227	403	0.1
Pb	208	2	165	0.073	ppb	43.06156417	2770	0.5
Th	232	2	193	8.217	ppb	13.89734669	99804	1
U	238	2	193	0.005	ppb	63.74713057	490	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	776470	0.83	832675	93.25	60	120	
Sc (IS)	45	1	HMI H2	21819199	1.03	22691138	96.16	60	120	
Sc (IS)	45	2	HMI He	1368355	1.46	1329086	102.95	60	120	
Sc (IS)	45	3	No Gas	39674673	0.29	40115962	98.90	60	120	
Ge Internal standard	72	1	HMI H2	11257988	1.22	11471213	98.14	60	120	
Ge Internal standard	72	2	HMI He	1644827	0.22	1582627	103.93	60	120	
In Internal standard	115	2	HMI He	4995197	0.28	4772525	104.67	60	120	
Ho-165	165	2	HMI He	18852446	0.50	18341213	102.79	60	120	
Ir (IS)	193	2	HMI He	14270332	0.68	14005392	101.89	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-585030/2-a
Data File Name	092_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:29:32-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585030 6020A DOD
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	39.558	39.558	ppb	13.876	3841025	400	9.9	80	120	>+/-20%
Be	9	1	6	42.674	42.674	ppb	2.496	14760	40	106.7	80	120	
Na	23	2	45	793.059	793.059	ppb	2.667	217630	40	1982.6	80	120	>+/-20%
Mg	24	2	45	791.443	791.443	ppb	1.363	94436	40	1978.6	80	120	>+/-20%
Al	27	2	45	855.004	855.004	ppb	0.956	28231	40	2137.5	80	120	>+/-20%
K	39	2	45	733.592	733.592	ppb	3.076	110196	40	1834.0	80	120	>+/-20%
V	51	2	72	42.139	42.139	ppb	2.035	62066	40	105.3	80	120	
Cr	52	2	72	42.398	42.398	ppb	0.332	81343	40	106.0	80	120	
Mn	55	2	72	43.077	43.077	ppb	0.220	34754	40	107.7	80	120	
(Fe)	57	2	72	837.432	837.432	ppb	2.108	31641	40	2093.6	80	120	>+/-20%
Co	59	2	72	42.567	42.567	ppb	0.092	134296	40	106.4	80	120	
Ni	60	2	72	41.310	41.310	ppb	3.194	38031	40	103.3	80	120	
Cu	63	2	72	42.356	42.356	ppb	0.901	102967	40	105.9	80	120	
Zn	66	2	72	42.266	42.266	ppb	2.886	18825	40	105.7	80	120	
As	75	2	72	41.663	41.663	ppb	1.476	14673	40	104.2	80	120	
Se	78	1	72	43.415	43.415	ppb	2.022	13132	40	108.5	80	120	
Nb	93	2	72	76.313	76.313	ppb	65.450	27	40	190.8	80	120	>+/-20%
Mo	95	2	115	43.935	43.935	ppb	2.975	51125	40	109.8	80	120	
Pd	105	2	115	-661.404	-661.404	ppb	-36.041	27	40	-1653.5	80	120	>+/-20%
Ag	107	2	115	42.281	42.281	ppb	1.288	163011	40	105.7	80	120	
Cd	111	2	115	42.655	42.655	ppb	1.755	23728	40	106.6	80	120	
Sn	120	2	115	44.280	44.280	ppb	0.832	62497	40	110.7	80	120	
Sb	121	2	115	43.686	43.686	ppb	2.501	67965	40	109.2	80	120	
Ba	137	2	115	44.973	44.973	ppb	1.285	20401	40	112.4	80	120	
W	182	2	165	2.770	2.770	ppb	2.274	15328	40	6.9	80	120	>+/-20%
Pt	195	2	165	83.134	83.134	ppb	73.324	73	40	207.8	80	120	>+/-20%
Tl	205	2	165	43.189	43.189	ppb	1.157	356128	40	108.0	80	120	
Pb	208	2	165	44.065	44.065	ppb	0.928	497798	40	110.2	80	120	
Th	232	2	193	48.094	48.094	ppb	1.250	544521	40	120.2	80	120	>+/-20%
U	238	2	193	38.792	38.792	ppb	0.932	584836	40	97.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	784661	0.43	832675	94.23	60	120	
Sc (IS)	45	1	HMI H2	22084246	0.13	22691138	97.33	60	120	
Sc (IS)	45	2	HMI He	1379551	0.54	1329086	103.80	60	120	
Sc (IS)	45	3	No Gas	39740441	1.13	40115962	99.06	60	120	
Ge Internal standard	72	1	HMI H2	11285108	0.43	11471213	98.38	60	120	
Ge Internal standard	72	2	HMI He	1642536	0.32	1582627	103.79	60	120	
In Internal standard	115	2	HMI He	4947025	0.61	4772525	103.66	60	120	
Ho-165	165	2	HMI He	18935374	0.24	18341213	103.24	60	120	
Ir (IS)	193	2	HMI He	14287679	0.12	14005392	102.02	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-a
Data File Name	093SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:33:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	0.347	ppb	0.347	980.54	3528100	50000	
Be	9	1	6	-0.113	ppb	-0.113	-46.00	20	2000	
B	11	1	6	23.815	ppb	23.815	1.03	7102	2000	
Na	23	2	45	20782.622	ppb	20782.622	1.32	5041676	400000	
Mg	24	2	45	16767.308	ppb	16767.308	1.54	1956944	400000	
Al	27	2	45	17.807	ppb	17.807	27.15	973	400000	
Si	28	2	45	1228.235	ppb	1228.235	1.71	263049	10000	
P	31	2	45	120.795	ppb	120.795	7.97	508	10000	
K	39	2	45	1697.700	ppb	1697.700	2.31	192630	400000	
Ca	40	1	45	54478.195	ppb	54478.195	1.18	210497010	400000	
Ti	47	2	45	0.188	ppb	0.188	173.21	7	4000	
V	51	2	72	0.511	ppb	0.511	29.52	1697	2000	
Cr	52	2	72	0.185	ppb	0.185	6.42	1233	5000	
Mn	55	2	72	0.349	ppb	0.349	31.22	383	10000	
Fe	56	1	72	11.875	ppb	11.875	3.65	152653	10000	
(Fe)	57	2	72	11.741	ppb	11.741	13.78	840	400000	
Co	59	2	72	0.039	ppb	0.039	68.83	140	2000	
Ni	60	2	72	0.338	ppb	0.338	3.07	717	5000	
Cu	63	2	72	0.549	ppb	0.549	10.11	2137	5000	
Zn	66	2	72	7.858	ppb	7.858	6.41	3987	5000	
As	75	2	72	2.176	ppb	2.176	12.09	829	2000	
Se	78	1	72	0.745	ppb	0.745	10.64	241	2000	
Sr	88	2	72	182.630	ppb	182.630	0.99	171560	4000	
Zr	90	2	72	-0.365	ppb	-0.365	-199.94	670	1000	
Nb	93	2	72	86.862	ppb	86.862	1.14	30	200	
Mo	95	2	115	0.443	ppb	0.443	22.52	557	2000	
Pd	105	2	115	-477.246	ppb	-477.246	-28.97	47	100	
Ag	107	2	115	0.025	ppb	0.025	37.95	163	100	
Cd	111	2	115	0.011	ppb	0.011	332.67	17	2000	
Sn	120	2	115	0.661	ppb	0.661	26.25	1477	2000	
Sb	121	2	115	0.411	ppb	0.411	13.18	677	1000	
Ba	137	2	115	390.619	ppb	390.619	2.32	177607	5000	
W	182	2	165	2.524	ppb	2.524	3.31	14184	100	
Pt	195	2	165	45.527	ppb	45.527	68.47	60	100	
Tl	205	2	165	-0.142	ppb	-0.142	-1.43	473	2000	
Pb	208	2	165	0.071	ppb	0.071	26.99	2740	5000	
Th	232	2	193	6.762	ppb	6.762	11.55	80324	2000	
U	238	2	193	0.025	ppb	0.025	9.64	757	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	760479	0.82	832675	91.33	60	120	
Sc (IS)	45	1	HMI H2	21653011	0.95	22691138	95.42	60	120	
Sc (IS)	45	2	HMI He	1356521	1.73	1329086	102.06	60	120	
Sc (IS)	45	3	No Gas	40113639	1.08	40115962	99.99	60	120	
Ge Internal standard	72	1	HMI H2	11192628	0.43	11471213	97.57	60	120	
Ge Internal standard	72	2	HMI He	1650794	1.01	1582627	104.31	60	120	
In Internal standard	115	2	HMI He	4973918	1.31	4772525	104.22	60	120	
Ho-165	165	2	HMI He	18823996	1.12	18341213	102.63	60	120	
Ir (IS)	193	2	HMI He	13721999	0.74	14005392	97.98	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-aSD@5
Data File Name	094SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:37:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-6.634	ppb	-6.634	-7.81	3444370	50000	
Be	9	1	6	-0.135	ppb	-0.135	-12.06	13	2000	
B	11	1	6	6.227	ppb	6.227	10.61	2660	2000	
Na	23	2	45	3888.194	ppb	3888.194	0.46	979327	400000	
Mg	24	2	45	3111.761	ppb	3111.761	1.11	370341	400000	
Al	27	2	45	23.242	ppb	23.242	11.44	1167	400000	
Si	28	2	45	244.159	ppb	244.159	1.67	60866	10000	
P	31	2	45	27.264	ppb	27.264	19.39	169	10000	
K	39	2	45	330.533	ppb	330.533	2.02	74464	400000	
Ca	40	1	45	10569.341	ppb	10569.341	0.33	41668574	400000	
Ti	47	2	45	0.094	ppb	0.094	173.21	3	4000	
V	51	2	72	0.120	ppb	0.120	46.78	1133	2000	
Cr	52	2	72	0.107	ppb	0.107	34.52	1090	5000	
Mn	55	2	72	0.229	ppb	0.229	64.13	287	10000	
Fe	56	1	72	6.105	ppb	6.105	7.46	112675	10000	
(Fe)	57	2	72	5.008	ppb	5.008	24.21	590	400000	
Co	59	2	72	0.022	ppb	0.022	29.94	87	2000	
Ni	60	2	72	0.225	ppb	0.225	32.03	617	5000	
Cu	63	2	72	0.110	ppb	0.110	63.44	1077	5000	
Zn	66	2	72	2.002	ppb	2.002	17.56	1453	5000	
As	75	2	72	0.396	ppb	0.396	22.53	203	2000	
Se	78	1	72	0.187	ppb	0.187	35.90	76	2000	
Sr	88	2	72	35.629	ppb	35.629	0.34	33676	4000	
Zr	90	2	72	-0.363	ppb	-0.363	-253.50	673	1000	
Nb	93	2	72	43.351	ppb	43.351	115.76	17	200	
Mo	95	2	115	0.098	ppb	0.098	19.44	153	2000	
Pd	105	2	115	-664.751	ppb	-664.751	-15.78	27	100	
Ag	107	2	115	0.026	ppb	0.026	14.54	167	100	
Cd	111	2	115	-0.013	ppb	-0.013	-81.83	3	2000	
Sn	120	2	115	0.358	ppb	0.358	23.30	1050	2000	
Sb	121	2	115	0.116	ppb	0.116	31.01	217	1000	
Ba	137	2	115	77.408	ppb	77.408	2.07	35294	5000	
W	182	2	165	0.935	ppb	0.935	2.54	7385	100	
Pt	195	2	165	44.120	ppb	44.120	172.05	60	100	
Tl	205	2	165	-0.168	ppb	-0.168	-1.69	267	2000	
Pb	208	2	165	0.021	ppb	0.021	53.92	2200	5000	
Th	232	2	193	1.458	ppb	1.458	10.47	23647	2000	
U	238	2	193	-0.001	ppb	-0.001	-159.71	380	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	799196	0.45	832675	95.98	60	120	
Sc (IS)	45	1	HMI H2	22066679	0.50	22691138	97.25	60	120	
Sc (IS)	45	2	HMI He	1381494	0.16	1329086	103.94	60	120	
Sc (IS)	45	3	No Gas	39866381	0.81	40115962	99.38	60	120	
Ge Internal standard	72	1	HMI H2	11464854	0.99	11471213	99.94	60	120	
Ge Internal standard	72	2	HMI He	1657875	1.02	1582627	104.75	60	120	
In Internal standard	115	2	HMI He	4979954	1.10	4772525	104.35	60	120	
Ho-165	165	2	HMI He	18925964	0.64	18341213	103.19	60	120	
Ir (IS)	193	2	HMI He	13789257	0.69	14005392	98.46	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-b ms
Data File Name	095SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:40:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	43.933	ppb	43.933	18.52	3893405	50000	
Be	9	1	6	1.611	ppb	1.611	140.77	1030	2000	
B	11	1	6	0.401	ppb	0.401	155.88	1810	2000	
Na	23	2	45	8595.179	ppb	8595.179	129.03	2284523	400000	
Mg	24	2	45	7006.800	ppb	7006.800	128.64	889470	400000	
Al	27	2	45	341.375	ppb	341.375	128.11	12406	400000	
Si	28	2	45	490.738	ppb	490.738	133.87	121462	10000	
P	31	2	45	38.727	ppb	38.727	156.00	233	10000	
K	39	2	45	810.081	ppb	810.081	172.61	129372	400000	
Ca	40	1	45	2451.864	ppb	2451.864	126.43	14218847	400000	
Ti	47	2	45	18.564	ppb	18.564	132.87	697	4000	
V	51	2	72	16.860	ppb	16.860	133.21	27615	2000	
Cr	52	2	72	16.562	ppb	16.562	131.06	35157	5000	
Mn	55	2	72	16.880	ppb	16.880	127.84	14898	10000	
Fe	56	1	72	39.345	ppb	39.345	136.45	528327	10000	
(Fe)	57	2	72	319.455	ppb	319.455	133.58	13368	400000	
Co	59	2	72	15.899	ppb	15.899	128.10	54546	2000	
Ni	60	2	72	15.744	ppb	15.744	131.15	16046	5000	
Cu	63	2	72	16.344	ppb	16.344	129.75	43792	5000	
Zn	66	2	72	19.285	ppb	19.285	132.88	9733	5000	
As	75	2	72	17.414	ppb	17.414	129.81	6702	2000	
Se	78	1	72	1.831	ppb	1.831	126.74	839	2000	
Sr	88	2	72	106.205	ppb	106.205	128.72	107875	4000	
Zr	90	2	72	0.530	ppb	0.530	349.37	1053	1000	
Nb	93	2	72	70.742	ppb	70.742	65.16	33	200	
Mo	95	2	115	17.180	ppb	17.180	132.37	21521	2000	
Pd	105	2	115	-541.718	ppb	-541.718	-18.80	50	100	
Ag	107	2	115	15.644	ppb	15.644	129.66	65176	100	
Cd	111	2	115	16.769	ppb	16.769	131.25	10054	2000	
Sn	120	2	115	17.313	ppb	17.313	134.26	26664	2000	
Sb	121	2	115	17.373	ppb	17.373	130.70	29160	1000	
Ba	137	2	115	174.474	ppb	174.474	129.36	85283	5000	
W	182	2	165	1.161	ppb	1.161	167.98	9552	100	
Pt	195	2	165	46.427	ppb	46.427	109.42	80	100	
Tl	205	2	165	16.982	ppb	16.982	132.69	152582	2000	
Pb	208	2	165	16.992	ppb	16.992	130.88	209597	5000	
Th	232	2	193	17.682	ppb	17.682	131.42	218587	2000	
U	238	2	193	15.794	ppb	15.794	131.37	251182	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1359833	5.37	832675	163.31	60	120	IS Failed
Sc (IS)	45	1	HMI H2	33762620	5.85	22691138	148.79	60	120	IS Failed
Sc (IS)	45	2	HMI He	1767144	19.31	1329086	132.96	60	120	IS Failed
Sc (IS)	45	3	No Gas	39878058	0.12	40115962	99.41	60	120	
Ge Internal standard	72	1	HMI H2	17296959	5.68	11471213	150.79	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2125868	18.75	1582627	134.33	60	120	IS Failed
In Internal standard	115	2	HMI He	6442145	19.79	4772525	134.98	60	120	IS Failed
Ho-165	165	2	HMI He	25327529	21.86	18341213	138.09	60	120	IS Failed
Ir (IS)	193	2	HMI He	18934091	23.45	14005392	135.19	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165796-a-1-c msd
Data File Name	096SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:44:33-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	50.612	ppb	50.612	18.69	3944910	50000	
Be	9	1	6	44.167	ppb	44.167	1.23	14847	2000	
B	11	1	6	24.233	ppb	24.233	3.42	7232	2000	
Na	23	2	45	21657.128	ppb	21657.128	0.15	5268270	400000	
Mg	24	2	45	17664.244	ppb	17664.244	1.01	2067635	400000	
Al	27	2	45	884.680	ppb	884.680	2.12	28788	400000	
Si	28	2	45	1284.335	ppb	1284.335	0.55	275457	10000	
P	31	2	45	117.933	ppb	117.933	11.41	499	10000	
K	39	2	45	2504.827	ppb	2504.827	0.54	263978	400000	
Ca	40	1	45	54447.310	ppb	54447.310	0.39	212852117	400000	
Ti	47	2	45	48.019	ppb	48.019	2.49	1673	4000	
V	51	2	72	43.947	ppb	43.947	1.67	65264	2000	
Cr	52	2	72	43.404	ppb	43.404	0.88	83996	5000	
Mn	55	2	72	42.705	ppb	42.705	2.97	34757	10000	
Fe	56	1	72	979.787	ppb	979.787	0.99	7317274	10000	
(Fe)	57	2	72	905.075	ppb	905.075	1.40	34470	400000	
Co	59	2	72	42.013	ppb	42.013	1.29	133734	2000	
Ni	60	2	72	41.641	ppb	41.641	3.56	38669	5000	
Cu	63	2	72	42.246	ppb	42.246	0.70	103618	5000	
Zn	66	2	72	49.522	ppb	49.522	2.34	22152	5000	
As	75	2	72	44.879	ppb	44.879	1.96	15940	2000	
Se	78	1	72	42.492	ppb	42.492	0.56	12761	2000	
Sr	88	2	72	271.349	ppb	271.349	0.25	255875	4000	
Zr	90	2	72	2.295	ppb	2.295	9.92	1270	1000	
Nb	93	2	72	43.008	ppb	43.008	43.24	17	200	
Mo	95	2	115	45.119	ppb	45.119	4.50	52720	2000	
Pd	105	2	115	-380.090	ppb	-380.090	-95.14	57	100	
Ag	107	2	115	41.908	ppb	41.908	1.71	162295	100	
Cd	111	2	115	44.134	ppb	44.134	3.34	24656	2000	
Sn	120	2	115	45.781	ppb	45.781	1.61	64882	2000	
Sb	121	2	115	45.634	ppb	45.634	2.07	71310	1000	
Ba	137	2	115	447.783	ppb	447.783	1.34	203426	5000	
W	182	2	165	2.696	ppb	2.696	4.55	14908	100	
Pt	195	2	165	45.460	ppb	45.460	129.42	60	100	
Tl	205	2	165	43.981	ppb	43.981	1.35	360207	2000	
Pb	208	2	165	44.261	ppb	44.261	0.20	496685	5000	
Th	232	2	193	53.248	ppb	53.248	0.43	574742	2000	
U	238	2	193	41.505	ppb	41.505	0.51	597392	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	762662	0.63	832675	91.59	60	120	
Sc (IS)	45	1	HMI H2	21906756	0.52	22691138	96.54	60	120	
Sc (IS)	45	2	HMI He	1360303	0.46	1329086	102.35	60	120	
Sc (IS)	45	3	No Gas	39800020	0.54	40115962	99.21	60	120	
Ge Internal standard	72	1	HMI H2	11204837	1.23	11471213	97.68	60	120	
Ge Internal standard	72	2	HMI He	1657212	1.00	1582627	104.71	60	120	
In Internal standard	115	2	HMI He	4969485	1.33	4772525	104.13	60	120	
Ho-165	165	2	HMI He	18809728	0.44	18341213	102.55	60	120	
Ir (IS)	193	2	HMI He	13641224	0.58	14005392	97.40	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-a PDS
Data File Name	097SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:48:19-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	30.494	ppb	30.494	11.50	6141303	50000	
Be	9	1	6	0.607	ppb	0.607	154.76	473	2000	
B	11	1	6	-0.279	ppb	-0.279	-272.97	1493	2000	
Na	23	2	45	1013.189	ppb	1013.189	94.78	398802	400000	
Mg	24	2	45	794.085	ppb	794.085	87.10	139116	400000	
Al	27	2	45	115.473	ppb	115.473	89.81	6117	400000	
Si	28	2	45	59.430	ppb	59.430	110.01	32241	10000	
P	31	2	45	100.961	ppb	100.961	98.05	649	10000	
K	39	2	45	-170.984	ppb	-170.984	-43.76	43683	400000	
Ca	40	1	45	177.851	ppb	177.851	117.74	1130230	400000	
Ti	47	2	45	11.631	ppb	11.631	91.55	603	4000	
V	51	2	72	10.687	ppb	10.687	93.04	24521	2000	
Cr	52	2	72	10.590	ppb	10.590	90.24	31284	5000	
Mn	55	2	72	10.588	ppb	10.588	89.59	12851	10000	
Fe	56	1	72	-1.727	ppb	-1.727	-13.63	76139	10000	
(Fe)	57	2	72	-2.639	ppb	-2.639	-124.19	447	400000	
Co	59	2	72	10.677	ppb	10.677	90.29	50248	2000	
Ni	60	2	72	10.241	ppb	10.241	89.40	14518	5000	
Cu	63	2	72	10.836	ppb	10.836	91.56	40172	5000	
Zn	66	2	72	11.187	ppb	11.187	87.03	8069	5000	
As	75	2	72	10.385	ppb	10.385	92.06	5523	2000	
Se	78	1	72	0.675	ppb	0.675	131.16	335	2000	
Sr	88	2	72	20.886	ppb	20.886	89.30	29214	4000	
Zr	90	2	72	2.682	ppb	2.682	80.75	2004	1000	
Nb	93	2	72	18.365	ppb	18.365	71.12	13	200	
Mo	95	2	115	11.095	ppb	11.095	87.57	19387	2000	
Pd	105	2	115	-219.630	ppb	-219.630	-57.77	110	100	
Ag	107	2	115	2.886	ppb	2.886	66.18	16779	100	
Cd	111	2	115	10.839	ppb	10.839	90.47	9046	2000	
Sn	120	2	115	9.938	ppb	9.938	90.17	21639	2000	
Sb	121	2	115	10.374	ppb	10.374	88.30	24219	1000	
Ba	137	2	115	31.124	ppb	31.124	90.79	21183	5000	
W	182	2	165	5.520	ppb	5.520	93.44	41745	100	
Pt	195	2	165	51.487	ppb	51.487	158.76	97	100	
Tl	205	2	165	10.967	ppb	10.967	88.39	140528	2000	
Pb	208	2	165	11.163	ppb	11.163	89.06	195596	5000	
Th	232	2	193	14.729	ppb	14.729	89.19	265878	2000	
U	238	2	193	11.322	ppb	11.322	95.05	263452	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1338180	6.60	832675	160.71	60	120	IS Failed
Sc (IS)	45	1	HMI H2	31870184	7.63	22691138	140.45	60	120	IS Failed
Sc (IS)	45	2	HMI He	2024493	0.74	1329086	152.32	60	120	IS Failed
Sc (IS)	45	3	No Gas	64897294	3.35	40115962	161.77	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16358227	8.11	11471213	142.60	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2439799	2.67	1582627	154.16	60	120	IS Failed
In Internal standard	115	2	HMI He	7392166	2.73	4772525	154.89	60	120	IS Failed
Ho-165	165	2	HMI He	29127904	1.99	18341213	158.81	60	120	IS Failed
Ir (IS)	193	2	HMI He	22039639	2.04	14005392	157.37	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165796-a-2-a
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:52:04-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	29.617	ppb	29.617	10.63	5366544	50000	
Be	9	1	6	-0.120	ppb	-0.120	-26.06	30	2000	
B	11	1	6	1.471	ppb	1.471	43.64	2180	2000	
Na	23	2	45	1199.041	ppb	1199.041	150.30	453320	400000	
Mg	24	2	45	899.450	ppb	899.450	142.02	153195	400000	
Al	27	2	45	-0.428	ppb	-0.428	-576.27	577	400000	
Si	28	2	45	53.023	ppb	53.023	177.93	29696	10000	
P	31	2	45	3.261	ppb	3.261	414.69	115	10000	
K	39	2	45	-159.415	ppb	-159.415	-91.09	44793	400000	
Ca	40	1	45	4701.770	ppb	4701.770	35.13	26743965	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.348	ppb	-0.348	-41.77	653	2000	
Cr	52	2	72	-0.212	ppb	-0.212	-22.08	703	5000	
Mn	55	2	72	0.059	ppb	0.059	39.82	220	10000	
Fe	56	1	72	-0.993	ppb	-0.993	-31.72	84043	10000	
(Fe)	57	2	72	-2.905	ppb	-2.905	-41.09	430	400000	
Co	59	2	72	0.010	ppb	0.010	116.24	73	2000	
Ni	60	2	72	-0.155	ppb	-0.155	-24.90	393	5000	
Cu	63	2	72	-0.094	ppb	-0.094	-31.32	857	5000	
Zn	66	2	72	0.228	ppb	0.228	293.52	997	5000	
As	75	2	72	0.078	ppb	0.078	302.95	131	2000	
Se	78	1	72	0.119	ppb	0.119	21.26	79	2000	
Sr	88	2	72	10.424	ppb	10.424	144.39	14309	4000	
Zr	90	2	72	-0.335	ppb	-0.335	-130.14	1000	1000	
Nb	93	2	72	11.106	ppb	11.106	199.18	10	200	
Mo	95	2	115	0.568	ppb	0.568	152.42	1020	2000	
Pd	105	2	115	-389.273	ppb	-389.273	-33.34	83	100	
Ag	107	2	115	0.016	ppb	0.016	90.93	187	100	
Cd	111	2	115	0.010	ppb	0.010	322.39	23	2000	
Sn	120	2	115	0.587	ppb	0.587	194.09	2000	2000	
Sb	121	2	115	0.563	ppb	0.563	126.41	1337	1000	
Ba	137	2	115	22.690	ppb	22.690	140.30	15112	5000	
W	182	2	165	0.203	ppb	0.203	404.97	6383	100	
Pt	195	2	165	80.333	ppb	80.333	205.89	113	100	
Tl	205	2	165	-0.129	ppb	-0.129	-25.01	887	2000	
Pb	208	2	165	-0.015	ppb	-0.015	-131.70	2760	5000	
Th	232	2	193	0.950	ppb	0.950	141.69	28430	2000	
U	238	2	193	0.066	ppb	0.066	170.79	2097	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1281779	1.95	832675	153.94	60	120	IS Failed
Sc (IS)	45	1	HMI H2	31825642	1.72	22691138	140.26	60	120	IS Failed
Sc (IS)	45	2	HMI He	2022519	3.62	1329086	152.17	60	120	IS Failed
Sc (IS)	45	3	No Gas	56810449	2.86	40115962	141.62	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16363497	1.33	11471213	142.65	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2444169	2.75	1582627	154.44	60	120	IS Failed
In Internal standard	115	2	HMI He	7378403	2.92	4772525	154.60	60	120	IS Failed
Ho-165	165	2	HMI He	29190280	4.07	18341213	159.15	60	120	IS Failed
Ir (IS)	193	2	HMI He	22086532	4.58	14005392	157.70	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-2-a
Data File Name	099SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:55:49-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-4.998	ppb	-4.998	-30.05	3514164	50000	
Be	9	1	6	-0.140	ppb	-0.140	-20.95	20	2000	
B	11	1	6	-0.372	ppb	-0.372	-187.85	1450	2000	
Na	23	2	45	19752.082	ppb	19752.082	1.43	4904756	400000	
Mg	24	2	45	16138.246	ppb	16138.246	2.04	1927551	400000	
Al	27	2	45	14.833	ppb	14.833	21.89	897	400000	
Si	28	2	45	1173.862	ppb	1173.862	1.34	257709	10000	
P	31	2	45	112.208	ppb	112.208	5.55	487	10000	
K	39	2	45	1619.568	ppb	1619.568	2.61	190148	400000	
Ca	40	1	45	1889.903	ppb	1889.903	90.32	11189066	400000	
Ti	47	2	45	0.468	ppb	0.468	34.37	17	4000	
V	51	2	72	0.417	ppb	0.417	11.89	1570	2000	
Cr	52	2	72	0.326	ppb	0.326	31.24	1510	5000	
Mn	55	2	72	0.449	ppb	0.449	5.55	467	10000	
Fe	56	1	72	-1.604	ppb	-1.604	-31.44	81149	10000	
(Fe)	57	2	72	10.471	ppb	10.471	39.22	797	400000	
Co	59	2	72	0.041	ppb	0.041	23.46	147	2000	
Ni	60	2	72	1.253	ppb	1.253	10.21	1563	5000	
Cu	63	2	72	0.574	ppb	0.574	19.47	2210	5000	
Zn	66	2	72	6.994	ppb	6.994	5.79	3634	5000	
As	75	2	72	2.097	ppb	2.097	5.41	806	2000	
Se	78	1	72	-0.020	ppb	-0.020	-133.88	19	2000	
Sr	88	2	72	175.070	ppb	175.070	1.18	165412	4000	
Zr	90	2	72	-0.379	ppb	-0.379	-102.39	670	1000	
Nb	93	2	72	21.338	ppb	21.338	152.58	10	200	
Mo	95	2	115	0.454	ppb	0.454	33.76	570	2000	
Pd	105	2	115	-757.748	ppb	-757.748	-7.13	17	100	
Ag	107	2	115	0.000	ppb	0.000	6562.22	67	100	
Cd	111	2	115	-0.007	ppb	-0.007	-302.55	7	2000	
Sn	120	2	115	0.666	ppb	0.666	7.33	1483	2000	
Sb	121	2	115	0.574	ppb	0.574	1.80	933	1000	
Ba	137	2	115	380.421	ppb	380.421	1.42	173267	5000	
W	182	2	165	3.052	ppb	3.052	0.75	16636	100	
Pt	195	2	165	-4.728	ppb	-4.728	-720.67	43	100	
Tl	205	2	165	-0.133	ppb	-0.133	-13.61	557	2000	
Pb	208	2	165	0.034	ppb	0.034	65.52	2357	5000	
Th	232	2	193	4.565	ppb	4.565	12.05	57069	2000	
U	238	2	193	0.025	ppb	0.025	46.44	763	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1358838	4.14	832675	163.19	60	120	IS Failed
Sc (IS)	45	1	HMI H2	33522953	3.01	22691138	147.74	60	120	IS Failed
Sc (IS)	45	2	HMI He	1388080	0.54	1329086	104.44	60	120	
Sc (IS)	45	3	No Gas	40504800	1.25	40115962	100.97	60	120	
Ge Internal standard	72	1	HMI H2	17164273	2.97	11471213	149.63	60	120	IS Failed
Ge Internal standard	72	2	HMI He	1660214	0.17	1582627	104.90	60	120	
In Internal standard	115	2	HMI He	4981392	0.13	4772525	104.38	60	120	
Ho-165	165	2	HMI He	19035919	0.85	18341213	103.79	60	120	
Ir (IS)	193	2	HMI He	13790908	0.81	14005392	98.47	60	120	

Sample Report

Sample Table

Sample Name	280-165793-a-3-a
Data File Name	100SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T15:59:35-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-7.777	ppb	-7.777	-32.00	3501293	50000	
Be	9	1	6	-0.134	ppb	-0.134	-33.58	13	2000	
B	11	1	6	26.877	ppb	26.877	2.08	8016	2000	
Na	23	2	45	20892.490	ppb	20892.490	1.38	5132408	400000	
Mg	24	2	45	16985.465	ppb	16985.465	1.82	2007494	400000	
Al	27	2	45	17.045	ppb	17.045	16.21	960	400000	
Si	28	2	45	1249.792	ppb	1249.792	2.15	270886	10000	
P	31	2	45	108.496	ppb	108.496	10.60	469	10000	
K	39	2	45	1702.167	ppb	1702.167	2.70	195468	400000	
Ca	40	1	45	53066.925	ppb	53066.925	0.45	209114637	400000	
Ti	47	2	45	0.380	ppb	0.380	114.30	13	4000	
V	51	2	72	1.063	ppb	1.063	5.34	2550	2000	
Cr	52	2	72	0.384	ppb	0.384	11.36	1643	5000	
Mn	55	2	72	0.271	ppb	0.271	39.03	327	10000	
Fe	56	1	72	8.881	ppb	8.881	2.04	133462	10000	
(Fe)	57	2	72	9.404	ppb	9.404	20.72	767	400000	
Co	59	2	72	0.037	ppb	0.037	18.39	137	2000	
Ni	60	2	72	0.652	ppb	0.652	6.33	1023	5000	
Cu	63	2	72	7.238	ppb	7.238	7.19	18691	5000	
Zn	66	2	72	411.908	ppb	411.908	1.98	182699	5000	
As	75	2	72	2.223	ppb	2.223	7.58	862	2000	
Se	78	1	72	0.622	ppb	0.622	18.59	209	2000	
Sr	88	2	72	184.028	ppb	184.028	2.51	176135	4000	
Zr	90	2	72	-0.840	ppb	-0.840	-41.08	573	1000	
Nb	93	2	72	20.880	ppb	20.880	2.27	10	200	
Mo	95	2	115	0.391	ppb	0.391	22.06	493	2000	
Pd	105	2	115	-725.661	ppb	-725.661	-25.94	20	100	
Ag	107	2	115	0.005	ppb	0.005	283.75	83	100	
Cd	111	2	115	-0.001	ppb	-0.001	-2231.43	10	2000	
Sn	120	2	115	0.354	ppb	0.354	10.20	1040	2000	
Sb	121	2	115	0.267	ppb	0.267	26.90	450	1000	
Ba	137	2	115	400.581	ppb	400.581	0.69	181562	5000	
W	182	2	165	2.772	ppb	2.772	7.92	15168	100	
Pt	195	2	165	124.470	ppb	124.470	111.14	87	100	
Tl	205	2	165	-0.153	ppb	-0.153	-3.35	383	2000	
Pb	208	2	165	0.622	ppb	0.622	6.22	8858	5000	
Th	232	2	193	2.713	ppb	2.713	11.88	36423	2000	
U	238	2	193	1.135	ppb	1.135	2.70	16567	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	771805	0.61	832675	92.69	60	120	
Sc (IS)	45	1	HMI H2	22082043	0.80	22691138	97.32	60	120	
Sc (IS)	45	2	HMI He	1373644	1.11	1329086	103.35	60	120	
Sc (IS)	45	3	No Gas	40644730	0.76	40115962	101.32	60	120	
Ge Internal standard	72	1	HMI H2	11444927	1.16	11471213	99.77	60	120	
Ge Internal standard	72	2	HMI He	1682237	1.49	1582627	106.29	60	120	
In Internal standard	115	2	HMI He	4957276	0.13	4772525	103.87	60	120	
Ho-165	165	2	HMI He	18722904	0.29	18341213	102.08	60	120	
Ir (IS)	193	2	HMI He	13517445	0.34	14005392	96.52	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	101_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:03:21-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	86.296	ppb	3.452	4314650	100	86.3	90	110	>+\-10%
Be	9	1	6	50.545	ppb	1.702	17316	50	101.1	90	110	
B	11	1	6	502.405	ppb	0.861	134434	50	1004.8	90	110	>+\-10%
Na	23	2	45	52936.325	ppb	0.747	13051526	51000	103.8	90	110	
Mg	24	2	45	11608.601	ppb	1.332	1380868	11000	105.5	90	110	
Al	27	2	45	999.661	ppb	0.368	33003	1000	100.0	90	110	
Si	28	2	45	61.168	ppb	7.627	22369	500	12.2	90	110	>+\-10%
P	31	2	45	2482.629	ppb	0.455	9319	2500	99.3	90	110	
K	39	2	45	10634.495	ppb	1.151	992588	11000	96.7	90	110	
Ca	40	1	45	11397.883	ppb	0.670	45486298	11000	103.6	90	110	
(Ca)	44	1	45	12187.933	ppb	1.584	1454643	11000	110.8	90	110	>+\-10%
Ti	47	2	45	48.629	ppb	16.502	1724	50	97.3	90	110	
V	51	2	72	49.905	ppb	1.524	74991	50	99.8	90	110	
Cr	52	2	72	48.837	ppb	1.080	95675	50	97.7	90	110	
Mn	55	2	72	47.464	ppb	2.493	39147	50	94.9	90	110	
Fe	56	1	72	1022.905	ppb	0.887	7932568	1000	102.3	90	110	
(Fe)	56	2	72	997.358	ppb	1.777	1621788	1000	99.7	90	110	
(Fe)	57	2	72	957.301	ppb	2.795	36925	1000	95.7	90	110	
Co	59	2	72	47.946	ppb	1.247	154676	50	95.9	90	110	
Ni	60	2	72	47.294	ppb	2.394	44460	50	94.6	90	110	
Cu	63	2	72	47.145	ppb	2.068	117096	50	94.3	90	110	
Zn	66	2	72	49.042	ppb	0.647	22242	50	98.1	90	110	
As	75	2	72	49.798	ppb	2.079	17919	50	99.6	90	110	
Se	78	1	72	49.010	ppb	2.331	15286	50	98.0	90	110	
Sr	88	2	72	100.659	ppb	1.383	96243	100	100.7	90	110	
Zr	90	2	72	1.811	ppb	21.083	1177	50	3.6	90	110	>+\-10%
Nb	93	2	72	96.213	ppb	84.497	33	100	96.2	90	110	
Mo	95	2	115	51.324	ppb	3.084	60229	50	102.6	90	110	
Pd	105	2	115	737.459	ppb	52.470	177	50	1474.9	90	110	>+\-10%
Ag	107	2	115	49.181	ppb	0.073	191264	50	98.4	90	110	
Cd	111	2	115	49.244	ppb	2.396	27631	50	98.5	90	110	
Sn	120	2	115	53.033	ppb	0.824	75398	50	106.1	90	110	
Sb	121	2	115	52.824	ppb	2.192	82892	50	105.6	90	110	
Ba	137	2	115	53.431	ppb	2.432	24433	50	106.9	90	110	
W	182	2	165	51.566	ppb	0.400	225074	50	103.1	90	110	
Pt	195	2	165	172.226	ppb	71.113	103	50	344.5	90	110	>+\-10%
Tl	205	2	165	49.740	ppb	0.851	407478	50	99.5	90	110	
Pb	208	2	165	50.112	ppb	0.414	562504	50	100.2	90	110	
Th	232	2	193	40.557	ppb	5.004	449124	50	81.1	90	110	>+\-10%
U	238	2	193	47.448	ppb	1.151	697687	50	94.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	777633	0.33	832675	93.39	60	120	
Sc (IS)	45	1	HMI H2	22339923	0.45	22691138	98.45	60	120	
Sc (IS)	45	2	HMI He	1382260	0.78	1329086	104.00	60	120	
Sc (IS)	45	3	No Gas	40309846	1.59	40115962	100.48	60	120	
Ge Internal standard	72	1	HMI H2	11638694	0.16	11471213	101.46	60	120	
Ge Internal standard	72	2	HMI He	1679660	0.92	1582627	106.13	60	120	
In Internal standard	115	2	HMI He	4990049	0.67	4772525	104.56	60	120	
Ho-165	165	2	HMI He	18823596	0.19	18341213	102.63	60	120	
Ir (IS)	193	2	HMI He	13937291	0.49	14005392	99.51	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	102_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:07:05-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-8.318	ppb	-48.9	3530694	10	
Be	9	1	6	-0.070	ppb	-47.2	37	0.5	
B	11	1	6	8.423	ppb	5.1	3290	0.5	>RL
Na	23	2	45	11.210	ppb	32.3	25860	25	
Mg	24	2	45	3.714	ppb	10.1	960	25	
Al	27	2	45	2.957	ppb	80.0	510	15	
K	39	2	45	6.759	ppb	275.2	46060	50	
Ti	47	2	45	0.185	ppb	86.6	7	0.5	
V	51	2	72	-0.100	ppb	-102.2	820	1	
Cr	52	2	72	0.018	ppb	194.4	930	1	
Mn	55	2	72	0.159	ppb	37.7	233	0.5	
(Fe)	57	2	72	2.128	ppb	136.0	487	25	
Co	59	2	72	0.026	ppb	43.4	100	0.5	
Ni	60	2	72	-0.012	ppb	-338.8	403	1	
Cu	63	2	72	-0.045	ppb	-69.9	710	1	
Zn	66	2	72	0.195	ppb	68.4	673	5	
As	75	2	72	-0.050	ppb	-95.3	45	1	
Se	78	1	72	0.022	ppb	150.5	25	1	
Sr	88	2	72	0.051	ppb	29.6	123	0.5	
Zr	90	2	72	-0.747	ppb	-7.2	593	1	
Nb	93	2	72	10.224	ppb	362.9	7	2	>RL
Mo	95	2	115	0.497	ppb	24.6	637	0.5	
Pd	105	2	115	-395.332	ppb	-49.3	57	1	
Ag	107	2	115	0.041	ppb	51.8	230	1	
Cd	111	2	115	-0.007	ppb	-141.2	7	0.5	
Sn	120	2	115	0.736	ppb	4.9	1623	1	
Sb	121	2	115	0.254	ppb	7.2	443	0.6	
Ba	137	2	115	0.141	ppb	58.7	133	0.5	
W	182	2	165	0.437	ppb	10.4	5274	1	
Pt	195	2	165	-24.193	ppb	-365.5	37	1	
Tl	205	2	165	-0.111	ppb	-6.5	737	0.1	
Pb	208	2	165	0.025	ppb	46.1	2253	0.5	
Th	232	2	193	1.551	ppb	9.6	25506	1	>RL
U	238	2	193	0.067	ppb	13.6	1417	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	806759	0.46	832675	96.89	60	120	
Sc (IS)	45	1	HMI H2	22449503	0.40	22691138	98.94	60	120	
Sc (IS)	45	2	HMI He	1394912	1.50	1329086	104.95	60	120	
Sc (IS)	45	3	No Gas	41043336	0.19	40115962	102.31	60	120	
Ge Internal standard	72	1	HMI H2	11469861	0.04	11471213	99.99	60	120	
Ge Internal standard	72	2	HMI He	1678165	1.09	1582627	106.04	60	120	
In Internal standard	115	2	HMI He	5108382	0.83	4772525	107.04	60	120	
Ho-165	165	2	HMI He	19073997	0.50	18341213	104.00	60	120	
Ir (IS)	193	2	HMI He	14270716	0.55	14005392	101.89	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	103LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:10:50-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	32.720	ppb	21.563	5978464	50	65.4	70	130	>+/-30%
Be	9	1	6	0.089	ppb	230.033	130	1	8.9	70	130	>+/-30%
Na	23	2	45	-40.500	ppb	-10.687	18945	50	-81.0	70	130	>+/-30%
Mg	24	2	45	1.804	ppb	142.500	1057	50	3.6	70	130	>+/-30%
Al	27	2	45	1.141	ppb	263.881	653	50	2.3	70	130	>+/-30%
K	39	2	45	-252.682	ppb	-5.292	33114	100	-252.7	70	130	>+/-30%
V	51	2	72	-0.126	ppb	-144.274	1153	5	-2.5	70	130	>+/-30%
Cr	52	2	72	-0.070	ppb	-5.070	1117	2	-3.5	70	130	>+/-30%
Mn	55	2	72	0.028	ppb	72.016	183	1	2.8	70	130	>+/-30%
(Fe)	57	2	72	0.669	ppb	81.051	637	50	1.3	70	130	>+/-30%
Co	59	2	72	0.079	ppb	36.132	400	1	7.9	70	130	>+/-30%
Ni	60	2	72	-0.065	ppb	-66.788	523	2	-3.2	70	130	>+/-30%
Cu	63	2	72	0.027	ppb	346.678	1307	2	1.3	70	130	>+/-30%
Zn	66	2	72	0.553	ppb	51.952	1230	10	5.5	70	130	>+/-30%
As	75	2	72	0.206	ppb	94.913	202	5	4.1	70	130	>+/-30%
Se	78	1	72	0.723	ppb	105.879	291	5	14.5	70	130	>+/-30%
Sr	88	2	72	-0.006	ppb	-457.485	100	1	-0.6	70	130	>+/-30%
Zr	90	2	72	-0.552	ppb	-28.464	940	0.5	-110.5	70	130	>+/-30%
Nb	93	2	72	3.807	ppb	341.403	7	2	190.4	70	130	>+/-30%
Mo	95	2	115	0.133	ppb	26.779	290	2	6.7	70	130	>+/-30%
Pd	105	2	115	-535.101	ppb	-44.879	60	1	-53510.1	70	130	>+/-30%
Ag	107	2	115	0.054	ppb	30.699	417	1	5.4	70	130	>+/-30%
Cd	111	2	115	0.064	ppb	49.638	70	1	6.4	70	130	>+/-30%
Sn	120	2	115	0.520	ppb	70.451	1907	10	5.2	70	130	>+/-30%
Sb	121	2	115	0.138	ppb	71.744	373	2	6.9	70	130	>+/-30%
Ba	137	2	115	0.070	ppb	123.714	147	1	7.0	70	130	>+/-30%
W	182	2	165	-0.074	ppb	-260.083	4651	1	-7.4	70	130	>+/-30%
Pt	195	2	165	126.006	ppb	32.989	137	1	12600.6	70	130	>+/-30%
Tl	205	2	165	-0.099	ppb	-22.784	1273	1	-9.9	70	130	>+/-30%
Pb	208	2	165	0.050	ppb	60.186	3870	1	5.0	70	130	>+/-30%
Th	232	2	193	0.513	ppb	55.286	21519	2	25.6	70	130	>+/-30%
U	238	2	193	0.059	ppb	75.894	2007	1	5.9	70	130	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1231219	15.89	832675	147.86	60	120	IS Failed
Sc (IS)	45	1	HMI H2	30646665	16.59	22691138	135.06	60	120	IS Failed
Sc (IS)	45	2	HMI He	2031730	5.11	1329086	152.87	60	120	IS Failed
Sc (IS)	45	3	No Gas	62853537	2.29	40115962	156.68	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	15575382	16.97	11471213	135.78	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2470056	5.22	1582627	156.07	60	120	IS Failed
In Internal standard	115	2	HMI He	7461710	5.64	4772525	156.35	60	120	IS Failed
Ho-165	165	2	HMI He	29189035	6.16	18341213	159.14	60	120	IS Failed
Ir (IS)	193	2	HMI He	22055643	5.73	14005392	157.48	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-1-a
Data File Name	104SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:14:37-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-5.067	ppb	-5.067	-66.13	3509293	50000	
Be	9	1	6	-0.144	ppb	-0.144	-35.73	10	2000	
B	11	1	6	24.725	ppb	24.725	2.39	7435	2000	
Na	23	2	45	20565.255	ppb	20565.255	1.43	5124299	400000	
Mg	24	2	45	16626.857	ppb	16626.857	1.36	1993171	400000	
Al	27	2	45	7.924	ppb	7.924	28.52	673	400000	
Si	28	2	45	1230.293	ppb	1230.293	1.32	270623	10000	
P	31	2	45	112.462	ppb	112.462	7.38	490	10000	
K	39	2	45	1659.936	ppb	1659.936	2.78	194452	400000	
Ca	40	1	45	53833.238	ppb	53833.238	0.88	211419970	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.473	ppb	0.473	9.64	1667	2000	
Cr	52	2	72	0.295	ppb	0.295	6.11	1463	5000	
Mn	55	2	72	0.192	ppb	0.192	33.60	260	10000	
Fe	56	1	72	5.581	ppb	5.581	5.16	107148	10000	
(Fe)	57	2	72	7.577	ppb	7.577	33.02	693	400000	
Co	59	2	72	0.033	ppb	0.033	28.42	123	2000	
Ni	60	2	72	0.330	ppb	0.330	21.65	720	5000	
Cu	63	2	72	0.458	ppb	0.458	4.31	1947	5000	
Zn	66	2	72	9.822	ppb	9.822	7.09	4911	5000	
As	75	2	72	2.208	ppb	2.208	4.40	853	2000	
Se	78	1	72	0.702	ppb	0.702	5.64	231	2000	
Sr	88	2	72	183.275	ppb	183.275	2.49	174753	4000	
Zr	90	2	72	-0.732	ppb	-0.732	-37.58	597	1000	
Nb	93	2	72	42.396	ppb	42.396	43.32	17	200	
Mo	95	2	115	0.329	ppb	0.329	5.97	427	2000	
Pd	105	2	115	-478.649	ppb	-478.649	-30.48	47	100	
Ag	107	2	115	-0.001	ppb	-0.001	-820.61	63	100	
Cd	111	2	115	0.005	ppb	0.005	555.79	13	2000	
Sn	120	2	115	0.261	ppb	0.261	60.51	920	2000	
Sb	121	2	115	0.132	ppb	0.132	35.78	243	1000	
Ba	137	2	115	395.624	ppb	395.624	1.25	181396	5000	
W	182	2	165	3.204	ppb	3.204	4.87	17220	100	
Pt	195	2	165	-33.240	ppb	-33.240	-135.19	33	100	
Tl	205	2	165	-0.150	ppb	-0.150	-2.36	410	2000	
Pb	208	2	165	0.026	ppb	0.026	38.39	2257	5000	
Th	232	2	193	10.996	ppb	10.996	12.85	125087	2000	
U	238	2	193	0.003	ppb	0.003	166.82	447	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	770512	0.35	832675	92.53	60	120	
Sc (IS)	45	1	HMI H2	22007645	0.52	22691138	96.99	60	120	
Sc (IS)	45	2	HMI He	1393269	1.79	1329086	104.83	60	120	
Sc (IS)	45	3	No Gas	40455476	0.38	40115962	100.85	60	120	
Ge Internal standard	72	1	HMI H2	11302279	0.44	11471213	98.53	60	120	
Ge Internal standard	72	2	HMI He	1675934	1.58	1582627	105.90	60	120	
In Internal standard	115	2	HMI He	5015081	1.35	4772525	105.08	60	120	
Ho-165	165	2	HMI He	18950432	0.57	18341213	103.32	60	120	
Ir (IS)	193	2	HMI He	13658629	0.17	14005392	97.52	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-1-b ms
Data File Name	105SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:19:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	38.614	ppb	38.614	1.36	3937504	50000	
Be	9	1	6	43.761	ppb	43.761	3.61	14900	2000	
B	11	1	6	22.759	ppb	22.759	5.14	6935	2000	
Na	23	2	45	21512.006	ppb	21512.006	0.19	5403099	400000	
Mg	24	2	45	17637.485	ppb	17637.485	0.92	2131529	400000	
Al	27	2	45	902.558	ppb	902.558	1.40	30318	400000	
Si	28	2	45	1292.298	ppb	1292.298	1.92	286109	10000	
P	31	2	45	126.874	ppb	126.874	1.30	549	10000	
K	39	2	45	2484.574	ppb	2484.574	0.73	270715	400000	
Ca	40	1	45	54511.801	ppb	54511.801	0.90	216376230	400000	
Ti	47	2	45	46.791	ppb	46.791	3.63	1683	4000	
V	51	2	72	44.484	ppb	44.484	2.80	68142	2000	
Cr	52	2	72	43.283	ppb	43.283	3.19	86408	5000	
Mn	55	2	72	42.793	ppb	42.793	2.02	35943	10000	
Fe	56	1	72	886.004	ppb	886.004	0.91	6780805	10000	
(Fe)	57	2	72	840.338	ppb	840.338	0.98	33050	400000	
Co	59	2	72	41.021	ppb	41.021	1.64	134709	2000	
Ni	60	2	72	41.123	ppb	41.123	0.94	39411	5000	
Cu	63	2	72	41.876	ppb	41.876	1.45	105982	5000	
Zn	66	2	72	51.863	ppb	51.863	1.60	23908	5000	
As	75	2	72	44.825	ppb	44.825	1.07	16427	2000	
Se	78	1	72	43.136	ppb	43.136	1.34	13262	2000	
Sr	88	2	72	269.834	ppb	269.834	0.86	262507	4000	
Zr	90	2	72	1.572	ppb	1.572	30.38	1143	1000	
Nb	93	2	72	72.631	ppb	72.631	89.16	27	200	
Mo	95	2	115	45.571	ppb	45.571	2.16	53930	2000	
Pd	105	2	115	-572.744	ppb	-572.744	-34.32	37	100	
Ag	107	2	115	41.907	ppb	41.907	0.38	164329	100	
Cd	111	2	115	43.710	ppb	43.710	2.36	24730	2000	
Sn	120	2	115	45.492	ppb	45.492	0.92	65291	2000	
Sb	121	2	115	45.109	ppb	45.109	1.36	71377	1000	
Ba	137	2	115	446.937	ppb	446.937	1.06	205583	5000	
W	182	2	165	2.994	ppb	2.994	2.50	16296	100	
Pt	195	2	165	121.922	ppb	121.922	60.78	87	100	
Tl	205	2	165	43.512	ppb	43.512	0.45	358803	2000	
Pb	208	2	165	44.054	ppb	44.054	0.90	497692	5000	
Th	232	2	193	52.123	ppb	52.123	0.57	562921	2000	
U	238	2	193	41.282	ppb	41.282	0.70	594339	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	772409	0.68	832675	92.76	60	120	
Sc (IS)	45	1	HMI H2	22242727	0.30	22691138	98.02	60	120	
Sc (IS)	45	2	HMI He	1404500	0.89	1329086	105.67	60	120	
Sc (IS)	45	3	No Gas	40824061	0.77	40115962	101.77	60	120	
Ge Internal standard	72	1	HMI H2	11470779	0.42	11471213	100.00	60	120	
Ge Internal standard	72	2	HMI He	1709780	0.85	1582627	108.03	60	120	
In Internal standard	115	2	HMI He	5031332	0.85	4772525	105.42	60	120	
Ho-165	165	2	HMI He	18936689	0.91	18341213	103.25	60	120	
Ir (IS)	193	2	HMI He	13644739	0.16	14005392	97.42	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-1-c msd
Data File Name	106SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:23:20-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	41.769	ppb	41.769	7.48	3949240	50000	
Be	9	1	6	42.269	ppb	42.269	2.46	14497	2000	
B	11	1	6	22.640	ppb	22.640	2.69	6952	2000	
Na	23	2	45	21711.217	ppb	21711.217	1.78	5446002	400000	
Mg	24	2	45	17700.318	ppb	17700.318	2.62	2136340	400000	
Al	27	2	45	867.924	ppb	867.924	2.96	29129	400000	
Si	28	2	45	1291.167	ppb	1291.167	1.19	285513	10000	
P	31	2	45	120.068	ppb	120.068	12.44	522	10000	
K	39	2	45	2480.971	ppb	2480.971	2.66	270055	400000	
Ca	40	1	45	54770.161	ppb	54770.161	0.91	219745210	400000	
Ti	47	2	45	49.161	ppb	49.161	10.13	1767	4000	
V	51	2	72	43.683	ppb	43.683	0.67	66699	2000	
Cr	52	2	72	42.547	ppb	42.547	0.57	84663	5000	
Mn	55	2	72	41.972	ppb	41.972	0.54	35124	10000	
Fe	56	1	72	983.164	ppb	983.164	0.51	7585853	10000	
(Fe)	57	2	72	925.151	ppb	925.151	0.45	36213	400000	
Co	59	2	72	40.947	ppb	40.947	0.42	133992	2000	
Ni	60	2	72	41.166	ppb	41.166	2.00	39311	5000	
Cu	63	2	72	40.626	ppb	40.626	0.60	102471	5000	
Zn	66	2	72	51.437	ppb	51.437	4.78	23631	5000	
As	75	2	72	45.363	ppb	45.363	1.33	16564	2000	
Se	78	1	72	43.136	ppb	43.136	1.16	13386	2000	
Sr	88	2	72	271.853	ppb	271.853	1.19	263526	4000	
Zr	90	2	72	1.376	ppb	1.376	18.14	1093	1000	
Nb	93	2	72	41.595	ppb	41.595	44.03	17	200	
Mo	95	2	115	44.354	ppb	44.354	1.61	52506	2000	
Pd	105	2	115	-512.431	ppb	-512.431	-20.65	43	100	
Ag	107	2	115	41.588	ppb	41.588	1.34	163127	100	
Cd	111	2	115	42.984	ppb	42.984	2.44	24326	2000	
Sn	120	2	115	45.335	ppb	45.335	3.73	65077	2000	
Sb	121	2	115	43.947	ppb	43.947	2.76	69555	1000	
Ba	137	2	115	447.882	ppb	447.882	0.97	206084	5000	
W	182	2	165	2.516	ppb	2.516	6.47	14200	100	
Pt	195	2	165	5.794	ppb	5.794	1162.46	47	100	
Tl	205	2	165	43.010	ppb	43.010	0.87	353921	2000	
Pb	208	2	165	43.439	ppb	43.439	0.34	489731	5000	
Th	232	2	193	53.032	ppb	53.032	0.49	575217	2000	
U	238	2	193	41.118	ppb	41.118	0.51	594681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	777901	0.91	832675	93.42	60	120	
Sc (IS)	45	1	HMI H2	22484109	1.03	22691138	99.09	60	120	
Sc (IS)	45	2	HMI He	1402934	1.48	1329086	105.56	60	120	
Sc (IS)	45	3	No Gas	40651251	0.91	40115962	101.33	60	120	
Ge Internal standard	72	1	HMI H2	11576485	1.40	11471213	100.92	60	120	
Ge Internal standard	72	2	HMI He	1703630	0.08	1582627	107.65	60	120	
In Internal standard	115	2	HMI He	5032974	0.64	4772525	105.46	60	120	
Ho-165	165	2	HMI He	18896034	0.22	18341213	103.02	60	120	
Ir (IS)	193	2	HMI He	13707124	0.19	14005392	97.87	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-b ms
Data File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:27:04-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	32.713	ppb	32.713	4.91	5900002	50000	
Be	9	1	6	3.511	ppb	3.511	43.53	2010	2000	
B	11	1	6	1.575	ppb	1.575	44.32	2197	2000	
Na	23	2	45	863.826	ppb	863.826	40.90	354416	400000	
Mg	24	2	45	687.504	ppb	687.504	35.35	123917	400000	
Al	27	2	45	30.490	ppb	30.490	59.32	2114	400000	
Si	28	2	45	39.425	ppb	39.425	42.21	26806	10000	
P	31	2	45	-2.134	ppb	-2.134	-169.94	89	10000	
K	39	2	45	-152.550	ppb	-152.550	-25.38	47416	400000	
Ca	40	1	45	5673.911	ppb	5673.911	49.14	31459329	400000	
Ti	47	2	45	2.052	ppb	2.052	67.34	110	4000	
V	51	2	72	1.453	ppb	1.453	55.99	4625	2000	
Cr	52	2	72	1.619	ppb	1.619	47.06	5969	5000	
Mn	55	2	72	1.633	ppb	1.633	26.15	2140	10000	
Fe	56	1	72	102.771	ppb	102.771	53.14	1167454	10000	
(Fe)	57	2	72	34.731	ppb	34.731	31.27	2564	400000	
Co	59	2	72	1.735	ppb	1.735	35.38	8305	2000	
Ni	60	2	72	1.553	ppb	1.553	37.11	2754	5000	
Cu	63	2	72	1.656	ppb	1.656	34.40	7257	5000	
Zn	66	2	72	1.833	ppb	1.833	41.34	2070	5000	
As	75	2	72	1.623	ppb	1.623	44.36	954	2000	
Se	78	1	72	3.811	ppb	3.811	49.21	1644	2000	
Sr	88	2	72	10.723	ppb	10.723	33.87	15266	4000	
Zr	90	2	72	-0.292	ppb	-0.292	-37.97	1033	1000	
Nb	93	2	72	17.800	ppb	17.800	141.12	13	200	
Mo	95	2	115	1.785	ppb	1.785	37.48	3214	2000	
Pd	105	2	115	-563.578	ppb	-563.578	-26.91	57	100	
Ag	107	2	115	1.701	ppb	1.701	33.99	10092	100	
Cd	111	2	115	1.599	ppb	1.599	37.04	1370	2000	
Sn	120	2	115	1.417	ppb	1.417	38.04	3844	2000	
Sb	121	2	115	1.747	ppb	1.747	31.13	4188	1000	
Ba	137	2	115	19.132	ppb	19.132	36.20	13249	5000	
W	182	2	165	-0.233	ppb	-0.233	-34.95	3661	100	
Pt	195	2	165	92.044	ppb	92.044	48.72	120	100	
Tl	205	2	165	1.578	ppb	1.578	40.69	22885	2000	
Pb	208	2	165	1.740	ppb	1.740	35.92	33777	5000	
Th	232	2	193	2.157	ppb	2.157	32.37	49638	2000	
U	238	2	193	1.581	ppb	1.581	35.89	37254	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1273405	8.81	832675	152.93	60	120	IS Failed
Sc (IS)	45	1	HMI H2	32075214	10.32	22691138	141.36	60	120	IS Failed
Sc (IS)	45	2	HMI He	2084404	2.49	1329086	156.83	60	120	IS Failed
Sc (IS)	45	3	No Gas	62016114	1.23	40115962	154.59	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16380076	10.04	11471213	142.79	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2487930	1.34	1582627	157.20	60	120	IS Failed
In Internal standard	115	2	HMI He	7529056	2.07	4772525	157.76	60	120	IS Failed
Ho-165	165	2	HMI He	29661388	1.76	18341213	161.72	60	120	IS Failed
Ir (IS)	193	2	HMI He	21964146	1.30	14005392	156.83	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165796-a-2-a
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:30:49-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	24.366	ppb	24.366	6.81	6003782	50000	
Be	9	1	6	0.306	ppb	0.306	136.42	277	2000	
B	11	1	6	-0.699	ppb	-0.699	-34.64	1307	2000	
Na	23	2	45	1248.335	ppb	1248.335	17.25	496879	400000	
Mg	24	2	45	873.216	ppb	873.216	16.75	157080	400000	
Al	27	2	45	36.593	ppb	36.593	28.72	2414	400000	
Si	28	2	45	55.588	ppb	55.588	16.93	31845	10000	
P	31	2	45	-5.114	ppb	-5.114	-75.09	73	10000	
K	39	2	45	-105.413	ppb	-105.413	-25.01	53537	400000	
Ca	40	1	45	736.354	ppb	736.354	78.87	4250780	400000	
Ti	47	2	45	2.381	ppb	2.381	18.64	127	4000	
V	51	2	72	1.690	ppb	1.690	22.07	5196	2000	
Cr	52	2	72	1.996	ppb	1.996	19.93	7124	5000	
Mn	55	2	72	2.052	ppb	2.052	20.65	2677	10000	
Fe	56	1	72	10.354	ppb	10.354	94.59	207345	10000	
(Fe)	57	2	72	38.670	ppb	38.670	26.89	2814	400000	
Co	59	2	72	2.161	ppb	2.161	11.93	10432	2000	
Ni	60	2	72	1.898	ppb	1.898	13.91	3258	5000	
Cu	63	2	72	2.148	ppb	2.148	19.09	9146	5000	
Zn	66	2	72	2.651	ppb	2.651	3.92	2620	5000	
As	75	2	72	2.259	ppb	2.259	15.42	1304	2000	
Se	78	1	72	0.517	ppb	0.517	67.97	253	2000	
Sr	88	2	72	14.541	ppb	14.541	19.45	20886	4000	
Zr	90	2	72	-0.177	ppb	-0.177	-315.40	1077	1000	
Nb	93	2	72	10.481	ppb	10.481	203.61	10	200	
Mo	95	2	115	2.419	ppb	2.419	14.93	4338	2000	
Pd	105	2	115	-474.422	ppb	-474.422	-30.21	70	100	
Ag	107	2	115	2.321	ppb	2.321	21.17	13713	100	
Cd	111	2	115	2.073	ppb	2.073	15.23	1770	2000	
Sn	120	2	115	1.991	ppb	1.991	12.79	5059	2000	
Sb	121	2	115	2.123	ppb	2.123	3.74	5062	1000	
Ba	137	2	115	23.379	ppb	23.379	15.09	16189	5000	
W	182	2	165	-0.141	ppb	-0.141	-35.40	4244	100	
Pt	195	2	165	38.610	ppb	38.610	12.49	90	100	
Tl	205	2	165	2.159	ppb	2.159	15.92	30112	2000	
Pb	208	2	165	2.246	ppb	2.246	15.19	42350	5000	
Th	232	2	193	2.659	ppb	2.659	17.56	58772	2000	
U	238	2	193	1.976	ppb	1.976	16.57	46851	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1354049	5.61	832675	162.61	60	120	IS Failed
Sc (IS)	45	1	HMI H2	32808785	6.66	22691138	144.59	60	120	IS Failed
Sc (IS)	45	2	HMI He	2073044	3.52	1329086	155.98	60	120	IS Failed
Sc (IS)	45	3	No Gas	64360569	2.89	40115962	160.44	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16799944	6.84	11471213	146.45	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2501371	3.19	1582627	158.05	60	120	IS Failed
In Internal standard	115	2	HMI He	7498643	4.15	4772525	157.12	60	120	IS Failed
Ho-165	165	2	HMI He	29370130	2.84	18341213	160.13	60	120	IS Failed
Ir (IS)	193	2	HMI He	22120130	2.49	14005392	157.94	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-2-a
Data File Name	109SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:34:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	26.303	ppb	26.303	3.28	6167644	50000	
Be	9	1	6	0.475	ppb	0.475	126.34	343	2000	
B	11	1	6	-0.258	ppb	-0.258	-66.47	1440	2000	
Na	23	2	45	48.656	ppb	48.656	322.85	53687	400000	
Mg	24	2	45	70.472	ppb	70.472	162.88	13742	400000	
Al	27	2	45	2.704	ppb	2.704	266.02	763	400000	
Si	28	2	45	-4.751	ppb	-4.751	-292.67	13006	10000	
P	31	2	45	-6.793	ppb	-6.793	-29.40	64	10000	
K	39	2	45	-244.206	ppb	-244.206	-13.97	35609	400000	
Ca	40	1	45	880.569	ppb	880.569	72.72	4824755	400000	
Ti	47	2	45	0.608	ppb	0.608	173.21	33	4000	
V	51	2	72	-0.281	ppb	-0.281	-132.18	833	2000	
Cr	52	2	72	-0.014	ppb	-0.014	-2108.07	1303	5000	
Mn	55	2	72	0.142	ppb	0.142	118.90	330	10000	
Fe	56	1	72	13.305	ppb	13.305	86.03	229260	10000	
(Fe)	57	2	72	1.803	ppb	1.803	384.41	713	400000	
Co	59	2	72	0.164	ppb	0.164	160.15	833	2000	
Ni	60	2	72	-0.032	ppb	-0.032	-528.85	577	5000	
Cu	63	2	72	0.022	ppb	0.022	1039.79	1317	5000	
Zn	66	2	72	0.022	ppb	0.022	1271.21	893	5000	
As	75	2	72	0.083	ppb	0.083	375.98	141	2000	
Se	78	1	72	0.700	ppb	0.700	95.49	309	2000	
Sr	88	2	72	1.123	ppb	1.123	155.25	1744	4000	
Zr	90	2	72	-0.735	ppb	-0.735	-51.89	890	1000	
Nb	93	2	72	39.628	ppb	39.628	86.21	23	200	
Mo	95	2	115	0.432	ppb	0.432	159.11	837	2000	
Pd	105	2	115	-523.679	ppb	-523.679	-17.82	63	100	
Ag	107	2	115	0.252	ppb	0.252	137.45	1604	100	
Cd	111	2	115	0.174	ppb	0.174	169.18	167	2000	
Sn	120	2	115	0.664	ppb	0.664	183.65	2274	2000	
Sb	121	2	115	0.415	ppb	0.415	147.25	1054	1000	
Ba	137	2	115	1.934	ppb	1.934	163.38	1457	5000	
W	182	2	165	-0.383	ppb	-0.383	-12.80	2660	100	
Pt	195	2	165	5.526	ppb	5.526	726.96	73	100	
Tl	205	2	165	0.069	ppb	0.069	467.50	3511	2000	
Pb	208	2	165	0.157	ppb	0.157	181.94	5925	5000	
Th	232	2	193	0.089	ppb	0.089	196.57	14521	2000	
U	238	2	193	0.192	ppb	0.192	166.25	5191	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1299120	11.79	832675	156.02	60	120	IS Failed
Sc (IS)	45	1	HMI H2	32099560	12.54	22691138	141.46	60	120	IS Failed
Sc (IS)	45	2	HMI He	2110620	1.34	1329086	158.80	60	120	IS Failed
Sc (IS)	45	3	No Gas	65813857	1.66	40115962	164.06	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16451260	13.00	11471213	143.41	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2500906	2.23	1582627	158.02	60	120	IS Failed
In Internal standard	115	2	HMI He	7574012	1.90	4772525	158.70	60	120	IS Failed
Ho-165	165	2	HMI He	29829946	1.47	18341213	162.64	60	120	IS Failed
Ir (IS)	193	2	HMI He	22463471	0.88	14005392	160.39	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-4-a
Data File Name	110SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:38:19-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-10.634	ppb	-10.634	-40.74	3524958	50000	
Be	9	1	6	-0.144	ppb	-0.144	-20.55	10	2000	
B	11	1	6	27.479	ppb	27.479	2.97	8176	2000	
Na	23	2	45	20693.065	ppb	20693.065	0.23	5270791	400000	
Mg	24	2	45	17020.037	ppb	17020.037	0.72	2085658	400000	
Al	27	2	45	20.278	ppb	20.278	12.08	1103	400000	
Si	28	2	45	1253.924	ppb	1253.924	0.55	281764	10000	
P	31	2	45	116.677	ppb	116.677	7.31	517	10000	
K	39	2	45	1729.043	ppb	1729.043	0.15	205142	400000	
Ca	40	1	45	54945.068	ppb	54945.068	0.59	218828490	400000	
Ti	47	2	45	0.366	ppb	0.366	44.27	13	4000	
V	51	2	72	1.232	ppb	1.232	10.60	2850	2000	
Cr	52	2	72	0.447	ppb	0.447	5.50	1797	5000	
Mn	55	2	72	2.608	ppb	2.608	6.50	2290	10000	
Fe	56	1	72	661.005	ppb	661.005	1.49	5056756	10000	
(Fe)	57	2	72	618.161	ppb	618.161	2.18	24445	400000	
Co	59	2	72	0.098	ppb	0.098	13.13	340	2000	
Ni	60	2	72	0.397	ppb	0.397	25.52	800	5000	
Cu	63	2	72	1.532	ppb	1.532	5.71	4688	5000	
Zn	66	2	72	16.277	ppb	16.277	2.61	7922	5000	
As	75	2	72	2.177	ppb	2.177	3.70	860	2000	
Se	78	1	72	0.738	ppb	0.738	31.58	244	2000	
Sr	88	2	72	184.794	ppb	184.794	0.97	179993	4000	
Zr	90	2	72	-0.310	ppb	-0.310	-60.71	707	1000	
Nb	93	2	72	492.629	ppb	492.629	50.90	160	200	
Mo	95	2	115	0.442	ppb	0.442	17.45	567	2000	
Pd	105	2	115	-453.613	ppb	-453.613	-88.92	50	100	
Ag	107	2	115	0.009	ppb	0.009	111.91	103	100	
Cd	111	2	115	0.022	ppb	0.022	91.04	23	2000	
Sn	120	2	115	0.455	ppb	0.455	18.68	1210	2000	
Sb	121	2	115	0.291	ppb	0.291	14.28	500	1000	
Ba	137	2	115	403.002	ppb	403.002	0.64	187169	5000	
W	182	2	165	2.717	ppb	2.717	1.91	15115	100	
Pt	195	2	165	160.116	ppb	160.116	78.80	100	100	
Tl	205	2	165	-0.146	ppb	-0.146	-3.76	440	2000	
Pb	208	2	165	0.089	ppb	0.089	11.86	2967	5000	
Th	232	2	193	6.890	ppb	6.890	12.23	81400	2000	
U	238	2	193	1.228	ppb	1.228	4.42	18092	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	771956	0.14	832675	92.71	60	120	
Sc (IS)	45	1	HMI H2	22318511	1.12	22691138	98.36	60	120	
Sc (IS)	45	2	HMI He	1424092	1.02	1329086	107.15	60	120	
Sc (IS)	45	3	No Gas	41222329	0.48	40115962	102.76	60	120	
Ge Internal standard	72	1	HMI H2	11428300	0.48	11471213	99.63	60	120	
Ge Internal standard	72	2	HMI He	1711513	0.42	1582627	108.14	60	120	
In Internal standard	115	2	HMI He	5079678	0.70	4772525	106.44	60	120	
Ho-165	165	2	HMI He	18955904	0.22	18341213	103.35	60	120	
Ir (IS)	193	2	HMI He	13668507	0.38	14005392	97.59	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-5-a
Data File Name	111SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:42:03-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	15.485	ppb	15.485	41.03	6015386	50000	
Be	9	1	6	-0.168	ppb	-0.168	-5.34	3	2000	
B	11	1	6	-0.785	ppb	-0.785	-49.50	1313	2000	
Na	23	2	45	1020.602	ppb	1020.602	120.90	426900	400000	
Mg	24	2	45	800.464	ppb	800.464	113.20	149091	400000	
Al	27	2	45	-1.563	ppb	-1.563	-93.21	557	400000	
Si	28	2	45	45.601	ppb	45.601	140.04	29724	10000	
P	31	2	45	-4.578	ppb	-4.578	-123.24	78	10000	
K	39	2	45	-163.309	ppb	-163.309	-68.10	47420	400000	
Ca	40	1	45	109.949	ppb	109.949	135.29	744095	400000	
Ti	47	2	45	0.120	ppb	0.120	86.61	7	4000	
V	51	2	72	-0.414	ppb	-0.414	-24.99	543	2000	
Cr	52	2	72	-0.191	ppb	-0.191	-13.34	800	5000	
Mn	55	2	72	0.011	ppb	0.011	330.49	170	10000	
Fe	56	1	72	-1.836	ppb	-1.836	-5.77	79928	10000	
(Fe)	57	2	72	-1.312	ppb	-1.312	-150.16	543	400000	
Co	59	2	72	0.006	ppb	0.006	69.24	57	2000	
Ni	60	2	72	-0.140	ppb	-0.140	-34.82	433	5000	
Cu	63	2	72	-0.051	ppb	-0.051	-163.31	1060	5000	
Zn	66	2	72	0.673	ppb	0.673	141.66	1350	5000	
As	75	2	72	0.016	ppb	0.016	818.58	105	2000	
Se	78	1	72	-0.027	ppb	-0.027	-30.65	16	2000	
Sr	88	2	72	9.499	ppb	9.499	115.85	13975	4000	
Zr	90	2	72	-0.270	ppb	-0.270	-87.99	1070	1000	
Nb	93	2	72	9.897	ppb	9.897	0.82	10	200	
Mo	95	2	115	0.034	ppb	0.034	256.41	120	2000	
Pd	105	2	115	-671.049	ppb	-671.049	-15.51	40	100	
Ag	107	2	115	-0.003	ppb	-0.003	-40.64	87	100	
Cd	111	2	115	-0.019	ppb	-0.019	0.00	0	2000	
Sn	120	2	115	-0.077	ppb	-0.077	-142.49	673	2000	
Sb	121	2	115	0.045	ppb	0.045	139.07	163	1000	
Ba	137	2	115	20.981	ppb	20.981	112.57	14884	5000	
W	182	2	165	-0.207	ppb	-0.207	-106.43	3874	100	
Pt	195	2	165	35.333	ppb	35.333	89.84	90	100	
Tl	205	2	165	-0.165	ppb	-0.165	-3.18	457	2000	
Pb	208	2	165	-0.034	ppb	-0.034	-31.26	2490	5000	
Th	232	2	193	0.279	ppb	0.279	121.97	17840	2000	
U	238	2	193	0.122	ppb	0.122	126.97	3518	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1408835	4.57	832675	169.19	60	120	IS Failed
Sc (IS)	45	1	HMI H2	34456977	4.53	22691138	151.85	60	120	IS Failed
Sc (IS)	45	2	HMI He	2146560	1.57	1329086	161.51	60	120	IS Failed
Sc (IS)	45	3	No Gas	65894761	4.48	40115962	164.26	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	17456036	4.15	11471213	152.17	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2557691	0.39	1582627	161.61	60	120	IS Failed
In Internal standard	115	2	HMI He	7671184	0.73	4772525	160.74	60	120	IS Failed
Ho-165	165	2	HMI He	29932030	0.36	18341213	163.20	60	120	IS Failed
Ir (IS)	193	2	HMI He	22512511	1.22	14005392	160.74	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-6-a
Data File Name	112SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:45:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-10.614	ppb	-10.614	-73.49	3625711	50000	
Be	9	1	6	-0.038	ppb	-0.038	-303.37	47	2000	
B	11	1	6	26.588	ppb	26.588	1.00	8072	2000	
Na	23	2	45	20892.356	ppb	20892.356	1.32	5396526	400000	
Mg	24	2	45	16666.926	ppb	16666.926	0.34	2071407	400000	
Al	27	2	45	20.118	ppb	20.118	0.44	1113	400000	
Si	28	2	45	1223.099	ppb	1223.099	1.54	278970	10000	
P	31	2	45	126.628	ppb	126.628	4.46	563	10000	
K	39	2	45	1723.017	ppb	1723.017	0.42	207490	400000	
Ca	40	1	45	54407.297	ppb	54407.297	0.91	219100310	400000	
Ti	47	2	45	0.360	ppb	0.360	114.80	13	4000	
V	51	2	72	0.937	ppb	0.937	17.07	2430	2000	
Cr	52	2	72	0.278	ppb	0.278	16.27	1477	5000	
Mn	55	2	72	0.234	ppb	0.234	11.41	303	10000	
Fe	56	1	72	7.108	ppb	7.108	1.39	122474	10000	
(Fe)	57	2	72	6.067	ppb	6.067	68.97	657	400000	
Co	59	2	72	0.036	ppb	0.036	20.47	137	2000	
Ni	60	2	72	0.684	ppb	0.684	15.26	1083	5000	
Cu	63	2	72	5.654	ppb	5.654	3.09	15201	5000	
Zn	66	2	72	794.393	ppb	794.393	1.16	361672	5000	
As	75	2	72	2.223	ppb	2.223	2.50	886	2000	
Se	78	1	72	0.661	ppb	0.661	28.56	225	2000	
Sr	88	2	72	185.228	ppb	185.228	1.07	182274	4000	
Zr	90	2	72	-0.411	ppb	-0.411	-67.50	690	1000	
Nb	93	2	72	61.408	ppb	61.408	57.96	23	200	
Mo	95	2	115	0.341	ppb	0.341	7.15	450	2000	
Pd	105	2	115	-306.658	ppb	-306.658	-62.76	67	100	
Ag	107	2	115	-0.006	ppb	-0.006	-115.63	43	100	
Cd	111	2	115	-0.001	ppb	-0.001	-1332.68	10	2000	
Sn	120	2	115	0.054	ppb	0.054	135.63	640	2000	
Sb	121	2	115	0.106	ppb	0.106	58.28	207	1000	
Ba	137	2	115	405.460	ppb	405.460	1.64	190017	5000	
W	182	2	165	2.503	ppb	2.503	3.36	14434	100	
Pt	195	2	165	12.444	ppb	12.444	222.33	50	100	
Tl	205	2	165	-0.167	ppb	-0.167	-1.18	273	2000	
Pb	208	2	165	0.305	ppb	0.305	7.09	5494	5000	
Th	232	2	193	2.522	ppb	2.522	14.50	35321	2000	
U	238	2	193	-0.002	ppb	-0.002	-160.82	377	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	784720	0.70	832675	94.24	60	120	
Sc (IS)	45	1	HMI H2	22567076	0.72	22691138	99.45	60	120	
Sc (IS)	45	2	HMI He	1444270	0.58	1329086	108.67	60	120	
Sc (IS)	45	3	No Gas	42400536	0.43	40115962	105.69	60	120	
Ge Internal standard	72	1	HMI H2	11676639	0.68	11471213	101.79	60	120	
Ge Internal standard	72	2	HMI He	1729219	0.84	1582627	109.26	60	120	
In Internal standard	115	2	HMI He	5125860	0.81	4772525	107.40	60	120	
Ho-165	165	2	HMI He	19283828	0.65	18341213	105.14	60	120	
Ir (IS)	193	2	HMI He	13879769	0.38	14005392	99.10	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-7-a
Data File Name	113SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:49:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-12.521	ppb	-12.521	-32.42	3552503	50000	
Be	9	1	6	-0.115	ppb	-0.115	-25.19	20	2000	
B	11	1	6	27.072	ppb	27.072	3.30	8216	2000	
Na	23	2	45	20588.463	ppb	20588.463	1.12	5317388	400000	
Mg	24	2	45	16901.728	ppb	16901.728	0.66	2100136	400000	
Al	27	2	45	13.280	ppb	13.280	19.03	880	400000	
Si	28	2	45	1271.370	ppb	1271.370	1.36	289571	10000	
P	31	2	45	122.708	ppb	122.708	4.17	548	10000	
K	39	2	45	1734.200	ppb	1734.200	1.03	208483	400000	
Ca	40	1	45	54470.731	ppb	54470.731	0.31	220952957	400000	
Ti	47	2	45	0.091	ppb	0.091	173.21	3	4000	
V	51	2	72	0.942	ppb	0.942	2.75	2470	2000	
Cr	52	2	72	0.357	ppb	0.357	30.77	1657	5000	
Mn	55	2	72	0.578	ppb	0.578	8.60	603	10000	
Fe	56	1	72	71.195	ppb	71.195	1.28	617487	10000	
(Fe)	57	2	72	68.988	ppb	68.988	4.93	3170	400000	
Co	59	2	72	0.043	ppb	0.043	4.69	163	2000	
Ni	60	2	72	0.326	ppb	0.326	16.89	750	5000	
Cu	63	2	72	0.425	ppb	0.425	13.40	1950	5000	
Zn	66	2	72	22.382	ppb	22.382	5.38	10924	5000	
As	75	2	72	2.252	ppb	2.252	10.78	909	2000	
Se	78	1	72	0.583	ppb	0.583	30.59	201	2000	
Sr	88	2	72	184.904	ppb	184.904	0.86	184429	4000	
Zr	90	2	72	-0.197	ppb	-0.197	-298.44	750	1000	
Nb	93	2	72	91.516	ppb	91.516	39.22	33	200	
Mo	95	2	115	0.293	ppb	0.293	17.45	397	2000	
Pd	105	2	115	-523.679	ppb	-523.679	-39.79	43	100	
Ag	107	2	115	-0.002	ppb	-0.002	-220.12	60	100	
Cd	111	2	115	-0.007	ppb	-0.007	-263.70	7	2000	
Sn	120	2	115	0.097	ppb	0.097	133.74	710	2000	
Sb	121	2	115	0.068	ppb	0.068	40.45	147	1000	
Ba	137	2	115	404.997	ppb	404.997	0.66	191930	5000	
W	182	2	165	2.204	ppb	2.204	6.16	12963	100	
Pt	195	2	165	-43.474	ppb	-43.474	-175.92	30	100	
Tl	205	2	165	-0.155	ppb	-0.155	-7.94	373	2000	
Pb	208	2	165	0.051	ppb	0.051	8.85	2547	5000	
Th	232	2	193	1.597	ppb	1.597	13.70	24969	2000	
U	238	2	193	0.004	ppb	0.004	43.88	460	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	786054	0.34	832675	94.40	60	120	
Sc (IS)	45	1	HMI H2	22730542	0.08	22691138	100.17	60	120	
Sc (IS)	45	2	HMI He	1444005	0.82	1329086	108.65	60	120	
Sc (IS)	45	3	No Gas	41749831	0.30	40115962	104.07	60	120	
Ge Internal standard	72	1	HMI H2	11689142	0.56	11471213	101.90	60	120	
Ge Internal standard	72	2	HMI He	1752735	0.62	1582627	110.75	60	120	
In Internal standard	115	2	HMI He	5183515	1.13	4772525	108.61	60	120	
Ho-165	165	2	HMI He	19058253	0.21	18341213	103.91	60	120	
Ir (IS)	193	2	HMI He	13692577	0.58	14005392	97.77	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	114_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:53:18-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	84.918	ppb	4.651	4433567	100	84.9	90	110	>+\-10%
Be	9	1	6	49.548	ppb	0.930	17416	50	99.1	90	110	
B	11	1	6	501.067	ppb	1.274	137561	50	1002.1	90	110	>+\-10%
Na	23	2	45	53122.918	ppb	1.796	13493097	51000	104.2	90	110	
Mg	24	2	45	11513.177	ppb	2.056	1411010	11000	104.7	90	110	
Al	27	2	45	992.345	ppb	1.470	33764	1000	99.2	90	110	
Si	28	2	45	69.308	ppb	1.975	24815	500	13.9	90	110	>+\-10%
P	31	2	45	2548.592	ppb	1.803	9854	2500	101.9	90	110	
K	39	2	45	10662.138	ppb	1.180	1025190	11000	96.9	90	110	
Ca	40	1	45	11414.336	ppb	0.728	46579589	11000	103.8	90	110	
(Ca)	44	1	45	12123.327	ppb	0.758	1479591	11000	110.2	90	110	>+\-10%
Ti	47	2	45	51.443	ppb	2.267	1877	50	102.9	90	110	
V	51	2	72	50.500	ppb	0.686	77871	50	101.0	90	110	
Cr	52	2	72	48.776	ppb	0.563	98073	50	97.6	90	110	
Mn	55	2	72	48.636	ppb	2.417	41158	50	97.3	90	110	
Fe	56	1	72	1024.262	ppb	0.476	8056301	1000	102.4	90	110	
(Fe)	56	2	72	989.482	ppb	1.607	1651388	1000	98.9	90	110	
(Fe)	57	2	72	936.337	ppb	2.765	37072	1000	93.6	90	110	
Co	59	2	72	47.749	ppb	0.260	158096	50	95.5	90	110	
Ni	60	2	72	47.228	ppb	0.969	45570	50	94.5	90	110	
Cu	63	2	72	47.622	ppb	0.385	121393	50	95.2	90	110	
Zn	66	2	72	48.931	ppb	2.097	22773	50	97.9	90	110	
As	75	2	72	49.284	ppb	0.743	18203	50	98.6	90	110	
Se	78	1	72	48.280	ppb	0.913	15273	50	96.6	90	110	
Sr	88	2	72	101.923	ppb	0.488	100016	100	101.9	90	110	
Zr	90	2	72	2.605	ppb	15.097	1393	50	5.2	90	110	>+\-10%
Nb	93	2	72	51.178	ppb	59.950	20	100	51.2	90	110	>+\-10%
Mo	95	2	115	51.284	ppb	1.039	61752	50	102.6	90	110	
Pd	105	2	115	1029.814	ppb	12.901	213	50	2059.6	90	110	>+\-10%
Ag	107	2	115	49.082	ppb	0.689	195819	50	98.2	90	110	
Cd	111	2	115	49.241	ppb	2.155	28343	50	98.5	90	110	
Sn	120	2	115	52.084	ppb	2.385	75965	50	104.2	90	110	
Sb	121	2	115	51.277	ppb	0.904	82554	50	102.6	90	110	
Ba	137	2	115	52.342	ppb	4.075	24563	50	104.7	90	110	
W	182	2	165	50.824	ppb	0.414	225188	50	101.6	90	110	
Pt	195	2	165	167.445	ppb	52.158	103	50	334.9	90	110	>+\-10%
Tl	205	2	165	49.243	ppb	0.639	409426	50	98.5	90	110	
Pb	208	2	165	49.563	ppb	0.373	564643	50	99.1	90	110	
Th	232	2	193	40.415	ppb	6.912	449500	50	80.8	90	110	>+\-10%
U	238	2	193	47.475	ppb	1.252	701198	50	94.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	797827	0.42	832675	95.81	60	120	
Sc (IS)	45	1	HMI H2	22843406	0.10	22691138	100.67	60	120	
Sc (IS)	45	2	HMI He	1424267	1.80	1329086	107.16	60	120	
Sc (IS)	45	3	No Gas	41536428	0.87	40115962	103.54	60	120	
Ge Internal standard	72	1	HMI H2	11804560	0.60	11471213	102.91	60	120	
Ge Internal standard	72	2	HMI He	1723788	1.16	1582627	108.92	60	120	
In Internal standard	115	2	HMI He	5119375	0.94	4772525	107.27	60	120	
Ho-165	165	2	HMI He	19103941	0.61	18341213	104.16	60	120	
Ir (IS)	193	2	HMI He	14000457	1.05	14005392	99.96	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	115_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T16:57:02-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-11.448	ppb	-29.2	3603978	10	
Be	9	1	6	-0.092	ppb	-58.6	30	0.5	
B	11	1	6	8.565	ppb	13.9	3450	0.5	>RL
Na	23	2	45	3.184	ppb	84.4	25079	25	
Mg	24	2	45	3.910	ppb	14.2	1033	25	
Al	27	2	45	-0.028	ppb	-11365.8	433	15	
K	39	2	45	0.817	ppb	477.4	47842	50	
Ti	47	2	45	0.089	ppb	173.2	3	0.5	
V	51	2	72	-0.132	ppb	-39.4	813	1	
Cr	52	2	72	-0.031	ppb	-155.8	877	1	
Mn	55	2	72	0.095	ppb	33.4	190	0.5	
(Fe)	57	2	72	3.057	ppb	96.3	550	25	
Co	59	2	72	0.024	ppb	31.9	100	0.5	
Ni	60	2	72	0.032	ppb	139.9	467	1	
Cu	63	2	72	-0.033	ppb	-213.3	777	1	
Zn	66	2	72	0.041	ppb	349.3	637	5	
As	75	2	72	-0.071	ppb	-47.5	40	1	
Se	78	1	72	0.006	ppb	315.5	21	1	
Sr	88	2	72	0.042	ppb	121.5	120	0.5	
Zr	90	2	72	-0.568	ppb	-59.9	667	1	
Nb	93	2	72	19.302	ppb	157.4	10	2	>RL
Mo	95	2	115	0.345	ppb	10.4	467	0.5	
Pd	105	2	115	-677.467	ppb	-15.0	27	1	
Ag	107	2	115	0.031	ppb	64.0	197	1	
Cd	111	2	115	0.026	ppb	133.8	27	0.5	
Sn	120	2	115	0.652	ppb	12.9	1547	1	
Sb	121	2	115	0.197	ppb	9.1	363	0.6	
Ba	137	2	115	0.105	ppb	103.8	120	0.5	
W	182	2	165	0.284	ppb	45.5	4684	1	
Pt	195	2	165	59.050	ppb	120.4	67	1	>RL
Tl	205	2	165	-0.117	ppb	-9.6	697	0.1	
Pb	208	2	165	-0.006	ppb	-68.0	1937	0.5	
Th	232	2	193	1.248	ppb	0.9	22428	1	>RL
U	238	2	193	0.053	ppb	10.2	1227	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	836298	0.97	832675	100.44	60	120	
Sc (IS)	45	1	HMI H2	23085568	0.63	22691138	101.74	60	120	
Sc (IS)	45	2	HMI He	1465374	0.67	1329086	110.25	60	120	
Sc (IS)	45	3	No Gas	42237068	0.37	40115962	105.29	60	120	
Ge Internal standard	72	1	HMI H2	11932454	0.53	11471213	104.02	60	120	
Ge Internal standard	72	2	HMI He	1763750	0.63	1582627	111.44	60	120	
In Internal standard	115	2	HMI He	5260495	0.20	4772525	110.22	60	120	
Ho-165	165	2	HMI He	19389831	0.46	18341213	105.72	60	120	
Ir (IS)	193	2	HMI He	14463568	0.88	14005392	103.27	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	116LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:00:47-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-3.666	ppb	-120.820	3736451	50	-7.3	70	130	>+/-30%
Be	9	1	6	0.830	ppb	11.254	363	1	83.0	70	130	
Na	23	2	45	33.781	ppb	10.667	32468	50	67.6	70	130	>+/-30%
Mg	24	2	45	48.472	ppb	7.644	6535	50	96.9	70	130	
Al	27	2	45	52.164	ppb	9.393	2197	50	104.3	70	130	
K	39	2	45	101.379	ppb	15.041	56308	100	101.4	70	130	
V	51	2	72	4.652	ppb	4.458	8202	5	93.0	70	130	
Cr	52	2	72	1.975	ppb	1.719	4928	2	98.7	70	130	
Mn	55	2	72	0.929	ppb	7.453	903	1	92.9	70	130	
(Fe)	57	2	72	46.932	ppb	5.774	2290	50	93.9	70	130	
Co	59	2	72	0.983	ppb	1.675	3324	1	98.3	70	130	
Ni	60	2	72	2.011	ppb	7.410	2384	2	100.5	70	130	
Cu	63	2	72	2.129	ppb	1.213	6328	2	106.4	70	130	
Zn	66	2	72	9.688	ppb	4.901	5071	10	96.9	70	130	
As	75	2	72	5.083	ppb	3.575	1965	5	101.7	70	130	
Se	78	1	72	4.891	ppb	5.156	1571	5	97.8	70	130	
Sr	88	2	72	1.060	ppb	2.610	1133	1	106.0	70	130	
Zr	90	2	72	0.253	ppb	165.530	857	0.5	50.6	70	130	>+/-30%
Nb	93	2	72	70.957	ppb	24.721	27	2	3547.9	70	130	>+/-30%
Mo	95	2	115	1.911	ppb	6.012	2390	2	95.6	70	130	
Pd	105	2	115	-616.629	ppb	-8.256	33	1	-61662.9	70	130	>+/-30%
Ag	107	2	115	0.965	ppb	4.079	4001	1	96.5	70	130	
Cd	111	2	115	1.030	ppb	25.739	617	1	103.0	70	130	
Sn	120	2	115	10.505	ppb	1.837	16115	10	105.0	70	130	
Sb	121	2	115	2.042	ppb	4.690	3394	2	102.1	70	130	
Ba	137	2	115	1.082	ppb	23.230	587	1	108.2	70	130	
W	182	2	165	4.922	ppb	2.848	25068	1	492.2	70	130	>+/-30%
Pt	195	2	165	12.774	ppb	228.302	50	1	1277.4	70	130	>+/-30%
Tl	205	2	165	0.818	ppb	4.910	8503	1	81.8	70	130	
Pb	208	2	165	1.048	ppb	3.463	14000	1	104.8	70	130	
Th	232	2	193	5.538	ppb	3.900	70965	2	276.9	70	130	>+/-30%
U	238	2	193	0.958	ppb	2.990	15055	1	95.8	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	824611	0.46	832675	99.03	60	120	
Sc (IS)	45	1	HMI H2	23060301	0.42	22691138	101.63	60	120	
Sc (IS)	45	2	HMI He	1439434	1.90	1329086	108.30	60	120	
Sc (IS)	45	3	No Gas	42922909	1.18	40115962	107.00	60	120	
Ge Internal standard	72	1	HMI H2	11853046	0.45	11471213	103.33	60	120	
Ge Internal standard	72	2	HMI He	1750449	0.52	1582627	110.60	60	120	
In Internal standard	115	2	HMI He	5231193	0.17	4772525	109.61	60	120	
Ho-165	165	2	HMI He	19266851	0.76	18341213	105.05	60	120	
Ir (IS)	193	2	HMI He	14485012	0.48	14005392	103.42	60	120	

Sample Report

Sample Table

Sample Name	280-165796-a-1-b ms
Data File Name	117SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:10:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	30.765	ppb	30.765	14.68	5569663	50000	
Be	9	1	6	-0.083	ppb	-0.083	-83.40	53	2000	
B	11	1	6	-0.494	ppb	-0.494	-132.34	1377	2000	
Na	23	2	45	-48.879	ppb	-48.879	-4.28	16582	400000	
Mg	24	2	45	0.227	ppb	0.227	729.68	820	400000	
Al	27	2	45	0.998	ppb	0.998	84.96	677	400000	
Si	28	2	45	-6.512	ppb	-6.512	-41.00	12422	10000	
P	31	2	45	-4.548	ppb	-4.548	-62.34	77	10000	
K	39	2	45	-242.572	ppb	-242.572	-5.31	35832	400000	
Ca	40	1	45	-0.167	ppb	-0.167	-3020.05	86627	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.378	ppb	-0.378	-17.51	617	2000	
Cr	52	2	72	-0.124	ppb	-0.124	-13.82	987	5000	
Mn	55	2	72	0.026	ppb	0.026	134.72	187	10000	
Fe	56	1	72	0.972	ppb	0.972	317.88	106221	10000	
(Fe)	57	2	72	-2.080	ppb	-2.080	-94.93	493	400000	
Co	59	2	72	0.031	ppb	0.031	45.44	180	2000	
Ni	60	2	72	-0.179	ppb	-0.179	-12.38	373	5000	
Cu	63	2	72	-0.083	ppb	-0.083	-24.59	930	5000	
Zn	66	2	72	0.073	ppb	0.073	398.02	933	5000	
As	75	2	72	0.035	ppb	0.035	370.10	114	2000	
Se	78	1	72	0.186	ppb	0.186	141.94	109	2000	
Sr	88	2	72	-0.011	ppb	-0.011	-220.82	97	4000	
Zr	90	2	72	-0.284	ppb	-0.284	-127.56	1053	1000	
Nb	93	2	72	-4.270	ppb	-4.270	-281.07	3	200	
Mo	95	2	115	0.062	ppb	0.062	117.07	170	2000	
Pd	105	2	115	-688.180	ppb	-688.180	-19.13	37	100	
Ag	107	2	115	0.023	ppb	0.023	32.32	240	100	
Cd	111	2	115	0.019	ppb	0.019	243.22	33	2000	
Sn	120	2	115	0.158	ppb	0.158	127.33	1180	2000	
Sb	121	2	115	0.073	ppb	0.073	68.23	230	1000	
Ba	137	2	115	0.002	ppb	0.002	5564.67	103	5000	
W	182	2	165	-0.226	ppb	-0.226	-27.98	3704	100	
Pt	195	2	165	-12.609	ppb	-12.609	-421.85	63	100	
Tl	205	2	165	-0.141	ppb	-0.141	-17.33	753	2000	
Pb	208	2	165	0.010	ppb	0.010	236.99	3244	5000	
Th	232	2	193	0.177	ppb	0.177	51.58	15883	2000	
U	238	2	193	0.027	ppb	0.027	67.83	1273	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1331424	3.71	832675	159.90	60	120	IS Failed
Sc (IS)	45	1	HMI H2	32296488	5.29	22691138	142.33	60	120	IS Failed
Sc (IS)	45	2	HMI He	2113423	1.93	1329086	159.01	60	120	IS Failed
Sc (IS)	45	3	No Gas	58808479	4.16	40115962	146.60	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16442466	5.77	11471213	143.34	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2528829	2.29	1582627	159.79	60	120	IS Failed
In Internal standard	115	2	HMI He	7635809	2.27	4772525	160.00	60	120	IS Failed
Ho-165	165	2	HMI He	29597595	1.33	18341213	161.37	60	120	IS Failed
Ir (IS)	193	2	HMI He	22210471	1.51	14005392	158.59	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165796-a-2-a
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:13:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	25.799	ppb	25.799	15.76	6098329	50000	
Be	9	1	6	-0.173	ppb	-0.173	0.00	0	2000	
B	11	1	6	-0.519	ppb	-0.519	-10.42	1413	2000	
Na	23	2	45	-49.226	ppb	-49.226	-9.27	16545	400000	
Mg	24	2	45	0.581	ppb	0.581	517.31	893	400000	
Al	27	2	45	-0.073	ppb	-0.073	-3930.73	627	400000	
Si	28	2	45	-5.769	ppb	-5.769	-76.27	12732	10000	
P	31	2	45	-7.666	ppb	-7.666	-16.78	59	10000	
K	39	2	45	-242.900	ppb	-242.900	-8.50	35993	400000	
Ca	40	1	45	-4.972	ppb	-4.972	-19.19	60814	400000	
Ti	47	2	45	0.062	ppb	0.062	173.21	3	4000	
V	51	2	72	-0.268	ppb	-0.268	-95.76	867	2000	
Cr	52	2	72	-0.154	ppb	-0.154	-86.49	903	5000	
Mn	55	2	72	0.044	ppb	0.044	127.72	210	10000	
Fe	56	1	72	-1.377	ppb	-1.377	-50.52	83214	10000	
(Fe)	57	2	72	-1.554	ppb	-1.554	-190.12	527	400000	
Co	59	2	72	0.053	ppb	0.053	132.72	283	2000	
Ni	60	2	72	-0.139	ppb	-0.139	-111.87	433	5000	
Cu	63	2	72	-0.039	ppb	-0.039	-410.99	1100	5000	
Zn	66	2	72	0.440	ppb	0.440	125.62	1187	5000	
As	75	2	72	0.064	ppb	0.064	393.16	131	2000	
Se	78	1	72	0.045	ppb	0.045	228.49	47	2000	
Sr	88	2	72	0.016	ppb	0.016	384.08	137	4000	
Zr	90	2	72	-0.392	ppb	-0.392	-99.15	1023	1000	
Nb	93	2	72	17.088	ppb	17.088	286.72	13	200	
Mo	95	2	115	0.150	ppb	0.150	122.48	330	2000	
Pd	105	2	115	-629.875	ppb	-629.875	-36.74	47	100	
Ag	107	2	115	0.034	ppb	0.034	123.39	303	100	
Cd	111	2	115	0.016	ppb	0.016	216.80	30	2000	
Sn	120	2	115	0.248	ppb	0.248	258.07	1384	2000	
Sb	121	2	115	0.125	ppb	0.125	119.46	357	1000	
Ba	137	2	115	0.068	ppb	0.068	143.11	150	5000	
W	182	2	165	-0.151	ppb	-0.151	-200.83	4201	100	
Pt	195	2	165	80.598	ppb	80.598	126.97	113	100	
Tl	205	2	165	-0.122	ppb	-0.122	-62.45	1000	2000	
Pb	208	2	165	0.010	ppb	0.010	663.68	3230	5000	
Th	232	2	193	0.215	ppb	0.215	138.61	16571	2000	
U	238	2	193	0.037	ppb	0.037	169.55	1500	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1380430	5.02	832675	165.78	60	120	IS Failed
Sc (IS)	45	1	HMI H2	33600857	4.50	22691138	148.08	60	120	IS Failed
Sc (IS)	45	2	HMI He	2124037	1.14	1329086	159.81	60	120	IS Failed
Sc (IS)	45	3	No Gas	65165222	3.64	40115962	162.44	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	17090281	4.99	11471213	148.98	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2547155	0.16	1582627	160.94	60	120	IS Failed
In Internal standard	115	2	HMI He	7683584	0.43	4772525	161.00	60	120	IS Failed
Ho-165	165	2	HMI He	29584018	0.84	18341213	161.30	60	120	IS Failed
Ir (IS)	193	2	HMI He	22288281	0.65	14005392	159.14	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165796-a-1-b ms
Data File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:17:42-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	31.434	ppb	31.434	12.41	3926073	50000	
Be	9	1	6	40.673	ppb	40.673	4.12	14003	2000	
B	11	1	6	22.256	ppb	22.256	4.95	6878	2000	
Na	23	2	45	20803.077	ppb	20803.077	0.39	5269895	400000	
Mg	24	2	45	16957.491	ppb	16957.491	0.32	2066736	400000	
Al	27	2	45	834.192	ppb	834.192	1.04	28287	400000	
Si	28	2	45	1254.374	ppb	1254.374	1.43	280325	10000	
P	31	2	45	118.714	ppb	118.714	10.86	522	10000	
K	39	2	45	2437.988	ppb	2437.988	1.10	268749	400000	
Ca	40	1	45	53395.636	ppb	53395.636	0.52	213858337	400000	
Ti	47	2	45	45.295	ppb	45.295	5.47	1643	4000	
V	51	2	72	41.499	ppb	41.499	1.40	64066	2000	
Cr	52	2	72	40.485	ppb	40.485	0.70	81424	5000	
Mn	55	2	72	39.414	ppb	39.414	0.89	33327	10000	
Fe	56	1	72	845.207	ppb	845.207	1.23	6550583	10000	
(Fe)	57	2	72	761.514	ppb	761.514	1.34	30185	400000	
Co	59	2	72	38.695	ppb	38.695	1.51	127900	2000	
Ni	60	2	72	38.261	ppb	38.261	1.39	36942	5000	
Cu	63	2	72	39.286	ppb	39.286	0.22	100127	5000	
Zn	66	2	72	46.130	ppb	46.130	4.94	21468	5000	
As	75	2	72	43.421	ppb	43.421	0.34	16019	2000	
Se	78	1	72	41.377	ppb	41.377	3.37	12877	2000	
Sr	88	2	72	259.507	ppb	259.507	0.94	254142	4000	
Zr	90	2	72	1.254	ppb	1.254	34.65	1077	1000	
Nb	93	2	72	20.225	ppb	20.225	156.38	10	200	
Mo	95	2	115	42.380	ppb	42.380	0.58	50927	2000	
Pd	105	2	115	-669.040	ppb	-669.040	-39.82	27	100	
Ag	107	2	115	39.103	ppb	39.103	0.65	155692	100	
Cd	111	2	115	40.168	ppb	40.168	0.92	23077	2000	
Sn	120	2	115	42.415	ppb	42.415	1.78	61840	2000	
Sb	121	2	115	43.335	ppb	43.335	1.16	69629	1000	
Ba	137	2	115	422.809	ppb	422.809	0.58	197475	5000	
W	182	2	165	2.583	ppb	2.583	0.91	14614	100	
Pt	195	2	165	4.655	ppb	4.655	374.43	47	100	
Tl	205	2	165	40.803	ppb	40.803	0.67	338788	2000	
Pb	208	2	165	41.166	ppb	41.166	1.26	468270	5000	
Th	232	2	193	52.392	ppb	52.392	0.64	568962	2000	
U	238	2	193	38.892	ppb	38.892	0.34	563088	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	780997	0.62	832675	93.79	60	120	
Sc (IS)	45	1	HMI H2	22443761	0.47	22691138	98.91	60	120	
Sc (IS)	45	2	HMI He	1416340	0.54	1329086	106.56	60	120	
Sc (IS)	45	3	No Gas	41390617	0.16	40115962	103.18	60	120	
Ge Internal standard	72	1	HMI H2	11611192	0.41	11471213	101.22	60	120	
Ge Internal standard	72	2	HMI He	1720982	0.98	1582627	108.74	60	120	
In Internal standard	115	2	HMI He	5108595	0.98	4772525	107.04	60	120	
Ho-165	165	2	HMI He	19062049	0.64	18341213	103.93	60	120	
Ir (IS)	193	2	HMI He	13721136	0.46	14005392	97.97	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-2-a
Data File Name	120SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:21:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	21.689	ppb	21.689	22.43	6306450	50000	
Be	9	1	6	2.458	ppb	2.458	68.06	1490	2000	
B	11	1	6	0.539	ppb	0.539	201.41	1834	2000	
Na	23	2	45	977.013	ppb	977.013	142.10	415575	400000	
Mg	24	2	45	739.291	ppb	739.291	131.18	139520	400000	
Al	27	2	45	41.035	ppb	41.035	134.46	2757	400000	
Si	28	2	45	45.588	ppb	45.588	161.53	30117	10000	
P	31	2	45	-3.948	ppb	-3.948	-160.00	83	10000	
K	39	2	45	-145.045	ppb	-145.045	-111.83	50690	400000	
Ca	40	1	45	3955.359	ppb	3955.359	64.15	23082998	400000	
Ti	47	2	45	2.204	ppb	2.204	152.01	123	4000	
V	51	2	72	1.606	ppb	1.606	166.82	5173	2000	
Cr	52	2	72	1.588	ppb	1.588	152.62	6140	5000	
Mn	55	2	72	1.745	ppb	1.745	137.16	2374	10000	
Fe	56	1	72	64.308	ppb	64.308	68.18	806681	10000	
(Fe)	57	2	72	34.578	ppb	34.578	140.67	2664	400000	
Co	59	2	72	1.876	ppb	1.876	133.85	9370	2000	
Ni	60	2	72	1.505	ppb	1.505	144.45	2804	5000	
Cu	63	2	72	1.691	ppb	1.691	139.37	7705	5000	
Zn	66	2	72	1.999	ppb	1.999	124.64	2270	5000	
As	75	2	72	1.749	ppb	1.749	137.70	1065	2000	
Se	78	1	72	2.862	ppb	2.862	61.53	1309	2000	
Sr	88	2	72	12.310	ppb	12.310	132.86	18271	4000	
Zr	90	2	72	-0.613	ppb	-0.613	-27.83	963	1000	
Nb	93	2	72	9.616	ppb	9.616	216.37	10	200	
Mo	95	2	115	1.926	ppb	1.926	136.93	3578	2000	
Pd	105	2	115	-455.286	ppb	-455.286	-100.90	77	100	
Ag	107	2	115	1.837	ppb	1.837	124.95	11228	100	
Cd	111	2	115	1.798	ppb	1.798	126.20	1587	2000	
Sn	120	2	115	1.441	ppb	1.441	149.66	4022	2000	
Sb	121	2	115	1.785	ppb	1.785	135.63	4416	1000	
Ba	137	2	115	19.980	ppb	19.980	131.04	14297	5000	
W	182	2	165	-0.263	ppb	-0.263	-59.58	3501	100	
Pt	195	2	165	34.912	ppb	34.912	96.95	90	100	
Tl	205	2	165	1.749	ppb	1.749	144.15	25170	2000	
Pb	208	2	165	1.909	ppb	1.909	133.92	36906	5000	
Th	232	2	193	2.438	ppb	2.438	127.32	55032	2000	
U	238	2	193	1.756	ppb	1.756	130.91	41597	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1341192	10.08	832675	161.07	60	120	IS Failed
Sc (IS)	45	1	HMI H2	33689382	9.98	22691138	148.47	60	120	IS Failed
Sc (IS)	45	2	HMI He	2179914	1.63	1329086	164.02	60	120	IS Failed
Sc (IS)	45	3	No Gas	68034291	1.06	40115962	169.59	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	17210088	9.50	11471213	150.03	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2591460	0.06	1582627	163.74	60	120	IS Failed
In Internal standard	115	2	HMI He	7810293	0.93	4772525	163.65	60	120	IS Failed
Ho-165	165	2	HMI He	30072552	1.49	18341213	163.96	60	120	IS Failed
Ir (IS)	193	2	HMI He	22432877	2.00	14005392	160.17	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-5-a
Data File Name	121SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:25:14-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	14.752	ppb	14.752	30.73	6360330	50000	
Be	9	1	6	1.213	ppb	1.213	100.04	797	2000	
B	11	1	6	-0.100	ppb	-0.100	-591.72	1550	2000	
Na	23	2	45	857.221	ppb	857.221	149.26	360886	400000	
Mg	24	2	45	626.024	ppb	626.024	138.00	115634	400000	
Al	27	2	45	32.607	ppb	32.607	133.52	2284	400000	
Si	28	2	45	37.442	ppb	37.442	180.09	26994	10000	
P	31	2	45	-3.722	ppb	-3.722	-130.78	83	10000	
K	39	2	45	-140.712	ppb	-140.712	-116.31	50735	400000	
Ca	40	1	45	1955.110	ppb	1955.110	100.18	11562458	400000	
Ti	47	2	45	1.823	ppb	1.823	106.00	100	4000	
V	51	2	72	1.143	ppb	1.143	201.53	4132	2000	
Cr	52	2	72	1.350	ppb	1.350	156.21	5456	5000	
Mn	55	2	72	1.666	ppb	1.666	140.36	2284	10000	
Fe	56	1	72	29.898	ppb	29.898	112.39	425035	10000	
(Fe)	57	2	72	26.347	ppb	26.347	166.24	2190	400000	
Co	59	2	72	1.545	ppb	1.545	134.97	7756	2000	
Ni	60	2	72	1.351	ppb	1.351	156.82	2597	5000	
Cu	63	2	72	1.434	ppb	1.434	155.74	6761	5000	
Zn	66	2	72	1.688	ppb	1.688	149.34	2074	5000	
As	75	2	72	1.532	ppb	1.532	150.81	950	2000	
Se	78	1	72	1.307	ppb	1.307	100.35	609	2000	
Sr	88	2	72	10.171	ppb	10.171	141.37	15176	4000	
Zr	90	2	72	-0.684	ppb	-0.684	-14.03	950	1000	
Nb	93	2	72	2.654	ppb	2.654	903.97	7	200	
Mo	95	2	115	1.538	ppb	1.538	137.68	2831	2000	
Pd	105	2	115	-380.436	ppb	-380.436	-66.24	90	100	
Ag	107	2	115	1.909	ppb	1.909	117.30	11537	100	
Cd	111	2	115	1.528	ppb	1.528	133.24	1334	2000	
Sn	120	2	115	1.176	ppb	1.176	165.53	3394	2000	
Sb	121	2	115	1.379	ppb	1.379	135.54	3378	1000	
Ba	137	2	115	17.569	ppb	17.569	140.22	12402	5000	
W	182	2	165	-0.298	ppb	-0.298	-49.88	3237	100	
Pt	195	2	165	67.057	ppb	67.057	102.22	107	100	
Tl	205	2	165	1.609	ppb	1.609	145.28	23069	2000	
Pb	208	2	165	1.642	ppb	1.642	142.46	31738	5000	
Th	232	2	193	2.140	ppb	2.140	133.99	49000	2000	
U	238	2	193	1.491	ppb	1.491	140.47	34577	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1330742	5.67	832675	159.82	60	120	IS Failed
Sc (IS)	45	1	HMI H2	33280963	7.02	22691138	146.67	60	120	IS Failed
Sc (IS)	45	2	HMI He	2168582	1.84	1329086	163.16	60	120	IS Failed
Sc (IS)	45	3	No Gas	69771177	1.61	40115962	173.92	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16855211	6.95	11471213	146.93	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2623613	1.06	1582627	165.78	60	120	IS Failed
In Internal standard	115	2	HMI He	7818797	2.30	4772525	163.83	60	120	IS Failed
Ho-165	165	2	HMI He	29906260	2.02	18341213	163.05	60	120	IS Failed
Ir (IS)	193	2	HMI He	22350030	3.70	14005392	159.58	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165793-b-8-a
Data File Name	122SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:28:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.433	ppb	-15.433	-24.72	3456476	50000	
Be	9	1	6	-0.125	ppb	-0.125	-35.60	17	2000	
B	11	1	6	25.408	ppb	25.408	1.11	7752	2000	
Na	23	2	45	19819.628	ppb	19819.628	0.75	5229150	400000	
Mg	24	2	45	16267.468	ppb	16267.468	0.89	2064492	400000	
Al	27	2	45	8.520	ppb	8.520	14.27	733	400000	
Si	28	2	45	1213.783	ppb	1213.783	1.56	282769	10000	
P	31	2	45	113.679	ppb	113.679	9.21	523	10000	
K	39	2	45	1667.092	ppb	1667.092	2.62	206583	400000	
Ca	40	1	45	52938.426	ppb	52938.426	0.74	213030003	400000	
Ti	47	2	45	0.088	ppb	0.088	173.21	3	4000	
V	51	2	72	0.997	ppb	0.997	20.23	2567	2000	
Cr	52	2	72	0.307	ppb	0.307	29.34	1567	5000	
Mn	55	2	72	0.532	ppb	0.532	6.82	567	10000	
Fe	56	1	72	18.422	ppb	18.422	1.20	208829	10000	
(Fe)	57	2	72	18.053	ppb	18.053	15.69	1150	400000	
Co	59	2	72	0.053	ppb	0.053	23.75	197	2000	
Ni	60	2	72	0.234	ppb	0.234	45.22	663	5000	
Cu	63	2	72	1.341	ppb	1.341	8.97	4331	5000	
Zn	66	2	72	21.436	ppb	21.436	5.25	10550	5000	
As	75	2	72	2.171	ppb	2.171	7.83	883	2000	
Se	78	1	72	0.642	ppb	0.642	13.58	219	2000	
Sr	88	2	72	180.656	ppb	180.656	0.40	181203	4000	
Zr	90	2	72	-0.789	ppb	-0.789	-16.07	613	1000	
Nb	93	2	72	70.386	ppb	70.386	49.89	27	200	
Mo	95	2	115	0.416	ppb	0.416	9.19	550	2000	
Pd	105	2	115	-406.738	ppb	-406.738	-26.26	57	100	
Ag	107	2	115	0.009	ppb	0.009	135.44	107	100	
Cd	111	2	115	-0.002	ppb	-0.002	-18.39	10	2000	
Sn	120	2	115	0.409	ppb	0.409	23.48	1177	2000	
Sb	121	2	115	0.230	ppb	0.230	23.09	413	1000	
Ba	137	2	115	387.400	ppb	387.400	2.16	184781	5000	
W	182	2	165	1.846	ppb	1.846	4.41	11468	100	
Pt	195	2	165	-15.415	ppb	-15.415	-319.04	40	100	
Tl	205	2	165	-0.153	ppb	-0.153	-7.17	390	2000	
Pb	208	2	165	0.087	ppb	0.087	7.48	2977	5000	
Th	232	2	193	7.454	ppb	7.454	13.29	87294	2000	
U	238	2	193	0.013	ppb	0.013	44.33	583	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	784374	0.16	832675	94.20	60	120	
Sc (IS)	45	1	HMI H2	22549467	0.25	22691138	99.38	60	120	
Sc (IS)	45	2	HMI He	1474892	1.37	1329086	110.97	60	120	
Sc (IS)	45	3	No Gas	40933666	0.50	40115962	102.04	60	120	
Ge Internal standard	72	1	HMI H2	11625344	0.25	11471213	101.34	60	120	
Ge Internal standard	72	2	HMI He	1762513	0.94	1582627	111.37	60	120	
In Internal standard	115	2	HMI He	5218141	1.83	4772525	109.34	60	120	
Ho-165	165	2	HMI He	19162278	0.43	18341213	104.48	60	120	
Ir (IS)	193	2	HMI He	13648675	0.43	14005392	97.45	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-9-a
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:32:43-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.401	ppb	-15.401	-12.17	3481440	50000	
Be	9	1	6	-0.113	ppb	-0.113	-46.24	20	2000	
B	11	1	6	26.464	ppb	26.464	3.30	7749	2000	
Na	23	2	45	19037.054	ppb	19037.054	1.65	4879132	400000	
Mg	24	2	45	21789.606	ppb	21789.606	0.41	2685908	400000	
Al	27	2	45	15.659	ppb	15.659	24.81	953	400000	
Si	28	2	45	1452.813	ppb	1452.813	2.33	326795	10000	
P	31	2	45	138.891	ppb	138.891	14.60	605	10000	
K	39	2	45	1652.340	ppb	1652.340	3.67	199236	400000	
Ca	40	1	45	68612.080	ppb	68612.080	1.11	271319776	400000	
Ti	47	2	45	0.365	ppb	0.365	86.62	13	4000	
V	51	2	72	1.506	ppb	1.506	6.62	3287	2000	
Cr	52	2	72	0.460	ppb	0.460	8.93	1837	5000	
Mn	55	2	72	3.102	ppb	3.102	5.15	2724	10000	
Fe	56	1	72	381.216	ppb	381.216	0.19	2940859	10000	
(Fe)	57	2	72	342.698	ppb	342.698	3.28	13836	400000	
Co	59	2	72	0.042	ppb	0.042	48.90	157	2000	
Ni	60	2	72	0.304	ppb	0.304	57.23	717	5000	
Cu	63	2	72	10.766	ppb	10.766	5.04	28105	5000	
Zn	66	2	72	15.746	ppb	15.746	3.99	7739	5000	
As	75	2	72	3.451	ppb	3.451	6.58	1335	2000	
Se	78	1	72	0.345	ppb	0.345	24.94	124	2000	
Sr	88	2	72	317.315	ppb	317.315	1.47	311268	4000	
Zr	90	2	72	5.120	ppb	5.120	14.08	1984	1000	
Nb	93	2	72	72.491	ppb	72.491	108.69	27	200	
Mo	95	2	115	0.285	ppb	0.285	30.00	380	2000	
Pd	105	2	115	-455.806	ppb	-455.806	-52.97	50	100	
Ag	107	2	115	0.001	ppb	0.001	502.23	73	100	
Cd	111	2	115	0.005	ppb	0.005	433.97	13	2000	
Sn	120	2	115	0.408	ppb	0.408	36.09	1143	2000	
Sb	121	2	115	0.115	ppb	0.115	14.85	220	1000	
Ba	137	2	115	488.633	ppb	488.633	1.29	227109	5000	
W	182	2	165	1.969	ppb	1.969	7.52	11595	100	
Pt	195	2	165	88.152	ppb	88.152	52.76	73	100	
Tl	205	2	165	-0.156	ppb	-0.156	-3.54	353	2000	
Pb	208	2	165	0.256	ppb	0.256	5.75	4727	5000	
Th	232	2	193	4.064	ppb	4.064	14.44	49355	2000	
U	238	2	193	1.610	ppb	1.610	1.35	22728	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	756459	0.28	832675	90.85	60	120	
Sc (IS)	45	1	HMI H2	22160788	0.23	22691138	97.66	60	120	
Sc (IS)	45	2	HMI He	1432588	1.42	1329086	107.79	60	120	
Sc (IS)	45	3	No Gas	41225553	0.86	40115962	102.77	60	120	
Ge Internal standard	72	1	HMI H2	11414573	0.35	11471213	99.51	60	120	
Ge Internal standard	72	2	HMI He	1724125	0.78	1582627	108.94	60	120	
In Internal standard	115	2	HMI He	5083857	0.63	4772525	106.52	60	120	
Ho-165	165	2	HMI He	18502342	0.87	18341213	100.88	60	120	
Ir (IS)	193	2	HMI He	13163858	0.51	14005392	93.99	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-10-a
Data File Name	124SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:36:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-28.742	ppb	-28.742	-11.65	3352004	50000	
Be	9	1	6	-0.123	ppb	-0.123	-70.92	17	2000	
B	11	1	6	37.176	ppb	37.176	2.49	10537	2000	
Na	23	2	45	28049.463	ppb	28049.463	1.68	7215212	400000	
Mg	24	2	45	11138.064	ppb	11138.064	1.82	1380236	400000	
Al	27	2	45	23.843	ppb	23.843	8.14	1237	400000	
Si	28	2	45	734.296	ppb	734.296	1.39	170930	10000	
P	31	2	45	132.764	ppb	132.764	3.07	585	10000	
K	39	2	45	2627.254	ppb	2627.254	1.28	290792	400000	
Ca	40	1	45	33750.647	ppb	33750.647	0.73	134895718	400000	
Ti	47	2	45	0.725	ppb	0.725	94.38	27	4000	
V	51	2	72	0.093	ppb	0.093	130.30	1153	2000	
Cr	52	2	72	0.723	ppb	0.723	12.93	2394	5000	
Mn	55	2	72	1.598	ppb	1.598	11.98	1473	10000	
Fe	56	1	72	15.508	ppb	15.508	0.86	184497	10000	
(Fe)	57	2	72	13.603	ppb	13.603	9.77	963	400000	
Co	59	2	72	0.056	ppb	0.056	9.45	207	2000	
Ni	60	2	72	0.459	ppb	0.459	7.36	877	5000	
Cu	63	2	72	6.450	ppb	6.450	2.65	17406	5000	
Zn	66	2	72	19.517	ppb	19.517	3.49	9583	5000	
As	75	2	72	0.466	ppb	0.466	6.20	240	2000	
Se	78	1	72	1.485	ppb	1.485	10.25	476	2000	
Sr	88	2	72	127.295	ppb	127.295	1.64	126630	4000	
Zr	90	2	72	0.494	ppb	0.494	106.79	913	1000	
Nb	93	2	72	30.285	ppb	30.285	156.76	13	200	
Mo	95	2	115	0.195	ppb	0.195	10.89	273	2000	
Pd	105	2	115	-639.953	ppb	-639.953	-28.50	30	100	
Ag	107	2	115	-0.010	ppb	-0.010	-50.39	27	100	
Cd	111	2	115	-0.019	ppb	-0.019	0.00	0	2000	
Sn	120	2	115	0.074	ppb	0.074	66.73	667	2000	
Sb	121	2	115	0.100	ppb	0.100	28.13	197	1000	
Ba	137	2	115	144.175	ppb	144.175	3.19	67371	5000	
W	182	2	165	2.184	ppb	2.184	3.39	12512	100	
Pt	195	2	165	18.215	ppb	18.215	322.45	50	100	
Tl	205	2	165	-0.160	ppb	-0.160	-4.41	323	2000	
Pb	208	2	165	0.043	ppb	0.043	22.16	2390	5000	
Th	232	2	193	2.730	ppb	2.730	12.85	35665	2000	
U	238	2	193	1.209	ppb	1.209	2.71	17174	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	757867	0.46	832675	91.02	60	120	
Sc (IS)	45	1	HMI H2	22392710	0.52	22691138	98.68	60	120	
Sc (IS)	45	2	HMI He	1439904	0.56	1329086	108.34	60	120	
Sc (IS)	45	3	No Gas	41137822	1.01	40115962	102.55	60	120	
Ge Internal standard	72	1	HMI H2	11503358	0.45	11471213	100.28	60	120	
Ge Internal standard	72	2	HMI He	1747971	1.52	1582627	110.45	60	120	
In Internal standard	115	2	HMI He	5107529	0.12	4772525	107.02	60	120	
Ho-165	165	2	HMI He	18523644	0.52	18341213	100.99	60	120	
Ir (IS)	193	2	HMI He	13167349	0.89	14005392	94.02	60	120	

Sample Report

Sample Table

Sample Name	280-165793-b-11-a
Data File Name	125SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:40:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585030 6020A DOD
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-13.558	ppb	-13.558	-28.38	3511349	50000	
Be	9	1	6	-0.123	ppb	-0.123	-14.30	17	2000	
B	11	1	6	24.145	ppb	24.145	3.22	7178	2000	
Na	23	2	45	19701.562	ppb	19701.562	1.04	5018286	400000	
Mg	24	2	45	17925.602	ppb	17925.602	1.04	2196286	400000	
Al	27	2	45	13.335	ppb	13.335	18.60	870	400000	
Si	28	2	45	1536.901	ppb	1536.901	0.77	343069	10000	
P	31	2	45	141.798	ppb	141.798	8.12	613	10000	
K	39	2	45	1610.069	ppb	1610.069	1.10	194173	400000	
Ca	40	1	45	61407.224	ppb	61407.224	0.73	243367410	400000	
Ti	47	2	45	0.454	ppb	0.454	124.88	17	4000	
V	51	2	72	1.491	ppb	1.491	12.99	3244	2000	
Cr	52	2	72	0.324	ppb	0.324	21.94	1553	5000	
Mn	55	2	72	0.658	ppb	0.658	16.28	657	10000	
Fe	56	1	72	42.391	ppb	42.391	1.25	386807	10000	
(Fe)	57	2	72	42.388	ppb	42.388	9.16	2064	400000	
Co	59	2	72	0.032	ppb	0.032	19.68	123	2000	
Ni	60	2	72	0.225	ppb	0.225	47.66	637	5000	
Cu	63	2	72	1.192	ppb	1.192	6.68	3834	5000	
Zn	66	2	72	8.073	ppb	8.073	5.17	4234	5000	
As	75	2	72	2.936	ppb	2.936	5.37	1138	2000	
Se	78	1	72	0.483	ppb	0.483	24.98	167	2000	
Sr	88	2	72	153.160	ppb	153.160	1.25	149270	4000	
Zr	90	2	72	-0.197	ppb	-0.197	-44.73	733	1000	
Nb	93	2	72	41.325	ppb	41.325	158.84	17	200	
Mo	95	2	115	0.382	ppb	0.382	24.35	497	2000	
Pd	105	2	115	-639.210	ppb	-639.210	-14.27	30	100	
Ag	107	2	115	-0.005	ppb	-0.005	-27.47	47	100	
Cd	111	2	115	0.010	ppb	0.010	350.84	17	2000	
Sn	120	2	115	0.152	ppb	0.152	11.96	777	2000	
Sb	121	2	115	0.084	ppb	0.084	32.17	170	1000	
Ba	137	2	115	529.724	ppb	529.724	0.54	246714	5000	
W	182	2	165	2.116	ppb	2.116	8.24	12252	100	
Pt	195	2	165	37.991	ppb	37.991	120.38	57	100	
Tl	205	2	165	-0.157	ppb	-0.157	-3.63	347	2000	
Pb	208	2	165	0.111	ppb	0.111	20.64	3144	5000	
Th	232	2	193	1.726	ppb	1.726	16.75	25343	2000	
U	238	2	193	0.770	ppb	0.770	2.09	11075	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	759393	0.98	832675	91.20	60	120	
Sc (IS)	45	1	HMI H2	22209200	0.62	22691138	97.88	60	120	
Sc (IS)	45	2	HMI He	1423810	1.05	1329086	107.13	60	120	
Sc (IS)	45	3	No Gas	41376143	0.67	40115962	103.14	60	120	
Ge Internal standard	72	1	HMI H2	11444716	0.24	11471213	99.77	60	120	
Ge Internal standard	72	2	HMI He	1712414	0.13	1582627	108.20	60	120	
In Internal standard	115	2	HMI He	5094330	0.27	4772525	106.74	60	120	
Ho-165	165	2	HMI He	18560546	0.39	18341213	101.20	60	120	
Ir (IS)	193	2	HMI He	13175070	0.31	14005392	94.07	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	126_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:43:58-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	85.729	ppb	5.218	4300081	100	85.7	90	110	>+\-10%
Be	9	1	6	52.232	ppb	0.451	17676	50	104.5	90	110	
B	11	1	6	525.334	ppb	0.548	138837	50	1050.7	90	110	>+\-10%
Na	23	2	45	55090.770	ppb	1.310	13854540	51000	108.0	90	110	
Mg	24	2	45	11979.613	ppb	2.130	1453529	11000	108.9	90	110	
Al	27	2	45	1039.064	ppb	2.035	34973	1000	103.9	90	110	
Si	28	2	45	74.540	ppb	4.762	25690	500	14.9	90	110	>+\-10%
P	31	2	45	2633.610	ppb	2.391	10079	2500	105.3	90	110	
K	39	2	45	11297.232	ppb	0.354	1072867	11000	102.7	90	110	
Ca	40	1	45	11944.990	ppb	1.007	47345668	11000	108.6	90	110	
(Ca)	44	1	45	12707.726	ppb	1.162	1506411	11000	115.5	90	110	>+\-10%
Ti	47	2	45	48.595	ppb	6.588	1757	50	97.2	90	110	
V	51	2	72	52.003	ppb	1.120	79950	50	104.0	90	110	
Cr	52	2	72	50.418	ppb	0.933	101080	50	100.8	90	110	
Mn	55	2	72	50.961	ppb	3.512	43016	50	101.9	90	110	
Fe	56	1	72	1083.406	ppb	0.589	8279508	1000	108.3	90	110	
(Fe)	56	2	72	1024.208	ppb	0.289	1704645	1000	102.4	90	110	
(Fe)	57	2	72	963.459	ppb	0.055	38044	1000	96.3	90	110	
Co	59	2	72	49.225	ppb	0.250	162566	50	98.5	90	110	
Ni	60	2	72	47.990	ppb	1.916	46178	50	96.0	90	110	
Cu	63	2	72	48.051	ppb	1.389	122171	50	96.1	90	110	
Zn	66	2	72	52.759	ppb	3.230	24445	50	105.5	90	110	
As	75	2	72	51.941	ppb	1.378	19131	50	103.9	90	110	
Se	78	1	72	50.760	ppb	1.833	15608	50	101.5	90	110	
Sr	88	2	72	106.173	ppb	1.109	103919	100	106.2	90	110	
Zr	90	2	72	5.132	ppb	3.175	1980	50	10.3	90	110	>+\-10%
Nb	93	2	72	72.836	ppb	199.836	27	100	72.8	90	110	>+\-10%
Mo	95	2	115	52.511	ppb	0.824	62213	50	105.0	90	110	
Pd	105	2	115	1894.984	ppb	1.940	303	50	3790.0	90	110	>+\-10%
Ag	107	2	115	50.185	ppb	0.943	197029	50	100.4	90	110	
Cd	111	2	115	50.957	ppb	0.947	28863	50	101.9	90	110	
Sn	120	2	115	54.281	ppb	1.028	77890	50	108.6	90	110	
Sb	121	2	115	54.280	ppb	0.419	85988	50	108.6	90	110	
Ba	137	2	115	54.453	ppb	3.791	25134	50	108.9	90	110	
W	182	2	165	53.401	ppb	1.348	228327	50	106.8	90	110	
Pt	195	2	165	188.286	ppb	24.795	107	50	376.6	90	110	>+\-10%
Tl	205	2	165	51.199	ppb	0.203	411033	50	102.4	90	110	
Pb	208	2	165	51.942	ppb	1.269	571358	50	103.9	90	110	
Th	232	2	193	42.469	ppb	5.331	452082	50	84.9	90	110	>+\-10%
U	238	2	193	49.580	ppb	1.045	701239	50	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	768278	0.47	832675	92.27	60	120	
Sc (IS)	45	1	HMI H2	22189528	0.39	22691138	97.79	60	120	
Sc (IS)	45	2	HMI He	1410160	1.61	1329086	106.10	60	120	
Sc (IS)	45	3	No Gas	40220069	1.07	40115962	100.26	60	120	
Ge Internal standard	72	1	HMI H2	11475004	0.52	11471213	100.03	60	120	
Ge Internal standard	72	2	HMI He	1719386	0.49	1582627	108.64	60	120	
In Internal standard	115	2	HMI He	5037420	0.65	4772525	105.55	60	120	
Ho-165	165	2	HMI He	18448954	0.38	18341213	100.59	60	120	
Ir (IS)	193	2	HMI He	13406223	0.25	14005392	95.72	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	127_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:47:42-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-17.801	ppb	-19.8	3440408	10	
Be	9	1	6	-0.145	ppb	-19.7	10	0.5	
B	11	1	6	8.823	ppb	9.0	3354	0.5	>RL
Na	23	2	45	13.531	ppb	7.8	26785	25	
Mg	24	2	45	3.559	ppb	20.3	953	25	
Al	27	2	45	-2.663	ppb	-98.3	330	15	
K	39	2	45	47.011	ppb	21.3	50332	50	
Ti	47	2	45	0.184	ppb	173.2	7	0.5	
V	51	2	72	-0.173	ppb	-27.7	723	1	
Cr	52	2	72	-0.023	ppb	-235.4	863	1	
Mn	55	2	72	0.115	ppb	37.4	200	0.5	
(Fe)	57	2	72	-0.572	ppb	-585.9	390	25	
Co	59	2	72	0.019	ppb	58.8	80	0.5	
Ni	60	2	72	-0.135	ppb	-32.7	293	1	
Cu	63	2	72	-0.054	ppb	-103.4	697	1	
Zn	66	2	72	0.030	ppb	482.3	610	5	
As	75	2	72	-0.027	ppb	-284.7	54	1	
Se	78	1	72	0.048	ppb	109.5	33	1	
Sr	88	2	72	0.035	ppb	78.0	110	0.5	
Zr	90	2	72	-0.326	ppb	-132.5	700	1	
Nb	93	2	72	31.026	ppb	155.5	13	2	>RL
Mo	95	2	115	0.402	ppb	27.3	517	0.5	
Pd	105	2	115	-729.262	ppb	-12.7	20	1	
Ag	107	2	115	0.024	ppb	108.0	160	1	
Cd	111	2	115	0.016	ppb	184.4	20	0.5	
Sn	120	2	115	0.673	ppb	15.3	1517	1	
Sb	121	2	115	0.221	ppb	7.3	387	0.6	
Ba	137	2	115	0.006	ppb	673.5	70	0.5	
W	182	2	165	0.368	ppb	25.8	4828	1	
Pt	195	2	165	38.497	ppb	90.6	57	1	>RL
Tl	205	2	165	-0.111	ppb	-7.3	713	0.1	
Pb	208	2	165	0.010	ppb	26.0	2027	0.5	
Th	232	2	193	1.419	ppb	2.5	22782	1	>RL
U	238	2	193	0.071	ppb	5.5	1410	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	795708	0.77	832675	95.56	60	120	
Sc (IS)	45	1	HMI H2	22340260	0.92	22691138	98.45	60	120	
Sc (IS)	45	2	HMI He	1412911	0.93	1329086	106.31	60	120	
Sc (IS)	45	3	No Gas	40998930	0.63	40115962	102.20	60	120	
Ge Internal standard	72	1	HMI H2	11432069	0.06	11471213	99.66	60	120	
Ge Internal standard	72	2	HMI He	1703785	0.58	1582627	107.66	60	120	
In Internal standard	115	2	HMI He	5053867	0.71	4772525	105.90	60	120	
Ho-165	165	2	HMI He	18501566	0.51	18341213	100.87	60	120	
Ir (IS)	193	2	HMI He	13525575	0.54	14005392	96.57	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	128LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:51:25-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-3.924	ppb	-141.468	3591531	50	-7.8	70	130	>+/-30%
Be	9	1	6	0.624	ppb	11.730	277	1	62.4	70	130	>+/-30%
Na	23	2	45	41.277	ppb	2.554	34192	50	82.6	70	130	
Mg	24	2	45	49.024	ppb	7.801	6561	50	98.0	70	130	
Al	27	2	45	48.160	ppb	12.493	2050	50	96.3	70	130	
K	39	2	45	144.145	ppb	9.850	59930	100	144.1	70	130	>+/-30%
V	51	2	72	5.117	ppb	1.720	8773	5	102.3	70	130	
Cr	52	2	72	1.882	ppb	4.999	4661	2	94.1	70	130	
Mn	55	2	72	1.259	ppb	4.141	1167	1	125.9	70	130	
(Fe)	57	2	72	48.937	ppb	3.964	2330	50	97.9	70	130	
Co	59	2	72	1.083	ppb	2.765	3597	1	108.3	70	130	
Ni	60	2	72	1.930	ppb	5.547	2267	2	96.5	70	130	
Cu	63	2	72	2.071	ppb	4.220	6078	2	103.6	70	130	
Zn	66	2	72	9.262	ppb	1.090	4794	10	92.6	70	130	
As	75	2	72	5.337	ppb	6.149	2026	5	106.7	70	130	
Se	78	1	72	5.432	ppb	3.227	1696	5	108.6	70	130	
Sr	88	2	72	1.222	ppb	6.249	1273	1	122.2	70	130	
Zr	90	2	72	1.155	ppb	54.412	1053	0.5	230.9	70	130	>+/-30%
Nb	93	2	72	62.010	ppb	58.623	23	2	3100.5	70	130	>+/-30%
Mo	95	2	115	2.045	ppb	5.692	2510	2	102.2	70	130	
Pd	105	2	115	-641.553	ppb	-24.503	30	1	-64155.3	70	130	>+/-30%
Ag	107	2	115	0.991	ppb	2.372	4037	1	99.1	70	130	
Cd	111	2	115	0.876	ppb	9.217	517	1	87.6	70	130	
Sn	120	2	115	11.353	ppb	4.785	17070	10	113.5	70	130	
Sb	121	2	115	2.148	ppb	2.026	3507	2	107.4	70	130	
Ba	137	2	115	1.267	ppb	19.882	663	1	126.7	70	130	
W	182	2	165	5.286	ppb	1.874	25910	1	528.6	70	130	>+/-30%
Pt	195	2	165	-2.742	ppb	-619.228	43	1	-274.2	70	130	>+/-30%
Tl	205	2	165	0.948	ppb	3.318	9313	1	94.8	70	130	
Pb	208	2	165	1.105	ppb	1.384	14230	1	110.5	70	130	
Th	232	2	193	6.039	ppb	5.244	72954	2	302.0	70	130	>+/-30%
U	238	2	193	0.987	ppb	0.431	14745	1	98.7	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	790646	0.51	832675	94.95	60	120	
Sc (IS)	45	1	HMI H2	22449581	0.13	22691138	98.94	60	120	
Sc (IS)	45	2	HMI He	1430725	0.77	1329086	107.65	60	120	
Sc (IS)	45	3	No Gas	41282944	0.95	40115962	102.91	60	120	
Ge Internal standard	72	1	HMI H2	11538534	0.61	11471213	100.59	60	120	
Ge Internal standard	72	2	HMI He	1721432	0.32	1582627	108.77	60	120	
In Internal standard	115	2	HMI He	5140460	0.08	4772525	107.71	60	120	
Ho-165	165	2	HMI He	18717871	0.58	18341213	102.05	60	120	
Ir (IS)	193	2	HMI He	13788816	0.40	14005392	98.45	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:55:11-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.530	ppb	-15.530	-14.15	3446187	50000	
Be	9	1	6	-0.125	ppb	-0.125	-48.82	17	2000	
B	11	1	6	2.170	ppb	2.170	24.37	1520	2000	
Na	23	2	45	-5.293	ppb	-5.293	-34.11	21861	400000	
Mg	24	2	45	4.090	ppb	4.090	16.56	1010	400000	
Al	27	2	45	3.066	ppb	3.066	33.95	517	400000	
Si	28	2	45	15.755	ppb	15.755	25.79	12982	10000	
P	31	2	45	-0.182	ppb	-0.182	-1436.93	67	10000	
K	39	2	45	69.529	ppb	69.529	15.33	51937	400000	
Ca	40	1	45	20.379	ppb	20.379	1.44	139230	400000	
Ti	47	2	45	0.278	ppb	0.278	100.24	10	4000	
V	51	2	72	-0.222	ppb	-0.222	-15.85	647	2000	
Cr	52	2	72	-0.041	ppb	-0.041	-67.15	823	5000	
Mn	55	2	72	0.308	ppb	0.308	47.99	360	10000	
Fe	56	1	72	16.924	ppb	16.924	2.08	192704	10000	
(Fe)	57	2	72	15.722	ppb	15.722	18.40	1017	400000	
Co	59	2	72	0.018	ppb	0.018	25.56	77	2000	
Ni	60	2	72	-0.137	ppb	-0.137	-9.28	290	5000	
Cu	63	2	72	0.013	ppb	0.013	342.60	863	5000	
Zn	66	2	72	0.841	ppb	0.841	15.69	970	5000	
As	75	2	72	-0.057	ppb	-0.057	-76.19	43	2000	
Se	78	1	72	-0.008	ppb	-0.008	-435.37	16	2000	
Sr	88	2	72	0.036	ppb	0.036	78.41	110	4000	
Zr	90	2	72	-0.244	ppb	-0.244	-220.68	717	1000	
Nb	93	2	72	115.835	ppb	115.835	54.75	40	200	
Mo	95	2	115	0.032	ppb	0.032	100.87	77	2000	
Pd	105	2	115	-667.775	ppb	-667.775	-28.86	27	100	
Ag	107	2	115	0.010	ppb	0.010	97.33	107	100	
Cd	111	2	115	-0.001	ppb	-0.001	-1405.72	10	2000	
Sn	120	2	115	0.296	ppb	0.296	43.97	980	2000	
Sb	121	2	115	0.063	ppb	0.063	19.71	137	1000	
Ba	137	2	115	0.172	ppb	0.172	58.72	147	5000	
W	182	2	165	-0.009	ppb	-0.009	-976.85	3220	100	
Pt	195	2	165	49.038	ppb	49.038	162.10	60	100	
Tl	205	2	165	-0.153	ppb	-0.153	-8.66	377	2000	
Pb	208	2	165	0.007	ppb	0.007	217.41	1987	5000	
Th	232	2	193	0.808	ppb	0.808	3.94	16506	2000	
U	238	2	193	0.008	ppb	0.008	45.17	517	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	782754	0.42	832675	94.00	60	120	
Sc (IS)	45	1	HMI H2	21968632	0.23	22691138	96.82	60	120	
Sc (IS)	45	2	HMI He	1400906	0.96	1329086	105.40	60	120	
Sc (IS)	45	3	No Gas	40820962	0.88	40115962	101.76	60	120	
Ge Internal standard	72	1	HMI H2	11353250	0.41	11471213	98.97	60	120	
Ge Internal standard	72	2	HMI He	1697255	0.69	1582627	107.24	60	120	
In Internal standard	115	2	HMI He	5067406	0.61	4772525	106.18	60	120	
Ho-165	165	2	HMI He	18443225	0.22	18341213	100.56	60	120	
Ir (IS)	193	2	HMI He	13671079	0.54	14005392	97.61	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	130SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T17:58:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-17.784	ppb	-17.784	-23.07	3409895	50000	
Be	9	1	6	-0.134	ppb	-0.134	-12.66	13	2000	
B	11	1	6	1.676	ppb	1.676	34.32	1387	2000	
Na	23	2	45	-11.179	ppb	-11.179	-19.28	20483	400000	
Mg	24	2	45	4.083	ppb	4.083	9.46	1013	400000	
Al	27	2	45	3.683	ppb	3.683	71.60	540	400000	
Si	28	2	45	16.424	ppb	16.424	18.63	13179	10000	
P	31	2	45	-0.490	ppb	-0.490	-1118.71	67	10000	
K	39	2	45	52.840	ppb	52.840	41.40	50633	400000	
Ca	40	1	45	18.239	ppb	18.239	2.13	131322	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	-0.209	ppb	-0.209	-42.40	663	2000	
Cr	52	2	72	0.001	ppb	0.001	6815.99	903	5000	
Mn	55	2	72	0.395	ppb	0.395	18.26	430	10000	
Fe	56	1	72	16.361	ppb	16.361	0.94	188278	10000	
(Fe)	57	2	72	15.857	ppb	15.857	14.51	1017	400000	
Co	59	2	72	0.018	ppb	0.018	36.00	77	2000	
Ni	60	2	72	-0.036	ppb	-0.036	-126.22	383	5000	
Cu	63	2	72	-0.008	ppb	-0.008	-1170.53	807	5000	
Zn	66	2	72	0.695	ppb	0.695	17.95	900	5000	
As	75	2	72	-0.084	ppb	-0.084	-30.31	33	2000	
Se	78	1	72	0.010	ppb	0.010	210.62	21	2000	
Sr	88	2	72	0.036	ppb	0.036	151.73	110	4000	
Zr	90	2	72	-0.807	ppb	-0.807	-9.86	583	1000	
Nb	93	2	72	10.038	ppb	10.038	366.44	7	200	
Mo	95	2	115	0.010	ppb	0.010	153.47	50	2000	
Pd	105	2	115	-482.075	ppb	-482.075	-22.12	47	100	
Ag	107	2	115	-0.002	ppb	-0.002	-432.69	60	100	
Cd	111	2	115	-0.001	ppb	-0.001	-1666.31	10	2000	
Sn	120	2	115	0.167	ppb	0.167	9.32	790	2000	
Sb	121	2	115	0.018	ppb	0.018	179.33	63	1000	
Ba	137	2	115	0.144	ppb	0.144	67.13	133	5000	
W	182	2	165	-0.079	ppb	-0.079	-47.57	2944	100	
Pt	195	2	165	136.775	ppb	136.775	94.24	90	100	
Tl	205	2	165	-0.156	ppb	-0.156	-2.50	357	2000	
Pb	208	2	165	0.014	ppb	0.014	160.49	2077	5000	
Th	232	2	193	0.573	ppb	0.573	9.31	14017	2000	
U	238	2	193	-0.002	ppb	-0.002	-355.98	373	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	781930	0.43	832675	93.91	60	120	
Sc (IS)	45	1	HMI H2	22048414	1.03	22691138	97.17	60	120	
Sc (IS)	45	2	HMI He	1406981	1.40	1329086	105.86	60	120	
Sc (IS)	45	3	No Gas	40633104	0.86	40115962	101.29	60	120	
Ge Internal standard	72	1	HMI H2	11341068	0.66	11471213	98.87	60	120	
Ge Internal standard	72	2	HMI He	1688486	0.48	1582627	106.69	60	120	
In Internal standard	115	2	HMI He	5041821	0.60	4772525	105.64	60	120	
Ho-165	165	2	HMI He	18550455	0.48	18341213	101.14	60	120	
Ir (IS)	193	2	HMI He	13683180	0.34	14005392	97.70	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	131SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:02:40-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.192	ppb	-15.192	-24.45	3445862	50000	
Be	9	1	6	-0.164	ppb	-0.164	-10.13	3	2000	
B	11	1	6	1.274	ppb	1.274	45.51	1300	2000	
Na	23	2	45	-9.818	ppb	-9.818	-49.09	20847	400000	
Mg	24	2	45	3.920	ppb	3.920	22.54	993	400000	
Al	27	2	45	3.071	ppb	3.071	57.11	520	400000	
Si	28	2	45	11.298	ppb	11.298	6.36	12098	10000	
P	31	2	45	0.240	ppb	0.240	816.37	69	10000	
K	39	2	45	45.719	ppb	45.719	6.34	50061	400000	
Ca	40	1	45	17.969	ppb	17.969	0.58	132476	400000	
Ti	47	2	45	0.278	ppb	0.278	173.21	10	4000	
V	51	2	72	-0.228	ppb	-0.228	-7.04	640	2000	
Cr	52	2	72	-0.014	ppb	-0.014	-434.33	880	5000	
Mn	55	2	72	0.295	ppb	0.295	21.12	350	10000	
Fe	56	1	72	16.251	ppb	16.251	1.81	190200	10000	
(Fe)	57	2	72	16.756	ppb	16.756	20.72	1060	400000	
Co	59	2	72	0.017	ppb	0.017	73.04	73	2000	
Ni	60	2	72	-0.071	ppb	-0.071	-20.61	353	5000	
Cu	63	2	72	-0.018	ppb	-0.018	-222.19	787	5000	
Zn	66	2	72	0.523	ppb	0.523	44.87	830	5000	
As	75	2	72	-0.061	ppb	-0.061	-81.34	42	2000	
Se	78	1	72	-0.022	ppb	-0.022	-103.37	12	2000	
Sr	88	2	72	0.066	ppb	0.066	67.93	140	4000	
Zr	90	2	72	-0.306	ppb	-0.306	-180.88	703	1000	
Nb	93	2	72	52.228	ppb	52.228	0.78	20	200	
Mo	95	2	115	0.004	ppb	0.004	460.27	43	2000	
Pd	105	2	115	-421.804	ppb	-421.804	-70.14	53	100	
Ag	107	2	115	0.007	ppb	0.007	117.86	93	100	
Cd	111	2	115	-0.007	ppb	-0.007	-145.43	7	2000	
Sn	120	2	115	0.154	ppb	0.154	6.24	773	2000	
Sb	121	2	115	0.026	ppb	0.026	37.59	77	1000	
Ba	137	2	115	0.028	ppb	0.028	203.30	80	5000	
W	182	2	165	-0.079	ppb	-0.079	-37.50	2930	100	
Pt	195	2	165	-10.928	ppb	-10.928	-724.36	40	100	
Tl	205	2	165	-0.167	ppb	-0.167	-2.95	267	2000	
Pb	208	2	165	0.005	ppb	0.005	81.02	1967	5000	
Th	232	2	193	0.547	ppb	0.547	12.44	13707	2000	
U	238	2	193	0.000	ppb	0.000	-39240.03	397	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	794777	0.31	832675	95.45	60	120	
Sc (IS)	45	1	HMI H2	22423969	0.21	22691138	98.82	60	120	
Sc (IS)	45	2	HMI He	1408586	1.75	1329086	105.98	60	120	
Sc (IS)	45	3	No Gas	40781672	0.69	40115962	101.66	60	120	
Ge Internal standard	72	1	HMI H2	11506929	0.04	11471213	100.31	60	120	
Ge Internal standard	72	2	HMI He	1701395	0.64	1582627	107.50	60	120	
In Internal standard	115	2	HMI He	5055038	0.40	4772525	105.92	60	120	
Ho-165	165	2	HMI He	18473879	0.40	18341213	100.72	60	120	
Ir (IS)	193	2	HMI He	13656994	0.70	14005392	97.51	60	120	

Calibration Blank Report

Sample Table

Sample Name	icis-7343166
Data File Name	132CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:06:24-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	3465355	0.00
Be	9	1	HMI H2	10	1000.00
B	11	1	HMI H2	1240	0.23
Na	23	2	HMI He	17950	0.01
Mg	24	2	HMI He	570	1.60
Al	27	2	HMI He	267	1.62
K	39	2	HMI He	49797	0.00
Ti	47	2	HMI He	0	#VALUE!
V	51	2	HMI He	667	1.37
Cr	52	2	HMI He	670	2.48
Mn	55	2	HMI He	153	20.98
(Fe)	57	2	HMI He	317	6.64
Co	59	2	HMI He	43	221.72
Ni	60	2	HMI He	257	9.27
Cu	63	2	HMI He	537	2.65
Zn	66	2	HMI He	393	2.08
As	75	2	HMI He	39	67.67
Se	78	1	HMI H2	15	284.04
Sr	88	2	HMI He	130	25.79
Zr	90	2	HMI He	687	2.48
Nb	93	2	HMI He	10	1000.00
Mo	95	2	HMI He	43	30.75
Pd	105	2	HMI He	37	42.94
Ag	107	2	HMI He	47	207.06
Cd	111	2	HMI He	7	2598.08
Sn	120	2	HMI He	680	1.98
Sb	121	2	HMI He	63	51.90
Ba	137	2	HMI He	93	28.89
W	182	2	HMI He	2934	0.16
Pt	195	2	HMI He	50	69.28
Tl	205	2	HMI He	233	9.42
Pb	208	2	HMI He	1677	0.10
Th	232	2	HMI He	14478	0.04
U	238	2	HMI He	233	4.62

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal standard	6	1	HMI H2	758371	3.57
Sc (IS)	45	1	HMI H2	21579358	2.22
Sc (IS)	45	2	HMI He	1389101	0.68
Sc (IS)	45	3	No Gas	40812554	1.05
Ge Internal standard	72	1	HMI H2	11084416	2.89
Ge Internal standard	72	2	HMI He	1699063	0.36
In Internal standard	115	2	HMI He	5046179	0.44
Ho-165	165	2	HMI He	18410285	0.38
Ir (IS)	193	2	HMI He	13684495	0.36

Calibration Standard Report

Sample Table

Sample Name	ic-7343172
Data File Name	133CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:10:08-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	cal 4
ISTD Ref File Name	132CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	3278671	0.00
Be	9	1	HMI H2	37	113.62
B	11	1	HMI H2	1053	0.57
Na	23	2	HMI He	25898046	0.00
Mg	24	2	HMI He	2470566	0.00
Al	27	2	HMI He	933	1.94
K	39	2	HMI He	1954620	0.00
Ti	47	2	HMI He	40	165.36
V	51	2	HMI He	657	0.67
Cr	52	2	HMI He	1023	1.27
Mn	55	2	HMI He	617	3.94
(Fe)	57	2	HMI He	1260	0.13
Co	59	2	HMI He	153	2.46
Ni	60	2	HMI He	403	1.98
Cu	63	2	HMI He	1423	0.98
Zn	66	2	HMI He	1157	0.44
As	75	2	HMI He	40	51.36
Se	78	1	HMI H2	21	101.49
Sr	88	2	HMI He	1233	1.05
Zr	90	2	HMI He	913	0.37
Nb	93	2	HMI He	37	227.24
Mo	95	2	HMI He	93	40.32
Pd	105	2	HMI He	90	68.74
Ag	107	2	HMI He	107	10.15
Cd	111	2	HMI He	7	1299.04
Sn	120	2	HMI He	807	1.55
Sb	121	2	HMI He	80	27.06
Ba	137	2	HMI He	253	7.69
Nd	146	2	HMI He	37	113.62
Sm	147	2	HMI He	7	1299.04
Sm	147	1	HMI H2	40	165.36
Gd	156	1	HMI H2	287	1.86
Gd	157	1	HMI H2	267	8.59
W	182	2	HMI He	4037	0.07
Pt	195	2	HMI He	130	15.65
Tl	205	2	HMI He	343	6.42
Pb	208	2	HMI He	2960	0.10
Th	232	2	HMI He	18686	0.03
U	238	2	HMI He	517	0.57

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	734262	0.53	758371	96.82	60	120	
Sc (IS)	45	1	HMI H2	21704594	0.28	21579358	100.58	60	120	
Sc (IS)	45	2	HMI He	1402974	1.31	1389101	101.00	60	120	
Sc (IS)	45	3	No Gas	40303104	1.58	40812554	98.75	60	120	
Ge Internal standard	72	1	HMI H2	11010569	0.63	11084416	99.33	60	120	
Ge Internal standard	72	2	HMI He	1657984	0.83	1699063	97.58	60	120	
In Internal standard	115	2	HMI He	4847014	0.42	5046179	96.05	60	120	
Ho-165	165	2	HMI He	17941180	0.42	18410285	97.45	60	120	
Ir (IS)	193	2	HMI He	13172424	0.54	13684495	96.26	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7343170
Data File Name	134CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:13:50-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	cal1
ISTD Ref File Name	132CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	5428616	0.00
Be	9	1	HMI H2	34498	0.00
B	11	1	HMI H2	272749	0.00
Na	23	2	HMI He	536014	0.00
Mg	24	2	HMI He	235547	0.00
Al	27	2	HMI He	70268	0.00
K	39	2	HMI He	227703	0.00
Ti	47	2	HMI He	3841	0.14
V	51	2	HMI He	157659	0.00
Cr	52	2	HMI He	198508	0.00
Mn	55	2	HMI He	86121	0.00
(Fe)	57	2	HMI He	77322	0.00
Co	59	2	HMI He	332044	0.00
Ni	60	2	HMI He	94516	0.00
Cu	63	2	HMI He	249822	0.00
Zn	66	2	HMI He	46355	0.01
As	75	2	HMI He	37871	0.00
Se	78	1	HMI H2	31256	0.00
Sr	88	2	HMI He	209218	0.00
Zr	90	2	HMI He	3157	0.42
Nb	93	2	HMI He	70	35.35
Mo	95	2	HMI He	122643	0.00
Pd	105	2	HMI He	150	20.37
Ag	107	2	HMI He	404332	0.00
Cd	111	2	HMI He	58681	0.00
Sn	120	2	HMI He	152886	0.00
Sb	121	2	HMI He	170239	0.00
Ba	137	2	HMI He	50074	0.00
Nd	146	2	HMI He	57	64.84
Sm	147	2	HMI He	23	106.04
Sm	147	1	HMI H2	80	27.06
Gd	156	1	HMI H2	317	8.12
Gd	157	1	HMI H2	207	11.55
W	182	2	HMI He	439006	0.00
Pt	195	2	HMI He	67	25.98
Tl	205	2	HMI He	843967	0.00
Pb	208	2	HMI He	1163245	0.00
Th	232	2	HMI He	1148240	0.00
U	238	2	HMI He	1560905	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	779842	0.55	758371	102.83	60	120	
Sc (IS)	45	1	HMI H2	22257901	0.79	21579358	103.14	60	120	
Sc (IS)	45	2	HMI He	1403401	1.61	1389101	101.03	60	120	
Sc (IS)	45	3	No Gas	41338413	0.87	40812554	101.29	60	120	
Ge Internal standard	72	1	HMI H2	11443983	0.44	11084416	103.24	60	120	
Ge Internal standard	72	2	HMI He	1728167	1.44	1699063	101.71	60	120	
In Internal standard	115	2	HMI He	5088452	1.32	5046179	100.84	60	120	
Ho-165	165	2	HMI He	18365681	0.95	18410285	99.76	60	120	
Ir (IS)	193	2	HMI He	13449794	0.99	13684495	98.28	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7343176
Data File Name	135_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:17:34-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	126.059	ppb	2.572	4576008	80	157.6	90	110	>+\-10%
Be	9	1	6	42.182	ppb	1.673	14320	40	105.5	90	110	
B	11	1	6	846.985	ppb	3.505	227420	400	211.7	90	110	>+\-10%
Na	23	2	45	12987.608	ppb	0.979	3438751	12800	101.5	90	110	
Mg	24	2	45	4496.783	ppb	1.164	565629	4800	93.7	90	110	
Al	27	2	45	811.491	ppb	2.724	29166	800	101.4	90	110	
Si	28	2	45	40.259	ppb	2.561	22512	40	100.6	90	110	
P	31	2	45	1246.202	ppb	2.564	5107	2400	51.9	90	110	>+\-10%
K	39	2	45	4398.748	ppb	1.519	477373	4800	91.6	90	110	
Ca	40	1	45	4789.467	ppb	1.271	20036606	4800	99.8	90	110	
(Ca)	44	1	45	4763.817	ppb	0.389	603050	4800	99.2	10	110	
Ti	47	2	45	43.310	ppb	10.380	1690	40	108.3	90	110	
V	51	2	72	41.312	ppb	2.443	65006	40	103.3	90	110	
Cr	52	2	72	41.672	ppb	0.882	82476	40	104.2	90	110	
Mn	55	2	72	43.031	ppb	2.411	36862	40	107.6	90	110	
Fe	56	1	72	828.070	ppb	0.278	6770938	800	103.5	90	110	
(Fe)	56	2	72	839.837	ppb	2.728	1397649	800	105.0	90	110	
(Fe)	57	2	72	834.933	ppb	2.928	32209	800	104.4	90	110	
Co	59	2	72	40.948	ppb	1.759	134904	40	102.4	90	110	
Ni	60	2	72	41.502	ppb	1.369	39077	40	103.8	90	110	
Cu	63	2	72	42.154	ppb	4.070	104768	40	105.4	90	110	
Zn	66	2	72	81.799	ppb	1.862	37694	80	102.2	90	110	
As	75	2	72	40.009	ppb	0.351	15057	40	100.0	90	110	
Se	78	1	72	42.812	ppb	0.172	13374	40	107.0	90	110	
Sr	88	2	72	123.494	ppb	1.205	128223	80	154.4	90	110	>+\-10%
Zr	90	2	72	24.184	ppb	16.607	1283	40	60.5	90	110	>+\-10%
Nb	93	2	72	119.258	ppb	43.451	43	80	149.1	90	110	>+\-10%
Mo	95	2	115	43.595	ppb	3.228	53532	40	109.0	90	110	
Pd	105	2	115	126.684	ppb	55.120	110	40	316.7	90	110	>+\-10%
Ag	107	2	115	80.579	ppb	1.055	326108	80	100.7	90	110	
Cd	111	2	115	41.192	ppb	2.036	24202	40	103.0	90	110	
Sn	120	2	115	43.264	ppb	0.303	66599	40	108.2	90	110	
Sb	121	2	115	42.315	ppb	0.920	72134	40	105.8	90	110	
Ba	137	2	115	42.778	ppb	2.332	21495	40	106.9	90	110	
W	182	2	165	41.858	ppb	0.563	186476	40	104.6	90	110	
Pt	195	2	165	35.624	ppb	88.029	80	40	89.1	90	110	>+\-10%
Tl	205	2	165	40.595	ppb	0.668	344596	40	101.5	90	110	
Pb	208	2	165	40.665	ppb	0.561	476599	40	101.7	90	110	
Th	232	2	193	75.850	ppb	4.521	879989	80	94.8	90	110	
U	238	2	193	37.042	ppb	1.413	582188	40	92.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	767134	0.90	758371	101.16	60	120	
Sc (IS)	45	1	HMI H2	22018263	0.44	21579358	102.03	60	120	
Sc (IS)	45	2	HMI He	1427547	1.17	1389101	102.77	60	120	
Sc (IS)	45	3	No Gas	40081585	1.18	40812554	98.21	60	120	
Ge Internal standard	72	1	HMI H2	11429646	0.90	11084416	103.11	60	120	
Ge Internal standard	72	2	HMI He	1714749	1.90	1699063	100.92	60	120	
In Internal standard	115	2	HMI He	5092585	0.91	5046179	100.92	60	120	
Ho-165	165	2	HMI He	18464583	0.49	18410285	100.29	60	120	
Ir (IS)	193	2	HMI He	13539005	1.09	13684495	98.94	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	136_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:21:17-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	85.023	ppb	3.398	4298011	100	85.0	90	110	>+\-10%
Be	9	1	6	54.257	ppb	4.498	17836	50	108.5	90	110	
B	11	1	6	561.252	ppb	3.222	146406	50	1122.5	90	110	>+\-10%
Na	23	2	45	53473.855	ppb	1.645	13945342	51000	104.9	90	110	
Mg	24	2	45	11837.057	ppb	0.036	1471798	11000	107.6	90	110	
Al	27	2	45	1015.467	ppb	2.951	36029	1000	101.5	90	110	
Si	28	2	45	49.668	ppb	4.341	24448	500	9.9	90	110	>+\-10%
P	31	2	45	2543.834	ppb	0.750	10243	2500	101.8	90	110	
K	39	2	45	10633.333	ppb	1.287	1069609	11000	96.7	90	110	
Ca	40	1	45	11538.081	ppb	3.818	47921719	11000	104.9	90	110	
(Ca)	44	1	45	12151.510	ppb	3.367	1527377	11000	110.5	90	110	>+\-10%
Ti	47	2	45	56.464	ppb	11.324	2180	50	112.9	90	110	>+\-10%
V	51	2	72	50.395	ppb	1.323	79586	50	100.8	90	110	
Cr	52	2	72	50.954	ppb	0.649	101234	50	101.9	90	110	
Mn	55	2	72	49.842	ppb	0.691	42896	50	99.7	90	110	
Fe	56	1	72	1036.258	ppb	3.901	8363117	1000	103.6	90	110	
(Fe)	56	2	72	1023.731	ppb	1.350	1710618	1000	102.4	90	110	
(Fe)	57	2	72	998.985	ppb	0.528	38689	1000	99.9	90	110	
Co	59	2	72	49.385	ppb	1.331	163577	50	98.8	90	110	
Ni	60	2	72	49.657	ppb	1.374	46950	50	99.3	90	110	
Cu	63	2	72	49.303	ppb	1.299	123140	50	98.6	90	110	
Zn	66	2	72	51.933	ppb	3.178	24205	50	103.9	90	110	
As	75	2	72	50.157	ppb	0.971	18965	50	100.3	90	110	
Se	78	1	72	51.876	ppb	3.923	16019	50	103.8	90	110	
Sr	88	2	72	100.391	ppb	1.337	104822	100	100.4	90	110	
Zr	90	2	72	38.495	ppb	27.856	1640	50	77.0	90	110	>+\-10%
Nb	93	2	72	154.531	ppb	118.405	53	100	154.5	90	110	>+\-10%
Mo	95	2	115	51.711	ppb	3.694	61932	50	103.4	90	110	
Pd	105	2	115	456.893	ppb	36.116	293	50	913.8	90	110	>+\-10%
Ag	107	2	115	50.324	ppb	0.703	198676	50	100.6	90	110	
Cd	111	2	115	50.927	ppb	0.125	29181	50	101.9	90	110	
Sn	120	2	115	53.391	ppb	2.061	80004	50	106.8	90	110	
Sb	121	2	115	52.023	ppb	1.255	86487	50	104.0	90	110	
Ba	137	2	115	51.286	ppb	2.765	25114	50	102.6	90	110	
W	182	2	165	51.777	ppb	0.292	227171	50	103.6	90	110	
Pt	195	2	165	93.659	ppb	74.646	127	50	187.3	90	110	>+\-10%
Tl	205	2	165	49.375	ppb	0.370	413991	50	98.7	90	110	
Pb	208	2	165	49.422	ppb	0.983	571839	50	98.8	90	110	
Th	232	2	193	69.854	ppb	2.203	795689	50	139.7	90	110	>+\-10%
U	238	2	193	45.522	ppb	0.682	701301	50	91.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	743543	2.69	758371	98.04	60	120	
Sc (IS)	45	1	HMI H2	21926101	1.72	21579358	101.61	60	120	
Sc (IS)	45	2	HMI He	1411901	1.26	1389101	101.64	60	120	
Sc (IS)	45	3	No Gas	41072980	0.55	40812554	100.64	60	120	
Ge Internal standard	72	1	HMI H2	11306185	1.95	11084416	102.00	60	120	
Ge Internal standard	72	2	HMI He	1723694	0.46	1699063	101.45	60	120	
In Internal standard	115	2	HMI He	4967195	0.47	5046179	98.43	60	120	
Ho-165	165	2	HMI He	18240693	0.56	18410285	99.08	60	120	
Ir (IS)	193	2	HMI He	13271081	0.59	13684495	96.98	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	137_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:25:01-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-2.521	ppb	-123.3	3523813	10	
Be	9	1	6	-0.011	ppb	-154.9	7	0.5	
B	11	1	6	15.542	ppb	5.9	5574	0.5	>RL
Na	23	2	45	42.062	ppb	6.8	29229	25	>RL
Mg	24	2	45	4.400	ppb	24.9	1127	25	
Al	27	2	45	2.417	ppb	44.2	357	15	
K	39	2	45	15.101	ppb	58.5	52101	50	
Ti	47	2	45	0.429	ppb	91.7	17	0.5	
V	51	2	72	-0.049	ppb	-104.2	597	1	
Cr	52	2	72	0.064	ppb	57.2	800	1	
Mn	55	2	72	0.228	ppb	73.0	350	0.5	
(Fe)	57	2	72	7.940	ppb	64.2	620	25	
Co	59	2	72	0.034	ppb	11.5	157	0.5	
Ni	60	2	72	0.082	ppb	165.1	333	1	
Cu	63	2	72	0.108	ppb	9.7	807	1	
Zn	66	2	72	0.575	ppb	29.9	657	5	
As	75	2	72	0.036	ppb	15.2	52	1	
Se	78	1	72	0.058	ppb	66.5	33	1	
Sr	88	2	72	0.092	ppb	40.0	227	0.5	
Zr	90	2	72	-5.815	ppb	-47.9	550	1	
Nb	93	2	72	-12.713	ppb	-322.8	7	2	
Mo	95	2	115	0.549	ppb	5.0	717	0.5	>RL
Pd	105	2	115	-6.274	ppb	-318.3	33	1	
Ag	107	2	115	0.041	ppb	19.5	213	1	
Cd	111	2	115	0.017	ppb	153.0	17	0.5	
Sn	120	2	115	0.769	ppb	11.9	1854	1	
Sb	121	2	115	0.251	ppb	6.7	490	0.6	
Ba	137	2	115	-0.048	ppb	-113.1	70	0.5	
W	182	2	165	0.563	ppb	15.5	5398	1	
Pt	195	2	165	-4.118	ppb	-155.0	47	1	
Tl	205	2	165	0.067	ppb	21.8	797	0.1	
Pb	208	2	165	0.047	ppb	15.5	2220	0.5	
Th	232	2	193	2.557	ppb	11.1	43726	1	>RL
U	238	2	193	0.084	ppb	8.3	1563	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	791056	0.26	758371	104.31	60	120	
Sc (IS)	45	1	HMI H2	22431006	0.46	21579358	103.95	60	120	
Sc (IS)	45	2	HMI He	1413126	0.82	1389101	101.73	60	120	
Sc (IS)	45	3	No Gas	41789494	0.81	40812554	102.39	60	120	
Ge Internal standard	72	1	HMI H2	11468093	0.50	11084416	103.46	60	120	
Ge Internal standard	72	2	HMI He	1710665	2.04	1699063	100.68	60	120	
In Internal standard	115	2	HMI He	5082358	0.95	5046179	100.72	60	120	
Ho-165	165	2	HMI He	18423091	1.08	18410285	100.07	60	120	
Ir (IS)	193	2	HMI He	13611534	1.52	13684495	99.47	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	138LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:28:45-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	4.985	ppb	42.848	3610840	50	10.0	70	130	>+/-30%
Be	9	1	6	0.869	ppb	12.548	317	1	86.9	70	130	
Na	23	2	45	85.828	ppb	3.300	41855	50	171.7	70	130	>+/-30%
Mg	24	2	45	60.315	ppb	2.398	8326	50	120.6	70	130	
Al	27	2	45	52.532	ppb	4.921	2187	50	105.1	70	130	
K	39	2	45	88.857	ppb	6.147	60957	100	88.9	70	130	
V	51	2	72	4.931	ppb	1.928	8449	5	98.6	70	130	
Cr	52	2	72	2.141	ppb	3.264	4934	2	107.1	70	130	
Mn	55	2	72	1.398	ppb	16.440	1363	1	139.8	70	130	>+/-30%
(Fe)	57	2	72	67.994	ppb	10.402	2950	50	136.0	70	130	>+/-30%
Co	59	2	72	1.005	ppb	3.853	3394	1	100.5	70	130	
Ni	60	2	72	2.089	ppb	14.580	2237	2	104.4	70	130	
Cu	63	2	72	2.385	ppb	2.497	6515	2	119.2	70	130	
Zn	66	2	72	11.626	ppb	3.505	5765	10	116.3	70	130	
As	75	2	72	5.198	ppb	4.301	2013	5	104.0	70	130	
Se	78	1	72	5.302	ppb	6.313	1691	5	106.0	70	130	
Sr	88	2	72	1.256	ppb	2.181	1450	1	125.6	70	130	
Zr	90	2	72	9.870	ppb	78.844	943	0.5	1974.0	70	130	>+/-30%
Nb	93	2	72	-0.596	ppb	-10406.952	10	2	-29.8	70	130	>+/-30%
Mo	95	2	115	2.141	ppb	4.777	2724	2	107.1	70	130	
Pd	105	2	115	-1.710	ppb	-614.841	37	1	-171.0	70	130	>+/-30%
Ag	107	2	115	1.002	ppb	10.504	4177	1	100.2	70	130	
Cd	111	2	115	1.119	ppb	4.103	677	1	111.9	70	130	
Sn	120	2	115	10.522	ppb	2.398	17040	10	105.2	70	130	
Sb	121	2	115	2.104	ppb	12.433	3714	2	105.2	70	130	
Ba	137	2	115	0.938	ppb	27.742	573	1	93.8	70	130	
W	182	2	165	5.071	ppb	1.882	25582	1	507.1	70	130	>+/-30%
Pt	195	2	165	-5.231	ppb	-458.984	47	1	-523.1	70	130	>+/-30%
Tl	205	2	165	1.029	ppb	5.479	9106	1	102.9	70	130	
Pb	208	2	165	1.073	ppb	1.443	14450	1	107.3	70	130	
Th	232	2	193	9.934	ppb	9.799	131116	2	496.7	70	130	>+/-30%
U	238	2	193	0.946	ppb	1.144	15492	1	94.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	797233	0.43	758371	105.12	60	120	
Sc (IS)	45	1	HMI H2	22570695	0.59	21579358	104.59	60	120	
Sc (IS)	45	2	HMI He	1455552	0.28	1389101	104.78	60	120	
Sc (IS)	45	3	No Gas	41954348	0.47	40812554	102.80	60	120	
Ge Internal standard	72	1	HMI H2	11573387	0.70	11084416	104.41	60	120	
Ge Internal standard	72	2	HMI He	1734241	0.76	1699063	102.07	60	120	
In Internal standard	115	2	HMI He	5191162	1.27	5046179	102.87	60	120	
Ho-165	165	2	HMI He	18764720	1.07	18410285	101.93	60	120	
Ir (IS)	193	2	HMI He	13891456	0.72	13684495	101.51	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7335817
Data File Name	139ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:32:29-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-21.870	ppb	-16.5	3189339	1	
Be	9	1	6	0.045	ppb	151.6	23	1	
B	11	1	6	8.091	ppb	10.8	3217	1	>RL or LOD
Ti	47	2	45	2055.422	ppb	1.6	78741	1	>RL or LOD
V	51	2	72	-0.074	ppb	-144.6	550	1	
Cr	52	2	72	1.322	ppb	3.1	3227	1	>RL or LOD
Mn	55	2	72	0.774	ppb	19.2	803	0.95	
Co	59	2	72	0.219	ppb	9.2	753	0.2	>RL or LOD
Ni	60	2	72	0.543	ppb	36.0	757	1	
Cu	63	2	72	0.419	ppb	7.6	1557	1	
Zn	66	2	72	2.205	ppb	2.1	1383	1	>RL or LOD
As	75	2	72	0.110	ppb	32.3	79	1	
Se	78	1	72	0.110	ppb	14.6	48	1	
Sr	88	2	72	1.600	ppb	7.6	1767	1	>RL or LOD
Zr	90	2	72	18.718	ppb	6.4	1133	1	>RL or LOD
Nb	93	2	72	146.553	ppb	50.1	50	1	>RL or LOD
Mo	95	2	115	2194.885	ppb	0.2	2553565	2000	>RL or LOD
Pd	105	2	115	81.917	ppb	88.4	80	1	>RL or LOD
Ag	107	2	115	0.061	ppb	15.2	280	1	
Cd	111	2	115	0.234	ppb	12.1	137	1	
Sn	120	2	115	0.422	ppb	7.2	1260	1	
Sb	121	2	115	0.105	ppb	63.1	230	1	
Ba	137	2	115	1.795	ppb	15.0	940	0.95	>RL or LOD
W	182	2	165	0.188	ppb	9.6	3734	1	
Pt	195	2	165	153.209	ppb	11.9	177	1	>RL or LOD
Tl	205	2	165	0.031	ppb	21.4	490	1	
Pb	208	2	165	0.142	ppb	13.2	3310	1	
Th	232	2	193	13.125	ppb	15.1	156559	1	>RL or LOD
U	238	2	193	0.030	ppb	2.3	667	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	724230	5.68	758371	95.50	60	120	
Sc (IS)	45	1	HMI H2	21536156	6.95	21579358	99.80	60	120	
Sc (IS)	45	2	HMI He	1400412	0.12	1389101	100.81	60	120	
Sc (IS)	45	3	No Gas	39952229	0.98	40812554	97.89	60	120	
Ge Internal standard	72	1	HMI H2	11114678	5.91	11084416	100.27	60	120	
Ge Internal standard	72	2	HMI He	1691163	0.17	1699063	99.54	60	120	
In Internal standard	115	2	HMI He	4828442	0.62	5046179	95.69	60	120	
Ho-165	165	2	HMI He	18307702	0.35	18410285	99.44	60	120	
Ir (IS)	193	2	HMI He	12909926	0.24	13684495	94.34	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7335818
Data File Name	140ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:36:10-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	166.949	ppb	2.590	5065331	100	166.9	80	120	>+\-20%
Be	9	1	6	106.550	ppb	1.462	33917	100	106.6	80	120	
B	11	1	6	1082.611	ppb	1.073	272399	100	1082.6	80	120	>+\-20%
V	51	2	72	101.091	ppb	1.333	159273	100	101.1	80	120	
Cr	52	2	72	100.089	ppb	0.726	198571	100	100.1	80	120	
Mn	55	2	72	99.773	ppb	3.084	85873	100	99.8	80	120	
Co	59	2	72	95.318	ppb	0.803	316278	100	95.3	80	120	
Ni	60	2	72	94.121	ppb	1.900	88927	100	94.1	80	120	
Cu	63	2	72	96.489	ppb	1.998	240923	100	96.5	80	120	
Zn	66	2	72	96.759	ppb	1.216	44841	100	96.8	80	120	
As	75	2	72	99.558	ppb	0.750	37678	100	99.6	80	120	
Se	78	1	72	103.791	ppb	2.171	32395	100	103.8	80	120	
Sr	88	2	72	204.250	ppb	1.780	213519	100	204.2	80	120	>+\-20%
Zr	90	2	72	43.570	ppb	26.346	1767	100	43.6	80	120	>+\-20%
Nb	93	2	72	3926.778	ppb	21.818	1107	100	3926.8	80	120	>+\-20%
Mo	95	2	115	2345.469	ppb	0.441	2761925	100	2345.5	80	120	>+\-20%
Pd	105	2	115	62.329	ppb	58.584	70	100	62.3	80	120	>+\-20%
Ag	107	2	115	99.219	ppb	0.668	385351	100	99.2	80	120	
Cd	111	2	115	101.542	ppb	2.327	57236	100	101.5	80	120	
Sn	120	2	115	106.344	ppb	2.199	156134	100	106.3	80	120	
Sb	121	2	115	103.762	ppb	1.116	169660	100	103.8	80	120	
Ba	137	2	115	110.772	ppb	2.159	53264	100	110.8	80	120	
W	182	2	165	98.321	ppb	0.582	433297	100	98.3	80	120	
Pt	195	2	165	263.651	ppb	43.242	270	100	263.7	80	120	
Tl	205	2	165	96.787	ppb	0.654	819873	100	96.8	80	120	
Pb	208	2	165	97.035	ppb	0.826	1133006	100	97.0	80	120	
Th	232	2	193	125.704	ppb	6.628	1378662	100	125.7	80	120	
U	238	2	193	102.014	ppb	1.679	1525171	100	102.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	719635	0.60	758371	94.89	60	120	
Sc (IS)	45	1	HMI H2	22184248	1.27	21579358	102.80	60	120	
Sc (IS)	45	2	HMI He	1439723	1.00	1389101	103.64	60	120	
Sc (IS)	45	3	No Gas	40962114	0.29	40812554	100.37	60	120	
Ge Internal standard	72	1	HMI H2	11428224	0.97	11084416	103.10	60	120	
Ge Internal standard	72	2	HMI He	1726967	0.21	1699063	101.64	60	120	
In Internal standard	115	2	HMI He	4887152	0.39	5046179	96.85	60	120	
Ho-165	165	2	HMI He	18433352	0.50	18410285	100.13	60	120	
Ir (IS)	193	2	HMI He	12881329	0.64	13684495	94.13	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	141SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:39:53-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-10.226	ppb	-10.226	-28.56	3429482	50000	
Be	9	1	6	0.164	ppb	0.164	27.24	67	2000	
B	11	1	6	18.048	ppb	18.048	8.39	6178	2000	
Na	23	2	45	75.506	ppb	75.506	10.93	40048	400000	
Mg	24	2	45	32.741	ppb	32.741	6.11	4911	400000	
Al	27	2	45	29.753	ppb	29.753	1.70	1393	400000	
Si	28	2	45	-0.940	ppb	-0.940	-212.86	13406	10000	
P	31	2	45	37.225	ppb	37.225	20.89	223	10000	
K	39	2	45	52.800	ppb	52.800	31.17	58816	400000	
Ca	40	1	45	75.615	ppb	75.615	3.46	418970	400000	
Ti	47	2	45	3.844	ppb	3.844	32.63	157	4000	
V	51	2	72	-0.068	ppb	-0.068	-104.49	587	2000	
Cr	52	2	72	0.072	ppb	0.072	63.96	847	5000	
Mn	55	2	72	0.603	ppb	0.603	4.28	693	10000	
Fe	56	1	72	83.858	ppb	83.858	5.24	756519	10000	
(Fe)	57	2	72	126.789	ppb	126.789	14.21	5348	400000	
Co	59	2	72	0.034	ppb	0.034	15.56	160	2000	
Ni	60	2	72	0.060	ppb	0.060	70.66	327	5000	
Cu	63	2	72	0.235	ppb	0.235	8.42	1163	5000	
Zn	66	2	72	0.887	ppb	0.887	20.14	830	5000	
As	75	2	72	0.049	ppb	0.049	55.76	59	2000	
Se	78	1	72	0.043	ppb	0.043	92.92	29	2000	
Sr	88	2	72	0.236	ppb	0.236	35.75	390	4000	
Zr	90	2	72	-2.288	ppb	-2.288	-79.18	660	1000	
Nb	93	2	72	218.837	ppb	218.837	63.95	73	200	
Mo	95	2	115	34.053	ppb	34.053	11.72	43663	2000	
Pd	105	2	115	2.370	ppb	2.370	735.65	40	100	
Ag	107	2	115	0.059	ppb	0.059	9.12	300	100	
Cd	111	2	115	0.065	ppb	0.065	14.38	47	2000	
Sn	120	2	115	0.213	ppb	0.213	31.76	1057	2000	
Sb	121	2	115	1.016	ppb	1.016	13.02	1874	1000	
Ba	137	2	115	0.079	ppb	0.079	82.23	140	5000	
W	182	2	165	2.087	ppb	2.087	14.37	12372	100	
Pt	195	2	165	25.749	ppb	25.749	69.53	73	100	
Tl	205	2	165	0.108	ppb	0.108	12.02	1180	2000	
Pb	208	2	165	0.089	ppb	0.089	13.34	2784	5000	
Th	232	2	193	0.991	ppb	0.991	4.60	26114	2000	
U	238	2	193	0.135	ppb	0.135	11.42	2394	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	780021	0.32	758371	102.85	60	120	
Sc (IS)	45	1	HMI H2	22820081	0.36	21579358	105.75	60	120	
Sc (IS)	45	2	HMI He	1491739	0.55	1389101	107.39	60	120	
Sc (IS)	45	3	No Gas	41551068	0.67	40812554	101.81	60	120	
Ge Internal standard	72	1	HMI H2	11722691	0.22	11084416	105.76	60	120	
Ge Internal standard	72	2	HMI He	1775518	0.34	1699063	104.50	60	120	
In Internal standard	115	2	HMI He	5320366	1.34	5046179	105.43	60	120	
Ho-165	165	2	HMI He	18888696	0.03	18410285	102.60	60	120	
Ir (IS)	193	2	HMI He	13789219	0.36	13684495	100.77	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7316798
Data File Name	142_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:43:37-06:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	2153.387	ppb	1.750	736111	2000	107.7	90	110	
V	51	2	72	2126.521	ppb	0.815	3480637	2000	106.3	90	110	
Cr	52	2	72	5135.670	ppb	0.849	10592259	5000	102.7	90	110	
(Cr)	53	2	72	5400.999	ppb	1.242	1370819	5000	108.0	90	110	
Mn	55	2	72	10582.570	ppb	0.537	9484135	10000	105.8	90	110	
Co	59	2	72	2127.175	ppb	0.199	7361797	2000	106.4	90	110	
Ni	60	2	72	5050.095	ppb	0.504	4962906	5000	101.0	90	110	
Cu	63	2	72	5286.310	ppb	0.495	13738689	5000	105.7	90	110	
Zn	66	2	72	5190.760	ppb	1.884	2487200	5000	103.8	90	110	
As	75	2	72	2061.390	ppb	0.568	812958	2000	103.1	90	110	
Se	78	1	72	2185.618	ppb	2.379	694817	2000	109.3	90	110	
(Se)	82	1	72	2729.501	ppb	2.630	304128	2000	136.5	90	110	LRS Main CR1 Failed
Mo	95	2	115	2166.471	ppb	1.517	2734180	2000	108.3	90	110	
Cd	111	2	115	2051.696	ppb	0.737	1239425	2000	102.6	90	110	
(Cd)	114	2	115	2175.388	ppb	0.696	3363726	2000	108.8	90	110	
Sn	120	2	115	2236.829	ppb	0.918	3505845	2000	111.8	90	110	LRS Main CR1 Failed
Sb	121	2	115	1144.971	ppb	1.654	2005729	1000	114.5	90	110	LRS Main CR1 Failed
Ba	137	2	115	5489.576	ppb	1.436	2824423	5000	109.8	90	110	
Tl	205	2	165	1050.191	ppb	0.815	9163959	1000	105.0	90	110	
(Pb)	206	2	165	5230.426	ppb	0.349	15621399	5000	104.6	90	110	
(Pb)	207	2	165	5235.305	ppb	0.393	13596429	5000	104.7	90	110	
Pb	208	2	165	5260.123	ppb	0.750	63190607	5000	105.2	90	110	
Th	232	2	193	1223.762	ppb	1.032	14282779	1000	122.4	90	110	LRS Main CR1 Failed
U	238	2	193	1855.069	ppb	1.466	29766339	2000	92.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	773064	1.07	758371	101.94	60	120	
Sc (IS)	45	1	HMI H2	22642524	1.02	21579358	104.93	60	120	
Sc (IS)	45	2	HMI He	1489469	0.57	1389101	107.23	60	120	
Sc (IS)	45	3	No Gas	42040948	1.15	40812554	103.01	60	120	
Ge Internal standard	72	1	HMI H2	11646909	1.28	11084416	105.07	60	120	
Ge Internal standard	72	2	HMI He	1801469	1.03	1699063	106.03	60	120	
In Internal standard	115	2	HMI He	5238352	1.31	5046179	103.81	60	120	
Ho-165	165	2	HMI He	18993101	0.76	18410285	103.17	60	120	
Ir (IS)	193	2	HMI He	13827976	1.24	13684495	101.05	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	143SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:48:07-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	21.029	ppb	21.029	24.74	5684684	50000	
Be	9	1	6	0.369	ppb	0.369	51.24	217	2000	
B	11	1	6	15.670	ppb	15.670	14.34	8899	2000	
Na	23	2	45	-23.861	ppb	-23.861	-26.66	18758	400000	
Mg	24	2	45	1.354	ppb	1.354	295.66	1177	400000	
Al	27	2	45	1.267	ppb	1.267	242.53	493	400000	
Si	28	2	45	-17.461	ppb	-17.461	-2.11	13769	10000	
P	31	2	45	-1.620	ppb	-1.620	-251.73	87	10000	
K	39	2	45	-249.232	ppb	-249.232	-7.27	41632	400000	
Ca	40	1	45	14.754	ppb	14.754	223.08	211608	400000	
Ti	47	2	45	0.431	ppb	0.431	140.82	27	4000	
V	51	2	72	0.149	ppb	0.149	318.33	1414	2000	
Cr	52	2	72	0.432	ppb	0.432	104.68	2370	5000	
Mn	55	2	72	1.559	ppb	1.559	70.03	2310	10000	
Fe	56	1	72	16.179	ppb	16.179	141.13	259266	10000	
(Fe)	57	2	72	10.332	ppb	10.332	170.13	1117	400000	
Co	59	2	72	0.286	ppb	0.286	80.28	1537	2000	
Ni	60	2	72	0.528	ppb	0.528	112.44	1173	5000	
Cu	63	2	72	0.694	ppb	0.694	89.43	3518	5000	
Zn	66	2	72	0.564	ppb	0.564	125.97	1017	5000	
As	75	2	72	0.221	ppb	0.221	127.25	190	2000	
Se	78	1	72	0.597	ppb	0.597	111.62	275	2000	
Sr	88	2	72	0.231	ppb	0.231	154.87	580	4000	
Zr	90	2	72	-0.480	ppb	-0.480	-665.81	1050	1000	
Nb	93	2	72	16.903	ppb	16.903	546.24	23	200	
Mo	95	2	115	20.362	ppb	20.362	102.84	39074	2000	
Pd	105	2	115	15.381	ppb	15.381	87.32	70	100	
Ag	107	2	115	0.007	ppb	0.007	89.73	113	100	
Cd	111	2	115	0.168	ppb	0.168	62.90	163	2000	
Sn	120	2	115	9.023	ppb	9.023	100.34	22496	2000	
Sb	121	2	115	1.720	ppb	1.720	94.43	4662	1000	
Ba	137	2	115	0.613	ppb	0.613	76.92	620	5000	
W	182	2	165	-0.276	ppb	-0.276	-17.27	2740	100	
Pt	195	2	165	15.818	ppb	15.818	52.69	100	100	
Tl	205	2	165	0.473	ppb	0.473	86.37	6764	2000	
Pb	208	2	165	0.693	ppb	0.693	75.66	15526	5000	
Th	232	2	193	1.337	ppb	1.337	120.71	46898	2000	
U	238	2	193	1.581	ppb	1.581	98.18	39880	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1263429	9.14	758371	166.60	60	120	IS Failed
Sc (IS)	45	1	HMI H2	32971995	10.82	21579358	152.79	60	120	IS Failed
Sc (IS)	45	2	HMI He	2196859	3.08	1389101	158.15	60	120	IS Failed
Sc (IS)	45	3	No Gas	63333657	4.18	40812554	155.18	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	16807588	10.94	11084416	151.63	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2640793	2.69	1699063	155.43	60	120	IS Failed
In Internal standard	115	2	HMI He	7793699	2.99	5046179	154.45	60	120	IS Failed
Ho-165	165	2	HMI He	29149338	1.59	18410285	158.33	60	120	IS Failed
Ir (IS)	193	2	HMI He	21319685	1.61	13684495	155.79	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse
Data File Name	144SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:51:50-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	21.034	ppb	21.034	20.70	5478150	50000	
Be	9	1	6	0.185	ppb	0.185	23.28	127	2000	
B	11	1	6	7.791	ppb	7.791	2.97	5828	2000	
Na	23	2	45	-27.210	ppb	-27.210	-19.17	17370	400000	
Mg	24	2	45	0.508	ppb	0.508	740.31	1000	400000	
Al	27	2	45	-0.456	ppb	-0.456	-789.79	397	400000	
Si	28	2	45	-17.155	ppb	-17.155	-15.12	13900	10000	
P	31	2	45	-3.611	ppb	-3.611	-108.50	75	10000	
K	39	2	45	-258.929	ppb	-258.929	-4.12	40185	400000	
Ca	40	1	45	-9.653	ppb	-9.653	-30.86	75467	400000	
Ti	47	2	45	0.112	ppb	0.112	86.62	7	4000	
V	51	2	72	-0.043	ppb	-0.043	-757.33	943	2000	
Cr	52	2	72	0.164	ppb	0.164	128.19	1554	5000	
Mn	55	2	72	1.015	ppb	1.015	61.57	1590	10000	
Fe	56	1	72	1.353	ppb	1.353	260.19	103523	10000	
(Fe)	57	2	72	9.130	ppb	9.130	137.45	1040	400000	
Co	59	2	72	0.173	ppb	0.173	69.20	953	2000	
Ni	60	2	72	0.159	ppb	0.159	215.19	637	5000	
Cu	63	2	72	0.330	ppb	0.330	95.82	2114	5000	
Zn	66	2	72	0.020	ppb	0.020	1132.61	633	5000	
As	75	2	72	0.132	ppb	0.132	144.69	138	2000	
Se	78	1	72	0.143	ppb	0.143	95.32	91	2000	
Sr	88	2	72	0.032	ppb	0.032	379.63	257	4000	
Zr	90	2	72	-2.059	ppb	-2.059	-123.57	1000	1000	
Nb	93	2	72	-13.207	ppb	-13.207	-4.34	10	200	
Mo	95	2	115	17.021	ppb	17.021	111.65	32308	2000	
Pd	105	2	115	7.285	ppb	7.285	453.02	63	100	
Ag	107	2	115	-0.002	ppb	-0.002	-171.74	57	100	
Cd	111	2	115	0.077	ppb	0.077	92.97	80	2000	
Sn	120	2	115	7.746	ppb	7.746	110.23	19265	2000	
Sb	121	2	115	1.260	ppb	1.260	110.87	3408	1000	
Ba	137	2	115	0.326	ppb	0.326	117.56	397	5000	
W	182	2	165	-0.277	ppb	-0.277	-30.73	2747	100	
Pt	195	2	165	32.811	ppb	32.811	59.55	123	100	
Tl	205	2	165	0.239	ppb	0.239	99.17	3591	2000	
Pb	208	2	165	0.347	ppb	0.347	89.83	9116	5000	
Th	232	2	193	0.575	ppb	0.575	208.89	33304	2000	
U	238	2	193	1.136	ppb	1.136	111.24	28799	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1340695	4.38	758371	176.79	60	120	IS Failed
Sc (IS)	45	1	HMI H2	34072012	5.77	21579358	157.89	60	120	IS Failed
Sc (IS)	45	2	HMI He	2199360	1.70	1389101	158.33	60	120	IS Failed
Sc (IS)	45	3	No Gas	61019857	8.75	40812554	149.51	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	17355855	5.36	11084416	156.58	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2667417	2.44	1699063	156.99	60	120	IS Failed
In Internal standard	115	2	HMI He	7850972	2.41	5046179	155.58	60	120	IS Failed
Ho-165	165	2	HMI He	29374424	0.98	18410285	159.55	60	120	IS Failed
Ir (IS)	193	2	HMI He	21607676	1.44	13684495	157.90	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	145_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:55:36-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	80.451	ppb	0.608	4318986	100	80.5	90	110	>+\-10%
Be	9	1	6	52.309	ppb	2.042	17476	50	104.6	90	110	
B	11	1	6	541.348	ppb	1.048	143519	50	1082.7	90	110	>+\-10%
Na	23	2	45	53098.397	ppb	2.121	14324280	51000	104.1	90	110	
Mg	24	2	45	11692.796	ppb	0.680	1503945	11000	106.3	90	110	
Al	27	2	45	1023.669	ppb	0.271	37579	1000	102.4	90	110	
Si	28	2	45	54.684	ppb	8.829	26488	500	10.9	90	110	>+\-10%
P	31	2	45	2607.532	ppb	1.286	10860	2500	104.3	90	110	
K	39	2	45	11146.799	ppb	2.925	1157766	11000	101.3	90	110	
Ca	40	1	45	11467.284	ppb	0.541	49036404	11000	104.2	90	110	
(Ca)	44	1	45	12163.839	ppb	0.801	1574009	11000	110.6	90	110	>+\-10%
Ti	47	2	45	55.282	ppb	5.798	2210	50	110.6	90	110	>+\-10%
V	51	2	72	51.113	ppb	1.464	83424	50	102.2	90	110	
Cr	52	2	72	51.453	ppb	0.585	105654	50	102.9	90	110	
Mn	55	2	72	51.504	ppb	3.657	45807	50	103.0	90	110	
Fe	56	1	72	1018.525	ppb	0.102	8481995	1000	101.9	90	110	
(Fe)	56	2	72	1019.916	ppb	0.493	1761518	1000	102.0	90	110	
(Fe)	57	2	72	1013.848	ppb	2.049	40577	1000	101.4	90	110	
Co	59	2	72	49.479	ppb	1.086	169406	50	99.0	90	110	
Ni	60	2	72	48.796	ppb	2.184	47696	50	97.6	90	110	
Cu	63	2	72	49.987	ppb	1.517	129033	50	100.0	90	110	
Zn	66	2	72	52.421	ppb	2.131	25250	50	104.8	90	110	
As	75	2	72	51.003	ppb	1.051	19933	50	102.0	90	110	
Se	78	1	72	51.353	ppb	1.502	16360	50	102.7	90	110	
Sr	88	2	72	101.167	ppb	2.298	109173	100	101.2	90	110	
Zr	90	2	72	12.388	ppb	31.823	1033	50	24.8	90	110	>+\-10%
Nb	93	2	72	125.605	ppb	15.918	47	100	125.6	90	110	>+\-10%
Mo	95	2	115	57.293	ppb	0.403	71427	50	114.6	90	110	>+\-10%
Pd	105	2	115	538.819	ppb	4.695	353	50	1077.6	90	110	>+\-10%
Ag	107	2	115	49.318	ppb	1.556	202688	50	98.6	90	110	
Cd	111	2	115	51.955	ppb	0.746	30991	50	103.9	90	110	
Sn	120	2	115	56.601	ppb	2.619	88258	50	113.2	90	110	>+\-10%
Sb	121	2	115	53.045	ppb	0.909	91801	50	106.1	90	110	
Ba	137	2	115	52.281	ppb	2.595	26650	50	104.6	90	110	
W	182	2	165	50.902	ppb	1.846	227591	50	101.8	90	110	
Pt	195	2	165	55.379	ppb	120.295	97	50	110.8	90	110	>+\-10%
Tl	205	2	165	49.045	ppb	1.904	418977	50	98.1	90	110	
Pb	208	2	165	49.283	ppb	1.080	581021	50	98.6	90	110	
Th	232	2	193	70.738	ppb	2.191	805176	50	141.5	90	110	>+\-10%
U	238	2	193	45.602	ppb	0.341	702129	50	91.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	755022	0.34	758371	99.56	60	120	
Sc (IS)	45	1	HMI H2	22565069	0.65	21579358	104.57	60	120	
Sc (IS)	45	2	HMI He	1460645	1.70	1389101	105.15	60	120	
Sc (IS)	45	3	No Gas	41695807	0.40	40812554	102.16	60	120	
Ge Internal standard	72	1	HMI H2	11659306	0.37	11084416	105.19	60	120	
Ge Internal standard	72	2	HMI He	1781668	0.72	1699063	104.86	60	120	
In Internal standard	115	2	HMI He	5170921	0.14	5046179	102.47	60	120	
Ho-165	165	2	HMI He	18586415	1.13	18410285	100.96	60	120	
Ir (IS)	193	2	HMI He	13262844	0.32	13684495	96.92	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	146_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T18:59:20-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-8.154	ppb	-35.3	3457460	10	
Be	9	1	6	0.235	ppb	42.1	93	0.5	
B	11	1	6	18.005	ppb	4.0	6288	0.5	>RL
Na	23	2	45	30.108	ppb	16.8	27483	25	>RL
Mg	24	2	45	5.572	ppb	13.2	1340	25	
Al	27	2	45	3.711	ppb	48.4	423	15	
K	39	2	45	28.329	ppb	24.1	56177	50	
Ti	47	2	45	0.410	ppb	69.7	17	0.5	
V	51	2	72	-0.063	ppb	-53.4	600	1	
Cr	52	2	72	0.237	ppb	7.6	1190	1	
Mn	55	2	72	1.099	ppb	13.7	1140	0.5	>RL
(Fe)	57	2	72	5.270	ppb	43.1	543	25	
Co	59	2	72	0.180	ppb	2.5	663	0.5	
Ni	60	2	72	0.154	ppb	18.5	420	1	
Cu	63	2	72	0.317	ppb	6.3	1383	1	
Zn	66	2	72	0.713	ppb	21.6	753	5	
As	75	2	72	0.062	ppb	114.0	65	1	
Se	78	1	72	0.081	ppb	58.7	41	1	
Sr	88	2	72	0.126	ppb	26.3	273	0.5	
Zr	90	2	72	-5.370	ppb	-23.0	587	1	
Nb	93	2	72	44.426	ppb	162.3	23	2	>RL
Mo	95	2	115	1.811	ppb	14.8	2344	0.5	>RL
Pd	105	2	115	13.957	ppb	179.7	47	1	>RL
Ag	107	2	115	0.035	ppb	44.5	197	1	
Cd	111	2	115	0.038	ppb	115.0	30	0.5	
Sn	120	2	115	2.142	ppb	18.0	4087	1	>RL
Sb	121	2	115	0.454	ppb	13.8	867	0.6	
Ba	137	2	115	0.282	ppb	34.1	243	0.5	
W	182	2	165	0.363	ppb	20.9	4581	1	
Pt	195	2	165	26.810	ppb	155.4	73	1	>RL
Tl	205	2	165	0.103	ppb	15.3	1117	0.1	>RL
Pb	208	2	165	0.210	ppb	15.5	4180	0.5	
Th	232	2	193	2.781	ppb	10.4	46836	1	>RL
U	238	2	193	0.137	ppb	1.6	2424	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	795558	0.31	758371	104.90	60	120	
Sc (IS)	45	1	HMI H2	22646388	1.01	21579358	104.94	60	120	
Sc (IS)	45	2	HMI He	1487379	0.36	1389101	107.07	60	120	
Sc (IS)	45	3	No Gas	41649003	0.81	40812554	102.05	60	120	
Ge Internal standard	72	1	HMI H2	11706884	0.25	11084416	105.62	60	120	
Ge Internal standard	72	2	HMI He	1788745	0.33	1699063	105.28	60	120	
In Internal standard	115	2	HMI He	5265228	0.77	5046179	104.34	60	120	
Ho-165	165	2	HMI He	18653571	0.47	18410285	101.32	60	120	
Ir (IS)	193	2	HMI He	13764601	0.24	13684495	100.59	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	147LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:03:04-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-1.294	ppb	-17.428	3513216	50	-2.6	70	130	>+/-30%
Be	9	1	6	1.125	ppb	13.161	400	1	112.5	70	130	
Na	23	2	45	55.047	ppb	1.951	34278	50	110.1	70	130	
Mg	24	2	45	49.186	ppb	1.603	7042	50	98.4	70	130	
Al	27	2	45	48.012	ppb	9.107	2064	50	96.0	70	130	
K	39	2	45	109.150	ppb	2.197	64255	100	109.2	70	130	
V	51	2	72	4.688	ppb	7.165	8292	5	93.8	70	130	
Cr	52	2	72	2.240	ppb	3.717	5278	2	112.0	70	130	
Mn	55	2	72	1.893	ppb	11.121	1840	1	189.3	70	130	>+/-30%
(Fe)	57	2	72	52.136	ppb	5.774	2404	50	104.3	70	130	
Co	59	2	72	1.257	ppb	5.185	4351	1	125.7	70	130	
Ni	60	2	72	2.300	ppb	5.830	2507	2	115.0	70	130	
Cu	63	2	72	2.384	ppb	1.037	6698	2	119.2	70	130	
Zn	66	2	72	10.427	ppb	11.526	5364	10	104.3	70	130	
As	75	2	72	5.224	ppb	6.877	2082	5	104.5	70	130	
Se	78	1	72	5.515	ppb	1.947	1771	5	110.3	70	130	
Sr	88	2	72	1.180	ppb	13.899	1410	1	118.0	70	130	
Zr	90	2	72	6.359	ppb	71.289	883	0.5	1271.9	70	130	>+/-30%
Nb	93	2	72	20.788	ppb	342.799	17	2	1039.4	70	130	>+/-30%
Mo	95	2	115	2.909	ppb	9.329	3714	2	145.4	70	130	>+/-30%
Pd	105	2	115	-13.799	ppb	-437.101	30	1	-1379.9	70	130	>+/-30%
Ag	107	2	115	0.934	ppb	4.137	3934	1	93.4	70	130	
Cd	111	2	115	1.114	ppb	24.111	680	1	111.4	70	130	
Sn	120	2	115	11.409	ppb	5.675	18575	10	114.1	70	130	
Sb	121	2	115	2.293	ppb	0.874	4081	2	114.6	70	130	
Ba	137	2	115	1.083	ppb	20.794	653	1	108.3	70	130	
W	182	2	165	4.993	ppb	3.610	25122	1	499.3	70	130	>+/-30%
Pt	195	2	165	22.769	ppb	52.076	70	1	2276.9	70	130	>+/-30%
Tl	205	2	165	1.065	ppb	1.994	9377	1	106.5	70	130	
Pb	208	2	165	1.200	ppb	2.835	15874	1	120.0	70	130	
Th	232	2	193	11.147	ppb	9.576	142305	2	557.3	70	130	>+/-30%
U	238	2	193	0.985	ppb	0.471	15776	1	98.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	783486	0.36	758371	103.31	60	120	
Sc (IS)	45	1	HMI H2	22702115	0.54	21579358	105.20	60	120	
Sc (IS)	45	2	HMI He	1485417	0.61	1389101	106.93	60	120	
Sc (IS)	45	3	No Gas	41522673	1.27	40812554	101.74	60	120	
Ge Internal standard	72	1	HMI H2	11658354	0.76	11084416	105.18	60	120	
Ge Internal standard	72	2	HMI He	1783932	1.42	1699063	105.00	60	120	
In Internal standard	115	2	HMI He	5236325	0.58	5046179	103.77	60	120	
Ho-165	165	2	HMI He	18678692	0.04	18410285	101.46	60	120	
Ir (IS)	193	2	HMI He	13603332	0.81	13684495	99.41	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585165/1-A
Data File Name	148_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:07:02-06:00
Sample Type	Blank
Dilution	1
Comment	585165 200.8
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-12.195	ppb	-38.86736968	3547101	10
Be	9	1	6	0.212	ppb	67.47280394	87	0.5
B	11	1	6	8.681	ppb	15.10826594	3777	0.5
Na	23	2	45	2.648	ppb	75.10713016	20436	25
Mg	24	2	45	5.300	ppb	17.51987988	1337	25
Al	27	2	45	2.116	ppb	41.22868271	373	15
K	39	2	45	1.965	ppb	301.2037826	54840	50
Ti	47	2	45	0.398	ppb	124.069014	17	0.5
V	51	2	72	-0.085	ppb	-62.08930153	577	1
Cr	52	2	72	0.127	ppb	50.36349269	987	1
Mn	55	2	72	0.827	ppb	8.319833557	917	0.5
(Fe)	57	2	72	10.734	ppb	26.92856852	777	25
Co	59	2	72	0.152	ppb	23.91964049	580	0.5
Ni	60	2	72	0.131	ppb	33.28620688	407	1
Cu	63	2	72	0.218	ppb	9.995460976	1153	1
Zn	66	2	72	0.749	ppb	29.28984726	787	5
As	75	2	72	0.091	ppb	21.05756791	78	1
Se	78	1	72	0.075	ppb	71.79677559	40	1
Sr	88	2	72	0.091	ppb	20.48572043	240	0.5
Zr	90	2	72	-2.393	ppb	-66.10341579	677	1
Nb	93	2	72	42.258	ppb	90.88290893	23	2
Mo	95	2	115	0.588	ppb	22.25023303	810	0.5
Pd	105	2	115	-9.391	ppb	-271.2577634	33	1
Ag	107	2	115	0.017	ppb	22.10953821	123	1
Cd	111	2	115	0.053	ppb	53.30205203	40	0.5
Sn	120	2	115	0.484	ppb	15.16961466	1507	1
Sb	121	2	115	0.136	ppb	47.93537095	313	0.6
Ba	137	2	115	0.120	ppb	116.151656	163	0.5
W	182	2	165	-0.307	ppb	-16.70546075	1653	1
Pt	195	2	165	32.076	ppb	198.7603096	80	1
Tl	205	2	165	0.063	ppb	11.78296391	800	0.1
Pb	208	2	165	0.188	ppb	8.235746444	4014	0.5
Th	232	2	193	-0.399	ppb	-9.430875392	10007	1
U	238	2	193	0.077	ppb	2.206836929	1480	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	810596	0.56	758371	106.89	60	120	
Sc (IS)	45	1	HMI H2	23304835	0.89	21579358	108.00	60	120	
Sc (IS)	45	2	HMI He	1524259	1.33	1389101	109.73	60	120	
Sc (IS)	45	3	No Gas	43214746	0.19	40812554	105.89	60	120	
Ge Internal standard	72	1	HMI H2	11927517	0.24	11084416	107.61	60	120	
Ge Internal standard	72	2	HMI He	1827637	1.21	1699063	107.57	60	120	
In Internal standard	115	2	HMI He	5387604	0.91	5046179	106.77	60	120	
Ho-165	165	2	HMI He	19140548	0.62	18410285	103.97	60	120	
Ir (IS)	193	2	HMI He	13869246	0.71	13684495	101.35	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585165/2-A
Data File Name	149_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:10:48-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585165 200.8
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	26.259	26.259	ppb	21.244	3919350	400	6.6	80	120	>+/-20%
Be	9	1	6	41.789	41.789	ppb	3.372	14937	40	104.5	80	120	
Na	23	2	45	759.355	759.355	ppb	1.145	232406	40	1898.4	80	120	>+/-20%
Mg	24	2	45	759.510	759.510	ppb	2.371	102166	40	1898.8	80	120	>+/-20%
Al	27	2	45	778.042	778.042	ppb	3.775	29774	40	1945.1	80	120	>+/-20%
K	39	2	45	764.648	764.648	ppb	2.411	133282	40	1911.6	80	120	>+/-20%
V	51	2	72	40.715	40.715	ppb	1.468	68979	40	101.8	80	120	
Cr	52	2	72	40.689	40.689	ppb	0.412	86690	40	101.7	80	120	
Mn	55	2	72	40.750	40.750	ppb	1.599	37580	40	101.9	80	120	
(Fe)	57	2	72	791.610	791.610	ppb	0.270	32893	40	1979.0	80	120	>+/-20%
Co	59	2	72	40.961	40.961	ppb	0.923	145252	40	102.4	80	120	
Ni	60	2	72	40.880	40.880	ppb	1.337	41429	40	102.2	80	120	
Cu	63	2	72	41.458	41.458	ppb	0.245	110946	40	103.6	80	120	
Zn	66	2	72	40.241	40.241	ppb	1.398	20176	40	100.6	80	120	
As	75	2	72	40.541	40.541	ppb	0.917	16419	40	101.4	80	120	
Se	78	1	72	41.072	41.072	ppb	1.725	13603	40	102.7	80	120	
Nb	93	2	72	-2.885	-2.885	ppb	-8.253	10	40	-7.2	80	120	>+/-20%
Mo	95	2	115	40.078	40.078	ppb	1.105	52516	40	100.2	80	120	
Pd	105	2	115	-31.718	-31.718	ppb	-50.346	20	40	-79.3	80	120	>+/-20%
Ag	107	2	115	39.102	39.102	ppb	0.985	168876	40	97.8	80	120	
Cd	111	2	115	41.298	41.298	ppb	1.675	25885	40	103.2	80	120	
Sn	120	2	115	39.686	39.686	ppb	1.771	65241	40	99.2	80	120	
Sb	121	2	115	40.723	40.723	ppb	1.838	74072	40	101.8	80	120	
Ba	137	2	115	41.550	41.550	ppb	0.904	22277	40	103.9	80	120	
W	182	2	165	0.015	0.015	ppb	296.845	3144	40	0.0	80	120	>+/-20%
Pt	195	2	165	46.928	46.928	ppb	86.164	93	40	117.3	80	120	
Tl	205	2	165	39.801	39.801	ppb	1.058	352899	40	99.5	80	120	
Pb	208	2	165	40.289	40.289	ppb	0.763	493241	40	100.7	80	120	
Th	232	2	193	22.093	22.093	ppb	7.974	277905	40	55.2	80	120	>+/-20%
U	238	2	193	34.870	34.870	ppb	1.129	571514	40	87.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	807685	0.43	758371	106.50	60	120	
Sc (IS)	45	1	HMI H2	23670583	0.25	21579358	109.69	60	120	
Sc (IS)	45	2	HMI He	1518872	0.64	1389101	109.34	60	120	
Sc (IS)	45	3	No Gas	43065264	0.67	40812554	105.52	60	120	
Ge Internal standard	72	1	HMI H2	12118313	0.41	11084416	109.33	60	120	
Ge Internal standard	72	2	HMI He	1845349	0.71	1699063	108.61	60	120	
In Internal standard	115	2	HMI He	5433787	0.87	5046179	107.68	60	120	
Ho-165	165	2	HMI He	19286519	0.27	18410285	104.76	60	120	
Ir (IS)	193	2	HMI He	14117577	0.78	13684495	103.16	60	120	

Sample Report

Sample Table

Sample Name	280-165832-D-1-B
Data File Name	150SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:14:32-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.155	ppb	-15.155	-16.57	3454761	50000	
Be	9	1	6	0.198	ppb	0.198	37.94	80	2000	
B	11	1	6	9.247	ppb	9.247	12.47	3861	2000	
Na	23	2	45	1883.189	ppb	1883.189	0.54	550187	400000	
Mg	24	2	45	31565.517	ppb	31565.517	1.36	4242868	400000	
Al	27	2	45	18.325	ppb	18.325	32.43	990	400000	
Si	28	2	45	280.781	ppb	280.781	2.21	84515	10000	
P	31	2	45	0.909	ppb	0.909	454.10	71	10000	
K	39	2	45	713.431	ppb	713.431	4.26	128654	400000	
Ca	40	1	45	39912.047	ppb	39912.047	0.86	177519791	400000	
Ti	47	2	45	0.479	ppb	0.479	1.21	20	4000	
V	51	2	72	-0.185	ppb	-0.185	-13.70	413	2000	
Cr	52	2	72	0.158	ppb	0.158	41.26	1060	5000	
Mn	55	2	72	30.916	ppb	30.916	2.84	28538	10000	
Fe	56	1	72	265.951	ppb	265.951	0.96	2370835	10000	
(Fe)	57	2	72	265.954	ppb	265.954	3.68	11278	400000	
Co	59	2	72	0.376	ppb	0.376	10.59	1380	2000	
Ni	60	2	72	2.235	ppb	2.235	13.17	2527	5000	
Cu	63	2	72	7.125	ppb	7.125	3.69	19542	5000	
Zn	66	2	72	435.140	ppb	435.140	1.56	213924	5000	
As	75	2	72	0.462	ppb	0.462	17.95	228	2000	
Se	78	1	72	1.113	ppb	1.113	10.71	388	2000	
Sr	88	2	72	307.480	ppb	307.480	2.44	343278	4000	
Zr	90	2	72	-0.457	ppb	-0.457	-877.78	733	1000	
Nb	93	2	72	75.574	ppb	75.574	52.23	33	200	
Mo	95	2	115	4.497	ppb	4.497	2.12	5798	2000	
Pd	105	2	115	-14.097	ppb	-14.097	-206.18	30	100	
Ag	107	2	115	0.026	ppb	0.026	30.82	157	100	
Cd	111	2	115	1.012	ppb	1.012	10.93	627	2000	
Sn	120	2	115	1.279	ppb	1.279	5.02	2747	2000	
Sb	121	2	115	1.821	ppb	1.821	2.62	3300	1000	
Ba	137	2	115	50.118	ppb	50.118	2.23	26229	5000	
W	182	2	165	0.002	ppb	0.002	4019.24	3084	100	
Pt	195	2	165	-6.659	ppb	-6.659	-94.50	47	100	
Tl	205	2	165	0.081	ppb	0.081	8.05	960	2000	
Pb	208	2	165	0.574	ppb	0.574	7.28	8775	5000	
Th	232	2	193	1.558	ppb	1.558	10.02	32507	2000	
U	238	2	193	23.469	ppb	23.469	0.34	373427	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	795250	0.74	758371	104.86	60	120	
Sc (IS)	45	1	HMI H2	23502249	0.84	21579358	108.91	60	120	
Sc (IS)	45	2	HMI He	1526868	1.21	1389101	109.92	60	120	
Sc (IS)	45	3	No Gas	42446198	0.45	40812554	104.00	60	120	
Ge Internal standard	72	1	HMI H2	12239853	0.31	11084416	110.42	60	120	
Ge Internal standard	72	2	HMI He	1844949	0.93	1699063	108.59	60	120	
In Internal standard	115	2	HMI He	5308661	0.84	5046179	105.20	60	120	
Ho-165	165	2	HMI He	19305559	0.82	18410285	104.86	60	120	
Ir (IS)	193	2	HMI He	13702153	0.75	13684495	100.13	60	120	

Sample Report

Sample Table

Sample Name	280-165832-D-1-C MS
Data File Name	151SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:18:16-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	27.785	ppb	27.785	13.64	3846352	50000	
Be	9	1	6	42.447	ppb	42.447	4.39	14643	2000	
B	11	1	6	7.316	ppb	7.316	9.12	3260	2000	
Na	23	2	45	2659.406	ppb	2659.406	0.58	761133	400000	
Mg	24	2	45	32366.707	ppb	32366.707	1.40	4307097	400000	
Al	27	2	45	833.596	ppb	833.596	3.95	31713	400000	
Si	28	2	45	323.171	ppb	323.171	1.91	94211	10000	
P	31	2	45	-0.033	ppb	-0.033	-14889.88	67	10000	
K	39	2	45	1467.567	ppb	1467.567	2.01	204761	400000	
Ca	40	1	45	41289.977	ppb	41289.977	1.32	180920717	400000	
Ti	47	2	45	43.100	ppb	43.100	15.53	1780	4000	
V	51	2	72	41.400	ppb	41.400	2.19	69973	2000	
Cr	52	2	72	41.390	ppb	41.390	0.66	88000	5000	
Mn	55	2	72	72.513	ppb	72.513	0.75	66600	10000	
Fe	56	1	72	1076.051	ppb	1076.051	0.65	9236368	10000	
(Fe)	57	2	72	1053.080	ppb	1053.080	0.91	43554	400000	
Co	59	2	72	40.562	ppb	40.562	0.69	143551	2000	
Ni	60	2	72	41.805	ppb	41.805	0.61	42278	5000	
Cu	63	2	72	46.190	ppb	46.190	1.30	123283	5000	
Zn	66	2	72	483.007	ppb	483.007	1.16	236986	5000	
As	75	2	72	42.203	ppb	42.203	2.75	17053	2000	
Se	78	1	72	43.580	ppb	43.580	2.13	14318	2000	
Sr	88	2	72	386.499	ppb	386.499	0.80	430737	4000	
Zr	90	2	72	2.353	ppb	2.353	105.93	807	1000	
Nb	93	2	72	8.692	ppb	8.692	593.72	13	200	
Mo	95	2	115	46.782	ppb	46.782	0.67	59055	2000	
Pd	105	2	115	31.635	ppb	31.635	165.37	57	100	
Ag	107	2	115	40.835	ppb	40.835	1.08	169923	100	
Cd	111	2	115	43.817	ppb	43.817	3.83	26463	2000	
Sn	120	2	115	42.693	ppb	42.693	1.15	67574	2000	
Sb	121	2	115	44.056	ppb	44.056	0.74	77207	1000	
Ba	137	2	115	92.728	ppb	92.728	2.65	47780	5000	
W	182	2	165	0.296	ppb	0.296	7.43	4364	100	
Pt	195	2	165	48.593	ppb	48.593	69.96	93	100	
Tl	205	2	165	40.795	ppb	40.795	0.68	356398	2000	
Pb	208	2	165	41.103	ppb	41.103	0.92	495766	5000	
Th	232	2	193	36.253	ppb	36.253	3.89	433185	2000	
U	238	2	193	60.013	ppb	60.013	0.78	954274	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	779475	0.33	758371	102.78	60	120	
Sc (IS)	45	1	HMI H2	23154490	1.01	21579358	107.30	60	120	
Sc (IS)	45	2	HMI He	1511590	1.14	1389101	108.82	60	120	
Sc (IS)	45	3	No Gas	42104501	1.27	40812554	103.17	60	120	
Ge Internal standard	72	1	HMI H2	12022086	0.36	11084416	108.46	60	120	
Ge Internal standard	72	2	HMI He	1841678	1.38	1699063	108.39	60	120	
In Internal standard	115	2	HMI He	5235276	0.71	5046179	103.75	60	120	
Ho-165	165	2	HMI He	19004178	1.07	18410285	103.23	60	120	
Ir (IS)	193	2	HMI He	13698479	0.66	13684495	100.10	60	120	

Sample Report

Sample Table

Sample Name	280-165832-D-1-D MSD
Data File Name	152SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:22:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	27.870	ppb	27.870	11.95	3883382	50000	
Be	9	1	6	42.175	ppb	42.175	7.27	14663	2000	
B	11	1	6	7.453	ppb	7.453	10.62	3324	2000	
Na	23	2	45	2742.460	ppb	2742.460	1.00	775412	400000	
Mg	24	2	45	33892.933	ppb	33892.933	0.57	4459362	400000	
Al	27	2	45	812.431	ppb	812.431	2.92	30578	400000	
Si	28	2	45	338.674	ppb	338.674	2.48	96953	10000	
P	31	2	45	-1.674	ppb	-1.674	-265.40	59	10000	
K	39	2	45	1488.777	ppb	1488.777	0.61	204599	400000	
Ca	40	1	45	42453.809	ppb	42453.809	0.63	186646837	400000	
Ti	47	2	45	43.918	ppb	43.918	8.77	1797	4000	
V	51	2	72	41.323	ppb	41.323	1.58	68661	2000	
Cr	52	2	72	41.965	ppb	41.965	1.64	87672	5000	
Mn	55	2	72	74.471	ppb	74.471	2.87	67209	10000	
Fe	56	1	72	1206.764	ppb	1206.764	0.33	10379921	10000	
(Fe)	57	2	72	1205.574	ppb	1205.574	2.96	48949	400000	
Co	59	2	72	40.274	ppb	40.274	0.95	140096	2000	
Ni	60	2	72	41.985	ppb	41.985	4.74	41713	5000	
Cu	63	2	72	47.462	ppb	47.462	1.30	124498	5000	
Zn	66	2	72	506.266	ppb	506.266	1.22	244131	5000	
As	75	2	72	42.086	ppb	42.086	2.86	16714	2000	
Se	78	1	72	42.682	ppb	42.682	2.48	14062	2000	
Sr	88	2	72	402.181	ppb	402.181	2.96	440436	4000	
Zr	90	2	72	8.234	ppb	8.234	68.26	943	1000	
Nb	93	2	72	-24.862	ppb	-24.862	-80.41	3	200	
Mo	95	2	115	46.317	ppb	46.317	0.96	58202	2000	
Pd	105	2	115	71.558	ppb	71.558	95.32	80	100	
Ag	107	2	115	40.471	ppb	40.471	0.19	167630	100	
Cd	111	2	115	42.051	ppb	42.051	1.73	25277	2000	
Sn	120	2	115	43.949	ppb	43.949	2.09	69221	2000	
Sb	121	2	115	44.486	ppb	44.486	1.90	77592	1000	
Ba	137	2	115	94.276	ppb	94.276	1.23	48352	5000	
W	182	2	165	0.332	ppb	0.332	6.51	4548	100	
Pt	195	2	165	-2.043	ppb	-2.043	-1511.67	50	100	
Tl	205	2	165	40.258	ppb	40.258	1.22	353185	2000	
Pb	208	2	165	40.403	ppb	40.403	0.40	489400	5000	
Th	232	2	193	41.904	ppb	41.904	2.13	496275	2000	
U	238	2	193	60.914	ppb	60.914	0.52	964223	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	785625	0.55	758371	103.59	60	120	
Sc (IS)	45	1	HMI H2	23231195	0.64	21579358	107.65	60	120	
Sc (IS)	45	2	HMI He	1494502	1.36	1389101	107.59	60	120	
Sc (IS)	45	3	No Gas	42499484	1.02	40812554	104.13	60	120	
Ge Internal standard	72	1	HMI H2	12055669	0.41	11084416	108.76	60	120	
Ge Internal standard	72	2	HMI He	1810258	1.78	1699063	106.54	60	120	
In Internal standard	115	2	HMI He	5211027	0.62	5046179	103.27	60	120	
Ho-165	165	2	HMI He	19082345	0.55	18410285	103.65	60	120	
Ir (IS)	193	2	HMI He	13636579	0.09	13684495	99.65	60	120	

Sample Report

Sample Table

Sample Name	280-165851-B-1-B
Data File Name	153SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:25:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-14.321	ppb	-14.321	-19.25	3524312	50000	
Be	9	1	6	0.101	ppb	0.101	97.46	47	2000	
B	11	1	6	6.441	ppb	6.441	15.72	3130	2000	
Na	23	2	45	1411.618	ppb	1411.618	1.14	416224	400000	
Mg	24	2	45	2280.556	ppb	2280.556	0.50	306316	400000	
Al	27	2	45	58.539	ppb	58.539	18.78	2514	400000	
Si	28	2	45	476.502	ppb	476.502	0.86	133346	10000	
P	31	2	45	17.307	ppb	17.307	23.43	142	10000	
K	39	2	45	349.757	ppb	349.757	3.80	90729	400000	
Ca	40	1	45	7545.451	ppb	7545.451	0.39	33416785	400000	
Ti	47	2	45	2.318	ppb	2.318	25.32	97	4000	
V	51	2	72	0.759	ppb	0.759	14.89	1947	2000	
Cr	52	2	72	0.403	ppb	0.403	13.37	1540	5000	
Mn	55	2	72	12.655	ppb	12.655	4.13	11498	10000	
Fe	56	1	72	463.570	ppb	463.570	0.69	3987843	10000	
(Fe)	57	2	72	451.206	ppb	451.206	1.33	18434	400000	
Co	59	2	72	0.260	ppb	0.260	10.28	947	2000	
Ni	60	2	72	0.599	ppb	0.599	11.19	860	5000	
Cu	63	2	72	2.498	ppb	2.498	6.91	7058	5000	
Zn	66	2	72	2.040	ppb	2.040	17.52	1393	5000	
As	75	2	72	0.243	ppb	0.243	9.77	137	2000	
Se	78	1	72	0.111	ppb	0.111	11.67	52	2000	
Sr	88	2	72	42.462	ppb	42.462	1.53	46383	4000	
Zr	90	2	72	12.470	ppb	12.470	20.86	1047	1000	
Nb	93	2	72	203.849	ppb	203.849	44.19	70	200	
Mo	95	2	115	0.921	ppb	0.921	14.96	1233	2000	
Pd	105	2	115	-9.152	ppb	-9.152	-208.21	33	100	
Ag	107	2	115	0.076	ppb	0.076	14.04	373	100	
Cd	111	2	115	0.021	ppb	0.021	133.84	20	2000	
Sn	120	2	115	1.194	ppb	1.194	16.67	2634	2000	
Sb	121	2	115	0.562	ppb	0.562	12.04	1073	1000	
Ba	137	2	115	14.103	ppb	14.103	5.18	7512	5000	
W	182	2	165	-0.306	ppb	-0.306	-12.62	1663	100	
Pt	195	2	165	28.132	ppb	28.132	93.72	77	100	
Tl	205	2	165	0.062	ppb	0.062	4.76	793	2000	
Pb	208	2	165	0.389	ppb	0.389	2.65	6477	5000	
Th	232	2	193	2.562	ppb	2.562	8.19	45301	2000	
U	238	2	193	0.206	ppb	0.206	8.11	3611	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	807177	0.29	758371	106.44	60	120	
Sc (IS)	45	1	HMI H2	23346775	0.21	21579358	108.19	60	120	
Sc (IS)	45	2	HMI He	1522743	1.09	1389101	109.62	60	120	
Sc (IS)	45	3	No Gas	43196423	0.40	40812554	105.84	60	120	
Ge Internal standard	72	1	HMI H2	11944456	0.46	11084416	107.76	60	120	
Ge Internal standard	72	2	HMI He	1800271	0.42	1699063	105.96	60	120	
In Internal standard	115	2	HMI He	5350962	0.33	5046179	106.04	60	120	
Ho-165	165	2	HMI He	19202361	0.74	18410285	104.30	60	120	
Ir (IS)	193	2	HMI He	14072155	0.46	13684495	102.83	60	120	

Sample Report

Sample Table

Sample Name	280-165851-B-2-B
Data File Name	154SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:29:29-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-13.082	ppb	-13.082	-12.64	3508178	50000	
Be	9	1	6	0.120	ppb	0.120	71.41	53	2000	
B	11	1	6	5.833	ppb	5.833	15.78	2954	2000	
Na	23	2	45	1571.639	ppb	1571.639	0.87	459422	400000	
Mg	24	2	45	2800.251	ppb	2800.251	0.83	374547	400000	
Al	27	2	45	145.896	ppb	145.896	9.70	5812	400000	
Si	28	2	45	516.364	ppb	516.364	1.19	142787	10000	
P	31	2	45	20.414	ppb	20.414	9.59	155	10000	
K	39	2	45	454.795	ppb	454.795	1.50	101210	400000	
Ca	40	1	45	8737.449	ppb	8737.449	0.56	38699134	400000	
Ti	47	2	45	9.321	ppb	9.321	4.69	387	4000	
V	51	2	72	0.813	ppb	0.813	2.12	2060	2000	
Cr	52	2	72	0.495	ppb	0.495	12.76	1750	5000	
Mn	55	2	72	12.569	ppb	12.569	6.04	11554	10000	
Fe	56	1	72	665.812	ppb	665.812	1.27	5744424	10000	
(Fe)	57	2	72	665.898	ppb	665.898	1.41	27367	400000	
Co	59	2	72	0.328	ppb	0.328	8.81	1193	2000	
Ni	60	2	72	0.609	ppb	0.609	22.08	880	5000	
Cu	63	2	72	3.039	ppb	3.039	4.25	8563	5000	
Zn	66	2	72	6.857	ppb	6.857	5.10	3744	5000	
As	75	2	72	0.198	ppb	0.198	27.28	120	2000	
Se	78	1	72	0.102	ppb	0.102	36.64	49	2000	
Sr	88	2	72	59.651	ppb	59.651	1.45	65873	4000	
Zr	90	2	72	11.093	ppb	11.093	18.06	1023	1000	
Nb	93	2	72	552.053	ppb	552.053	27.50	173	200	
Mo	95	2	115	0.498	ppb	0.498	15.57	687	2000	
Pd	105	2	115	-31.045	ppb	-31.045	-140.54	20	100	
Ag	107	2	115	0.127	ppb	0.127	17.70	590	100	
Cd	111	2	115	0.070	ppb	0.070	102.54	50	2000	
Sn	120	2	115	0.409	ppb	0.409	42.80	1377	2000	
Sb	121	2	115	0.184	ppb	0.184	7.73	397	1000	
Ba	137	2	115	16.620	ppb	16.620	2.50	8826	5000	
W	182	2	165	-0.321	ppb	-0.321	-11.13	1613	100	
Pt	195	2	165	38.604	ppb	38.604	94.72	87	100	
Tl	205	2	165	0.026	ppb	0.026	28.66	477	2000	
Pb	208	2	165	2.371	ppb	2.371	1.90	30884	5000	
Th	232	2	193	1.996	ppb	1.996	9.10	38485	2000	
U	238	2	193	0.183	ppb	0.183	3.51	3214	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	805518	0.18	758371	106.22	60	120	
Sc (IS)	45	1	HMI H2	23358097	0.42	21579358	108.24	60	120	
Sc (IS)	45	2	HMI He	1516960	0.88	1389101	109.20	60	120	
Sc (IS)	45	3	No Gas	42850271	1.31	40812554	104.99	60	120	
Ge Internal standard	72	1	HMI H2	12034466	0.49	11084416	108.57	60	120	
Ge Internal standard	72	2	HMI He	1821502	0.32	1699063	107.21	60	120	
In Internal standard	115	2	HMI He	5346020	1.20	5046179	105.94	60	120	
Ho-165	165	2	HMI He	19413127	0.14	18410285	105.45	60	120	
Ir (IS)	193	2	HMI He	14041082	0.49	13684495	102.61	60	120	

Sample Report

Sample Table

Sample Name	280-165851-B-3-B
Data File Name	155SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:33:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-14.832	ppb	-14.832	-15.75	3474883	50000	
Be	9	1	6	0.102	ppb	0.102	32.65	47	2000	
B	11	1	6	6.586	ppb	6.586	17.78	3144	2000	
Na	23	2	45	1968.496	ppb	1968.496	1.52	573733	400000	
Mg	24	2	45	5476.950	ppb	5476.950	2.15	736068	400000	
Al	27	2	45	166.179	ppb	166.179	3.39	6615	400000	
Si	28	2	45	532.488	ppb	532.488	2.80	147624	10000	
P	31	2	45	17.577	ppb	17.577	35.85	143	10000	
K	39	2	45	873.082	ppb	873.082	2.23	145101	400000	
Ca	40	1	45	13751.666	ppb	13751.666	0.89	61486931	400000	
Ti	47	2	45	10.431	ppb	10.431	19.25	437	4000	
V	51	2	72	0.731	ppb	0.731	13.58	1960	2000	
Cr	52	2	72	0.611	ppb	0.611	33.94	2027	5000	
Mn	55	2	72	13.475	ppb	13.475	2.03	12609	10000	
Fe	56	1	72	494.385	ppb	494.385	0.41	4329268	10000	
(Fe)	57	2	72	484.888	ppb	484.888	0.57	20400	400000	
Co	59	2	72	0.292	ppb	0.292	19.78	1090	2000	
Ni	60	2	72	0.626	ppb	0.626	16.87	913	5000	
Cu	63	2	72	2.988	ppb	2.988	1.33	8586	5000	
Zn	66	2	72	11.526	ppb	11.526	3.22	6118	5000	
As	75	2	72	0.260	ppb	0.260	18.52	148	2000	
Se	78	1	72	0.181	ppb	0.181	30.92	76	2000	
Sr	88	2	72	121.929	ppb	121.929	0.97	137040	4000	
Zr	90	2	72	6.052	ppb	6.052	127.99	910	1000	
Nb	93	2	72	484.644	ppb	484.644	26.42	157	200	
Mo	95	2	115	7.275	ppb	7.275	4.42	9480	2000	
Pd	105	2	115	-9.430	ppb	-9.430	-103.27	33	100	
Ag	107	2	115	0.178	ppb	0.178	22.93	813	100	
Cd	111	2	115	0.042	ppb	0.042	22.20	33	2000	
Sn	120	2	115	0.219	ppb	0.219	11.39	1077	2000	
Sb	121	2	115	0.188	ppb	0.188	27.70	407	1000	
Ba	137	2	115	17.355	ppb	17.355	3.57	9273	5000	
W	182	2	165	-0.287	ppb	-0.287	-5.96	1760	100	
Pt	195	2	165	4.857	ppb	4.857	136.21	57	100	
Tl	205	2	165	0.017	ppb	0.017	66.99	397	2000	
Pb	208	2	165	3.977	ppb	3.977	0.75	50285	5000	
Th	232	2	193	1.381	ppb	1.381	13.09	30960	2000	
U	238	2	193	0.490	ppb	0.490	8.02	8159	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	800217	0.52	758371	105.52	60	120	
Sc (IS)	45	1	HMI H2	23601881	1.05	21579358	109.37	60	120	
Sc (IS)	45	2	HMI He	1525878	2.34	1389101	109.85	60	120	
Sc (IS)	45	3	No Gas	42652376	0.78	40812554	104.51	60	120	
Ge Internal standard	72	1	HMI H2	12170469	0.32	11084416	109.80	60	120	
Ge Internal standard	72	2	HMI He	1856044	1.39	1699063	109.24	60	120	
In Internal standard	115	2	HMI He	5380671	0.61	5046179	106.63	60	120	
Ho-165	165	2	HMI He	19292876	0.10	18410285	104.79	60	120	
Ir (IS)	193	2	HMI He	13924297	0.84	13684495	101.75	60	120	

Sample Report

Sample Table

Sample Name	280-165863-A-1-D
Data File Name	156SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:36:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-12.348	ppb	-12.348	-9.83	3497492	50000	
Be	9	1	6	0.056	ppb	0.056	135.32	30	2000	
B	11	1	6	5.806	ppb	5.806	5.70	2914	2000	
Na	23	2	45	4375.197	ppb	4375.197	0.62	1227589	400000	
Mg	24	2	45	2204.128	ppb	2204.128	0.74	291035	400000	
Al	27	2	45	37.051	ppb	37.051	7.96	1670	400000	
Si	28	2	45	708.691	ppb	708.691	1.85	188259	10000	
P	31	2	45	10.388	ppb	10.388	27.42	110	10000	
K	39	2	45	689.009	ppb	689.009	2.58	123661	400000	
Ca	40	1	45	7551.009	ppb	7551.009	0.55	33374885	400000	
Ti	47	2	45	1.308	ppb	1.308	57.64	53	4000	
V	51	2	72	0.447	ppb	0.447	39.42	1460	2000	
Cr	52	2	72	0.176	ppb	0.176	15.10	1090	5000	
Mn	55	2	72	8.501	ppb	8.501	4.17	7902	10000	
Fe	56	1	72	120.712	ppb	120.712	1.11	1091654	10000	
(Fe)	57	2	72	126.625	ppb	126.625	2.09	5504	400000	
Co	59	2	72	0.107	ppb	0.107	34.92	423	2000	
Ni	60	2	72	0.210	ppb	0.210	71.97	487	5000	
Cu	63	2	72	1.137	ppb	1.137	10.36	3577	5000	
Zn	66	2	72	6.763	ppb	6.763	7.12	3714	5000	
As	75	2	72	0.064	ppb	0.064	21.03	67	2000	
Se	78	1	72	0.049	ppb	0.049	84.64	32	2000	
Sr	88	2	72	86.049	ppb	86.049	1.61	95408	4000	
Zr	90	2	72	0.251	ppb	0.251	1349.75	747	1000	
Nb	93	2	72	245.243	ppb	245.243	28.71	83	200	
Mo	95	2	115	0.546	ppb	0.546	21.26	750	2000	
Pd	105	2	115	-9.267	ppb	-9.267	-267.15	33	100	
Ag	107	2	115	0.009	ppb	0.009	40.63	87	100	
Cd	111	2	115	0.010	ppb	0.010	93.00	13	2000	
Sn	120	2	115	0.143	ppb	0.143	31.31	950	2000	
Sb	121	2	115	0.050	ppb	0.050	35.34	157	1000	
Ba	137	2	115	13.830	ppb	13.830	4.89	7369	5000	
W	182	2	165	-0.264	ppb	-0.264	-25.70	1847	100	
Pt	195	2	165	9.346	ppb	9.346	126.76	60	100	
Tl	205	2	165	0.019	ppb	0.019	30.26	407	2000	
Pb	208	2	165	0.125	ppb	0.125	13.88	3250	5000	
Th	232	2	193	0.821	ppb	0.821	14.72	23723	2000	
U	238	2	193	0.059	ppb	0.059	8.02	1157	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	796530	0.37	758371	105.03	60	120	
Sc (IS)	45	1	HMI H2	23300175	0.38	21579358	107.97	60	120	
Sc (IS)	45	2	HMI He	1496884	1.44	1389101	107.76	60	120	
Sc (IS)	45	3	No Gas	42630209	0.99	40812554	104.45	60	120	
Ge Internal standard	72	1	HMI H2	12039235	0.65	11084416	108.61	60	120	
Ge Internal standard	72	2	HMI He	1829958	1.03	1699063	107.70	60	120	
In Internal standard	115	2	HMI He	5351752	0.71	5046179	106.06	60	120	
Ho-165	165	2	HMI He	19114195	0.61	18410285	103.82	60	120	
Ir (IS)	193	2	HMI He	13552562	0.51	13684495	99.04	60	120	

Sample Report

Sample Table

Sample Name	280-165863-A-2-B
Data File Name	157SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:40:41-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585165 200.8
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.513	ppb	-15.513	-1.20	3492352	50000	
Be	9	1	6	0.065	ppb	0.065	65.85	33	2000	
B	11	1	6	14.475	ppb	14.475	8.08	5311	2000	
Na	23	2	45	9474.481	ppb	9474.481	1.54	2640473	400000	
Mg	24	2	45	4804.284	ppb	4804.284	1.83	634761	400000	
Al	27	2	45	30.723	ppb	30.723	8.48	1437	400000	
Si	28	2	45	656.990	ppb	656.990	2.36	175860	10000	
P	31	2	45	8.437	ppb	8.437	20.95	102	10000	
K	39	2	45	1449.626	ppb	1449.626	1.87	201307	400000	
Ca	40	1	45	16350.178	ppb	16350.178	0.53	72183571	400000	
Ti	47	2	45	0.654	ppb	0.654	86.61	27	4000	
V	51	2	72	0.147	ppb	0.147	74.10	970	2000	
Cr	52	2	72	0.132	ppb	0.132	45.02	1007	5000	
Mn	55	2	72	168.779	ppb	168.779	2.51	155127	10000	
Fe	56	1	72	273.699	ppb	273.699	1.11	2407944	10000	
(Fe)	57	2	72	266.457	ppb	266.457	8.70	11301	400000	
Co	59	2	72	0.315	ppb	0.315	9.04	1163	2000	
Ni	60	2	72	0.610	ppb	0.610	12.74	893	5000	
Cu	63	2	72	4.157	ppb	4.157	5.27	11651	5000	
Zn	66	2	72	54.565	ppb	54.565	1.66	27210	5000	
As	75	2	72	0.081	ppb	0.081	16.47	75	2000	
Se	78	1	72	0.089	ppb	0.089	51.72	45	2000	
Sr	88	2	72	165.733	ppb	165.733	1.06	185170	4000	
Zr	90	2	72	1.421	ppb	1.421	80.91	783	1000	
Nb	93	2	72	64.042	ppb	64.042	90.08	30	200	
Mo	95	2	115	0.587	ppb	0.587	29.60	810	2000	
Pd	105	2	115	6.680	ppb	6.680	134.18	43	100	
Ag	107	2	115	0.029	ppb	0.029	86.42	177	100	
Cd	111	2	115	0.133	ppb	0.133	20.52	90	2000	
Sn	120	2	115	0.121	ppb	0.121	41.77	923	2000	
Sb	121	2	115	0.147	ppb	0.147	23.32	333	1000	
Ba	137	2	115	19.848	ppb	19.848	3.63	10621	5000	
W	182	2	165	-0.281	ppb	-0.281	-18.17	1770	100	
Pt	195	2	165	24.841	ppb	24.841	151.29	73	100	
Tl	205	2	165	0.011	ppb	0.011	32.63	337	2000	
Pb	208	2	165	0.680	ppb	0.680	5.44	9958	5000	
Th	232	2	193	0.827	ppb	0.827	14.08	23873	2000	
U	238	2	193	0.393	ppb	0.393	3.48	6438	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	795451	1.08	758371	104.89	60	120	
Sc (IS)	45	1	HMI H2	23309831	0.84	21579358	108.02	60	120	
Sc (IS)	45	2	HMI He	1499679	1.26	1389101	107.96	60	120	
Sc (IS)	45	3	No Gas	42951246	0.52	40812554	105.24	60	120	
Ge Internal standard	72	1	HMI H2	12088714	0.31	11084416	109.06	60	120	
Ge Internal standard	72	2	HMI He	1845456	0.27	1699063	108.62	60	120	
In Internal standard	115	2	HMI He	5397633	0.99	5046179	106.96	60	120	
Ho-165	165	2	HMI He	19114928	0.56	18410285	103.83	60	120	
Ir (IS)	193	2	HMI He	13601240	0.28	13684495	99.39	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	158_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:44:26-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	86.799	ppb	2.221	4305801	100	86.8	90	110	>+\-10%
Be	9	1	6	53.983	ppb	0.514	17970	50	108.0	90	110	
B	11	1	6	536.792	ppb	2.635	141788	50	1073.6	90	110	>+\-10%
Na	23	2	45	52980.552	ppb	0.421	14229340	51000	103.9	90	110	
Mg	24	2	45	11658.179	ppb	2.513	1492729	11000	106.0	90	110	
Al	27	2	45	982.319	ppb	0.358	35905	1000	98.2	90	110	
Si	28	2	45	57.127	ppb	2.618	26962	500	11.4	90	110	>+\-10%
P	31	2	45	2588.309	ppb	2.192	10731	2500	103.5	90	110	
K	39	2	45	10757.320	ppb	0.864	1113741	11000	97.8	90	110	
Ca	40	1	45	11479.433	ppb	1.709	48963448	11000	104.4	90	110	
(Ca)	44	1	45	12070.437	ppb	1.272	1558026	11000	109.7	90	110	
Ti	47	2	45	53.575	ppb	10.739	2130	50	107.1	90	110	
V	51	2	72	51.240	ppb	1.059	82610	50	102.5	90	110	
Cr	52	2	72	50.641	ppb	2.119	102723	50	101.3	90	110	
Mn	55	2	72	51.194	ppb	1.343	44981	50	102.4	90	110	
Fe	56	1	72	1027.368	ppb	1.171	8522944	1000	102.7	90	110	
(Fe)	56	2	72	1031.813	ppb	0.760	1760234	1000	103.2	90	110	
(Fe)	57	2	72	1029.771	ppb	3.692	40697	1000	103.0	90	110	
Co	59	2	72	49.497	ppb	2.563	167362	50	99.0	90	110	
Ni	60	2	72	49.026	ppb	1.414	47341	50	98.1	90	110	
Cu	63	2	72	48.486	ppb	2.457	123636	50	97.0	90	110	
Zn	66	2	72	50.743	ppb	4.425	24152	50	101.5	90	110	
As	75	2	72	51.264	ppb	2.950	19787	50	102.5	90	110	
Se	78	1	72	50.895	ppb	2.745	16152	50	101.8	90	110	
Sr	88	2	72	100.997	ppb	1.533	107656	100	101.0	90	110	
Zr	90	2	72	21.368	ppb	19.284	1247	50	42.7	90	110	>+\-10%
Nb	93	2	72	115.903	ppb	46.690	43	100	115.9	90	110	>+\-10%
Mo	95	2	115	51.966	ppb	0.376	64268	50	103.9	90	110	
Pd	105	2	115	400.357	ppb	17.207	270	50	800.7	90	110	>+\-10%
Ag	107	2	115	49.112	ppb	1.074	200208	50	98.2	90	110	
Cd	111	2	115	51.041	ppb	1.359	30199	50	102.1	90	110	
Sn	120	2	115	53.037	ppb	1.899	82078	50	106.1	90	110	
Sb	121	2	115	51.853	ppb	1.244	89012	50	103.7	90	110	
Ba	137	2	115	51.856	ppb	2.400	26223	50	103.7	90	110	
W	182	2	165	50.885	ppb	0.854	225442	50	101.8	90	110	
Pt	195	2	165	3.916	ppb	163.769	53	50	7.8	90	110	>+\-10%
Tl	205	2	165	48.720	ppb	0.609	412414	50	97.4	90	110	
Pb	208	2	165	49.071	ppb	0.663	573237	50	98.1	90	110	
Th	232	2	193	67.941	ppb	2.962	773213	50	135.9	90	110	>+\-10%
U	238	2	193	45.415	ppb	1.465	698673	50	90.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	752298	0.88	758371	99.20	60	120	
Sc (IS)	45	1	HMI H2	22509335	0.88	21579358	104.31	60	120	
Sc (IS)	45	2	HMI He	1453890	0.64	1389101	104.66	60	120	
Sc (IS)	45	3	No Gas	40985514	0.87	40812554	100.42	60	120	
Ge Internal standard	72	1	HMI H2	11616204	0.99	11084416	104.80	60	120	
Ge Internal standard	72	2	HMI He	1760051	1.58	1699063	103.59	60	120	
In Internal standard	115	2	HMI He	5129277	0.70	5046179	101.65	60	120	
Ho-165	165	2	HMI He	18415680	0.78	18410285	100.03	60	120	
Ir (IS)	193	2	HMI He	13252162	0.27	13684495	96.84	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	159_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:48:10-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-12.565	ppb	-25.9	3468064	10	
Be	9	1	6	0.074	ppb	22.1	37	0.5	
B	11	1	6	10.706	ppb	12.3	4277	0.5	>RL
Na	23	2	45	30.022	ppb	4.1	27353	25	>RL
Mg	24	2	45	5.783	ppb	24.0	1363	25	
Al	27	2	45	2.040	ppb	58.3	360	15	
K	39	2	45	15.360	ppb	30.6	54662	50	
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5	
V	51	2	72	-0.042	ppb	-175.5	633	1	
Cr	52	2	72	0.114	ppb	26.0	937	1	
Mn	55	2	72	0.408	ppb	18.5	523	0.5	
(Fe)	57	2	72	10.062	ppb	13.2	733	25	
Co	59	2	72	0.098	ppb	24.4	380	0.5	
Ni	60	2	72	0.134	ppb	72.1	400	1	
Cu	63	2	72	0.140	ppb	59.7	923	1	
Zn	66	2	72	0.427	ppb	62.0	617	5	
As	75	2	72	0.043	ppb	60.4	58	1	
Se	78	1	72	-0.003	ppb	-901.9	15	1	
Sr	88	2	72	0.114	ppb	76.4	260	0.5	
Zr	90	2	72	0.706	ppb	181.9	740	1	
Nb	93	2	72	9.412	ppb	843.1	13	2	>RL
Mo	95	2	115	0.533	ppb	22.1	717	0.5	>RL
Pd	105	2	115	-2.563	ppb	-1646.5	37	1	
Ag	107	2	115	0.027	ppb	39.4	160	1	
Cd	111	2	115	0.011	ppb	359.8	13	0.5	
Sn	120	2	115	0.648	ppb	7.8	1720	1	
Sb	121	2	115	0.282	ppb	5.4	560	0.6	
Ba	137	2	115	-0.026	ppb	-171.5	83	0.5	
W	182	2	165	0.397	ppb	20.8	4774	1	
Pt	195	2	165	14.259	ppb	171.1	63	1	>RL
Tl	205	2	165	0.054	ppb	6.0	707	0.1	
Pb	208	2	165	0.064	ppb	18.5	2484	0.5	
Th	232	2	193	2.551	ppb	8.8	44355	1	>RL
U	238	2	193	0.083	ppb	5.7	1563	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	797541	0.63	758371	105.16	60	120	
Sc (IS)	45	1	HMI H2	23007922	0.51	21579358	106.62	60	120	
Sc (IS)	45	2	HMI He	1481811	0.70	1389101	106.67	60	120	
Sc (IS)	45	3	No Gas	42297273	0.40	40812554	103.64	60	120	
Ge Internal standard	72	1	HMI H2	11837226	0.21	11084416	106.79	60	120	
Ge Internal standard	72	2	HMI He	1785605	1.09	1699063	105.09	60	120	
In Internal standard	115	2	HMI He	5235185	1.36	5046179	103.75	60	120	
Ho-165	165	2	HMI He	18837445	0.67	18410285	102.32	60	120	
Ir (IS)	193	2	HMI He	13818501	0.40	13684495	100.98	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585201/1-A
Data File Name	160_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:51:55-06:00
Sample Type	Blank
Dilution	1
Comment	585201 6020b
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-15.311	ppb	-3.703037857	3357357	10
Be	9	1	6	0.058	ppb	132.9595804	30	0.5
B	11	1	6	5.189	ppb	10.47139593	2660	0.5
Na	23	2	45	5.483	ppb	16.07744348	20476	25
Mg	24	2	45	5.591	ppb	5.748576344	1327	25
Al	27	2	45	0.496	ppb	343.0747975	300	15
K	39	2	45	3.785	ppb	356.7583807	53053	50
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5
V	51	2	72	-0.197	ppb	-5.77866996	373	1
Cr	52	2	72	0.137	ppb	40.26015534	963	1
Mn	55	2	72	0.754	ppb	10.61984754	813	0.5
(Fe)	57	2	72	14.787	ppb	20.69445834	900	25
Co	59	2	72	0.080	ppb	21.20565705	313	0.5
Ni	60	2	72	0.031	ppb	179.114683	293	1
Cu	63	2	72	0.039	ppb	39.67391145	650	1
Zn	66	2	72	0.865	ppb	17.78096159	807	5
As	75	2	72	0.009	ppb	589.6811656	43	1
Se	78	1	72	0.002	ppb	1339.679768	16	1
Sr	88	2	72	0.028	ppb	191.4789882	163	0.5
Zr	90	2	72	-1.052	ppb	-83.26026027	680	1
Nb	93	2	72	81.676	ppb	133.1346334	33	2
Mo	95	2	115	0.137	ppb	56.20035194	217	0.5
Pd	105	2	115	-18.905	ppb	-106.4834788	27	1
Ag	107	2	115	0.007	ppb	141.3786347	77	1
Cd	111	2	115	0.000	ppb	-2175.31632	7	0.5
Sn	120	2	115	-0.013	ppb	-407.9664013	683	1
Sb	121	2	115	0.063	ppb	44.71809862	177	0.6
Ba	137	2	115	0.072	ppb	111.9660656	133	0.5
W	182	2	165	0.612	ppb	5.580937023	5661	1
Pt	195	2	165	19.246	ppb	285.661796	67	1
Tl	205	2	165	0.030	ppb	20.92381734	490	0.1
Pb	208	2	165	0.051	ppb	39.5865155	2287	0.5
Th	232	2	193	7.670	ppb	13.08760624	101929	1
U	238	2	193	0.027	ppb	16.0824394	653	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	772685	0.23	758371	101.89	60	120	
Sc (IS)	45	1	HMI H2	22520957	0.72	21579358	104.36	60	120	
Sc (IS)	45	2	HMI He	1469665	0.89	1389101	105.80	60	120	
Sc (IS)	45	3	No Gas	41267483	0.58	40812554	101.11	60	120	
Ge Internal standard	72	1	HMI H2	11517611	0.65	11084416	103.91	60	120	
Ge Internal standard	72	2	HMI He	1746339	0.96	1699063	102.78	60	120	
In Internal standard	115	2	HMI He	5220434	1.12	5046179	103.45	60	120	
Ho-165	165	2	HMI He	18583448	0.45	18410285	100.94	60	120	
Ir (IS)	193	2	HMI He	13535909	0.88	13684495	98.91	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585201/2-A
Data File Name	161_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:55:40-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585201 6020b
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	29.584	29.584	ppb	4.402	3783977	400	7.4	80	120	>+/-20%
Be	9	1	6	43.403	43.403	ppb	4.723	14837	40	108.5	80	120	
Na	23	2	45	766.347	766.347	ppb	1.387	229155	40	1915.9	80	120	>+/-20%
Mg	24	2	45	766.886	766.886	ppb	1.102	100855	40	1917.2	80	120	>+/-20%
Al	27	2	45	817.941	817.941	ppb	3.828	30585	40	2044.9	80	120	>+/-20%
K	39	2	45	762.818	762.818	ppb	2.378	130119	40	1907.0	80	120	>+/-20%
V	51	2	72	41.087	41.087	ppb	1.960	66884	40	102.7	80	120	
Cr	52	2	72	42.846	42.846	ppb	1.065	87685	40	107.1	80	120	
Mn	55	2	72	42.220	42.220	ppb	1.260	37406	40	105.6	80	120	
(Fe)	57	2	72	837.006	837.006	ppb	3.936	33401	40	2092.5	80	120	>+/-20%
Co	59	2	72	42.462	42.462	ppb	0.402	144698	40	106.2	80	120	
Ni	60	2	72	42.449	42.449	ppb	4.163	41325	40	106.1	80	120	
Cu	63	2	72	41.926	41.926	ppb	1.893	107807	40	104.8	80	120	
Zn	66	2	72	42.462	42.462	ppb	0.809	20437	40	106.2	80	120	
As	75	2	72	42.165	42.165	ppb	0.986	16408	40	105.4	80	120	
Se	78	1	72	41.739	41.739	ppb	1.606	13319	40	104.3	80	120	
Nb	93	2	72	10.204	10.204	ppb	395.572	13	40	25.5	80	120	>+/-20%
Mo	95	2	115	42.903	42.903	ppb	0.894	53917	40	107.3	80	120	
Pd	105	2	115	32.297	32.297	ppb	251.941	57	40	80.7	80	120	
Ag	107	2	115	40.703	40.703	ppb	2.010	168590	40	101.8	80	120	
Cd	111	2	115	40.938	40.938	ppb	2.620	24610	40	102.3	80	120	
Sn	120	2	115	41.927	41.927	ppb	1.393	66067	40	104.8	80	120	
Sb	121	2	115	41.910	41.910	ppb	0.480	73114	40	104.8	80	120	
Ba	137	2	115	42.120	42.120	ppb	2.341	21655	40	105.3	80	120	
W	182	2	165	0.837	0.837	ppb	7.065	6722	40	2.1	80	120	>+/-20%
Pt	195	2	165	-4.994	-4.994	ppb	-598.474	47	40	-12.5	80	120	>+/-20%
Tl	205	2	165	40.880	40.880	ppb	2.070	352757	40	102.2	80	120	
Pb	208	2	165	41.052	41.052	ppb	1.238	489101	40	102.6	80	120	
Th	232	2	193	48.645	48.645	ppb	0.872	579072	40	121.6	80	120	>+/-20%
U	238	2	193	35.740	35.740	ppb	0.623	571050	40	89.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	772526	0.35	758371	101.87	60	120	
Sc (IS)	45	1	HMI H2	22625293	0.36	21579358	104.85	60	120	
Sc (IS)	45	2	HMI He	1485018	0.98	1389101	106.90	60	120	
Sc (IS)	45	3	No Gas	41230183	0.70	40812554	101.02	60	120	
Ge Internal standard	72	1	HMI H2	11675995	0.55	11084416	105.34	60	120	
Ge Internal standard	72	2	HMI He	1773283	0.43	1699063	104.37	60	120	
In Internal standard	115	2	HMI He	5211709	1.08	5046179	103.28	60	120	
Ho-165	165	2	HMI He	18771750	0.65	18410285	101.96	60	120	
Ir (IS)	193	2	HMI He	13762067	0.17	13684495	100.57	60	120	

Sample Report

Sample Table

Sample Name	280-165864-B-1-A
Data File Name	162SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T19:59:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1832.016	ppb	1832.016	1.15	20843020	50000	
Be	9	1	6	0.104	ppb	0.104	61.88	43	2000	
B	11	1	6	882.816	ppb	882.816	0.80	227703	2000	
Na	23	2	45	1512359.555	ppb	1512359.555	0.86	416296420	400000	
Mg	24	2	45	1964942.572	ppb	1964942.572	0.73	258069483	400000	
Al	27	2	45	11.476	ppb	11.476	5.45	713	400000	
Si	28	2	45	499.675	ppb	499.675	0.97	136359	10000	
P	31	2	45	25.091	ppb	25.091	9.90	172	10000	
K	39	2	45	30230.623	ppb	30230.623	0.87	3115292	400000	
Ca	40	1	45	498979.803	ppb	498979.803	1.94	2595724495	400000	
Ti	47	2	45	0.571	ppb	0.571	23.95	23	4000	
V	51	2	72	0.311	ppb	0.311	25.62	1177	2000	
Cr	52	2	72	0.574	ppb	0.574	11.49	1834	5000	
Mn	55	2	72	3521.425	ppb	3521.425	0.33	3053111	10000	
Fe	56	1	72	37.556	ppb	37.556	0.56	383036	10000	
(Fe)	57	2	72	70.551	ppb	70.551	5.32	3064	400000	
Co	59	2	72	16.078	ppb	16.078	1.05	53871	2000	
Ni	60	2	72	102.633	ppb	102.633	1.03	97826	5000	
Cu	63	2	72	8.055	ppb	8.055	2.70	20800	5000	
Zn	66	2	72	19.915	ppb	19.915	1.60	9633	5000	
As	75	2	72	0.542	ppb	0.542	9.52	246	2000	
Se	78	1	72	163.476	ppb	163.476	1.65	53943	2000	
Sr	88	2	72	8309.873	ppb	8309.873	1.15	8760818	4000	
Zr	90	2	72	115.764	ppb	115.764	6.38	3571	1000	
Nb	93	2	72	152.984	ppb	152.984	74.84	53	200	
Mo	95	2	115	4.631	ppb	4.631	7.85	5511	2000	
Pd	105	2	115	579.108	ppb	579.108	27.21	357	100	>LDR
Ag	107	2	115	0.217	ppb	0.217	10.45	890	100	
Cd	111	2	115	2.922	ppb	2.922	9.52	1657	2000	
Sn	120	2	115	0.898	ppb	0.898	5.69	1977	2000	
Sb	121	2	115	0.705	ppb	0.705	10.01	1217	1000	
Ba	137	2	115	11.739	ppb	11.739	5.95	5738	5000	
W	182	2	165	1.081	ppb	1.081	3.37	7289	100	
Pt	195	2	165	7.208	ppb	7.208	266.78	53	100	
Tl	205	2	165	5.369	ppb	5.369	1.13	43437	2000	
Pb	208	2	165	0.302	ppb	0.302	1.18	4941	5000	
Th	232	2	193	23.000	ppb	23.000	12.91	240429	2000	
U	238	2	193	165.483	ppb	165.483	1.17	2258442	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	737090	2.33	758371	97.19	60	120	
Sc (IS)	45	1	HMI H2	27494001	1.85	21579358	127.41	60	120	IS Failed
Sc (IS)	45	2	HMI He	1492046	1.18	1389101	107.41	60	120	
Sc (IS)	45	3	No Gas	40860784	1.31	40812554	100.12	60	120	
Ge Internal standard	72	1	HMI H2	12083953	0.53	11084416	109.02	60	120	
Ge Internal standard	72	2	HMI He	1742662	0.42	1699063	102.57	60	120	
In Internal standard	115	2	HMI He	4899185	0.80	5046179	97.09	60	120	
Ho-165	165	2	HMI He	17520797	0.20	18410285	95.17	60	120	
Ir (IS)	193	2	HMI He	11759250	0.39	13684495	85.93	60	120	

Sample Report

Sample Table

Sample Name	280-165864-B-1-Asd@5
Data File Name	163SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:03:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	336.156	ppb	336.156	1.21	7113625	50000	
Be	9	1	6	0.080	ppb	0.080	113.69	37	2000	
B	11	1	6	155.985	ppb	155.985	0.36	42092	2000	
Na	23	2	45	300428.997	ppb	300428.997	1.73	87580495	400000	
Mg	24	2	45	392301.634	ppb	392301.634	2.34	54553871	400000	
Al	27	2	45	3.384	ppb	3.384	18.02	437	400000	
Si	28	2	45	105.592	ppb	105.592	1.31	41902	10000	
P	31	2	45	6.628	ppb	6.628	58.96	99	10000	
K	39	2	45	5637.213	ppb	5637.213	1.44	661170	400000	
Ca	40	1	45	83576.201	ppb	83576.201	0.39	377649981	400000	
Ti	47	2	45	0.154	ppb	0.154	86.63	7	4000	
V	51	2	72	0.128	ppb	0.128	46.55	963	2000	
Cr	52	2	72	0.097	ppb	0.097	38.91	957	5000	
Mn	55	2	72	632.353	ppb	632.353	0.93	596136	10000	
Fe	56	1	72	10.243	ppb	10.243	5.25	150646	10000	
(Fe)	57	2	72	17.465	ppb	17.465	21.46	1090	400000	
Co	59	2	72	3.202	ppb	3.202	1.21	11701	2000	
Ni	60	2	72	20.086	ppb	20.086	0.62	21044	5000	
Cu	63	2	72	1.987	ppb	1.987	6.78	6028	5000	
Zn	66	2	72	4.806	ppb	4.806	5.53	2860	5000	
As	75	2	72	0.104	ppb	0.104	27.40	86	2000	
Se	78	1	72	28.623	ppb	28.623	0.76	9567	2000	
Sr	88	2	72	1662.432	ppb	1662.432	0.87	1905471	4000	
Zr	90	2	72	19.116	ppb	19.116	38.67	1280	1000	
Nb	93	2	72	29.137	ppb	29.137	225.33	20	200	
Mo	95	2	115	0.918	ppb	0.918	7.61	1193	2000	
Pd	105	2	115	134.043	ppb	134.043	50.81	117	100	
Ag	107	2	115	0.063	ppb	0.063	9.26	310	100	
Cd	111	2	115	0.545	ppb	0.545	28.13	333	2000	
Sn	120	2	115	0.323	ppb	0.323	38.27	1200	2000	
Sb	121	2	115	0.139	ppb	0.139	19.28	307	1000	
Ba	137	2	115	2.583	ppb	2.583	3.40	1413	5000	
W	182	2	165	0.102	ppb	0.102	33.16	3364	100	
Pt	195	2	165	36.498	ppb	36.498	119.58	80	100	
Tl	205	2	165	1.107	ppb	1.107	1.28	9553	2000	
Pb	208	2	165	0.118	ppb	0.118	24.87	3044	5000	
Th	232	2	193	1.355	ppb	1.355	23.26	27888	2000	
U	238	2	193	28.675	ppb	28.675	0.97	421905	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	752501	0.39	758371	99.23	60	120	
Sc (IS)	45	1	HMI H2	23882559	0.86	21579358	110.67	60	120	
Sc (IS)	45	2	HMI He	1580014	1.34	1389101	113.74	60	120	
Sc (IS)	45	3	No Gas	43661068	0.76	40812554	106.98	60	120	
Ge Internal standard	72	1	HMI H2	12223379	1.18	11084416	110.28	60	120	
Ge Internal standard	72	2	HMI He	1894469	0.55	1699063	111.50	60	120	
In Internal standard	115	2	HMI He	5193563	0.75	5046179	102.92	60	120	
Ho-165	165	2	HMI He	18326827	0.78	18410285	99.55	60	120	
Ir (IS)	193	2	HMI He	12671654	0.33	13684495	92.60	60	120	

Sample Report

Sample Table

Sample Name	280-165864-B-1-B MS
Data File Name	164SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:06:55-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1755.334	ppb	1755.334	1.31	20378076	50000	
Be	9	1	6	48.500	ppb	48.500	2.91	13753	2000	
B	11	1	6	800.763	ppb	800.763	0.47	179689	2000	
Na	23	2	45	1469586.882	ppb	1469586.882	0.30	417509420	400000	
Mg	24	2	45	1908580.750	ppb	1908580.750	1.23	258704283	400000	
Al	27	2	45	789.015	ppb	789.015	1.98	30602	400000	
Si	28	2	45	544.120	ppb	544.120	1.95	151976	10000	
P	31	2	45	22.807	ppb	22.807	40.05	167	10000	
K	39	2	45	30718.125	ppb	30718.125	2.06	3265824	400000	
Ca	40	1	45	426987.865	ppb	426987.865	0.38	1840915333	400000	
Ti	47	2	45	41.940	ppb	41.940	4.51	1767	4000	
V	51	2	72	42.810	ppb	42.810	3.02	70549	2000	
Cr	52	2	72	41.332	ppb	41.332	1.14	85692	5000	
Mn	55	2	72	3505.004	ppb	3505.004	0.79	3132007	10000	
Fe	56	1	72	834.733	ppb	834.733	0.35	6742356	10000	
(Fe)	57	2	72	813.226	ppb	813.226	2.70	32873	400000	
Co	59	2	72	54.513	ppb	54.513	0.40	188136	2000	
Ni	60	2	72	138.709	ppb	138.709	0.45	136175	5000	
Cu	63	2	72	45.238	ppb	45.238	2.25	117764	5000	
Zn	66	2	72	54.406	ppb	54.406	1.72	26402	5000	
As	75	2	72	43.016	ppb	43.016	0.82	16953	2000	
Se	78	1	72	207.350	ppb	207.350	1.33	63924	2000	
Sr	88	2	72	8304.724	ppb	8304.724	0.94	9023511	4000	
Zr	90	2	72	142.252	ppb	142.252	9.03	4357	1000	
Nb	93	2	72	55.557	ppb	55.557	94.66	27	200	
Mo	95	2	115	46.710	ppb	46.710	2.21	55586	2000	
Pd	105	2	115	597.346	ppb	597.346	4.81	370	100	>LDR
Ag	107	2	115	36.835	ppb	36.835	0.43	144503	100	
Cd	111	2	115	42.019	ppb	42.019	2.75	23922	2000	
Sn	120	2	115	42.716	ppb	42.716	0.84	63738	2000	
Sb	121	2	115	42.632	ppb	42.632	0.51	70433	1000	
Ba	137	2	115	54.017	ppb	54.017	2.56	26279	5000	
W	182	2	165	1.523	ppb	1.523	8.10	8960	100	
Pt	195	2	165	34.057	ppb	34.057	41.22	73	100	
Tl	205	2	165	43.177	ppb	43.177	1.17	341468	2000	
Pb	208	2	165	38.117	ppb	38.117	1.33	416329	5000	
Th	232	2	193	52.733	ppb	52.733	1.48	520344	2000	
U	238	2	193	203.402	ppb	203.402	0.35	2698351	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	640853	0.46	758371	84.50	60	120	
Sc (IS)	45	1	HMI H2	22791320	0.99	21579358	105.62	60	120	
Sc (IS)	45	2	HMI He	1539869	0.56	1389101	110.85	60	120	
Sc (IS)	45	3	No Gas	41396761	1.86	40812554	101.43	60	120	
Ge Internal standard	72	1	HMI H2	11291173	0.90	11084416	101.87	60	120	
Ge Internal standard	72	2	HMI He	1796094	1.16	1699063	105.71	60	120	
In Internal standard	115	2	HMI He	4935435	0.45	5046179	97.81	60	120	
Ho-165	165	2	HMI He	17204635	0.92	18410285	93.45	60	120	
Ir (IS)	193	2	HMI He	11430426	0.42	13684495	83.53	60	120	

Sample Report

Sample Table

Sample Name	280-165864-B-1-C MSD
Data File Name	165SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:10:41-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1785.563	ppb	1785.563	0.32	20514092	50000	
Be	9	1	6	48.100	ppb	48.100	4.94	13322	2000	
B	11	1	6	842.600	ppb	842.600	1.02	184665	2000	
Na	23	2	45	1521457.182	ppb	1521457.182	0.94	438284433	400000	
Mg	24	2	45	1962177.313	ppb	1962177.313	1.63	269676823	400000	
Al	27	2	45	771.358	ppb	771.358	1.92	30344	400000	
Si	28	2	45	562.712	ppb	562.712	0.79	158887	10000	
P	31	2	45	28.031	ppb	28.031	24.86	193	10000	
K	39	2	45	32240.727	ppb	32240.727	0.58	3473332	400000	
Ca	40	1	45	440337.651	ppb	440337.651	0.32	1932596078	400000	
Ti	47	2	45	47.484	ppb	47.484	7.27	2027	4000	
V	51	2	72	43.757	ppb	43.757	1.04	74004	2000	
Cr	52	2	72	41.133	ppb	41.133	2.32	87538	5000	
Mn	55	2	72	3598.025	ppb	3598.025	1.14	3299981	10000	
Fe	56	1	72	833.357	ppb	833.357	0.98	6886374	10000	
(Fe)	57	2	72	825.101	ppb	825.101	1.04	34236	400000	
Co	59	2	72	54.498	ppb	54.498	0.95	193054	2000	
Ni	60	2	72	140.305	ppb	140.305	0.14	141374	5000	
Cu	63	2	72	44.246	ppb	44.246	1.07	118252	5000	
Zn	66	2	72	56.168	ppb	56.168	3.16	27968	5000	
As	75	2	72	43.083	ppb	43.083	0.90	17429	2000	
Se	78	1	72	217.082	ppb	217.082	1.09	68473	2000	
Sr	88	2	72	8516.063	ppb	8516.063	0.97	9497757	4000	
Zr	90	2	72	115.038	ppb	115.038	7.03	3757	1000	
Nb	93	2	72	97.787	ppb	97.787	34.29	40	200	
Mo	95	2	115	46.576	ppb	46.576	0.69	56770	2000	
Pd	105	2	115	668.935	ppb	668.935	24.98	420	100	>LDR
Ag	107	2	115	36.753	ppb	36.753	0.71	147670	100	
Cd	111	2	115	41.727	ppb	41.727	3.64	24336	2000	
Sn	120	2	115	42.571	ppb	42.571	1.44	65063	2000	
Sb	121	2	115	43.536	ppb	43.536	0.90	73667	1000	
Ba	137	2	115	53.964	ppb	53.964	2.03	26887	5000	
W	182	2	165	1.306	ppb	1.306	3.65	8056	100	
Pt	195	2	165	60.178	ppb	60.178	12.98	93	100	
Tl	205	2	165	42.881	ppb	42.881	0.81	338230	2000	
Pb	208	2	165	37.658	ppb	37.658	1.45	410240	5000	
Th	232	2	193	52.109	ppb	52.109	0.47	505216	2000	
U	238	2	193	208.158	ppb	208.158	0.07	2712453	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	626118	1.06	758371	82.56	60	120	
Sc (IS)	45	1	HMI H2	23201451	0.63	21579358	107.52	60	120	
Sc (IS)	45	2	HMI He	1561504	1.46	1389101	112.41	60	120	
Sc (IS)	45	3	No Gas	41081644	0.61	40812554	100.66	60	120	
Ge Internal standard	72	1	HMI H2	11551537	0.60	11084416	104.21	60	120	
Ge Internal standard	72	2	HMI He	1843536	0.43	1699063	108.50	60	120	
In Internal standard	115	2	HMI He	5054863	0.58	5046179	100.17	60	120	
Ho-165	165	2	HMI He	17158113	0.35	18410285	93.20	60	120	
Ir (IS)	193	2	HMI He	11227566	0.66	13684495	82.05	60	120	

Sample Report

Sample Table

Sample Name	280-165864-B-1-A pds
Data File Name	166SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:14:26-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1830.601	ppb	1830.601	1.14	21005552	50000	
Be	9	1	6	247.896	ppb	247.896	1.58	66879	2000	
B	11	1	6	814.661	ppb	814.661	0.66	173982	2000	
Na	23	2	45	1461427.170	ppb	1461427.170	1.34	416856220	400000	
Mg	24	2	45	1883798.064	ppb	1883798.064	1.40	256376423	400000	
Al	27	2	45	2033.499	ppb	2033.499	1.11	78721	400000	
Si	28	2	45	716.607	ppb	716.607	1.54	196483	10000	
P	31	2	45	2351.790	ppb	2351.790	2.29	10375	10000	
K	39	2	45	32254.632	ppb	32254.632	1.54	3440359	400000	
Ca	40	1	45	420736.621	ppb	420736.621	0.63	1800624293	400000	
Ti	47	2	45	227.600	ppb	227.600	7.65	9626	4000	
V	51	2	72	214.959	ppb	214.959	0.55	353247	2000	
Cr	52	2	72	206.721	ppb	206.721	0.81	427969	5000	
Mn	55	2	72	3645.451	ppb	3645.451	1.52	3274062	10000	
Fe	56	1	72	46.773	ppb	46.773	1.24	433319	10000	
(Fe)	57	2	72	78.420	ppb	78.420	7.48	3491	400000	
Co	59	2	72	211.185	ppb	211.185	1.01	732454	2000	
Ni	60	2	72	284.009	ppb	284.009	0.72	279959	5000	
Cu	63	2	72	198.540	ppb	198.540	1.77	517592	5000	
Zn	66	2	72	212.095	ppb	212.095	0.41	102260	5000	
As	75	2	72	222.201	ppb	222.201	0.72	87856	2000	
Se	78	1	72	401.423	ppb	401.423	0.64	124211	2000	
Sr	88	2	72	8294.725	ppb	8294.725	0.35	9059350	4000	
Zr	90	2	72	210.100	ppb	210.100	10.95	6121	1000	
Nb	93	2	72	329.105	ppb	329.105	47.22	107	200	
Mo	95	2	115	220.560	ppb	220.560	1.22	262897	2000	
Pd	105	2	115	946.666	ppb	946.666	19.13	567	100	>LDR
Ag	107	2	115	48.258	ppb	48.258	0.76	189717	100	
Cd	111	2	115	203.973	ppb	203.973	1.60	116359	2000	
Sn	120	2	115	215.839	ppb	215.839	0.05	320055	2000	
Sb	121	2	115	222.850	ppb	222.850	0.37	368718	1000	
Ba	137	2	115	219.907	ppb	219.907	1.61	106931	5000	
W	182	2	165	75.742	ppb	75.742	1.07	304319	100	
Pt	195	2	165	71.530	ppb	71.530	53.92	100	100	
Tl	205	2	165	215.376	ppb	215.376	1.06	1659790	2000	
Pb	208	2	165	192.388	ppb	192.388	0.30	2042509	5000	
Th	232	2	193	92.319	ppb	92.319	4.35	870563	2000	
U	238	2	193	358.950	ppb	358.950	1.06	4596249	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	609973	0.18	758371	80.43	60	120	
Sc (IS)	45	1	HMI H2	22624281	0.78	21579358	104.84	60	120	
Sc (IS)	45	2	HMI He	1546189	1.19	1389101	111.31	60	120	
Sc (IS)	45	3	No Gas	41204437	0.35	40812554	100.96	60	120	
Ge Internal standard	72	1	HMI H2	11333230	0.43	11084416	102.24	60	120	
Ge Internal standard	72	2	HMI He	1805371	0.94	1699063	106.26	60	120	
In Internal standard	115	2	HMI He	4946254	0.34	5046179	98.02	60	120	
Ho-165	165	2	HMI He	16772332	0.73	18410285	91.10	60	120	
Ir (IS)	193	2	HMI He	11033408	0.33	13684495	80.63	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-A
Data File Name	167SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:18:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3659.405	ppb	3659.405	0.65	31392517	50000	
Be	9	1	6	0.351	ppb	0.351	52.93	90	2000	
B	11	1	6	1887.304	ppb	1887.304	1.45	352528	2000	
Na	23	2	45	5184883.275	ppb	5184883.275	1.21	1318688434	400000	>LDR
Mg	24	2	45	7561965.997	ppb	7561965.997	0.87	917706066	400000	>LDR
Al	27	2	45	457.498	ppb	457.498	3.44	15999	400000	
Si	28	2	45	541.050	ppb	541.050	1.06	135358	10000	
P	31	2	45	109.621	ppb	109.621	14.95	489	10000	
K	39	2	45	62836.191	ppb	62836.191	1.00	5929150	400000	
Ca	40	1	45	516315.645	ppb	516315.645	0.82	2533603376	400000	
Ti	47	2	45	9.897	ppb	9.897	24.78	373	4000	
V	51	2	72	2.939	ppb	2.939	10.17	4674	2000	
Cr	52	2	72	1.240	ppb	1.240	6.55	2774	5000	
Mn	55	2	72	3609.484	ppb	3609.484	0.87	2743274	10000	
Fe	56	1	72	967.558	ppb	967.558	0.11	7346646	10000	
(Fe)	57	2	72	910.473	ppb	910.473	1.82	31277	400000	
Co	59	2	72	12.900	ppb	12.900	1.08	37901	2000	
Ni	60	2	72	108.097	ppb	108.097	1.07	90324	5000	
Cu	63	2	72	10.924	ppb	10.924	1.21	24562	5000	
Zn	66	2	72	32.504	ppb	32.504	1.46	13559	5000	
As	75	2	72	1.195	ppb	1.195	19.36	434	2000	
Se	78	1	72	2864.742	ppb	2864.742	0.17	831090	2000	
Sr	88	2	72	8129.586	ppb	8129.586	0.28	7514023	4000	
Zr	90	2	72	214.248	ppb	214.248	15.90	5265	1000	
Nb	93	2	72	677.457	ppb	677.457	20.85	177	200	
Mo	95	2	115	4.828	ppb	4.828	1.01	4828	2000	
Pd	105	2	115	556.754	ppb	556.754	12.60	290	100	>LDR
Ag	107	2	115	0.672	ppb	0.672	5.61	2237	100	
Cd	111	2	115	4.073	ppb	4.073	2.82	1940	2000	
Sn	120	2	115	2.257	ppb	2.257	21.22	3334	2000	
Sb	121	2	115	1.788	ppb	1.788	7.10	2514	1000	
Ba	137	2	115	16.536	ppb	16.536	3.71	6765	5000	
W	182	2	165	4.408	ppb	4.408	2.19	16523	100	
Pt	195	2	165	68.832	ppb	68.832	60.81	80	100	
Tl	205	2	165	4.568	ppb	4.568	2.51	28932	2000	
Pb	208	2	165	1.092	ppb	1.092	4.82	10709	5000	
Th	232	2	193	4.683	ppb	4.683	14.21	42402	2000	
U	238	2	193	88.311	ppb	88.311	1.30	869308	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	535213	0.64	758371	70.57	60	120	
Sc (IS)	45	1	HMI H2	25941323	0.61	21579358	120.21	60	120	IS Failed
Sc (IS)	45	2	HMI He	1378562	1.09	1389101	99.24	60	120	
Sc (IS)	45	3	No Gas	33601952	0.61	40812554	82.33	60	120	
Ge Internal standard	72	1	HMI H2	10626765	0.86	11084416	95.87	60	120	
Ge Internal standard	72	2	HMI He	1527766	1.69	1699063	89.92	60	120	
In Internal standard	115	2	HMI He	4119533	1.35	5046179	81.64	60	120	
Ho-165	165	2	HMI He	13699559	1.40	18410285	74.41	60	120	
Ir (IS)	193	2	HMI He	8480307	1.74	13684495	61.97	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-2-A
Data File Name	168SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:22:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1943.017	ppb	1943.017	1.12	17775563	50000	
Be	9	1	6	0.136	ppb	0.136	51.38	37	2000	
B	11	1	6	2387.606	ppb	2387.606	1.99	416725	2000	
Na	23	2	45	3159097.799	ppb	3159097.799	0.79	733438602	400000	>LDR
Mg	24	2	45	3712394.137	ppb	3712394.137	0.91	411246821	400000	>LDR
Al	27	2	45	396.075	ppb	396.075	2.70	12676	400000	
Si	28	2	45	675.573	ppb	675.573	2.05	151425	10000	
P	31	2	45	60.134	ppb	60.134	6.02	270	10000	
K	39	2	45	35595.193	ppb	35595.193	0.80	3085704	400000	
Ca	40	1	45	430893.990	ppb	430893.990	1.65	1573093523	400000	
Ti	47	2	45	9.579	ppb	9.579	25.51	330	4000	
V	51	2	72	2.075	ppb	2.075	7.84	3400	2000	
Cr	52	2	72	1.315	ppb	1.315	11.24	2837	5000	
Mn	55	2	72	682.061	ppb	682.061	1.64	506663	10000	
Fe	56	1	72	539.220	ppb	539.220	1.90	3651797	10000	
(Fe)	57	2	72	515.358	ppb	515.358	4.19	17420	400000	
Co	59	2	72	1.781	ppb	1.781	2.23	5144	2000	
Ni	60	2	72	48.292	ppb	48.292	2.42	39548	5000	
Cu	63	2	72	8.580	ppb	8.580	2.31	18948	5000	
Zn	66	2	72	14.419	ppb	14.419	1.64	6071	5000	
As	75	2	72	0.933	ppb	0.933	11.90	339	2000	
Se	78	1	72	2294.151	ppb	2294.151	1.42	590213	2000	
Sr	88	2	72	6848.909	ppb	6848.909	0.94	6185431	4000	
Zr	90	2	72	93.652	ppb	93.652	13.22	2590	1000	
Nb	93	2	72	488.037	ppb	488.037	34.02	127	200	
Mo	95	2	115	3.291	ppb	3.291	9.08	3114	2000	
Pd	105	2	115	473.599	ppb	473.599	26.35	237	100	
Ag	107	2	115	0.184	ppb	0.184	11.65	603	100	
Cd	111	2	115	2.954	ppb	2.954	17.71	1327	2000	
Sn	120	2	115	0.547	ppb	0.547	14.47	1160	2000	
Sb	121	2	115	0.522	ppb	0.522	17.36	727	1000	
Ba	137	2	115	17.416	ppb	17.416	1.98	6715	5000	
W	182	2	165	2.228	ppb	2.228	6.11	9050	100	
Pt	195	2	165	80.034	ppb	80.034	73.76	83	100	
Tl	205	2	165	2.146	ppb	2.146	0.48	13129	2000	
Pb	208	2	165	0.633	ppb	0.633	6.10	6461	5000	
Th	232	2	193	0.980	ppb	0.980	19.02	16243	2000	
U	238	2	193	49.959	ppb	49.959	1.16	499794	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	500505	1.75	758371	66.00	60	120	
Sc (IS)	45	1	HMI H2	19300855	0.72	21579358	89.44	60	120	
Sc (IS)	45	2	HMI He	1258440	0.53	1389101	90.59	60	120	
Sc (IS)	45	3	No Gas	33170405	0.18	40812554	81.28	60	120	
Ge Internal standard	72	1	HMI H2	9424233	0.73	11084416	85.02	60	120	
Ge Internal standard	72	2	HMI He	1492922	0.98	1699063	87.87	60	120	
In Internal standard	115	2	HMI He	3883823	1.18	5046179	76.97	60	120	
Ho-165	165	2	HMI He	13146049	0.04	18410285	71.41	60	120	
Ir (IS)	193	2	HMI He	8618099	0.32	13684495	62.98	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	169_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:25:48-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	94.808	ppb	3.186	3865828	100	94.8	90	110	
Be	9	1	6	53.767	ppb	3.258	15654	50	107.5	90	110	
B	11	1	6	567.621	ppb	1.370	131078	50	1135.2	90	110	>+\-10%
Na	23	2	45	58351.183	ppb	1.619	14222490	51000	114.4	90	110	>+\-10%
Mg	24	2	45	14453.378	ppb	0.843	1679680	11000	131.4	90	110	>+\-10%
Al	27	2	45	1017.875	ppb	6.174	33751	1000	101.8	90	110	
Si	28	2	45	78.958	ppb	5.738	29229	500	15.8	90	110	>+\-10%
P	31	2	45	2630.190	ppb	2.254	9897	2500	105.2	90	110	
K	39	2	45	11352.053	ppb	0.654	1064267	11000	103.2	90	110	
Ca	40	1	45	11709.663	ppb	0.738	45722169	11000	106.5	90	110	
(Ca)	44	1	45	12351.808	ppb	1.528	1459520	11000	112.3	90	110	>+\-10%
Ti	47	2	45	55.970	ppb	6.644	2020	50	111.9	90	110	>+\-10%
V	51	2	72	51.331	ppb	1.309	75570	50	102.7	90	110	
Cr	52	2	72	48.777	ppb	1.175	90376	50	97.6	90	110	
Mn	55	2	72	48.986	ppb	3.495	39314	50	98.0	90	110	
Fe	56	1	72	1019.869	ppb	0.603	7657373	1000	102.0	90	110	
(Fe)	56	2	72	972.653	ppb	1.841	1515703	1000	97.3	90	110	
(Fe)	57	2	72	967.986	ppb	3.456	34958	1000	96.8	90	110	
Co	59	2	72	47.759	ppb	0.604	147488	50	95.5	90	110	
Ni	60	2	72	49.604	ppb	1.264	43728	50	99.2	90	110	
Cu	63	2	72	45.798	ppb	0.686	106684	50	91.6	90	110	
Zn	66	2	72	48.316	ppb	0.384	21024	50	96.6	90	110	
As	75	2	72	50.622	ppb	1.580	17845	50	101.2	90	110	
Se	78	1	72	51.586	ppb	4.144	14816	50	103.2	90	110	
Sr	88	2	72	98.100	ppb	0.995	95499	100	98.1	90	110	
Zr	90	2	72	0.166	ppb	1165.334	653	50	0.3	90	110	>+\-10%
Nb	93	2	72	194.390	ppb	33.859	60	100	194.4	90	110	>+\-10%
Mo	95	2	115	52.193	ppb	1.492	54014	50	104.4	90	110	
Pd	105	2	115	463.689	ppb	34.496	257	50	927.4	90	110	>+\-10%
Ag	107	2	115	48.782	ppb	0.490	166429	50	97.6	90	110	
Cd	111	2	115	49.007	ppb	0.224	24266	50	98.0	90	110	
Sn	120	2	115	53.886	ppb	3.188	69766	50	107.8	90	110	
Sb	121	2	115	52.345	ppb	1.706	75194	50	104.7	90	110	
Ba	137	2	115	50.679	ppb	2.228	21445	50	101.4	90	110	
W	182	2	165	50.780	ppb	1.620	180472	50	101.6	90	110	
Pt	195	2	165	44.569	ppb	145.685	70	50	89.1	90	110	>+\-10%
Tl	205	2	165	48.172	ppb	0.187	327107	50	96.3	90	110	
Pb	208	2	165	48.452	ppb	0.231	454049	50	96.9	90	110	
Th	232	2	193	35.785	ppb	7.027	330864	50	71.6	90	110	>+\-10%
U	238	2	193	43.649	ppb	0.696	536725	50	87.3	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	657940	0.57	758371	86.76	60	120	
Sc (IS)	45	1	HMI H2	20605006	0.59	21579358	95.48	60	120	
Sc (IS)	45	2	HMI He	1319826	1.80	1389101	95.01	60	120	
Sc (IS)	45	3	No Gas	36158111	0.29	40812554	88.60	60	120	
Ge Internal standard	72	1	HMI H2	10512019	0.71	11084416	94.84	60	120	
Ge Internal standard	72	2	HMI He	1607095	0.70	1699063	94.59	60	120	
In Internal standard	115	2	HMI He	4292401	0.68	5046179	85.06	60	120	
Ho-165	165	2	HMI He	14771943	0.49	18410285	80.24	60	120	
Ir (IS)	193	2	HMI He	10592217	0.27	13684495	77.40	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	170_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:29:33-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-4.225	ppb	-101.8	3169863	10	
Be	9	1	6	0.207	ppb	38.8	73	0.5	
B	11	1	6	21.427	ppb	7.2	6358	0.5	>RL
Na	23	2	45	2020.607	ppb	2.4	513406	25	>RL
Mg	24	2	45	855.783	ppb	3.2	100818	25	>RL
Al	27	2	45	0.340	ppb	728.7	267	15	
K	39	2	45	195.592	ppb	10.4	65397	50	>RL
Ti	47	2	45	0.278	ppb	173.2	10	0.5	
V	51	2	72	0.637	ppb	13.4	1577	1	
Cr	52	2	72	0.043	ppb	274.4	720	1	
Mn	55	2	72	0.585	ppb	25.3	620	0.5	>RL
(Fe)	57	2	72	10.421	ppb	22.8	680	25	
Co	59	2	72	0.032	ppb	80.3	140	0.5	
Ni	60	2	72	6.229	ppb	23.5	5765	1	>RL
Cu	63	2	72	0.104	ppb	16.2	757	1	
Zn	66	2	72	0.286	ppb	128.8	500	5	
As	75	2	72	0.108	ppb	49.8	75	1	
Se	78	1	72	0.238	ppb	24.5	81	1	
Sr	88	2	72	0.413	ppb	8.4	530	0.5	
Zr	90	2	72	-4.184	ppb	-47.1	560	1	
Nb	93	2	72	52.323	ppb	83.5	23	2	>RL
Mo	95	2	115	0.505	ppb	13.8	587	0.5	>RL
Pd	105	2	115	1.163	ppb	1920.8	33	1	>RL
Ag	107	2	115	0.034	ppb	34.3	163	1	
Cd	111	2	115	0.021	ppb	142.0	17	0.5	
Sn	120	2	115	0.885	ppb	4.2	1797	1	
Sb	121	2	115	0.352	ppb	7.1	587	0.6	
Ba	137	2	115	0.023	ppb	249.9	93	0.5	
W	182	2	165	0.544	ppb	16.8	4474	1	
Pt	195	2	165	6.467	ppb	132.5	47	1	>RL
Tl	205	2	165	0.050	ppb	11.5	553	0.1	
Pb	208	2	165	0.049	ppb	31.9	1897	0.5	
Th	232	2	193	0.546	ppb	18.4	16767	1	
U	238	2	193	0.094	ppb	9.2	1397	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	698689	1.25	758371	92.13	60	120	
Sc (IS)	45	1	HMI H2	20188262	0.17	21579358	93.55	60	120	
Sc (IS)	45	2	HMI He	1331356	1.24	1389101	95.84	60	120	
Sc (IS)	45	3	No Gas	37767549	1.21	40812554	92.54	60	120	
Ge Internal standard	72	1	HMI H2	10392450	0.57	11084416	93.76	60	120	
Ge Internal standard	72	2	HMI He	1624238	0.45	1699063	95.60	60	120	
In Internal standard	115	2	HMI He	4499183	1.16	5046179	89.16	60	120	
Ho-165	165	2	HMI He	15511060	0.60	18410285	84.25	60	120	
Ir (IS)	193	2	HMI He	11043679	0.21	13684495	80.70	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-3-A
Data File Name	171SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:33:18-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	2175.412	ppb	2175.412	0.64	18278580	50000	
Be	9	1	6	0.261	ppb	0.261	118.22	63	2000	
B	11	1	6	1224.266	ppb	1224.266	1.60	212685	2000	
Na	23	2	45	10505748.005	ppb	10505748.005	7.00	2206998207	400000	>LDR
Mg	24	2	45	4644101.584	ppb	4644101.584	7.66	465368486	400000	>LDR
Al	27	2	45	96.089	ppb	96.089	9.94	2954	400000	
Si	28	2	45	619.310	ppb	619.310	6.01	126565	10000	
P	31	2	45	75.676	ppb	75.676	12.75	294	10000	
K	39	2	45	42060.442	ppb	42060.442	7.26	3291561	400000	
Ca	40	1	45	505488.004	ppb	505488.004	0.28	2058235489	400000	
Ti	47	2	45	2.973	ppb	2.973	50.87	93	4000	
V	51	2	72	1.798	ppb	1.798	11.91	2727	2000	
Cr	52	2	72	0.848	ppb	0.848	24.90	1837	5000	
Mn	55	2	72	18937.634	ppb	18937.634	3.29	12694471	10000	
Fe	56	1	72	493.988	ppb	493.988	0.64	3127161	10000	
(Fe)	57	2	72	436.682	ppb	436.682	3.13	13363	400000	
Co	59	2	72	114.743	ppb	114.743	2.86	297066	2000	
Ni	60	2	72	235.707	ppb	235.707	3.67	173448	5000	
Cu	63	2	72	8.415	ppb	8.415	1.94	16786	5000	
Zn	66	2	72	63.109	ppb	63.109	4.78	22923	5000	
As	75	2	72	0.823	ppb	0.823	11.24	273	2000	
Se	78	1	72	7.419	ppb	7.419	12.52	1792	2000	
Sr	88	2	72	8640.847	ppb	8640.847	3.75	7043072	4000	
Zr	90	2	72	329.715	ppb	329.715	4.11	6855	1000	
Nb	93	2	72	316.005	ppb	316.005	23.24	77	200	
Mo	95	2	115	2.660	ppb	2.660	13.95	2374	2000	
Pd	105	2	115	708.655	ppb	708.655	19.60	320	100	>LDR
Ag	107	2	115	1.173	ppb	1.173	1.35	3437	100	
Cd	111	2	115	16.886	ppb	16.886	7.35	7112	2000	
Sn	120	2	115	0.628	ppb	0.628	27.83	1177	2000	
Sb	121	2	115	0.506	ppb	0.506	13.22	663	1000	
Ba	137	2	115	16.088	ppb	16.088	4.72	5835	5000	
W	182	2	165	2.662	ppb	2.662	1.61	9780	100	
Pt	195	2	165	-0.469	ppb	-0.469	-7932.12	33	100	
Tl	205	2	165	3.058	ppb	3.058	2.28	17514	2000	
Pb	208	2	165	0.791	ppb	0.791	0.58	7308	5000	
Th	232	2	193	13.447	ppb	13.447	12.94	96136	2000	
U	238	2	193	113.403	ppb	113.403	1.23	1021363	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	497171	1.30	758371	65.56	60	120	
Sc (IS)	45	1	HMI H2	21525351	0.59	21579358	99.75	60	120	
Sc (IS)	45	2	HMI He	1142328	6.90	1389101	82.24	60	120	
Sc (IS)	45	3	No Gas	30990669	0.95	40812554	75.93	60	120	
Ge Internal standard	72	1	HMI H2	8798188	0.85	11084416	79.37	60	120	
Ge Internal standard	72	2	HMI He	1348047	2.19	1699063	79.34	60	120	
In Internal standard	115	2	HMI He	3650274	1.17	5046179	72.34	60	120	
Ho-165	165	2	HMI He	12356715	0.13	18410285	67.12	60	120	
Ir (IS)	193	2	HMI He	7760333	0.93	13684495	56.71	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165874-D-4-A
Data File Name	172SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:37:10-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	254.051	ppb	254.051	1.37	5189795	50000	
Be	9	1	6	0.094	ppb	0.094	24.13	33	2000	
B	11	1	6	1194.419	ppb	1194.419	1.22	254886	2000	
Na	23	2	45	707376.961	ppb	707376.961	1.33	168649871	400000	
Mg	24	2	45	271518.057	ppb	271518.057	1.25	30886230	400000	
Al	27	2	45	16.984	ppb	16.984	15.01	797	400000	
Si	28	2	45	477.426	ppb	477.426	1.74	113350	10000	
P	31	2	45	20.253	ppb	20.253	17.89	131	10000	
K	39	2	45	16279.896	ppb	16279.896	1.33	1474295	400000	
Ca	40	1	45	506483.348	ppb	506483.348	0.65	1831620453	400000	
Ti	47	2	45	1.219	ppb	1.219	46.75	43	4000	
V	51	2	72	0.222	ppb	0.222	65.16	920	2000	
Cr	52	2	72	0.295	ppb	0.295	9.89	1130	5000	
Mn	55	2	72	310.250	ppb	310.250	1.90	238388	10000	
Fe	56	1	72	188.394	ppb	188.394	0.88	1337789	10000	
(Fe)	57	2	72	206.114	ppb	206.114	6.45	7382	400000	
Co	59	2	72	2.736	ppb	2.736	3.42	8152	2000	
Ni	60	2	72	37.341	ppb	37.341	5.18	31668	5000	
Cu	63	2	72	0.863	ppb	0.863	14.67	2407	5000	
Zn	66	2	72	3.769	ppb	3.769	10.45	1907	5000	
As	75	2	72	0.359	ppb	0.359	7.27	156	2000	
Se	78	1	72	1.152	ppb	1.152	8.12	316	2000	
Sr	88	2	72	5346.431	ppb	5346.431	1.21	4992413	4000	
Zr	90	2	72	7.822	ppb	7.822	106.43	793	1000	
Nb	93	2	72	83.168	ppb	83.168	95.36	30	200	
Mo	95	2	115	4.072	ppb	4.072	5.25	4057	2000	
Pd	105	2	115	366.050	ppb	366.050	24.51	200	100	
Ag	107	2	115	0.007	ppb	0.007	77.92	60	100	
Cd	111	2	115	0.876	ppb	0.876	26.68	420	2000	
Sn	120	2	115	0.124	ppb	0.124	75.00	703	2000	
Sb	121	2	115	0.199	ppb	0.199	14.84	323	1000	
Ba	137	2	115	19.606	ppb	19.606	2.85	7969	5000	
W	182	2	165	1.156	ppb	1.156	12.26	6031	100	
Pt	195	2	165	-7.236	ppb	-7.236	-451.39	33	100	
Tl	205	2	165	0.873	ppb	0.873	4.47	5745	2000	
Pb	208	2	165	0.229	ppb	0.229	12.41	3277	5000	
Th	232	2	193	0.682	ppb	0.682	15.95	15699	2000	
U	238	2	193	8.593	ppb	8.593	1.93	95990	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	610617	0.94	758371	80.52	60	120	
Sc (IS)	45	1	HMI H2	19117135	0.51	21579358	88.59	60	120	
Sc (IS)	45	2	HMI He	1292412	2.07	1389101	93.04	60	120	
Sc (IS)	45	3	No Gas	36072625	1.16	40812554	88.39	60	120	
Ge Internal standard	72	1	HMI H2	9646349	0.20	11084416	87.03	60	120	
Ge Internal standard	72	2	HMI He	1543665	1.85	1699063	90.85	60	120	
In Internal standard	115	2	HMI He	4097802	0.98	5046179	81.21	60	120	
Ho-165	165	2	HMI He	13892137	1.19	18410285	75.46	60	120	
Ir (IS)	193	2	HMI He	9609492	0.87	13684495	70.22	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-5-A
Data File Name	173SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:40:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	231.901	ppb	231.901	4.31	5203279	50000	
Be	9	1	6	0.066	ppb	0.066	155.03	27	2000	
B	11	1	6	1197.682	ppb	1197.682	2.70	260778	2000	
Na	23	2	45	686850.335	ppb	686850.335	1.56	165176808	400000	
Mg	24	2	45	264792.840	ppb	264792.840	1.29	30383356	400000	
Al	27	2	45	12.049	ppb	12.049	19.07	643	400000	
Si	28	2	45	470.159	ppb	470.159	2.90	112760	10000	
P	31	2	45	23.249	ppb	23.249	34.98	143	10000	
K	39	2	45	15816.449	ppb	15816.449	1.44	1446111	400000	
Ca	40	1	45	506890.286	ppb	506890.286	3.56	1841713199	400000	
Ti	47	2	45	0.382	ppb	0.382	116.41	13	4000	
V	51	2	72	0.171	ppb	0.171	20.75	867	2000	
Cr	52	2	72	0.277	ppb	0.277	39.94	1127	5000	
Mn	55	2	72	304.931	ppb	304.931	1.76	240487	10000	
Fe	56	1	72	170.411	ppb	170.411	8.80	1236241	10000	
(Fe)	57	2	72	185.350	ppb	185.350	5.14	6842	400000	
Co	59	2	72	2.758	ppb	2.758	2.38	8439	2000	
Ni	60	2	72	27.867	ppb	27.867	2.21	24318	5000	
Cu	63	2	72	0.678	ppb	0.678	11.38	2050	5000	
Zn	66	2	72	3.517	ppb	3.517	17.88	1854	5000	
As	75	2	72	0.343	ppb	0.343	9.46	155	2000	
Se	78	1	72	0.489	ppb	0.489	3.96	144	2000	
Sr	88	2	72	5203.706	ppb	5203.706	1.39	4989114	4000	
Zr	90	2	72	7.822	ppb	7.822	23.29	817	1000	
Nb	93	2	72	105.754	ppb	105.754	53.54	37	200	
Mo	95	2	115	3.608	ppb	3.608	5.13	3681	2000	
Pd	105	2	115	301.954	ppb	301.954	20.03	173	100	
Ag	107	2	115	0.003	ppb	0.003	234.54	50	100	
Cd	111	2	115	0.913	ppb	0.913	5.36	447	2000	
Sn	120	2	115	0.099	ppb	0.099	48.04	690	2000	
Sb	121	2	115	0.143	ppb	0.143	23.90	253	1000	
Ba	137	2	115	18.578	ppb	18.578	1.41	7729	5000	
W	182	2	165	1.203	ppb	1.203	2.97	6402	100	
Pt	195	2	165	27.414	ppb	27.414	146.88	57	100	
Tl	205	2	165	0.814	ppb	0.814	5.55	5568	2000	
Pb	208	2	165	0.194	ppb	0.194	11.41	3070	5000	
Th	232	2	193	0.677	ppb	0.677	22.48	16069	2000	
U	238	2	193	8.386	ppb	8.386	1.17	96053	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	623312	2.56	758371	82.19	60	120	
Sc (IS)	45	1	HMI H2	19217513	2.22	21579358	89.06	60	120	
Sc (IS)	45	2	HMI He	1303773	2.97	1389101	93.86	60	120	
Sc (IS)	45	3	No Gas	37505685	0.15	40812554	91.90	60	120	
Ge Internal standard	72	1	HMI H2	9824730	2.17	11084416	88.64	60	120	
Ge Internal standard	72	2	HMI He	1584644	2.65	1699063	93.27	60	120	
In Internal standard	115	2	HMI He	4191870	3.01	5046179	83.07	60	120	
Ho-165	165	2	HMI He	14385920	2.24	18410285	78.14	60	120	
Ir (IS)	193	2	HMI He	9852104	2.67	13684495	71.99	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-6-A
Data File Name	174SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:44:42-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	2237.376	ppb	2237.376	0.58	18671384	50000	
Be	9	1	6	0.298	ppb	0.298	40.49	77	2000	
B	11	1	6	1170.013	ppb	1170.013	1.74	215807	2000	
Na	23	2	45	10631548.020	ppb	10631548.020	0.29	2141536075	400000	>LDR
Mg	24	2	45	4645929.991	ppb	4645929.991	0.47	446530687	400000	>LDR
Al	27	2	45	359.865	ppb	359.865	6.14	10010	400000	
Si	28	2	45	706.955	ppb	706.955	2.05	137016	10000	
P	31	2	45	74.934	ppb	74.934	7.97	280	10000	
K	39	2	45	51064.626	ppb	51064.626	1.00	3823686	400000	
Ca	40	1	45	308383.258	ppb	308383.258	1.11	1337633447	400000	
Ti	47	2	45	7.036	ppb	7.036	41.39	210	4000	
V	51	2	72	3.954	ppb	3.954	1.65	5388	2000	
Cr	52	2	72	1.458	ppb	1.458	13.96	2784	5000	
Mn	55	2	72	17682.923	ppb	17682.923	2.97	11886953	10000	
Fe	56	1	72	1099.852	ppb	1099.852	0.87	7401641	10000	
(Fe)	57	2	72	990.227	ppb	990.227	5.44	30051	400000	
Co	59	2	72	112.172	ppb	112.172	2.86	291221	2000	
Ni	60	2	72	328.199	ppb	328.199	2.29	242276	5000	
Cu	63	2	72	14.076	ppb	14.076	3.40	27864	5000	
Zn	66	2	72	52.705	ppb	52.705	2.55	19255	5000	
As	75	2	72	1.628	ppb	1.628	7.77	512	2000	
Se	78	1	72	6.153	ppb	6.153	3.60	1596	2000	
Sr	88	2	72	5808.300	ppb	5808.300	2.11	4748860	4000	
Zr	90	2	72	530.214	ppb	530.214	0.85	10731	1000	
Nb	93	2	72	1670.869	ppb	1670.869	6.89	373	200	>LDR
Mo	95	2	115	7.711	ppb	7.711	3.19	6652	2000	
Pd	105	2	115	381.561	ppb	381.561	17.10	180	100	
Ag	107	2	115	0.090	ppb	0.090	22.14	287	100	
Cd	111	2	115	24.259	ppb	24.259	4.58	9973	2000	
Sn	120	2	115	0.003	ppb	0.003	4248.77	483	2000	
Sb	121	2	115	0.992	ppb	0.992	8.54	1227	1000	
Ba	137	2	115	24.173	ppb	24.173	4.18	8529	5000	
W	182	2	165	2.049	ppb	2.049	4.39	7776	100	
Pt	195	2	165	13.383	ppb	13.383	137.59	40	100	
Tl	205	2	165	4.228	ppb	4.228	2.36	23539	2000	
Pb	208	2	165	0.657	ppb	0.657	5.31	6101	5000	
Th	232	2	193	2.028	ppb	2.028	20.77	20926	2000	
U	238	2	193	106.178	ppb	106.178	1.49	931430	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	527776	0.77	758371	69.59	60	120	
Sc (IS)	45	1	HMI H2	22931059	0.91	21579358	106.26	60	120	
Sc (IS)	45	2	HMI He	1091846	0.85	1389101	78.60	60	120	
Sc (IS)	45	3	No Gas	30902814	0.89	40812554	75.72	60	120	
Ge Internal standard	72	1	HMI H2	9426984	0.38	11084416	85.05	60	120	
Ge Internal standard	72	2	HMI He	1351970	2.82	1699063	79.57	60	120	
In Internal standard	115	2	HMI He	3563769	0.62	5046179	70.62	60	120	
Ho-165	165	2	HMI He	12038986	0.10	18410285	65.39	60	120	
Ir (IS)	193	2	HMI He	7558264	0.43	13684495	55.23	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165874-D-7-A
Data File Name	175SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:48:33-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-13.773	ppb	-13.773	-18.17	3002422	50000	
Be	9	1	6	0.100	ppb	0.100	148.75	40	2000	
B	11	1	6	23.208	ppb	23.208	6.25	6788	2000	
Na	23	2	45	9854.114	ppb	9854.114	7.46	2485903	400000	
Mg	24	2	45	2277.745	ppb	2277.745	12.70	272960	400000	
Al	27	2	45	11.557	ppb	11.557	26.99	650	400000	
Si	28	2	45	47.845	ppb	47.845	6.60	23073	10000	
P	31	2	45	23.659	ppb	23.659	24.37	151	10000	
K	39	2	45	330.856	ppb	330.856	5.29	79094	400000	
Ca	40	1	45	552.002	ppb	552.002	6.01	2262753	400000	
Ti	47	2	45	0.267	ppb	0.267	100.25	10	4000	
V	51	2	72	0.533	ppb	0.533	13.54	1440	2000	
Cr	52	2	72	0.729	ppb	0.729	11.71	2020	5000	
Mn	55	2	72	7.943	ppb	7.943	12.44	6648	10000	
Fe	56	1	72	16.026	ppb	16.026	2.39	178050	10000	
(Fe)	57	2	72	15.990	ppb	15.990	25.26	890	400000	
Co	59	2	72	0.091	ppb	0.091	32.51	330	2000	
Ni	60	2	72	20.712	ppb	20.712	11.95	18831	5000	
Cu	63	2	72	0.329	ppb	0.329	23.59	1297	5000	
Zn	66	2	72	1.310	ppb	1.310	18.45	953	5000	
As	75	2	72	0.067	ppb	0.067	24.88	61	2000	
Se	78	1	72	0.547	ppb	0.547	15.14	176	2000	
Sr	88	2	72	4.244	ppb	4.244	9.69	4347	4000	
Zr	90	2	72	-1.323	ppb	-1.323	-163.66	633	1000	
Nb	93	2	72	88.565	ppb	88.565	62.69	33	200	
Mo	95	2	115	0.382	ppb	0.382	29.65	443	2000	
Pd	105	2	115	-30.770	ppb	-30.770	-38.69	17	100	
Ag	107	2	115	0.007	ppb	0.007	60.43	67	100	
Cd	111	2	115	0.009	ppb	0.009	402.59	10	2000	
Sn	120	2	115	-0.059	ppb	-0.059	-203.53	517	2000	
Sb	121	2	115	0.069	ppb	0.069	50.68	157	1000	
Ba	137	2	115	1.104	ppb	1.104	26.62	560	5000	
W	182	2	165	1.002	ppb	1.002	11.75	5815	100	
Pt	195	2	165	5.324	ppb	5.324	159.67	43	100	
Tl	205	2	165	0.009	ppb	0.009	58.76	247	2000	
Pb	208	2	165	0.030	ppb	0.030	70.68	1610	5000	
Th	232	2	193	-0.523	ppb	-0.523	-2.66	6275	2000	
U	238	2	193	0.120	ppb	0.120	12.85	1593	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	698636	0.33	758371	92.12	60	120	
Sc (IS)	45	1	HMI H2	20867691	0.97	21579358	96.70	60	120	
Sc (IS)	45	2	HMI He	1356442	2.18	1389101	97.65	60	120	
Sc (IS)	45	3	No Gas	36743813	0.47	40812554	90.03	60	120	
Ge Internal standard	72	1	HMI H2	10838722	0.33	11084416	97.78	60	120	
Ge Internal standard	72	2	HMI He	1642912	1.43	1699063	96.70	60	120	
In Internal standard	115	2	HMI He	4424786	2.13	5046179	87.69	60	120	
Ho-165	165	2	HMI He	14644945	1.30	18410285	79.55	60	120	
Ir (IS)	193	2	HMI He	10166464	1.03	13684495	74.29	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-8-A
Data File Name	176SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:52:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3715.834	ppb	3715.834	0.97	27422854	50000	
Be	9	1	6	0.287	ppb	0.287	25.11	67	2000	
B	11	1	6	1406.834	ppb	1406.834	0.93	233558	2000	
Na	23	2	45	6097584.306	ppb	6097584.306	0.26	1181783982	400000	>LDR
Mg	24	2	45	9764742.822	ppb	9764742.822	0.84	903023427	400000	>LDR
Al	27	2	45	94.838	ppb	94.838	2.41	2687	400000	
Si	28	2	45	451.842	ppb	451.842	0.73	87732	10000	
P	31	2	45	93.450	ppb	93.450	9.45	325	10000	
K	39	2	45	84517.324	ppb	84517.324	0.47	6064609	400000	
Ca	40	1	45	278122.682	ppb	278122.682	0.33	1254802301	400000	
Ti	47	2	45	2.787	ppb	2.787	76.05	80	4000	
V	51	2	72	1.444	ppb	1.444	8.90	2187	2000	
Cr	52	2	72	2.469	ppb	2.469	7.72	4127	5000	
Mn	55	2	72	813.728	ppb	813.728	1.62	519200	10000	
Fe	56	1	72	336.294	ppb	336.294	0.94	2388765	10000	
(Fe)	57	2	72	314.871	ppb	314.871	8.67	9243	400000	
Co	59	2	72	2.177	ppb	2.177	5.53	5391	2000	
Ni	60	2	72	84.485	ppb	84.485	8.08	59243	5000	
Cu	63	2	72	11.638	ppb	11.638	2.37	21928	5000	
Zn	66	2	72	20.215	ppb	20.215	4.16	7189	5000	
As	75	2	72	0.666	ppb	0.666	13.26	216	2000	
Se	78	1	72	7473.653	ppb	7473.653	1.03	2000720	2000	
Sr	88	2	72	6916.377	ppb	6916.377	2.72	5363730	4000	
Zr	90	2	72	273.305	ppb	273.305	9.92	5488	1000	
Nb	93	2	72	599.473	ppb	599.473	52.85	133	200	
Mo	95	2	115	4.198	ppb	4.198	6.04	3527	2000	
Pd	105	2	115	369.606	ppb	369.606	30.03	170	100	
Ag	107	2	115	0.129	ppb	0.129	20.69	387	100	
Cd	111	2	115	0.273	ppb	0.273	28.29	113	2000	
Sn	120	2	115	0.297	ppb	0.297	32.74	773	2000	
Sb	121	2	115	0.159	ppb	0.159	51.15	227	1000	
Ba	137	2	115	22.127	ppb	22.127	7.24	7582	5000	
W	182	2	165	3.042	ppb	3.042	6.51	10254	100	
Pt	195	2	165	110.994	ppb	110.994	61.81	90	100	
Tl	205	2	165	7.530	ppb	7.530	0.14	40389	2000	
Pb	208	2	165	0.223	ppb	0.223	20.23	2704	5000	
Th	232	2	193	0.982	ppb	0.982	26.31	13747	2000	
U	238	2	193	122.170	ppb	122.170	0.47	1034034	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	475327	0.53	758371	62.68	60	120	
Sc (IS)	45	1	HMI H2	23849872	0.21	21579358	110.52	60	120	
Sc (IS)	45	2	HMI He	1050520	0.27	1389101	75.63	60	120	
Sc (IS)	45	3	No Gas	28947470	0.65	40812554	70.93	60	120	
Ge Internal standard	72	1	HMI H2	9806357	0.53	11084416	88.47	60	120	
Ge Internal standard	72	2	HMI He	1282693	3.46	1699063	75.49	60	120	
In Internal standard	115	2	HMI He	3458298	0.43	5046179	68.53	60	120	
Ho-165	165	2	HMI He	11633076	0.62	18410285	63.19	60	120	
Ir (IS)	193	2	HMI He	7292169	0.80	13684495	53.29	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165874-D-9-A
Data File Name	177SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:56:08-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1731.631	ppb	1731.631	0.61	15444349	50000	
Be	9	1	6	0.136	ppb	0.136	19.52	37	2000	
B	11	1	6	791.127	ppb	791.127	1.18	138348	2000	
Na	23	2	45	2827275.158	ppb	2827275.158	1.08	532883432	400000	>LDR
Mg	24	2	45	990037.163	ppb	990037.163	1.81	89032855	400000	
Al	27	2	45	22.546	ppb	22.546	16.40	770	400000	
Si	28	2	45	565.082	ppb	565.082	3.14	104360	10000	
P	31	2	45	37.924	ppb	37.924	24.70	155	10000	
K	39	2	45	36831.507	ppb	36831.507	0.57	2590834	400000	
Ca	40	1	45	420159.824	ppb	420159.824	1.06	1385914753	400000	
Ti	47	2	45	0.601	ppb	0.601	92.02	17	4000	
V	51	2	72	0.837	ppb	0.837	13.87	1510	2000	
Cr	52	2	72	0.327	ppb	0.327	26.53	1007	5000	
Mn	55	2	72	1027.173	ppb	1027.173	1.60	670274	10000	
Fe	56	1	72	51.106	ppb	51.106	1.20	357804	10000	
(Fe)	57	2	72	79.015	ppb	79.015	6.33	2554	400000	
Co	59	2	72	7.553	ppb	7.553	2.90	19055	2000	
Ni	60	2	72	110.030	ppb	110.030	4.73	78870	5000	
Cu	63	2	72	8.369	ppb	8.369	2.24	16255	5000	
Zn	66	2	72	11.153	ppb	11.153	5.25	4191	5000	
As	75	2	72	0.269	ppb	0.269	22.01	107	2000	
Se	78	1	72	418.839	ppb	418.839	0.70	99054	2000	
Sr	88	2	72	8211.786	ppb	8211.786	1.74	6514213	4000	
Zr	90	2	72	129.396	ppb	129.396	9.21	2937	1000	
Nb	93	2	72	122.725	ppb	122.725	82.52	33	200	
Mo	95	2	115	4.209	ppb	4.209	6.47	3594	2000	
Pd	105	2	115	504.295	ppb	504.295	21.41	227	100	>LDR
Ag	107	2	115	0.077	ppb	0.077	27.82	247	100	
Cd	111	2	115	0.959	ppb	0.959	13.30	393	2000	
Sn	120	2	115	-0.083	ppb	-0.083	-61.83	387	2000	
Sb	121	2	115	0.385	ppb	0.385	11.17	497	1000	
Ba	137	2	115	9.233	ppb	9.233	4.64	3250	5000	
W	182	2	165	1.285	ppb	1.285	4.85	5768	100	
Pt	195	2	165	82.215	ppb	82.215	18.72	80	100	
Tl	205	2	165	1.677	ppb	1.677	4.42	9727	2000	
Pb	208	2	165	0.132	ppb	0.132	17.99	2167	5000	
Th	232	2	193	-0.114	ppb	-0.114	-126.37	8156	2000	
U	238	2	193	119.264	ppb	119.264	0.87	1173320	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	499373	0.44	758371	65.85	60	120	
Sc (IS)	45	1	HMI H2	17438100	1.02	21579358	80.81	60	120	
Sc (IS)	45	2	HMI He	1021638	1.31	1389101	73.55	60	120	
Sc (IS)	45	3	No Gas	31725322	1.08	40812554	77.73	60	120	
Ge Internal standard	72	1	HMI H2	8662228	0.90	11084416	78.15	60	120	
Ge Internal standard	72	2	HMI He	1311694	2.93	1699063	77.20	60	120	
In Internal standard	115	2	HMI He	3511148	1.77	5046179	69.58	60	120	
Ho-165	165	2	HMI He	12412156	1.78	18410285	67.42	60	120	
Ir (IS)	193	2	HMI He	8476424	1.06	13684495	61.94	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-10-A
Data File Name	178SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T20:59:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	2562.965	ppb	2562.965	0.67	21569201	50000	
Be	9	1	6	0.134	ppb	0.134	92.17	33	2000	
B	11	1	6	716.678	ppb	716.678	0.52	115959	2000	
Na	23	2	45	5501061.192	ppb	5501061.192	2.42	1046163024	400000	>LDR
Mg	24	2	45	1609576.187	ppb	1609576.187	2.26	146061998	400000	
Al	27	2	45	4.596	ppb	4.596	106.76	317	400000	
Si	28	2	45	698.246	ppb	698.246	1.84	127935	10000	
P	31	2	45	31.460	ppb	31.460	28.21	137	10000	
K	39	2	45	47672.056	ppb	47672.056	1.72	3373397	400000	
Ca	40	1	45	416617.481	ppb	416617.481	0.64	1336020620	400000	
Ti	47	2	45	0.345	ppb	0.345	100.09	10	4000	
V	51	2	72	2.015	ppb	2.015	13.87	2917	2000	
Cr	52	2	72	1.429	ppb	1.429	18.16	2657	5000	
Mn	55	2	72	229.654	ppb	229.654	6.17	150403	10000	
Fe	56	1	72	25.763	ppb	25.763	1.32	196213	10000	
(Fe)	57	2	72	59.156	ppb	59.156	8.07	1980	400000	
Co	59	2	72	11.784	ppb	11.784	4.82	29858	2000	
Ni	60	2	72	135.695	ppb	135.695	7.54	97494	5000	
Cu	63	2	72	25.242	ppb	25.242	6.09	48317	5000	
Zn	66	2	72	26.029	ppb	26.029	3.49	9426	5000	
As	75	2	72	0.436	ppb	0.436	4.51	156	2000	
Se	78	1	72	1303.926	ppb	1303.926	0.81	299343	2000	
Sr	88	2	72	8889.228	ppb	8889.228	6.41	7072837	4000	
Zr	90	2	72	334.267	ppb	334.267	8.42	6772	1000	
Nb	93	2	72	301.385	ppb	301.385	64.82	70	200	
Mo	95	2	115	17.145	ppb	17.145	1.05	14540	2000	
Pd	105	2	115	448.480	ppb	448.480	23.53	203	100	
Ag	107	2	115	0.025	ppb	0.025	29.26	103	100	
Cd	111	2	115	1.513	ppb	1.513	21.88	613	2000	
Sn	120	2	115	0.345	ppb	0.345	33.88	837	2000	
Sb	121	2	115	0.460	ppb	0.460	12.50	583	1000	
Ba	137	2	115	16.661	ppb	16.661	5.03	5811	5000	
W	182	2	165	1.589	ppb	1.589	7.64	6482	100	
Pt	195	2	165	43.402	ppb	43.402	83.82	57	100	
Tl	205	2	165	2.362	ppb	2.362	3.88	13263	2000	
Pb	208	2	165	0.133	ppb	0.133	30.74	2117	5000	
Th	232	2	193	0.159	ppb	0.159	49.05	9600	2000	
U	238	2	193	261.110	ppb	261.110	2.25	2435557	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	461768	0.66	758371	60.89	60	120	
Sc (IS)	45	1	HMI H2	16952587	0.59	21579358	78.56	60	120	
Sc (IS)	45	2	HMI He	1031605	4.85	1389101	74.26	60	120	
Sc (IS)	45	3	No Gas	31729268	1.03	40812554	77.74	60	120	
Ge Internal standard	72	1	HMI H2	8409021	0.55	11084416	75.86	60	120	
Ge Internal standard	72	2	HMI He	1320215	8.92	1699063	77.70	60	120	
In Internal standard	115	2	HMI He	3513349	4.65	5046179	69.62	60	120	
Ho-165	165	2	HMI He	12089903	4.50	18410285	65.67	60	120	
Ir (IS)	193	2	HMI He	8041478	4.75	13684495	58.76	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	179_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:03:46-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	58.219	ppb	1.613	3589982	100	58.2	90	110	>+\-10%
Be	9	1	6	53.634	ppb	3.466	15231	50	107.3	90	110	
B	11	1	6	555.830	ppb	0.385	125220	50	1111.7	90	110	>+\-10%
Na	23	2	45	62496.220	ppb	1.204	14677833	51000	122.5	90	110	>+\-10%
Mg	24	2	45	13888.261	ppb	1.517	1555138	11000	126.3	90	110	>+\-10%
Al	27	2	45	1009.848	ppb	4.175	32275	1000	101.0	90	110	
Si	28	2	45	81.256	ppb	3.237	28632	500	16.3	90	110	>+\-10%
P	31	2	45	2526.998	ppb	1.663	9165	2500	101.1	90	110	
K	39	2	45	11875.161	ppb	0.200	1070643	11000	108.0	90	110	
Ca	40	1	45	12144.580	ppb	0.743	46648859	11000	110.4	90	110	>+\-10%
(Ca)	44	1	45	12723.405	ppb	0.723	1478969	11000	115.7	90	110	>+\-10%
Ti	47	2	45	49.534	ppb	9.726	1723	50	99.1	90	110	
V	51	2	72	53.119	ppb	3.042	77184	50	106.2	90	110	
Cr	52	2	72	50.426	ppb	1.608	92229	50	100.9	90	110	
Mn	55	2	72	49.824	ppb	1.232	39477	50	99.6	90	110	
Fe	56	1	72	1060.757	ppb	0.458	7977472	1000	106.1	90	110	
(Fe)	56	2	72	993.814	ppb	1.070	1528977	1000	99.4	90	110	
(Fe)	57	2	72	964.903	ppb	0.764	34413	1000	96.5	90	110	
Co	59	2	72	48.275	ppb	0.651	147203	50	96.5	90	110	
Ni	60	2	72	56.246	ppb	4.102	48916	50	112.5	90	110	>+\-10%
Cu	63	2	72	46.560	ppb	2.308	107071	50	93.1	90	110	
Zn	66	2	72	48.228	ppb	3.012	20724	50	96.5	90	110	
As	75	2	72	49.854	ppb	2.290	17355	50	99.7	90	110	
Se	78	1	72	51.688	ppb	1.860	14875	50	103.4	90	110	
Sr	88	2	72	100.745	ppb	1.036	96833	100	100.7	90	110	
Zr	90	2	72	2.882	ppb	139.653	707	50	5.8	90	110	>+\-10%
Nb	93	2	72	106.294	ppb	92.341	37	100	106.3	90	110	
Mo	95	2	115	55.023	ppb	3.117	55482	50	110.0	90	110	>+\-10%
Pd	105	2	115	554.540	ppb	30.210	293	50	1109.1	90	110	>+\-10%
Ag	107	2	115	50.737	ppb	2.437	168636	50	101.5	90	110	
Cd	111	2	115	52.859	ppb	2.130	25501	50	105.7	90	110	
Sn	120	2	115	55.312	ppb	1.388	69763	50	110.6	90	110	>+\-10%
Sb	121	2	115	54.035	ppb	0.302	75630	50	108.1	90	110	
Ba	137	2	115	52.137	ppb	1.469	21495	50	104.3	90	110	
W	182	2	165	52.257	ppb	1.543	180678	50	104.5	90	110	
Pt	195	2	165	32.184	ppb	2.464	60	50	64.4	90	110	>+\-10%
Tl	205	2	165	50.027	ppb	0.634	330594	50	100.1	90	110	
Pb	208	2	165	49.768	ppb	0.730	453834	50	99.5	90	110	
Th	232	2	193	37.751	ppb	8.727	334489	50	75.5	90	110	>+\-10%
U	238	2	193	45.117	ppb	0.947	532806	50	90.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	641729	0.39	758371	84.62	60	120	
Sc (IS)	45	1	HMI H2	20271512	0.68	21579358	93.94	60	120	
Sc (IS)	45	2	HMI He	1271647	0.45	1389101	91.54	60	120	
Sc (IS)	45	3	No Gas	36475364	0.76	40812554	89.37	60	120	
Ge Internal standard	72	1	HMI H2	10532056	0.32	11084416	95.02	60	120	
Ge Internal standard	72	2	HMI He	1586883	0.97	1699063	93.40	60	120	
In Internal standard	115	2	HMI He	4182044	0.35	5046179	82.88	60	120	
Ho-165	165	2	HMI He	14376347	0.86	18410285	78.09	60	120	
Ir (IS)	193	2	HMI He	10172983	0.58	13684495	74.34	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	180_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:07:31-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-22.021	ppb	-9.0	2914376	10	
Be	9	1	6	0.223	ppb	28.4	77	0.5	
B	11	1	6	21.933	ppb	5.9	6345	0.5	>RL
Na	23	2	45	4091.205	ppb	5.4	896883	25	>RL
Mg	24	2	45	1345.111	ppb	5.1	138833	25	>RL
Al	27	2	45	-0.991	ppb	-154.5	197	15	
K	39	2	45	307.145	ppb	11.6	66250	50	>RL
Ti	47	2	45	0.206	ppb	86.8	7	0.5	
V	51	2	72	1.285	ppb	5.8	2450	1	>RL
Cr	52	2	72	0.036	ppb	184.7	683	1	
Mn	55	2	72	0.792	ppb	19.3	760	0.5	>RL
(Fe)	57	2	72	5.260	ppb	40.8	477	25	
Co	59	2	72	0.037	ppb	40.3	153	0.5	
Ni	60	2	72	5.627	ppb	4.1	5061	1	>RL
Cu	63	2	72	0.130	ppb	39.2	790	1	
Zn	66	2	72	0.360	ppb	90.5	513	5	
As	75	2	72	0.088	ppb	52.7	66	1	
Se	78	1	72	0.392	ppb	17.9	127	1	
Sr	88	2	72	0.536	ppb	18.3	630	0.5	>RL
Zr	90	2	72	-1.434	ppb	-142.5	603	1	
Nb	93	2	72	42.039	ppb	245.4	20	2	>RL
Mo	95	2	115	0.652	ppb	12.6	697	0.5	>RL
Pd	105	2	115	47.849	ppb	49.9	53	1	>RL
Ag	107	2	115	0.025	ppb	73.1	123	1	
Cd	111	2	115	-0.005	ppb	-264.4	3	0.5	
Sn	120	2	115	0.559	ppb	26.5	1270	1	
Sb	121	2	115	0.199	ppb	22.3	333	0.6	
Ba	137	2	115	-0.051	ppb	-119.8	57	0.5	
W	182	2	165	0.478	ppb	5.2	3991	1	
Pt	195	2	165	0.454	ppb	8868.9	40	1	
Tl	205	2	165	0.064	ppb	13.8	617	0.1	
Pb	208	2	165	0.034	ppb	66.4	1647	0.5	
Th	232	2	193	0.502	ppb	10.0	15736	1	
U	238	2	193	0.109	ppb	5.4	1523	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	684226	2.16	758371	90.22	60	120	
Sc (IS)	45	1	HMI H2	20427070	1.54	21579358	94.66	60	120	
Sc (IS)	45	2	HMI He	1170083	4.85	1389101	84.23	60	120	
Sc (IS)	45	3	No Gas	36520624	0.55	40812554	89.48	60	120	
Ge Internal standard	72	1	HMI H2	10556534	1.92	11084416	95.24	60	120	
Ge Internal standard	72	2	HMI He	1570845	1.37	1699063	92.45	60	120	
In Internal standard	115	2	HMI He	4200670	1.08	5046179	83.24	60	120	
Ho-165	165	2	HMI He	14626620	0.44	18410285	79.45	60	120	
Ir (IS)	193	2	HMI He	10623906	0.26	13684495	77.63	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-1-A
Data File Name	181SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:11:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.138	ppb	-3.138	-201.82	2907934	50000	
Be	9	1	6	0.040	ppb	0.040	174.89	20	2000	
B	11	1	6	82.414	ppb	82.414	5.62	19682	2000	
Na	23	2	45	25953.141	ppb	25953.141	1.06	5092217	400000	
Mg	24	2	45	6974.870	ppb	6974.870	0.21	651698	400000	
Al	27	2	45	12.697	ppb	12.697	32.66	540	400000	
Si	28	2	45	1568.861	ppb	1568.861	0.81	283585	10000	
P	31	2	45	32.756	ppb	32.756	16.18	145	10000	
K	39	2	45	3815.928	ppb	3815.928	1.76	312756	400000	
Ca	40	1	45	18801.590	ppb	18801.590	2.16	67873391	400000	
Ti	47	2	45	0.457	ppb	0.457	173.21	13	4000	
V	51	2	72	1.228	ppb	1.228	20.42	2190	2000	
Cr	52	2	72	0.327	ppb	0.327	18.27	1117	5000	
Mn	55	2	72	0.875	ppb	0.875	6.49	763	10000	
Fe	56	1	72	11.796	ppb	11.796	3.34	132516	10000	
(Fe)	57	2	72	11.015	ppb	11.015	26.29	627	400000	
Co	59	2	72	0.060	ppb	0.060	20.57	203	2000	
Ni	60	2	72	4.885	ppb	4.885	13.24	4091	5000	
Cu	63	2	72	0.588	ppb	0.588	5.80	1690	5000	
Zn	66	2	72	4.593	ppb	4.593	12.95	2110	5000	
As	75	2	72	0.250	ppb	0.250	31.14	112	2000	
Se	78	1	72	0.170	ppb	0.170	66.93	59	2000	
Sr	88	2	72	133.932	ppb	133.932	0.90	117782	4000	
Zr	90	2	72	1.607	ppb	1.607	228.99	620	1000	
Nb	93	2	72	6.186	ppb	6.186	4.11	10	200	
Mo	95	2	115	0.288	ppb	0.288	7.36	310	2000	
Pd	105	2	115	16.995	ppb	16.995	396.01	37	100	
Ag	107	2	115	0.006	ppb	0.006	77.34	57	100	
Cd	111	2	115	0.032	ppb	0.032	67.40	20	2000	
Sn	120	2	115	0.051	ppb	0.051	81.45	597	2000	
Sb	121	2	115	0.090	ppb	0.090	21.45	170	1000	
Ba	137	2	115	5.720	ppb	5.720	2.01	2310	5000	
W	182	2	165	1.174	ppb	1.174	3.91	6145	100	
Pt	195	2	165	39.757	ppb	39.757	99.80	63	100	
Tl	205	2	165	0.018	ppb	0.018	10.90	293	2000	
Pb	208	2	165	0.041	ppb	0.041	25.37	1640	5000	
Th	232	2	193	3.216	ppb	3.216	13.90	38131	2000	
U	238	2	193	0.115	ppb	0.115	12.19	1520	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	648950	0.76	758371	85.57	60	120	
Sc (IS)	45	1	HMI H2	19068100	1.93	21579358	88.36	60	120	
Sc (IS)	45	2	HMI He	1060706	0.63	1389101	76.36	60	120	
Sc (IS)	45	3	No Gas	34546878	0.87	40812554	84.65	60	120	
Ge Internal standard	72	1	HMI H2	9871093	1.15	11084416	89.05	60	120	
Ge Internal standard	72	2	HMI He	1452329	0.59	1699063	85.48	60	120	
In Internal standard	115	2	HMI He	3980896	0.39	5046179	78.89	60	120	
Ho-165	165	2	HMI He	14020631	0.38	18410285	76.16	60	120	
Ir (IS)	193	2	HMI He	10117534	0.86	13684495	73.93	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-2-A
Data File Name	182SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:15:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-6.675	ppb	-6.675	-24.09	2830482	50000	
Be	9	1	6	0.125	ppb	0.125	32.56	43	2000	
B	11	1	6	133.219	ppb	133.219	0.81	30314	2000	
Na	23	2	45	31854.128	ppb	31854.128	1.33	6019816	400000	
Mg	24	2	45	11598.337	ppb	11598.337	0.85	1044022	400000	
Al	27	2	45	5.737	ppb	5.737	78.59	343	400000	
Si	28	2	45	2040.797	ppb	2040.797	0.94	352678	10000	
P	31	2	45	49.109	ppb	49.109	15.34	187	10000	
K	39	2	45	12336.488	ppb	12336.488	0.17	892640	400000	
Ca	40	1	45	30946.712	ppb	30946.712	0.85	107536488	400000	
Ti	47	2	45	0.118	ppb	0.118	173.21	3	4000	
V	51	2	72	1.999	ppb	1.999	9.18	3104	2000	
Cr	52	2	72	0.346	ppb	0.346	3.25	1110	5000	
Mn	55	2	72	17.723	ppb	17.723	3.44	12515	10000	
Fe	56	1	72	9.871	ppb	9.871	0.51	113385	10000	
(Fe)	57	2	72	9.196	ppb	9.196	24.90	550	400000	
Co	59	2	72	0.333	ppb	0.333	20.26	937	2000	
Ni	60	2	72	4.473	ppb	4.473	5.98	3641	5000	
Cu	63	2	72	1.856	ppb	1.856	14.29	4204	5000	
Zn	66	2	72	2.448	ppb	2.448	1.29	1240	5000	
As	75	2	72	0.466	ppb	0.466	14.01	175	2000	
Se	78	1	72	0.118	ppb	0.118	40.53	43	2000	
Sr	88	2	72	252.995	ppb	252.995	0.06	215166	4000	
Zr	90	2	72	-6.745	ppb	-6.745	-25.53	433	1000	
Nb	93	2	72	22.186	ppb	22.186	112.51	13	200	
Mo	95	2	115	0.209	ppb	0.209	21.61	227	2000	
Pd	105	2	115	27.714	ppb	27.714	144.03	40	100	
Ag	107	2	115	-0.006	ppb	-0.006	-30.95	17	100	
Cd	111	2	115	0.011	ppb	0.011	202.39	10	2000	
Sn	120	2	115	0.259	ppb	0.259	5.59	817	2000	
Sb	121	2	115	0.092	ppb	0.092	28.91	167	1000	
Ba	137	2	115	18.682	ppb	18.682	1.92	7129	5000	
W	182	2	165	1.285	ppb	1.285	5.37	6372	100	
Pt	195	2	165	14.832	ppb	14.832	307.10	47	100	
Tl	205	2	165	0.005	ppb	0.005	83.25	207	2000	
Pb	208	2	165	0.036	ppb	0.036	49.21	1560	5000	
Th	232	2	193	1.919	ppb	1.919	15.63	26799	2000	
U	238	2	193	0.130	ppb	0.130	6.89	1683	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	631371	0.47	758371	83.25	60	120	
Sc (IS)	45	1	HMI H2	18358153	0.54	21579358	85.07	60	120	
Sc (IS)	45	2	HMI He	1022198	1.11	1389101	73.59	60	120	
Sc (IS)	45	3	No Gas	33954771	0.33	40812554	83.20	60	120	
Ge Internal standard	72	1	HMI H2	9401053	0.12	11084416	84.81	60	120	
Ge Internal standard	72	2	HMI He	1405116	0.67	1699063	82.70	60	120	
In Internal standard	115	2	HMI He	3846132	0.62	5046179	76.22	60	120	
Ho-165	165	2	HMI He	13720446	1.45	18410285	74.53	60	120	
Ir (IS)	193	2	HMI He	10011102	0.51	13684495	73.16	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-3-A
Data File Name	183SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:18:46-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-4.833	ppb	-4.833	-70.65	2648672	50000	
Be	9	1	6	0.113	ppb	0.113	54.84	40	2000	
B	11	1	6	76.045	ppb	76.045	2.07	17847	2000	
Na	23	2	45	17261.077	ppb	17261.077	0.94	3250479	400000	
Mg	24	2	45	11893.848	ppb	11893.848	0.33	1064832	400000	
Al	27	2	45	6.761	ppb	6.761	18.17	367	400000	
Si	28	2	45	1932.243	ppb	1932.243	0.99	332603	10000	
P	31	2	45	58.902	ppb	58.902	11.89	215	10000	
K	39	2	45	3608.703	ppb	3608.703	0.45	285475	400000	
Ca	40	1	45	24520.734	ppb	24520.734	1.21	84979642	400000	
Ti	47	2	45	0.119	ppb	0.119	173.21	3	4000	
V	51	2	72	4.108	ppb	4.108	0.85	5828	2000	
Cr	52	2	72	0.354	ppb	0.354	29.83	1130	5000	
Mn	55	2	72	0.642	ppb	0.642	33.66	577	10000	
Fe	56	1	72	6.103	ppb	6.103	4.95	88329	10000	
(Fe)	57	2	72	3.483	ppb	3.483	66.29	373	400000	
Co	59	2	72	0.155	ppb	0.155	9.69	457	2000	
Ni	60	2	72	4.253	ppb	4.253	4.96	3491	5000	
Cu	63	2	72	0.693	ppb	0.693	9.81	1857	5000	
Zn	66	2	72	0.698	ppb	0.698	20.38	590	5000	
As	75	2	72	0.572	ppb	0.572	12.71	209	2000	
Se	78	1	72	0.133	ppb	0.133	77.47	47	2000	
Sr	88	2	72	123.247	ppb	123.247	2.03	105449	4000	
Zr	90	2	72	-0.220	ppb	-0.220	-3457.91	567	1000	
Nb	93	2	72	8.184	ppb	8.184	943.72	10	200	
Mo	95	2	115	0.295	ppb	0.295	11.17	307	2000	
Pd	105	2	115	35.176	ppb	35.176	99.16	43	100	
Ag	107	2	115	-0.002	ppb	-0.002	-313.52	30	100	
Cd	111	2	115	0.011	ppb	0.011	203.57	10	2000	
Sn	120	2	115	-0.089	ppb	-0.089	-38.10	417	2000	
Sb	121	2	115	0.030	ppb	0.030	133.64	87	1000	
Ba	137	2	115	4.873	ppb	4.873	8.82	1914	5000	
W	182	2	165	1.037	ppb	1.037	12.11	5631	100	
Pt	195	2	165	-1.781	ppb	-1.781	-1349.27	37	100	
Tl	205	2	165	0.012	ppb	0.012	84.12	250	2000	
Pb	208	2	165	0.035	ppb	0.035	12.76	1570	5000	
Th	232	2	193	1.410	ppb	1.410	17.11	22595	2000	
U	238	2	193	0.157	ppb	0.157	14.99	2007	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	634967	0.76	758371	83.73	60	120	
Sc (IS)	45	1	HMI H2	18306478	0.72	21579358	84.83	60	120	
Sc (IS)	45	2	HMI He	1016634	0.62	1389101	73.19	60	120	
Sc (IS)	45	3	No Gas	31615796	2.23	40812554	77.47	60	120	
Ge Internal standard	72	1	HMI H2	9407715	0.68	11084416	84.87	60	120	
Ge Internal standard	72	2	HMI He	1413172	2.07	1699063	83.17	60	120	
In Internal standard	115	2	HMI He	3848777	0.59	5046179	76.27	60	120	
Ho-165	165	2	HMI He	13876594	1.08	18410285	75.37	60	120	
Ir (IS)	193	2	HMI He	10054057	0.71	13684495	73.47	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-4-A
Data File Name	184SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:22:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-12.799	ppb	-12.799	-26.09	2836159	50000	
Be	9	1	6	0.137	ppb	0.137	106.10	47	2000	
B	11	1	6	115.357	ppb	115.357	0.43	26615	2000	
Na	23	2	45	26826.413	ppb	26826.413	0.22	5020239	400000	
Mg	24	2	45	10279.152	ppb	10279.152	0.88	915838	400000	
Al	27	2	45	2.854	ppb	2.854	133.03	267	400000	
Si	28	2	45	1822.022	ppb	1822.022	1.12	312632	10000	
P	31	2	45	41.386	ppb	41.386	3.52	163	10000	
K	39	2	45	8921.165	ppb	8921.165	1.82	648870	400000	
Ca	40	1	45	27538.608	ppb	27538.608	0.38	95597572	400000	
Ti	47	2	45	0.608	ppb	0.608	173.21	17	4000	
V	51	2	72	0.997	ppb	0.997	6.33	1820	2000	
Cr	52	2	72	0.274	ppb	0.274	18.94	993	5000	
Mn	55	2	72	0.612	ppb	0.612	15.69	553	10000	
Fe	56	1	72	9.555	ppb	9.555	1.23	112660	10000	
(Fe)	57	2	72	9.023	ppb	9.023	6.84	543	400000	
Co	59	2	72	0.196	ppb	0.196	6.02	563	2000	
Ni	60	2	72	3.945	ppb	3.945	5.35	3230	5000	
Cu	63	2	72	1.073	ppb	1.073	12.53	2614	5000	
Zn	66	2	72	0.693	ppb	0.693	22.03	583	5000	
As	75	2	72	0.337	ppb	0.337	20.01	135	2000	
Se	78	1	72	0.116	ppb	0.116	86.05	43	2000	
Sr	88	2	72	212.516	ppb	212.516	1.63	180438	4000	
Zr	90	2	72	-0.016	ppb	-0.016	-20796.94	567	1000	
Nb	93	2	72	66.474	ppb	66.474	101.12	23	200	
Mo	95	2	115	0.130	ppb	0.130	25.63	153	2000	
Pd	105	2	115	-18.014	ppb	-18.014	-223.71	20	100	
Ag	107	2	115	0.001	ppb	0.001	216.10	40	100	
Cd	111	2	115	0.011	ppb	0.011	203.71	10	2000	
Sn	120	2	115	0.020	ppb	0.020	490.59	540	2000	
Sb	121	2	115	0.045	ppb	0.045	64.98	107	1000	
Ba	137	2	115	11.712	ppb	11.712	4.62	4494	5000	
W	182	2	165	0.975	ppb	0.975	8.16	5414	100	
Pt	195	2	165	25.178	ppb	25.178	205.66	53	100	
Tl	205	2	165	0.003	ppb	0.003	68.91	197	2000	
Pb	208	2	165	0.050	ppb	0.050	44.38	1703	5000	
Th	232	2	193	1.050	ppb	1.050	15.80	19660	2000	
U	238	2	193	0.247	ppb	0.247	37.96	3068	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	636817	0.75	758371	83.97	60	120	
Sc (IS)	45	1	HMI H2	18337758	0.09	21579358	84.98	60	120	
Sc (IS)	45	2	HMI He	1011719	0.96	1389101	72.83	60	120	
Sc (IS)	45	3	No Gas	34616207	1.62	40812554	84.82	60	120	
Ge Internal standard	72	1	HMI H2	9517766	0.39	11084416	85.87	60	120	
Ge Internal standard	72	2	HMI He	1402653	0.29	1699063	82.55	60	120	
In Internal standard	115	2	HMI He	3845375	0.96	5046179	76.20	60	120	
Ho-165	165	2	HMI He	13852968	0.45	18410285	75.25	60	120	
Ir (IS)	193	2	HMI He	10117053	0.33	13684495	73.93	60	120	

Sample Table

Sample Name	280-165846-F-5-A
Data File Name	185SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:26:15-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-6.066	ppb	-6.066	-286.61	2827795	50000	
Be	9	1	6	0.100	ppb	0.100	73.95	37	2000	
B	11	1	6	88.780	ppb	88.780	2.16	20863	2000	
Na	23	2	45	26095.896	ppb	26095.896	1.39	4922275	400000	
Mg	24	2	45	9650.876	ppb	9650.876	1.13	866697	400000	
Al	27	2	45	9.843	ppb	9.843	44.16	447	400000	
Si	28	2	45	1579.606	ppb	1579.606	0.97	274428	10000	
P	31	2	45	44.885	ppb	44.885	16.99	175	10000	
K	39	2	45	7584.558	ppb	7584.558	0.25	561551	400000	
Ca	40	1	45	25852.761	ppb	25852.761	0.43	90892759	400000	
Ti	47	2	45	0.359	ppb	0.359	173.21	10	4000	
V	51	2	72	1.247	ppb	1.247	8.13	2167	2000	
Cr	52	2	72	0.219	ppb	0.219	30.02	917	5000	
Mn	55	2	72	5.547	ppb	5.547	8.20	4047	10000	
Fe	56	1	72	7.720	ppb	7.720	1.29	101295	10000	
(Fe)	57	2	72	11.323	ppb	11.323	29.82	623	400000	
Co	59	2	72	0.137	ppb	0.137	0.53	410	2000	
Ni	60	2	72	3.419	ppb	3.419	4.91	2864	5000	
Cu	63	2	72	1.495	ppb	1.495	8.74	3511	5000	
Zn	66	2	72	0.744	ppb	0.744	14.43	610	5000	
As	75	2	72	0.422	ppb	0.422	5.63	163	2000	
Se	78	1	72	0.043	ppb	0.043	93.69	24	2000	
Sr	88	2	72	183.497	ppb	183.497	0.96	157787	4000	
Zr	90	2	72	-4.004	ppb	-4.004	-74.53	493	1000	
Nb	93	2	72	94.234	ppb	94.234	46.33	30	200	
Mo	95	2	115	0.129	ppb	0.129	28.53	153	2000	
Pd	105	2	115	11.751	ppb	11.751	484.03	33	100	
Ag	107	2	115	-0.001	ppb	-0.001	-1022.85	33	100	
Cd	111	2	115	0.018	ppb	0.018	281.74	13	2000	
Sn	120	2	115	-0.055	ppb	-0.055	-103.32	457	2000	
Sb	121	2	115	0.125	ppb	0.125	44.02	210	1000	
Ba	137	2	115	11.959	ppb	11.959	4.08	4611	5000	
W	182	2	165	0.906	ppb	0.906	0.39	5271	100	
Pt	195	2	165	44.481	ppb	44.481	132.30	67	100	
Tl	205	2	165	0.005	ppb	0.005	155.06	210	2000	
Pb	208	2	165	0.034	ppb	0.034	87.32	1583	5000	
Th	232	2	193	0.696	ppb	0.696	19.04	17007	2000	
U	238	2	193	0.041	ppb	0.041	10.16	670	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	641092	0.40	758371	84.54	60	120	
Sc (IS)	45	1	HMI H2	18571553	0.49	21579358	86.06	60	120	
Sc (IS)	45	2	HMI He	1019733	0.83	1389101	73.41	60	120	
Sc (IS)	45	3	No Gas	33871434	0.91	40812554	82.99	60	120	
Ge Internal standard	72	1	HMI H2	9614889	0.26	11084416	86.74	60	120	
Ge Internal standard	72	2	HMI He	1420417	0.48	1699063	83.60	60	120	
In Internal standard	115	2	HMI He	3864054	0.65	5046179	76.57	60	120	
Ho-165	165	2	HMI He	14073248	0.65	18410285	76.44	60	120	
Ir (IS)	193	2	HMI He	10344798	1.26	13684495	75.60	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-6-A
Data File Name	186SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:29:59-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-32.989	ppb	-32.989	-11.25	2608424	50000	
Be	9	1	6	0.100	ppb	0.100	20.30	37	2000	
B	11	1	6	26.837	ppb	26.837	7.08	7032	2000	
Na	23	2	45	11503.184	ppb	11503.184	0.66	2159652	400000	
Mg	24	2	45	10109.181	ppb	10109.181	0.30	900538	400000	
Al	27	2	45	5.901	ppb	5.901	76.51	343	400000	
Si	28	2	45	1631.502	ppb	1631.502	1.27	280851	10000	
P	31	2	45	46.045	ppb	46.045	7.08	177	10000	
K	39	2	45	2593.574	ppb	2593.574	1.33	214325	400000	
Ca	40	1	45	19646.358	ppb	19646.358	0.44	69202582	400000	
Ti	47	2	45	0.120	ppb	0.120	173.21	3	4000	
V	51	2	72	2.823	ppb	2.823	2.89	4197	2000	
Cr	52	2	72	0.474	ppb	0.474	7.01	1330	5000	
Mn	55	2	72	0.645	ppb	0.645	9.58	583	10000	
Fe	56	1	72	11.943	ppb	11.943	3.98	130904	10000	
(Fe)	57	2	72	13.453	ppb	13.453	20.27	690	400000	
Co	59	2	72	0.070	ppb	0.070	47.80	227	2000	
Ni	60	2	72	3.052	ppb	3.052	5.78	2577	5000	
Cu	63	2	72	0.252	ppb	0.252	8.34	963	5000	
Zn	66	2	72	0.736	ppb	0.736	30.31	607	5000	
As	75	2	72	0.397	ppb	0.397	14.81	156	2000	
Se	78	1	72	0.230	ppb	0.230	30.41	73	2000	
Sr	88	2	72	89.667	ppb	89.667	3.76	77095	4000	
Zr	90	2	72	-1.874	ppb	-1.874	-251.15	537	1000	
Nb	93	2	72	35.867	ppb	35.867	185.48	17	200	
Mo	95	2	115	0.184	ppb	0.184	33.47	203	2000	
Pd	105	2	115	-10.655	ppb	-10.655	-446.71	23	100	
Ag	107	2	115	-0.002	ppb	-0.002	-328.01	30	100	
Cd	111	2	115	0.004	ppb	0.004	355.37	7	2000	
Sn	120	2	115	-0.105	ppb	-0.105	-77.14	397	2000	
Sb	121	2	115	0.056	ppb	0.056	35.50	120	1000	
Ba	137	2	115	3.156	ppb	3.156	11.65	1260	5000	
W	182	2	165	0.864	ppb	0.864	16.22	5041	100	
Pt	195	2	165	14.594	ppb	14.594	317.33	47	100	
Tl	205	2	165	0.002	ppb	0.002	282.22	187	2000	
Pb	208	2	165	0.034	ppb	0.034	14.02	1553	5000	
Th	232	2	193	0.514	ppb	0.514	30.73	15165	2000	
U	238	2	193	0.072	ppb	0.072	14.60	1017	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	640588	0.41	758371	84.47	60	120	
Sc (IS)	45	1	HMI H2	18601549	0.73	21579358	86.20	60	120	
Sc (IS)	45	2	HMI He	1011477	0.49	1389101	72.82	60	120	
Sc (IS)	45	3	No Gas	33765917	0.76	40812554	82.73	60	120	
Ge Internal standard	72	1	HMI H2	9675680	0.57	11084416	87.29	60	120	
Ge Internal standard	72	2	HMI He	1419645	1.41	1699063	83.55	60	120	
In Internal standard	115	2	HMI He	3836870	0.75	5046179	76.04	60	120	
Ho-165	165	2	HMI He	13825104	0.17	18410285	75.09	60	120	
Ir (IS)	193	2	HMI He	10165920	0.57	13684495	74.29	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-7-A
Data File Name	187SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:33:44-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-40.204	ppb	-40.204	-3.42	2523887	50000	
Be	9	1	6	0.195	ppb	0.195	43.39	63	2000	
B	11	1	6	26.140	ppb	26.140	0.99	6848	2000	
Na	23	2	45	11422.483	ppb	11422.483	0.58	2111812	400000	
Mg	24	2	45	10137.267	ppb	10137.267	1.12	889223	400000	
Al	27	2	45	1.694	ppb	1.694	25.09	233	400000	
Si	28	2	45	1610.960	ppb	1610.960	1.27	273196	10000	
P	31	2	45	45.114	ppb	45.114	21.25	171	10000	
K	39	2	45	2627.746	ppb	2627.746	0.65	213368	400000	
Ca	40	1	45	19160.053	ppb	19160.053	0.77	68513601	400000	
Ti	47	2	45	0.369	ppb	0.369	173.21	10	4000	
V	51	2	72	2.767	ppb	2.767	6.89	4137	2000	
Cr	52	2	72	0.432	ppb	0.432	13.80	1267	5000	
Mn	55	2	72	0.731	ppb	0.731	14.53	647	10000	
Fe	56	1	72	19.727	ppb	19.727	1.06	187017	10000	
(Fe)	57	2	72	18.219	ppb	18.219	34.31	843	400000	
Co	59	2	72	0.076	ppb	0.076	30.06	243	2000	
Ni	60	2	72	4.246	ppb	4.246	3.70	3514	5000	
Cu	63	2	72	0.305	ppb	0.305	21.24	1077	5000	
Zn	66	2	72	0.598	ppb	0.598	32.98	557	5000	
As	75	2	72	0.422	ppb	0.422	10.55	164	2000	
Se	78	1	72	0.246	ppb	0.246	46.99	79	2000	
Sr	88	2	72	88.848	ppb	88.848	2.50	76660	4000	
Zr	90	2	72	-8.203	ppb	-8.203	-32.72	410	1000	
Nb	93	2	72	35.974	ppb	35.974	139.41	17	200	
Mo	95	2	115	0.204	ppb	0.204	50.78	220	2000	
Pd	105	2	115	36.074	ppb	36.074	36.64	43	100	
Ag	107	2	115	-0.003	ppb	-0.003	-294.50	27	100	
Cd	111	2	115	-0.004	ppb	-0.004	-338.29	3	2000	
Sn	120	2	115	-0.047	ppb	-0.047	-66.72	460	2000	
Sb	121	2	115	0.077	ppb	0.077	40.85	147	1000	
Ba	137	2	115	2.970	ppb	2.970	19.29	1183	5000	
W	182	2	165	0.984	ppb	0.984	10.70	5431	100	
Pt	195	2	165	9.346	ppb	9.346	432.80	43	100	
Tl	205	2	165	0.010	ppb	0.010	87.20	237	2000	
Pb	208	2	165	0.031	ppb	0.031	23.03	1527	5000	
Th	232	2	193	0.349	ppb	0.349	27.57	13870	2000	
U	238	2	193	0.076	ppb	0.076	12.84	1073	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	637845	1.11	758371	84.11	60	120	
Sc (IS)	45	1	HMI H2	18883693	0.64	21579358	87.51	60	120	
Sc (IS)	45	2	HMI He	996041	0.47	1389101	71.70	60	120	
Sc (IS)	45	3	No Gas	33393283	0.88	40812554	81.82	60	120	
Ge Internal standard	72	1	HMI H2	9816585	0.74	11084416	88.56	60	120	
Ge Internal standard	72	2	HMI He	1424414	0.87	1699063	83.84	60	120	
In Internal standard	115	2	HMI He	3815691	0.20	5046179	75.62	60	120	
Ho-165	165	2	HMI He	13823280	0.74	18410285	75.08	60	120	
Ir (IS)	193	2	HMI He	10259282	0.93	13684495	74.97	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-9-A
Data File Name	188SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:37:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-49.009	ppb	-49.009	-7.36	2401080	50000	
Be	9	1	6	0.066	ppb	0.066	165.50	27	2000	
B	11	1	6	76.517	ppb	76.517	3.20	17730	2000	
Na	23	2	45	25567.490	ppb	25567.490	0.62	4682032	400000	
Mg	24	2	45	9698.640	ppb	9698.640	0.81	845567	400000	
Al	27	2	45	11.882	ppb	11.882	19.62	483	400000	
Si	28	2	45	1352.546	ppb	1352.546	0.96	229415	10000	
P	31	2	45	48.587	ppb	48.587	4.19	180	10000	
K	39	2	45	5793.832	ppb	5793.832	2.44	424773	400000	
Ca	40	1	45	27928.216	ppb	27928.216	0.50	98909575	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.787	ppb	0.787	29.36	1557	2000	
Cr	52	2	72	0.291	ppb	0.291	18.30	1023	5000	
Mn	55	2	72	106.272	ppb	106.272	1.31	74553	10000	
Fe	56	1	72	44.283	ppb	44.283	0.49	355049	10000	
(Fe)	57	2	72	40.755	ppb	40.755	12.07	1540	400000	
Co	59	2	72	0.456	ppb	0.456	18.87	1267	2000	
Ni	60	2	72	6.616	ppb	6.616	5.83	5291	5000	
Cu	63	2	72	4.614	ppb	4.614	7.15	9813	5000	
Zn	66	2	72	1.567	ppb	1.567	27.41	913	5000	
As	75	2	72	0.484	ppb	0.484	13.29	181	2000	
Se	78	1	72	0.197	ppb	0.197	41.75	65	2000	
Sr	88	2	72	177.037	ppb	177.037	2.07	150856	4000	
Zr	90	2	72	-3.965	ppb	-3.965	-183.87	490	1000	
Nb	93	2	72	95.623	ppb	95.623	122.13	30	200	
Mo	95	2	115	0.179	ppb	0.179	17.10	197	2000	
Pd	105	2	115	-2.177	ppb	-2.177	-614.27	27	100	
Ag	107	2	115	0.001	ppb	0.001	1638.94	37	100	
Cd	111	2	115	0.019	ppb	0.019	138.85	13	2000	
Sn	120	2	115	-0.102	ppb	-0.102	-87.87	397	2000	
Sb	121	2	115	0.109	ppb	0.109	56.48	187	1000	
Ba	137	2	115	8.305	ppb	8.305	7.19	3167	5000	
W	182	2	165	1.035	ppb	1.035	11.49	5525	100	
Pt	195	2	165	31.871	ppb	31.871	256.80	57	100	
Tl	205	2	165	0.011	ppb	0.011	59.86	243	2000	
Pb	208	2	165	0.039	ppb	0.039	30.64	1580	5000	
Th	232	2	193	0.264	ppb	0.264	27.08	13030	2000	
U	238	2	193	0.041	ppb	0.041	17.46	660	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	627062	0.43	758371	82.69	60	120	
Sc (IS)	45	1	HMI H2	18708852	0.40	21579358	86.70	60	120	
Sc (IS)	45	2	HMI He	989913	0.53	1389101	71.26	60	120	
Sc (IS)	45	3	No Gas	32654254	0.86	40812554	80.01	60	120	
Ge Internal standard	72	1	HMI H2	9735484	0.67	11084416	87.83	60	120	
Ge Internal standard	72	2	HMI He	1407693	0.90	1699063	82.85	60	120	
In Internal standard	115	2	HMI He	3798142	1.24	5046179	75.27	60	120	
Ho-165	165	2	HMI He	13638321	0.27	18410285	74.08	60	120	
Ir (IS)	193	2	HMI He	10173672	0.71	13684495	74.34	60	120	

Sample Report

Sample Table

Sample Name	280-165846-F-10-A
Data File Name	189SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:41:15-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585201 6020b
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-47.494	ppb	-47.494	-8.50	2413058	50000	
Be	9	1	6	0.066	ppb	0.066	165.87	27	2000	
B	11	1	6	49.196	ppb	49.196	8.17	11851	2000	
Na	23	2	45	16288.608	ppb	16288.608	1.02	2921839	400000	
Mg	24	2	45	7802.978	ppb	7802.978	1.75	665376	400000	
Al	27	2	45	1.822	ppb	1.822	78.78	230	400000	
Si	28	2	45	1807.253	ppb	1807.253	1.00	296831	10000	
P	31	2	45	139.497	ppb	139.497	11.20	425	10000	
K	39	2	45	8012.983	ppb	8012.983	0.64	561311	400000	
Ca	40	1	45	20426.145	ppb	20426.145	0.66	72526457	400000	
Ti	47	2	45	0.251	ppb	0.251	86.61	7	4000	
V	51	2	72	0.436	ppb	0.436	21.63	1097	2000	
Cr	52	2	72	0.387	ppb	0.387	22.24	1167	5000	
Mn	55	2	72	1286.232	ppb	1286.232	1.38	891104	10000	
Fe	56	1	72	3968.766	ppb	3968.766	1.17	27551684	10000	
(Fe)	57	2	72	3608.227	ppb	3608.227	1.59	112203	400000	
Co	59	2	72	0.842	ppb	0.842	8.10	2287	2000	
Ni	60	2	72	6.548	ppb	6.548	0.76	5184	5000	
Cu	63	2	72	0.299	ppb	0.299	23.14	1040	5000	
Zn	66	2	72	1.102	ppb	1.102	26.36	730	5000	
As	75	2	72	6.019	ppb	6.019	5.43	1866	2000	
Se	78	1	72	0.117	ppb	0.117	55.45	44	2000	
Sr	88	2	72	161.133	ppb	161.133	2.48	135836	4000	
Zr	90	2	72	-1.994	ppb	-1.994	-103.83	523	1000	
Nb	93	2	72	141.626	ppb	141.626	54.96	40	200	
Mo	95	2	115	0.296	ppb	0.296	23.26	300	2000	
Pd	105	2	115	-17.042	ppb	-17.042	-277.18	20	100	
Ag	107	2	115	0.003	ppb	0.003	240.54	43	100	
Cd	111	2	115	0.012	ppb	0.012	199.04	10	2000	
Sn	120	2	115	-0.190	ppb	-0.190	-20.89	293	2000	
Sb	121	2	115	0.021	ppb	0.021	95.92	73	1000	
Ba	137	2	115	15.113	ppb	15.113	4.49	5648	5000	
W	182	2	165	0.680	ppb	0.680	12.93	4331	100	
Pt	195	2	165	-0.055	ppb	-0.055	-16543.67	37	100	
Tl	205	2	165	-0.003	ppb	-0.003	-341.01	150	2000	
Pb	208	2	165	0.021	ppb	0.021	146.15	1407	5000	
Th	232	2	193	0.398	ppb	0.398	46.25	14121	2000	
U	238	2	193	0.006	ppb	0.006	119.68	247	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	631824	0.57	758371	83.31	60	120	
Sc (IS)	45	1	HMI H2	18751494	0.45	21579358	86.90	60	120	
Sc (IS)	45	2	HMI He	968188	0.81	1389101	69.70	60	120	
Sc (IS)	45	3	No Gas	32660333	0.82	40812554	80.03	60	120	
Ge Internal standard	72	1	HMI H2	9769902	0.39	11084416	88.14	60	120	
Ge Internal standard	72	2	HMI He	1392490	0.81	1699063	81.96	60	120	
In Internal standard	115	2	HMI He	3757937	0.52	5046179	74.47	60	120	
Ho-165	165	2	HMI He	13497970	0.60	18410285	73.32	60	120	
Ir (IS)	193	2	HMI He	10139371	1.11	13684495	74.09	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	190_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:45:00-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	30.957	ppb	2.094	2969649	100	31.0	90	110	>+\-10%
Be	9	1	6	50.957	ppb	1.803	13906	50	101.9	90	110	
B	11	1	6	524.828	ppb	2.925	113672	50	1049.7	90	110	>+\-10%
Na	23	2	45	64762.659	ppb	0.303	11536743	51000	127.0	90	110	>+\-10%
Mg	24	2	45	13886.631	ppb	5.374	1179601	11000	126.2	90	110	>+\-10%
Al	27	2	45	1061.722	ppb	0.545	25730	1000	106.2	90	110	
Si	28	2	45	86.681	ppb	4.172	22579	500	17.3	90	110	>+\-10%
P	31	2	45	2733.238	ppb	2.192	7516	2500	109.3	90	110	
K	39	2	45	12575.852	ppb	0.861	857967	11000	114.3	90	110	>+\-10%
Ca	40	1	45	11469.167	ppb	1.112	39982114	11000	104.3	90	110	
(Ca)	44	1	45	12158.198	ppb	0.430	1282631	11000	110.5	90	110	>+\-10%
Ti	47	2	45	61.412	ppb	5.804	1620	50	122.8	90	110	>+\-10%
V	51	2	72	51.424	ppb	2.026	65174	50	102.8	90	110	
Cr	52	2	72	50.498	ppb	1.248	80530	50	101.0	90	110	
Mn	55	2	72	47.610	ppb	1.624	32893	50	95.2	90	110	
Fe	56	1	72	1058.654	ppb	0.492	7336779	1000	105.9	90	110	
(Fe)	56	2	72	948.127	ppb	5.387	1272193	1000	94.8	90	110	
(Fe)	57	2	72	949.578	ppb	3.107	29524	1000	95.0	90	110	
Co	59	2	72	49.047	ppb	0.310	130381	50	98.1	90	110	
Ni	60	2	72	54.419	ppb	0.792	41275	50	108.8	90	110	
Cu	63	2	72	47.701	ppb	0.590	95633	50	95.4	90	110	
Zn	66	2	72	48.164	ppb	1.137	18040	50	96.3	90	110	
As	75	2	72	50.707	ppb	1.076	15387	50	101.4	90	110	
Se	78	1	72	52.350	ppb	2.041	13882	50	104.7	90	110	
Sr	88	2	72	91.195	ppb	1.338	76432	100	91.2	90	110	
Zr	90	2	72	0.541	ppb	573.378	570	50	1.1	90	110	>+\-10%
Nb	93	2	72	127.006	ppb	87.712	37	100	127.0	90	110	>+\-10%
Mo	95	2	115	56.132	ppb	3.186	49754	50	112.3	90	110	>+\-10%
Pd	105	2	115	807.967	ppb	12.379	363	50	1615.9	90	110	>+\-10%
Ag	107	2	115	53.141	ppb	1.758	155275	50	106.3	90	110	
Cd	111	2	115	53.465	ppb	0.390	22673	50	106.9	90	110	
Sn	120	2	115	55.411	ppb	1.200	61439	50	110.8	90	110	>+\-10%
Sb	121	2	115	53.026	ppb	1.094	65244	50	106.1	90	110	
Ba	137	2	115	51.617	ppb	4.279	18708	50	103.2	90	110	
W	182	2	165	54.799	ppb	0.988	177926	50	109.6	90	110	
Pt	195	2	165	38.090	ppb	85.579	60	50	76.2	90	110	>+\-10%
Tl	205	2	165	50.418	ppb	1.446	313058	50	100.8	90	110	
Pb	208	2	165	50.632	ppb	1.503	433835	50	101.3	90	110	
Th	232	2	193	38.742	ppb	6.359	343915	50	77.5	90	110	>+\-10%
U	238	2	193	43.046	ppb	0.294	509636	50	86.1	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	616806	1.29	758371	81.33	60	120	
Sc (IS)	45	1	HMI H2	18395754	0.50	21579358	85.25	60	120	
Sc (IS)	45	2	HMI He	964530	0.35	1389101	69.44	60	120	
Sc (IS)	45	3	No Gas	32245155	0.36	40812554	79.01	60	120	
Ge Internal standard	72	1	HMI H2	9705613	0.80	11084416	87.56	60	120	
Ge Internal standard	72	2	HMI He	1383391	0.74	1699063	81.42	60	120	
In Internal standard	115	2	HMI He	3676370	0.13	5046179	72.85	60	120	
Ho-165	165	2	HMI He	13508037	0.24	18410285	73.37	60	120	
Ir (IS)	193	2	HMI He	10198203	0.26	13684495	74.52	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	191_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:48:42-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	132CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-63.332	ppb	-2.4	2271431	10	
Be	9	1	6	0.194	ppb	21.2	63	0.5	
B	11	1	6	16.998	ppb	11.1	4838	0.5	>RL
Na	23	2	45	1722.460	ppb	2.1	316343	25	>RL
Mg	24	2	45	911.171	ppb	1.9	77124	25	>RL
Al	27	2	45	2.377	ppb	136.7	240	15	
K	39	2	45	289.217	ppb	2.9	53077	50	>RL
Ti	47	2	45	0.000	ppb	#DIV/0!	0	0.5	
V	51	2	72	0.681	ppb	17.1	1403	1	
Cr	52	2	72	0.029	ppb	107.9	593	1	
Mn	55	2	72	0.702	ppb	6.5	610	0.5	>RL
(Fe)	57	2	72	17.396	ppb	12.7	797	25	
Co	59	2	72	0.048	ppb	42.7	163	0.5	
Ni	60	2	72	6.026	ppb	5.4	4774	1	>RL
Cu	63	2	72	0.215	ppb	27.6	870	1	
Zn	66	2	72	0.556	ppb	13.3	527	5	
As	75	2	72	0.092	ppb	48.7	59	1	
Se	78	1	72	0.107	ppb	21.4	41	1	
Sr	88	2	72	0.024	ppb	232.0	127	0.5	
Zr	90	2	72	-5.479	ppb	-152.1	453	1	
Nb	93	2	72	111.955	ppb	60.2	33	2	>RL
Mo	95	2	115	0.373	ppb	6.7	367	0.5	
Pd	105	2	115	22.552	ppb	395.5	37	1	>RL
Ag	107	2	115	0.033	ppb	20.7	133	1	
Cd	111	2	115	-0.004	ppb	-366.8	3	0.5	
Sn	120	2	115	0.610	ppb	5.5	1180	1	
Sb	121	2	115	0.276	ppb	16.7	390	0.6	
Ba	137	2	115	0.012	ppb	1000.4	73	0.5	
W	182	2	165	0.428	ppb	10.8	3547	1	
Pt	195	2	165	48.391	ppb	84.9	67	1	>RL
Tl	205	2	165	0.049	ppb	14.4	480	0.1	
Pb	208	2	165	0.031	ppb	32.1	1503	0.5	
Th	232	2	193	0.620	ppb	10.4	16610	1	
U	238	2	193	0.068	ppb	15.9	1010	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	640349	0.32	758371	84.44	60	120	
Sc (IS)	45	1	HMI H2	18711625	0.55	21579358	86.71	60	120	
Sc (IS)	45	2	HMI He	956701	0.83	1389101	68.87	60	120	
Sc (IS)	45	3	No Gas	32351348	1.03	40812554	79.27	60	120	
Ge Internal standard	72	1	HMI H2	9777529	0.35	11084416	88.21	60	120	
Ge Internal standard	72	2	HMI He	1388495	0.42	1699063	81.72	60	120	
In Internal standard	115	2	HMI He	3721530	0.45	5046179	73.75	60	120	
Ho-165	165	2	HMI He	13591519	0.15	18410285	73.83	60	120	
Ir (IS)	193	2	HMI He	10507981	1.03	13684495	76.79	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	192SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:52:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-73.748	ppb	-73.748	-2.90	2156666	50000	
Be	9	1	6	0.102	ppb	0.102	53.97	37	2000	
B	11	1	6	9.300	ppb	9.300	14.76	3070	2000	
Na	23	2	45	1843.706	ppb	1843.706	1.55	332182	400000	
Mg	24	2	45	873.628	ppb	873.628	3.33	72745	400000	
Al	27	2	45	9.346	ppb	9.346	8.32	400	400000	
Si	28	2	45	30.148	ppb	30.148	14.03	13269	10000	
P	31	2	45	12.955	ppb	12.955	62.05	76	10000	
K	39	2	45	271.753	ppb	271.753	1.79	51084	400000	
Ca	40	1	45	16.412	ppb	16.412	0.68	132145	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.576	ppb	0.576	34.64	1250	2000	
Cr	52	2	72	0.088	ppb	0.088	61.03	677	5000	
Mn	55	2	72	0.505	ppb	0.505	30.02	467	10000	
Fe	56	1	72	27.710	ppb	27.710	1.55	239525	10000	
(Fe)	57	2	72	21.326	ppb	21.326	15.57	903	400000	
Co	59	2	72	0.041	ppb	0.041	75.10	143	2000	
Ni	60	2	72	4.899	ppb	4.899	10.81	3854	5000	
Cu	63	2	72	0.177	ppb	0.177	24.88	780	5000	
Zn	66	2	72	1.077	ppb	1.077	26.64	707	5000	
As	75	2	72	0.049	ppb	0.049	61.39	46	2000	
Se	78	1	72	0.178	ppb	0.178	63.55	60	2000	
Sr	88	2	72	-0.026	ppb	-0.026	-176.09	83	4000	
Zr	90	2	72	-5.437	ppb	-5.437	-37.38	447	1000	
Nb	93	2	72	99.498	ppb	99.498	45.36	30	200	
Mo	95	2	115	0.111	ppb	0.111	43.65	130	2000	
Pd	105	2	115	-31.958	ppb	-31.958	-87.16	13	100	
Ag	107	2	115	0.014	ppb	0.014	57.61	73	100	
Cd	111	2	115	0.004	ppb	0.004	318.83	7	2000	
Sn	120	2	115	0.167	ppb	0.167	23.03	677	2000	
Sb	121	2	115	0.022	ppb	0.022	90.82	73	1000	
Ba	137	2	115	0.126	ppb	0.126	45.62	113	5000	
W	182	2	165	0.015	ppb	0.015	392.00	2190	100	
Pt	195	2	165	5.597	ppb	5.597	774.57	40	100	
Tl	205	2	165	0.016	ppb	0.016	51.80	270	2000	
Pb	208	2	165	0.019	ppb	0.019	59.23	1387	5000	
Th	232	2	193	0.289	ppb	0.289	28.50	13737	2000	
U	238	2	193	0.021	ppb	0.021	33.65	437	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	630099	0.44	758371	83.09	60	120	
Sc (IS)	45	1	HMI H2	18454549	0.25	21579358	85.52	60	120	
Sc (IS)	45	2	HMI He	940868	0.44	1389101	67.73	60	120	
Sc (IS)	45	3	No Gas	31812540	0.62	40812554	77.95	60	120	
Ge Internal standard	72	1	HMI H2	9691689	0.37	11084416	87.44	60	120	
Ge Internal standard	72	2	HMI He	1365335	0.53	1699063	80.36	60	120	
In Internal standard	115	2	HMI He	3667195	0.61	5046179	72.67	60	120	
Ho-165	165	2	HMI He	13447191	0.30	18410285	73.04	60	120	
Ir (IS)	193	2	HMI He	10553008	0.95	13684495	77.12	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	193SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:56:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-78.899	ppb	-78.899	-6.01	2083304	50000	
Be	9	1	6	0.142	ppb	0.142	143.42	47	2000	
B	11	1	6	6.314	ppb	6.314	27.94	2370	2000	
Na	23	2	45	2007.218	ppb	2007.218	0.83	346106	400000	
Mg	24	2	45	824.068	ppb	824.068	1.69	65887	400000	
Al	27	2	45	5.486	ppb	5.486	71.69	297	400000	
Si	28	2	45	31.067	ppb	31.067	3.76	12875	10000	
P	31	2	45	14.896	ppb	14.896	23.05	78	10000	
K	39	2	45	276.891	ppb	276.891	8.15	49346	400000	
Ca	40	1	45	14.726	ppb	14.726	4.00	123759	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.748	ppb	0.748	32.30	1293	2000	
Cr	52	2	72	0.167	ppb	0.167	44.35	707	5000	
Mn	55	2	72	0.529	ppb	0.529	31.68	427	10000	
Fe	56	1	72	26.564	ppb	26.564	0.96	227157	10000	
(Fe)	57	2	72	29.331	ppb	29.331	14.66	1013	400000	
Co	59	2	72	0.026	ppb	0.026	58.15	90	2000	
Ni	60	2	72	5.047	ppb	5.047	5.79	3504	5000	
Cu	63	2	72	0.246	ppb	0.246	22.94	810	5000	
Zn	66	2	72	0.926	ppb	0.926	29.75	577	5000	
As	75	2	72	0.045	ppb	0.045	135.62	39	2000	
Se	78	1	72	0.152	ppb	0.152	36.00	52	2000	
Sr	88	2	72	0.015	ppb	0.015	189.33	103	4000	
Zr	90	2	72	-3.760	ppb	-3.760	-33.62	423	1000	
Nb	93	2	72	32.006	ppb	32.006	244.79	13	200	
Mo	95	2	115	0.019	ppb	0.019	94.85	47	2000	
Pd	105	2	115	-14.206	ppb	-14.206	-2.22	20	100	
Ag	107	2	115	0.006	ppb	0.006	55.91	50	100	
Cd	111	2	115	-0.011	ppb	-0.011	0.00	0	2000	
Sn	120	2	115	0.104	ppb	0.104	40.94	587	2000	
Sb	121	2	115	0.036	ppb	0.036	96.02	87	1000	
Ba	137	2	115	-0.054	ppb	-0.054	-32.40	47	5000	
W	182	2	165	-0.005	ppb	-0.005	-1518.50	2070	100	
Pt	195	2	165	41.236	ppb	41.236	70.48	60	100	
Tl	205	2	165	0.005	ppb	0.005	418.55	193	2000	
Pb	208	2	165	0.024	ppb	0.024	70.51	1387	5000	
Th	232	2	193	0.153	ppb	0.153	75.96	12252	2000	
U	238	2	193	0.009	ppb	0.009	85.09	280	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	618261	1.04	758371	81.52	60	120	
Sc (IS)	45	1	HMI H2	18089410	0.17	21579358	83.83	60	120	
Sc (IS)	45	2	HMI He	903121	0.47	1389101	65.01	60	120	
Sc (IS)	45	3	No Gas	31284805	0.83	40812554	76.65	60	120	
Ge Internal standard	72	1	HMI H2	9504223	0.55	11084416	85.74	60	120	
Ge Internal standard	72	2	HMI He	1206612	0.21	1699063	71.02	60	120	
In Internal standard	115	2	HMI He	3535475	0.64	5046179	70.06	60	120	
Ho-165	165	2	HMI He	13085183	0.51	18410285	71.08	60	120	
Ir (IS)	193	2	HMI He	10327034	0.68	13684495	75.47	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	194SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T21:59:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-82.400	ppb	-82.400	-2.50	2057395	50000	
Be	9	1	6	0.056	ppb	0.056	136.29	23	2000	
B	11	1	6	6.888	ppb	6.888	7.15	2484	2000	
Na	23	2	45	2107.889	ppb	2107.889	1.64	357640	400000	
Mg	24	2	45	839.089	ppb	839.089	3.41	66111	400000	
Al	27	2	45	8.967	ppb	8.967	12.96	370	400000	
Si	28	2	45	29.011	ppb	29.011	6.89	12388	10000	
P	31	2	45	14.810	ppb	14.810	20.33	77	10000	
K	39	2	45	271.429	ppb	271.429	9.85	48313	400000	
Ca	40	1	45	13.611	ppb	13.611	2.75	119670	400000	
Ti	47	2	45	0.272	ppb	0.272	173.21	7	4000	
V	51	2	72	0.475	ppb	0.475	25.27	1053	2000	
Cr	52	2	72	0.147	ppb	0.147	34.84	717	5000	
Mn	55	2	72	0.551	ppb	0.551	33.25	463	10000	
Fe	56	1	72	25.014	ppb	25.014	1.89	217205	10000	
(Fe)	57	2	72	24.409	ppb	24.409	11.09	930	400000	
Co	59	2	72	0.023	ppb	0.023	18.54	90	2000	
Ni	60	2	72	4.654	ppb	4.654	4.35	3430	5000	
Cu	63	2	72	0.236	ppb	0.236	18.86	837	5000	
Zn	66	2	72	1.257	ppb	1.257	18.80	720	5000	
As	75	2	72	-0.010	ppb	-0.010	-306.28	26	2000	
Se	78	1	72	0.177	ppb	0.177	33.43	59	2000	
Sr	88	2	72	0.007	ppb	0.007	731.93	103	4000	
Zr	90	2	72	0.445	ppb	0.445	802.49	523	1000	
Nb	93	2	72	12.067	ppb	12.067	391.54	10	200	
Mo	95	2	115	0.034	ppb	0.034	35.25	60	2000	
Pd	105	2	115	18.213	ppb	18.213	310.13	33	100	
Ag	107	2	115	0.001	ppb	0.001	402.35	37	100	
Cd	111	2	115	0.005	ppb	0.005	585.20	7	2000	
Sn	120	2	115	0.163	ppb	0.163	35.71	653	2000	
Sb	121	2	115	0.010	ppb	0.010	174.08	57	1000	
Ba	137	2	115	0.050	ppb	0.050	89.07	83	5000	
W	182	2	165	0.062	ppb	0.062	78.91	2297	100	
Pt	195	2	165	6.914	ppb	6.914	239.21	40	100	
Tl	205	2	165	0.009	ppb	0.009	105.21	220	2000	
Pb	208	2	165	0.023	ppb	0.023	57.27	1397	5000	
Th	232	2	193	0.095	ppb	0.095	70.93	12062	2000	
U	238	2	193	0.010	ppb	0.010	49.89	310	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	615605	0.51	758371	81.17	60	120	
Sc (IS)	45	1	HMI H2	18048698	0.72	21579358	83.64	60	120	
Sc (IS)	45	2	HMI He	890132	0.60	1389101	64.08	60	120	
Sc (IS)	45	3	No Gas	31275450	1.07	40812554	76.63	60	120	
Ge Internal standard	72	1	HMI H2	9526674	0.88	11084416	85.95	60	120	
Ge Internal standard	72	2	HMI He	1276479	4.36	1699063	75.13	60	120	
In Internal standard	115	2	HMI He	3562004	0.66	5046179	70.59	60	120	
Ho-165	165	2	HMI He	13192342	0.46	18410285	71.66	60	120	
Ir (IS)	193	2	HMI He	10599259	0.60	13684495	77.45	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	195SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:03:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-87.982	ppb	-87.982	-2.01	1969172	50000	
Be	9	1	6	0.045	ppb	0.045	166.70	20	2000	
B	11	1	6	5.408	ppb	5.408	14.04	2140	2000	
Na	23	2	45	2123.496	ppb	2123.496	0.63	353198	400000	
Mg	24	2	45	809.921	ppb	809.921	2.91	62582	400000	
Al	27	2	45	7.623	ppb	7.623	56.48	333	400000	
Si	28	2	45	24.380	ppb	24.380	18.40	11481	10000	
P	31	2	45	10.053	ppb	10.053	85.17	63	10000	
K	39	2	45	276.511	ppb	276.511	5.52	47668	400000	
Ca	40	1	45	13.184	ppb	13.184	3.34	117448	400000	
Ti	47	2	45	0.838	ppb	0.838	99.90	20	4000	
V	51	2	72	0.648	ppb	0.648	25.17	1207	2000	
Cr	52	2	72	0.100	ppb	0.100	31.03	627	5000	
Mn	55	2	72	0.550	ppb	0.550	21.69	447	10000	
Fe	56	1	72	24.285	ppb	24.285	0.67	212019	10000	
(Fe)	57	2	72	24.015	ppb	24.015	43.24	880	400000	
Co	59	2	72	0.036	ppb	0.036	103.69	117	2000	
Ni	60	2	72	4.246	ppb	4.246	1.99	3034	5000	
Cu	63	2	72	0.190	ppb	0.190	16.81	727	5000	
Zn	66	2	72	1.201	ppb	1.201	8.63	677	5000	
As	75	2	72	0.047	ppb	0.047	71.96	41	2000	
Se	78	1	72	0.193	ppb	0.193	36.20	63	2000	
Sr	88	2	72	0.005	ppb	0.005	1256.58	97	4000	
Zr	90	2	72	-2.903	ppb	-2.903	-195.41	443	1000	
Nb	93	2	72	32.876	ppb	32.876	365.00	13	200	
Mo	95	2	115	0.031	ppb	0.031	86.34	57	2000	
Pd	105	2	115	3.166	ppb	3.166	930.34	27	100	
Ag	107	2	115	0.003	ppb	0.003	2.17	40	100	
Cd	111	2	115	0.005	ppb	0.005	567.55	7	2000	
Sn	120	2	115	0.148	ppb	0.148	23.40	627	2000	
Sb	121	2	115	-0.003	ppb	-0.003	-251.26	40	1000	
Ba	137	2	115	0.064	ppb	0.064	104.10	87	5000	
W	182	2	165	0.003	ppb	0.003	1159.47	2117	100	
Pt	195	2	165	-9.876	ppb	-9.876	-294.10	30	100	
Tl	205	2	165	0.010	ppb	0.010	135.64	230	2000	
Pb	208	2	165	0.023	ppb	0.023	34.68	1397	5000	
Th	232	2	193	-0.012	ppb	-0.012	-475.12	11081	2000	
U	238	2	193	0.009	ppb	0.009	51.44	293	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	608294	0.43	758371	80.21	60	120	
Sc (IS)	45	1	HMI H2	17933226	1.29	21579358	83.10	60	120	
Sc (IS)	45	2	HMI He	872780	0.28	1389101	62.83	60	120	
Sc (IS)	45	3	No Gas	30533701	0.84	40812554	74.81	60	120	
Ge Internal standard	72	1	HMI H2	9514189	0.48	11084416	85.83	60	120	
Ge Internal standard	72	2	HMI He	1229719	4.71	1699063	72.38	60	120	
In Internal standard	115	2	HMI He	3501132	0.42	5046179	69.38	60	120	
Ho-165	165	2	HMI He	13220077	0.62	18410285	71.81	60	120	
Ir (IS)	193	2	HMI He	10572263	0.28	13684495	77.26	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	196SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:07:31-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-90.098	ppb	-90.098	-1.11	1934201	50000	
Be	9	1	6	0.120	ppb	0.120	113.39	40	2000	
B	11	1	6	5.604	ppb	5.604	31.67	2167	2000	
Na	23	2	45	2096.339	ppb	2096.339	0.43	343359	400000	
Mg	24	2	45	789.393	ppb	789.393	1.80	60049	400000	
Al	27	2	45	9.098	ppb	9.098	38.33	360	400000	
Si	28	2	45	24.784	ppb	24.784	20.14	11358	10000	
P	31	2	45	6.622	ppb	6.622	97.48	54	10000	
K	39	2	45	241.607	ppb	241.607	8.36	44887	400000	
Ca	40	1	45	12.860	ppb	12.860	10.26	115381	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.710	ppb	0.710	7.71	1223	2000	
Cr	52	2	72	0.196	ppb	0.196	24.90	730	5000	
Mn	55	2	72	0.466	ppb	0.466	3.72	380	10000	
Fe	56	1	72	23.310	ppb	23.310	3.21	204056	10000	
(Fe)	57	2	72	23.098	ppb	23.098	22.01	827	400000	
Co	59	2	72	0.029	ppb	0.029	23.17	97	2000	
Ni	60	2	72	2.998	ppb	2.998	18.78	2107	5000	
Cu	63	2	72	0.351	ppb	0.351	29.45	970	5000	
Zn	66	2	72	1.277	ppb	1.277	12.78	673	5000	
As	75	2	72	0.031	ppb	0.031	52.83	35	2000	
Se	78	1	72	0.122	ppb	0.122	54.28	44	2000	
Sr	88	2	72	0.093	ppb	0.093	96.65	157	4000	
Zr	90	2	72	-0.001	ppb	-0.001	-354095.34	477	1000	
Nb	93	2	72	50.911	ppb	50.911	157.22	17	200	
Mo	95	2	115	0.020	ppb	0.020	147.72	47	2000	
Pd	105	2	115	-4.818	ppb	-4.818	-604.54	23	100	
Ag	107	2	115	0.011	ppb	0.011	66.75	63	100	
Cd	111	2	115	0.014	ppb	0.014	318.72	10	2000	
Sn	120	2	115	0.107	ppb	0.107	116.42	577	2000	
Sb	121	2	115	-0.012	ppb	-0.012	-127.14	30	1000	
Ba	137	2	115	0.105	ppb	0.105	167.66	100	5000	
W	182	2	165	-0.009	ppb	-0.009	-759.49	2070	100	
Pt	195	2	165	7.053	ppb	7.053	476.38	40	100	
Tl	205	2	165	0.002	ppb	0.002	502.63	180	2000	
Pb	208	2	165	0.028	ppb	0.028	38.89	1433	5000	
Th	232	2	193	-0.084	ppb	-0.084	-82.85	10501	2000	
U	238	2	193	0.009	ppb	0.009	77.52	287	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	605290	2.04	758371	79.81	60	120	
Sc (IS)	45	1	HMI H2	17789253	1.62	21579358	82.44	60	120	
Sc (IS)	45	2	HMI He	859096	0.30	1389101	61.85	60	120	
Sc (IS)	45	3	No Gas	30222419	0.47	40812554	74.05	60	120	
Ge Internal standard	72	1	HMI H2	9452779	1.76	11084416	85.28	60	120	
Ge Internal standard	72	2	HMI He	1179124	0.24	1699063	69.40	60	120	
In Internal standard	115	2	HMI He	3464117	0.85	5046179	68.65	60	120	
Ho-165	165	2	HMI He	13173493	0.19	18410285	71.56	60	120	
Ir (IS)	193	2	HMI He	10638681	0.57	13684495	77.74	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	197SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:11:16-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-88.714	ppb	-88.714	-6.51	1871800	50000	
Be	9	1	6	0.185	ppb	0.185	65.55	57	2000	
B	11	1	6	5.567	ppb	5.567	1.81	2127	2000	
Na	23	2	45	2106.768	ppb	2106.768	4.28	329273	400000	
Mg	24	2	45	783.505	ppb	783.505	3.68	56905	400000	
Al	27	2	45	7.307	ppb	7.307	37.83	307	400000	
Si	28	2	45	25.358	ppb	25.358	21.39	10924	10000	
P	31	2	45	15.758	ppb	15.758	106.95	72	10000	
K	39	2	45	253.991	ppb	253.991	10.33	43557	400000	
Ca	40	1	45	14.406	ppb	14.406	3.05	119744	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.588	ppb	0.588	25.32	1047	2000	
Cr	52	2	72	0.238	ppb	0.238	42.12	753	5000	
Mn	55	2	72	0.614	ppb	0.614	23.08	450	10000	
Fe	56	1	72	22.989	ppb	22.989	1.89	199258	10000	
(Fe)	57	2	72	20.803	ppb	20.803	20.77	733	400000	
Co	59	2	72	0.042	ppb	0.042	30.45	120	2000	
Ni	60	2	72	2.731	ppb	2.731	5.71	1857	5000	
Cu	63	2	72	0.370	ppb	0.370	20.31	960	5000	
Zn	66	2	72	1.286	ppb	1.286	28.25	647	5000	
As	75	2	72	0.050	ppb	0.050	160.73	39	2000	
Se	78	1	72	0.088	ppb	0.088	82.49	35	2000	
Sr	88	2	72	-0.021	ppb	-0.021	-505.57	70	4000	
Zr	90	2	72	-0.331	ppb	-0.331	-1379.54	453	1000	
Nb	93	2	72	1.746	ppb	1.746	3784.68	7	200	
Mo	95	2	115	0.023	ppb	0.023	196.92	47	2000	
Pd	105	2	115	-20.527	ppb	-20.527	-67.38	17	100	
Ag	107	2	115	0.002	ppb	0.002	425.72	37	100	
Cd	111	2	115	-0.003	ppb	-0.003	-496.57	3	2000	
Sn	120	2	115	0.097	ppb	0.097	67.80	547	2000	
Sb	121	2	115	-0.001	ppb	-0.001	-4030.10	40	1000	
Ba	137	2	115	0.059	ppb	0.059	246.27	80	5000	
W	182	2	165	0.032	ppb	0.032	50.53	2144	100	
Pt	195	2	165	3.940	ppb	3.940	1441.69	37	100	
Tl	205	2	165	0.002	ppb	0.002	216.24	177	2000	
Pb	208	2	165	0.024	ppb	0.024	77.69	1363	5000	
Th	232	2	193	-0.056	ppb	-0.056	-220.50	10571	2000	
U	238	2	193	0.007	ppb	0.007	47.69	267	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	595042	0.51	758371	78.46	60	120	
Sc (IS)	45	1	HMI H2	17658291	0.99	21579358	81.83	60	120	
Sc (IS)	45	2	HMI He	820819	4.02	1389101	59.09	60	120	IS Failed
Sc (IS)	45	3	No Gas	29105170	0.90	40812554	71.31	60	120	
Ge Internal standard	72	1	HMI H2	9326667	0.58	11084416	84.14	60	120	
Ge Internal standard	72	2	HMI He	1131858	3.91	1699063	66.62	60	120	
In Internal standard	115	2	HMI He	3345621	3.95	5046179	66.30	60	120	
Ho-165	165	2	HMI He	12844178	4.22	18410285	69.77	60	120	
Ir (IS)	193	2	HMI He	10489342	4.22	13684495	76.65	60	120	

Sample Report

Sample Table

Sample Name	rinse-7316801
Data File Name	198SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:15:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	132CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-87.261	ppb	-87.261	-1.99	1857969	50000	
Be	9	1	6	0.073	ppb	0.073	80.80	27	2000	
B	11	1	6	5.309	ppb	5.309	16.84	2047	2000	
Na	23	2	45	1852.559	ppb	1852.559	2.65	292371	400000	
Mg	24	2	45	729.073	ppb	729.073	2.08	53244	400000	
Al	27	2	45	10.784	ppb	10.784	4.51	380	400000	
Si	28	2	45	19.874	ppb	19.874	19.81	10233	10000	
P	31	2	45	3.558	ppb	3.558	133.96	45	10000	
K	39	2	45	214.271	ppb	214.271	6.30	41539	400000	
Ca	40	1	45	15.338	ppb	15.338	1.37	120539	400000	
Ti	47	2	45	0.000	ppb	0.000	#DIV/0!	0	4000	
V	51	2	72	0.561	ppb	0.561	3.56	1023	2000	
Cr	52	2	72	0.154	ppb	0.154	31.02	647	5000	
Mn	55	2	72	0.533	ppb	0.533	18.20	403	10000	
Fe	56	1	72	23.324	ppb	23.324	0.93	198809	10000	
(Fe)	57	2	72	24.218	ppb	24.218	43.05	823	400000	
Co	59	2	72	0.022	ppb	0.022	52.54	77	2000	
Ni	60	2	72	2.714	ppb	2.714	11.40	1850	5000	
Cu	63	2	72	0.392	ppb	0.392	14.19	1000	5000	
Zn	66	2	72	1.295	ppb	1.295	16.82	653	5000	
As	75	2	72	0.017	ppb	0.017	130.18	30	2000	
Se	78	1	72	0.169	ppb	0.169	28.52	55	2000	
Sr	88	2	72	-0.010	ppb	-0.010	-442.29	80	4000	
Zr	90	2	72	-5.492	ppb	-5.492	-74.50	370	1000	
Nb	93	2	72	54.474	ppb	54.474	57.70	17	200	
Mo	95	2	115	0.014	ppb	0.014	150.48	40	2000	
Pd	105	2	115	-11.200	ppb	-11.200	-239.18	20	100	
Ag	107	2	115	-0.004	ppb	-0.004	-181.88	20	100	
Cd	111	2	115	-0.011	ppb	-0.011	0.00	0	2000	
Sn	120	2	115	0.117	ppb	0.117	56.69	567	2000	
Sb	121	2	115	0.016	ppb	0.016	146.63	60	1000	
Ba	137	2	115	-0.056	ppb	-0.056	-110.62	43	5000	
W	182	2	165	0.107	ppb	0.107	72.01	2380	100	
Pt	195	2	165	-8.695	ppb	-8.695	-192.21	30	100	
Tl	205	2	165	-0.002	ppb	-0.002	-375.10	153	2000	
Pb	208	2	165	0.025	ppb	0.025	55.17	1380	5000	
Th	232	2	193	-0.144	ppb	-0.144	-56.55	9890	2000	
U	238	2	193	0.009	ppb	0.009	14.98	287	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	587439	0.29	758371	77.46	60	120	
Sc (IS)	45	1	HMI H2	17325480	0.12	21579358	80.29	60	120	
Sc (IS)	45	2	HMI He	824381	0.76	1389101	59.35	60	120	IS Failed
Sc (IS)	45	3	No Gas	28735604	0.30	40812554	70.41	60	120	
Ge Internal standard	72	1	HMI H2	9203004	0.44	11084416	83.03	60	120	
Ge Internal standard	72	2	HMI He	1134174	0.13	1699063	66.75	60	120	
In Internal standard	115	2	HMI He	3339615	0.96	5046179	66.18	60	120	
Ho-165	165	2	HMI He	12889081	0.98	18410285	70.01	60	120	
Ir (IS)	193	2	HMI He	10556023	0.58	13684495	77.14	60	120	

Calibration Blank Report

Sample Table

Sample Name	icis-7343166
Data File Name	199CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:18:45-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	1822940	0.00
Be	9	1	HMI H2	17	207.85
B	11	1	HMI H2	1894	0.53
Na	23	2	HMI He	270162	0.00
Mg	24	2	HMI He	51728	0.00
Al	27	2	HMI He	280	10.12
K	39	2	HMI He	41565	0.01
Ti	47	2	HMI He	10	1732.05
V	51	2	HMI He	1133	0.25
Cr	52	2	HMI He	643	2.23
Mn	55	2	HMI He	427	1.93
(Fe)	57	2	HMI He	400	4.33
Co	59	2	HMI He	57	78.37
Ni	60	2	HMI He	1700	0.31
Cu	63	2	HMI He	1257	0.44
Zn	66	2	HMI He	500	2.80
As	75	2	HMI He	30	102.50
Se	78	1	HMI H2	20	100.00
Sr	88	2	HMI He	107	22.12
Zr	90	2	HMI He	520	1.11
Nb	93	2	HMI He	17	749.40
Mo	95	2	HMI He	53	214.80
Pd	105	2	HMI He	30	111.11
Ag	107	2	HMI He	37	154.83
Cd	111	2	HMI He	7	1299.04
Sn	120	2	HMI He	523	1.80
Sb	121	2	HMI He	20	0.00
Ba	137	2	HMI He	63	51.90
W	182	2	HMI He	2304	0.20
Pt	195	2	HMI He	43	110.86
Tl	205	2	HMI He	177	26.68
Pb	208	2	HMI He	1437	1.14
Th	232	2	HMI He	10604	0.04
U	238	2	HMI He	253	7.84

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal standard	6	1	HMI H2	579603	0.39
Sc (IS)	45	1	HMI H2	17043241	0.49
Sc (IS)	45	2	HMI He	797526	0.45
Sc (IS)	45	3	No Gas	28509182	0.99
Ge Internal standard	72	1	HMI H2	9074377	0.29
Ge Internal standard	72	2	HMI He	1113151	0.27
In Internal standard	115	2	HMI He	3301939	1.24
Ho-165	165	2	HMI He	12873604	0.63
Ir (IS)	193	2	HMI He	10633585	0.22

Calibration Standard Report

Sample Table

Sample Name	ic-7343172
Data File Name	200CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:22:30-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	cal 4
ISTD Ref File Name	199CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	1772120	0.00
Be	9	1	HMI H2	23	382.35
B	11	1	HMI H2	1817	1.14
Na	23	2	HMI He	18174636	0.00
Mg	24	2	HMI He	1716190	0.00
Al	27	2	HMI He	607	0.83
K	39	2	HMI He	1329975	0.00
Ti	47	2	HMI He	17	549.91
V	51	2	HMI He	867	0.89
Cr	52	2	HMI He	847	1.45
Mn	55	2	HMI He	580	1.07
(Fe)	57	2	HMI He	960	1.88
Co	59	2	HMI He	160	19.53
Ni	60	2	HMI He	1810	0.32
Cu	63	2	HMI He	1360	0.38
Zn	66	2	HMI He	1010	0.64
As	75	2	HMI He	46	63.76
Se	78	1	HMI H2	28	176.74
Sr	88	2	HMI He	753	1.37
Zr	90	2	HMI He	633	3.02
Nb	93	2	HMI He	20	250.00
Mo	95	2	HMI He	123	10.04
Pd	105	2	HMI He	180	6.17
Ag	107	2	HMI He	107	30.87
Cd	111	2	HMI He	13	324.76
Sn	120	2	HMI He	653	0.27
Sb	121	2	HMI He	43	30.75
Ba	137	2	HMI He	180	3.09
Nd	146	2	HMI He	0	#VALUE!
Sm	147	2	HMI He	7	2598.08
Sm	147	1	HMI H2	63	103.79
Gd	156	1	HMI H2	273	5.57
Gd	157	1	HMI H2	230	15.47
W	182	2	HMI He	3621	0.19
Pt	195	2	HMI He	63	87.55
Tl	205	2	HMI He	237	13.40
Pb	208	2	HMI He	2377	0.29
Th	232	2	HMI He	14851	0.04
U	238	2	HMI He	470	1.20

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	542570	0.24	579603	93.61	60	120	
Sc (IS)	45	1	HMI H2	16673379	0.60	17043241	97.83	60	120	
Sc (IS)	45	2	HMI He	793059	0.29	797526	99.44	60	120	
Sc (IS)	45	3	No Gas	28643666	0.77	28509182	100.47	60	120	
Ge Internal standard	72	1	HMI H2	8856000	0.62	9074377	97.59	60	120	
Ge Internal standard	72	2	HMI He	1091874	0.04	1113151	98.09	60	120	
In Internal standard	115	2	HMI He	3191820	0.33	3301939	96.67	60	120	
Ho-165	165	2	HMI He	12682092	0.38	12873604	98.51	60	120	
Ir (IS)	193	2	HMI He	10328491	0.73	10633585	97.13	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7343170
Data File Name	201CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:26:13-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	cal1
ISTD Ref File Name	199CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	3	No Gas	2864721	0.00
Be	9	1	HMI H2	25680	0.01
B	11	1	HMI H2	211806	0.00
Na	23	2	HMI He	633405	0.00
Mg	24	2	HMI He	210790	0.00
Al	27	2	HMI He	42006	0.01
K	39	2	HMI He	154730	0.00
Ti	47	2	HMI He	2474	0.30
V	51	2	HMI He	111360	0.00
Cr	52	2	HMI He	138984	0.00
Mn	55	2	HMI He	58101	0.00
(Fe)	57	2	HMI He	53286	0.00
Co	59	2	HMI He	237805	0.00
Ni	60	2	HMI He	67935	0.00
Cu	63	2	HMI He	178212	0.00
Zn	66	2	HMI He	32185	0.00
As	75	2	HMI He	26775	0.00
Se	78	1	HMI H2	27018	0.01
Sr	88	2	HMI He	133434	0.00
Zr	90	2	HMI He	963	1.68
Nb	93	2	HMI He	43	110.86
Mo	95	2	HMI He	90257	0.00
Pd	105	2	HMI He	130	11.83
Ag	107	2	HMI He	304141	0.00
Cd	111	2	HMI He	42835	0.01
Sn	120	2	HMI He	113703	0.00
Sb	121	2	HMI He	120297	0.00
Ba	137	2	HMI He	34713	0.01
Nd	146	2	HMI He	27	162.38
Sm	147	2	HMI He	27	532.40
Sm	147	1	HMI H2	80	68.11
Gd	156	1	HMI H2	323	3.87
Gd	157	1	HMI H2	197	1.49
W	182	2	HMI He	356940	0.00
Pt	195	2	HMI He	40	0.00
Tl	205	2	HMI He	650057	0.00
Pb	208	2	HMI He	890912	0.00
Th	232	2	HMI He	859068	0.00
U	238	2	HMI He	1042298	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	581299	1.05	579603	100.29	60	120	
Sc (IS)	45	1	HMI H2	17177746	0.29	17043241	100.79	60	120	
Sc (IS)	45	2	HMI He	797856	0.25	797526	100.04	60	120	
Sc (IS)	45	3	No Gas	29047760	1.43	28509182	101.89	60	120	
Ge Internal standard	72	1	HMI H2	9159949	1.01	9074377	100.94	60	120	
Ge Internal standard	72	2	HMI He	1126101	0.47	1113151	101.16	60	120	
In Internal standard	115	2	HMI He	3355717	0.65	3301939	101.63	60	120	
Ho-165	165	2	HMI He	13124285	0.92	12873604	101.95	60	120	
Ir (IS)	193	2	HMI He	10732746	0.04	10633585	100.93	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7343176
Data File Name	202_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:29:57-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	113.670	ppb	3.707	2439743	80	142.1	90	110	>+\-10%
Be	9	1	6	40.969	ppb	3.041	10424	40	102.4	90	110	
B	11	1	6	827.822	ppb	0.629	173872	400	207.0	90	110	>+\-10%
Na	23	2	45	12408.296	ppb	0.482	2543947	12800	96.9	90	110	
Mg	24	2	45	4078.260	ppb	0.198	399299	4800	85.0	90	110	>+\-10%
Al	27	2	45	790.794	ppb	1.638	17036	800	98.8	90	110	
Si	28	2	45	36.007	ppb	7.873	15110	40	90.0	90	110	
P	31	2	45	1230.753	ppb	0.907	2902	2400	51.3	90	110	>+\-10%
K	39	2	45	3998.011	ppb	0.428	305353	4800	83.3	90	110	>+\-10%
Ca	40	1	45	4670.981	ppb	1.521	15925818	4800	97.3	90	110	
(Ca)	44	1	45	4081.013	ppb	2.029	478126	4800	85.0	10	110	
Ti	47	2	45	44.623	ppb	10.439	1127	40	111.6	90	110	>+\-10%
V	51	2	72	39.621	ppb	2.357	45332	40	99.1	90	110	
Cr	52	2	72	39.770	ppb	1.666	56302	40	99.4	90	110	
Mn	55	2	72	38.840	ppb	1.081	23093	40	97.1	90	110	
Fe	56	1	72	784.988	ppb	1.406	5778786	800	98.1	90	110	
(Fe)	56	2	72	720.956	ppb	0.651	857188	800	90.1	90	110	
(Fe)	57	2	72	772.569	ppb	3.552	21067	800	96.6	90	110	
Co	59	2	72	39.830	ppb	0.881	95841	40	99.6	90	110	
Ni	60	2	72	39.874	ppb	0.220	28445	40	99.7	90	110	
Cu	63	2	72	40.428	ppb	1.569	73636	40	101.1	90	110	
Zn	66	2	72	78.262	ppb	1.996	25587	80	97.8	90	110	
As	75	2	72	39.343	ppb	1.129	10673	40	98.4	90	110	
Se	78	1	72	41.101	ppb	2.680	11328	40	102.8	90	110	
Sr	88	2	72	117.236	ppb	1.375	79155	80	146.5	90	110	>+\-10%
Zr	90	2	72	4.937	ppb	837.194	553	40	12.3	90	110	>+\-10%
Nb	93	2	72	430.320	ppb	142.345	33	80	537.9	90	110	>+\-10%
Mo	95	2	115	42.283	ppb	1.462	38289	40	105.7	90	110	
Pd	105	2	115	35.378	ppb	46.815	87	40	88.4	90	110	>+\-10%
Ag	107	2	115	78.647	ppb	1.443	239762	80	98.3	90	110	
Cd	111	2	115	39.221	ppb	1.124	16843	40	98.1	90	110	
Sn	120	2	115	40.571	ppb	2.537	46552	40	101.4	90	110	
Sb	121	2	115	42.248	ppb	1.603	50952	40	105.6	90	110	
Ba	137	2	115	40.763	ppb	1.571	14224	40	101.9	90	110	
W	182	2	165	40.975	ppb	0.651	150935	40	102.4	90	110	
Pt	195	2	165	128.499	ppb	123.628	73	40	321.2	90	110	>+\-10%
Tl	205	2	165	39.302	ppb	1.245	261264	40	98.3	90	110	
Pb	208	2	165	39.639	ppb	0.376	361903	40	99.1	90	110	
Th	232	2	193	74.480	ppb	3.685	648996	80	93.1	90	110	
U	238	2	193	40.525	ppb	1.346	426784	40	101.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	575427	0.59	579603	99.28	60	120	
Sc (IS)	45	1	HMI H2	17419178	1.16	17043241	102.21	60	120	
Sc (IS)	45	2	HMI He	810084	0.34	797526	101.57	60	120	
Sc (IS)	45	3	No Gas	29163327	0.78	28509182	102.29	60	120	
Ge Internal standard	72	1	HMI H2	9334948	0.13	9074377	102.87	60	120	
Ge Internal standard	72	2	HMI He	1139002	0.48	1113151	102.32	60	120	
In Internal standard	115	2	HMI He	3363935	1.42	3301939	101.88	60	120	
Ho-165	165	2	HMI He	13416008	0.67	12873604	104.21	60	120	
Ir (IS)	193	2	HMI He	10840891	0.40	10633585	101.95	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	203_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:33:43-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	90.189	ppb	7.518	2237782	100	90.2	90	110	
Be	9	1	6	52.269	ppb	2.440	12632	50	104.5	90	110	
B	11	1	6	543.710	ppb	1.915	109122	50	1087.4	90	110	>+\-10%
Na	23	2	45	51437.804	ppb	3.929	9425108	51000	100.9	90	110	
Mg	24	2	45	10105.870	ppb	4.228	887507	11000	91.9	90	110	
Al	27	2	45	966.576	ppb	6.608	20203	1000	96.7	90	110	
Si	28	2	45	45.725	ppb	6.256	16008	500	9.1	90	110	>+\-10%
P	31	2	45	2588.821	ppb	3.464	5906	2500	103.6	90	110	
K	39	2	45	9969.576	ppb	3.390	679842	11000	90.6	90	110	
Ca	40	1	45	10971.850	ppb	0.958	36182497	11000	99.7	90	110	
(Ca)	44	1	45	9577.264	ppb	0.884	1085734	11000	87.1	90	110	>+\-10%
Ti	47	2	45	52.019	ppb	3.880	1277	50	104.0	90	110	
V	51	2	72	50.748	ppb	2.423	56071	50	101.5	90	110	
Cr	52	2	72	51.422	ppb	3.231	70505	50	102.8	90	110	
Mn	55	2	72	48.564	ppb	3.303	27941	50	97.1	90	110	
Fe	56	1	72	948.885	ppb	0.553	6802576	1000	94.9	90	110	
(Fe)	56	2	72	899.925	ppb	4.602	1034604	1000	90.0	90	110	>+\-10%
(Fe)	57	2	72	989.637	ppb	8.159	26078	1000	99.0	90	110	
Co	59	2	72	50.154	ppb	4.622	117159	50	100.3	90	110	
Ni	60	2	72	50.176	ppb	4.259	34326	50	100.4	90	110	
Cu	63	2	72	49.011	ppb	3.094	86425	50	98.0	90	110	
Zn	66	2	72	49.797	ppb	5.619	15988	50	99.6	90	110	
As	75	2	72	51.980	ppb	3.820	13682	50	104.0	90	110	
Se	78	1	72	48.603	ppb	2.383	13087	50	97.2	90	110	
Sr	88	2	72	100.430	ppb	5.180	65844	100	100.4	90	110	
Zr	90	2	72	40.605	ppb	51.758	690	50	81.2	90	110	>+\-10%
Nb	93	2	72	641.067	ppb	46.201	40	100	641.1	90	110	>+\-10%
Mo	95	2	115	52.268	ppb	5.126	45926	50	104.5	90	110	
Pd	105	2	115	173.403	ppb	24.028	297	50	346.8	90	110	>+\-10%
Ag	107	2	115	50.346	ppb	3.638	149043	50	100.7	90	110	
Cd	111	2	115	50.253	ppb	3.927	20951	50	100.5	90	110	
Sn	120	2	115	51.329	ppb	4.261	57049	50	102.7	90	110	
Sb	121	2	115	52.259	ppb	5.537	61175	50	104.5	90	110	
Ba	137	2	115	51.067	ppb	6.811	17273	50	102.1	90	110	
W	182	2	165	52.878	ppb	3.247	188120	50	105.8	90	110	
Pt	195	2	165	123.917	ppb	4.597	70	50	247.8	90	110	>+\-10%
Tl	205	2	165	50.206	ppb	4.532	323412	50	100.4	90	110	
Pb	208	2	165	49.638	ppb	4.508	438840	50	99.3	90	110	
Th	232	2	193	72.012	ppb	6.958	606915	50	144.0	90	110	>+\-10%
U	238	2	193	51.900	ppb	4.506	528433	50	103.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	546819	1.12	579603	94.34	60	120	
Sc (IS)	45	1	HMI H2	16960061	0.78	17043241	99.51	60	120	
Sc (IS)	45	2	HMI He	788940	2.09	797526	98.92	60	120	
Sc (IS)	45	3	No Gas	28121533	1.43	28509182	98.64	60	120	
Ge Internal standard	72	1	HMI H2	9121529	0.24	9074377	100.52	60	120	
Ge Internal standard	72	2	HMI He	1106521	2.21	1113151	99.40	60	120	
In Internal standard	115	2	HMI He	3267808	2.39	3301939	98.97	60	120	
Ho-165	165	2	HMI He	13008650	1.70	12873604	101.05	60	120	
Ir (IS)	193	2	HMI He	10488644	2.10	10633585	98.64	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	204_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:37:58-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-11.244	ppb	-35.1	1754678	10	
Be	9	1	6	0.145	ppb	77.9	53	0.5	
B	11	1	6	12.814	ppb	9.8	4517	0.5	>RL
Na	23	2	45	-529.123	ppb	-2.7	172798	25	
Mg	24	2	45	-138.982	ppb	-8.1	39620	25	
Al	27	2	45	-1.130	ppb	-327.3	253	15	
K	39	2	45	-14.438	ppb	-119.1	40145	50	
Ti	47	2	45	-0.408	ppb	0.0	0	0.5	
V	51	2	72	-0.274	ppb	-31.9	830	1	
Cr	52	2	72	0.027	ppb	369.8	677	1	
Mn	55	2	72	-0.208	ppb	-17.3	307	0.5	
(Fe)	57	2	72	0.845	ppb	512.0	420	25	
Co	59	2	72	0.014	ppb	29.0	90	0.5	
Ni	60	2	72	0.532	ppb	10.8	2037	1	
Cu	63	2	72	-0.297	ppb	-32.8	733	1	
Zn	66	2	72	0.265	ppb	172.9	580	5	
As	75	2	72	-0.004	ppb	-838.4	29	1	
Se	78	1	72	0.110	ppb	52.9	49	1	
Sr	88	2	72	0.062	ppb	78.3	147	0.5	
Zr	90	2	72	-15.621	ppb	-98.4	450	1	
Nb	93	2	72	-451.203	ppb	0.0	0	2	
Mo	95	2	115	0.444	ppb	20.8	453	0.5	
Pd	105	2	115	-2.385	ppb	-550.9	27	1	
Ag	107	2	115	0.027	ppb	31.2	120	1	
Cd	111	2	115	0.039	ppb	91.3	23	0.5	
Sn	120	2	115	0.683	ppb	21.6	1300	1	
Sb	121	2	115	0.381	ppb	6.0	477	0.6	
Ba	137	2	115	-0.041	ppb	-187.6	50	0.5	
W	182	2	165	0.544	ppb	27.2	4267	1	
Pt	195	2	165	-3.295	ppb	-3606.8	43	1	
Tl	205	2	165	0.061	ppb	8.2	577	0.1	
Pb	208	2	165	0.006	ppb	305.9	1517	0.5	
Th	232	2	193	2.509	ppb	10.2	32323	1	>RL
U	238	2	193	0.085	ppb	14.5	1157	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	572458	1.00	579603	98.77	60	120	
Sc (IS)	45	1	HMI H2	17067675	0.59	17043241	100.14	60	120	
Sc (IS)	45	2	HMI He	788031	0.33	797526	98.81	60	120	
Sc (IS)	45	3	No Gas	28302970	0.77	28509182	99.28	60	120	
Ge Internal standard	72	1	HMI H2	9057394	1.18	9074377	99.81	60	120	
Ge Internal standard	72	2	HMI He	1107099	0.30	1113151	99.46	60	120	
In Internal standard	115	2	HMI He	3341742	0.73	3301939	101.21	60	120	
Ho-165	165	2	HMI He	13084764	0.66	12873604	101.64	60	120	
Ir (IS)	193	2	HMI He	10843386	0.28	10633585	101.97	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	205LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:41:58-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	0.047	ppb	14567.914	1808901	50	0.1	70	130	>+/-30%
Be	9	1	6	1.208	ppb	18.288	320	1	120.8	70	130	
Na	23	2	45	-505.277	ppb	-1.901	175636	50	-1010.6	70	130	>+/-30%
Mg	24	2	45	-95.638	ppb	-10.463	42865	50	-191.3	70	130	>+/-30%
Al	27	2	45	47.898	ppb	10.034	1253	50	95.8	70	130	
K	39	2	45	63.906	ppb	19.747	44800	100	63.9	70	130	>+/-30%
V	51	2	72	4.810	ppb	9.378	6321	5	96.2	70	130	
Cr	52	2	72	2.090	ppb	4.055	3471	2	104.5	70	130	
Mn	55	2	72	1.002	ppb	34.560	990	1	100.2	70	130	
(Fe)	57	2	72	50.450	ppb	16.305	1704	50	100.9	70	130	
Co	59	2	72	1.030	ppb	9.012	2457	1	103.0	70	130	
Ni	60	2	72	1.903	ppb	18.141	2920	2	95.2	70	130	
Cu	63	2	72	1.928	ppb	8.325	4587	2	96.4	70	130	
Zn	66	2	72	10.526	ppb	12.099	3764	10	105.3	70	130	
As	75	2	72	5.230	ppb	6.826	1400	5	104.6	70	130	
Se	78	1	72	5.207	ppb	3.613	1415	5	104.1	70	130	
Sr	88	2	72	1.221	ppb	3.698	903	1	122.1	70	130	
Zr	90	2	72	12.672	ppb	122.153	570	0.5	2534.3	70	130	>+/-30%
Nb	93	2	72	550.727	ppb	143.939	37	2	27536.3	70	130	>+/-30%
Mo	95	2	115	2.059	ppb	7.391	1900	2	102.9	70	130	
Pd	105	2	115	1.820	ppb	795.512	33	1	182.0	70	130	>+/-30%
Ag	107	2	115	1.016	ppb	2.358	3107	1	101.6	70	130	
Cd	111	2	115	1.049	ppb	2.010	453	1	104.9	70	130	
Sn	120	2	115	10.270	ppb	5.177	12082	10	102.7	70	130	
Sb	121	2	115	2.201	ppb	5.130	2650	2	110.0	70	130	
Ba	137	2	115	1.014	ppb	19.809	413	1	101.4	70	130	
W	182	2	165	5.066	ppb	2.035	20621	1	506.6	70	130	>+/-30%
Pt	195	2	165	116.155	ppb	105.807	70	1	11615.5	70	130	>+/-30%
Tl	205	2	165	1.034	ppb	3.404	7002	1	103.4	70	130	
Pb	208	2	165	1.065	ppb	3.906	11102	1	106.5	70	130	
Th	232	2	193	10.461	ppb	8.864	101544	2	523.0	70	130	>+/-30%
U	238	2	193	1.033	ppb	1.848	11245	1	103.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	569186	0.37	579603	98.20	60	120	
Sc (IS)	45	1	HMI H2	16921440	1.00	17043241	99.29	60	120	
Sc (IS)	45	2	HMI He	781765	0.41	797526	98.02	60	120	
Sc (IS)	45	3	No Gas	28286526	0.73	28509182	99.22	60	120	
Ge Internal standard	72	1	HMI H2	9090719	1.13	9074377	100.18	60	120	
Ge Internal standard	72	2	HMI He	1103545	0.64	1113151	99.14	60	120	
In Internal standard	115	2	HMI He	3335185	0.73	3301939	101.01	60	120	
Ho-165	165	2	HMI He	13323869	0.20	12873604	103.50	60	120	
Ir (IS)	193	2	HMI He	10956001	0.80	10633585	103.03	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585099/1-A
Data File Name	206_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:46:12-06:00
Sample Type	Blank
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-3.435	ppb	-155.5301706	1816747	10
Be	9	1	6	0.016	ppb	682.0791237	20	0.5
B	11	1	6	26.671	ppb	2.756898249	7245	0.5
Na	23	2	45	-615.993	ppb	-2.286660138	158375	25
Mg	24	2	45	-261.438	ppb	-5.355673748	29687	25
Al	27	2	45	14.366	ppb	37.72036079	577	15
K	39	2	45	-29.379	ppb	-47.51489719	39447	50
Ti	47	2	45	-0.001	ppb	-115324.7878	10	0.5
V	51	2	72	-0.360	ppb	-28.87990745	730	1
Cr	52	2	72	0.678	ppb	5.664072253	1547	1
Mn	55	2	72	0.237	ppb	66.91048861	553	0.5
(Fe)	57	2	72	30.134	ppb	5.104310014	1170	25
Co	59	2	72	0.032	ppb	53.22304297	130	0.5
Ni	60	2	72	0.479	ppb	39.22122158	1984	1
Cu	63	2	72	0.971	ppb	9.751917519	2910	1
Zn	66	2	72	3.394	ppb	25.62834976	1540	5
As	75	2	72	-0.056	ppb	-33.81352517	15	1
Se	78	1	72	0.011	ppb	423.4835818	23	1
Sr	88	2	72	0.408	ppb	6.332616081	370	0.5
Zr	90	2	72	20.692	ppb	162.9764569	600	1
Nb	93	2	72	-85.269	ppb	-492.9424354	13	2
Mo	95	2	115	0.305	ppb	11.86632149	327	0.5
Pd	105	2	115	-8.680	ppb	-111.850375	17	1
Ag	107	2	115	0.014	ppb	70.06569591	80	1
Cd	111	2	115	0.016	ppb	87.4156909	13	0.5
Sn	120	2	115	12.034	ppb	3.681714835	14027	1
Sb	121	2	115	0.067	ppb	32.93927445	100	0.6
Ba	137	2	115	0.697	ppb	45.94779391	303	0.5
W	182	2	165	2.614	ppb	1.79995342	11702	1
Pt	195	2	165	-83.312	ppb	-32.06088301	27	1
Tl	205	2	165	0.032	ppb	10.98791446	393	0.1
Pb	208	2	165	0.098	ppb	7.913207951	2357	0.5
Th	232	2	193	15.632	ppb	14.37460727	144798	1
U	238	2	193	0.066	ppb	25.04956373	957	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	561733	0.16	579603	96.92	60	120	
Sc (IS)	45	1	HMI H2	16840625	0.62	17043241	98.81	60	120	
Sc (IS)	45	2	HMI He	793199	0.32	797526	99.46	60	120	
Sc (IS)	45	3	No Gas	28678880	0.34	28509182	100.60	60	120	
Ge Internal standard	72	1	HMI H2	8979439	0.58	9074377	98.95	60	120	
Ge Internal standard	72	2	HMI He	1096633	0.53	1113151	98.52	60	120	
In Internal standard	115	2	HMI He	3326362	0.26	3301939	100.74	60	120	
Ho-165	165	2	HMI He	13219110	0.65	12873604	102.68	60	120	
Ir (IS)	193	2	HMI He	10835469	0.86	10633585	101.90	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585099/2-A
Data File Name	207LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:49:57-06:00
Sample Type	LCS-s
Dilution	1
Analyst	Denver Metals
Comment	585099 soil 6020a dod5
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	206.716	206.716	ppb	3.379	51387	200	103.4	80	120	
Na	23	2	45	2905.480	2905.480	ppb	1.161	786777	200	1452.7	80	120	NewName Main CR1 Failed
Mg	24	2	45	3119.310	3119.310	ppb	0.797	310261	200000	1.6	80	120	NewName Main CR1 Failed
Al	27	2	45	3807.046	3807.046	ppb	0.758	79022	200000	1.9	80	120	NewName Main CR1 Failed
K	39	2	45	3310.417	3310.417	ppb	0.754	253960	200000	1.7	80	120	NewName Main CR1 Failed
V	51	2	72	200.797	200.797	ppb	0.587	216850	200	100.4	80	120	
Cr	52	2	72	201.725	201.725	ppb	1.272	272682	200	100.9	80	120	
(Cr)	53	2	72	192.272	192.272	ppb	1.750	32776	200	96.1	80	120	
Mn	55	2	72	192.853	192.853	ppb	0.820	108842	200	96.4	80	120	
(Fe)	57	2	72	3800.926	3800.926	ppb	0.934	98359	200000	1.9	80	120	NewName Main CR1 Failed
Co	59	2	72	201.511	201.511	ppb	1.501	467043	200	100.8	80	120	
Ni	60	2	72	201.645	201.645	ppb	2.064	131854	200	100.8	80	120	
Cu	63	2	72	201.331	201.331	ppb	1.029	348488	200	100.7	80	120	
Zn	66	2	72	198.248	198.248	ppb	1.537	61719	200	99.1	80	120	
As	75	2	72	198.498	198.498	ppb	0.116	51780	200	99.2	80	120	
Se	78	1	72	198.764	198.764	ppb	1.141	52455	200	99.4	80	120	
(Se)	82	1	72	207.148	207.148	ppb	3.188	28111	200	103.6	80	120	
Nb	93	2	72	641.505	641.505	ppb	111.042	40	400	160.4	80	120	NewName Main CR1 Failed
Mo	95	2	115	205.523	205.523	ppb	0.723	180683	200	102.8	80	120	
Pd	105	2	115	8.766	8.766	ppb	42.470	43	200	4.4	80	120	NewName Main CR1 Failed
Ag	107	2	115	195.323	195.323	ppb	0.748	578813	200	97.7	80	120	
Cd	111	2	115	197.938	197.938	ppb	0.773	82602	200	99.0	80	120	
(Cd)	114	2	115	200.674	200.674	ppb	0.527	211679	200	100.3	80	120	
Sn	120	2	115	211.068	211.068	ppb	0.875	233273	200	105.5	80	120	
Sb	121	2	115	203.320	203.320	ppb	0.407	238300	200	101.7	80	110	
Ba	137	2	115	203.461	203.461	ppb	0.778	68747	200	101.7	80	120	
W	182	2	165	3.559	3.559	ppb	1.670	15141	200	1.8	80	120	NewName Main CR1 Failed
Pt	195	2	165	71.524	71.524	ppb	174.387	60	200	35.8	80	120	NewName Main CR1 Failed
Tl	205	2	165	219.472	219.472	ppb	0.346	1442875	200	109.7	80	120	
(Pb)	206	2	165	198.106	198.106	ppb	0.675	441934	200	99.1	80	120	
(Pb)	207	2	165	198.947	198.947	ppb	0.383	384856	200	99.5	80	120	
Pb	208	2	165	198.272	198.272	ppb	0.317	1785283	200	99.1	80	120	
Th	232	2	193	257.499	257.499	ppb	0.655	2235679	200	128.7	80	120	NewName Main CR1 Failed
U	238	2	193	215.240	215.240	ppb	1.439	2284446	200	107.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	562844	0.94	579603	97.11	60	120	
Sc (IS)	45	1	HMI H2	16953940	0.87	17043241	99.48	60	120	
Sc (IS)	45	2	HMI He	790980	1.42	797526	99.18	60	120	
Sc (IS)	45	3	No Gas	29097350	0.12	28509182	102.06	60	120	
Ge Internal standard	72	1	HMI H2	8951670	0.93	9074377	98.65	60	120	
Ge Internal standard	72	2	HMI He	1097753	0.98	1113151	98.62	60	120	
In Internal standard	115	2	HMI He	3269772	0.17	3301939	99.03	60	120	
Ho-165	165	2	HMI He	13275204	0.91	12873604	103.12	60	120	
Ir (IS)	193	2	HMI He	10930267	0.41	10633585	102.79	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-1-A
Data File Name	208SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:53:41-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	12.136	ppb	12.136	48.00	1954012	50000	
Be	9	1	6	1.163	ppb	1.163	23.94	313	2000	
B	11	1	6	25.232	ppb	25.232	1.86	7155	2000	
Na	23	2	45	-726.317	ppb	-726.317	-1.99	142482	400000	
Mg	24	2	45	1337.958	ppb	1337.958	1.99	167386	400000	
Al	27	2	45	25747.219	ppb	25747.219	0.64	549219	400000	
Si	28	2	45	82.120	ppb	82.120	8.46	21568	10000	
P	31	2	45	351.243	ppb	351.243	3.84	858	10000	
K	39	2	45	2262.954	ppb	2262.954	0.92	192393	400000	
Ca	40	1	45	5121.153	ppb	5121.153	1.05	17345464	400000	
Ti	47	2	45	849.416	ppb	849.416	1.38	21398	4000	
V	51	2	72	86.620	ppb	86.620	1.11	96617	2000	
Cr	52	2	72	83.290	ppb	83.290	0.45	115867	5000	
Mn	55	2	72	72.970	ppb	72.970	1.91	42512	10000	
Fe	56	1	72	21730.161	ppb	21730.161	0.82	152915881	10000	
(Fe)	57	2	72	21743.234	ppb	21743.234	0.35	575257	400000	
Co	59	2	72	4.190	ppb	4.190	5.68	10020	2000	
Ni	60	2	72	19.768	ppb	19.768	4.40	14807	5000	
Cu	63	2	72	20.125	ppb	20.125	0.87	36882	5000	
Zn	66	2	72	93.396	ppb	93.396	3.02	30095	5000	
As	75	2	72	13.134	ppb	13.134	2.91	3543	2000	
Se	78	1	72	2.915	ppb	2.915	5.45	801	2000	
Sr	88	2	72	66.046	ppb	66.046	1.29	44137	4000	
Zr	90	2	72	30595.035	ppb	30595.035	3.05	134178	1000	>LDR
Nb	93	2	72	120032.981	ppb	120032.981	4.15	4507	200	>LDR
Mo	95	2	115	14.712	ppb	14.712	5.93	13343	2000	
Pd	105	2	115	24.597	ppb	24.597	109.08	70	100	
Ag	107	2	115	0.297	ppb	0.297	8.08	943	100	
Cd	111	2	115	2.508	ppb	2.508	10.73	1083	2000	
Sn	120	2	115	6.104	ppb	6.104	0.54	7452	2000	
Sb	121	2	115	1.098	ppb	1.098	8.03	1343	1000	
Ba	137	2	115	101.435	ppb	101.435	3.17	35257	5000	
W	182	2	165	1.126	ppb	1.126	10.73	6612	100	
Pt	195	2	165	122.941	ppb	122.941	149.06	73	100	
Tl	205	2	165	0.778	ppb	0.778	5.26	5458	2000	
Pb	208	2	165	40.709	ppb	40.709	1.33	379003	5000	
Th	232	2	193	35.730	ppb	35.730	4.46	327658	2000	
U	238	2	193	14.175	ppb	14.175	1.09	154439	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	578074	0.27	579603	99.74	60	120	
Sc (IS)	45	1	HMI H2	17320616	0.67	17043241	101.63	60	120	
Sc (IS)	45	2	HMI He	815319	0.39	797526	102.23	60	120	
Sc (IS)	45	3	No Gas	29586539	0.96	28509182	103.78	60	120	
Ge Internal standard	72	1	HMI H2	9095037	0.42	9074377	100.23	60	120	
Ge Internal standard	72	2	HMI He	1126077	0.65	1113151	101.16	60	120	
In Internal standard	115	2	HMI He	3361182	1.12	3301939	101.79	60	120	
Ho-165	165	2	HMI He	13681848	0.45	12873604	106.28	60	120	
Ir (IS)	193	2	HMI He	11202647	1.04	10633585	105.35	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-1-Asd@5
Data File Name	209SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T22:57:26-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-7.119	ppb	-7.119	-39.34	1821408	50000	
Be	9	1	6	0.298	ppb	0.298	14.62	93	2000	
B	11	1	6	5.723	ppb	5.723	16.02	3107	2000	
Na	23	2	45	-736.950	ppb	-736.950	-2.23	140317	400000	
Mg	24	2	45	62.503	ppb	62.503	21.33	58149	400000	
Al	27	2	45	5407.079	ppb	5407.079	1.40	115397	400000	
Si	28	2	45	15.121	ppb	15.121	7.29	12308	10000	
P	31	2	45	91.443	ppb	91.443	21.57	248	10000	
K	39	2	45	422.295	ppb	422.295	6.32	70353	400000	
Ca	40	1	45	1069.034	ppb	1069.034	1.19	3767178	400000	
Ti	47	2	45	178.058	ppb	178.058	3.27	4487	4000	
V	51	2	72	17.326	ppb	17.326	1.66	20477	2000	
Cr	52	2	72	17.321	ppb	17.321	2.99	24896	5000	
Mn	55	2	72	14.781	ppb	14.781	2.94	9059	10000	
Fe	56	1	72	4435.037	ppb	4435.037	0.57	32085565	10000	
(Fe)	57	2	72	4564.072	ppb	4564.072	0.64	122468	400000	
Co	59	2	72	0.986	ppb	0.986	3.06	2430	2000	
Ni	60	2	72	4.231	ppb	4.231	6.40	4574	5000	
Cu	63	2	72	3.967	ppb	3.967	1.85	8386	5000	
Zn	66	2	72	20.170	ppb	20.170	5.03	6975	5000	
As	75	2	72	2.689	ppb	2.689	4.24	758	2000	
Se	78	1	72	0.565	ppb	0.565	19.95	176	2000	
Sr	88	2	72	13.614	ppb	13.614	3.00	9290	4000	
Zr	90	2	72	6232.478	ppb	6232.478	3.11	28075	1000	>LDR
Nb	93	2	72	22714.845	ppb	22714.845	18.32	877	200	>LDR
Mo	95	2	115	3.136	ppb	3.136	2.88	2910	2000	
Pd	105	2	115	-0.557	ppb	-0.557	-1104.14	30	100	
Ag	107	2	115	0.108	ppb	0.108	15.38	370	100	
Cd	111	2	115	0.478	ppb	0.478	25.35	213	2000	
Sn	120	2	115	1.534	ppb	1.534	7.93	2290	2000	
Sb	121	2	115	0.194	ppb	0.194	16.96	257	1000	
Ba	137	2	115	21.147	ppb	21.147	3.04	7462	5000	
W	182	2	165	-0.070	ppb	-0.070	-53.71	2187	100	
Pt	195	2	165	108.324	ppb	108.324	84.98	70	100	
Tl	205	2	165	0.181	ppb	0.181	1.32	1410	2000	
Pb	208	2	165	8.459	ppb	8.459	2.13	79830	5000	
Th	232	2	193	4.267	ppb	4.267	0.55	48357	2000	
U	238	2	193	2.888	ppb	2.888	1.69	31294	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	582433	0.42	579603	100.49	60	120	
Sc (IS)	45	1	HMI H2	17324497	0.50	17043241	101.65	60	120	
Sc (IS)	45	2	HMI He	814120	0.67	797526	102.08	60	120	
Sc (IS)	45	3	No Gas	29045458	0.77	28509182	101.88	60	120	
Ge Internal standard	72	1	HMI H2	9323959	0.49	9074377	102.75	60	120	
Ge Internal standard	72	2	HMI He	1139084	0.47	1113151	102.33	60	120	
In Internal standard	115	2	HMI He	3388157	0.49	3301939	102.61	60	120	
Ho-165	165	2	HMI He	13660085	1.10	12873604	106.11	60	120	
Ir (IS)	193	2	HMI He	11066457	1.03	10633585	104.07	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-1-B MS
Data File Name	210SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:01:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	182.907	ppb	182.907	3.41	2832246	50000	
Be	9	1	6	195.366	ppb	195.366	2.51	48499	2000	
B	11	1	6	26.434	ppb	26.434	6.88	7202	2000	
Na	23	2	45	2586.996	ppb	2586.996	0.40	762408	400000	
Mg	24	2	45	4438.803	ppb	4438.803	1.79	438468	400000	
Al	27	2	45	39777.450	ppb	39777.450	1.09	859609	400000	
Si	28	2	45	177.083	ppb	177.083	2.76	35131	10000	
P	31	2	45	260.361	ppb	260.361	6.73	653	10000	
K	39	2	45	5293.481	ppb	5293.481	1.48	398350	400000	
Ca	40	1	45	6773.233	ppb	6773.233	2.70	23047887	400000	
Ti	47	2	45	982.156	ppb	982.156	2.93	25067	4000	
V	51	2	72	252.147	ppb	252.147	0.65	283251	2000	
Cr	52	2	72	252.909	ppb	252.909	1.64	355776	5000	
Mn	55	2	72	237.218	ppb	237.218	1.56	139304	10000	
Fe	56	1	72	18295.811	ppb	18295.811	2.22	130842585	10000	
(Fe)	57	2	72	18740.401	ppb	18740.401	0.19	503348	400000	
Co	59	2	72	191.455	ppb	191.455	0.94	462103	2000	
Ni	60	2	72	203.579	ppb	203.579	1.45	138574	5000	
Cu	63	2	72	195.541	ppb	195.541	1.52	352501	5000	
Zn	66	2	72	246.985	ppb	246.985	0.62	79936	5000	
As	75	2	72	169.677	ppb	169.677	1.22	46091	2000	
Se	78	1	72	174.374	ppb	174.374	2.00	47515	2000	
Sr	88	2	72	423.221	ppb	423.221	0.99	286484	4000	
Zr	90	2	72	31702.828	ppb	31702.828	1.47	141115	1000	>LDR
Nb	93	2	72	92927.840	ppb	92927.840	3.26	3547	200	>LDR
Mo	95	2	115	171.821	ppb	171.821	0.78	157970	2000	
Pd	105	2	115	15.743	ppb	15.743	162.94	57	100	
Ag	107	2	115	182.451	ppb	182.451	1.03	565391	100	
Cd	111	2	115	187.268	ppb	187.268	2.83	81721	2000	
Sn	120	2	115	114.865	ppb	114.865	1.61	132997	2000	
Sb	121	2	115	65.385	ppb	65.385	1.03	80152	1000	
Ba	137	2	115	282.705	ppb	282.705	1.06	99865	5000	
W	182	2	165	1.831	ppb	1.831	4.37	9320	100	
Pt	195	2	165	163.455	ppb	163.455	14.37	83	100	
Tl	205	2	165	190.627	ppb	190.627	5.60	1305765	2000	
Pb	208	2	165	212.913	ppb	212.913	0.82	1997117	5000	
Th	232	2	193	264.743	ppb	264.743	1.37	2339361	2000	
U	238	2	193	217.313	ppb	217.313	1.62	2347674	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	562207	0.88	579603	97.00	60	120	
Sc (IS)	45	1	HMI H2	17452382	2.13	17043241	102.40	60	120	
Sc (IS)	45	2	HMI He	826145	0.21	797526	103.59	60	120	
Sc (IS)	45	3	No Gas	29607685	0.56	28509182	103.85	60	120	
Ge Internal standard	72	1	HMI H2	9242999	1.07	9074377	101.86	60	120	
Ge Internal standard	72	2	HMI He	1143054	0.66	1113151	102.69	60	120	
In Internal standard	115	2	HMI He	3419352	0.49	3301939	103.56	60	120	
Ho-165	165	2	HMI He	13830547	0.85	12873604	107.43	60	120	
Ir (IS)	193	2	HMI He	11127312	1.43	10633585	104.64	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-1-C MSD
Data File Name	211SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:04:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	146.500	ppb	146.500	2.46	2716796	50000	
Be	9	1	6	197.474	ppb	197.474	0.92	50277	2000	
B	11	1	6	31.744	ppb	31.744	5.41	8489	2000	
Na	23	2	45	2570.911	ppb	2570.911	1.38	762732	400000	
Mg	24	2	45	4871.246	ppb	4871.246	0.98	478058	400000	
Al	27	2	45	47137.433	ppb	47137.433	0.80	1023098	400000	
Si	28	2	45	204.946	ppb	204.946	7.45	39186	10000	
P	31	2	45	348.948	ppb	348.948	13.43	868	10000	
K	39	2	45	6022.951	ppb	6022.951	0.91	449291	400000	
Ca	40	1	45	7672.284	ppb	7672.284	0.75	26872854	400000	
Ti	47	2	45	1123.239	ppb	1123.239	5.75	28788	4000	
V	51	2	72	271.999	ppb	271.999	0.42	311195	2000	
Cr	52	2	72	274.409	ppb	274.409	0.97	393218	5000	
Mn	55	2	72	248.364	ppb	248.364	1.16	148559	10000	
Fe	56	1	72	22463.981	ppb	22463.981	1.85	166862441	10000	
(Fe)	57	2	72	23014.953	ppb	23014.953	0.34	629664	400000	
Co	59	2	72	195.168	ppb	195.168	0.77	479872	2000	
Ni	60	2	72	209.113	ppb	209.113	1.53	144967	5000	
Cu	63	2	72	199.223	ppb	199.223	0.61	365841	5000	
Zn	66	2	72	259.784	ppb	259.784	1.52	85637	5000	
As	75	2	72	173.897	ppb	173.897	0.09	48126	2000	
Se	78	1	72	175.327	ppb	175.327	2.13	49628	2000	
Sr	88	2	72	453.058	ppb	453.058	1.00	312414	4000	
Zr	90	2	72	40424.360	ppb	40424.360	0.86	183163	1000	>LDR
Nb	93	2	72	117177.503	ppb	117177.503	2.92	4551	200	>LDR
Mo	95	2	115	180.397	ppb	180.397	0.74	167265	2000	
Pd	105	2	115	37.904	ppb	37.904	82.58	93	100	
Ag	107	2	115	188.166	ppb	188.166	1.14	588086	100	
Cd	111	2	115	195.197	ppb	195.197	0.67	85910	2000	
Sn	120	2	115	111.460	ppb	111.460	0.69	130178	2000	
Sb	121	2	115	61.484	ppb	61.484	1.53	76015	1000	
Ba	137	2	115	326.277	ppb	326.277	0.88	116236	5000	
W	182	2	165	2.010	ppb	2.010	6.34	10144	100	
Pt	195	2	165	68.958	ppb	68.958	259.19	63	100	
Tl	205	2	165	209.372	ppb	209.372	1.05	1456474	2000	
Pb	208	2	165	223.609	ppb	223.609	0.47	2130055	5000	
Th	232	2	193	272.784	ppb	272.784	1.16	2462773	2000	
U	238	2	193	219.384	ppb	219.384	1.53	2421847	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	576501	1.15	579603	99.46	60	120	
Sc (IS)	45	1	HMI H2	17975333	1.05	17043241	105.47	60	120	
Sc (IS)	45	2	HMI He	829813	1.14	797526	104.05	60	120	
Sc (IS)	45	3	No Gas	30406966	1.07	28509182	106.66	60	120	
Ge Internal standard	72	1	HMI H2	9601328	0.84	9074377	105.81	60	120	
Ge Internal standard	72	2	HMI He	1164517	1.21	1113151	104.61	60	120	
In Internal standard	115	2	HMI He	3448510	0.76	3301939	104.44	60	120	
Ho-165	165	2	HMI He	14046104	1.07	12873604	109.11	60	120	
Ir (IS)	193	2	HMI He	11370318	1.35	10633585	106.93	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-1-A pds
Data File Name	212SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:08:41-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	148.124	ppb	148.124	4.82	2683475	50000	
Be	9	1	6	210.228	ppb	210.228	3.49	53213	2000	
B	11	1	6	25.709	ppb	25.709	4.36	7195	2000	
Na	23	2	45	-780.808	ppb	-780.808	-1.17	133870	400000	
Mg	24	2	45	1243.741	ppb	1243.741	0.92	161021	400000	
Al	27	2	45	26329.928	ppb	26329.928	0.66	567653	400000	
Si	28	2	45	253.864	ppb	253.864	3.42	45746	10000	
P	31	2	45	2278.004	ppb	2278.004	1.73	5435	10000	
K	39	2	45	2178.105	ppb	2178.105	1.28	188766	400000	
Ca	40	1	45	5039.279	ppb	5039.279	0.69	17690255	400000	
Ti	47	2	45	1062.923	ppb	1062.923	2.80	27059	4000	
V	51	2	72	281.171	ppb	281.171	0.30	321299	2000	
Cr	52	2	72	282.119	ppb	282.119	0.90	403802	5000	
Mn	55	2	72	266.354	ppb	266.354	0.43	159126	10000	
Fe	56	1	72	21256.178	ppb	21256.178	0.98	157547338	10000	
(Fe)	57	2	72	21227.716	ppb	21227.716	0.93	580156	400000	
Co	59	2	72	205.510	ppb	205.510	0.36	504758	2000	
Ni	60	2	72	219.702	ppb	219.702	0.79	152050	5000	
Cu	63	2	72	223.892	ppb	223.892	0.56	410527	5000	
Zn	66	2	72	297.638	ppb	297.638	0.40	97920	5000	
As	75	2	72	215.919	ppb	215.919	0.56	59681	2000	
Se	78	1	72	205.894	ppb	205.894	1.11	58149	2000	
Sr	88	2	72	268.022	ppb	268.022	1.61	184670	4000	
Zr	90	2	72	41251.634	ppb	41251.634	1.58	186713	1000	>LDR
Nb	93	2	72	131356.972	ppb	131356.972	2.78	5094	200	>LDR
Mo	95	2	115	222.848	ppb	222.848	0.48	207989	2000	
Pd	105	2	115	149.320	ppb	149.320	18.81	277	100	
Ag	107	2	115	52.585	ppb	52.585	1.88	165464	100	
Cd	111	2	115	202.509	ppb	202.509	1.16	89720	2000	
Sn	120	2	115	203.950	ppb	203.950	0.40	239320	2000	
Sb	121	2	115	206.406	ppb	206.406	1.02	256832	1000	
Ba	137	2	115	308.561	ppb	308.561	0.62	110653	5000	
W	182	2	165	75.592	ppb	75.592	1.23	290454	100	
Pt	195	2	165	83.928	ppb	83.928	109.59	67	100	
Tl	205	2	165	220.754	ppb	220.754	1.46	1541136	2000	
Pb	208	2	165	238.456	ppb	238.456	1.07	2279753	5000	
Th	232	2	193	102.996	ppb	102.996	3.64	948026	2000	
U	238	2	193	241.932	ppb	241.932	0.96	2702262	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	573244	0.83	579603	98.90	60	120	
Sc (IS)	45	1	HMI H2	17948283	0.07	17043241	105.31	60	120	
Sc (IS)	45	2	HMI He	824038	0.15	797526	103.32	60	120	
Sc (IS)	45	3	No Gas	29941212	0.81	28509182	105.02	60	120	
Ge Internal standard	72	1	HMI H2	9579325	0.39	9074377	105.56	60	120	
Ge Internal standard	72	2	HMI He	1163221	0.38	1113151	104.50	60	120	
In Internal standard	115	2	HMI He	3471357	0.05	3301939	105.13	60	120	
Ho-165	165	2	HMI He	14097879	0.69	12873604	109.51	60	120	
Ir (IS)	193	2	HMI He	11503465	0.59	10633585	108.18	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-3-A
Data File Name	213SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:12:26-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-24.790	ppb	-24.790	-3.76	1825104	50000	
Be	9	1	6	3.843	ppb	3.843	5.98	963	2000	
B	11	1	6	24.936	ppb	24.936	1.66	6855	2000	
Na	23	2	45	-690.981	ppb	-690.981	-0.85	149349	400000	
Mg	24	2	45	1395.763	ppb	1395.763	3.20	172720	400000	
Al	27	2	45	11891.452	ppb	11891.452	1.59	254450	400000	
Si	28	2	45	120.710	ppb	120.710	5.18	26952	10000	
P	31	2	45	1001.175	ppb	1001.175	1.82	2388	10000	
K	39	2	45	1646.230	ppb	1646.230	0.94	151913	400000	
Ca	40	1	45	4614.366	ppb	4614.366	0.32	16237389	400000	
Ti	47	2	45	375.441	ppb	375.441	4.99	9483	4000	
V	51	2	72	90.649	ppb	90.649	1.90	104739	2000	
Cr	52	2	72	41.285	ppb	41.285	1.99	59868	5000	
Mn	55	2	72	600.987	ppb	600.987	0.86	359685	10000	
Fe	56	1	72	185442.179	ppb	185442.179	0.78	1380028353	10000	>LDR
(Fe)	57	2	72	198842.720	ppb	198842.720	0.75	5449201	400000	
Co	59	2	72	8.768	ppb	8.768	2.61	21665	2000	
Ni	60	2	72	17.544	ppb	17.544	1.19	13823	5000	
Cu	63	2	72	36.651	ppb	36.651	0.77	68532	5000	
Zn	66	2	72	353.894	ppb	353.894	0.65	116720	5000	
As	75	2	72	22.105	ppb	22.105	4.40	6159	2000	
Se	78	1	72	2.139	ppb	2.139	6.47	628	2000	
Sr	88	2	72	59.595	ppb	59.595	2.98	41287	4000	
Zr	90	2	72	18228.074	ppb	18228.074	2.63	83082	1000	>LDR
Nb	93	2	72	57054.918	ppb	57054.918	8.99	2230	200	>LDR
Mo	95	2	115	12.686	ppb	12.686	3.73	12058	2000	
Pd	105	2	115	18.869	ppb	18.869	51.04	63	100	
Ag	107	2	115	0.296	ppb	0.296	5.02	983	100	
Cd	111	2	115	2.218	ppb	2.218	11.58	1003	2000	
Sn	120	2	115	12.704	ppb	12.704	1.66	15638	2000	
Sb	121	2	115	1.820	ppb	1.820	0.40	2317	1000	
Ba	137	2	115	145.408	ppb	145.408	3.48	52890	5000	
W	182	2	165	3.366	ppb	3.366	5.19	15358	100	
Pt	195	2	165	83.969	ppb	83.969	132.97	67	100	
Tl	205	2	165	0.206	ppb	0.206	8.76	1633	2000	
Pb	208	2	165	34.260	ppb	34.260	1.34	329187	5000	
Th	232	2	193	9.981	ppb	9.981	3.41	101039	2000	
U	238	2	193	6.675	ppb	6.675	1.33	73950	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	558625	1.00	579603	96.38	60	120	
Sc (IS)	45	1	HMI H2	17973426	0.05	17043241	105.46	60	120	
Sc (IS)	45	2	HMI He	817327	1.33	797526	102.48	60	120	
Sc (IS)	45	3	No Gas	30598551	0.25	28509182	107.33	60	120	
Ge Internal standard	72	1	HMI H2	9624209	0.21	9074377	106.06	60	120	
Ge Internal standard	72	2	HMI He	1167133	0.05	1113151	104.85	60	120	
In Internal standard	115	2	HMI He	3519479	1.13	3301939	106.59	60	120	
Ho-165	165	2	HMI He	14111103	0.78	12873604	109.61	60	120	
Ir (IS)	193	2	HMI He	11368983	0.41	10633585	106.92	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-4-A
Data File Name	214SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:16:14-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-26.603	ppb	-26.603	-18.14	1855539	50000	
Be	9	1	6	16.459	ppb	16.459	5.91	4207	2000	
B	11	1	6	37.563	ppb	37.563	2.80	9706	2000	
Na	23	2	45	-248.357	ppb	-248.357	-11.36	243057	400000	
Mg	24	2	45	4042.504	ppb	4042.504	0.51	420649	400000	
Al	27	2	45	38180.792	ppb	38180.792	0.51	858877	400000	
Si	28	2	45	103.083	ppb	103.083	6.48	25794	10000	
P	31	2	45	1170.682	ppb	1170.682	4.02	2932	10000	
K	39	2	45	3970.595	ppb	3970.595	0.53	322226	400000	
Ca	40	1	45	5294.395	ppb	5294.395	0.46	18731753	400000	
Ti	47	2	45	1033.570	ppb	1033.570	2.46	27463	4000	
V	51	2	72	102.366	ppb	102.366	5.76	124589	2000	
Cr	52	2	72	106.650	ppb	106.650	4.88	162026	5000	
Mn	55	2	72	130.376	ppb	130.376	3.62	82714	10000	
Fe	56	1	72	41540.440	ppb	41540.440	0.58	312930082	10000	
(Fe)	57	2	72	45780.465	ppb	45780.465	4.38	1324069	400000	
Co	59	2	72	8.276	ppb	8.276	5.27	21578	2000	
Ni	60	2	72	30.795	ppb	30.795	5.05	24182	5000	
Cu	63	2	72	50.962	ppb	50.962	3.36	100027	5000	
Zn	66	2	72	170.314	ppb	170.314	3.41	59581	5000	
As	75	2	72	13.160	ppb	13.160	3.10	3883	2000	
Se	78	1	72	2.281	ppb	2.281	11.02	676	2000	
Sr	88	2	72	36.383	ppb	36.383	5.10	26636	4000	
Zr	90	2	72	24449.925	ppb	24449.925	1.84	117492	1000	>LDR
Nb	93	2	72	134924.610	ppb	134924.610	5.38	5538	200	>LDR
Mo	95	2	115	8.606	ppb	8.606	3.99	8416	2000	
Pd	105	2	115	9.886	ppb	9.886	173.66	50	100	
Ag	107	2	115	0.656	ppb	0.656	17.16	2190	100	
Cd	111	2	115	1.829	ppb	1.829	1.35	850	2000	
Sn	120	2	115	6.660	ppb	6.660	1.57	8686	2000	
Sb	121	2	115	0.421	ppb	0.421	19.59	567	1000	
Ba	137	2	115	163.220	ppb	163.220	0.92	60932	5000	
W	182	2	165	2.236	ppb	2.236	10.16	11271	100	
Pt	195	2	165	63.470	ppb	63.470	78.42	63	100	
Tl	205	2	165	0.544	ppb	0.544	3.07	4074	2000	
Pb	208	2	165	82.490	ppb	82.490	0.33	806385	5000	
Th	232	2	193	24.545	ppb	24.545	1.08	231374	2000	
U	238	2	193	7.739	ppb	7.739	1.97	85492	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	576785	0.75	579603	99.51	60	120	
Sc (IS)	45	1	HMI H2	18098583	0.27	17043241	106.19	60	120	
Sc (IS)	45	2	HMI He	859958	0.97	797526	107.83	60	120	
Sc (IS)	45	3	No Gas	31277181	1.18	28509182	109.71	60	120	
Ge Internal standard	72	1	HMI H2	9739342	0.35	9074377	107.33	60	120	
Ge Internal standard	72	2	HMI He	1232847	3.96	1113151	110.75	60	120	
In Internal standard	115	2	HMI He	3611773	1.35	3301939	109.38	60	120	
Ho-165	165	2	HMI He	14395630	1.23	12873604	111.82	60	120	
Ir (IS)	193	2	HMI He	11342511	0.34	10633585	106.67	60	120	

Sample Report

Sample Table

Sample Name	280-165770-C-5-A
Data File Name	215SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:19:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585099 soil 6020a dod5
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-21.985	ppb	-21.985	-22.89	1911094	50000	
Be	9	1	6	2.809	ppb	2.809	2.79	737	2000	
B	11	1	6	43.205	ppb	43.205	10.18	10954	2000	
Na	23	2	45	1988.201	ppb	1988.201	1.45	690101	400000	
Mg	24	2	45	6199.591	ppb	6199.591	0.61	626935	400000	
Al	27	2	45	19388.583	ppb	19388.583	0.87	444520	400000	
Si	28	2	45	70.603	ppb	70.603	5.12	21471	10000	
P	31	2	45	1550.856	ppb	1550.856	0.78	3946	10000	
K	39	2	45	5674.110	ppb	5674.110	0.49	449562	400000	
Ca	40	1	45	5732.533	ppb	5732.533	0.62	21035815	400000	
Ti	47	2	45	372.888	ppb	372.888	5.29	10100	4000	
V	51	2	72	25.496	ppb	25.496	4.06	33371	2000	
Cr	52	2	72	45.477	ppb	45.477	4.17	72517	5000	
Mn	55	2	72	168.361	ppb	168.361	3.55	111301	10000	
Fe	56	1	72	31560.049	ppb	31560.049	0.68	247544636	10000	
(Fe)	57	2	72	30743.127	ppb	30743.127	2.93	928058	400000	
Co	59	2	72	13.979	ppb	13.979	2.73	37997	2000	
Ni	60	2	72	30.642	ppb	30.642	3.53	25116	5000	
Cu	63	2	72	15.004	ppb	15.004	2.20	31768	5000	
Zn	66	2	72	139.015	ppb	139.015	3.46	50832	5000	
As	75	2	72	4.273	ppb	4.273	1.31	1340	2000	
Se	78	1	72	0.430	ppb	0.430	21.50	151	2000	
Sr	88	2	72	97.147	ppb	97.147	2.55	74034	4000	
Zr	90	2	72	6344.754	ppb	6344.754	9.30	32189	1000	>LDR
Nb	93	2	72	28011.618	ppb	28011.618	6.85	1217	200	>LDR
Mo	95	2	115	1.574	ppb	1.574	20.32	1623	2000	
Pd	105	2	115	34.137	ppb	34.137	114.11	93	100	
Ag	107	2	115	0.245	ppb	0.245	15.50	863	100	
Cd	111	2	115	1.171	ppb	1.171	10.00	560	2000	
Sn	120	2	115	9.268	ppb	9.268	3.10	12142	2000	
Sb	121	2	115	0.265	ppb	0.265	10.80	373	1000	
Ba	137	2	115	174.482	ppb	174.482	0.92	66665	5000	
W	182	2	165	1.731	ppb	1.731	3.48	9503	100	
Pt	195	2	165	-12.071	ppb	-12.071	-718.05	47	100	
Tl	205	2	165	0.467	ppb	0.467	1.82	3601	2000	
Pb	208	2	165	28.132	ppb	28.132	0.57	281798	5000	
Th	232	2	193	32.448	ppb	32.448	0.92	304631	2000	
U	238	2	193	1.433	ppb	1.433	1.66	16183	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	580541	0.45	579603	100.16	60	120	
Sc (IS)	45	1	HMI H2	18785698	0.51	17043241	110.22	60	120	
Sc (IS)	45	2	HMI He	876151	0.09	797526	109.86	60	120	
Sc (IS)	45	3	No Gas	31782590	0.64	28509182	111.48	60	120	
Ge Internal standard	72	1	HMI H2	10139593	0.75	9074377	111.74	60	120	
Ge Internal standard	72	2	HMI He	1285964	3.41	1113151	115.52	60	120	
In Internal standard	115	2	HMI He	3696755	0.08	3301939	111.96	60	120	
Ho-165	165	2	HMI He	14694753	0.27	12873604	114.15	60	120	
Ir (IS)	193	2	HMI He	11432256	0.38	10633585	107.51	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	216_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:23:42-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	26.732	ppb	6.387	2149178	100	26.7	90	110	>+\-10%
Be	9	1	6	53.279	ppb	2.779	13636	50	106.6	90	110	
B	11	1	6	516.479	ppb	0.912	109849	50	1033.0	90	110	>+\-10%
Na	23	2	45	48144.853	ppb	0.472	9772459	51000	94.4	90	110	
Mg	24	2	45	9274.477	ppb	1.099	905182	11000	84.3	90	110	>+\-10%
Al	27	2	45	897.828	ppb	1.349	20773	1000	89.8	90	110	>+\-10%
Si	28	2	45	40.260	ppb	9.201	16886	500	8.1	90	110	>+\-10%
P	31	2	45	2413.465	ppb	1.009	6090	2500	96.5	90	110	
K	39	2	45	9850.825	ppb	1.169	743152	11000	89.6	90	110	>+\-10%
Ca	40	1	45	11089.155	ppb	0.423	40579016	11000	100.8	90	110	
(Ca)	44	1	45	10542.493	ppb	1.474	1325669	11000	95.8	90	110	
Ti	47	2	45	54.807	ppb	1.626	1487	50	109.6	90	110	
V	51	2	72	46.881	ppb	1.554	62350	50	93.8	90	110	
Cr	52	2	72	46.701	ppb	1.707	77041	50	93.4	90	110	
Mn	55	2	72	43.828	ppb	1.645	30348	50	87.7	90	110	>+\-10%
Fe	56	1	72	1009.776	ppb	0.242	8179513	1000	101.0	90	110	
(Fe)	56	2	72	875.070	ppb	3.742	1210354	1000	87.5	90	110	>+\-10%
(Fe)	57	2	72	938.975	ppb	4.839	29777	1000	93.9	90	110	
Co	59	2	72	45.932	ppb	3.234	128964	50	91.9	90	110	
Ni	60	2	72	44.768	ppb	1.860	37032	50	89.5	90	110	>+\-10%
Cu	63	2	72	45.659	ppb	1.912	96871	50	91.3	90	110	
Zn	66	2	72	45.708	ppb	5.214	17693	50	91.4	90	110	
As	75	2	72	47.456	ppb	1.438	15021	50	94.9	90	110	
Se	78	1	72	48.816	ppb	2.680	14864	50	97.6	90	110	
Sr	88	2	72	96.147	ppb	1.258	75800	100	96.1	90	110	
Zr	90	2	72	2340.188	ppb	7.728	12695	50	4680.4	90	110	>+\-10%
Nb	93	2	72	1736.279	ppb	29.822	97	100	1736.3	90	110	>+\-10%
Mo	95	2	115	51.323	ppb	1.067	51687	50	102.6	90	110	
Pd	105	2	115	167.113	ppb	21.479	330	50	334.2	90	110	>+\-10%
Ag	107	2	115	49.508	ppb	1.041	167945	50	99.0	90	110	
Cd	111	2	115	49.553	ppb	0.359	23675	50	99.1	90	110	
Sn	120	2	115	51.262	ppb	0.226	65294	50	102.5	90	110	
Sb	121	2	115	50.955	ppb	0.810	68371	50	101.9	90	110	
Ba	137	2	115	50.710	ppb	1.473	19666	50	101.4	90	110	
W	182	2	165	49.769	ppb	1.020	200498	50	99.5	90	110	
Pt	195	2	165	99.026	ppb	61.243	73	50	198.1	90	110	>+\-10%
Tl	205	2	165	49.046	ppb	1.079	357506	50	98.1	90	110	
Pb	208	2	165	48.880	ppb	0.875	489031	50	97.8	90	110	
Th	232	2	193	49.398	ppb	2.906	463955	50	98.8	90	110	
U	238	2	193	51.943	ppb	1.029	584616	50	103.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	578931	0.92	579603	99.88	60	120	
Sc (IS)	45	1	HMI H2	18820205	0.36	17043241	110.43	60	120	
Sc (IS)	45	2	HMI He	871856	1.24	797526	109.32	60	120	
Sc (IS)	45	3	No Gas	31338100	0.50	28509182	109.92	60	120	
Ge Internal standard	72	1	HMI H2	10316470	0.34	9074377	113.69	60	120	
Ge Internal standard	72	2	HMI He	1329460	0.99	1113151	119.43	60	120	
In Internal standard	115	2	HMI He	3742494	0.61	3301939	113.34	60	120	
Ho-165	165	2	HMI He	14713521	1.14	12873604	114.29	60	120	
Ir (IS)	193	2	HMI He	11587221	0.70	10633585	108.97	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	217_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:27:27-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-55.368	ppb	-4.0	1723581	10	
Be	9	1	6	0.159	ppb	46.8	60	0.5	
B	11	1	6	6.330	ppb	14.3	3364	0.5	>RL
Na	23	2	45	-784.668	ppb	-0.6	142797	25	
Mg	24	2	45	-388.100	ppb	-3.8	21327	25	
Al	27	2	45	-0.595	ppb	-579.4	297	15	
K	39	2	45	-107.118	ppb	-16.7	38361	50	
Ti	47	2	45	-0.408	ppb	0.0	0	0.5	
V	51	2	72	-0.580	ppb	-12.1	617	1	
Cr	52	2	72	-0.014	ppb	-608.5	767	1	
Mn	55	2	72	-0.219	ppb	-36.2	370	0.5	
(Fe)	57	2	72	9.330	ppb	19.7	790	25	
Co	59	2	72	0.046	ppb	30.6	203	0.5	
Ni	60	2	72	-1.119	ppb	-20.5	1187	1	
Cu	63	2	72	-0.238	ppb	-41.4	1030	1	
Zn	66	2	72	0.156	ppb	144.8	673	5	
As	75	2	72	0.017	ppb	152.2	42	1	
Se	78	1	72	0.055	ppb	117.2	40	1	
Sr	88	2	72	0.015	ppb	491.4	143	0.5	
Zr	90	2	72	-12.971	ppb	-86.1	570	1	
Nb	93	2	72	433.138	ppb	104.1	40	2	>RL
Mo	95	2	115	0.620	ppb	32.3	707	0.5	>RL
Pd	105	2	115	2.612	ppb	208.9	40	1	>RL
Ag	107	2	115	0.036	ppb	35.0	170	1	
Cd	111	2	115	0.032	ppb	98.8	23	0.5	
Sn	120	2	115	0.722	ppb	21.3	1557	1	
Sb	121	2	115	0.296	ppb	11.0	433	0.6	
Ba	137	2	115	0.039	ppb	222.3	90	0.5	
W	182	2	165	0.353	ppb	17.7	4111	1	
Pt	195	2	165	-43.757	ppb	-321.6	40	1	
Tl	205	2	165	0.074	ppb	8.4	753	0.1	
Pb	208	2	165	0.035	ppb	53.6	2023	0.5	
Th	232	2	193	1.051	ppb	12.6	21960	1	>RL
U	238	2	193	0.073	ppb	6.5	1137	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	605745	0.22	579603	104.51	60	120	
Sc (IS)	45	1	HMI H2	19021151	0.56	17043241	111.61	60	120	
Sc (IS)	45	2	HMI He	883716	0.48	797526	110.81	60	120	
Sc (IS)	45	3	No Gas	31716354	1.29	28509182	111.25	60	120	
Ge Internal standard	72	1	HMI H2	10429908	0.41	9074377	114.94	60	120	
Ge Internal standard	72	2	HMI He	1366536	1.15	1113151	122.76	60	120	IS Failed
In Internal standard	115	2	HMI He	3865923	1.37	3301939	117.08	60	120	
Ho-165	165	2	HMI He	14986256	0.69	12873604	116.41	60	120	
Ir (IS)	193	2	HMI He	12014307	0.54	10633585	112.98	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	218LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:31:13-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-47.263	ppb	-3.980	1761165	50	-94.5	70	130	>+/-30%
Be	9	1	6	1.099	ppb	31.859	307	1	109.9	70	130	
Na	23	2	45	-756.729	ppb	-0.504	146670	50	-1513.5	70	130	>+/-30%
Mg	24	2	45	-340.390	ppb	-0.863	25456	50	-680.8	70	130	>+/-30%
Al	27	2	45	43.790	ppb	18.849	1307	50	87.6	70	130	
K	39	2	45	-13.036	ppb	-126.230	44600	100	-13.0	70	130	>+/-30%
V	51	2	72	3.959	ppb	3.014	6692	5	79.2	70	130	
Cr	52	2	72	1.829	ppb	13.497	3864	2	91.4	70	130	
Mn	55	2	72	0.522	ppb	24.947	890	1	52.2	70	130	>+/-30%
(Fe)	57	2	72	50.734	ppb	13.314	2120	50	101.5	70	130	
Co	59	2	72	0.992	ppb	10.582	2934	1	99.2	70	130	
Ni	60	2	72	0.860	ppb	12.347	2780	2	43.0	70	130	>+/-30%
Cu	63	2	72	1.726	ppb	2.383	5254	2	86.3	70	130	
Zn	66	2	72	9.445	ppb	5.495	4247	10	94.5	70	130	
As	75	2	72	4.880	ppb	0.831	1622	5	97.6	70	130	
Se	78	1	72	5.582	ppb	2.823	1735	5	111.6	70	130	
Sr	88	2	72	1.065	ppb	8.637	993	1	106.5	70	130	
Zr	90	2	72	629.636	ppb	12.235	3981	0.5	125927.2	70	130	>+/-30%
Nb	93	2	72	-8.972	ppb	-4952.023	20	2	-448.6	70	130	>+/-30%
Mo	95	2	115	2.285	ppb	3.564	2430	2	114.2	70	130	
Pd	105	2	115	-10.126	ppb	-112.852	17	1	-1012.6	70	130	>+/-30%
Ag	107	2	115	1.082	ppb	2.281	3824	1	108.2	70	130	
Cd	111	2	115	1.129	ppb	16.858	563	1	112.9	70	130	
Sn	120	2	115	10.354	ppb	2.517	14077	10	103.5	70	130	
Sb	121	2	115	2.168	ppb	3.722	3020	2	108.4	70	130	
Ba	137	2	115	0.986	ppb	26.120	467	1	98.6	70	130	
W	182	2	165	5.120	ppb	2.782	23375	1	512.0	70	130	>+/-30%
Pt	195	2	165	162.911	ppb	1.105	90	1	16291.1	70	130	>+/-30%
Tl	205	2	165	1.031	ppb	2.296	7842	1	103.1	70	130	
Pb	208	2	165	1.012	ppb	1.258	11936	1	101.2	70	130	
Th	232	2	193	4.955	ppb	7.605	59605	2	247.8	70	130	>+/-30%
U	238	2	193	1.045	ppb	2.746	12596	1	104.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	597531	0.79	579603	103.09	60	120	
Sc (IS)	45	1	HMI H2	18935506	0.25	17043241	111.10	60	120	
Sc (IS)	45	2	HMI He	873574	0.48	797526	109.54	60	120	
Sc (IS)	45	3	No Gas	31590838	0.39	28509182	110.81	60	120	
Ge Internal standard	72	1	HMI H2	10406022	0.16	9074377	114.67	60	120	
Ge Internal standard	72	2	HMI He	1367729	0.82	1113151	122.87	60	120	IS Failed
In Internal standard	115	2	HMI He	3856350	0.27	3301939	116.79	60	120	
Ho-165	165	2	HMI He	14962594	0.49	12873604	116.23	60	120	
Ir (IS)	193	2	HMI He	12129131	0.20	10633585	114.06	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585214/1-A
Data File Name	219_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:34:58-06:00
Sample Type	Blank
Dilution	1
Comment	585214 6020a
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-54.667	ppb	-1.944056735	1755904	10
Be	9	1	6	0.037	ppb	240.6015834	27	0.5
B	11	1	6	0.838	ppb	64.2333546	2134	0.5
Na	23	2	45	-878.323	ppb	-0.741390497	124005	25
Mg	24	2	45	-442.138	ppb	-1.774833938	16302	25
Al	27	2	45	-2.456	ppb	-44.7088211	253	15
K	39	2	45	-113.692	ppb	-8.501706269	37863	50
Ti	47	2	45	-0.408	ppb	0	0	0.5
V	51	2	72	-0.713	ppb	-6.865041857	440	1
Cr	52	2	72	0.141	ppb	40.029616	1030	1
Mn	55	2	72	-0.383	ppb	-12.07171502	257	0.5
(Fe)	57	2	72	-0.932	ppb	-154.4538052	463	25
Co	59	2	72	-0.003	ppb	-182.4258824	60	0.5
Ni	60	2	72	-1.197	ppb	-5.634668636	1130	1
Cu	63	2	72	-0.108	ppb	-46.18443862	1317	1
Zn	66	2	72	0.231	ppb	194.3853625	707	5
As	75	2	72	-0.015	ppb	-61.14285466	32	1
Se	78	1	72	0.065	ppb	51.22693109	43	1
Sr	88	2	72	-0.055	ppb	-57.96084849	87	0.5
Zr	90	2	72	12.934	ppb	69.86349451	710	1
Nb	93	2	72	62.462	ppb	542.9898546	23	2
Mo	95	2	115	0.103	ppb	39.42109574	170	0.5
Pd	105	2	115	4.434	ppb	254.6746384	43	1
Ag	107	2	115	0.021	ppb	50.24125752	117	1
Cd	111	2	115	-0.009	ppb	-130.9511562	3	0.5
Sn	120	2	115	0.016	ppb	333.4377354	633	1
Sb	121	2	115	0.099	ppb	18.91348022	160	0.6
Ba	137	2	115	0.057	ppb	156.2254825	97	0.5
W	182	2	165	1.461	ppb	1.836794108	8623	1
Pt	195	2	165	24.406	ppb	826.6840117	57	1
Tl	205	2	165	0.021	ppb	41.72050088	363	0.1
Pb	208	2	165	0.000	ppb	22597.51588	1677	0.5
Th	232	2	193	4.055	ppb	15.51140431	50953	1
U	238	2	193	0.008	ppb	76.07222968	387	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	597635	1.22	579603	103.11	60	120	
Sc (IS)	45	1	HMI H2	18973973	0.58	17043241	111.33	60	120	
Sc (IS)	45	2	HMI He	882984	0.39	797526	110.72	60	120	
Sc (IS)	45	3	No Gas	32239207	0.58	28509182	113.08	60	120	
Ge Internal standard	72	1	HMI H2	10391976	0.59	9074377	114.52	60	120	
Ge Internal standard	72	2	HMI He	1372145	1.05	1113151	123.27	60	120	IS Failed
In Internal standard	115	2	HMI He	3861636	0.67	3301939	116.95	60	120	
Ho-165	165	2	HMI He	15026011	0.40	12873604	116.72	60	120	
Ir (IS)	193	2	HMI He	12125296	0.22	10633585	114.03	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585214/2-A
Data File Name	220_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:38:43-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585214 6020a
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-14.561	-14.561	ppb	-36.132	1944477	400	-3.6	80	120	>+/-20%
Be	9	1	6	39.812	39.812	ppb	2.066	10657	40	99.5	80	120	
Na	23	2	45	-210.976	-210.976	ppb	-2.294	259047	40	-527.4	80	120	>+/-20%
Mg	24	2	45	228.965	228.965	ppb	1.597	79106	40	572.4	80	120	>+/-20%
Al	27	2	45	735.445	735.445	ppb	1.955	17426	40	1838.6	80	120	>+/-20%
K	39	2	45	546.957	546.957	ppb	2.049	85918	40	1367.4	80	120	>+/-20%
V	51	2	72	36.911	36.911	ppb	1.926	50861	40	92.3	80	120	
Cr	52	2	72	37.920	37.920	ppb	1.412	64581	40	94.8	80	120	
Mn	55	2	72	36.311	36.311	ppb	2.518	25988	40	90.8	80	120	
(Fe)	57	2	72	727.904	727.904	ppb	0.868	23894	40	1819.8	80	120	>+/-20%
Co	59	2	72	38.104	38.104	ppb	1.093	110229	40	95.3	80	120	
Ni	60	2	72	36.765	36.765	ppb	2.826	31698	40	91.9	80	120	
Cu	63	2	72	37.567	37.567	ppb	1.021	82377	40	93.9	80	120	
Zn	66	2	72	36.842	36.842	ppb	1.951	14807	40	92.1	80	120	
As	75	2	72	37.929	37.929	ppb	1.778	12371	40	94.8	80	120	
Se	78	1	72	38.772	38.772	ppb	2.941	12023	40	96.9	80	120	
Nb	93	2	72	-86.518	-86.518	ppb	-386.247	17	40	-216.3	80	120	>+/-20%
Mo	95	2	115	41.025	41.025	ppb	1.929	42637	40	102.6	80	120	
Pd	105	2	115	-6.485	-6.485	ppb	-175.105	23	40	-16.2	80	120	>+/-20%
Ag	107	2	115	40.159	40.159	ppb	1.237	140530	40	100.4	80	120	
Cd	111	2	115	40.600	40.600	ppb	1.011	20010	40	101.5	80	120	
Sn	120	2	115	40.190	40.190	ppb	0.690	52935	40	100.5	80	120	
Sb	121	2	115	40.809	40.809	ppb	1.298	56484	40	102.0	80	120	
Ba	137	2	115	40.912	40.912	ppb	3.792	16376	40	102.3	80	120	
W	182	2	165	1.349	1.349	ppb	3.267	8239	40	3.4	80	120	>+/-20%
Pt	195	2	165	158.514	158.514	ppb	69.632	90	40	396.3	80	120	>+/-20%
Tl	205	2	165	39.982	39.982	ppb	0.774	300370	40	100.0	80	120	
Pb	208	2	165	40.374	40.374	ppb	1.096	416540	40	100.9	80	120	
Th	232	2	193	45.208	45.208	ppb	0.292	447815	40	113.0	80	120	
U	238	2	193	40.170	40.170	ppb	0.619	475779	40	100.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	605404	1.36	579603	104.45	60	120	
Sc (IS)	45	1	HMI H2	19292747	0.80	17043241	113.20	60	120	
Sc (IS)	45	2	HMI He	889849	0.92	797526	111.58	60	120	
Sc (IS)	45	3	No Gas	31660743	0.73	28509182	111.05	60	120	
Ge Internal standard	72	1	HMI H2	10502890	0.83	9074377	115.74	60	120	
Ge Internal standard	72	2	HMI He	1369397	0.74	1113151	123.02	60	120	IS Failed
In Internal standard	115	2	HMI He	3860449	1.12	3301939	116.91	60	120	
Ho-165	165	2	HMI He	15162162	0.79	12873604	117.78	60	120	
Ir (IS)	193	2	HMI He	12191501	0.63	10633585	114.65	60	120	

Sample Table

Sample Name	LCSD 280-585214/3-A
Data File Name	221SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:42:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-22.209	ppb	-22.209	-17.34	1923577	50000	
Be	9	1	6	40.675	ppb	40.675	2.48	10787	2000	
B	11	1	6	-0.602	ppb	-0.602	-95.35	1830	2000	
Na	23	2	45	-233.151	ppb	-233.151	-2.87	255183	400000	
Mg	24	2	45	245.578	ppb	245.578	10.87	80830	400000	
Al	27	2	45	733.803	ppb	733.803	4.57	17423	400000	
Si	28	2	45	28.124	ppb	28.124	18.71	15441	10000	
P	31	2	45	9.630	ppb	9.630	28.60	62	10000	
K	39	2	45	544.654	ppb	544.654	2.72	85948	400000	
Ca	40	1	45	746.232	ppb	746.232	2.38	2975882	400000	
Ti	47	2	45	44.130	ppb	44.130	0.47	1227	4000	
V	51	2	72	36.067	ppb	36.067	2.52	49741	2000	
Cr	52	2	72	37.131	ppb	37.131	2.26	63273	5000	
Mn	55	2	72	35.927	ppb	35.927	6.61	25721	10000	
Fe	56	1	72	752.087	ppb	752.087	2.64	6224104	10000	
(Fe)	57	2	72	696.852	ppb	696.852	3.13	22906	400000	
Co	59	2	72	37.514	ppb	37.514	0.88	108558	2000	
Ni	60	2	72	36.551	ppb	36.551	2.61	31527	5000	
Cu	63	2	72	38.384	ppb	38.384	1.40	84163	5000	
Zn	66	2	72	37.500	ppb	37.500	3.61	15067	5000	
As	75	2	72	37.324	ppb	37.324	1.93	12180	2000	
Se	78	1	72	38.702	ppb	38.702	0.64	11985	2000	
Sr	88	2	72	75.666	ppb	75.666	0.99	61483	4000	
Zr	90	2	72	921.142	ppb	921.142	8.72	5538	1000	
Nb	93	2	72	63.196	ppb	63.196	407.33	23	200	
Mo	95	2	115	41.500	ppb	41.500	0.80	42790	2000	
Pd	105	2	115	-6.401	ppb	-6.401	-216.10	23	100	
Ag	107	2	115	39.624	ppb	39.624	1.69	137586	100	
Cd	111	2	115	40.580	ppb	40.580	0.85	19846	2000	
Sn	120	2	115	40.327	ppb	40.327	0.80	52704	2000	
Sb	121	2	115	41.121	ppb	41.121	1.32	56481	1000	
Ba	137	2	115	41.596	ppb	41.596	2.91	16523	5000	
W	182	2	165	1.402	ppb	1.402	4.47	8456	100	
Pt	195	2	165	22.419	ppb	22.419	197.05	57	100	
Tl	205	2	165	39.623	ppb	39.623	1.40	297535	2000	
Pb	208	2	165	39.921	ppb	39.921	2.32	411659	5000	
Th	232	2	193	46.613	ppb	46.613	1.41	461709	2000	
U	238	2	193	39.890	ppb	39.890	1.98	472802	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	599861	1.11	579603	103.50	60	120	
Sc (IS)	45	1	HMI H2	19201752	0.99	17043241	112.66	60	120	
Sc (IS)	45	2	HMI He	891930	1.06	797526	111.84	60	120	
Sc (IS)	45	3	No Gas	32012483	1.46	28509182	112.29	60	120	
Ge Internal standard	72	1	HMI H2	10486864	1.05	9074377	115.57	60	120	
Ge Internal standard	72	2	HMI He	1369767	1.02	1113151	123.05	60	120	IS Failed
In Internal standard	115	2	HMI He	3830613	0.48	3301939	116.01	60	120	
Ho-165	165	2	HMI He	15155819	1.07	12873604	117.73	60	120	
Ir (IS)	193	2	HMI He	12201650	0.94	10633585	114.75	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-1-A
Data File Name	222SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:46:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	393.490	ppb	393.490	1.37	4231691	50000	
Be	9	1	6	0.088	ppb	0.088	51.26	37	2000	
B	11	1	6	1566.037	ppb	1566.037	1.26	307887	2000	
Na	23	2	45	526989.913	ppb	526989.913	0.47	104823945	400000	
Mg	24	2	45	128547.465	ppb	128547.465	0.28	11909315	400000	
Al	27	2	45	-7.189	ppb	-7.189	-3.07	143	400000	
Si	28	2	45	3249.880	ppb	3249.880	0.83	494090	10000	
P	31	2	45	9.463	ppb	9.463	32.39	61	10000	
K	39	2	45	3455.032	ppb	3455.032	0.35	292378	400000	
Ca	40	1	45	304383.092	ppb	304383.092	1.04	1095269477	400000	
Ti	47	2	45	-0.408	ppb	-0.408	0.00	0	4000	
V	51	2	72	217.060	ppb	217.060	2.73	284553	2000	
Cr	52	2	72	196.303	ppb	196.303	2.43	322249	5000	
Mn	55	2	72	-0.372	ppb	-0.372	-24.43	257	10000	
Fe	56	1	72	1.918	ppb	1.918	19.32	136575	10000	
(Fe)	57	2	72	17.045	ppb	17.045	47.36	1013	400000	
Co	59	2	72	0.348	ppb	0.348	6.71	1047	2000	
Ni	60	2	72	6.602	ppb	6.602	2.94	7212	5000	
Cu	63	2	72	0.136	ppb	0.136	38.29	1790	5000	
Zn	66	2	72	4.371	ppb	4.371	14.19	2237	5000	
As	75	2	72	27.208	ppb	27.208	3.88	8648	2000	
Se	78	1	72	15.075	ppb	15.075	3.45	4483	2000	
Sr	88	2	72	15017.472	ppb	15017.472	2.57	11850974	4000	
Zr	90	2	72	1172.453	ppb	1172.453	14.31	6695	1000	
Nb	93	2	72	-145.998	ppb	-145.998	-181.07	13	200	
Mo	95	2	115	40.352	ppb	40.352	0.52	40418	2000	
Pd	105	2	115	160.812	ppb	160.812	14.57	317	100	
Ag	107	2	115	0.060	ppb	0.060	31.59	243	100	
Cd	111	2	115	-0.002	ppb	-0.002	-1538.11	7	2000	
Sn	120	2	115	0.762	ppb	0.762	19.87	1547	2000	
Sb	121	2	115	0.403	ppb	0.403	25.72	560	1000	
Ba	137	2	115	15.873	ppb	15.873	4.79	6168	5000	
W	182	2	165	1.417	ppb	1.417	4.38	8259	100	
Pt	195	2	165	-67.816	ppb	-67.816	-36.20	33	100	
Tl	205	2	165	0.047	ppb	0.047	38.98	543	2000	
Pb	208	2	165	-0.010	ppb	-0.010	-43.06	1543	5000	
Th	232	2	193	5.218	ppb	5.218	15.92	57083	2000	
U	238	2	193	25.364	ppb	25.364	0.81	274533	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	541450	1.87	579603	93.42	60	120	
Sc (IS)	45	1	HMI H2	18595775	1.10	17043241	109.11	60	120	
Sc (IS)	45	2	HMI He	878471	0.75	797526	110.15	60	120	
Sc (IS)	45	3	No Gas	32014215	0.33	28509182	112.29	60	120	
Ge Internal standard	72	1	HMI H2	10042725	0.82	9074377	110.67	60	120	
Ge Internal standard	72	2	HMI He	1333654	2.62	1113151	119.81	60	120	
In Internal standard	115	2	HMI He	3720890	0.89	3301939	112.69	60	120	
Ho-165	165	2	HMI He	14698429	0.25	12873604	114.17	60	120	
Ir (IS)	193	2	HMI He	11137758	0.81	10633585	104.74	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-2-A
Data File Name	223SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:50:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	426.651	ppb	426.651	0.42	4347414	50000	
Be	9	1	6	0.166	ppb	0.166	134.82	57	2000	
B	11	1	6	1575.752	ppb	1575.752	0.76	317035	2000	
Na	23	2	45	568501.395	ppb	568501.395	1.63	113784808	400000	
Mg	24	2	45	130899.306	ppb	130899.306	1.22	12204649	400000	
Al	27	2	45	-6.069	ppb	-6.069	-33.48	170	400000	
Si	28	2	45	2919.731	ppb	2919.731	0.72	447924	10000	
P	31	2	45	13.031	ppb	13.031	59.54	70	10000	
K	39	2	45	3449.001	ppb	3449.001	2.91	293809	400000	
Ca	40	1	45	290110.770	ppb	290110.770	0.66	1035779825	400000	
Ti	47	2	45	-0.040	ppb	-0.040	-926.27	10	4000	
V	51	2	72	127.923	ppb	127.923	5.37	162507	2000	
Cr	52	2	72	55.371	ppb	55.371	4.91	88330	5000	
Mn	55	2	72	22.050	ppb	22.050	4.08	15044	10000	
Fe	56	1	72	1860.063	ppb	1860.063	0.65	14537843	10000	
(Fe)	57	2	72	1787.253	ppb	1787.253	5.89	54480	400000	
Co	59	2	72	0.647	ppb	0.647	0.93	1827	2000	
Ni	60	2	72	12.164	ppb	12.164	5.57	11177	5000	
Cu	63	2	72	0.312	ppb	0.312	71.82	2080	5000	
Zn	66	2	72	1.889	ppb	1.889	21.53	1260	5000	
As	75	2	72	12.871	ppb	12.871	6.48	3969	2000	
Se	78	1	72	14.934	ppb	14.934	2.02	4434	2000	
Sr	88	2	72	15464.595	ppb	15464.595	4.09	11790725	4000	
Zr	90	2	72	835.191	ppb	835.191	9.84	4778	1000	
Nb	93	2	72	181.140	ppb	181.140	210.57	27	200	
Mo	95	2	115	40.308	ppb	40.308	1.71	40147	2000	
Pd	105	2	115	161.740	ppb	161.740	14.05	317	100	
Ag	107	2	115	0.020	ppb	0.020	22.56	107	100	
Cd	111	2	115	-0.009	ppb	-0.009	-141.18	3	2000	
Sn	120	2	115	0.053	ppb	0.053	91.55	653	2000	
Sb	121	2	115	0.202	ppb	0.202	14.22	290	1000	
Ba	137	2	115	11.891	ppb	11.891	7.44	4614	5000	
W	182	2	165	1.228	ppb	1.228	7.98	7475	100	
Pt	195	2	165	-11.293	ppb	-11.293	-771.12	47	100	
Tl	205	2	165	0.016	ppb	0.016	21.63	317	2000	
Pb	208	2	165	-0.026	ppb	-0.026	-55.28	1377	5000	
Th	232	2	193	1.092	ppb	1.092	22.94	20588	2000	
U	238	2	193	25.396	ppb	25.396	0.53	273005	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	554039	0.56	579603	95.59	60	120	
Sc (IS)	45	1	HMI H2	18449990	0.73	17043241	108.25	60	120	
Sc (IS)	45	2	HMI He	884236	1.10	797526	110.87	60	120	
Sc (IS)	45	3	No Gas	31518645	0.46	28509182	110.56	60	120	
Ge Internal standard	72	1	HMI H2	10024224	0.35	9074377	110.47	60	120	
Ge Internal standard	72	2	HMI He	1289469	4.39	1113151	115.84	60	120	
In Internal standard	115	2	HMI He	3700064	0.75	3301939	112.06	60	120	
Ho-165	165	2	HMI He	14638806	0.34	12873604	113.71	60	120	
Ir (IS)	193	2	HMI He	11061394	0.77	10633585	104.02	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-2-Asd@5
Data File Name	224SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:53:43-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	21.670	ppb	21.670	8.76	2244292	50000	
Be	9	1	6	0.059	ppb	0.059	72.95	33	2000	
B	11	1	6	313.384	ppb	313.384	0.53	70815	2000	
Na	23	2	45	109921.944	ppb	109921.944	0.67	23333466	400000	
Mg	24	2	45	25453.959	ppb	25453.959	1.05	2538095	400000	
Al	27	2	45	7.455	ppb	7.455	25.75	507	400000	
Si	28	2	45	553.938	ppb	553.938	2.02	98589	10000	
P	31	2	45	-1.031	ppb	-1.031	-406.95	36	10000	
K	39	2	45	579.929	ppb	579.929	1.58	92039	400000	
Ca	40	1	45	56310.374	ppb	56310.374	0.73	213825817	400000	
Ti	47	2	45	-0.058	ppb	-0.058	-610.09	10	4000	
V	51	2	72	22.509	ppb	22.509	3.38	33501	2000	
Cr	52	2	72	9.812	ppb	9.812	1.70	18364	5000	
Mn	55	2	72	3.783	ppb	3.783	5.73	3374	10000	
Fe	56	1	72	369.718	ppb	369.718	0.22	3181252	10000	
(Fe)	57	2	72	329.010	ppb	329.010	0.91	11751	400000	
Co	59	2	72	0.170	ppb	0.170	18.29	597	2000	
Ni	60	2	72	5.395	ppb	5.395	7.33	6832	5000	
Cu	63	2	72	-0.245	ppb	-0.245	-49.04	1080	5000	
Zn	66	2	72	0.507	ppb	0.507	24.07	860	5000	
As	75	2	72	2.410	ppb	2.410	3.86	871	2000	
Se	78	1	72	2.781	ppb	2.781	2.10	899	2000	
Sr	88	2	72	2930.042	ppb	2930.042	0.29	2521569	4000	
Zr	90	2	72	-13.331	ppb	-13.331	-141.00	603	1000	
Nb	93	2	72	97.954	ppb	97.954	527.77	27	200	
Mo	95	2	115	8.063	ppb	8.063	4.18	8696	2000	
Pd	105	2	115	16.259	ppb	16.259	181.33	67	100	
Ag	107	2	115	0.020	ppb	0.020	104.84	117	100	
Cd	111	2	115	-0.016	ppb	-0.016	0.00	0	2000	
Sn	120	2	115	0.110	ppb	0.110	120.59	780	2000	
Sb	121	2	115	0.084	ppb	0.084	27.77	143	1000	
Ba	137	2	115	2.383	ppb	2.383	11.39	1057	5000	
W	182	2	165	-0.042	ppb	-0.042	-83.72	2614	100	
Pt	195	2	165	3.732	ppb	3.732	4445.84	53	100	
Tl	205	2	165	0.008	ppb	0.008	65.25	273	2000	
Pb	208	2	165	-0.028	ppb	-0.028	-33.66	1447	5000	
Th	232	2	193	-0.437	ppb	-0.437	-5.72	7786	2000	
U	238	2	193	4.785	ppb	4.785	0.43	55800	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	608267	0.12	579603	104.95	60	120	
Sc (IS)	45	1	HMI H2	19607490	0.59	17043241	115.05	60	120	
Sc (IS)	45	2	HMI He	927527	0.62	797526	116.30	60	120	
Sc (IS)	45	3	No Gas	33149830	0.79	28509182	116.28	60	120	
Ge Internal standard	72	1	HMI H2	10676248	0.43	9074377	117.65	60	120	
Ge Internal standard	72	2	HMI He	1453664	0.85	1113151	130.59	60	120	IS Failed
In Internal standard	115	2	HMI He	3982869	0.63	3301939	120.62	60	120	IS Failed
Ho-165	165	2	HMI He	15589203	0.50	12873604	121.09	60	120	IS Failed
Ir (IS)	193	2	HMI He	11950913	0.43	10633585	112.39	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-2-B MS
Data File Name	225SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-29T23:57:27-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	449.775	ppb	449.775	1.98	4539883	50000	
Be	9	1	6	44.510	ppb	44.510	4.65	10974	2000	
B	11	1	6	1598.998	ppb	1598.998	0.93	323818	2000	
Na	23	2	45	569071.351	ppb	569071.351	3.89	116472285	400000	
Mg	24	2	45	131747.896	ppb	131747.896	3.08	12561724	400000	
Al	27	2	45	745.323	ppb	745.323	6.05	17937	400000	
Si	28	2	45	2979.680	ppb	2979.680	4.27	467156	10000	
P	31	2	45	11.923	ppb	11.923	53.93	69	10000	
K	39	2	45	4220.953	ppb	4220.953	2.83	357232	400000	
Ca	40	1	45	290590.138	ppb	290590.138	0.65	1071984811	400000	
Ti	47	2	45	47.008	ppb	47.008	10.07	1323	4000	
V	51	2	72	162.644	ppb	162.644	2.45	218168	2000	
Cr	52	2	72	90.806	ppb	90.806	4.92	152631	5000	
Mn	55	2	72	57.908	ppb	57.908	6.78	40881	10000	
Fe	56	1	72	2622.062	ppb	2622.062	0.41	21073664	10000	
(Fe)	57	2	72	2516.076	ppb	2516.076	2.86	80929	400000	
Co	59	2	72	37.700	ppb	37.700	4.35	108424	2000	
Ni	60	2	72	49.334	ppb	49.334	4.55	41573	5000	
Cu	63	2	72	37.063	ppb	37.063	2.39	80843	5000	
Zn	66	2	72	39.674	ppb	39.674	4.72	15805	5000	
As	75	2	72	51.116	ppb	51.116	4.53	16563	2000	
Se	78	1	72	55.012	ppb	55.012	0.54	16775	2000	
Sr	88	2	72	15324.034	ppb	15324.034	3.70	12350917	4000	
Zr	90	2	72	1241.055	ppb	1241.055	19.45	7179	1000	
Nb	93	2	72	72.790	ppb	72.790	788.85	23	200	
Mo	95	2	115	85.216	ppb	85.216	3.18	86225	2000	
Pd	105	2	115	149.790	ppb	149.790	39.15	300	100	
Ag	107	2	115	38.300	ppb	38.300	2.66	130609	100	
Cd	111	2	115	39.720	ppb	39.720	1.70	19079	2000	
Sn	120	2	115	41.896	ppb	41.896	2.17	53751	2000	
Sb	121	2	115	42.207	ppb	42.207	3.65	56932	1000	
Ba	137	2	115	54.632	ppb	54.632	3.83	21288	5000	
W	182	2	165	1.626	ppb	1.626	8.16	9283	100	
Pt	195	2	165	148.896	ppb	148.896	91.16	87	100	
Tl	205	2	165	38.704	ppb	38.704	2.18	288073	2000	
Pb	208	2	165	38.677	ppb	38.677	2.45	395377	5000	
Th	232	2	193	48.037	ppb	48.037	0.68	441280	2000	
U	238	2	193	68.908	ppb	68.908	0.90	757892	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	557710	0.50	579603	96.22	60	120	
Sc (IS)	45	1	HMI H2	19062745	0.43	17043241	111.85	60	120	
Sc (IS)	45	2	HMI He	904525	1.89	797526	113.42	60	120	
Sc (IS)	45	3	No Gas	31985866	0.63	28509182	112.19	60	120	
Ge Internal standard	72	1	HMI H2	10332939	0.46	9074377	113.87	60	120	
Ge Internal standard	72	2	HMI He	1362337	2.55	1113151	122.39	60	120	IS Failed
In Internal standard	115	2	HMI He	3762504	1.02	3301939	113.95	60	120	
Ho-165	165	2	HMI He	15023673	1.51	12873604	116.70	60	120	
Ir (IS)	193	2	HMI He	11324329	0.27	10633585	106.50	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-2-C MSD
Data File Name	226SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:01:14-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	464.850	ppb	464.850	0.83	4659745	50000	
Be	9	1	6	43.970	ppb	43.970	4.37	11031	2000	
B	11	1	6	1593.035	ppb	1593.035	0.69	328219	2000	
Na	23	2	45	574740.929	ppb	574740.929	0.92	115309102	400000	
Mg	24	2	45	133529.648	ppb	133529.648	0.85	12478649	400000	
Al	27	2	45	769.625	ppb	769.625	1.21	18150	400000	
Si	28	2	45	3020.558	ppb	3020.558	0.99	464120	10000	
P	31	2	45	9.509	ppb	9.509	20.85	61	10000	
K	39	2	45	4231.870	ppb	4231.870	0.48	350924	400000	
Ca	40	1	45	292830.210	ppb	292830.210	0.22	1068220491	400000	
Ti	47	2	45	40.331	ppb	40.331	19.56	1113	4000	
V	51	2	72	171.425	ppb	171.425	2.13	213760	2000	
Cr	52	2	72	97.813	ppb	97.813	3.06	152869	5000	
Mn	55	2	72	61.469	ppb	61.469	3.87	40339	10000	
Fe	56	1	72	2640.884	ppb	2640.884	0.96	21048397	10000	
(Fe)	57	2	72	2690.465	ppb	2690.465	1.13	80477	400000	
Co	59	2	72	39.819	ppb	39.819	2.43	106518	2000	
Ni	60	2	72	53.326	ppb	53.326	3.28	41636	5000	
Cu	63	2	72	39.678	ppb	39.678	1.75	80388	5000	
Zn	66	2	72	41.069	ppb	41.069	7.05	15187	5000	
As	75	2	72	54.734	ppb	54.734	2.30	16495	2000	
Se	78	1	72	55.090	ppb	55.090	1.39	16661	2000	
Sr	88	2	72	16157.349	ppb	16157.349	2.67	12111272	4000	
Zr	90	2	72	986.111	ppb	986.111	12.80	5441	1000	
Nb	93	2	72	98.143	ppb	98.143	268.08	23	200	
Mo	95	2	115	85.289	ppb	85.289	2.26	84996	2000	
Pd	105	2	115	131.059	ppb	131.059	9.82	263	100	
Ag	107	2	115	38.320	ppb	38.320	0.79	128710	100	
Cd	111	2	115	40.708	ppb	40.708	2.64	19256	2000	
Sn	120	2	115	42.184	ppb	42.184	1.58	53300	2000	
Sb	121	2	115	41.807	ppb	41.807	0.21	55541	1000	
Ba	137	2	115	54.166	ppb	54.166	2.13	20791	5000	
W	182	2	165	1.589	ppb	1.589	4.69	9026	100	
Pt	195	2	165	69.314	ppb	69.314	37.31	67	100	
Tl	205	2	165	39.191	ppb	39.191	1.15	288142	2000	
Pb	208	2	165	39.268	ppb	39.268	0.64	396501	5000	
Th	232	2	193	51.381	ppb	51.381	1.15	462139	2000	
U	238	2	193	69.442	ppb	69.442	1.73	749006	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	567390	0.29	579603	97.89	60	120	
Sc (IS)	45	1	HMI H2	18850524	0.19	17043241	110.60	60	120	
Sc (IS)	45	2	HMI He	886338	1.15	797526	111.14	60	120	
Sc (IS)	45	3	No Gas	32234954	0.23	28509182	113.07	60	120	
Ge Internal standard	72	1	HMI H2	10248078	0.90	9074377	112.93	60	120	
Ge Internal standard	72	2	HMI He	1266871	2.88	1113151	113.81	60	120	
In Internal standard	115	2	HMI He	3705113	0.32	3301939	112.21	60	120	
Ho-165	165	2	HMI He	14836771	0.73	12873604	115.25	60	120	
Ir (IS)	193	2	HMI He	11106917	1.14	10633585	104.45	60	120	

Sample Report

Sample Table

Sample Name	280-165879-A-2-A pds
Data File Name	227SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:05:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	633.169	ppb	633.169	1.34	5181795	50000	
Be	9	1	6	223.509	ppb	223.509	0.22	55061	2000	
B	11	1	6	1553.853	ppb	1553.853	1.18	314790	2000	
Na	23	2	45	567670.005	ppb	567670.005	0.75	110625225	400000	
Mg	24	2	45	130614.173	ppb	130614.173	0.67	11856973	400000	
Al	27	2	45	1845.960	ppb	1845.960	2.20	41852	400000	
Si	28	2	45	3049.436	ppb	3049.436	1.30	454987	10000	
P	31	2	45	2001.449	ppb	2001.449	0.72	4993	10000	
K	39	2	45	3507.684	ppb	3507.684	1.30	290170	400000	
Ca	40	1	45	285093.733	ppb	285093.733	0.64	1018135611	400000	
Ti	47	2	45	219.991	ppb	219.991	10.00	5861	4000	
V	51	2	72	345.918	ppb	345.918	1.02	406159	2000	
Cr	52	2	72	263.960	ppb	263.960	0.25	388517	5000	
Mn	55	2	72	225.836	ppb	225.836	0.94	138794	10000	
Fe	56	1	72	1852.634	ppb	1852.634	1.00	14402189	10000	
(Fe)	57	2	72	1877.612	ppb	1877.612	3.14	53145	400000	
Co	59	2	72	205.881	ppb	205.881	0.91	519915	2000	
Ni	60	2	72	214.244	ppb	214.244	0.50	152499	5000	
Cu	63	2	72	209.007	ppb	209.007	0.95	394112	5000	
Zn	66	2	72	202.565	ppb	202.565	0.79	68689	5000	
As	75	2	72	223.800	ppb	223.800	0.79	63600	2000	
Se	78	1	72	216.797	ppb	216.797	1.19	63725	2000	
Sr	88	2	72	16328.727	ppb	16328.727	0.58	11560672	4000	
Zr	90	2	72	2400.851	ppb	2400.851	11.16	11695	1000	
Nb	93	2	72	304.019	ppb	304.019	143.56	30	200	
Mo	95	2	115	264.250	ppb	264.250	0.78	251712	2000	
Pd	105	2	115	334.676	ppb	334.676	20.04	593	100	
Ag	107	2	115	51.403	ppb	51.403	1.29	165073	100	
Cd	111	2	115	203.397	ppb	203.397	1.31	91976	2000	
Sn	120	2	115	213.510	ppb	213.510	1.64	255668	2000	
Sb	121	2	115	222.785	ppb	222.785	1.70	282920	1000	
Ba	137	2	115	228.986	ppb	228.986	1.25	83826	5000	
W	182	2	165	80.171	ppb	80.171	0.78	310682	100	
Pt	195	2	165	225.526	ppb	225.526	19.97	100	100	
Tl	205	2	165	222.304	ppb	222.304	0.25	1566062	2000	
Pb	208	2	165	200.691	ppb	200.691	0.30	1936319	5000	
Th	232	2	193	143.791	ppb	143.791	17.61	1224234	2000	
U	238	2	193	276.495	ppb	276.495	0.80	2869525	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	557856	0.69	579603	96.25	60	120	
Sc (IS)	45	1	HMI H2	18454383	0.61	17043241	108.28	60	120	
Sc (IS)	45	2	HMI He	860825	0.61	797526	107.94	60	120	
Sc (IS)	45	3	No Gas	29825492	1.32	28509182	104.62	60	120	
Ge Internal standard	72	1	HMI H2	9970362	0.55	9074377	109.87	60	120	
Ge Internal standard	72	2	HMI He	1196007	0.81	1113151	107.44	60	120	
In Internal standard	115	2	HMI He	3542996	0.71	3301939	107.30	60	120	
Ho-165	165	2	HMI He	14225057	0.50	12873604	110.50	60	120	
Ir (IS)	193	2	HMI He	10687883	0.85	10633585	100.51	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	228_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:08:43-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	55.211	ppb	3.064	2269502	100	55.2	90	110	>+\-10%
Be	9	1	6	51.417	ppb	4.087	13552	50	102.8	90	110	
B	11	1	6	515.472	ppb	1.990	112932	50	1030.9	90	110	>+\-10%
Na	23	2	45	49819.869	ppb	0.878	9940275	51000	97.7	90	110	
Mg	24	2	45	9422.404	ppb	1.138	904021	11000	85.7	90	110	>+\-10%
Al	27	2	45	949.658	ppb	1.396	21604	1000	95.0	90	110	
Si	28	2	45	45.382	ppb	1.714	17363	500	9.1	90	110	>+\-10%
P	31	2	45	2349.499	ppb	0.940	5835	2500	94.0	90	110	
K	39	2	45	9873.603	ppb	0.177	732908	11000	89.8	90	110	>+\-10%
Ca	40	1	45	11364.893	ppb	0.244	40862708	11000	103.3	90	110	
(Ca)	44	1	45	10759.827	ppb	0.746	1329449	11000	97.8	90	110	
Ti	47	2	45	54.727	ppb	10.466	1460	50	109.5	90	110	
V	51	2	72	50.019	ppb	2.029	61303	50	100.0	90	110	
Cr	52	2	72	50.856	ppb	2.554	77341	50	101.7	90	110	
Mn	55	2	72	48.057	ppb	2.401	30662	50	96.1	90	110	
Fe	56	1	72	963.121	ppb	0.693	7666141	1000	96.3	90	110	
(Fe)	56	2	72	894.429	ppb	0.986	1140781	1000	89.4	90	110	>+\-10%
(Fe)	57	2	72	967.973	ppb	3.132	28318	1000	96.8	90	110	
Co	59	2	72	49.390	ppb	1.219	127974	50	98.8	90	110	
Ni	60	2	72	53.271	ppb	2.828	40296	50	106.5	90	110	
Cu	63	2	72	49.628	ppb	0.650	97039	50	99.3	90	110	
Zn	66	2	72	49.714	ppb	0.871	17707	50	99.4	90	110	
As	75	2	72	49.644	ppb	0.843	14496	50	99.3	90	110	
Se	78	1	72	48.071	ppb	1.477	14376	50	96.1	90	110	
Sr	88	2	72	108.736	ppb	1.227	79078	100	108.7	90	110	
Zr	90	2	72	132.449	ppb	17.266	1203	50	264.9	90	110	>+\-10%
Nb	93	2	72	1021.340	ppb	104.713	60	100	1021.3	90	110	>+\-10%
Mo	95	2	115	52.332	ppb	1.674	52068	50	104.7	90	110	
Pd	105	2	115	138.886	ppb	12.180	277	50	277.8	90	110	>+\-10%
Ag	107	2	115	49.868	ppb	0.740	167152	50	99.7	90	110	
Cd	111	2	115	49.431	ppb	2.556	23338	50	98.9	90	110	
Sn	120	2	115	52.646	ppb	1.049	66238	50	105.3	90	110	
Sb	121	2	115	52.796	ppb	1.888	69987	50	105.6	90	110	
Ba	137	2	115	53.297	ppb	3.600	20417	50	106.6	90	110	
W	182	2	165	51.260	ppb	0.341	204150	50	102.5	90	110	
Pt	195	2	165	215.186	ppb	50.802	100	50	430.4	90	110	>+\-10%
Tl	205	2	165	49.477	ppb	0.502	356723	50	99.0	90	110	
Pb	208	2	165	49.185	ppb	0.693	486677	50	98.4	90	110	
Th	232	2	193	43.555	ppb	6.089	405754	50	87.1	90	110	>+\-10%
U	238	2	193	52.224	ppb	0.557	581219	50	104.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	596274	0.39	579603	102.88	60	120	
Sc (IS)	45	1	HMI H2	18493828	0.55	17043241	108.51	60	120	
Sc (IS)	45	2	HMI He	857899	0.72	797526	107.57	60	120	
Sc (IS)	45	3	No Gas	30869061	0.49	28509182	108.28	60	120	
Ge Internal standard	72	1	HMI H2	10130268	1.11	9074377	111.64	60	120	
Ge Internal standard	72	2	HMI He	1226665	0.27	1113151	110.20	60	120	
In Internal standard	115	2	HMI He	3697981	1.52	3301939	111.99	60	120	
Ho-165	165	2	HMI He	14551972	0.86	12873604	113.04	60	120	
Ir (IS)	193	2	HMI He	11457257	0.78	10633585	107.75	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	229_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:12:27-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-43.729	ppb	-12.2	1734020	10	
Be	9	1	6	0.296	ppb	31.7	97	0.5	
B	11	1	6	25.021	ppb	4.5	7455	0.5	>RL
Na	23	2	45	-582.033	ppb	-1.2	175086	25	
Mg	24	2	45	-436.782	ppb	-1.2	16065	25	
Al	27	2	45	-0.588	ppb	-362.6	283	15	
K	39	2	45	-103.454	ppb	-7.5	36911	50	
Ti	47	2	45	0.107	ppb	554.9	13	0.5	
V	51	2	72	-0.618	ppb	-19.5	503	1	
Cr	52	2	72	0.015	ppb	107.4	727	1	
Mn	55	2	72	-0.123	ppb	-78.7	390	0.5	
(Fe)	57	2	72	4.155	ppb	53.3	557	25	
Co	59	2	72	0.057	ppb	17.2	210	0.5	
Ni	60	2	72	2.635	ppb	9.4	3747	1	>RL
Cu	63	2	72	-0.177	ppb	-34.9	1037	1	
Zn	66	2	72	0.332	ppb	188.6	660	5	
As	75	2	72	0.024	ppb	95.9	40	1	
Se	78	1	72	0.042	ppb	147.3	35	1	
Sr	88	2	72	1.184	ppb	9.2	970	0.5	>RL
Zr	90	2	72	-10.348	ppb	-218.1	520	1	
Nb	93	2	72	43.894	ppb	1126.2	20	2	>RL
Mo	95	2	115	0.628	ppb	14.7	687	0.5	>RL
Pd	105	2	115	9.174	ppb	283.3	50	1	>RL
Ag	107	2	115	0.053	ppb	17.3	220	1	
Cd	111	2	115	0.026	ppb	137.5	20	0.5	
Sn	120	2	115	1.011	ppb	8.6	1854	1	>RL
Sb	121	2	115	0.347	ppb	33.8	483	0.6	
Ba	137	2	115	0.128	ppb	54.9	120	0.5	
W	182	2	165	0.448	ppb	19.7	4371	1	
Pt	195	2	165	-66.678	ppb	-221.6	33	1	
Tl	205	2	165	0.072	ppb	25.1	717	0.1	
Pb	208	2	165	0.020	ppb	55.9	1823	0.5	
Th	232	2	193	1.019	ppb	4.4	21049	1	>RL
U	238	2	193	0.106	ppb	12.6	1477	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	605962	1.02	579603	104.55	60	120	
Sc (IS)	45	1	HMI H2	18326598	0.43	17043241	107.53	60	120	
Sc (IS)	45	2	HMI He	844444	0.79	797526	105.88	60	120	
Sc (IS)	45	3	No Gas	30769380	1.36	28509182	107.93	60	120	
Ge Internal standard	72	1	HMI H2	10053832	0.23	9074377	110.79	60	120	
Ge Internal standard	72	2	HMI He	1218211	0.54	1113151	109.44	60	120	
In Internal standard	115	2	HMI He	3710304	0.62	3301939	112.37	60	120	
Ho-165	165	2	HMI He	14560340	0.68	12873604	113.10	60	120	
Ir (IS)	193	2	HMI He	11677577	1.06	10633585	109.82	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	230LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:16:12-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-41.504	ppb	-5.831	1768624	50	-83.0	70	130	>+/-30%
Be	9	1	6	1.019	ppb	17.975	293	1	101.9	70	130	
Na	23	2	45	-660.550	ppb	-1.101	159626	50	-1321.1	70	130	>+/-30%
Mg	24	2	45	-376.565	ppb	-2.897	21334	50	-753.1	70	130	>+/-30%
Al	27	2	45	43.960	ppb	6.330	1263	50	87.9	70	130	
K	39	2	45	-20.519	ppb	-16.036	42471	100	-20.5	70	130	>+/-30%
V	51	2	72	4.208	ppb	8.724	6251	5	84.2	70	130	
Cr	52	2	72	2.052	ppb	5.329	3771	2	102.6	70	130	
Mn	55	2	72	0.690	ppb	36.060	897	1	69.0	70	130	>+/-30%
(Fe)	57	2	72	45.944	ppb	15.770	1750	50	91.9	70	130	
Co	59	2	72	1.092	ppb	7.806	2867	1	109.2	70	130	
Ni	60	2	72	3.358	ppb	14.066	4261	2	167.9	70	130	>+/-30%
Cu	63	2	72	1.990	ppb	10.709	5178	2	99.5	70	130	
Zn	66	2	72	9.611	ppb	7.376	3837	10	96.1	70	130	
As	75	2	72	5.235	ppb	3.732	1546	5	104.7	70	130	
Se	78	1	72	5.072	ppb	5.249	1548	5	101.4	70	130	
Sr	88	2	72	1.574	ppb	4.236	1250	1	157.4	70	130	>+/-30%
Zr	90	2	72	49.069	ppb	16.599	800	0.5	9813.7	70	130	>+/-30%
Nb	93	2	72	42.953	ppb	1523.046	20	2	2147.6	70	130	>+/-30%
Mo	95	2	115	2.328	ppb	10.357	2390	2	116.4	70	130	
Pd	105	2	115	-7.930	ppb	-70.732	20	1	-793.0	70	130	>+/-30%
Ag	107	2	115	1.093	ppb	6.328	3727	1	109.3	70	130	
Cd	111	2	115	1.024	ppb	20.001	493	1	102.4	70	130	
Sn	120	2	115	10.521	ppb	2.139	13800	10	105.2	70	130	
Sb	121	2	115	2.147	ppb	0.943	2887	2	107.3	70	130	
Ba	137	2	115	1.046	ppb	14.886	473	1	104.6	70	130	
W	182	2	165	5.189	ppb	1.117	23158	1	518.9	70	130	>+/-30%
Pt	195	2	165	-81.461	ppb	-51.250	30	1	-8146.1	70	130	>+/-30%
Tl	205	2	165	1.085	ppb	5.720	8072	1	108.5	70	130	
Pb	208	2	165	1.037	ppb	2.841	11929	1	103.7	70	130	
Th	232	2	193	5.574	ppb	6.890	64073	2	278.7	70	130	>+/-30%
U	238	2	193	1.092	ppb	7.094	12849	1	109.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	612937	0.52	579603	105.75	60	120	
Sc (IS)	45	1	HMI H2	18474690	0.95	17043241	108.40	60	120	
Sc (IS)	45	2	HMI He	841858	0.24	797526	105.56	60	120	
Sc (IS)	45	3	No Gas	31167053	0.63	28509182	109.32	60	120	
Ge Internal standard	72	1	HMI H2	10208122	0.69	9074377	112.49	60	120	
Ge Internal standard	72	2	HMI He	1216911	0.37	1113151	109.32	60	120	
In Internal standard	115	2	HMI He	3722732	0.81	3301939	112.74	60	120	
Ho-165	165	2	HMI He	14648755	0.25	12873604	113.79	60	120	
Ir (IS)	193	2	HMI He	11858120	0.87	10633585	111.52	60	120	

Sample Report

Sample Table

Sample Name	280-165805-C-2-B
Data File Name	231SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:20:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	261.816	ppb	261.816	0.39	3523252	50000	
Be	9	1	6	30.414	ppb	30.414	2.41	6772	2000	
B	11	1	6	477.495	ppb	477.495	1.65	88416	2000	
Na	23	2	45	107518.252	ppb	107518.252	1.16	21280000	400000	
Mg	24	2	45	187829.944	ppb	187829.944	0.60	17100858	400000	
Al	27	2	45	398913.904	ppb	398913.904	1.07	9018719	400000	
Si	28	2	45	5645.193	ppb	5645.193	1.17	836665	10000	
P	31	2	45	25257.014	ppb	25257.014	0.15	62863	10000	
K	39	2	45	31362.563	ppb	31362.563	1.05	2248028	400000	
Ca	40	1	45	427627.183	ppb	427627.183	0.05	1548172457	400000	
Ti	47	2	45	5030.287	ppb	5030.287	0.69	134325	4000	
V	51	2	72	1853.803	ppb	1853.803	1.43	2086121	2000	
Cr	52	2	72	847.540	ppb	847.540	3.22	1197378	5000	
Mn	55	2	72	20440.094	ppb	20440.094	0.71	12029862	10000	
Fe	56	1	72	576570.481	ppb	576570.481	0.98	4207434817	10000	>LDR
(Fe)	57	2	72	611635.517	ppb	611635.517	0.81	16502272	400000	
Co	59	2	72	306.561	ppb	306.561	0.39	743810	2000	
Ni	60	2	72	665.292	ppb	665.292	0.85	451301	5000	
Cu	63	2	72	1296.340	ppb	1296.340	0.26	2342009	5000	
Zn	66	2	72	1445.129	ppb	1445.129	0.26	467695	5000	
As	75	2	72	69.099	ppb	69.099	0.29	18890	2000	
Se	78	1	72	4.926	ppb	4.926	3.22	1391	2000	
Sr	88	2	72	6030.488	ppb	6030.488	0.90	4102315	4000	
Zr	90	2	72	6653.169	ppb	6653.169	5.05	30189	1000	>LDR
Nb	93	2	72	33952.372	ppb	33952.372	14.83	1313	200	>LDR
Mo	95	2	115	5.335	ppb	5.335	4.97	5051	2000	
Pd	105	2	115	211.564	ppb	211.564	12.43	380	100	
Ag	107	2	115	4.610	ppb	4.610	1.37	14587	100	
Cd	111	2	115	4.629	ppb	4.629	2.91	2064	2000	
Sn	120	2	115	0.483	ppb	0.483	22.43	1120	2000	
Sb	121	2	115	0.311	ppb	0.311	18.45	410	1000	
Ba	137	2	115	11602.136	ppb	11602.136	1.30	4170792	5000	
W	182	2	165	3.096	ppb	3.096	5.95	14451	100	
Pt	195	2	165	298.145	ppb	298.145	59.63	117	100	
Tl	205	2	165	2.974	ppb	2.974	3.08	21152	2000	
Pb	208	2	165	180.471	ppb	180.471	1.24	1741905	5000	
Th	232	2	193	226.979	ppb	226.979	0.47	1936842	2000	
U	238	2	193	76.275	ppb	76.275	0.64	795288	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	503272	0.47	579603	86.83	60	120	
Sc (IS)	45	1	HMI H2	18709327	0.76	17043241	109.78	60	120	
Sc (IS)	45	2	HMI He	864615	1.30	797526	108.41	60	120	
Sc (IS)	45	3	No Gas	32220917	0.80	28509182	113.02	60	120	
Ge Internal standard	72	1	HMI H2	9437722	0.86	9074377	104.00	60	120	
Ge Internal standard	72	2	HMI He	1149161	1.00	1113151	103.23	60	120	
In Internal standard	115	2	HMI He	3482286	1.51	3301939	105.46	60	120	
Ho-165	165	2	HMI He	14229900	0.89	12873604	110.54	60	120	
Ir (IS)	193	2	HMI He	10735687	0.13	10633585	100.96	60	120	

Sample Report

Sample Table

Sample Name	280-165805-C-4-B
Data File Name	232SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:23:50-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	920.033	ppb	920.033	1.42	7406182	50000	
Be	9	1	6	56.578	ppb	56.578	4.33	12281	2000	
B	11	1	6	481.187	ppb	481.187	0.53	86941	2000	
Na	23	2	45	97196.683	ppb	97196.683	0.37	20760864	400000	
Mg	24	2	45	403739.076	ppb	403739.076	1.12	39541334	400000	
Al	27	2	45	776734.408	ppb	776734.408	0.61	18923581	400000	
Si	28	2	45	5689.019	ppb	5689.019	0.21	908515	10000	
P	31	2	45	27751.736	ppb	27751.736	0.68	74425	10000	
K	39	2	45	152649.569	ppb	152649.569	0.37	11602513	400000	
Ca	40	1	45	587425.157	ppb	587425.157	1.09	2272073673	400000	
Ti	47	2	45	10573.350	ppb	10573.350	0.70	304206	4000	
V	51	2	72	3454.597	ppb	3454.597	0.78	3962451	2000	
Cr	52	2	72	1735.122	ppb	1735.122	0.78	2497805	5000	
Mn	55	2	72	53695.006	ppb	53695.006	0.72	32216979	10000	>LDR
Fe	56	1	72	OR	ppb	OR	#VALUE!	OR	10000	
(Fe)	57	2	72	1174866.322	ppb	1174866.322	1.14	32317630	400000	
Co	59	2	72	1098.789	ppb	1098.789	0.34	2717829	2000	
Ni	60	2	72	1671.479	ppb	1671.479	0.36	1153250	5000	
Cu	63	2	72	1460.321	ppb	1460.321	0.71	2689594	5000	
Zn	66	2	72	3572.493	ppb	3572.493	0.10	1177947	5000	
As	75	2	72	326.652	ppb	326.652	0.78	90920	2000	
Se	78	1	72	3.631	ppb	3.631	6.04	1037	2000	
Sr	88	2	72	7207.678	ppb	7207.678	1.20	4998853	4000	
Zr	90	2	72	6872.080	ppb	6872.080	2.72	31778	1000	>LDR
Nb	93	2	72	51024.794	ppb	51024.794	8.35	2004	200	>LDR
Mo	95	2	115	22.130	ppb	22.130	3.77	20570	2000	
Pd	105	2	115	500.322	ppb	500.322	14.69	847	100	>LDR
Ag	107	2	115	4.606	ppb	4.606	4.40	14430	100	
Cd	111	2	115	4.878	ppb	4.878	7.01	2154	2000	
Sn	120	2	115	1.192	ppb	1.192	15.57	1934	2000	
Sb	121	2	115	0.191	ppb	0.191	18.63	257	1000	
Ba	137	2	115	20297.582	ppb	20297.582	1.23	7226402	5000	
W	182	2	165	2.747	ppb	2.747	3.69	12976	100	
Pt	195	2	165	129.787	ppb	129.787	218.28	77	100	
Tl	205	2	165	13.256	ppb	13.256	1.12	92665	2000	
Pb	208	2	165	418.068	ppb	418.068	0.82	3992419	5000	
Th	232	2	193	673.614	ppb	673.614	0.36	5476282	2000	
U	238	2	193	149.986	ppb	149.986	0.36	1495142	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	491181	0.94	579603	84.74	60	120	
Sc (IS)	45	1	HMI H2	19989577	0.43	17043241	117.29	60	120	
Sc (IS)	45	2	HMI He	931633	1.24	797526	116.82	60	120	
Sc (IS)	45	3	No Gas	33141565	1.10	28509182	116.25	60	120	
Ge Internal standard	72	1	HMI H2	9497308	0.17	9074377	104.66	60	120	
Ge Internal standard	72	2	HMI He	1171551	0.67	1113151	105.25	60	120	
In Internal standard	115	2	HMI He	3448388	0.47	3301939	104.44	60	120	
Ho-165	165	2	HMI He	14086368	1.13	12873604	109.42	60	120	
Ir (IS)	193	2	HMI He	10265771	0.61	10633585	96.54	60	120	

Sample Report

Sample Table

Sample Name	280-165805-A-7-C
Data File Name	233SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:27:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	525.655	ppb	525.655	0.29	5162896	50000	
Be	9	1	6	22.178	ppb	22.178	3.71	5311	2000	
B	11	1	6	391.549	ppb	391.549	1.06	78243	2000	
Na	23	2	45	68369.185	ppb	68369.185	0.67	14781934	400000	
Mg	24	2	45	213370.700	ppb	213370.700	1.01	21045336	400000	
Al	27	2	45	398086.568	ppb	398086.568	0.18	9755183	400000	
Si	28	2	45	6797.944	ppb	6797.944	0.57	1089587	10000	
P	31	2	45	13424.112	ppb	13424.112	0.65	36230	10000	
K	39	2	45	72406.944	ppb	72406.944	0.84	5561401	400000	
Ca	40	1	45	304669.477	ppb	304669.477	0.17	1121622170	400000	
Ti	47	2	45	9299.557	ppb	9299.557	0.74	269110	4000	
V	51	2	72	2321.544	ppb	2321.544	0.57	2744742	2000	
Cr	52	2	72	1190.279	ppb	1190.279	1.32	1766126	5000	
Mn	55	2	72	16521.592	ppb	16521.592	0.83	10216629	10000	
Fe	56	1	72	598019.229	ppb	598019.229	0.19	4435529961	10000	>LDR
(Fe)	57	2	72	643688.796	ppb	643688.796	0.44	18247330	400000	
Co	59	2	72	354.006	ppb	354.006	0.43	902450	2000	
Ni	60	2	72	763.868	ppb	763.868	0.15	544169	5000	
Cu	63	2	72	907.690	ppb	907.690	1.10	1723337	5000	
Zn	66	2	72	1712.846	ppb	1712.846	0.26	582330	5000	
As	75	2	72	122.566	ppb	122.566	1.52	35178	2000	
Se	78	1	72	9.076	ppb	9.076	2.24	2587	2000	
Sr	88	2	72	3503.605	ppb	3503.605	0.70	2504271	4000	
Zr	90	2	72	11268.715	ppb	11268.715	11.24	53371	1000	>LDR
Nb	93	2	72	73020.267	ppb	73020.267	6.98	2947	200	>LDR
Mo	95	2	115	34.311	ppb	34.311	1.07	33188	2000	
Pd	105	2	115	175.084	ppb	175.084	17.05	330	100	
Ag	107	2	115	2.123	ppb	2.123	2.90	6952	100	
Cd	111	2	115	2.972	ppb	2.972	11.04	1370	2000	
Sn	120	2	115	0.430	ppb	0.430	10.97	1090	2000	
Sb	121	2	115	0.260	ppb	0.260	10.55	357	1000	
Ba	137	2	115	8771.740	ppb	8771.740	0.20	3253481	5000	
W	182	2	165	2.593	ppb	2.593	1.88	12656	100	
Pt	195	2	165	177.483	ppb	177.483	86.58	90	100	
Tl	205	2	165	6.282	ppb	6.282	1.65	44951	2000	
Pb	208	2	165	197.212	ppb	197.212	0.21	1924499	5000	
Th	232	2	193	349.220	ppb	349.220	0.53	2959402	2000	
U	238	2	193	298.538	ppb	298.538	0.43	3096501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	540975	1.00	579603	93.34	60	120	
Sc (IS)	45	1	HMI H2	19024091	0.99	17043241	111.62	60	120	
Sc (IS)	45	2	HMI He	937068	0.96	797526	117.50	60	120	
Sc (IS)	45	3	No Gas	33288125	1.10	28509182	116.76	60	120	
Ge Internal standard	72	1	HMI H2	9592582	0.62	9074377	105.71	60	120	
Ge Internal standard	72	2	HMI He	1207401	0.71	1113151	108.47	60	120	
In Internal standard	115	2	HMI He	3592433	0.71	3301939	108.80	60	120	
Ho-165	165	2	HMI He	14387462	0.56	12873604	111.76	60	120	
Ir (IS)	193	2	HMI He	10682320	0.56	10633585	100.46	60	120	

Sample Report

Sample Table

Sample Name	160-46738-A-8-A
Data File Name	234SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:31:25-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	16.829	ppb	16.829	31.41	2200646	50000	
Be	9	1	6	0.270	ppb	0.270	98.29	90	2000	
B	11	1	6	20.537	ppb	20.537	6.30	6451	2000	
Na	23	2	45	1064.483	ppb	1064.483	3.60	535783	400000	
Mg	24	2	45	14590.647	ppb	14590.647	0.85	1476903	400000	
Al	27	2	45	867.256	ppb	867.256	1.21	21308	400000	
Si	28	2	45	645.160	ppb	645.160	1.63	112628	10000	
P	31	2	45	54.857	ppb	54.857	22.80	185	10000	
K	39	2	45	9073.439	ppb	9073.439	0.81	730274	400000	
Ca	40	1	45	32430.045	ppb	32430.045	3.57	116952035	400000	
Ti	47	2	45	27.130	ppb	27.130	5.33	787	4000	
V	51	2	72	2.111	ppb	2.111	8.69	4244	2000	
Cr	52	2	72	30.286	ppb	30.286	3.92	52001	5000	
Mn	55	2	72	50.970	ppb	50.970	3.46	36457	10000	
Fe	56	1	72	1520.332	ppb	1520.332	3.89	11981777	10000	
(Fe)	57	2	72	1311.637	ppb	1311.637	2.80	42879	400000	
Co	59	2	72	1.782	ppb	1.782	2.13	5248	2000	
Ni	60	2	72	34.367	ppb	34.367	2.65	29918	5000	
Cu	63	2	72	11.349	ppb	11.349	4.88	26095	5000	
Zn	66	2	72	469.437	ppb	469.437	1.28	182392	5000	
As	75	2	72	0.717	ppb	0.717	26.32	272	2000	
Se	78	1	72	0.132	ppb	0.132	27.91	61	2000	
Sr	88	2	72	34.860	ppb	34.860	3.65	28533	4000	
Zr	90	2	72	450.851	ppb	450.851	2.57	3050	1000	
Nb	93	2	72	6619.476	ppb	6619.476	10.80	323	200	>LDR
Mo	95	2	115	0.886	ppb	0.886	7.11	977	2000	
Pd	105	2	115	-8.254	ppb	-8.254	-115.54	20	100	
Ag	107	2	115	2.515	ppb	2.515	2.32	8793	100	
Cd	111	2	115	0.392	ppb	0.392	18.67	200	2000	
Sn	120	2	115	1.062	ppb	1.062	6.70	1984	2000	
Sb	121	2	115	2.336	ppb	2.336	7.30	3237	1000	
Ba	137	2	115	191.475	ppb	191.475	2.16	75974	5000	
W	182	2	165	2.586	ppb	2.586	3.07	13056	100	
Pt	195	2	165	-138.298	ppb	-138.298	-45.90	17	100	
Tl	205	2	165	0.024	ppb	0.024	64.96	380	2000	
Pb	208	2	165	29.549	ppb	29.549	1.41	299543	5000	
Th	232	2	193	6.418	ppb	6.418	14.12	68619	2000	
U	238	2	193	9.437	ppb	9.437	0.46	103819	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	603980	1.15	579603	104.21	60	120	
Sc (IS)	45	1	HMI H2	18617923	2.44	17043241	109.24	60	120	
Sc (IS)	45	2	HMI He	925244	0.43	797526	116.01	60	120	
Sc (IS)	45	3	No Gas	32913005	0.21	28509182	115.45	60	120	
Ge Internal standard	72	1	HMI H2	10094086	2.09	9074377	111.24	60	120	
Ge Internal standard	72	2	HMI He	1376464	0.68	1113151	123.65	60	120	IS Failed
In Internal standard	115	2	HMI He	3839513	0.28	3301939	116.28	60	120	
Ho-165	165	2	HMI He	14875988	0.51	12873604	115.55	60	120	
Ir (IS)	193	2	HMI He	11301269	0.33	10633585	106.28	60	120	

Sample Report

Sample Table

Sample Name	160-46738-A-12-A
Data File Name	235SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:35:10-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	12.650	ppb	12.650	22.59	2167116	50000	
Be	9	1	6	0.112	ppb	0.112	20.79	47	2000	
B	11	1	6	133.521	ppb	133.521	3.87	30808	2000	
Na	23	2	45	5426.100	ppb	5426.100	2.08	1435118	400000	
Mg	24	2	45	23261.128	ppb	23261.128	0.87	2299916	400000	
Al	27	2	45	92.170	ppb	92.170	15.15	2534	400000	
Si	28	2	45	269.079	ppb	269.079	3.24	53304	10000	
P	31	2	45	16.277	ppb	16.277	6.78	81	10000	
K	39	2	45	3598.821	ppb	3598.821	0.28	316137	400000	
Ca	40	1	45	80679.542	ppb	80679.542	0.66	288506422	400000	
Ti	47	2	45	2.652	ppb	2.652	40.89	87	4000	
V	51	2	72	-0.455	ppb	-0.455	-29.00	797	2000	
Cr	52	2	72	2.261	ppb	2.261	3.69	4668	5000	
Mn	55	2	72	5.526	ppb	5.526	5.01	4471	10000	
Fe	56	1	72	216.196	ppb	216.196	4.44	1815438	10000	
(Fe)	57	2	72	159.042	ppb	159.042	3.53	5695	400000	
Co	59	2	72	0.148	ppb	0.148	6.46	507	2000	
Ni	60	2	72	3.088	ppb	3.088	19.77	4651	5000	
Cu	63	2	72	1.103	ppb	1.103	16.77	3981	5000	
Zn	66	2	72	2.364	ppb	2.364	11.15	1550	5000	
As	75	2	72	0.047	ppb	0.047	52.18	53	2000	
Se	78	1	72	0.524	ppb	0.524	31.75	179	2000	
Sr	88	2	72	1136.843	ppb	1136.843	0.56	936387	4000	
Zr	90	2	72	276.678	ppb	276.678	10.08	2144	1000	
Nb	93	2	72	2289.562	ppb	2289.562	42.61	127	200	>LDR
Mo	95	2	115	0.486	ppb	0.486	20.19	567	2000	
Pd	105	2	115	4.495	ppb	4.495	254.12	43	100	
Ag	107	2	115	0.025	ppb	0.025	45.98	130	100	
Cd	111	2	115	0.011	ppb	0.011	274.25	13	2000	
Sn	120	2	115	-0.135	ppb	-0.135	-26.74	437	2000	
Sb	121	2	115	0.190	ppb	0.190	26.57	287	1000	
Ba	137	2	115	36.440	ppb	36.440	1.58	14591	5000	
W	182	2	165	1.857	ppb	1.857	5.11	10110	100	
Pt	195	2	165	-27.803	ppb	-27.803	-228.85	43	100	
Tl	205	2	165	0.006	ppb	0.006	71.03	247	2000	
Pb	208	2	165	0.173	ppb	0.173	6.59	3397	5000	
Th	232	2	193	2.236	ppb	2.236	21.36	31067	2000	
U	238	2	193	0.278	ppb	0.278	2.90	3304	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	598618	1.20	579603	103.28	60	120	
Sc (IS)	45	1	HMI H2	18469960	0.43	17043241	108.37	60	120	
Sc (IS)	45	2	HMI He	917662	0.18	797526	115.06	60	120	
Sc (IS)	45	3	No Gas	32766453	0.44	28509182	114.93	60	120	
Ge Internal standard	72	1	HMI H2	10127525	0.36	9074377	111.61	60	120	
Ge Internal standard	72	2	HMI He	1391188	0.38	1113151	124.98	60	120	IS Failed
In Internal standard	115	2	HMI He	3858540	0.10	3301939	116.86	60	120	
Ho-165	165	2	HMI He	14853629	0.19	12873604	115.38	60	120	
Ir (IS)	193	2	HMI He	11240079	0.42	10633585	105.70	60	120	

Sample Report

Sample Table

Sample Name	160-46740-A-2-A
Data File Name	236SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:38:54-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	14.640	ppb	14.640	29.62	2198682	50000	
Be	9	1	6	0.072	ppb	0.072	158.77	37	2000	
B	11	1	6	27.445	ppb	27.445	10.68	8002	2000	
Na	23	2	45	11400.496	ppb	11400.496	6.36	2703558	400000	
Mg	24	2	45	9991.929	ppb	9991.929	7.11	1033317	400000	
Al	27	2	45	40.677	ppb	40.677	11.27	1313	400000	
Si	28	2	45	253.481	ppb	253.481	6.37	51476	10000	
P	31	2	45	21.200	ppb	21.200	14.85	95	10000	
K	39	2	45	2399.868	ppb	2399.868	5.98	229396	400000	
Ca	40	1	45	115231.117	ppb	115231.117	0.25	417013380	400000	
Ti	47	2	45	0.505	ppb	0.505	134.95	27	4000	
V	51	2	72	-0.708	ppb	-0.708	-5.47	440	2000	
Cr	52	2	72	0.240	ppb	0.240	50.91	1177	5000	
Mn	55	2	72	1119.597	ppb	1119.597	10.36	776384	10000	
Fe	56	1	72	473.736	ppb	473.736	1.66	3850730	10000	
(Fe)	57	2	72	425.296	ppb	425.296	5.32	14036	400000	
Co	59	2	72	0.562	ppb	0.562	14.89	1677	2000	
Ni	60	2	72	3.710	ppb	3.710	7.62	5034	5000	
Cu	63	2	72	-0.145	ppb	-0.145	-76.33	1213	5000	
Zn	66	2	72	1.297	ppb	1.297	16.79	1103	5000	
As	75	2	72	0.194	ppb	0.194	43.87	98	2000	
Se	78	1	72	-0.012	ppb	-0.012	-227.90	19	2000	
Sr	88	2	72	239.553	ppb	239.553	9.23	192125	4000	
Zr	90	2	72	123.846	ppb	123.846	26.66	1280	1000	
Nb	93	2	72	1025.127	ppb	1025.127	52.07	67	200	>LDR
Mo	95	2	115	0.454	ppb	0.454	23.01	543	2000	
Pd	105	2	115	3.997	ppb	3.997	404.88	43	100	
Ag	107	2	115	0.004	ppb	0.004	175.45	57	100	
Cd	111	2	115	0.017	ppb	0.017	64.12	17	2000	
Sn	120	2	115	-0.039	ppb	-0.039	-37.15	570	2000	
Sb	121	2	115	0.045	ppb	0.045	41.38	87	1000	
Ba	137	2	115	44.755	ppb	44.755	5.63	18198	5000	
W	182	2	165	1.048	ppb	1.048	9.15	6918	100	
Pt	195	2	165	26.336	ppb	26.336	207.31	57	100	
Tl	205	2	165	-0.001	ppb	-0.001	-996.66	200	2000	
Pb	208	2	165	0.043	ppb	0.043	31.78	2110	5000	
Th	232	2	193	0.996	ppb	0.996	24.31	20528	2000	
U	238	2	193	0.602	ppb	0.602	12.10	6975	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	607384	0.33	579603	104.79	60	120	
Sc (IS)	45	1	HMI H2	18695282	0.41	17043241	109.69	60	120	
Sc (IS)	45	2	HMI He	929439	3.69	797526	116.54	60	120	
Sc (IS)	45	3	No Gas	33072414	0.63	28509182	116.01	60	120	
Ge Internal standard	72	1	HMI H2	10177083	0.73	9074377	112.15	60	120	
Ge Internal standard	72	2	HMI He	1360136	7.60	1113151	122.19	60	120	IS Failed
In Internal standard	115	2	HMI He	3924104	1.86	3301939	118.84	60	120	
Ho-165	165	2	HMI He	14990813	3.99	12873604	116.45	60	120	
Ir (IS)	193	2	HMI He	11494155	3.30	10633585	108.09	60	120	

Sample Report

Sample Table

Sample Name	160-46743-A-10-A
Data File Name	237SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:42:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	45.315	ppb	45.315	10.43	2370360	50000	
Be	9	1	6	0.224	ppb	0.224	39.04	77	2000	
B	11	1	6	112.227	ppb	112.227	2.62	26321	2000	
Na	23	2	45	19691.665	ppb	19691.665	0.50	4301558	400000	
Mg	24	2	45	22681.472	ppb	22681.472	1.19	2198450	400000	
Al	27	2	45	294.444	ppb	294.444	6.26	7239	400000	
Si	28	2	45	509.287	ppb	509.287	1.29	88761	10000	
P	31	2	45	16.156	ppb	16.156	43.89	79	10000	
K	39	2	45	3041.534	ppb	3041.534	0.47	269007	400000	
Ca	40	1	45	150663.752	ppb	150663.752	0.25	531480179	400000	
Ti	47	2	45	5.600	ppb	5.600	37.93	167	4000	
V	51	2	72	-0.287	ppb	-0.287	-34.33	943	2000	
Cr	52	2	72	0.436	ppb	0.436	15.04	1427	5000	
Mn	55	2	72	1168.355	ppb	1168.355	4.51	767487	10000	
Fe	56	1	72	348.875	ppb	348.875	0.47	2790868	10000	
(Fe)	57	2	72	317.691	ppb	317.691	1.69	10030	400000	
Co	59	2	72	1.371	ppb	1.371	12.56	3784	2000	
Ni	60	2	72	18.935	ppb	18.935	7.97	16218	5000	
Cu	63	2	72	0.643	ppb	0.643	4.01	2747	5000	
Zn	66	2	72	1.805	ppb	1.805	9.86	1227	5000	
As	75	2	72	0.283	ppb	0.283	8.11	121	2000	
Se	78	1	72	0.090	ppb	0.090	26.09	48	2000	
Sr	88	2	72	448.896	ppb	448.896	3.73	340819	4000	
Zr	90	2	72	432.997	ppb	432.997	11.90	2757	1000	
Nb	93	2	72	2519.984	ppb	2519.984	40.90	127	200	>LDR
Mo	95	2	115	0.642	ppb	0.642	12.42	717	2000	
Pd	105	2	115	-8.163	ppb	-8.163	-135.01	20	100	
Ag	107	2	115	0.003	ppb	0.003	185.35	53	100	
Cd	111	2	115	5.555	ppb	5.555	4.92	2700	2000	
Sn	120	2	115	-0.135	ppb	-0.135	-27.67	430	2000	
Sb	121	2	115	0.081	ppb	0.081	38.92	133	1000	
Ba	137	2	115	269.498	ppb	269.498	2.67	105706	5000	
W	182	2	165	1.026	ppb	1.026	2.45	6798	100	
Pt	195	2	165	673.763	ppb	673.763	25.04	213	100	>LDR
Tl	205	2	165	0.005	ppb	0.005	228.30	240	2000	
Pb	208	2	165	0.399	ppb	0.399	5.76	5694	5000	
Th	232	2	193	0.742	ppb	0.742	31.99	17998	2000	
U	238	2	193	19.383	ppb	19.383	0.58	214062	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	601062	0.54	579603	103.70	60	120	
Sc (IS)	45	1	HMI H2	18225592	0.73	17043241	106.94	60	120	
Sc (IS)	45	2	HMI He	899014	0.27	797526	112.73	60	120	
Sc (IS)	45	3	No Gas	33012973	1.23	28509182	115.80	60	120	
Ge Internal standard	72	1	HMI H2	9901596	0.20	9074377	109.12	60	120	
Ge Internal standard	72	2	HMI He	1283434	4.23	1113151	115.30	60	120	
In Internal standard	115	2	HMI He	3797264	1.12	3301939	115.00	60	120	
Ho-165	165	2	HMI He	14900084	0.73	12873604	115.74	60	120	
Ir (IS)	193	2	HMI He	11360154	0.66	10633585	106.83	60	120	

Sample Report

Sample Table

Sample Name	160-46743-A-13-A
Data File Name	238SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:46:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	48.000	ppb	48.000	5.33	2354911	50000	
Be	9	1	6	0.075	ppb	0.075	107.05	37	2000	
B	11	1	6	113.692	ppb	113.692	1.05	26334	2000	
Na	23	2	45	19490.796	ppb	19490.796	0.98	4176950	400000	
Mg	24	2	45	22586.287	ppb	22586.287	0.73	2146391	400000	
Al	27	2	45	113.562	ppb	113.562	4.25	2927	400000	
Si	28	2	45	494.085	ppb	494.085	1.42	84746	10000	
P	31	2	45	16.241	ppb	16.241	13.81	78	10000	
K	39	2	45	2988.515	ppb	2988.515	1.54	259914	400000	
Ca	40	1	45	148880.879	ppb	148880.879	0.50	520185366	400000	
Ti	47	2	45	1.307	ppb	1.307	70.95	47	4000	
V	51	2	72	-0.598	ppb	-0.598	-20.26	553	2000	
Cr	52	2	72	0.281	ppb	0.281	5.57	1177	5000	
Mn	55	2	72	946.848	ppb	946.848	4.93	617998	10000	
Fe	56	1	72	136.556	ppb	136.556	2.78	1136342	10000	
(Fe)	57	2	72	145.995	ppb	145.995	1.03	4831	400000	
Co	59	2	72	0.931	ppb	0.931	6.49	2567	2000	
Ni	60	2	72	16.578	ppb	16.578	3.59	14367	5000	
Cu	63	2	72	0.482	ppb	0.482	33.12	2397	5000	
Zn	66	2	72	1.487	ppb	1.487	18.63	1107	5000	
As	75	2	72	0.138	ppb	0.138	14.53	76	2000	
Se	78	1	72	0.103	ppb	0.103	67.26	51	2000	
Sr	88	2	72	441.186	ppb	441.186	5.17	332676	4000	
Zr	90	2	72	298.413	ppb	298.413	3.76	2074	1000	
Nb	93	2	72	1286.255	ppb	1286.255	17.39	73	200	>LDR
Mo	95	2	115	0.509	ppb	0.509	8.64	573	2000	
Pd	105	2	115	14.631	ppb	14.631	67.83	60	100	
Ag	107	2	115	0.007	ppb	0.007	63.17	67	100	
Cd	111	2	115	5.147	ppb	5.147	10.06	2467	2000	
Sn	120	2	115	-0.230	ppb	-0.230	-23.55	303	2000	
Sb	121	2	115	0.115	ppb	0.115	17.35	177	1000	
Ba	137	2	115	260.708	ppb	260.708	1.05	100922	5000	
W	182	2	165	0.885	ppb	0.885	7.28	6168	100	
Pt	195	2	165	654.826	ppb	654.826	9.02	207	100	>LDR
Tl	205	2	165	0.010	ppb	0.010	123.17	277	2000	
Pb	208	2	165	0.114	ppb	0.114	8.18	2784	5000	
Th	232	2	193	0.159	ppb	0.159	105.21	12723	2000	
U	238	2	193	19.398	ppb	19.398	0.74	213505	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	594189	0.54	579603	102.52	60	120	
Sc (IS)	45	1	HMI H2	18051479	0.51	17043241	105.92	60	120	
Sc (IS)	45	2	HMI He	881330	0.53	797526	110.51	60	120	
Sc (IS)	45	3	No Gas	32585440	0.83	28509182	114.30	60	120	
Ge Internal standard	72	1	HMI H2	9655757	0.82	9074377	106.41	60	120	
Ge Internal standard	72	2	HMI He	1275379	4.74	1113151	114.57	60	120	
In Internal standard	115	2	HMI He	3747058	1.20	3301939	113.48	60	120	
Ho-165	165	2	HMI He	14754975	0.56	12873604	114.61	60	120	
Ir (IS)	193	2	HMI He	11322684	1.09	10633585	106.48	60	120	

Sample Report

Sample Table

Sample Name	160-46743-A-16-A
Data File Name	239SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:50:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	26.085	ppb	26.085	1.27	2231596	50000	
Be	9	1	6	0.112	ppb	0.112	128.43	47	2000	
B	11	1	6	22.732	ppb	22.732	6.11	6848	2000	
Na	23	2	45	7220.966	ppb	7220.966	1.26	1728400	400000	
Mg	24	2	45	13113.615	ppb	13113.615	1.60	1265063	400000	
Al	27	2	45	87.233	ppb	87.233	12.47	2310	400000	
Si	28	2	45	625.057	ppb	625.057	1.36	103857	10000	
P	31	2	45	33.533	ppb	33.533	22.35	121	10000	
K	39	2	45	1314.095	ppb	1314.095	2.20	139451	400000	
Ca	40	1	45	81966.651	ppb	81966.651	0.55	283188529	400000	
Ti	47	2	45	1.438	ppb	1.438	68.05	50	4000	
V	51	2	72	-0.533	ppb	-0.533	-22.51	637	2000	
Cr	52	2	72	0.314	ppb	0.314	19.84	1227	5000	
Mn	55	2	72	16.594	ppb	16.594	7.89	11298	10000	
Fe	56	1	72	109.378	ppb	109.378	0.88	944962	10000	
(Fe)	57	2	72	114.286	ppb	114.286	9.47	3871	400000	
Co	59	2	72	0.115	ppb	0.115	19.98	373	2000	
Ni	60	2	72	4.582	ppb	4.582	3.03	5384	5000	
Cu	63	2	72	-0.039	ppb	-0.039	-210.68	1357	5000	
Zn	66	2	72	0.600	ppb	0.600	50.16	787	5000	
As	75	2	72	0.127	ppb	0.127	33.32	73	2000	
Se	78	1	72	-0.033	ppb	-0.033	-71.46	12	2000	
Sr	88	2	72	232.193	ppb	232.193	4.16	175138	4000	
Zr	90	2	72	84.359	ppb	84.359	8.94	1013	1000	
Nb	93	2	72	177.968	ppb	177.968	381.98	27	200	
Mo	95	2	115	0.510	ppb	0.510	11.39	577	2000	
Pd	105	2	115	-0.508	ppb	-0.508	-1298.08	33	100	
Ag	107	2	115	0.007	ppb	0.007	61.46	67	100	
Cd	111	2	115	-0.009	ppb	-0.009	-137.02	3	2000	
Sn	120	2	115	-0.194	ppb	-0.194	-15.55	350	2000	
Sb	121	2	115	0.045	ppb	0.045	42.30	83	1000	
Ba	137	2	115	178.525	ppb	178.525	3.23	69461	5000	
W	182	2	165	0.987	ppb	0.987	7.82	6582	100	
Pt	195	2	165	0.803	ppb	0.803	5030.67	50	100	
Tl	205	2	165	-0.006	ppb	-0.006	-44.31	157	2000	
Pb	208	2	165	0.067	ppb	0.067	22.93	2324	5000	
Th	232	2	193	-0.023	ppb	-0.023	-465.86	11211	2000	
U	238	2	193	0.602	ppb	0.602	1.83	6955	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	596870	1.48	579603	102.98	60	120	
Sc (IS)	45	1	HMI H2	17844842	0.57	17043241	104.70	60	120	
Sc (IS)	45	2	HMI He	877740	0.29	797526	110.06	60	120	
Sc (IS)	45	3	No Gas	32592880	0.91	28509182	114.32	60	120	
Ge Internal standard	72	1	HMI H2	9773738	0.73	9074377	107.71	60	120	
Ge Internal standard	72	2	HMI He	1274830	4.42	1113151	114.52	60	120	
In Internal standard	115	2	HMI He	3765227	0.72	3301939	114.03	60	120	
Ho-165	165	2	HMI He	14768095	0.78	12873604	114.72	60	120	
Ir (IS)	193	2	HMI He	11441051	1.16	10633585	107.59	60	120	

Sample Report

Sample Table

Sample Name	160-46743-A-20-A
Data File Name	240SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:53:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585214 6020a
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	32.126	ppb	32.126	14.54	2277728	50000	
Be	9	1	6	0.059	ppb	0.059	73.04	33	2000	
B	11	1	6	22.474	ppb	22.474	1.28	6918	2000	
Na	23	2	45	3914.868	ppb	3914.868	4.43	1071840	400000	
Mg	24	2	45	14809.173	ppb	14809.173	0.66	1419377	400000	
Al	27	2	45	221.100	ppb	221.100	12.60	5378	400000	
Si	28	2	45	704.566	ppb	704.566	0.68	115512	10000	
P	31	2	45	17.722	ppb	17.722	3.11	81	10000	
K	39	2	45	1446.214	ppb	1446.214	2.76	148675	400000	
Ca	40	1	45	72389.292	ppb	72389.292	0.52	252190743	400000	
Ti	47	2	45	4.263	ppb	4.263	86.39	127	4000	
V	51	2	72	-0.134	ppb	-0.134	-48.95	1083	2000	
Cr	52	2	72	0.371	ppb	0.371	24.20	1263	5000	
Mn	55	2	72	28.309	ppb	28.309	1.64	18190	10000	
Fe	56	1	72	265.554	ppb	265.554	1.33	2153720	10000	
(Fe)	57	2	72	259.279	ppb	259.279	2.40	7879	400000	
Co	59	2	72	0.237	ppb	0.237	3.67	673	2000	
Ni	60	2	72	4.340	ppb	4.340	11.85	4984	5000	
Cu	63	2	72	0.468	ppb	0.468	23.88	2280	5000	
Zn	66	2	72	2.680	ppb	2.680	8.71	1470	5000	
As	75	2	72	0.724	ppb	0.724	1.80	243	2000	
Se	78	1	72	0.030	ppb	0.030	158.00	31	2000	
Sr	88	2	72	231.194	ppb	231.194	1.30	167392	4000	
Zr	90	2	72	355.438	ppb	355.438	7.85	2257	1000	
Nb	93	2	72	2827.157	ppb	2827.157	50.26	133	200	>LDR
Mo	95	2	115	0.510	ppb	0.510	21.48	580	2000	
Pd	105	2	115	4.963	ppb	4.963	65.30	43	100	
Ag	107	2	115	0.006	ppb	0.006	98.36	63	100	
Cd	111	2	115	0.033	ppb	0.033	37.16	23	2000	
Sn	120	2	115	-0.128	ppb	-0.128	-84.27	437	2000	
Sb	121	2	115	0.047	ppb	0.047	23.54	87	1000	
Ba	137	2	115	59.101	ppb	59.101	0.99	23158	5000	
W	182	2	165	1.016	ppb	1.016	6.04	6748	100	
Pt	195	2	165	26.890	ppb	26.890	85.25	57	100	
Tl	205	2	165	-0.002	ppb	-0.002	-81.69	187	2000	
Pb	208	2	165	0.343	ppb	0.343	4.32	5124	5000	
Th	232	2	193	-0.082	ppb	-0.082	-54.28	10674	2000	
U	238	2	193	43.240	ppb	43.240	1.51	480602	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	607831	0.26	579603	104.87	60	120	
Sc (IS)	45	1	HMI H2	17993013	1.22	17043241	105.57	60	120	
Sc (IS)	45	2	HMI He	876602	0.50	797526	109.92	60	120	
Sc (IS)	45	3	No Gas	32763147	0.97	28509182	114.92	60	120	
Ge Internal standard	72	1	HMI H2	9905691	0.96	9074377	109.16	60	120	
Ge Internal standard	72	2	HMI He	1222246	0.67	1113151	109.80	60	120	
In Internal standard	115	2	HMI He	3783283	0.35	3301939	114.58	60	120	
Ho-165	165	2	HMI He	14883036	0.74	12873604	115.61	60	120	
Ir (IS)	193	2	HMI He	11442716	1.08	10633585	107.61	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	241_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T00:57:32-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	130.618	ppb	1.688	2762036	100	130.6	90	110	>+\-10%
Be	9	1	6	50.298	ppb	2.913	13476	50	100.6	90	110	
B	11	1	6	462.096	ppb	1.310	103105	50	924.2	90	110	>+\-10%
Na	23	2	45	49303.674	ppb	0.481	9984422	51000	96.7	90	110	
Mg	24	2	45	9431.872	ppb	0.472	918141	11000	85.7	90	110	>+\-10%
Al	27	2	45	936.008	ppb	1.662	21611	1000	93.6	90	110	
Si	28	2	45	44.095	ppb	7.685	17426	500	8.8	90	110	>+\-10%
P	31	2	45	2364.816	ppb	2.215	5958	2500	94.6	90	110	
K	39	2	45	9774.295	ppb	0.321	736584	11000	88.9	90	110	>+\-10%
Ca	40	1	45	11184.247	ppb	0.509	39374684	11000	101.7	90	110	
(Ca)	44	1	45	10536.951	ppb	0.904	1274809	11000	95.8	90	110	
Ti	47	2	45	48.334	ppb	4.990	1310	50	96.7	90	110	
V	51	2	72	48.662	ppb	5.291	60928	50	97.3	90	110	
Cr	52	2	72	49.385	ppb	4.482	76729	50	98.8	90	110	
Mn	55	2	72	49.279	ppb	4.450	32105	50	98.6	90	110	
Fe	56	1	72	1016.667	ppb	0.706	7929394	1000	101.7	90	110	
(Fe)	56	2	72	986.318	ppb	7.212	1282895	1000	98.6	90	110	
(Fe)	57	2	72	1025.417	ppb	4.405	30612	1000	102.5	90	110	
Co	59	2	72	48.997	ppb	4.387	129658	50	98.0	90	110	
Ni	60	2	72	50.154	ppb	5.742	38846	50	100.3	90	110	
Cu	63	2	72	48.691	ppb	5.618	97220	50	97.4	90	110	
Zn	66	2	72	48.998	ppb	8.545	17807	50	98.0	90	110	
As	75	2	72	48.969	ppb	4.674	14606	50	97.9	90	110	
Se	78	1	72	46.805	ppb	1.329	13726	50	93.6	90	110	
Sr	88	2	72	101.682	ppb	4.633	75526	100	101.7	90	110	
Zr	90	2	72	1064.636	ppb	8.592	5755	50	2129.3	90	110	>+\-10%
Nb	93	2	72	854.945	ppb	86.624	53	100	854.9	90	110	>+\-10%
Mo	95	2	115	50.418	ppb	1.685	50570	50	100.8	90	110	
Pd	105	2	115	145.417	ppb	40.911	290	50	290.8	90	110	>+\-10%
Ag	107	2	115	49.492	ppb	1.340	167231	50	99.0	90	110	
Cd	111	2	115	49.262	ppb	0.580	23441	50	98.5	90	110	
Sn	120	2	115	50.602	ppb	1.921	64197	50	101.2	90	110	
Sb	121	2	115	50.952	ppb	0.413	68093	50	101.9	90	110	
Ba	137	2	115	52.821	ppb	1.641	20397	50	105.6	90	110	
W	182	2	165	49.362	ppb	0.385	199837	50	98.7	90	110	
Pt	195	2	165	181.158	ppb	47.623	93	50	362.3	90	110	>+\-10%
Tl	205	2	165	48.553	ppb	0.939	355657	50	97.1	90	110	
Pb	208	2	165	48.896	ppb	1.056	491573	50	97.8	90	110	
Th	232	2	193	46.777	ppb	4.122	439085	50	93.6	90	110	
U	238	2	193	52.575	ppb	1.003	590467	50	105.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	606085	0.08	579603	104.57	60	120	
Sc (IS)	45	1	HMI H2	18107186	0.42	17043241	106.24	60	120	
Sc (IS)	45	2	HMI He	870430	0.18	797526	109.14	60	120	
Sc (IS)	45	3	No Gas	31896324	1.58	28509182	111.88	60	120	
Ge Internal standard	72	1	HMI H2	9934114	0.38	9074377	109.47	60	120	
Ge Internal standard	72	2	HMI He	1254823	5.55	1113151	112.73	60	120	
In Internal standard	115	2	HMI He	3727446	0.76	3301939	112.89	60	120	
Ho-165	165	2	HMI He	14784839	0.26	12873604	114.85	60	120	
Ir (IS)	193	2	HMI He	11562296	0.32	10633585	108.73	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	242_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:01:17-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	10.846	ppb	54.7	2127481	10	>RL
Be	9	1	6	0.033	ppb	321.1	27	0.5	
B	11	1	6	9.328	ppb	4.3	4097	0.5	>RL
Na	23	2	45	-863.138	ppb	-1.2	123699	25	
Mg	24	2	45	-486.849	ppb	-0.9	11838	25	
Al	27	2	45	6.444	ppb	32.5	447	15	
K	39	2	45	-118.359	ppb	-12.0	36540	50	
Ti	47	2	45	-0.408	ppb	0.0	0	0.5	
V	51	2	72	-0.770	ppb	-11.5	320	1	
Cr	52	2	72	-0.063	ppb	-18.1	607	1	
Mn	55	2	72	0.827	ppb	21.7	977	0.5	>RL
(Fe)	57	2	72	33.821	ppb	20.7	1397	25	>RL
Co	59	2	72	0.045	ppb	17.7	177	0.5	
Ni	60	2	72	1.528	ppb	7.2	2937	1	>RL
Cu	63	2	72	-0.029	ppb	-426.6	1313	1	
Zn	66	2	72	0.518	ppb	61.3	720	5	
As	75	2	72	-0.043	ppb	-48.4	20	1	
Se	78	1	72	0.026	ppb	183.6	29	1	
Sr	88	2	72	0.103	ppb	48.0	190	0.5	
Zr	90	2	72	-8.922	ppb	-273.3	523	1	
Nb	93	2	72	-119.797	ppb	-316.1	13	2	
Mo	95	2	115	0.475	ppb	37.0	543	0.5	
Pd	105	2	115	-2.465	ppb	-227.2	30	1	
Ag	107	2	115	0.044	ppb	22.7	193	1	
Cd	111	2	115	0.005	ppb	413.8	10	0.5	
Sn	120	2	115	0.580	ppb	17.7	1337	1	
Sb	121	2	115	0.232	ppb	18.3	337	0.6	
Ba	137	2	115	0.353	ppb	19.7	210	0.5	
W	182	2	165	0.345	ppb	34.7	4024	1	
Pt	195	2	165	14.788	ppb	169.9	53	1	>RL
Tl	205	2	165	0.047	ppb	31.8	550	0.1	
Pb	208	2	165	0.016	ppb	110.8	1810	0.5	
Th	232	2	193	0.984	ppb	20.5	20869	1	
U	238	2	193	0.092	ppb	4.5	1327	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	617410	1.43	579603	106.52	60	120	
Sc (IS)	45	1	HMI H2	18034832	0.71	17043241	105.82	60	120	
Sc (IS)	45	2	HMI He	859842	0.48	797526	107.81	60	120	
Sc (IS)	45	3	No Gas	32320702	0.37	28509182	113.37	60	120	
Ge Internal standard	72	1	HMI H2	9839444	0.49	9074377	108.43	60	120	
Ge Internal standard	72	2	HMI He	1210922	0.55	1113151	108.78	60	120	
In Internal standard	115	2	HMI He	3776381	0.36	3301939	114.37	60	120	
Ho-165	165	2	HMI He	14779325	0.57	12873604	114.80	60	120	
Ir (IS)	193	2	HMI He	11756915	0.23	10633585	110.56	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	243LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:05:02-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	13.321	ppb	34.499	2105951	50	26.6	70	130	>+/-30%
Be	9	1	6	0.929	ppb	22.832	267	1	92.9	70	130	
Na	23	2	45	-825.346	ppb	-1.475	129494	50	-1650.7	70	130	>+/-30%
Mg	24	2	45	-429.070	ppb	-0.319	16852	50	-858.1	70	130	>+/-30%
Al	27	2	45	53.782	ppb	20.429	1493	50	107.6	70	130	
K	39	2	45	-37.773	ppb	-23.498	41676	100	-37.8	70	130	>+/-30%
V	51	2	72	4.189	ppb	1.900	6131	5	83.8	70	130	
Cr	52	2	72	2.184	ppb	14.672	3904	2	109.2	70	130	
Mn	55	2	72	1.730	ppb	16.726	1520	1	173.0	70	130	>+/-30%
(Fe)	57	2	72	74.200	ppb	4.347	2517	50	148.4	70	130	>+/-30%
Co	59	2	72	1.103	ppb	6.259	2850	1	110.3	70	130	
Ni	60	2	72	3.210	ppb	7.373	4091	2	160.5	70	130	>+/-30%
Cu	63	2	72	2.206	ppb	3.072	5504	2	110.3	70	130	
Zn	66	2	72	9.969	ppb	5.792	3897	10	99.7	70	130	
As	75	2	72	5.181	ppb	6.857	1506	5	103.6	70	130	
Se	78	1	72	5.149	ppb	6.197	1505	5	103.0	70	130	
Sr	88	2	72	1.257	ppb	17.350	1007	1	125.7	70	130	
Zr	90	2	72	332.896	ppb	6.788	2107	0.5	66579.2	70	130	>+/-30%
Nb	93	2	72	636.436	ppb	98.668	43	2	31821.8	70	130	>+/-30%
Mo	95	2	115	2.347	ppb	5.198	2400	2	117.4	70	130	
Pd	105	2	115	-4.043	ppb	-355.505	27	1	-404.3	70	130	>+/-30%
Ag	107	2	115	1.102	ppb	2.120	3744	1	110.2	70	130	
Cd	111	2	115	1.019	ppb	13.508	490	1	101.9	70	130	
Sn	120	2	115	10.538	ppb	2.672	13770	10	105.4	70	130	
Sb	121	2	115	2.222	ppb	10.009	2977	2	111.1	70	130	
Ba	137	2	115	1.590	ppb	11.246	680	1	159.0	70	130	>+/-30%
W	182	2	165	4.918	ppb	2.716	22153	1	491.8	70	130	>+/-30%
Pt	195	2	165	99.622	ppb	46.815	73	1	9962.2	70	130	>+/-30%
Tl	205	2	165	1.000	ppb	4.441	7479	1	100.0	70	130	
Pb	208	2	165	1.096	ppb	4.229	12552	1	109.6	70	130	
Th	232	2	193	5.273	ppb	7.386	60961	2	263.6	70	130	>+/-30%
U	238	2	193	1.072	ppb	3.802	12569	1	107.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	607409	0.37	579603	104.80	60	120	
Sc (IS)	45	1	HMI H2	17821111	0.44	17043241	104.56	60	120	
Sc (IS)	45	2	HMI He	849745	0.67	797526	106.55	60	120	
Sc (IS)	45	3	No Gas	31785745	1.04	28509182	111.49	60	120	
Ge Internal standard	72	1	HMI H2	9779223	0.40	9074377	107.77	60	120	
Ge Internal standard	72	2	HMI He	1197847	0.44	1113151	107.61	60	120	
In Internal standard	115	2	HMI He	3708893	0.15	3301939	112.32	60	120	
Ho-165	165	2	HMI He	14694057	0.73	12873604	114.14	60	120	
Ir (IS)	193	2	HMI He	11802546	0.25	10633585	110.99	60	120	

Blank Report

Sample Table

Sample Name	mb 280-585029/1-a
Data File Name	244_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:08:49-06:00
Sample Type	Blank
Dilution	1
Comment	585029 6020A
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	6.678	ppb	7.010060031	2057431	10
Be	9	1	6	0.037	ppb	217.0604875	27	0.5
B	11	1	6	4.514	ppb	16.58657898	2907	0.5
Na	23	2	45	-805.654	ppb	-1.86385113	132272	25
Mg	24	2	45	-381.400	ppb	-1.697983036	20943	25
Al	27	2	45	59.557	ppb	17.72955127	1610	15
K	39	2	45	-107.467	ppb	-7.154207167	36587	50
Ti	47	2	45	0.359	ppb	106.0344671	20	0.5
V	51	2	72	-0.686	ppb	-20.01481192	413	1
Cr	52	2	72	0.334	ppb	6.527621613	1180	1
Mn	55	2	72	1.954	ppb	11.25007409	1653	0.5
(Fe)	57	2	72	74.156	ppb	13.70146383	2507	25
Co	59	2	72	0.099	ppb	18.38918622	310	0.5
Ni	60	2	72	0.262	ppb	107.5398906	2007	1
Cu	63	2	72	0.399	ppb	14.10992967	2097	1
Zn	66	2	72	3.750	ppb	14.2469499	1797	5
As	75	2	72	-0.008	ppb	-273.6804425	30	1
Se	78	1	72	0.032	ppb	24.13338777	31	1
Sr	88	2	72	1.046	ppb	17.27934684	853	0.5
Zr	90	2	72	13.977	ppb	203.989344	623	1
Nb	93	2	72	476.092	ppb	123.274477	37	2
Mo	95	2	115	0.189	ppb	40.02639316	247	0.5
Pd	105	2	115	-0.107	ppb	-8239.992271	33	1
Ag	107	2	115	0.020	ppb	34.91941671	107	1
Cd	111	2	115	0.027	ppb	79.60082611	20	0.5
Sn	120	2	115	0.848	ppb	15.5076881	1637	1
Sb	121	2	115	0.099	ppb	38.48516555	153	0.6
Ba	137	2	115	0.840	ppb	13.891433	390	0.5
W	182	2	165	1.142	ppb	3.63567184	7192	1
Pt	195	2	165	-26.614	ppb	-91.47919642	43	1
Tl	205	2	165	0.024	ppb	59.129106	377	0.1
Pb	208	2	165	0.120	ppb	25.91852957	2844	0.5
Th	232	2	193	5.335	ppb	16.12380986	61280	1
U	238	2	193	0.082	ppb	11.78352339	1220	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	593684	0.45	579603	102.43	60	120	
Sc (IS)	45	1	HMI H2	17779117	0.51	17043241	104.32	60	120	
Sc (IS)	45	2	HMI He	843331	0.42	797526	105.74	60	120	
Sc (IS)	45	3	No Gas	31602644	0.41	28509182	110.85	60	120	
Ge Internal standard	72	1	HMI H2	9759147	1.12	9074377	107.55	60	120	
Ge Internal standard	72	2	HMI He	1194201	0.86	1113151	107.28	60	120	
In Internal standard	115	2	HMI He	3682789	0.27	3301939	111.53	60	120	
Ho-165	165	2	HMI He	14753214	0.20	12873604	114.60	60	120	
Ir (IS)	193	2	HMI He	11753585	0.24	10633585	110.53	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-585029/2-a
Data File Name	245_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:12:37-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585029 6020A
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	41.318	41.318	ppb	12.362	2253814	400	10.3	80	120	>+/-20%
Be	9	1	6	42.301	42.301	ppb	4.516	11121	40	105.8	80	120	
Na	23	2	45	-205.279	-205.279	ppb	-10.015	245553	40	-513.2	80	120	>+/-20%
Mg	24	2	45	249.644	249.644	ppb	8.935	76480	40	624.1	80	120	>+/-20%
Al	27	2	45	821.482	821.482	ppb	2.832	18334	40	2053.7	80	120	>+/-20%
K	39	2	45	616.106	616.106	ppb	1.040	85807	40	1540.3	80	120	>+/-20%
V	51	2	72	43.392	43.392	ppb	1.350	51323	40	108.5	80	120	
Cr	52	2	72	45.038	45.038	ppb	0.751	65977	40	112.6	80	120	
Mn	55	2	72	43.108	43.108	ppb	0.511	26508	40	107.8	80	120	
(Fe)	57	2	72	854.653	854.653	ppb	1.272	24105	40	2136.6	80	120	>+/-20%
Co	59	2	72	44.924	44.924	ppb	1.234	111991	40	112.3	80	120	
Ni	60	2	72	43.899	43.899	ppb	2.165	32265	40	109.7	80	120	
Cu	63	2	72	45.732	45.732	ppb	0.745	86135	40	114.3	80	120	
Zn	66	2	72	43.734	43.734	ppb	3.726	15051	40	109.3	80	120	
As	75	2	72	43.411	43.411	ppb	1.252	12200	40	108.5	80	120	
Se	78	1	72	40.171	40.171	ppb	1.594	11523	40	100.4	80	120	
Nb	93	2	72	739.686	739.686	ppb	53.244	47	40	1849.2	80	120	>+/-20%
Mo	95	2	115	44.422	44.422	ppb	0.792	43763	40	111.1	80	120	
Pd	105	2	115	1.939	1.939	ppb	347.942	37	40	4.8	80	120	>+/-20%
Ag	107	2	115	42.288	42.288	ppb	2.091	140282	40	105.7	80	120	
Cd	111	2	115	43.270	43.270	ppb	1.124	20220	40	108.2	80	120	
Sn	120	2	115	42.703	42.703	ppb	2.252	53286	40	106.8	80	120	
Sb	121	2	115	42.310	42.310	ppb	2.241	55517	40	105.8	80	120	
Ba	137	2	115	45.355	45.355	ppb	1.593	17213	40	113.4	80	120	
W	182	2	165	1.261	1.261	ppb	0.426	7592	40	3.2	80	120	>+/-20%
Pt	195	2	165	45.249	45.249	ppb	184.535	60	40	113.1	80	120	
Tl	205	2	165	43.183	43.183	ppb	0.477	312658	40	108.0	80	120	
Pb	208	2	165	43.467	43.467	ppb	0.742	432065	40	108.7	80	120	
Th	232	2	193	48.491	48.491	ppb	1.960	463797	40	121.2	80	120	>+/-20%
U	238	2	193	43.103	43.103	ppb	1.098	493838	40	107.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	594646	0.71	579603	102.60	60	120	
Sc (IS)	45	1	HMI H2	17751361	0.78	17043241	104.15	60	120	
Sc (IS)	45	2	HMI He	839816	0.50	797526	105.30	60	120	
Sc (IS)	45	3	No Gas	31694275	0.15	28509182	111.17	60	120	
Ge Internal standard	72	1	HMI H2	9713898	0.88	9074377	107.05	60	120	
Ge Internal standard	72	2	HMI He	1180178	0.51	1113151	106.02	60	120	
In Internal standard	115	2	HMI He	3660363	1.77	3301939	110.85	60	120	
Ho-165	165	2	HMI He	14612419	0.72	12873604	113.51	60	120	
Ir (IS)	193	2	HMI He	11794327	0.65	10633585	110.92	60	120	

Sample Table

Sample Name	lcsd 280-585029/3-a
Data File Name	246SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:16:22-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	41.535	ppb	41.535	16.82	2240353	50000	
Be	9	1	6	40.699	ppb	40.699	3.21	10727	2000	
B	11	1	6	3.761	ppb	3.761	46.14	2757	2000	
Na	23	2	45	-225.097	ppb	-225.097	-1.17	243372	400000	
Mg	24	2	45	272.694	ppb	272.694	4.18	79019	400000	
Al	27	2	45	796.553	ppb	796.553	1.04	17903	400000	
Si	28	2	45	30.938	ppb	30.938	6.18	15040	10000	
P	31	2	45	12.333	ppb	12.333	36.47	65	10000	
K	39	2	45	595.207	ppb	595.207	0.54	84926	400000	
Ca	40	1	45	862.316	ppb	862.316	0.41	3159881	400000	
Ti	47	2	45	40.332	ppb	40.332	13.50	1063	4000	
V	51	2	72	42.149	ppb	42.149	0.65	50243	2000	
Cr	52	2	72	43.685	ppb	43.685	0.99	64468	5000	
Mn	55	2	72	41.701	ppb	41.701	2.15	25841	10000	
Fe	56	1	72	843.566	ppb	843.566	0.20	6494733	10000	
(Fe)	57	2	72	868.891	ppb	868.891	2.12	24672	400000	
Co	59	2	72	44.065	ppb	44.065	0.48	110631	2000	
Ni	60	2	72	43.926	ppb	43.926	1.57	32516	5000	
Cu	63	2	72	44.006	ppb	44.006	0.53	83522	5000	
Zn	66	2	72	45.162	ppb	45.162	0.62	15635	5000	
As	75	2	72	41.483	ppb	41.483	1.82	11741	2000	
Se	78	1	72	39.908	ppb	39.908	1.13	11520	2000	
Sr	88	2	72	88.572	ppb	88.572	1.62	62430	4000	
Zr	90	2	72	559.006	ppb	559.006	11.67	3134	1000	
Nb	93	2	72	225.565	ppb	225.565	343.52	27	200	
Mo	95	2	115	44.032	ppb	44.032	2.04	43586	2000	
Pd	105	2	115	1.773	ppb	1.773	483.93	37	100	
Ag	107	2	115	41.640	ppb	41.640	2.01	138779	100	
Cd	111	2	115	40.857	ppb	40.857	5.50	19172	2000	
Sn	120	2	115	42.227	ppb	42.227	1.33	52945	2000	
Sb	121	2	115	42.658	ppb	42.658	3.79	56230	1000	
Ba	137	2	115	43.982	ppb	43.982	0.92	16770	5000	
W	182	2	165	1.203	ppb	1.203	3.35	7419	100	
Pt	195	2	165	-68.493	ppb	-68.493	-91.10	33	100	
Tl	205	2	165	42.128	ppb	42.128	0.84	307334	2000	
Pb	208	2	165	42.835	ppb	42.835	0.86	429063	5000	
Th	232	2	193	50.629	ppb	50.629	0.83	481565	2000	
U	238	2	193	43.066	ppb	43.066	0.94	491186	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	596013	0.42	579603	102.83	60	120	
Sc (IS)	45	1	HMI H2	17806287	0.80	17043241	104.48	60	120	
Sc (IS)	45	2	HMI He	845253	0.24	797526	105.98	60	120	
Sc (IS)	45	3	No Gas	31487937	0.26	28509182	110.45	60	120	
Ge Internal standard	72	1	HMI H2	9776156	0.44	9074377	107.73	60	120	
Ge Internal standard	72	2	HMI He	1188536	0.49	1113151	106.77	60	120	
In Internal standard	115	2	HMI He	3677192	1.32	3301939	111.36	60	120	
Ho-165	165	2	HMI He	14724031	0.95	12873604	114.37	60	120	
Ir (IS)	193	2	HMI He	11740762	0.24	10633585	110.41	60	120	

Sample Report

Sample Table

Sample Name	280-165805-d-1-a
Data File Name	247SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:20:08-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	69.771	ppb	69.771	34.30	3572215	50000	
Be	9	1	6	0.039	ppb	0.039	238.69	47	2000	
B	11	1	6	-2.095	ppb	-2.095	-79.36	2584	2000	
Na	23	2	45	4187.290	ppb	4187.290	174.26	1858837	400000	
Mg	24	2	45	4795.819	ppb	4795.819	149.75	822107	400000	
Al	27	2	45	13149.703	ppb	13149.703	140.61	497188	400000	
Si	28	2	45	224.141	ppb	224.141	162.63	73101	10000	
P	31	2	45	450.927	ppb	450.927	138.56	1937	10000	
K	39	2	45	1140.857	ppb	1140.857	193.29	209576	400000	
Ca	40	1	45	304.794	ppb	304.794	147.72	1783034	400000	
Ti	47	2	45	302.496	ppb	302.496	136.96	13523	4000	
V	51	2	72	40.899	ppb	40.899	141.99	80659	2000	
Cr	52	2	72	15.958	ppb	15.958	141.44	39661	5000	
Mn	55	2	72	388.863	ppb	388.863	141.70	391830	10000	
Fe	56	1	72	1207.129	ppb	1207.129	129.13	13106430	10000	
(Fe)	57	2	72	18186.313	ppb	18186.313	136.73	840089	400000	
Co	59	2	72	8.442	ppb	8.442	137.59	35132	2000	
Ni	60	2	72	17.787	ppb	17.787	151.55	23576	5000	
Cu	63	2	72	17.352	ppb	17.352	141.21	55819	5000	
Zn	66	2	72	35.129	ppb	35.129	142.67	20309	5000	
As	75	2	72	6.902	ppb	6.902	139.70	3275	2000	
Se	78	1	72	0.018	ppb	0.018	343.60	39	2000	
Sr	88	2	72	78.119	ppb	78.119	138.34	91065	4000	
Zr	90	2	72	309.327	ppb	309.327	120.34	3301	1000	
Nb	93	2	72	1644.684	ppb	1644.684	174.21	137	200	>LDR
Mo	95	2	115	0.260	ppb	0.260	171.05	473	2000	
Pd	105	2	115	10.010	ppb	10.010	199.99	77	100	
Ag	107	2	115	0.077	ppb	0.077	72.88	450	100	
Cd	111	2	115	0.118	ppb	0.118	166.23	93	2000	
Sn	120	2	115	0.222	ppb	0.222	308.02	1290	2000	
Sb	121	2	115	0.247	ppb	0.247	138.96	520	1000	
Ba	137	2	115	133.398	ppb	133.398	138.58	75819	5000	
W	182	2	165	-0.096	ppb	-0.096	-232.81	3547	100	
Pt	195	2	165	-40.803	ppb	-40.803	-129.36	63	100	
Tl	205	2	165	0.122	ppb	0.122	117.28	1707	2000	
Pb	208	2	165	4.980	ppb	4.980	139.67	79884	5000	
Th	232	2	193	12.493	ppb	12.493	147.03	201180	2000	
U	238	2	193	2.223	ppb	2.223	140.43	40343	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1034406	4.05	579603	178.47	60	120	IS Failed
Sc (IS)	45	1	HMI H2	26276468	3.17	17043241	154.18	60	120	IS Failed
Sc (IS)	45	2	HMI He	1469260	3.33	797526	184.23	60	120	IS Failed
Sc (IS)	45	3	No Gas	47074216	5.81	28509182	165.12	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	14324236	3.95	9074377	157.85	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2000400	2.61	1113151	179.71	60	120	IS Failed
In Internal standard	115	2	HMI He	5610161	2.82	3301939	169.91	60	120	IS Failed
Ho-165	165	2	HMI He	23311355	2.26	12873604	181.08	60	120	IS Failed
Ir (IS)	193	2	HMI He	18891879	3.00	10633585	177.66	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165805-d-1-aSD@5
Data File Name	248SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:23:54-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	32.849	ppb	32.849	12.19	2226394	50000	
Be	9	1	6	0.236	ppb	0.236	47.36	137	2000	
B	11	1	6	1.571	ppb	1.571	193.31	3944	2000	
Na	23	2	45	22374.903	ppb	22374.903	1.03	4665644	400000	
Mg	24	2	45	23016.198	ppb	23016.198	1.64	2146951	400000	
Al	27	2	45	59362.914	ppb	59362.914	1.99	1343810	400000	
Si	28	2	45	1341.705	ppb	1341.705	0.83	207370	10000	
P	31	2	45	2101.513	ppb	2101.513	2.19	5270	10000	
K	39	2	45	6225.971	ppb	6225.971	0.85	482938	400000	
Ca	40	1	45	1501.221	ppb	1501.221	57.56	8361926	400000	
Ti	47	2	45	1424.438	ppb	1424.438	1.05	38084	4000	
V	51	2	72	183.035	ppb	183.035	1.73	217386	2000	
Cr	52	2	72	70.354	ppb	70.354	1.42	104980	5000	
Mn	55	2	72	1563.655	ppb	1563.655	0.52	966756	10000	
Fe	56	1	72	5347.957	ppb	5347.957	57.22	62128300	10000	
(Fe)	57	2	72	81366.287	ppb	81366.287	0.37	2305523	400000	
Co	59	2	72	37.473	ppb	37.473	1.59	95522	2000	
Ni	60	2	72	87.210	ppb	87.210	2.12	63719	5000	
Cu	63	2	72	78.770	ppb	78.770	0.81	150705	5000	
Zn	66	2	72	170.440	ppb	170.440	1.14	58397	5000	
As	75	2	72	33.284	ppb	33.284	2.85	9571	2000	
Se	78	1	72	-0.020	ppb	-0.020	-213.66	24	2000	
Sr	88	2	72	352.035	ppb	352.035	0.40	251572	4000	
Zr	90	2	72	2535.317	ppb	2535.317	12.77	12432	1000	
Nb	93	2	72	12351.656	ppb	12351.656	14.52	513	200	>LDR
Mo	95	2	115	0.898	ppb	0.898	11.91	943	2000	
Pd	105	2	115	7.710	ppb	7.710	340.57	47	100	
Ag	107	2	115	0.203	ppb	0.203	8.61	713	100	
Cd	111	2	115	0.405	ppb	0.405	32.01	197	2000	
Sn	120	2	115	1.566	ppb	1.566	9.10	2514	2000	
Sb	121	2	115	0.199	ppb	0.199	7.29	283	1000	
Ba	137	2	115	551.390	ppb	551.390	1.04	208528	5000	
W	182	2	165	0.430	ppb	0.430	2.64	4431	100	
Pt	195	2	165	106.979	ppb	106.979	234.21	77	100	
Tl	205	2	165	0.472	ppb	0.472	6.73	3717	2000	
Pb	208	2	165	20.448	ppb	20.448	0.38	209789	5000	
Th	232	2	193	43.592	ppb	43.592	1.36	416398	2000	
U	238	2	193	9.248	ppb	9.248	1.01	105728	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1032957	2.34	579603	178.22	60	120	IS Failed
Sc (IS)	45	1	HMI H2	27995113	2.18	17043241	164.26	60	120	IS Failed
Sc (IS)	45	2	HMI He	865555	0.77	797526	108.53	60	120	
Sc (IS)	45	3	No Gas	31971156	0.94	28509182	112.14	60	120	
Ge Internal standard	72	1	HMI H2	15159964	3.10	9074377	167.06	60	120	IS Failed
Ge Internal standard	72	2	HMI He	1206625	0.17	1113151	108.40	60	120	
In Internal standard	115	2	HMI He	3662135	1.24	3301939	110.91	60	120	
Ho-165	165	2	HMI He	15017986	0.14	12873604	116.66	60	120	
Ir (IS)	193	2	HMI He	11744538	0.20	10633585	110.45	60	120	

Sample Table

Sample Name	280-165805-d-1-b ms
Data File Name	249SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:27:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	13.700	ppb	13.700	9.23	3454833	50000	
Be	9	1	6	4.882	ppb	4.882	125.80	1930	2000	
B	11	1	6	24.143	ppb	24.143	134.63	10733	2000	
Na	23	2	45	4564.223	ppb	4564.223	213.16	1976943	400000	
Mg	24	2	45	4938.181	ppb	4938.181	184.81	841195	400000	
Al	27	2	45	15852.196	ppb	15852.196	165.74	598249	400000	
Si	28	2	45	176.037	ppb	176.037	197.99	61449	10000	
P	31	2	45	457.188	ppb	457.188	167.25	1959	10000	
K	39	2	45	1223.925	ppb	1223.925	223.61	219559	400000	
Ca	40	1	45	8897.135	ppb	8897.135	118.74	43674446	400000	
Ti	47	2	45	443.045	ppb	443.045	166.16	19745	4000	
V	51	2	72	49.011	ppb	49.011	168.66	95049	2000	
Cr	52	2	72	20.814	ppb	20.814	167.35	50754	5000	
Mn	55	2	72	430.858	ppb	430.858	166.04	428783	10000	
Fe	56	1	72	31692.256	ppb	31692.256	118.88	330430464	10000	
(Fe)	57	2	72	20832.346	ppb	20832.346	165.70	949548	400000	
Co	59	2	72	11.357	ppb	11.357	165.37	46621	2000	
Ni	60	2	72	22.527	ppb	22.527	179.57	28695	5000	
Cu	63	2	72	20.816	ppb	20.816	168.77	65689	5000	
Zn	66	2	72	40.415	ppb	40.415	168.96	22950	5000	
As	75	2	72	9.592	ppb	9.592	167.32	4473	2000	
Se	78	1	72	2.100	ppb	2.100	115.83	865	2000	
Sr	88	2	72	89.755	ppb	89.755	166.10	103250	4000	
Zr	90	2	72	1296.207	ppb	1296.207	166.16	10701	1000	
Nb	93	2	72	2177.818	ppb	2177.818	186.16	170	200	>LDR
Mo	95	2	115	1.401	ppb	1.401	174.00	2111	2000	
Pd	105	2	115	2.536	ppb	2.536	386.57	60	100	
Ag	107	2	115	2.344	ppb	2.344	145.35	11584	100	
Cd	111	2	115	2.587	ppb	2.587	165.89	1787	2000	
Sn	120	2	115	0.352	ppb	0.352	310.83	1510	2000	
Sb	121	2	115	0.171	ppb	0.171	171.28	363	1000	
Ba	137	2	115	151.476	ppb	151.476	165.81	84213	5000	
W	182	2	165	-0.202	ppb	-0.202	-115.72	2867	100	
Pt	195	2	165	-75.898	ppb	-75.898	-62.18	50	100	
Tl	205	2	165	2.328	ppb	2.328	163.54	25782	2000	
Pb	208	2	165	7.476	ppb	7.476	166.67	114399	5000	
Th	232	2	193	16.657	ppb	16.657	170.82	251304	2000	
U	238	2	193	4.756	ppb	4.756	166.13	82108	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	939468	7.69	579603	162.09	60	120	IS Failed
Sc (IS)	45	1	HMI H2	25674224	4.20	17043241	150.64	60	120	IS Failed
Sc (IS)	45	2	HMI He	1500980	5.66	797526	188.20	60	120	IS Failed
Sc (IS)	45	3	No Gas	52092433	0.27	28509182	182.72	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	13873197	4.49	9074377	152.88	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2038084	5.33	1113151	183.09	60	120	IS Failed
In Internal standard	115	2	HMI He	5717290	6.08	3301939	173.15	60	120	IS Failed
Ho-165	165	2	HMI He	23488340	6.10	12873604	182.45	60	120	IS Failed
Ir (IS)	193	2	HMI He	18970450	6.52	10633585	178.40	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165805-d-1-c msd
Data File Name	250SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:31:23-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	242.067	ppb	242.067	0.49	3518588	50000	
Be	9	1	6	64.476	ppb	64.476	3.89	15314	2000	
B	11	1	6	447.609	ppb	447.609	1.13	88596	2000	
Na	23	2	45	113289.422	ppb	113289.422	0.80	23131743	400000	
Mg	24	2	45	105947.470	ppb	105947.470	0.36	9982925	400000	
Al	27	2	45	275792.854	ppb	275792.854	0.45	6437710	400000	
Si	28	2	45	5322.107	ppb	5322.107	0.23	814996	10000	
P	31	2	45	10297.317	ppb	10297.317	1.72	26480	10000	
K	39	2	45	31988.988	ppb	31988.988	0.69	2366137	400000	
Ca	40	1	45	103748.778	ppb	103748.778	0.68	375633208	400000	
Ti	47	2	45	7574.135	ppb	7574.135	1.09	208769	4000	
V	51	2	72	982.406	ppb	982.406	4.46	1164050	2000	
Cr	52	2	72	387.081	ppb	387.081	0.33	575703	5000	
Mn	55	2	72	8295.044	ppb	8295.044	0.82	5137633	10000	
Fe	56	1	72	347338.114	ppb	347338.114	1.80	2595066468	10000	>LDR
(Fe)	57	2	72	380572.045	ppb	380572.045	0.22	10805206	400000	
Co	59	2	72	220.985	ppb	220.985	0.71	564223	2000	
Ni	60	2	72	460.674	ppb	460.674	1.08	329402	5000	
Cu	63	2	72	408.519	ppb	408.519	0.05	777557	5000	
Zn	66	2	72	847.002	ppb	847.002	0.96	288682	5000	
As	75	2	72	205.989	ppb	205.989	0.78	59191	2000	
Se	78	1	72	28.087	ppb	28.087	6.29	8022	2000	
Sr	88	2	72	2127.962	ppb	2127.962	0.26	1523373	4000	
Zr	90	2	72	37256.129	ppb	37256.129	1.55	175339	1000	>LDR
Nb	93	2	72	62446.896	ppb	62446.896	8.70	2527	200	>LDR
Mo	95	2	115	27.981	ppb	27.981	2.07	27337	2000	
Pd	105	2	115	147.950	ppb	147.950	17.99	287	100	
Ag	107	2	115	41.998	ppb	41.998	1.78	138080	100	
Cd	111	2	115	44.889	ppb	44.889	4.67	20784	2000	
Sn	120	2	115	9.636	ppb	9.636	3.29	12362	2000	
Sb	121	2	115	3.655	ppb	3.655	4.94	4774	1000	
Ba	137	2	115	2836.536	ppb	2836.536	1.39	1062241	5000	
W	182	2	165	2.256	ppb	2.256	1.93	11662	100	
Pt	195	2	165	251.159	ppb	251.159	60.91	110	100	
Tl	205	2	165	42.293	ppb	42.293	1.62	309960	2000	
Pb	208	2	165	136.916	ppb	136.916	1.29	1374054	5000	
Th	232	2	193	290.073	ppb	290.073	0.87	2580682	2000	
U	238	2	193	91.630	ppb	91.630	0.85	997228	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	537347	1.25	579603	92.71	60	120	
Sc (IS)	45	1	HMI H2	18702631	0.53	17043241	109.74	60	120	
Sc (IS)	45	2	HMI He	892570	1.32	797526	111.92	60	120	
Sc (IS)	45	3	No Gas	33218728	0.30	28509182	116.52	60	120	
Ge Internal standard	72	1	HMI H2	9663156	0.63	9074377	106.49	60	120	
Ge Internal standard	72	2	HMI He	1209219	0.52	1113151	108.63	60	120	
In Internal standard	115	2	HMI He	3627085	0.41	3301939	109.85	60	120	
Ho-165	165	2	HMI He	14791644	1.20	12873604	114.90	60	120	
Ir (IS)	193	2	HMI He	11206243	0.33	10633585	105.39	60	120	

Sample Report

Sample Table

Sample Name	280-165805-d-1-a PDS
Data File Name	251SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:35:11-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	412.566	ppb	412.566	3.15	4525251	50000	
Be	9	1	6	253.032	ppb	253.032	1.31	60690	2000	
B	11	1	6	448.132	ppb	448.132	1.84	89665	2000	
Na	23	2	45	107482.483	ppb	107482.483	0.88	22300032	400000	
Mg	24	2	45	104444.919	ppb	104444.919	0.49	9993980	400000	
Al	27	2	45	271816.544	ppb	271816.544	0.22	6442197	400000	
Si	28	2	45	6668.002	ppb	6668.002	0.63	1033907	10000	
P	31	2	45	12056.529	ppb	12056.529	1.00	31473	10000	
K	39	2	45	32466.652	ppb	32466.652	0.65	2437805	400000	
Ca	40	1	45	99495.373	ppb	99495.373	0.22	369846688	400000	
Ti	47	2	45	7011.113	ppb	7011.113	1.02	196240	4000	
V	51	2	72	1211.964	ppb	1211.964	3.17	1473914	2000	
Cr	52	2	72	553.245	ppb	553.245	3.12	844481	5000	
Mn	55	2	72	8223.118	ppb	8223.118	2.96	5229273	10000	
Fe	56	1	72	353290.889	ppb	353290.889	0.98	2703205666	10000	>LDR
(Fe)	57	2	72	375125.044	ppb	375125.044	3.10	10934805	400000	
Co	59	2	72	390.471	ppb	390.471	2.67	1023628	2000	
Ni	60	2	72	633.554	ppb	633.554	3.14	464407	5000	
Cu	63	2	72	582.583	ppb	582.583	3.28	1137824	5000	
Zn	66	2	72	1012.823	ppb	1012.823	2.50	354340	5000	
As	75	2	72	380.672	ppb	380.672	2.75	112284	2000	
Se	78	1	72	212.449	ppb	212.449	0.45	61981	2000	
Sr	88	2	72	2167.374	ppb	2167.374	2.78	1593157	4000	
Zr	90	2	72	38559.573	ppb	38559.573	1.10	186413	1000	>LDR
Nb	93	2	72	64792.512	ppb	64792.512	8.85	2690	200	>LDR
Mo	95	2	115	235.379	ppb	235.379	0.78	231822	2000	
Pd	105	2	115	285.028	ppb	285.028	10.88	527	100	
Ag	107	2	115	51.857	ppb	51.857	1.20	172190	100	
Cd	111	2	115	218.926	ppb	218.926	0.35	102358	2000	
Sn	120	2	115	226.650	ppb	226.650	0.58	280596	2000	
Sb	121	2	115	231.846	ppb	231.846	0.72	304429	1000	
Ba	137	2	115	2978.997	ppb	2978.997	0.86	1126719	5000	
W	182	2	165	93.375	ppb	93.375	1.43	378877	100	
Pt	195	2	165	370.894	ppb	370.894	40.48	140	100	
Tl	205	2	165	234.524	ppb	234.524	1.16	1731882	2000	
Pb	208	2	165	333.516	ppb	333.516	0.24	3372140	5000	
Th	232	2	193	600.334	ppb	600.334	1.47	5328736	2000	
U	238	2	193	311.624	ppb	311.624	0.87	3390708	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	543112	1.08	579603	93.70	60	120	
Sc (IS)	45	1	HMI H2	19201951	0.82	17043241	112.67	60	120	
Sc (IS)	45	2	HMI He	906302	0.65	797526	113.64	60	120	
Sc (IS)	45	3	No Gas	33402076	1.22	28509182	117.16	60	120	
Ge Internal standard	72	1	HMI H2	9895707	0.53	9074377	109.05	60	120	
Ge Internal standard	72	2	HMI He	1242354	3.34	1113151	111.61	60	120	
In Internal standard	115	2	HMI He	3663447	1.31	3301939	110.95	60	120	
Ho-165	165	2	HMI He	14911861	0.34	12873604	115.83	60	120	
Ir (IS)	193	2	HMI He	11206147	0.26	10633585	105.38	60	120	

Sample Report

Sample Table

Sample Name	280-165805-d-3-a
Data File Name	252SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:38:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	33.268	ppb	33.268	25.64	3835810	50000	
Be	9	1	6	2.416	ppb	2.416	55.08	1020	2000	
B	11	1	6	37.164	ppb	37.164	56.54	15610	2000	
Na	23	2	45	3344.409	ppb	3344.409	210.16	1668370	400000	
Mg	24	2	45	12017.223	ppb	12017.223	157.94	2021648	400000	
Al	27	2	45	25082.752	ppb	25082.752	152.55	999909	400000	
Si	28	2	45	336.133	ppb	336.133	165.64	105971	10000	
P	31	2	45	1755.698	ppb	1755.698	152.41	7761	10000	
K	39	2	45	4636.445	ppb	4636.445	166.89	653653	400000	
Ca	40	1	45	43284.782	ppb	43284.782	54.87	228461380	400000	
Ti	47	2	45	531.624	ppb	531.624	151.21	25040	4000	
V	51	2	72	107.808	ppb	107.808	154.95	219194	2000	
Cr	52	2	72	46.681	ppb	46.681	152.50	119252	5000	
Mn	55	2	72	1056.561	ppb	1056.561	153.46	1114177	10000	
Fe	56	1	72	64877.905	ppb	64877.905	53.88	733181642	10000	>LDR
(Fe)	57	2	72	33023.027	ppb	33023.027	150.78	1597207	400000	
Co	59	2	72	20.232	ppb	20.232	152.51	88018	2000	
Ni	60	2	72	38.797	ppb	38.797	157.65	50139	5000	
Cu	63	2	72	42.025	ppb	42.025	153.48	138269	5000	
Zn	66	2	72	89.358	ppb	89.358	152.65	52689	5000	
As	75	2	72	5.633	ppb	5.633	154.41	2810	2000	
Se	78	1	72	0.866	ppb	0.866	44.34	407	2000	
Sr	88	2	72	226.710	ppb	226.710	154.40	276273	4000	
Zr	90	2	72	718.625	ppb	718.625	145.04	6728	1000	
Nb	93	2	72	2690.350	ppb	2690.350	117.23	217	200	>LDR
Mo	95	2	115	2.344	ppb	2.344	154.65	3725	2000	
Pd	105	2	115	6.107	ppb	6.107	422.58	70	100	
Ag	107	2	115	0.179	ppb	0.179	96.36	1010	100	
Cd	111	2	115	0.210	ppb	0.210	150.33	167	2000	
Sn	120	2	115	1.263	ppb	1.263	172.56	3381	2000	
Sb	121	2	115	0.816	ppb	0.816	145.19	1724	1000	
Ba	137	2	115	609.966	ppb	609.966	153.95	362988	5000	
W	182	2	165	0.493	ppb	0.493	224.93	7411	100	
Pt	195	2	165	117.162	ppb	117.162	39.57	127	100	
Tl	205	2	165	0.403	ppb	0.403	139.13	5036	2000	
Pb	208	2	165	11.086	ppb	11.086	151.31	179504	5000	
Th	232	2	193	28.307	ppb	28.307	155.94	431992	2000	
U	238	2	193	5.507	ppb	5.507	151.85	99236	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	951211	8.28	579603	164.11	60	120	IS Failed
Sc (IS)	45	1	HMI H2	27758036	7.59	17043241	162.87	60	120	IS Failed
Sc (IS)	45	2	HMI He	1546508	3.37	797526	193.91	60	120	IS Failed
Sc (IS)	45	3	No Gas	55042696	2.70	28509182	193.07	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	14902859	7.86	9074377	164.23	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2106772	3.55	1113151	189.26	60	120	IS Failed
In Internal standard	115	2	HMI He	5877057	2.55	3301939	177.99	60	120	IS Failed
Ho-165	165	2	HMI He	24085973	3.12	12873604	187.10	60	120	IS Failed
Ir (IS)	193	2	HMI He	19078149	3.76	10633585	179.41	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	253_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:42:40-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	60.993	ppb	7.446	2500845	100	61.0	90	110	>+\-10%
Be	9	1	6	52.028	ppb	3.836	13676	50	104.1	90	110	
B	11	1	6	495.749	ppb	0.180	108414	50	991.5	90	110	>+\-10%
Na	23	2	45	48054.422	ppb	1.181	10097315	51000	94.2	90	110	
Mg	24	2	45	9276.581	ppb	1.155	937224	11000	84.3	90	110	>+\-10%
Al	27	2	45	1008.504	ppb	0.322	24118	1000	100.9	90	110	
Si	28	2	45	65.383	ppb	6.381	21321	500	13.1	90	110	>+\-10%
P	31	2	45	2444.930	ppb	0.593	6386	2500	97.8	90	110	
K	39	2	45	9912.714	ppb	0.308	773889	11000	90.1	90	110	
Ca	40	1	45	11479.719	ppb	0.565	42072619	11000	104.4	90	110	
(Ca)	44	1	45	10754.485	ppb	0.733	1354547	11000	97.8	90	110	
Ti	47	2	45	61.074	ppb	17.883	1714	50	122.1	90	110	>+\-10%
V	51	2	72	46.760	ppb	1.740	65271	50	93.5	90	110	
Cr	52	2	72	47.235	ppb	0.298	81762	50	94.5	90	110	
Mn	55	2	72	47.807	ppb	3.323	34697	50	95.6	90	110	
Fe	56	1	72	1177.333	ppb	1.956	9721731	1000	117.7	90	110	>+\-10%
(Fe)	56	2	72	1080.253	ppb	0.738	1562599	1000	108.0	90	110	
(Fe)	57	2	72	1084.134	ppb	2.246	36013	1000	108.4	90	110	
Co	59	2	72	46.214	ppb	0.667	136200	50	92.4	90	110	
Ni	60	2	72	46.603	ppb	2.608	40363	50	93.2	90	110	
Cu	63	2	72	46.431	ppb	0.216	103362	50	92.9	90	110	
Zn	66	2	72	48.116	ppb	0.726	19512	50	96.2	90	110	
As	75	2	72	47.281	ppb	0.572	15704	50	94.6	90	110	
Se	78	1	72	46.848	ppb	1.763	14576	50	93.7	90	110	
Sr	88	2	72	97.833	ppb	1.374	80934	100	97.8	90	110	
Zr	90	2	72	4599.176	ppb	11.397	25548	50	9198.4	90	110	>+\-10%
Nb	93	2	72	5373.614	ppb	24.471	270	100	5373.6	90	110	>+\-10%
Mo	95	2	115	52.526	ppb	0.265	55486	50	105.1	90	110	
Pd	105	2	115	189.117	ppb	16.498	387	50	378.2	90	110	>+\-10%
Ag	107	2	115	50.106	ppb	0.428	178287	50	100.2	90	110	
Cd	111	2	115	49.101	ppb	2.296	24610	50	98.2	90	110	
Sn	120	2	115	52.210	ppb	2.133	69733	50	104.4	90	110	
Sb	121	2	115	51.368	ppb	1.123	72291	50	102.7	90	110	
Ba	137	2	115	53.111	ppb	2.873	21599	50	106.2	90	110	
W	182	2	165	50.423	ppb	1.407	211986	50	100.8	90	110	
Pt	195	2	165	247.372	ppb	50.274	113	50	494.7	90	110	>+\-10%
Tl	205	2	165	49.175	ppb	0.323	374193	50	98.4	90	110	
Pb	208	2	165	49.263	ppb	1.023	514443	50	98.5	90	110	
Th	232	2	193	56.210	ppb	1.860	542419	50	112.4	90	110	>+\-10%
U	238	2	193	53.016	ppb	0.702	614904	50	106.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	594801	1.06	579603	102.62	60	120	
Sc (IS)	45	1	HMI H2	18851990	0.06	17043241	110.61	60	120	
Sc (IS)	45	2	HMI He	902506	0.62	797526	113.16	60	120	
Sc (IS)	45	3	No Gas	33560125	0.84	28509182	117.72	60	120	
Ge Internal standard	72	1	HMI H2	10539832	0.40	9074377	116.15	60	120	
Ge Internal standard	72	2	HMI He	1395178	0.26	1113151	125.34	60	120	IS Failed
In Internal standard	115	2	HMI He	3925469	1.25	3301939	118.88	60	120	
Ho-165	165	2	HMI He	15358646	0.84	12873604	119.30	60	120	
Ir (IS)	193	2	HMI He	11941133	0.97	10633585	112.30	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	254_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:46:24-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-30.971	ppb	-9.4	1966561	10	
Be	9	1	6	0.293	ppb	1.8	100	0.5	
B	11	1	6	10.494	ppb	8.6	4457	0.5	>RL
Na	23	2	45	-1111.892	ppb	-0.5	78191	25	
Mg	24	2	45	-525.267	ppb	-0.2	8679	25	
Al	27	2	45	16.323	ppb	14.2	693	15	>RL
K	39	2	45	-136.584	ppb	-12.0	36564	50	
Ti	47	2	45	2.374	ppb	57.6	77	0.5	>RL
V	51	2	72	-0.687	ppb	-7.1	470	1	
Cr	52	2	72	-0.017	ppb	-53.8	757	1	
Mn	55	2	72	0.788	ppb	17.1	1070	0.5	>RL
(Fe)	57	2	72	49.012	ppb	1.3	2054	25	>RL
Co	59	2	72	0.053	ppb	21.8	220	0.5	
Ni	60	2	72	-0.580	ppb	-40.8	1617	1	
Cu	63	2	72	0.052	ppb	181.8	1643	1	
Zn	66	2	72	0.202	ppb	138.9	690	5	
As	75	2	72	0.022	ppb	174.4	44	1	
Se	78	1	72	0.017	ppb	252.5	29	1	
Sr	88	2	72	0.278	ppb	26.5	353	0.5	
Zr	90	2	72	5.692	ppb	374.6	663	1	>RL
Nb	93	2	72	1598.046	ppb	63.4	93	2	>RL
Mo	95	2	115	0.778	ppb	10.1	890	0.5	>RL
Pd	105	2	115	-4.917	ppb	-169.7	27	1	
Ag	107	2	115	0.065	ppb	7.7	277	1	
Cd	111	2	115	0.017	ppb	175.5	17	0.5	
Sn	120	2	115	1.016	ppb	13.4	1980	1	>RL
Sb	121	2	115	0.443	ppb	5.6	650	0.6	
Ba	137	2	115	0.346	ppb	12.3	217	0.5	
W	182	2	165	0.562	ppb	13.7	5108	1	
Pt	195	2	165	165.079	ppb	14.0	93	1	>RL
Tl	205	2	165	0.089	ppb	20.6	893	0.1	
Pb	208	2	165	0.034	ppb	26.1	2077	0.5	
Th	232	2	193	1.476	ppb	13.5	26361	1	>RL
U	238	2	193	0.097	ppb	5.1	1437	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	631951	1.42	579603	109.03	60	120	
Sc (IS)	45	1	HMI H2	19555278	2.47	17043241	114.74	60	120	
Sc (IS)	45	2	HMI He	891508	0.80	797526	111.78	60	120	
Sc (IS)	45	3	No Gas	33574270	0.42	28509182	117.77	60	120	
Ge Internal standard	72	1	HMI H2	10787172	1.85	9074377	118.88	60	120	
Ge Internal standard	72	2	HMI He	1360139	2.76	1113151	122.19	60	120	IS Failed
In Internal standard	115	2	HMI He	3948798	1.32	3301939	119.59	60	120	
Ho-165	165	2	HMI He	15427788	1.93	12873604	119.84	60	120	
Ir (IS)	193	2	HMI He	12178901	0.44	10633585	114.53	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7343178
Data File Name	255LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:50:09-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-23.271	ppb	-10.570	1973964	50	-46.5	70	130	>+/-30%
Be	9	1	6	0.937	ppb	21.037	273	1	93.7	70	130	
Na	23	2	45	-1129.600	ppb	-0.255	75061	50	-2259.2	70	130	>+/-30%
Mg	24	2	45	-472.556	ppb	-0.796	13689	50	-945.1	70	130	>+/-30%
Al	27	2	45	54.404	ppb	9.487	1590	50	108.8	70	130	
K	39	2	45	-55.620	ppb	-42.429	42678	100	-55.6	70	130	>+/-30%
V	51	2	72	4.246	ppb	4.996	7168	5	84.9	70	130	
Cr	52	2	72	1.761	ppb	12.828	3797	2	88.1	70	130	
Mn	55	2	72	1.271	ppb	10.550	1433	1	127.1	70	130	
(Fe)	57	2	72	67.593	ppb	5.194	2697	50	135.2	70	130	>+/-30%
Co	59	2	72	0.939	ppb	3.253	2817	1	93.9	70	130	
Ni	60	2	72	0.798	ppb	17.462	2767	2	39.9	70	130	>+/-30%
Cu	63	2	72	1.835	ppb	14.675	5561	2	91.8	70	130	
Zn	66	2	72	8.949	ppb	5.516	4111	10	89.5	70	130	
As	75	2	72	4.698	ppb	2.905	1584	5	94.0	70	130	
Se	78	1	72	4.686	ppb	2.682	1487	5	93.7	70	130	
Sr	88	2	72	1.183	ppb	5.496	1103	1	118.3	70	130	
Zr	90	2	72	1489.092	ppb	9.808	8656	0.5	297818.4	70	130	>+/-30%
Nb	93	2	72	1503.960	ppb	43.661	90	2	75198.0	70	130	>+/-30%
Mo	95	2	115	2.205	ppb	3.957	2430	2	110.3	70	130	
Pd	105	2	115	-8.648	ppb	-62.258	20	1	-864.8	70	130	>+/-30%
Ag	107	2	115	0.968	ppb	4.976	3544	1	96.8	70	130	
Cd	111	2	115	0.893	ppb	9.940	463	1	89.3	70	130	
Sn	120	2	115	10.086	ppb	0.921	14204	10	100.9	70	130	
Sb	121	2	115	2.212	ppb	11.627	3184	2	110.6	70	130	
Ba	137	2	115	1.231	ppb	25.402	583	1	123.1	70	130	
W	182	2	165	4.817	ppb	2.668	23061	1	481.7	70	130	>+/-30%
Pt	195	2	165	55.156	ppb	325.896	67	1	5515.6	70	130	>+/-30%
Tl	205	2	165	1.005	ppb	1.058	7966	1	100.5	70	130	
Pb	208	2	165	1.069	ppb	1.520	13023	1	106.9	70	130	
Th	232	2	193	4.917	ppb	6.031	60636	2	245.9	70	130	>+/-30%
U	238	2	193	1.064	ppb	0.423	13120	1	106.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	617686	0.76	579603	106.57	60	120	
Sc (IS)	45	1	HMI H2	19218669	0.43	17043241	112.76	60	120	
Sc (IS)	45	2	HMI He	896691	0.70	797526	112.43	60	120	
Sc (IS)	45	3	No Gas	32949230	0.81	28509182	115.57	60	120	
Ge Internal standard	72	1	HMI H2	10597688	0.47	9074377	116.79	60	120	
Ge Internal standard	72	2	HMI He	1385772	0.72	1113151	124.49	60	120	IS Failed
In Internal standard	115	2	HMI He	3989970	1.27	3301939	120.84	60	120	IS Failed
Ho-165	165	2	HMI He	15574464	1.00	12873604	120.98	60	120	IS Failed
Ir (IS)	193	2	HMI He	12409598	1.38	10633585	116.70	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-5-b
Data File Name	256SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:53:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	256.532	ppb	256.532	2.75	3633317	50000	
Be	9	1	6	14.640	ppb	14.640	7.48	3537	2000	
B	11	1	6	251.230	ppb	251.230	1.07	51190	2000	
Na	23	2	45	47049.853	ppb	47049.853	0.75	9802745	400000	
Mg	24	2	45	136922.405	ppb	136922.405	0.61	12909561	400000	
Al	27	2	45	255969.971	ppb	255969.971	0.84	5986327	400000	
Si	28	2	45	6241.754	ppb	6241.754	0.51	955709	10000	
P	31	2	45	7920.992	ppb	7920.992	0.71	20418	10000	
K	39	2	45	42613.808	ppb	42613.808	0.98	3142664	400000	
Ca	40	1	45	232517.889	ppb	232517.889	1.94	863990227	400000	
Ti	47	2	45	6210.231	ppb	6210.231	0.33	171526	4000	
V	51	2	72	2063.615	ppb	2063.615	1.22	2418939	2000	
Cr	52	2	72	882.327	ppb	882.327	0.51	1298228	5000	
Mn	55	2	72	10404.183	ppb	10404.183	1.37	6378858	10000	
Fe	56	1	72	364535.369	ppb	364535.369	2.26	2787998678	10000	>LDR
(Fe)	57	2	72	400341.730	ppb	400341.730	0.16	11252809	400000	
Co	59	2	72	244.588	ppb	244.588	0.47	618264	2000	
Ni	60	2	72	548.428	ppb	548.428	0.50	387882	5000	
Cu	63	2	72	809.459	ppb	809.459	1.47	1524030	5000	
Zn	66	2	72	1166.430	ppb	1166.430	0.20	393372	5000	
As	75	2	72	138.404	ppb	138.404	1.10	39380	2000	
Se	78	1	72	16.770	ppb	16.770	0.75	4911	2000	
Sr	88	2	72	2802.876	ppb	2802.876	1.27	1986282	4000	
Zr	90	2	72	8662.321	ppb	8662.321	6.50	40772	1000	>LDR
Nb	93	2	72	88003.791	ppb	88003.791	6.10	3517	200	>LDR
Mo	95	2	115	20.367	ppb	20.367	0.99	20026	2000	
Pd	105	2	115	112.501	ppb	112.501	26.88	227	100	
Ag	107	2	115	1.942	ppb	1.942	2.26	6462	100	
Cd	111	2	115	2.779	ppb	2.779	10.13	1300	2000	
Sn	120	2	115	0.769	ppb	0.769	7.74	1523	2000	
Sb	121	2	115	0.448	ppb	0.448	13.95	607	1000	
Ba	137	2	115	7030.532	ppb	7030.532	1.50	2646829	5000	
W	182	2	165	3.012	ppb	3.012	2.25	14894	100	
Pt	195	2	165	93.353	ppb	93.353	154.17	73	100	
Tl	205	2	165	3.618	ppb	3.618	3.07	27085	2000	
Pb	208	2	165	151.170	ppb	151.170	0.71	1538774	5000	
Th	232	2	193	235.878	ppb	235.878	1.86	2122238	2000	
U	238	2	193	458.364	ppb	458.364	0.43	5038928	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	544711	0.63	579603	93.98	60	120	
Sc (IS)	45	1	HMI H2	19202443	0.84	17043241	112.67	60	120	
Sc (IS)	45	2	HMI He	894310	1.10	797526	112.14	60	120	
Sc (IS)	45	3	No Gas	33507101	0.51	28509182	117.53	60	120	
Ge Internal standard	72	1	HMI H2	9893013	1.17	9074377	109.02	60	120	
Ge Internal standard	72	2	HMI He	1197144	1.10	1113151	107.55	60	120	
In Internal standard	115	2	HMI He	3647048	1.78	3301939	110.45	60	120	
Ho-165	165	2	HMI He	15003396	0.29	12873604	116.54	60	120	
Ir (IS)	193	2	HMI He	11322155	0.24	10633585	106.48	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-6-b
Data File Name	257SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T01:57:42-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	0.606	ppb	0.606	257.43	3786873	50000	
Be	9	1	6	1.209	ppb	1.209	75.70	540	2000	
B	11	1	6	14.113	ppb	14.113	64.85	8223	2000	
Na	23	2	45	463.146	ppb	463.146	394.54	696503	400000	
Mg	24	2	45	4636.250	ppb	4636.250	113.29	867209	400000	
Al	27	2	45	9640.151	ppb	9640.151	100.34	396996	400000	
Si	28	2	45	167.938	ppb	167.938	120.50	64263	10000	
P	31	2	45	254.206	ppb	254.206	103.38	1214	10000	
K	39	2	45	1133.048	ppb	1133.048	144.25	225966	400000	
Ca	40	1	45	20858.156	ppb	20858.156	65.82	108667040	400000	
Ti	47	2	45	218.184	ppb	218.184	96.16	10633	4000	
V	51	2	72	64.879	ppb	64.879	102.70	140119	2000	
Cr	52	2	72	28.417	ppb	28.417	101.33	77081	5000	
Mn	55	2	72	383.120	ppb	383.120	100.11	427093	10000	
Fe	56	1	72	31811.154	ppb	31811.154	66.24	356626931	10000	
(Fe)	57	2	72	14734.063	ppb	14734.063	99.80	752361	400000	
Co	59	2	72	8.651	ppb	8.651	99.88	39788	2000	
Ni	60	2	72	18.061	ppb	18.061	111.81	26350	5000	
Cu	63	2	72	26.503	ppb	26.503	102.30	92888	5000	
Zn	66	2	72	39.422	ppb	39.422	100.86	25074	5000	
As	75	2	72	4.495	ppb	4.495	103.13	2376	2000	
Se	78	1	72	1.246	ppb	1.246	70.66	564	2000	
Sr	88	2	72	85.230	ppb	85.230	100.86	109790	4000	
Zr	90	2	72	255.603	ppb	255.603	112.05	3148	1000	
Nb	93	2	72	2730.662	ppb	2730.662	90.08	230	200	>LDR
Mo	95	2	115	0.786	ppb	0.786	108.19	1370	2000	
Pd	105	2	115	3.094	ppb	3.094	225.80	63	100	
Ag	107	2	115	0.071	ppb	0.071	64.26	457	100	
Cd	111	2	115	0.119	ppb	0.119	129.97	103	2000	
Sn	120	2	115	-0.171	ppb	-0.171	-70.00	603	2000	
Sb	121	2	115	0.066	ppb	0.066	90.79	180	1000	
Ba	137	2	115	242.605	ppb	242.605	100.97	151088	5000	
W	182	2	165	-0.170	ppb	-0.170	-116.98	3294	100	
Pt	195	2	165	48.618	ppb	48.618	176.35	103	100	
Tl	205	2	165	0.143	ppb	0.143	96.39	2107	2000	
Pb	208	2	165	5.819	ppb	5.819	102.36	101465	5000	
Th	232	2	193	7.465	ppb	7.465	107.67	137148	2000	
U	238	2	193	17.074	ppb	17.074	106.45	329878	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1011350	10.56	579603	174.49	60	120	IS Failed
Sc (IS)	45	1	HMI H2	28243505	11.27	17043241	165.72	60	120	IS Failed
Sc (IS)	45	2	HMI He	1549109	5.19	797526	194.24	60	120	IS Failed
Sc (IS)	45	3	No Gas	59129749	3.89	28509182	207.41	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	15293919	11.89	9074377	168.54	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2134924	5.20	1113151	191.79	60	120	IS Failed
In Internal standard	115	2	HMI He	5961891	4.19	3301939	180.56	60	120	IS Failed
Ho-165	165	2	HMI He	24616693	4.43	12873604	191.22	60	120	IS Failed
Ir (IS)	193	2	HMI He	19728672	3.10	10633585	185.53	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165805-a-8-b
Data File Name	258SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:01:27-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1.872	ppb	1.872	94.68	3574970	50000	
Be	9	1	6	-0.036	ppb	-0.036	-141.90	13	2000	
B	11	1	6	-3.063	ppb	-3.063	-14.20	2230	2000	
Na	23	2	45	482.708	ppb	482.708	420.79	696846	400000	
Mg	24	2	45	4340.160	ppb	4340.160	121.54	810398	400000	
Al	27	2	45	8448.420	ppb	8448.420	113.52	344130	400000	
Si	28	2	45	139.261	ppb	139.261	139.53	56225	10000	
P	31	2	45	246.481	ppb	246.481	113.37	1169	10000	
K	39	2	45	1123.317	ppb	1123.317	157.75	222982	400000	
Ca	40	1	45	-34.569	ppb	-34.569	-9.66	106007	400000	
Ti	47	2	45	206.332	ppb	206.332	108.97	9938	4000	
V	51	2	72	61.624	ppb	61.624	111.01	129821	2000	
Cr	52	2	72	26.804	ppb	26.804	109.75	70922	5000	
Mn	55	2	72	353.060	ppb	353.060	113.40	383491	10000	
Fe	56	1	72	21.461	ppb	21.461	29.17	420116	10000	
(Fe)	57	2	72	13676.932	ppb	13676.932	107.28	680506	400000	
Co	59	2	72	8.260	ppb	8.260	110.06	37021	2000	
Ni	60	2	72	16.774	ppb	16.774	122.12	24112	5000	
Cu	63	2	72	25.275	ppb	25.275	111.05	86455	5000	
Zn	66	2	72	38.329	ppb	38.329	114.14	23773	5000	
As	75	2	72	4.342	ppb	4.342	113.59	2240	2000	
Se	78	1	72	-0.041	ppb	-0.041	-63.84	15	2000	
Sr	88	2	72	82.066	ppb	82.066	108.99	103035	4000	
Zr	90	2	72	186.720	ppb	186.720	129.11	2524	1000	
Nb	93	2	72	2250.670	ppb	2250.670	132.71	190	200	>LDR
Mo	95	2	115	0.728	ppb	0.728	111.18	1247	2000	
Pd	105	2	115	7.058	ppb	7.058	131.07	73	100	
Ag	107	2	115	0.068	ppb	0.068	101.87	427	100	
Cd	111	2	115	0.100	ppb	0.100	108.57	87	2000	
Sn	120	2	115	-0.143	ppb	-0.143	-162.75	650	2000	
Sb	121	2	115	0.087	ppb	0.087	120.45	220	1000	
Ba	137	2	115	230.359	ppb	230.359	110.09	139974	5000	
W	182	2	165	-0.184	ppb	-0.184	-105.70	3161	100	
Pt	195	2	165	10.712	ppb	10.712	870.54	87	100	
Tl	205	2	165	0.160	ppb	0.160	103.38	2271	2000	
Pb	208	2	165	5.556	ppb	5.556	110.50	94865	5000	
Th	232	2	193	7.243	ppb	7.243	118.48	130474	2000	
U	238	2	193	15.753	ppb	15.753	115.00	297074	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	1029984	4.00	579603	177.71	60	120	IS Failed
Sc (IS)	45	1	HMI H2	27107250	4.66	17043241	159.05	60	120	IS Failed
Sc (IS)	45	2	HMI He	1557274	2.37	797526	195.26	60	120	IS Failed
Sc (IS)	45	3	No Gas	55628051	2.65	28509182	195.12	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	14717614	5.25	9074377	162.19	60	120	IS Failed
Ge Internal standard	72	2	HMI He	2121741	0.38	1113151	190.61	60	120	IS Failed
In Internal standard	115	2	HMI He	5904430	0.85	3301939	178.82	60	120	IS Failed
Ho-165	165	2	HMI He	24394858	1.01	12873604	189.50	60	120	IS Failed
Ir (IS)	193	2	HMI He	19500256	0.75	10633585	183.38	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-165805-a-9-b
Data File Name	259SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:05:14-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	525.547	ppb	525.547	1.36	5316603	50000	
Be	9	1	6	21.481	ppb	21.481	3.59	5021	2000	
B	11	1	6	442.958	ppb	442.958	0.58	86177	2000	
Na	23	2	45	75290.966	ppb	75290.966	1.58	15921481	400000	
Mg	24	2	45	199265.280	ppb	199265.280	0.79	19266299	400000	
Al	27	2	45	426075.895	ppb	426075.895	1.91	10231585	400000	
Si	28	2	45	4376.410	ppb	4376.410	1.72	691528	10000	
P	31	2	45	10902.230	ppb	10902.230	0.73	28842	10000	
K	39	2	45	88038.729	ppb	88038.729	0.83	6616444	400000	
Ca	40	1	45	307979.632	ppb	307979.632	0.58	1157670116	400000	
Ti	47	2	45	17329.520	ppb	17329.520	1.38	491455	4000	
V	51	2	72	1507.670	ppb	1507.670	0.25	1781715	2000	
Cr	52	2	72	731.897	ppb	731.897	1.00	1085534	5000	
Mn	55	2	72	14767.591	ppb	14767.591	0.43	9126353	10000	
Fe	56	1	72	605742.203	ppb	605742.203	1.08	4576186172	10000	>LDR
(Fe)	57	2	72	668862.780	ppb	668862.780	0.26	18948801	400000	
Co	59	2	72	328.523	ppb	328.523	1.35	836900	2000	
Ni	60	2	72	687.600	ppb	687.600	0.66	489689	5000	
Cu	63	2	72	601.992	ppb	601.992	0.78	1142651	5000	
Zn	66	2	72	1934.729	ppb	1934.729	1.10	657243	5000	
As	75	2	72	144.337	ppb	144.337	0.49	41393	2000	
Se	78	1	72	4.129	ppb	4.129	5.04	1211	2000	
Sr	88	2	72	3153.318	ppb	3153.318	2.02	2252523	4000	
Zr	90	2	72	24536.809	ppb	24536.809	1.71	115415	1000	>LDR
Nb	93	2	72	64089.069	ppb	64089.069	11.37	2587	200	>LDR
Mo	95	2	115	17.285	ppb	17.285	3.67	16959	2000	
Pd	105	2	115	242.336	ppb	242.336	15.24	450	100	
Ag	107	2	115	2.523	ppb	2.523	7.72	8359	100	
Cd	111	2	115	2.080	ppb	2.080	19.39	973	2000	
Sn	120	2	115	10.406	ppb	10.406	1.88	13339	2000	
Sb	121	2	115	0.305	ppb	0.305	34.36	420	1000	
Ba	137	2	115	6617.143	ppb	6617.143	1.00	2484751	5000	
W	182	2	165	2.945	ppb	2.945	6.34	14558	100	
Pt	195	2	165	81.018	ppb	81.018	86.57	70	100	
Tl	205	2	165	7.417	ppb	7.417	0.40	55038	2000	
Pb	208	2	165	168.310	ppb	168.310	0.69	1704747	5000	
Th	232	2	193	387.636	ppb	387.636	0.61	3421683	2000	
U	238	2	193	62.996	ppb	62.996	0.62	681063	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	528037	1.61	579603	91.10	60	120	
Sc (IS)	45	1	HMI H2	19424716	0.68	17043241	113.97	60	120	
Sc (IS)	45	2	HMI He	918360	0.80	797526	115.15	60	120	
Sc (IS)	45	3	No Gas	34284479	0.84	28509182	120.26	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9770938	0.44	9074377	107.68	60	120	
Ge Internal standard	72	2	HMI He	1206596	0.66	1113151	108.39	60	120	
In Internal standard	115	2	HMI He	3637018	0.87	3301939	110.15	60	120	
Ho-165	165	2	HMI He	14930519	0.57	12873604	115.98	60	120	
Ir (IS)	193	2	HMI He	11131045	0.55	10633585	104.68	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-10-b
Data File Name	260SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:09:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	141.457	ppb	141.457	0.92	2987364	50000	
Be	9	1	6	5.110	ppb	5.110	79.27	1460	2000	
B	11	1	6	224.985	ppb	224.985	79.80	54213	2000	
Na	23	2	45	99984.551	ppb	99984.551	0.15	21246170	400000	
Mg	24	2	45	73682.116	ppb	73682.116	0.26	7230885	400000	
Al	27	2	45	147934.949	ppb	147934.949	0.42	3587307	400000	
Si	28	2	45	5427.940	ppb	5427.940	0.32	863248	10000	
P	31	2	45	5056.031	ppb	5056.031	1.34	13527	10000	
K	39	2	45	27090.786	ppb	27090.786	0.52	2089162	400000	
Ca	40	1	45	37954.564	ppb	37954.564	75.49	156858533	400000	
Ti	47	2	45	7618.773	ppb	7618.773	0.35	218170	4000	
V	51	2	72	656.084	ppb	656.084	2.04	864067	2000	
Cr	52	2	72	170.405	ppb	170.405	2.65	281985	5000	
Mn	55	2	72	4393.939	ppb	4393.939	1.15	3024312	10000	
Fe	56	1	72	116427.373	ppb	116427.373	75.84	1015309938	10000	>LDR
(Fe)	57	2	72	201820.463	ppb	201820.463	2.01	6366475	400000	
Co	59	2	72	90.750	ppb	90.750	2.69	257447	2000	
Ni	60	2	72	216.278	ppb	216.278	3.50	172871	5000	
Cu	63	2	72	187.419	ppb	187.419	2.05	397153	5000	
Zn	66	2	72	496.579	ppb	496.579	1.67	188294	5000	
As	75	2	72	100.232	ppb	100.232	1.64	32020	2000	
Se	78	1	72	0.547	ppb	0.547	81.93	208	2000	
Sr	88	2	72	1157.652	ppb	1157.652	2.03	920823	4000	
Zr	90	2	72	26014.655	ppb	26014.655	7.01	136115	1000	>LDR
Nb	93	2	72	80002.804	ppb	80002.804	8.37	3597	200	>LDR
Mo	95	2	115	4.322	ppb	4.322	2.83	4451	2000	
Pd	105	2	115	36.718	ppb	36.718	40.24	100	100	
Ag	107	2	115	0.264	ppb	0.264	3.29	947	100	
Cd	111	2	115	1.526	ppb	1.526	6.45	743	2000	
Sn	120	2	115	5.595	ppb	5.595	4.10	7729	2000	
Sb	121	2	115	0.470	ppb	0.470	8.47	660	1000	
Ba	137	2	115	1633.682	ppb	1633.682	0.47	637380	5000	
W	182	2	165	2.349	ppb	2.349	4.28	12345	100	
Pt	195	2	165	158.067	ppb	158.067	77.86	90	100	
Tl	205	2	165	1.778	ppb	1.778	2.09	13567	2000	
Pb	208	2	165	50.708	ppb	50.708	0.68	523021	5000	
Th	232	2	193	74.005	ppb	74.005	1.54	676844	2000	
U	238	2	193	29.159	ppb	29.159	0.21	322347	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	753937	29.20	579603	130.08	60	120	IS Failed
Sc (IS)	45	1	HMI H2	23707423	19.97	17043241	139.10	60	120	IS Failed
Sc (IS)	45	2	HMI He	927234	0.30	797526	116.26	60	120	
Sc (IS)	45	3	No Gas	33764477	0.88	28509182	118.43	60	120	
Ge Internal standard	72	1	HMI H2	12656408	21.57	9074377	139.47	60	120	IS Failed
Ge Internal standard	72	2	HMI He	1343900	2.34	1113151	120.73	60	120	IS Failed
In Internal standard	115	2	HMI He	3778500	0.57	3301939	114.43	60	120	
Ho-165	165	2	HMI He	15170262	0.44	12873604	117.84	60	120	
Ir (IS)	193	2	HMI He	11376715	0.14	10633585	106.99	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-11-b
Data File Name	261SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:12:52-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	112.183	ppb	112.183	3.33	2858847	50000	
Be	9	1	6	9.873	ppb	9.873	9.61	2430	2000	
B	11	1	6	432.284	ppb	432.284	0.93	88271	2000	
Na	23	2	45	111176.305	ppb	111176.305	0.37	23846163	400000	
Mg	24	2	45	69274.556	ppb	69274.556	0.84	6875865	400000	
Al	27	2	45	174097.379	ppb	174097.379	0.50	4267767	400000	
Si	28	2	45	5576.041	ppb	5576.041	0.40	896138	10000	
P	31	2	45	5931.032	ppb	5931.032	0.51	16034	10000	
K	39	2	45	11761.985	ppb	11761.985	0.43	944583	400000	
Ca	40	1	45	100458.022	ppb	100458.022	0.82	373063101	400000	
Ti	47	2	45	5295.924	ppb	5295.924	0.54	153307	4000	
V	51	2	72	736.067	ppb	736.067	0.17	963759	2000	
Cr	52	2	72	372.648	ppb	372.648	0.60	612306	5000	
Mn	55	2	72	5677.598	ppb	5677.598	0.80	3884838	10000	
Fe	56	1	72	233872.036	ppb	233872.036	0.43	1803594053	10000	>LDR
(Fe)	57	2	72	241470.476	ppb	241470.476	0.76	7574251	400000	
Co	59	2	72	132.513	ppb	132.513	0.46	373804	2000	
Ni	60	2	72	267.665	ppb	267.665	0.33	212298	5000	
Cu	63	2	72	766.444	ppb	766.444	0.35	1610279	5000	
Zn	66	2	72	564.941	ppb	564.941	0.48	212905	5000	
As	75	2	72	35.367	ppb	35.367	1.70	11256	2000	
Se	78	1	72	1.513	ppb	1.513	2.49	467	2000	
Sr	88	2	72	1254.685	ppb	1254.685	0.48	992337	4000	
Zr	90	2	72	36964.546	ppb	36964.546	3.17	192177	1000	>LDR
Nb	93	2	72	59032.214	ppb	59032.214	8.40	2640	200	>LDR
Mo	95	2	115	9.414	ppb	9.414	4.35	9533	2000	
Pd	105	2	115	78.434	ppb	78.434	54.27	173	100	
Ag	107	2	115	3.113	ppb	3.113	4.42	10601	100	
Cd	111	2	115	1.897	ppb	1.897	15.44	913	2000	
Sn	120	2	115	1.124	ppb	1.124	10.61	2014	2000	
Sb	121	2	115	0.244	ppb	0.244	18.00	350	1000	
Ba	137	2	115	2137.633	ppb	2137.633	0.69	826245	5000	
W	182	2	165	2.037	ppb	2.037	2.55	11048	100	
Pt	195	2	165	306.696	ppb	306.696	79.02	127	100	
Tl	205	2	165	1.346	ppb	1.346	2.50	10301	2000	
Pb	208	2	165	69.426	ppb	69.426	1.23	714379	5000	
Th	232	2	193	73.433	ppb	73.433	0.74	666177	2000	
U	238	2	193	63.790	ppb	63.790	0.23	699053	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	553962	0.81	579603	95.58	60	120	
Sc (IS)	45	1	HMI H2	19183463	0.62	17043241	112.56	60	120	
Sc (IS)	45	2	HMI He	937350	0.76	797526	117.53	60	120	
Sc (IS)	45	3	No Gas	34279604	0.34	28509182	120.24	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9973490	0.22	9074377	109.91	60	120	
Ge Internal standard	72	2	HMI He	1335876	0.57	1113151	120.01	60	120	IS Failed
In Internal standard	115	2	HMI He	3743665	1.07	3301939	113.38	60	120	
Ho-165	165	2	HMI He	15146709	0.49	12873604	117.66	60	120	
Ir (IS)	193	2	HMI He	11282588	0.73	10633585	106.10	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-12-b
Data File Name	262SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:16:42-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	31.061	ppb	31.061	11.83	2334589	50000	
Be	9	1	6	3.547	ppb	3.547	7.89	903	2000	
B	11	1	6	393.105	ppb	393.105	2.54	82239	2000	
Na	23	2	45	86775.458	ppb	86775.458	0.72	18339040	400000	
Mg	24	2	45	30103.609	ppb	30103.609	1.18	2966851	400000	
Al	27	2	45	38768.773	ppb	38768.773	1.10	933124	400000	
Si	28	2	45	5568.337	ppb	5568.337	0.79	878478	10000	
P	31	2	45	3162.817	ppb	3162.817	1.45	8411	10000	
K	39	2	45	11054.736	ppb	11054.736	0.71	874362	400000	
Ca	40	1	45	115996.236	ppb	115996.236	0.25	424391994	400000	
Ti	47	2	45	3161.435	ppb	3161.435	2.40	89846	4000	
V	51	2	72	320.809	ppb	320.809	0.61	433999	2000	
Cr	52	2	72	52.905	ppb	52.905	1.28	90336	5000	
Mn	55	2	72	3290.648	ppb	3290.648	0.50	2322450	10000	
Fe	56	1	72	52143.174	ppb	52143.174	0.81	410595981	10000	>LDR
(Fe)	57	2	72	55188.582	ppb	55188.582	0.16	1785702	400000	
Co	59	2	72	24.579	ppb	24.579	2.37	71564	2000	
Ni	60	2	72	39.378	ppb	39.378	3.64	34002	5000	
Cu	63	2	72	46.174	ppb	46.174	1.52	101512	5000	
Zn	66	2	72	125.924	ppb	125.924	4.26	49418	5000	
As	75	2	72	18.723	ppb	18.723	3.12	6164	2000	
Se	78	1	72	1.991	ppb	1.991	8.66	620	2000	
Sr	88	2	72	1142.514	ppb	1142.514	1.55	931913	4000	
Zr	90	2	72	14054.526	ppb	14054.526	2.59	75763	1000	>LDR
Nb	93	2	72	66179.605	ppb	66179.605	4.52	3050	200	>LDR
Mo	95	2	115	4.291	ppb	4.291	3.42	4464	2000	
Pd	105	2	115	39.858	ppb	39.858	21.31	107	100	
Ag	107	2	115	0.248	ppb	0.248	20.27	900	100	
Cd	111	2	115	0.326	ppb	0.326	20.28	167	2000	
Sn	120	2	115	0.918	ppb	0.918	5.23	1787	2000	
Sb	121	2	115	0.154	ppb	0.154	9.99	233	1000	
Ba	137	2	115	1461.650	ppb	1461.650	0.68	576006	5000	
W	182	2	165	1.497	ppb	1.497	6.36	8826	100	
Pt	195	2	165	9.435	ppb	9.435	653.96	53	100	
Tl	205	2	165	0.490	ppb	0.490	3.84	3877	2000	
Pb	208	2	165	12.625	ppb	12.625	1.32	131138	5000	
Th	232	2	193	26.206	ppb	26.206	1.01	247031	2000	
U	238	2	193	18.290	ppb	18.290	2.34	202310	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	566430	0.76	579603	97.73	60	120	
Sc (IS)	45	1	HMI H2	18900641	0.48	17043241	110.90	60	120	
Sc (IS)	45	2	HMI He	920127	0.27	797526	115.37	60	120	
Sc (IS)	45	3	No Gas	33672661	0.52	28509182	118.11	60	120	
Ge Internal standard	72	1	HMI H2	10181620	0.58	9074377	112.20	60	120	
Ge Internal standard	72	2	HMI He	1377738	0.52	1113151	123.77	60	120	IS Failed
In Internal standard	115	2	HMI He	3816534	0.26	3301939	115.58	60	120	
Ho-165	165	2	HMI He	15131041	0.71	12873604	117.54	60	120	
Ir (IS)	193	2	HMI He	11378278	0.48	10633585	107.00	60	120	

Sample Report

Sample Table

Sample Name	280-165805-a-13-b
Data File Name	263SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:20:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585029 6020A
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	413.766	ppb	413.766	1.77	4683193	50000	
Be	9	1	6	16.412	ppb	16.412	11.50	3961	2000	
B	11	1	6	416.050	ppb	416.050	1.89	83619	2000	
Na	23	2	45	88397.974	ppb	88397.974	1.36	19245523	400000	
Mg	24	2	45	123359.456	ppb	123359.456	0.92	12338363	400000	
Al	27	2	45	286264.037	ppb	286264.037	0.82	7098570	400000	
Si	28	2	45	3861.367	ppb	3861.367	0.87	631419	10000	
P	31	2	45	6243.196	ppb	6243.196	0.78	17071	10000	
K	39	2	45	51612.950	ppb	51612.950	1.96	4025308	400000	
Ca	40	1	45	225366.593	ppb	225366.593	0.47	834487374	400000	
Ti	47	2	45	8557.650	ppb	8557.650	1.62	250603	4000	
V	51	2	72	1191.723	ppb	1191.723	4.95	1528855	2000	
Cr	52	2	72	605.150	ppb	605.150	5.38	974201	5000	
Mn	55	2	72	10247.850	ppb	10247.850	5.16	6873490	10000	
Fe	56	1	72	398102.283	ppb	398102.283	1.01	3037281981	10000	>LDR
(Fe)	57	2	72	417109.453	ppb	417109.453	4.42	12827351	400000	
Co	59	2	72	214.480	ppb	214.480	3.70	593283	2000	
Ni	60	2	72	405.014	ppb	405.014	5.21	313876	5000	
Cu	63	2	72	407.195	ppb	407.195	3.71	839666	5000	
Zn	66	2	72	1059.800	ppb	1059.800	4.67	391063	5000	
As	75	2	72	85.195	ppb	85.195	4.47	26537	2000	
Se	78	1	72	1.737	ppb	1.737	16.75	527	2000	
Sr	88	2	72	2107.112	ppb	2107.112	5.00	1633633	4000	
Zr	90	2	72	25167.356	ppb	25167.356	5.13	128475	1000	>LDR
Nb	93	2	72	46556.692	ppb	46556.692	9.10	2044	200	>LDR
Mo	95	2	115	16.405	ppb	16.405	3.52	16552	2000	
Pd	105	2	115	154.264	ppb	154.264	26.09	307	100	
Ag	107	2	115	0.809	ppb	0.809	4.76	2784	100	
Cd	111	2	115	1.549	ppb	1.549	11.39	747	2000	
Sn	120	2	115	9.492	ppb	9.492	1.00	12565	2000	
Sb	121	2	115	0.207	ppb	0.207	13.26	300	1000	
Ba	137	2	115	4399.840	ppb	4399.840	1.30	1699013	5000	
W	182	2	165	2.310	ppb	2.310	7.33	12102	100	
Pt	195	2	165	51.362	ppb	51.362	122.15	63	100	
Tl	205	2	165	4.006	ppb	4.006	2.40	30091	2000	
Pb	208	2	165	108.827	ppb	108.827	0.62	1112854	5000	
Th	232	2	193	200.640	ppb	200.640	1.45	1785812	2000	
U	238	2	193	46.199	ppb	46.199	1.89	502166	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	544735	0.73	579603	93.98	60	120	
Sc (IS)	45	1	HMI H2	19132979	0.23	17043241	112.26	60	120	
Sc (IS)	45	2	HMI He	948213	0.64	797526	118.89	60	120	
Sc (IS)	45	3	No Gas	34513783	1.02	28509182	121.06	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9867521	0.84	9074377	108.74	60	120	
Ge Internal standard	72	2	HMI He	1311387	4.16	1113151	117.81	60	120	
In Internal standard	115	2	HMI He	3739982	0.29	3301939	113.27	60	120	
Ho-165	165	2	HMI He	15066614	0.77	12873604	117.03	60	120	
Ir (IS)	193	2	HMI He	11190586	0.72	10633585	105.24	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7341784
Data File Name	264_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:24:16-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	104.337	ppb	2.371	2807775	100	104.3	90	110	
Be	9	1	6	51.101	ppb	2.615	13586	50	102.2	90	110	
B	11	1	6	493.045	ppb	1.563	109041	50	986.1	90	110	>+\-10%
Na	23	2	45	47988.887	ppb	0.831	10585809	51000	94.1	90	110	
Mg	24	2	45	9192.164	ppb	0.898	975466	11000	83.6	90	110	>+\-10%
Al	27	2	45	964.325	ppb	4.343	24221	1000	96.4	90	110	
Si	28	2	45	63.334	ppb	3.636	22052	500	12.7	90	110	>+\-10%
P	31	2	45	2407.955	ppb	1.752	6603	2500	96.3	90	110	
K	39	2	45	9854.415	ppb	0.338	807878	11000	89.6	90	110	>+\-10%
Ca	40	1	45	11307.510	ppb	0.828	42221818	11000	102.8	90	110	
(Ca)	44	1	45	10679.236	ppb	1.254	1370336	11000	97.1	90	110	
Ti	47	2	45	62.045	ppb	12.877	1827	50	124.1	90	110	>+\-10%
V	51	2	72	47.602	ppb	1.642	67446	50	95.2	90	110	
Cr	52	2	72	47.884	ppb	3.301	84144	50	95.8	90	110	
Mn	55	2	72	48.624	ppb	0.980	35829	50	97.2	90	110	
Fe	56	1	72	1212.227	ppb	1.613	10106948	1000	121.2	90	110	>+\-10%
(Fe)	56	2	72	1087.843	ppb	0.386	1597965	1000	108.8	90	110	
(Fe)	57	2	72	1068.259	ppb	3.469	36036	1000	106.8	90	110	
Co	59	2	72	46.964	ppb	1.047	140549	50	93.9	90	110	
Ni	60	2	72	46.665	ppb	1.288	41041	50	93.3	90	110	
Cu	63	2	72	46.490	ppb	2.059	105083	50	93.0	90	110	
Zn	66	2	72	46.497	ppb	3.104	19165	50	93.0	90	110	
As	75	2	72	47.045	ppb	0.689	15868	50	94.1	90	110	
Se	78	1	72	47.807	ppb	2.341	15023	50	95.6	90	110	
Sr	88	2	72	99.791	ppb	1.301	83828	100	99.8	90	110	
Zr	90	2	72	10346.860	ppb	12.705	57477	50	20693.7	90	110	>+\-10%
Nb	93	2	72	7541.136	ppb	14.132	377	100	7541.1	90	110	>+\-10%
Mo	95	2	115	51.628	ppb	4.337	55493	50	103.3	90	110	
Pd	105	2	115	111.525	ppb	27.363	247	50	223.0	90	110	>+\-10%
Ag	107	2	115	49.076	ppb	0.330	177729	50	98.2	90	110	
Cd	111	2	115	49.093	ppb	5.017	25030	50	98.2	90	110	
Sn	120	2	115	50.383	ppb	0.739	68517	50	100.8	90	110	
Sb	121	2	115	51.166	ppb	2.374	73289	50	102.3	90	110	
Ba	137	2	115	54.050	ppb	3.170	22367	50	108.1	90	110	
W	182	2	165	49.464	ppb	0.688	209501	50	98.9	90	110	
Pt	195	2	165	57.727	ppb	141.815	67	50	115.5	90	110	>+\-10%
Tl	205	2	165	49.328	ppb	0.854	378029	50	98.7	90	110	
Pb	208	2	165	49.451	ppb	0.578	520120	50	98.9	90	110	
Th	232	2	193	56.336	ppb	1.608	540773	50	112.7	90	110	>+\-10%
U	238	2	193	53.830	ppb	0.668	621095	50	107.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	601478	0.31	579603	103.77	60	120	
Sc (IS)	45	1	HMI H2	19205995	0.36	17043241	112.69	60	120	
Sc (IS)	45	2	HMI He	947389	0.25	797526	118.79	60	120	
Sc (IS)	45	3	No Gas	34226271	1.42	28509182	120.05	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10645797	0.21	9074377	117.32	60	120	
Ge Internal standard	72	2	HMI He	1416886	1.28	1113151	127.29	60	120	IS Failed
In Internal standard	115	2	HMI He	3995319	1.11	3301939	121.00	60	120	IS Failed
Ho-165	165	2	HMI He	15468438	0.44	12873604	120.16	60	120	IS Failed
Ir (IS)	193	2	HMI He	11878272	0.35	10633585	111.71	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7341778
Data File Name	265_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:28:03-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-1.258	ppb	-203.4	2199282	10	
Be	9	1	6	0.192	ppb	65.8	70	0.5	
B	11	1	6	11.662	ppb	13.9	4604	0.5	>RL
Na	23	2	45	-1172.169	ppb	-0.9	68878	25	
Mg	24	2	45	-536.803	ppb	-0.9	7926	25	
Al	27	2	45	11.128	ppb	68.8	597	15	
K	39	2	45	-121.809	ppb	-12.9	39246	50	
Ti	47	2	45	0.521	ppb	154.4	27	0.5	>RL
V	51	2	72	-0.671	ppb	-6.0	513	1	
Cr	52	2	72	-0.024	ppb	-44.2	780	1	
Mn	55	2	72	1.001	ppb	8.8	1273	0.5	>RL
(Fe)	57	2	72	55.943	ppb	3.0	2377	25	>RL
Co	59	2	72	0.045	ppb	82.1	207	0.5	
Ni	60	2	72	-0.371	ppb	-37.2	1860	1	
Cu	63	2	72	-0.078	ppb	-28.4	1430	1	
Zn	66	2	72	0.238	ppb	60.7	733	5	
As	75	2	72	-0.007	ppb	-336.9	36	1	
Se	78	1	72	-0.019	ppb	-104.4	17	1	
Sr	88	2	72	0.211	ppb	18.1	313	0.5	
Zr	90	2	72	33.815	ppb	60.8	850	1	>RL
Nb	93	2	72	2018.338	ppb	49.3	117	2	>RL
Mo	95	2	115	0.623	ppb	32.7	750	0.5	>RL
Pd	105	2	115	-14.082	ppb	-36.8	10	1	
Ag	107	2	115	0.057	ppb	34.9	257	1	
Cd	111	2	115	0.035	ppb	165.7	27	0.5	
Sn	120	2	115	0.746	ppb	29.3	1677	1	
Sb	121	2	115	0.220	ppb	17.6	347	0.6	
Ba	137	2	115	0.359	ppb	29.8	230	0.5	
W	182	2	165	0.442	ppb	15.3	4644	1	
Pt	195	2	165	-75.680	ppb	-120.5	33	1	
Tl	205	2	165	0.060	ppb	29.8	673	0.1	
Pb	208	2	165	0.018	ppb	66.8	1923	0.5	
Th	232	2	193	1.160	ppb	15.4	23242	1	>RL
U	238	2	193	0.085	ppb	4.9	1290	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	615548	0.40	579603	106.20	60	120	
Sc (IS)	45	1	HMI H2	19059710	0.78	17043241	111.83	60	120	
Sc (IS)	45	2	HMI He	929624	0.29	797526	116.56	60	120	
Sc (IS)	45	3	No Gas	34512541	1.13	28509182	121.06	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10472313	0.63	9074377	115.41	60	120	
Ge Internal standard	72	2	HMI He	1420999	0.24	1113151	127.66	60	120	IS Failed
In Internal standard	115	2	HMI He	4086390	0.46	3301939	123.76	60	120	IS Failed
Ho-165	165	2	HMI He	15563206	0.52	12873604	120.89	60	120	IS Failed
Ir (IS)	193	2	HMI He	12138251	0.31	10633585	114.15	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL-7341786
Data File Name	266LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:31:49-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	5.860	ppb	82.571	2221625	50	11.7	70	130	>+/-30%
Be	9	1	6	1.142	ppb	27.774	327	1	114.2	70	130	
Na	23	2	45	-1172.479	ppb	-0.623	68434	50	-2345.0	70	130	>+/-30%
Mg	24	2	45	-494.400	ppb	-0.633	11995	50	-988.8	70	130	>+/-30%
Al	27	2	45	50.099	ppb	18.802	1537	50	100.2	70	130	
K	39	2	45	-60.195	ppb	-27.966	43654	100	-60.2	70	130	>+/-30%
V	51	2	72	3.954	ppb	5.582	6972	5	79.1	70	130	
Cr	52	2	72	1.834	ppb	5.844	4037	2	91.7	70	130	
Mn	55	2	72	1.395	ppb	23.487	1567	1	139.5	70	130	>+/-30%
(Fe)	57	2	72	82.840	ppb	1.334	3287	50	165.7	70	130	>+/-30%
Co	59	2	72	0.911	ppb	3.155	2817	1	91.1	70	130	
Ni	60	2	72	1.026	ppb	30.512	3040	2	51.3	70	130	>+/-30%
Cu	63	2	72	1.925	ppb	6.012	5925	2	96.3	70	130	
Zn	66	2	72	9.098	ppb	6.840	4291	10	91.0	70	130	
As	75	2	72	4.627	ppb	4.166	1606	5	92.5	70	130	
Se	78	1	72	4.730	ppb	6.869	1483	5	94.6	70	130	
Sr	88	2	72	1.114	ppb	11.881	1077	1	111.4	70	130	
Zr	90	2	72	2697.310	ppb	13.593	15591	0.5	539462.1	70	130	>+/-30%
Nb	93	2	72	2014.297	ppb	68.443	117	2	100714.8	70	130	>+/-30%
Mo	95	2	115	2.162	ppb	10.029	2410	2	108.1	70	130	
Pd	105	2	115	-13.979	ppb	-37.727	10	1	-1397.9	70	130	>+/-30%
Ag	107	2	115	1.057	ppb	5.506	3907	1	105.7	70	130	
Cd	111	2	115	1.074	ppb	19.248	560	1	107.4	70	130	
Sn	120	2	115	10.151	ppb	1.614	14444	10	101.5	70	130	
Sb	121	2	115	2.198	ppb	5.667	3200	2	109.9	70	130	
Ba	137	2	115	1.130	ppb	28.196	547	1	113.0	70	130	
W	182	2	165	4.860	ppb	2.588	23185	1	486.0	70	130	>+/-30%
Pt	195	2	165	-48.410	ppb	-247.768	40	1	-4841.0	70	130	>+/-30%
Tl	205	2	165	1.061	ppb	6.329	8379	1	106.1	70	130	
Pb	208	2	165	1.051	ppb	6.334	12803	1	105.1	70	130	
Th	232	2	193	3.718	ppb	4.780	48451	2	185.9	70	130	>+/-30%
U	238	2	193	1.068	ppb	0.374	13056	1	106.8	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	613368	0.39	579603	105.83	60	120	
Sc (IS)	45	1	HMI H2	19006244	0.47	17043241	111.52	60	120	
Sc (IS)	45	2	HMI He	924572	1.18	797526	115.93	60	120	
Sc (IS)	45	3	No Gas	34199568	0.64	28509182	119.96	60	120	
Ge Internal standard	72	1	HMI H2	10472651	1.00	9074377	115.41	60	120	
Ge Internal standard	72	2	HMI He	1426597	0.75	1113151	128.16	60	120	IS Failed
In Internal standard	115	2	HMI He	4032173	1.61	3301939	122.12	60	120	IS Failed
Ho-165	165	2	HMI He	15538685	0.73	12873604	120.70	60	120	IS Failed
Ir (IS)	193	2	HMI He	12306616	0.95	10633585	115.73	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585084/1-A
Data File Name	267_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:35:38-06:00
Sample Type	Blank
Dilution	1
Comment	585084 6020
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	-10.272	ppb	-30.18952273	2103711	10
Be	9	1	6	0.125	ppb	60.70964299	50	0.5
B	11	1	6	4.656	ppb	37.65647622	2954	0.5
Na	23	2	45	-1285.419	ppb	-0.219748563	44017	25
Mg	24	2	45	-531.996	ppb	-0.928147862	8189	25
Al	27	2	45	10.041	ppb	39.89376756	557	15
K	39	2	45	-137.717	ppb	-5.857047369	37122	50
Ti	47	2	45	0.425	ppb	96.76494418	23	0.5
V	51	2	72	-0.850	ppb	-2.615749951	257	1
Cr	52	2	72	0.006	ppb	401.5182687	807	1
Mn	55	2	72	0.044	ppb	547.0395322	560	0.5
(Fe)	57	2	72	27.045	ppb	14.51289621	1370	25
Co	59	2	72	0.014	ppb	124.3247103	110	0.5
Ni	60	2	72	-0.883	ppb	-27.22108059	1390	1
Cu	63	2	72	-0.312	ppb	-15.76921308	880	1
Zn	66	2	72	-0.341	ppb	-34.02801371	487	5
As	75	2	72	-0.040	ppb	-81.1123657	24	1
Se	78	1	72	-0.018	ppb	-43.20526913	17	1
Sr	88	2	72	-0.076	ppb	-49.10100843	70	0.5
Zr	90	2	72	61.665	ppb	12.42986963	973	1
Nb	93	2	72	1952.656	ppb	23.08687517	110	2
Mo	95	2	115	0.106	ppb	44.91705002	177	0.5
Pd	105	2	115	-8.543	ppb	-63.58947842	20	1
Ag	107	2	115	-0.003	ppb	-216.2087467	33	1
Cd	111	2	115	-0.016	ppb	0	0	0.5
Sn	120	2	115	-0.048	ppb	-97.82944983	563	1
Sb	121	2	115	0.042	ppb	63.65579566	83	0.6
Ba	137	2	115	0.068	ppb	147.1748181	103	0.5
W	182	2	165	0.372	ppb	15.7166216	4334	1
Pt	195	2	165	30.952	ppb	445.9542335	60	1
Tl	205	2	165	0.005	ppb	35.07892787	253	0.1
Pb	208	2	165	-0.030	ppb	-24.39153855	1413	0.5
Th	232	2	193	0.715	ppb	25.61692911	18993	1
U	238	2	193	0.001	ppb	324.7109012	300	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	596744	0.25	579603	102.96	60	120	
Sc (IS)	45	1	HMI H2	18722318	0.30	17043241	109.85	60	120	
Sc (IS)	45	2	HMI He	907054	0.41	797526	113.73	60	120	
Sc (IS)	45	3	No Gas	33842102	1.42	28509182	118.71	60	120	
Ge Internal standard	72	1	HMI H2	10312507	0.29	9074377	113.64	60	120	
Ge Internal standard	72	2	HMI He	1378264	0.74	1113151	123.82	60	120	IS Failed
In Internal standard	115	2	HMI He	3955510	0.77	3301939	119.79	60	120	
Ho-165	165	2	HMI He	15503135	0.49	12873604	120.43	60	120	IS Failed
Ir (IS)	193	2	HMI He	12153361	0.62	10633585	114.29	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585084/2-A
Data File Name	268_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:39:25-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585084 6020
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	29.006	29.006	ppb	0.793	2307539	400	7.3	80	120	>+/-20%
Be	9	1	6	42.330	42.330	ppb	7.923	11194	40	105.8	80	120	
Na	23	2	45	-571.695	-571.695	ppb	-2.030	189954	40	-1429.2	80	120	>+/-20%
Mg	24	2	45	156.171	156.171	ppb	9.177	73615	40	390.4	80	120	>+/-20%
Al	27	2	45	738.336	738.336	ppb	3.037	17810	40	1845.8	80	120	>+/-20%
K	39	2	45	534.057	534.057	ppb	3.439	86523	40	1335.1	80	120	>+/-20%
V	51	2	72	37.609	37.609	ppb	1.998	52473	40	94.0	80	120	
Cr	52	2	72	38.526	38.526	ppb	2.210	66459	40	96.3	80	120	
Mn	55	2	72	36.408	36.408	ppb	3.014	26395	40	91.0	80	120	
(Fe)	57	2	72	745.544	745.544	ppb	3.027	24779	40	1863.9	80	120	>+/-20%
Co	59	2	72	38.731	38.731	ppb	0.759	113510	40	96.8	80	120	
Ni	60	2	72	37.658	37.658	ppb	3.845	32830	40	94.1	80	120	
Cu	63	2	72	39.041	39.041	ppb	0.581	86668	40	97.6	80	120	
Zn	66	2	72	37.816	37.816	ppb	3.907	15384	40	94.5	80	120	
As	75	2	72	36.743	36.743	ppb	0.908	12143	40	91.9	80	120	
Se	78	1	72	38.530	38.530	ppb	1.942	11864	40	96.3	80	120	
Nb	93	2	72	2511.614	2511.614	ppb	16.973	137	40	6279.0	80	120	>+/-20%
Mo	95	2	115	41.229	41.229	ppb	3.086	43844	40	103.1	80	120	
Pd	105	2	115	-8.562	-8.562	ppb	-124.468	20	40	-21.4	80	120	>+/-20%
Ag	107	2	115	39.841	39.841	ppb	1.298	142686	40	99.6	80	120	
Cd	111	2	115	40.107	40.107	ppb	4.180	20227	40	100.3	80	120	
Sn	120	2	115	39.788	39.788	ppb	0.947	53641	40	99.5	80	120	
Sb	121	2	115	40.565	40.565	ppb	0.648	57468	40	101.4	80	120	
Ba	137	2	115	43.670	43.670	ppb	4.761	17887	40	109.2	80	120	
W	182	2	165	0.529	0.529	ppb	16.309	5001	40	1.3	80	120	>+/-20%
Pt	195	2	165	-8.958	-8.958	ppb	-1180.310	50	40	-22.4	80	120	>+/-20%
Tl	205	2	165	40.016	40.016	ppb	1.096	307967	40	100.0	80	120	
Pb	208	2	165	40.479	40.479	ppb	1.425	427798	40	101.2	80	120	
Th	232	2	193	43.548	43.548	ppb	1.723	433453	40	108.9	80	120	
U	238	2	193	41.408	41.408	ppb	0.834	492278	40	103.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	597886	0.69	579603	103.15	60	120	
Sc (IS)	45	1	HMI H2	18891734	1.06	17043241	110.85	60	120	
Sc (IS)	45	2	HMI He	906027	0.99	797526	113.60	60	120	
Sc (IS)	45	3	No Gas	33454551	0.70	28509182	117.35	60	120	
Ge Internal standard	72	1	HMI H2	10428250	0.64	9074377	114.92	60	120	
Ge Internal standard	72	2	HMI He	1387302	1.05	1113151	124.63	60	120	IS Failed
In Internal standard	115	2	HMI He	3950929	0.72	3301939	119.65	60	120	
Ho-165	165	2	HMI He	15532547	0.93	12873604	120.65	60	120	IS Failed
Ir (IS)	193	2	HMI He	12237879	0.72	10633585	115.09	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-1-B
Data File Name	269SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:43:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	590.812	ppb	590.812	1.97	5376521	50000	
Be	9	1	6	0.072	ppb	0.072	61.85	30	2000	
B	11	1	6	522.023	ppb	522.023	0.45	94595	2000	
Na	23	2	45	3417233.185	ppb	3417233.185	0.47	706033163	400000	>LDR
Mg	24	2	45	51659.210	ppb	51659.210	1.48	5019056	400000	
Al	27	2	45	164.812	ppb	164.812	5.32	4264	400000	
Si	28	2	45	390.321	ppb	390.321	1.11	71895	10000	
P	31	2	45	10.511	ppb	10.511	81.09	66	10000	
K	39	2	45	12887.698	ppb	12887.698	1.08	1005432	400000	
Ca	40	1	45	376957.400	ppb	376957.400	1.32	1211501262	400000	
Ti	47	2	45	3.726	ppb	3.726	12.25	117	4000	
V	51	2	72	-0.358	ppb	-0.358	-20.65	823	2000	
Cr	52	2	72	0.236	ppb	0.236	34.31	1070	5000	
Mn	55	2	72	58.840	ppb	58.840	3.25	37630	10000	
Fe	56	1	72	143.038	ppb	143.038	0.29	1096720	10000	
(Fe)	57	2	72	177.124	ppb	177.124	7.22	5568	400000	
Co	59	2	72	0.209	ppb	0.209	10.15	607	2000	
Ni	60	2	72	-0.547	ppb	-0.547	-10.47	1487	5000	
Cu	63	2	72	-0.070	ppb	-0.070	-81.02	1257	5000	
Zn	66	2	72	1.139	ppb	1.139	36.41	950	5000	
As	75	2	72	1.300	ppb	1.300	26.19	413	2000	
Se	78	1	72	0.259	ppb	0.259	18.04	88	2000	
Sr	88	2	72	9783.460	ppb	9783.460	4.35	7139946	4000	
Zr	90	2	72	2644.978	ppb	2644.978	12.62	13213	1000	
Nb	93	2	72	3702.620	ppb	3702.620	29.50	170	200	>LDR
Mo	95	2	115	20.753	ppb	20.753	2.56	20474	2000	
Pd	105	2	115	117.281	ppb	117.281	16.55	237	100	
Ag	107	2	115	0.017	ppb	0.017	25.02	97	100	
Cd	111	2	115	0.006	ppb	0.006	369.38	10	2000	
Sn	120	2	115	0.682	ppb	0.682	36.21	1423	2000	
Sb	121	2	115	0.723	ppb	0.723	8.06	970	1000	
Ba	137	2	115	8.931	ppb	8.931	5.02	3447	5000	
W	182	2	165	0.626	ppb	0.626	11.56	4868	100	
Pt	195	2	165	-75.131	ppb	-75.131	-60.19	30	100	
Tl	205	2	165	0.018	ppb	0.018	77.27	317	2000	
Pb	208	2	165	0.122	ppb	0.122	10.68	2720	5000	
Th	232	2	193	5.678	ppb	5.678	13.61	54696	2000	
U	238	2	193	1.575	ppb	1.575	0.89	15479	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	493297	1.48	579603	85.11	60	120	
Sc (IS)	45	1	HMI H2	16608113	0.30	17043241	97.45	60	120	
Sc (IS)	45	2	HMI He	914652	1.27	797526	114.69	60	120	
Sc (IS)	45	3	No Gas	32311835	0.29	28509182	113.34	60	120	
Ge Internal standard	72	1	HMI H2	8937487	0.84	9074377	98.49	60	120	
Ge Internal standard	72	2	HMI He	1233562	2.42	1113151	110.82	60	120	
In Internal standard	115	2	HMI He	3660506	1.68	3301939	110.86	60	120	
Ho-165	165	2	HMI He	13990749	1.38	12873604	108.68	60	120	
Ir (IS)	193	2	HMI He	9968278	0.68	10633585	93.74	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-2-B
Data File Name	270SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:47:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	391.910	ppb	391.910	2.18	4487827	50000	
Be	9	1	6	0.076	ppb	0.076	114.77	33	2000	
B	11	1	6	501.669	ppb	501.669	3.53	98096	2000	
Na	23	2	45	2297946.320	ppb	2297946.320	0.93	510078099	400000	>LDR
Mg	24	2	45	32449.580	ppb	32449.580	0.71	3409974	400000	
Al	27	2	45	95.126	ppb	95.126	14.85	2790	400000	
Si	28	2	45	455.147	ppb	455.147	1.33	88006	10000	
P	31	2	45	12.583	ppb	12.583	14.69	77	10000	
K	39	2	45	8280.301	ppb	8280.301	0.95	712186	400000	
Ca	40	1	45	359014.859	ppb	359014.859	1.68	1196176969	400000	
Ti	47	2	45	1.795	ppb	1.795	29.80	67	4000	
V	51	2	72	-0.745	ppb	-0.745	-6.46	410	2000	
Cr	52	2	72	0.097	ppb	0.097	56.89	987	5000	
Mn	55	2	72	688.156	ppb	688.156	2.20	499588	10000	
Fe	56	1	72	183.065	ppb	183.065	1.08	1411959	10000	
(Fe)	57	2	72	178.529	ppb	178.529	4.68	6445	400000	
Co	59	2	72	0.217	ppb	0.217	8.55	720	2000	
Ni	60	2	72	-0.514	ppb	-0.514	-64.43	1733	5000	
Cu	63	2	72	0.184	ppb	0.184	46.68	2007	5000	
Zn	66	2	72	0.830	ppb	0.830	27.48	967	5000	
As	75	2	72	0.080	ppb	0.080	63.55	65	2000	
Se	78	1	72	8.745	ppb	8.745	3.61	2388	2000	
Sr	88	2	72	6873.685	ppb	6873.685	1.80	5761932	4000	
Zr	90	2	72	1188.952	ppb	1188.952	8.17	7192	1000	
Nb	93	2	72	1385.465	ppb	1385.465	69.38	87	200	>LDR
Mo	95	2	115	2.618	ppb	2.618	14.42	2804	2000	
Pd	105	2	115	74.906	ppb	74.906	23.97	173	100	
Ag	107	2	115	0.008	ppb	0.008	129.27	70	100	
Cd	111	2	115	0.024	ppb	0.024	83.14	20	2000	
Sn	120	2	115	0.574	ppb	0.574	13.11	1373	2000	
Sb	121	2	115	0.126	ppb	0.126	13.58	200	1000	
Ba	137	2	115	8.912	ppb	8.912	4.11	3661	5000	
W	182	2	165	0.395	ppb	0.395	30.82	4251	100	
Pt	195	2	165	27.443	ppb	27.443	859.66	57	100	
Tl	205	2	165	0.003	ppb	0.003	485.71	223	2000	
Pb	208	2	165	0.053	ppb	0.053	2.67	2190	5000	
Th	232	2	193	0.492	ppb	0.492	27.15	14594	2000	
U	238	2	193	5.887	ppb	5.887	2.03	60412	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	532043	0.93	579603	91.79	60	120	
Sc (IS)	45	1	HMI H2	17217978	0.42	17043241	101.03	60	120	
Sc (IS)	45	2	HMI He	982429	1.70	797526	123.18	60	120	IS Failed
Sc (IS)	45	3	No Gas	34024843	1.09	28509182	119.35	60	120	
Ge Internal standard	72	1	HMI H2	9188873	0.38	9074377	101.26	60	120	
Ge Internal standard	72	2	HMI He	1415933	1.12	1113151	127.20	60	120	IS Failed
In Internal standard	115	2	HMI He	3896399	1.20	3301939	118.00	60	120	
Ho-165	165	2	HMI He	14879697	0.42	12873604	115.58	60	120	
Ir (IS)	193	2	HMI He	10525672	0.31	10633585	98.99	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-3-B
Data File Name	271SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:50:52-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	511.614	ppb	511.614	1.02	5085404	50000	
Be	9	1	6	0.163	ppb	0.163	162.73	53	2000	
B	11	1	6	558.968	ppb	558.968	1.55	108904	2000	
Na	23	2	45	3031063.310	ppb	3031063.310	0.33	673946897	400000	>LDR
Mg	24	2	45	28216.075	ppb	28216.075	0.54	2978774	400000	
Al	27	2	45	356.803	ppb	356.803	1.78	9530	400000	
Si	28	2	45	424.067	ppb	424.067	1.14	82988	10000	
P	31	2	45	11.125	ppb	11.125	27.71	73	10000	
K	39	2	45	10070.381	ppb	10070.381	0.68	856605	400000	
Ca	40	1	45	191601.947	ppb	191601.947	2.33	633692204	400000	
Ti	47	2	45	6.059	ppb	6.059	26.51	197	4000	
V	51	2	72	-0.399	ppb	-0.399	-11.03	883	2000	
Cr	52	2	72	0.100	ppb	0.100	42.61	987	5000	
Mn	55	2	72	418.216	ppb	418.216	1.65	301790	10000	
Fe	56	1	72	293.774	ppb	293.774	2.69	2173158	10000	
(Fe)	57	2	72	266.119	ppb	266.119	9.61	9286	400000	
Co	59	2	72	0.137	ppb	0.137	30.01	477	2000	
Ni	60	2	72	-0.468	ppb	-0.468	-49.55	1760	5000	
Cu	63	2	72	0.167	ppb	0.167	30.07	1957	5000	
Zn	66	2	72	1.008	ppb	1.008	24.05	1030	5000	
As	75	2	72	0.063	ppb	0.063	110.02	59	2000	
Se	78	1	72	0.155	ppb	0.155	34.21	61	2000	
Sr	88	2	72	5263.728	ppb	5263.728	1.31	4382863	4000	
Zr	90	2	72	1300.697	ppb	1300.697	10.45	7752	1000	
Nb	93	2	72	1892.320	ppb	1892.320	69.87	110	200	>LDR
Mo	95	2	115	7.741	ppb	7.741	4.80	8192	2000	
Pd	105	2	115	63.758	ppb	63.758	12.98	153	100	
Ag	107	2	115	0.005	ppb	0.005	217.85	60	100	
Cd	111	2	115	-0.016	ppb	-0.016	0.00	0	2000	
Sn	120	2	115	-0.093	ppb	-0.093	-43.66	497	2000	
Sb	121	2	115	0.043	ppb	0.043	111.25	83	1000	
Ba	137	2	115	6.739	ppb	6.739	5.14	2794	5000	
W	182	2	165	0.411	ppb	0.411	9.87	4271	100	
Pt	195	2	165	15.447	ppb	15.447	413.36	53	100	
Tl	205	2	165	0.000	ppb	0.000	5901.66	203	2000	
Pb	208	2	165	0.144	ppb	0.144	13.94	3080	5000	
Th	232	2	193	0.215	ppb	0.215	61.28	12005	2000	
U	238	2	193	2.050	ppb	2.050	0.93	20725	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	530908	2.92	579603	91.60	60	120	
Sc (IS)	45	1	HMI H2	17099079	4.01	17043241	100.33	60	120	
Sc (IS)	45	2	HMI He	984297	0.51	797526	123.42	60	120	IS Failed
Sc (IS)	45	3	No Gas	33311494	0.42	28509182	116.84	60	120	
Ge Internal standard	72	1	HMI H2	9087810	3.30	9074377	100.15	60	120	
Ge Internal standard	72	2	HMI He	1406725	1.66	1113151	126.37	60	120	IS Failed
In Internal standard	115	2	HMI He	3906886	0.40	3301939	118.32	60	120	
Ho-165	165	2	HMI He	14729650	0.24	12873604	114.42	60	120	
Ir (IS)	193	2	HMI He	10292078	0.70	10633585	96.79	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-4-B
Data File Name	272SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:54:41-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	528.530	ppb	528.530	0.56	5250273	50000	
Be	9	1	6	0.043	ppb	0.043	271.88	27	2000	
B	11	1	6	573.838	ppb	573.838	0.97	117374	2000	
Na	23	2	45	3083520.881	ppb	3083520.881	0.90	689973803	400000	>LDR
Mg	24	2	45	29999.193	ppb	29999.193	0.37	3183217	400000	
Al	27	2	45	881.729	ppb	881.729	2.43	23187	400000	
Si	28	2	45	533.296	ppb	533.296	0.40	101826	10000	
P	31	2	45	20.790	ppb	20.790	16.97	101	10000	
K	39	2	45	10372.979	ppb	10372.979	0.40	886438	400000	
Ca	40	1	45	195924.323	ppb	195924.323	0.47	691865376	400000	
Ti	47	2	45	15.613	ppb	15.613	17.18	490	4000	
V	51	2	72	0.381	ppb	0.381	64.48	1927	2000	
Cr	52	2	72	0.337	ppb	0.337	25.65	1373	5000	
Mn	55	2	72	422.182	ppb	422.182	0.26	299953	10000	
Fe	56	1	72	774.593	ppb	774.593	1.30	5872336	10000	
(Fe)	57	2	72	718.132	ppb	718.132	1.32	23848	400000	
Co	59	2	72	0.248	ppb	0.248	17.50	797	2000	
Ni	60	2	72	0.124	ppb	0.124	306.54	2217	5000	
Cu	63	2	72	0.481	ppb	0.481	8.16	2610	5000	
Zn	66	2	72	1.398	ppb	1.398	41.55	1167	5000	
As	75	2	72	0.101	ppb	0.101	38.85	71	2000	
Se	78	1	72	0.127	ppb	0.127	83.40	57	2000	
Sr	88	2	72	5538.717	ppb	5538.717	0.48	4540630	4000	
Zr	90	2	72	1209.108	ppb	1209.108	6.86	7142	1000	
Nb	93	2	72	3538.069	ppb	3538.069	63.11	183	200	>LDR
Mo	95	2	115	7.596	ppb	7.596	0.71	7966	2000	
Pd	105	2	115	62.732	ppb	62.732	35.02	150	100	
Ag	107	2	115	0.000	ppb	0.000	1968.74	43	100	
Cd	111	2	115	-0.009	ppb	-0.009	-129.82	3	2000	
Sn	120	2	115	-0.141	ppb	-0.141	-75.95	430	2000	
Sb	121	2	115	0.067	ppb	0.067	61.88	117	1000	
Ba	137	2	115	8.074	ppb	8.074	1.89	3301	5000	
W	182	2	165	0.439	ppb	0.439	14.03	4331	100	
Pt	195	2	165	-52.478	ppb	-52.478	-185.80	37	100	
Tl	205	2	165	0.009	ppb	0.009	58.63	263	2000	
Pb	208	2	165	0.245	ppb	0.245	7.44	4040	5000	
Th	232	2	193	0.270	ppb	0.270	42.72	12209	2000	
U	238	2	193	2.616	ppb	2.616	1.00	25854	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	557712	0.98	579603	96.22	60	120	
Sc (IS)	45	1	HMI H2	18246533	0.58	17043241	107.06	60	120	
Sc (IS)	45	2	HMI He	990570	0.29	797526	124.21	60	120	IS Failed
Sc (IS)	45	3	No Gas	33742907	0.82	28509182	118.36	60	120	
Ge Internal standard	72	1	HMI H2	9610939	0.24	9074377	105.91	60	120	
Ge Internal standard	72	2	HMI He	1384814	0.60	1113151	124.40	60	120	IS Failed
In Internal standard	115	2	HMI He	3870610	0.17	3301939	117.22	60	120	
Ho-165	165	2	HMI He	14550392	0.24	12873604	113.03	60	120	
Ir (IS)	193	2	HMI He	10084912	0.77	10633585	94.84	60	120	

Sample Report

Sample Table

Sample Name	280-165797-L-5-B
Data File Name	273SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T02:58:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	445.405	ppb	445.405	1.59	4844431	50000	
Be	9	1	6	0.096	ppb	0.096	40.44	40	2000	
B	11	1	6	474.220	ppb	474.220	1.90	97735	2000	
Na	23	2	45	1608238.688	ppb	1608238.688	1.50	360152768	400000	
Mg	24	2	45	29465.411	ppb	29465.411	1.99	3128618	400000	
Al	27	2	45	3.939	ppb	3.939	112.35	450	400000	
Si	28	2	45	386.853	ppb	386.853	1.03	77322	10000	
P	31	2	45	13.090	ppb	13.090	20.77	79	10000	
K	39	2	45	9823.842	ppb	9823.842	1.54	842536	400000	
Ca	40	1	45	264553.732	ppb	264553.732	1.21	916945906	400000	
Ti	47	2	45	0.347	ppb	0.347	193.72	23	4000	
V	51	2	72	-0.830	ppb	-0.830	-7.74	293	2000	
Cr	52	2	72	0.209	ppb	0.209	25.89	1187	5000	
Mn	55	2	72	786.890	ppb	786.890	1.17	573698	10000	
Fe	56	1	72	19.557	ppb	19.557	2.78	256879	10000	
(Fe)	57	2	72	30.124	ppb	30.124	3.02	1517	400000	
Co	59	2	72	1.312	ppb	1.312	6.79	4011	2000	
Ni	60	2	72	0.736	ppb	0.736	11.15	2787	5000	
Cu	63	2	72	-0.407	ppb	-0.407	-13.44	697	5000	
Zn	66	2	72	0.137	ppb	0.137	67.74	693	5000	
As	75	2	72	0.691	ppb	0.691	3.24	272	2000	
Se	78	1	72	-0.017	ppb	-0.017	-355.44	16	2000	
Sr	88	2	72	9058.839	ppb	9058.839	0.44	7627120	4000	
Zr	90	2	72	412.647	ppb	412.647	17.75	2944	1000	
Nb	93	2	72	1459.284	ppb	1459.284	81.60	90	200	>LDR
Mo	95	2	115	2.284	ppb	2.284	7.23	2464	2000	
Pd	105	2	115	114.237	ppb	114.237	30.85	247	100	
Ag	107	2	115	0.001	ppb	0.001	1070.56	47	100	
Cd	111	2	115	-0.002	ppb	-0.002	-489.64	7	2000	
Sn	120	2	115	-0.071	ppb	-0.071	-70.33	527	2000	
Sb	121	2	115	0.116	ppb	0.116	22.65	187	1000	
Ba	137	2	115	5.989	ppb	5.989	8.36	2494	5000	
W	182	2	165	0.217	ppb	0.217	35.39	3521	100	
Pt	195	2	165	-13.271	ppb	-13.271	-487.57	47	100	
Tl	205	2	165	-0.002	ppb	-0.002	-192.96	187	2000	
Pb	208	2	165	-0.008	ppb	-0.008	-135.76	1570	5000	
Th	232	2	193	-0.270	ppb	-0.270	-16.70	8179	2000	
U	238	2	193	1.745	ppb	1.745	1.53	17925	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	560012	1.34	579603	96.62	60	120	
Sc (IS)	45	1	HMI H2	17909679	1.02	17043241	105.08	60	120	
Sc (IS)	45	2	HMI He	991082	1.72	797526	124.27	60	120	IS Failed
Sc (IS)	45	3	No Gas	34314505	0.68	28509182	120.36	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9430179	1.04	9074377	103.92	60	120	
Ge Internal standard	72	2	HMI He	1422290	1.03	1113151	127.77	60	120	IS Failed
In Internal standard	115	2	HMI He	3910393	0.50	3301939	118.43	60	120	
Ho-165	165	2	HMI He	14816860	0.69	12873604	115.09	60	120	
Ir (IS)	193	2	HMI He	10433471	0.39	10633585	98.12	60	120	

Sample Report

Sample Table

Sample Name	240-171187-D-44-A
Data File Name	274SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:02:16-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584616 soil 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	258.318	ppb	258.318	2.83	4057740	50000	
Be	9	1	6	9.798	ppb	9.798	9.90	2630	2000	
B	11	1	6	93.465	ppb	93.465	0.74	22355	2000	
Na	23	2	45	1928.915	ppb	1928.915	1.68	804691	400000	
Mg	24	2	45	84752.184	ppb	84752.184	0.47	9312243	400000	
Al	27	2	45	192992.818	ppb	192992.818	0.69	5245376	400000	
Si	28	2	45	72.178	ppb	72.178	11.05	25745	10000	
P	31	2	45	6289.501	ppb	6289.501	1.80	18849	10000	
K	39	2	45	32346.250	ppb	32346.250	0.53	2785393	400000	
Ca	40	1	45	618520.753	ppb	618520.753	0.32	2314644019	400000	
Ti	47	2	45	3141.649	ppb	3141.649	2.54	100841	4000	
V	51	2	72	310.362	ppb	310.362	0.72	444156	2000	
Cr	52	2	72	175.278	ppb	175.278	0.93	314616	5000	
Mn	55	2	72	19861.389	ppb	19861.389	0.63	14823853	10000	
Fe	56	1	72	172688.424	ppb	172688.424	0.51	1344301260	10000	>LDR
(Fe)	57	2	72	177968.517	ppb	177968.517	0.22	6089740	400000	
Co	59	2	72	76.529	ppb	76.529	1.38	235518	2000	
Ni	60	2	72	160.198	ppb	160.198	0.57	139504	5000	
Cu	63	2	72	1301.506	ppb	1301.506	0.96	2981736	5000	
Zn	66	2	72	4318.728	ppb	4318.728	1.30	1771134	5000	
As	75	2	72	179.990	ppb	179.990	0.89	62332	2000	
Se	78	1	72	1.565	ppb	1.565	8.26	487	2000	
Sr	88	2	72	985.249	ppb	985.249	0.98	850066	4000	
Zr	90	2	72	33794.523	ppb	33794.523	2.19	191725	1000	>LDR
Nb	93	2	72	169211.286	ppb	169211.286	7.72	8219	200	>LDR
Mo	95	2	115	5.564	ppb	5.564	6.05	6178	2000	
Pd	105	2	115	120.582	ppb	120.582	41.70	270	100	
Ag	107	2	115	6.427	ppb	6.427	1.20	23855	100	
Cd	111	2	115	12.791	ppb	12.791	4.28	6682	2000	
Sn	120	2	115	8.763	ppb	8.763	1.89	12729	2000	
Sb	121	2	115	0.602	ppb	0.602	11.63	907	1000	
Ba	137	2	115	2708.143	ppb	2708.143	0.60	1143111	5000	
W	182	2	165	3.449	ppb	3.449	0.89	17694	100	
Pt	195	2	165	62.970	ppb	62.970	120.93	70	100	
Tl	205	2	165	1.715	ppb	1.715	0.89	13747	2000	
Pb	208	2	165	1854.683	ppb	1854.683	0.97	20019896	5000	
Th	232	2	193	75.319	ppb	75.319	0.98	692829	2000	
U	238	2	193	6.032	ppb	6.032	0.79	67308	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	603961	0.53	579603	104.20	60	120	
Sc (IS)	45	1	HMI H2	19339716	0.51	17043241	113.47	60	120	
Sc (IS)	45	2	HMI He	1039289	0.11	797526	130.31	60	120	IS Failed
Sc (IS)	45	3	No Gas	37316836	0.53	28509182	130.89	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10067116	0.52	9074377	110.94	60	120	
Ge Internal standard	72	2	HMI He	1457314	0.83	1113151	130.92	60	120	IS Failed
In Internal standard	115	2	HMI He	4088230	0.86	3301939	123.81	60	120	IS Failed
Ho-165	165	2	HMI He	15926861	0.68	12873604	123.72	60	120	IS Failed
Ir (IS)	193	2	HMI He	11445991	0.78	10633585	107.64	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	275_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:06:10-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	209.568	ppb	1.261	3754881	100	209.6	90	110	>+\-10%
Be	9	1	6	52.530	ppb	2.500	14790	50	105.1	90	110	
B	11	1	6	495.338	ppb	0.457	116003	50	990.7	90	110	>+\-10%
Na	23	2	45	51551.053	ppb	1.104	12679937	51000	101.1	90	110	
Mg	24	2	45	10897.393	ppb	1.356	1279532	11000	99.1	90	110	
Al	27	2	45	1064.593	ppb	4.999	29837	1000	106.5	90	110	
Si	28	2	45	42.510	ppb	11.014	20910	500	8.5	90	110	>+\-10%
P	31	2	45	2553.545	ppb	2.254	7821	2500	102.1	90	110	
K	39	2	45	10318.864	ppb	0.813	942680	11000	93.8	90	110	
Ca	40	1	45	12081.234	ppb	0.379	46553534	11000	109.8	90	110	
(Ca)	44	1	45	11356.621	ppb	1.624	1503949	11000	103.2	90	110	
Ti	47	2	45	59.837	ppb	8.948	1970	50	119.7	90	110	>+\-10%
V	51	2	72	48.805	ppb	1.492	74703	50	97.6	90	110	
Cr	52	2	72	48.737	ppb	0.442	92575	50	97.5	90	110	
Mn	55	2	72	53.167	ppb	2.453	42278	50	106.3	90	110	
Fe	56	1	72	1112.526	ppb	0.700	9352465	1000	111.3	90	110	>+\-10%
(Fe)	56	2	72	1052.450	ppb	1.665	1671415	1000	105.2	90	110	
(Fe)	57	2	72	1009.618	ppb	2.352	36845	1000	101.0	90	110	
Co	59	2	72	47.218	ppb	1.705	152724	50	94.4	90	110	
Ni	60	2	72	47.806	ppb	1.767	45383	50	95.6	90	110	
Cu	63	2	72	46.627	ppb	2.423	113921	50	93.3	90	110	
Zn	66	2	72	48.775	ppb	1.847	21698	50	97.5	90	110	
As	75	2	72	47.484	ppb	0.875	17310	50	95.0	90	110	
Se	78	1	72	48.409	ppb	0.463	15321	50	96.8	90	110	
Sr	88	2	72	105.544	ppb	2.159	95820	100	105.5	90	110	
Zr	90	2	72	3184.162	ppb	8.128	19646	50	6368.3	90	110	>+\-10%
Nb	93	2	72	2892.284	ppb	24.062	170	100	2892.3	90	110	>+\-10%
Mo	95	2	115	51.606	ppb	1.836	60423	50	103.2	90	110	
Pd	105	2	115	124.881	ppb	11.666	297	50	249.8	90	110	>+\-10%
Ag	107	2	115	48.219	ppb	1.609	190172	50	96.4	90	110	
Cd	111	2	115	51.157	ppb	2.534	28419	50	102.3	90	110	
Sn	120	2	115	52.190	ppb	3.320	77271	50	104.4	90	110	
Sb	121	2	115	52.296	ppb	0.343	81585	50	104.6	90	110	
Ba	137	2	115	54.998	ppb	0.793	24790	50	110.0	90	110	
W	182	2	165	48.809	ppb	1.018	218316	50	97.6	90	110	
Pt	195	2	165	118.641	ppb	141.727	87	50	237.3	90	110	>+\-10%
Tl	205	2	165	49.136	ppb	0.816	397582	50	98.3	90	110	
Pb	208	2	165	49.802	ppb	0.408	553033	50	99.6	90	110	
Th	232	2	193	56.374	ppb	2.107	546043	50	112.7	90	110	>+\-10%
U	238	2	193	57.028	ppb	0.221	663922	50	114.1	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	636957	0.31	579603	109.90	60	120	
Sc (IS)	45	1	HMI H2	19825945	0.04	17043241	116.33	60	120	
Sc (IS)	45	2	HMI He	1058628	0.60	797526	132.74	60	120	IS Failed
Sc (IS)	45	3	No Gas	37442847	1.14	28509182	131.34	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10721803	0.44	9074377	118.15	60	120	
Ge Internal standard	72	2	HMI He	1531402	1.28	1113151	137.57	60	120	IS Failed
In Internal standard	115	2	HMI He	4351307	0.83	3301939	131.78	60	120	IS Failed
Ho-165	165	2	HMI He	16332024	0.59	12873604	126.86	60	120	IS Failed
Ir (IS)	193	2	HMI He	11985874	0.13	10633585	112.72	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	276_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:09:57-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	87.163	ppb	5.4	2895172	10	>RL
Be	9	1	6	0.152	ppb	25.4	63	0.5	
B	11	1	6	10.775	ppb	13.0	4734	0.5	>RL
Na	23	2	45	-339.497	ppb	-5.8	266450	25	
Mg	24	2	45	-517.271	ppb	-0.1	10750	25	
Al	27	2	45	7.014	ppb	33.2	543	15	
K	39	2	45	-141.500	ppb	-5.8	41295	50	
Ti	47	2	45	0.336	ppb	110.0	23	0.5	
V	51	2	72	-0.810	ppb	-0.2	340	1	
Cr	52	2	72	-0.091	ppb	-32.3	703	1	
Mn	55	2	72	1.397	ppb	10.4	1657	0.5	>RL
(Fe)	57	2	72	28.280	ppb	8.2	1543	25	>RL
Co	59	2	72	0.040	ppb	68.6	203	0.5	
Ni	60	2	72	0.236	ppb	45.7	2514	1	
Cu	63	2	72	-0.072	ppb	-44.4	1533	1	
Zn	66	2	72	0.508	ppb	39.5	893	5	
As	75	2	72	-0.011	ppb	-328.9	37	1	
Se	78	1	72	0.044	ppb	73.4	37	1	
Sr	88	2	72	0.398	ppb	22.1	500	0.5	
Zr	90	2	72	-1.394	ppb	-214.9	697	1	
Nb	93	2	72	1215.872	ppb	91.6	83	2	>RL
Mo	95	2	115	0.544	ppb	18.0	697	0.5	>RL
Pd	105	2	115	-2.813	ppb	-101.3	33	1	
Ag	107	2	115	0.053	ppb	24.0	253	1	
Cd	111	2	115	0.003	ppb	712.6	10	0.5	
Sn	120	2	115	0.879	ppb	3.3	1950	1	
Sb	121	2	115	0.237	ppb	13.9	390	0.6	
Ba	137	2	115	0.494	ppb	56.8	300	0.5	
W	182	2	165	0.324	ppb	32.1	4337	1	
Pt	195	2	165	-5.530	ppb	-424.7	53	1	
Tl	205	2	165	0.064	ppb	13.3	740	0.1	
Pb	208	2	165	0.091	ppb	3.8	2820	0.5	
Th	232	2	193	1.342	ppb	6.0	25192	1	>RL
U	238	2	193	0.103	ppb	6.2	1517	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	661452	0.48	579603	114.12	60	120	
Sc (IS)	45	1	HMI H2	19696283	0.55	17043241	115.57	60	120	
Sc (IS)	45	2	HMI He	1016639	0.46	797526	127.47	60	120	IS Failed
Sc (IS)	45	3	No Gas	36619414	0.77	28509182	128.45	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10687789	0.13	9074377	117.78	60	120	
Ge Internal standard	72	2	HMI He	1508697	0.85	1113151	135.53	60	120	IS Failed
In Internal standard	115	2	HMI He	4285439	0.79	3301939	129.79	60	120	IS Failed
Ho-165	165	2	HMI He	16270145	0.83	12873604	126.38	60	120	IS Failed
Ir (IS)	193	2	HMI He	12240771	0.60	10633585	115.11	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-5-D
Data File Name	277SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:13:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	432.376	ppb	432.376	0.83	4755620	50000	
Be	9	1	6	0.018	ppb	0.018	233.98	20	2000	
B	11	1	6	474.920	ppb	474.920	0.77	95613	2000	
Na	23	2	45	1653931.139	ppb	1653931.139	1.85	353199995	400000	
Mg	24	2	45	30389.905	ppb	30389.905	1.56	3075304	400000	
Al	27	2	45	3.433	ppb	3.433	49.46	417	400000	
Si	28	2	45	394.194	ppb	394.194	3.70	74901	10000	
P	31	2	45	9.813	ppb	9.813	53.98	66	10000	
K	39	2	45	10072.240	ppb	10072.240	1.85	822571	400000	
Ca	40	1	45	267212.329	ppb	267212.329	0.36	910951133	400000	
Ti	47	2	45	0.153	ppb	0.153	455.10	17	4000	
V	51	2	72	-0.754	ppb	-0.754	-3.39	377	2000	
Cr	52	2	72	0.138	ppb	0.138	69.04	1007	5000	
Mn	55	2	72	829.526	ppb	829.526	1.29	571951	10000	
Fe	56	1	72	21.588	ppb	21.588	2.01	270278	10000	
(Fe)	57	2	72	39.184	ppb	39.184	4.22	1720	400000	
Co	59	2	72	1.381	ppb	1.381	4.25	3987	2000	
Ni	60	2	72	1.650	ppb	1.650	10.25	3357	5000	
Cu	63	2	72	-0.349	ppb	-0.349	-4.68	780	5000	
Zn	66	2	72	0.285	ppb	0.285	78.93	713	5000	
As	75	2	72	0.702	ppb	0.702	9.05	261	2000	
Se	78	1	72	0.050	ppb	0.050	84.11	35	2000	
Sr	88	2	72	9621.175	ppb	9621.175	1.82	7661182	4000	
Zr	90	2	72	706.663	ppb	706.663	8.31	4321	1000	
Nb	93	2	72	1872.992	ppb	1872.992	44.28	103	200	>LDR
Mo	95	2	115	2.359	ppb	2.359	7.94	2494	2000	
Pd	105	2	115	135.106	ppb	135.106	10.82	280	100	
Ag	107	2	115	0.013	ppb	0.013	102.69	87	100	
Cd	111	2	115	0.005	ppb	0.005	423.89	10	2000	
Sn	120	2	115	0.013	ppb	0.013	472.62	627	2000	
Sb	121	2	115	0.131	ppb	0.131	18.16	203	1000	
Ba	137	2	115	5.634	ppb	5.634	5.81	2307	5000	
W	182	2	165	0.459	ppb	0.459	19.18	4411	100	
Pt	195	2	165	18.401	ppb	18.401	947.15	53	100	
Tl	205	2	165	0.006	ppb	0.006	108.99	247	2000	
Pb	208	2	165	0.029	ppb	0.029	31.72	1903	5000	
Th	232	2	193	6.760	ppb	6.760	12.51	65923	2000	
U	238	2	193	1.814	ppb	1.814	3.09	18536	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	547137	0.83	579603	94.40	60	120	
Sc (IS)	45	1	HMI H2	17615855	1.10	17043241	103.36	60	120	
Sc (IS)	45	2	HMI He	944790	2.39	797526	118.47	60	120	
Sc (IS)	45	3	No Gas	34232625	0.89	28509182	120.08	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9382588	1.43	9074377	103.40	60	120	
Ge Internal standard	72	2	HMI He	1344891	2.65	1113151	120.82	60	120	IS Failed
In Internal standard	115	2	HMI He	3837684	2.50	3301939	116.23	60	120	
Ho-165	165	2	HMI He	14541472	2.88	12873604	112.96	60	120	
Ir (IS)	193	2	HMI He	10382182	2.09	10633585	97.64	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-5-Dsd@5
Data File Name	278SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:17:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	153.429	ppb	153.429	1.23	3204413	50000	
Be	9	1	6	0.095	ppb	0.095	82.01	43	2000	
B	11	1	6	99.597	ppb	99.597	2.86	24104	2000	
Na	23	2	45	332933.535	ppb	332933.535	0.47	76022624	400000	
Mg	24	2	45	5161.809	ppb	5161.809	0.64	610779	400000	
Al	27	2	45	5.825	ppb	5.825	70.68	507	400000	
Si	28	2	45	64.939	ppb	64.939	7.35	23711	10000	
P	31	2	45	4.823	ppb	4.823	96.02	56	10000	
K	39	2	45	1886.614	ppb	1886.614	1.73	206781	400000	
Ca	40	1	45	54309.558	ppb	54309.558	0.36	202722097	400000	
Ti	47	2	45	-0.302	ppb	-0.302	-60.92	3	4000	
V	51	2	72	-0.792	ppb	-0.792	-3.77	360	2000	
Cr	52	2	72	-0.137	ppb	-0.137	-11.10	607	5000	
Mn	55	2	72	161.426	ppb	161.426	0.21	123123	10000	
Fe	56	1	72	13.451	ppb	13.451	4.02	235540	10000	
(Fe)	57	2	72	20.233	ppb	20.233	13.45	1237	400000	
Co	59	2	72	0.234	ppb	0.234	3.72	807	2000	
Ni	60	2	72	0.977	ppb	0.977	32.08	3117	5000	
Cu	63	2	72	-0.347	ppb	-0.347	-25.19	867	5000	
Zn	66	2	72	1.632	ppb	1.632	19.40	1347	5000	
As	75	2	72	0.105	ppb	0.105	42.28	77	2000	
Se	78	1	72	-0.010	ppb	-0.010	-496.85	20	2000	
Sr	88	2	72	1926.513	ppb	1926.513	0.51	1690772	4000	
Zr	90	2	72	18.763	ppb	18.763	86.77	800	1000	
Nb	93	2	72	158.379	ppb	158.379	130.12	30	200	
Mo	95	2	115	0.502	ppb	0.502	14.19	630	2000	
Pd	105	2	115	9.516	ppb	9.516	171.65	57	100	
Ag	107	2	115	0.014	ppb	0.014	18.62	100	100	
Cd	111	2	115	0.009	ppb	0.009	469.65	13	2000	
Sn	120	2	115	-0.027	ppb	-0.027	-174.72	623	2000	
Sb	121	2	115	0.061	ppb	0.061	6.73	117	1000	
Ba	137	2	115	1.419	ppb	1.419	26.51	690	5000	
W	182	2	165	-0.139	ppb	-0.139	-29.48	2250	100	
Pt	195	2	165	-1.046	ppb	-1.046	-11954.00	53	100	
Tl	205	2	165	0.001	ppb	0.001	1149.13	227	2000	
Pb	208	2	165	0.015	ppb	0.015	38.36	1937	5000	
Th	232	2	193	0.016	ppb	0.016	601.27	11848	2000	
U	238	2	193	0.356	ppb	0.356	6.45	4331	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	614499	1.02	579603	106.02	60	120	
Sc (IS)	45	1	HMI H2	19272718	0.85	17043241	113.08	60	120	
Sc (IS)	45	2	HMI He	1006795	0.92	797526	126.24	60	120	IS Failed
Sc (IS)	45	3	No Gas	35388094	0.86	28509182	124.13	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10462040	1.42	9074377	115.29	60	120	
Ge Internal standard	72	2	HMI He	1482390	0.71	1113151	133.17	60	120	IS Failed
In Internal standard	115	2	HMI He	4168029	0.61	3301939	126.23	60	120	IS Failed
Ho-165	165	2	HMI He	15923014	0.24	12873604	123.69	60	120	IS Failed
Ir (IS)	193	2	HMI He	11725983	0.56	10633585	110.27	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-5-E MS
Data File Name	279SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:21:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	502.963	ppb	502.963	0.90	5296350	50000	
Be	9	1	6	42.972	ppb	42.972	3.90	10514	2000	
B	11	1	6	488.474	ppb	488.474	1.44	99421	2000	
Na	23	2	45	1655466.741	ppb	1655466.741	1.49	374409701	400000	
Mg	24	2	45	31029.044	ppb	31029.044	1.84	3324058	400000	
Al	27	2	45	840.687	ppb	840.687	2.24	22359	400000	
Si	28	2	45	444.724	ppb	444.724	1.04	87882	10000	
P	31	2	45	8.796	ppb	8.796	67.07	67	10000	
K	39	2	45	10852.906	ppb	10852.906	1.15	934698	400000	
Ca	40	1	45	275296.616	ppb	275296.616	0.84	955837906	400000	
Ti	47	2	45	43.718	ppb	43.718	10.14	1363	4000	
V	51	2	72	40.611	ppb	40.611	2.93	59372	2000	
Cr	52	2	72	39.743	ppb	39.743	2.62	71948	5000	
Mn	55	2	72	851.199	ppb	851.199	2.62	635455	10000	
Fe	56	1	72	834.419	ppb	834.419	0.51	6344446	10000	
(Fe)	57	2	72	785.636	ppb	785.636	1.58	27390	400000	
Co	59	2	72	39.953	ppb	39.953	1.25	122939	2000	
Ni	60	2	72	40.393	ppb	40.393	2.10	36818	5000	
Cu	63	2	72	37.268	ppb	37.268	3.14	86926	5000	
Zn	66	2	72	40.188	ppb	40.188	2.72	17119	5000	
As	75	2	72	40.156	ppb	40.156	2.72	13928	2000	
Se	78	1	72	41.361	ppb	41.361	1.17	11788	2000	
Sr	88	2	72	9455.768	ppb	9455.768	2.43	8152429	4000	
Zr	90	2	72	1924.174	ppb	1924.174	11.10	11545	1000	
Nb	93	2	72	797.557	ppb	797.557	105.88	60	200	
Mo	95	2	115	45.584	ppb	45.584	2.13	49145	2000	
Pd	105	2	115	98.298	ppb	98.298	58.06	223	100	
Ag	107	2	115	37.189	ppb	37.189	0.43	135051	100	
Cd	111	2	115	41.558	ppb	41.558	1.95	21251	2000	
Sn	120	2	115	42.038	ppb	42.038	1.16	57428	2000	
Sb	121	2	115	43.351	ppb	43.351	0.79	62269	1000	
Ba	137	2	115	52.409	ppb	52.409	2.68	21752	5000	
W	182	2	165	0.594	ppb	0.594	19.09	5221	100	
Pt	195	2	165	-60.643	ppb	-60.643	-101.07	37	100	
Tl	205	2	165	39.486	ppb	39.486	0.14	300902	2000	
Pb	208	2	165	40.299	ppb	40.299	0.75	421729	5000	
Th	232	2	193	55.241	ppb	55.241	0.82	484532	2000	
U	238	2	193	50.065	ppb	50.065	0.37	527596	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	553417	0.92	579603	95.48	60	120	
Sc (IS)	45	1	HMI H2	17941538	0.25	17043241	105.27	60	120	
Sc (IS)	45	2	HMI He	1000921	1.52	797526	125.50	60	120	IS Failed
Sc (IS)	45	3	No Gas	35037783	0.71	28509182	122.90	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9652778	0.57	9074377	106.37	60	120	
Ge Internal standard	72	2	HMI He	1456787	1.72	1113151	130.87	60	120	IS Failed
In Internal standard	115	2	HMI He	4005906	0.97	3301939	121.32	60	120	IS Failed
Ho-165	165	2	HMI He	15378880	0.11	12873604	119.46	60	120	
Ir (IS)	193	2	HMI He	10848812	0.46	10633585	102.02	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-5-F MSD
Data File Name	280SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:25:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	509.935	ppb	509.935	1.10	5127056	50000	
Be	9	1	6	42.584	ppb	42.584	8.74	10337	2000	
B	11	1	6	477.190	ppb	477.190	1.76	96380	2000	
Na	23	2	45	1635518.834	ppb	1635518.834	0.93	359182048	400000	
Mg	24	2	45	30472.260	ppb	30472.260	1.56	3171126	400000	
Al	27	2	45	847.821	ppb	847.821	2.36	21885	400000	
Si	28	2	45	434.395	ppb	434.395	1.29	83631	10000	
P	31	2	45	6.203	ppb	6.203	48.04	58	10000	
K	39	2	45	10750.433	ppb	10750.433	0.56	899407	400000	
Ca	40	1	45	266994.633	ppb	266994.633	0.20	918068893	400000	
Ti	47	2	45	45.704	ppb	45.704	10.84	1383	4000	
V	51	2	72	40.079	ppb	40.079	1.47	56446	2000	
Cr	52	2	72	39.381	ppb	39.381	2.92	68658	5000	
Mn	55	2	72	846.058	ppb	846.058	2.96	608207	10000	
Fe	56	1	72	814.417	ppb	814.417	0.52	6081762	10000	
(Fe)	57	2	72	799.218	ppb	799.218	5.32	26815	400000	
Co	59	2	72	39.921	ppb	39.921	1.79	118280	2000	
Ni	60	2	72	39.182	ppb	39.182	1.26	34457	5000	
Cu	63	2	72	36.635	ppb	36.635	2.28	82313	5000	
Zn	66	2	72	38.514	ppb	38.514	2.81	15825	5000	
As	75	2	72	39.433	ppb	39.433	2.28	13173	2000	
Se	78	1	72	40.121	ppb	40.121	5.04	11227	2000	
Sr	88	2	72	9413.810	ppb	9413.810	1.93	7815836	4000	
Zr	90	2	72	1370.942	ppb	1370.942	16.43	8122	1000	
Nb	93	2	72	480.215	ppb	480.215	69.67	43	200	
Mo	95	2	115	45.696	ppb	45.696	0.98	48052	2000	
Pd	105	2	115	101.461	ppb	101.461	28.44	223	100	
Ag	107	2	115	35.936	ppb	35.936	0.53	127289	100	
Cd	111	2	115	40.449	ppb	40.449	2.02	20177	2000	
Sn	120	2	115	42.093	ppb	42.093	0.69	56086	2000	
Sb	121	2	115	43.722	ppb	43.722	0.80	61251	1000	
Ba	137	2	115	50.664	ppb	50.664	1.19	20514	5000	
W	182	2	165	0.555	ppb	0.555	9.91	4881	100	
Pt	195	2	165	-83.151	ppb	-83.151	-130.86	30	100	
Tl	205	2	165	39.199	ppb	39.199	1.35	288197	2000	
Pb	208	2	165	40.608	ppb	40.608	0.95	410017	5000	
Th	232	2	193	56.202	ppb	56.202	0.89	479410	2000	
U	238	2	193	49.392	ppb	49.392	1.20	506418	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	548955	0.31	579603	94.71	60	120	
Sc (IS)	45	1	HMI H2	17768174	0.84	17043241	104.25	60	120	
Sc (IS)	45	2	HMI He	971747	0.75	797526	121.85	60	120	IS Failed
Sc (IS)	45	3	No Gas	33647743	0.43	28509182	118.02	60	120	
Ge Internal standard	72	1	HMI H2	9475866	0.30	9074377	104.42	60	120	
Ge Internal standard	72	2	HMI He	1402646	0.92	1113151	126.01	60	120	IS Failed
In Internal standard	115	2	HMI He	3907358	1.25	3301939	118.34	60	120	
Ho-165	165	2	HMI He	14839481	1.78	12873604	115.27	60	120	
Ir (IS)	193	2	HMI He	10555013	1.58	10633585	99.26	60	120	

Sample Report

Sample Table

Sample Name	280-165797-M-5-D pds
Data File Name	281SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:29:02-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	727.755	ppb	727.755	1.24	6222451	50000	
Be	9	1	6	211.518	ppb	211.518	1.42	52183	2000	
B	11	1	6	463.692	ppb	463.692	1.68	95365	2000	
Na	23	2	45	1570701.145	ppb	1570701.145	2.98	341940662	400000	
Mg	24	2	45	28397.006	ppb	28397.006	2.69	2933678	400000	
Al	27	2	45	2123.600	ppb	2123.600	3.99	53843	400000	
Si	28	2	45	592.047	ppb	592.047	3.45	108597	10000	
P	31	2	45	2149.850	ppb	2149.850	5.94	5997	10000	
K	39	2	45	9587.684	ppb	9587.684	2.40	800497	400000	
Ca	40	1	45	256443.665	ppb	256443.665	1.08	897867747	400000	
Ti	47	2	45	223.239	ppb	223.239	2.38	6652	4000	
V	51	2	72	198.897	ppb	198.897	1.02	270208	2000	
Cr	52	2	72	191.138	ppb	191.138	0.75	324995	5000	
Mn	55	2	72	971.724	ppb	971.724	0.14	687538	10000	
Fe	56	1	72	22.654	ppb	22.654	0.75	283521	10000	
(Fe)	57	2	72	36.695	ppb	36.695	18.56	1690	400000	
Co	59	2	72	189.869	ppb	189.869	0.50	553369	2000	
Ni	60	2	72	187.327	ppb	187.327	1.41	154204	5000	
Cu	63	2	72	186.462	ppb	186.462	0.94	405937	5000	
Zn	66	2	72	188.985	ppb	188.985	2.37	74009	5000	
As	75	2	72	191.553	ppb	191.553	0.94	62853	2000	
Se	78	1	72	200.273	ppb	200.273	0.80	56494	2000	
Sr	88	2	72	9119.273	ppb	9119.273	0.41	7452134	4000	
Zr	90	2	72	4941.106	ppb	4941.106	14.39	27037	1000	
Nb	93	2	72	2169.765	ppb	2169.765	27.36	120	200	>LDR
Mo	95	2	115	214.134	ppb	214.134	2.21	219628	2000	
Pd	105	2	115	283.552	ppb	283.552	10.70	547	100	
Ag	107	2	115	46.512	ppb	46.512	3.14	160822	100	
Cd	111	2	115	200.268	ppb	200.268	2.46	97498	2000	
Sn	120	2	115	211.732	ppb	211.732	2.60	272991	2000	
Sb	121	2	115	216.713	ppb	216.713	1.97	296336	1000	
Ba	137	2	115	226.792	ppb	226.792	2.63	89407	5000	
W	182	2	165	73.891	ppb	73.891	3.92	298007	100	
Pt	195	2	165	194.388	ppb	194.388	79.75	97	100	
Tl	205	2	165	217.748	ppb	217.748	1.58	1594803	2000	
Pb	208	2	165	196.179	ppb	196.179	2.33	1968211	5000	
Th	232	2	193	179.799	ppb	179.799	11.23	1491486	2000	
U	238	2	193	268.064	ppb	268.064	1.26	2709325	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	558716	1.34	579603	96.40	60	120	
Sc (IS)	45	1	HMI H2	18092199	0.93	17043241	106.15	60	120	
Sc (IS)	45	2	HMI He	963054	2.14	797526	120.76	60	120	IS Failed
Sc (IS)	45	3	No Gas	32725433	0.44	28509182	114.79	60	120	
Ge Internal standard	72	1	HMI H2	9567938	1.11	9074377	105.44	60	120	
Ge Internal standard	72	2	HMI He	1380451	3.89	1113151	124.01	60	120	IS Failed
In Internal standard	115	2	HMI He	3813978	1.94	3301939	115.51	60	120	
Ho-165	165	2	HMI He	14788678	1.54	12873604	114.88	60	120	
Ir (IS)	193	2	HMI He	10407363	1.92	10633585	97.87	60	120	

Sample Report

Sample Table

Sample Name	280-165797-L-1-B
Data File Name	282SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:32:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	671.475	ppb	671.475	0.62	6035948	50000	
Be	9	1	6	0.275	ppb	0.275	65.39	77	2000	
B	11	1	6	527.699	ppb	527.699	2.60	98952	2000	
Na	23	2	45	3399847.845	ppb	3399847.845	0.55	731589936	400000	>LDR
Mg	24	2	45	51751.183	ppb	51751.183	0.77	5236230	400000	
Al	27	2	45	-0.295	ppb	-0.295	-1196.03	327	400000	
Si	28	2	45	366.600	ppb	366.600	0.77	71061	10000	
P	31	2	45	12.209	ppb	12.209	42.82	73	10000	
K	39	2	45	12972.682	ppb	12972.682	1.55	1053717	400000	
Ca	40	1	45	388547.433	ppb	388547.433	1.43	1258567128	400000	
Ti	47	2	45	-0.181	ppb	-0.181	-108.92	7	4000	
V	51	2	72	-0.608	ppb	-0.608	-21.14	540	2000	
Cr	52	2	72	0.111	ppb	0.111	42.85	920	5000	
Mn	55	2	72	57.133	ppb	57.133	5.47	38161	10000	
Fe	56	1	72	7.530	ppb	7.530	7.06	157074	10000	
(Fe)	57	2	72	23.716	ppb	23.716	6.84	1180	400000	
Co	59	2	72	0.076	ppb	0.076	43.75	277	2000	
Ni	60	2	72	1.016	ppb	1.016	17.55	2737	5000	
Cu	63	2	72	-0.309	ppb	-0.309	-8.64	830	5000	
Zn	66	2	72	0.477	ppb	0.477	90.05	750	5000	
As	75	2	72	1.177	ppb	1.177	6.12	395	2000	
Se	78	1	72	0.210	ppb	0.210	20.66	73	2000	
Sr	88	2	72	9515.740	ppb	9515.740	5.03	7251042	4000	
Zr	90	2	72	226.987	ppb	226.987	28.67	1727	1000	
Nb	93	2	72	731.918	ppb	731.918	65.30	50	200	
Mo	95	2	115	20.627	ppb	20.627	3.98	20690	2000	
Pd	105	2	115	120.939	ppb	120.939	39.28	247	100	
Ag	107	2	115	0.029	ppb	0.029	53.10	140	100	
Cd	111	2	115	0.033	ppb	0.033	97.45	23	2000	
Sn	120	2	115	1.601	ppb	1.601	2.87	2600	2000	
Sb	121	2	115	1.930	ppb	1.930	5.09	2597	1000	
Ba	137	2	115	8.028	ppb	8.028	7.87	3157	5000	
W	182	2	165	1.635	ppb	1.635	8.68	8609	100	
Pt	195	2	165	-14.743	ppb	-14.743	-635.12	43	100	
Tl	205	2	165	0.055	ppb	0.055	36.20	570	2000	
Pb	208	2	165	0.018	ppb	0.018	107.96	1713	5000	
Th	232	2	193	5.009	ppb	5.009	12.36	47491	2000	
U	238	2	193	1.684	ppb	1.684	2.30	15896	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	510519	1.71	579603	88.08	60	120	
Sc (IS)	45	1	HMI H2	16737742	2.26	17043241	98.21	60	120	
Sc (IS)	45	2	HMI He	952662	0.93	797526	119.45	60	120	
Sc (IS)	45	3	No Gas	33461509	1.24	28509182	117.37	60	120	
Ge Internal standard	72	1	HMI H2	8757806	1.92	9074377	96.51	60	120	
Ge Internal standard	72	2	HMI He	1289368	5.05	1113151	115.83	60	120	
In Internal standard	115	2	HMI He	3721697	1.09	3301939	112.71	60	120	
Ho-165	165	2	HMI He	13875503	0.83	12873604	107.78	60	120	
Ir (IS)	193	2	HMI He	9582733	0.32	10633585	90.12	60	120	

Sample Report

Sample Table

Sample Name	280-165797-L-2-B
Data File Name	283SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:36:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	408.735	ppb	408.735	1.32	4499005	50000	
Be	9	1	6	0.254	ppb	0.254	68.51	77	2000	
B	11	1	6	496.048	ppb	496.048	1.05	99253	2000	
Na	23	2	45	2208925.511	ppb	2208925.511	0.37	496856766	400000	>LDR
Mg	24	2	45	31485.336	ppb	31485.336	0.63	3354491	400000	
Al	27	2	45	90.421	ppb	90.421	8.72	2704	400000	
Si	28	2	45	442.135	ppb	442.135	1.62	86981	10000	
P	31	2	45	8.527	ppb	8.527	119.56	66	10000	
K	39	2	45	8044.101	ppb	8044.101	0.39	702532	400000	
Ca	40	1	45	339374.407	ppb	339374.407	0.86	1180049076	400000	
Ti	47	2	45	2.193	ppb	2.193	82.49	80	4000	
V	51	2	72	-0.697	ppb	-0.697	-21.47	477	2000	
Cr	52	2	72	0.073	ppb	0.073	30.98	943	5000	
Mn	55	2	72	663.446	ppb	663.446	1.96	481198	10000	
Fe	56	1	72	179.895	ppb	179.895	1.90	1418420	10000	
(Fe)	57	2	72	181.927	ppb	181.927	9.18	6548	400000	
Co	59	2	72	0.226	ppb	0.226	10.77	747	2000	
Ni	60	2	72	1.283	ppb	1.283	29.62	3227	5000	
Cu	63	2	72	0.194	ppb	0.194	56.41	2027	5000	
Zn	66	2	72	1.109	ppb	1.109	15.59	1077	5000	
As	75	2	72	0.087	ppb	0.087	42.14	67	2000	
Se	78	1	72	7.899	ppb	7.899	7.88	2204	2000	
Sr	88	2	72	6640.130	ppb	6640.130	0.92	5561046	4000	
Zr	90	2	72	97.605	ppb	97.605	13.34	1197	1000	
Nb	93	2	72	897.339	ppb	897.339	84.18	63	200	
Mo	95	2	115	2.463	ppb	2.463	5.68	2614	2000	
Pd	105	2	115	74.063	ppb	74.063	26.85	170	100	
Ag	107	2	115	0.014	ppb	0.014	79.81	93	100	
Cd	111	2	115	0.018	ppb	0.018	233.68	17	2000	
Sn	120	2	115	0.392	ppb	0.392	18.74	1120	2000	
Sb	121	2	115	0.388	ppb	0.388	31.69	560	1000	
Ba	137	2	115	9.620	ppb	9.620	9.09	3901	5000	
W	182	2	165	0.878	ppb	0.878	3.87	6011	100	
Pt	195	2	165	-22.330	ppb	-22.330	-401.94	43	100	
Tl	205	2	165	0.004	ppb	0.004	206.08	227	2000	
Pb	208	2	165	0.074	ppb	0.074	24.16	2337	5000	
Th	232	2	193	0.937	ppb	0.937	29.32	17424	2000	
U	238	2	193	5.774	ppb	5.774	2.90	56433	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	544226	0.41	579603	93.90	60	120	
Sc (IS)	45	1	HMI H2	17968896	0.47	17043241	105.43	60	120	
Sc (IS)	45	2	HMI He	995558	0.27	797526	124.83	60	120	IS Failed
Sc (IS)	45	3	No Gas	33368570	0.63	28509182	117.04	60	120	
Ge Internal standard	72	1	HMI H2	9380929	0.61	9074377	103.38	60	120	
Ge Internal standard	72	2	HMI He	1414797	1.11	1113151	127.10	60	120	IS Failed
In Internal standard	115	2	HMI He	3853581	0.20	3301939	116.71	60	120	
Ho-165	165	2	HMI He	14441085	0.66	12873604	112.18	60	120	
Ir (IS)	193	2	HMI He	10025498	0.66	10633585	94.28	60	120	

Sample Report

Sample Table

Sample Name	280-165797-L-3-B
Data File Name	284SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:40:39-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	515.618	ppb	515.618	0.13	5058860	50000	
Be	9	1	6	0.330	ppb	0.330	23.44	90	2000	
B	11	1	6	557.943	ppb	557.943	2.96	105647	2000	
Na	23	2	45	3037332.216	ppb	3037332.216	1.52	636620084	400000	>LDR
Mg	24	2	45	28628.204	ppb	28628.204	0.76	2848347	400000	
Al	27	2	45	837.804	ppb	837.804	4.21	20650	400000	
Si	28	2	45	550.298	ppb	550.298	2.36	98046	10000	
P	31	2	45	19.181	ppb	19.181	2.61	90	10000	
K	39	2	45	10263.930	ppb	10263.930	1.39	822124	400000	
Ca	40	1	45	187871.464	ppb	187871.464	0.41	612013671	400000	
Ti	47	2	45	13.689	ppb	13.689	52.38	403	4000	
V	51	2	72	0.267	ppb	0.267	20.40	1520	2000	
Cr	52	2	72	0.377	ppb	0.377	13.84	1237	5000	
Mn	55	2	72	475.091	ppb	475.091	1.42	289610	10000	
Fe	56	1	72	611.542	ppb	611.542	1.73	4237169	10000	
(Fe)	57	2	72	624.794	ppb	624.794	3.68	17860	400000	
Co	59	2	72	0.272	ppb	0.272	13.16	743	2000	
Ni	60	2	72	1.701	ppb	1.701	7.49	3004	5000	
Cu	63	2	72	0.678	ppb	0.678	2.60	2607	5000	
Zn	66	2	72	3.062	ppb	3.062	29.80	1557	5000	
As	75	2	72	0.157	ppb	0.157	24.13	76	2000	
Se	78	1	72	0.050	ppb	0.050	2.29	32	2000	
Sr	88	2	72	5835.516	ppb	5835.516	0.42	4105527	4000	
Zr	90	2	72	285.180	ppb	285.180	11.83	1870	1000	
Nb	93	2	72	2249.897	ppb	2249.897	50.64	107	200	>LDR
Mo	95	2	115	7.874	ppb	7.874	0.60	7685	2000	
Pd	105	2	115	57.014	ppb	57.014	17.11	130	100	
Ag	107	2	115	0.002	ppb	0.002	92.01	47	100	
Cd	111	2	115	-0.001	ppb	-0.001	-2164.97	7	2000	
Sn	120	2	115	0.246	ppb	0.246	30.03	870	2000	
Sb	121	2	115	0.234	ppb	0.234	9.16	323	1000	
Ba	137	2	115	7.685	ppb	7.685	8.36	2927	5000	
W	182	2	165	0.780	ppb	0.780	10.51	5214	100	
Pt	195	2	165	84.240	ppb	84.240	138.61	63	100	
Tl	205	2	165	0.022	ppb	0.022	50.62	327	2000	
Pb	208	2	165	0.364	ppb	0.364	9.34	4794	5000	
Th	232	2	193	0.791	ppb	0.791	26.17	14915	2000	
U	238	2	193	2.065	ppb	2.065	3.16	18642	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	516141	1.11	579603	89.05	60	120	
Sc (IS)	45	1	HMI H2	16832235	0.63	17043241	98.76	60	120	
Sc (IS)	45	2	HMI He	927964	1.10	797526	116.36	60	120	
Sc (IS)	45	3	No Gas	32987210	0.60	28509182	115.71	60	120	
Ge Internal standard	72	1	HMI H2	8736448	0.91	9074377	96.28	60	120	
Ge Internal standard	72	2	HMI He	1188417	0.33	1113151	106.76	60	120	
In Internal standard	115	2	HMI He	3603398	0.79	3301939	109.13	60	120	
Ho-165	165	2	HMI He	13375877	0.38	12873604	103.90	60	120	
Ir (IS)	193	2	HMI He	9189996	0.90	10633585	86.42	60	120	

Sample Report

Sample Table

Sample Name	280-165797-L-4-B
Data File Name	285SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:44:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585084 6020
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	519.553	ppb	519.553	0.96	4999729	50000	
Be	9	1	6	0.201	ppb	0.201	24.06	60	2000	
B	11	1	6	534.408	ppb	534.408	2.89	100329	2000	
Na	23	2	45	2981643.740	ppb	2981643.740	1.10	640584830	400000	>LDR
Mg	24	2	45	28075.178	ppb	28075.178	1.83	2863957	400000	
Al	27	2	45	617.277	ppb	617.277	5.41	15691	400000	
Si	28	2	45	489.471	ppb	489.471	2.50	90724	10000	
P	31	2	45	25.681	ppb	25.681	4.60	110	10000	
K	39	2	45	10179.928	ppb	10179.928	0.52	836168	400000	
Ca	40	1	45	177606.951	ppb	177606.951	0.92	571494231	400000	
Ti	47	2	45	9.708	ppb	9.708	37.19	297	4000	
V	51	2	72	0.048	ppb	0.048	254.42	1313	2000	
Cr	52	2	72	0.225	ppb	0.225	18.76	1053	5000	
Mn	55	2	72	450.063	ppb	450.063	3.05	284685	10000	
Fe	56	1	72	419.036	ppb	419.036	1.66	2916020	10000	
(Fe)	57	2	72	454.759	ppb	454.759	2.15	13609	400000	
Co	59	2	72	0.213	ppb	0.213	13.80	617	2000	
Ni	60	2	72	2.374	ppb	2.374	6.57	3607	5000	
Cu	63	2	72	0.577	ppb	0.577	19.27	2514	5000	
Zn	66	2	72	4.754	ppb	4.754	17.66	2207	5000	
As	75	2	72	0.100	ppb	0.100	83.52	63	2000	
Se	78	1	72	0.133	ppb	0.133	81.56	53	2000	
Sr	88	2	72	5698.090	ppb	5698.090	3.88	4158733	4000	
Zr	90	2	72	292.771	ppb	292.771	21.07	1980	1000	
Nb	93	2	72	2637.401	ppb	2637.401	37.37	127	200	>LDR
Mo	95	2	115	7.839	ppb	7.839	1.62	7742	2000	
Pd	105	2	115	62.001	ppb	62.001	10.79	140	100	
Ag	107	2	115	0.003	ppb	0.003	563.30	50	100	
Cd	111	2	115	-0.009	ppb	-0.009	-147.87	3	2000	
Sn	120	2	115	0.094	ppb	0.094	12.12	693	2000	
Sb	121	2	115	0.118	ppb	0.118	15.65	177	1000	
Ba	137	2	115	7.392	ppb	7.392	7.67	2854	5000	
W	182	2	165	0.613	ppb	0.613	8.22	4671	100	
Pt	195	2	165	-56.350	ppb	-56.350	-258.14	33	100	
Tl	205	2	165	0.011	ppb	0.011	132.95	260	2000	
Pb	208	2	165	0.249	ppb	0.249	8.15	3797	5000	
Th	232	2	193	0.293	ppb	0.293	61.53	11372	2000	
U	238	2	193	2.085	ppb	2.085	3.00	18953	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	511408	1.84	579603	88.23	60	120	
Sc (IS)	45	1	HMI H2	16626514	0.84	17043241	97.55	60	120	
Sc (IS)	45	2	HMI He	951078	1.14	797526	119.25	60	120	
Sc (IS)	45	3	No Gas	32457713	1.42	28509182	113.85	60	120	
Ge Internal standard	72	1	HMI H2	8677144	1.40	9074377	95.62	60	120	
Ge Internal standard	72	2	HMI He	1233552	2.53	1113151	110.82	60	120	
In Internal standard	115	2	HMI He	3646383	1.17	3301939	110.43	60	120	
Ho-165	165	2	HMI He	13551359	0.47	12873604	105.26	60	120	
Ir (IS)	193	2	HMI He	9253458	0.23	10633585	87.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	286_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:48:19-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	225.079	ppb	1.731	3787208	100	225.1	90	110	>+\-10%
Be	9	1	6	51.059	ppb	3.381	14260	50	102.1	90	110	
B	11	1	6	482.753	ppb	0.394	112201	50	965.5	90	110	>+\-10%
Na	23	2	45	50267.306	ppb	1.344	12225334	51000	98.6	90	110	
Mg	24	2	45	10289.964	ppb	1.924	1197444	11000	93.5	90	110	
Al	27	2	45	990.674	ppb	2.410	27470	1000	99.1	90	110	
Si	28	2	45	47.248	ppb	9.911	21494	500	9.4	90	110	>+\-10%
P	31	2	45	2583.291	ppb	2.160	7817	2500	103.3	90	110	
K	39	2	45	9995.433	ppb	0.497	903958	11000	90.9	90	110	
Ca	40	1	45	11255.464	ppb	0.258	43275319	11000	102.3	90	110	
(Ca)	44	1	45	10423.504	ppb	1.856	1377356	11000	94.8	90	110	
Ti	47	2	45	56.059	ppb	7.726	1824	50	112.1	90	110	>+\-10%
V	51	2	72	45.595	ppb	2.627	68594	50	91.2	90	110	
Cr	52	2	72	44.826	ppb	0.637	83638	50	89.7	90	110	>+\-10%
Mn	55	2	72	46.848	ppb	4.334	36628	50	93.7	90	110	
Fe	56	1	72	946.550	ppb	0.245	7908302	1000	94.7	90	110	
(Fe)	56	2	72	928.806	ppb	1.654	1450488	1000	92.9	90	110	
(Fe)	57	2	72	899.346	ppb	4.228	32272	1000	89.9	90	110	>+\-10%
Co	59	2	72	43.901	ppb	2.575	139356	50	87.8	90	110	>+\-10%
Ni	60	2	72	44.661	ppb	2.928	41766	50	89.3	90	110	>+\-10%
Cu	63	2	72	42.243	ppb	1.366	101454	50	84.5	90	110	>+\-10%
Zn	66	2	72	43.205	ppb	1.868	18945	50	86.4	90	110	>+\-10%
As	75	2	72	44.665	ppb	1.245	15983	50	89.3	90	110	>+\-10%
Se	78	1	72	45.674	ppb	3.376	14332	50	91.3	90	110	
Sr	88	2	72	100.913	ppb	0.971	89927	100	100.9	90	110	
Zr	90	2	72	294.887	ppb	21.002	2420	50	589.8	90	110	>+\-10%
Nb	93	2	72	1680.633	ppb	34.845	107	100	1680.6	90	110	>+\-10%
Mo	95	2	115	48.119	ppb	1.175	54750	50	96.2	90	110	
Pd	105	2	115	129.201	ppb	25.074	297	50	258.4	90	110	>+\-10%
Ag	107	2	115	44.786	ppb	1.045	171654	50	89.6	90	110	>+\-10%
Cd	111	2	115	46.371	ppb	4.538	25027	50	92.7	90	110	
Sn	120	2	115	48.339	ppb	0.841	69599	50	96.7	90	110	
Sb	121	2	115	49.119	ppb	0.752	74461	50	98.2	90	110	
Ba	137	2	115	49.483	ppb	6.323	21676	50	99.0	90	110	
W	182	2	165	45.052	ppb	0.906	191730	50	90.1	90	110	
Pt	195	2	165	229.810	ppb	87.513	110	50	459.6	90	110	>+\-10%
Tl	205	2	165	46.197	ppb	0.339	355282	50	92.4	90	110	
Pb	208	2	165	46.463	ppb	0.505	490497	50	92.9	90	110	
Th	232	2	193	46.386	ppb	5.603	418909	50	92.8	90	110	
U	238	2	193	54.140	ppb	0.788	584883	50	108.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	631854	0.43	579603	109.01	60	120	
Sc (IS)	45	1	HMI H2	19775477	0.26	17043241	116.03	60	120	
Sc (IS)	45	2	HMI He	1046029	1.06	797526	131.16	60	120	IS Failed
Sc (IS)	45	3	No Gas	36777829	0.53	28509182	129.00	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10629889	0.33	9074377	117.14	60	120	
Ge Internal standard	72	2	HMI He	1503058	1.34	1113151	135.03	60	120	IS Failed
In Internal standard	115	2	HMI He	4227993	0.65	3301939	128.05	60	120	IS Failed
Ho-165	165	2	HMI He	15522155	0.71	12873604	120.57	60	120	IS Failed
Ir (IS)	193	2	HMI He	11122041	0.22	10633585	104.59	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	287_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:52:09-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	96.502	ppb	9.3	2970348	10	>RL
Be	9	1	6	0.076	ppb	123.2	40	0.5	
B	11	1	6	12.301	ppb	5.9	4958	0.5	>RL
Na	23	2	45	376.651	ppb	9.8	436622	25	>RL
Mg	24	2	45	-445.007	ppb	-0.4	18711	25	
Al	27	2	45	3.773	ppb	109.2	463	15	
K	39	2	45	-89.075	ppb	-14.2	46241	50	
Ti	47	2	45	0.219	ppb	140.8	20	0.5	
V	51	2	72	-0.822	ppb	-4.4	317	1	
Cr	52	2	72	-0.092	ppb	-53.4	687	1	
Mn	55	2	72	0.436	ppb	23.6	897	0.5	
(Fe)	57	2	72	19.698	ppb	2.7	1213	25	
Co	59	2	72	0.028	ppb	72.1	163	0.5	
Ni	60	2	72	2.056	ppb	6.3	4041	1	>RL
Cu	63	2	72	-0.281	ppb	-15.1	1017	1	
Zn	66	2	72	0.517	ppb	62.9	877	5	
As	75	2	72	-0.025	ppb	-182.0	31	1	
Se	78	1	72	0.048	ppb	70.4	37	1	
Sr	88	2	72	1.656	ppb	37.4	1584	0.5	>RL
Zr	90	2	72	-30.760	ppb	-10.5	513	1	
Nb	93	2	72	96.641	ppb	446.4	27	2	>RL
Mo	95	2	115	0.455	ppb	7.2	587	0.5	
Pd	105	2	115	-5.979	ppb	-127.7	27	1	
Ag	107	2	115	0.046	ppb	17.9	223	1	
Cd	111	2	115	0.015	ppb	257.2	17	0.5	
Sn	120	2	115	0.729	ppb	30.0	1717	1	
Sb	121	2	115	0.279	ppb	8.3	450	0.6	
Ba	137	2	115	0.278	ppb	58.9	203	0.5	
W	182	2	165	0.264	ppb	46.8	3894	1	
Pt	195	2	165	-8.741	ppb	-1212.5	50	1	
Tl	205	2	165	0.053	ppb	18.5	623	0.1	
Pb	208	2	165	0.031	ppb	101.6	2057	0.5	
Th	232	2	193	1.005	ppb	13.6	20411	1	>RL
U	238	2	193	0.103	ppb	6.2	1413	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	643124	0.20	579603	110.96	60	120	
Sc (IS)	45	1	HMI H2	19075441	1.27	17043241	111.92	60	120	
Sc (IS)	45	2	HMI He	1030372	0.98	797526	129.20	60	120	IS Failed
Sc (IS)	45	3	No Gas	36818511	0.50	28509182	129.15	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10314653	0.75	9074377	113.67	60	120	
Ge Internal standard	72	2	HMI He	1476943	2.78	1113151	132.68	60	120	IS Failed
In Internal standard	115	2	HMI He	4237741	1.83	3301939	128.34	60	120	IS Failed
Ho-165	165	2	HMI He	15533756	2.28	12873604	120.66	60	120	IS Failed
Ir (IS)	193	2	HMI He	11385131	1.90	10633585	107.07	60	120	

Blank Report

Sample Table

Sample Name	MB 280-585231/1-A
Data File Name	288_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:56:01-06:00
Sample Type	Blank
Dilution	1
Comment	585231 6020b
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	45	94.562	ppb	5.009794962	2939379	10
Be	9	1	6	-0.006	ppb	-936.5074389	17	0.5
B	11	1	6	5.377	ppb	14.04424616	3310	0.5
Na	23	2	45	439.787	ppb	1.764849763	451935	25
Mg	24	2	45	-252.605	ppb	-2.765734267	39570	25
Al	27	2	45	-1.451	ppb	-165.4477771	323	15
K	39	2	45	-96.198	ppb	-6.169735884	45706	50
Ti	47	2	45	-0.303	ppb	-59.89324033	3	0.5
V	51	2	72	-0.858	ppb	-13.22646741	267	1
Cr	52	2	72	0.000	ppb	-24729.19956	863	1
Mn	55	2	72	1.138	ppb	21.07528794	1443	0.5
(Fe)	57	2	72	12.830	ppb	42.31339397	987	25
Co	59	2	72	0.019	ppb	107.3116919	137	0.5
Ni	60	2	72	1.591	ppb	12.88351898	3681	1
Cu	63	2	72	-0.430	ppb	-3.831446325	677	1
Zn	66	2	72	-0.408	ppb	-45.03268918	500	5
As	75	2	72	-0.058	ppb	-15.8908293	20	1
Se	78	1	72	-0.036	ppb	-37.3443295	12	1
Sr	88	2	72	0.785	ppb	29.51999745	837	0.5
Zr	90	2	72	-24.955	ppb	-76.82832724	553	1
Nb	93	2	72	152.065	ppb	130.2330584	30	2
Mo	95	2	115	0.123	ppb	36.88844982	210	0.5
Pd	105	2	115	5.536	ppb	357.0104606	50	1
Ag	107	2	115	0.013	ppb	99.71873606	97	1
Cd	111	2	115	-0.010	ppb	-110.9773035	3	0.5
Sn	120	2	115	-0.080	ppb	-97.67568304	560	1
Sb	121	2	115	0.053	ppb	49.48822544	107	0.6
Ba	137	2	115	0.186	ppb	70.8379097	163	0.5
W	182	2	165	0.342	ppb	20.12184285	4254	1
Pt	195	2	165	28.302	ppb	244.331059	60	1
Tl	205	2	165	0.010	ppb	25.2813458	297	0.1
Pb	208	2	165	0.007	ppb	143.844444	1820	0.5
Th	232	2	193	2.911	ppb	12.29695761	38017	1
U	238	2	193	0.019	ppb	53.5167522	483	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	635512	0.34	579603	109.65	60	120	
Sc (IS)	45	1	HMI H2	19180373	0.40	17043241	112.54	60	120	
Sc (IS)	45	2	HMI He	1031716	0.54	797526	129.36	60	120	IS Failed
Sc (IS)	45	3	No Gas	36587310	1.42	28509182	128.34	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10373794	0.75	9074377	114.32	60	120	
Ge Internal standard	72	2	HMI He	1494759	0.57	1113151	134.28	60	120	IS Failed
In Internal standard	115	2	HMI He	4257742	0.43	3301939	128.95	60	120	IS Failed
Ho-165	165	2	HMI He	15681047	0.41	12873604	121.81	60	120	IS Failed
Ir (IS)	193	2	HMI He	11523675	0.49	10633585	108.37	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-585231/2-A
Data File Name	289_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T03:59:53-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	585231 6020b
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	144.496	144.496	ppb	0.921	3204151	400	36.1	80	120	>+/-20%
Be	9	1	6	40.247	40.247	ppb	7.004	11194	40	100.6	80	120	
Na	23	2	45	579.537	579.537	ppb	7.606	473334	40	1448.8	80	120	>+/-20%
Mg	24	2	45	301.709	301.709	ppb	3.181	97305	40	754.3	80	120	>+/-20%
Al	27	2	45	783.194	783.194	ppb	5.504	20994	40	1958.0	80	120	>+/-20%
K	39	2	45	576.907	576.907	ppb	5.227	99765	40	1442.3	80	120	>+/-20%
V	51	2	72	35.801	35.801	ppb	0.427	53536	40	89.5	80	120	
Cr	52	2	72	36.229	36.229	ppb	2.359	66937	40	90.6	80	120	
Mn	55	2	72	37.402	37.402	ppb	0.843	29009	40	93.5	80	120	
(Fe)	57	2	72	700.423	700.423	ppb	4.163	24953	40	1751.1	80	120	>+/-20%
Co	59	2	72	35.500	35.500	ppb	2.438	111342	40	88.7	80	120	
Ni	60	2	72	38.230	38.230	ppb	2.713	35649	40	95.6	80	120	
Cu	63	2	72	35.726	35.726	ppb	1.229	85017	40	89.3	80	120	
Zn	66	2	72	35.617	35.617	ppb	6.163	15541	40	89.0	80	120	
As	75	2	72	34.884	34.884	ppb	2.768	12339	40	87.2	80	120	
Se	78	1	72	36.191	36.191	ppb	2.277	10904	40	90.5	80	120	
Nb	93	2	72	91.005	91.005	ppb	467.517	27	40	227.5	80	120	>+/-20%
Mo	95	2	115	37.591	37.591	ppb	0.863	42183	40	94.0	80	120	
Pd	105	2	115	-0.647	-0.647	ppb	-1631.432	37	40	-1.6	80	120	>+/-20%
Ag	107	2	115	35.427	35.427	ppb	0.661	133868	40	88.6	80	120	
Cd	111	2	115	37.219	37.219	ppb	2.002	19809	40	93.0	80	120	
Sn	120	2	115	37.716	37.716	ppb	1.857	53678	40	94.3	80	120	
Sb	121	2	115	38.696	38.696	ppb	0.707	57839	40	96.7	80	120	
Ba	137	2	115	40.561	40.561	ppb	1.009	17534	40	101.4	80	120	
W	182	2	165	0.559	0.559	ppb	7.629	5148	40	1.4	80	120	>+/-20%
Pt	195	2	165	3.278	3.278	ppb	1892.721	53	40	8.2	80	120	>+/-20%
Tl	205	2	165	37.903	37.903	ppb	1.079	293046	40	94.8	80	120	
Pb	208	2	165	38.539	38.539	ppb	0.265	409243	40	96.3	80	120	
Th	232	2	193	41.803	41.803	ppb	2.274	393072	40	104.5	80	120	
U	238	2	193	41.336	41.336	ppb	1.463	463791	40	103.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	628923	0.55	579603	108.51	60	120	
Sc (IS)	45	1	HMI H2	18909036	0.29	17043241	110.95	60	120	
Sc (IS)	45	2	HMI He	1007974	0.88	797526	126.39	60	120	IS Failed
Sc (IS)	45	3	No Gas	36000643	0.24	28509182	126.28	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10202921	0.87	9074377	112.44	60	120	
Ge Internal standard	72	2	HMI He	1484744	0.77	1113151	133.38	60	120	IS Failed
In Internal standard	115	2	HMI He	4168279	1.23	3301939	126.24	60	120	IS Failed
Ho-165	165	2	HMI He	15602431	0.86	12873604	121.20	60	120	IS Failed
Ir (IS)	193	2	HMI He	11548449	0.81	10633585	108.60	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-C@10
Data File Name	290SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:03:49-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	559.446	ppb	559.446	0.74	5810873	50000	
Be	9	1	6	0.079	ppb	0.079	104.66	37	2000	
B	11	1	6	122.839	ppb	122.839	1.08	27553	2000	
Na	23	2	45	493377.246	ppb	493377.246	0.51	114366675	400000	
Mg	24	2	45	714373.475	ppb	714373.475	0.69	76814447	400000	
Al	27	2	45	50.426	ppb	50.426	16.54	1710	400000	
Si	28	2	45	51.149	ppb	51.149	11.76	21715	10000	
P	31	2	45	8.563	ppb	8.563	8.07	68	10000	
K	39	2	45	5085.528	ppb	5085.528	0.18	476264	400000	
Ca	40	1	45	41704.778	ppb	41704.778	0.86	149771121	400000	
Ti	47	2	45	1.180	ppb	1.180	97.37	50	4000	
V	51	2	72	-0.504	ppb	-0.504	-15.76	773	2000	
Cr	52	2	72	0.002	ppb	0.002	4447.35	853	5000	
Mn	55	2	72	284.509	ppb	284.509	1.09	215107	10000	
Fe	56	1	72	82.453	ppb	82.453	1.27	747766	10000	
(Fe)	57	2	72	86.999	ppb	86.999	2.29	3537	400000	
Co	59	2	72	1.072	ppb	1.072	6.57	3407	2000	
Ni	60	2	72	11.778	ppb	11.778	5.97	12452	5000	
Cu	63	2	72	0.557	ppb	0.557	10.86	2950	5000	
Zn	66	2	72	2.969	ppb	2.969	11.10	1890	5000	
As	75	2	72	0.032	ppb	0.032	105.14	51	2000	
Se	78	1	72	180.872	ppb	180.872	2.08	52560	2000	
Sr	88	2	72	679.342	ppb	679.342	1.43	592253	4000	
Zr	90	2	72	78.988	ppb	78.988	24.77	1140	1000	
Nb	93	2	72	1255.664	ppb	1255.664	74.74	83	200	>LDR
Mo	95	2	115	0.638	ppb	0.638	14.18	747	2000	
Pd	105	2	115	17.939	ppb	17.939	58.26	70	100	
Ag	107	2	115	0.118	ppb	0.118	12.93	470	100	
Cd	111	2	115	0.406	ppb	0.406	25.39	213	2000	
Sn	120	2	115	0.815	ppb	0.815	12.45	1724	2000	
Sb	121	2	115	0.343	ppb	0.343	24.52	513	1000	
Ba	137	2	115	1.481	ppb	1.481	11.26	683	5000	
W	182	2	165	-0.074	ppb	-0.074	-31.36	2404	100	
Pt	195	2	165	-85.300	ppb	-85.300	-1.52	30	100	
Tl	205	2	165	0.460	ppb	0.460	3.44	3651	2000	
Pb	208	2	165	0.086	ppb	0.086	28.55	2567	5000	
Th	232	2	193	9.072	ppb	9.072	13.39	87653	2000	
U	238	2	193	9.556	ppb	9.556	1.15	99782	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	578568	0.56	579603	99.82	60	120	
Sc (IS)	45	1	HMI H2	18537600	0.88	17043241	108.77	60	120	
Sc (IS)	45	2	HMI He	1023577	0.84	797526	128.34	60	120	IS Failed
Sc (IS)	45	3	No Gas	36102514	0.78	28509182	126.63	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9856445	0.60	9074377	108.62	60	120	
Ge Internal standard	72	2	HMI He	1472457	1.36	1113151	132.28	60	120	IS Failed
In Internal standard	115	2	HMI He	3974423	1.73	3301939	120.37	60	120	IS Failed
Ho-165	165	2	HMI He	15118079	1.05	12873604	117.43	60	120	
Ir (IS)	193	2	HMI He	10726737	0.60	10633585	100.88	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-Csd@50
Data File Name	291SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:07:40-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	156.642	ppb	156.642	0.96	3208054	50000	
Be	9	1	6	0.046	ppb	0.046	140.48	30	2000	
B	11	1	6	23.259	ppb	23.259	3.65	7138	2000	
Na	23	2	45	92242.849	ppb	92242.849	0.69	20545575	400000	
Mg	24	2	45	133967.305	ppb	133967.305	0.70	13711878	400000	
Al	27	2	45	54.058	ppb	54.058	17.88	1714	400000	
Si	28	2	45	0.510	ppb	0.510	415.17	12275	10000	
P	31	2	45	5.300	ppb	5.300	128.70	55	10000	
K	39	2	45	834.863	ppb	834.863	0.67	116433	400000	
Ca	40	1	45	7733.540	ppb	7733.540	0.25	28276089	400000	
Ti	47	2	45	-0.186	ppb	-0.186	-103.75	7	4000	
V	51	2	72	-0.661	ppb	-0.661	-6.46	523	2000	
Cr	52	2	72	-0.122	ppb	-0.122	-14.28	603	5000	
Mn	55	2	72	52.296	ppb	52.296	1.92	38305	10000	
Fe	56	1	72	22.027	ppb	22.027	3.13	293888	10000	
(Fe)	57	2	72	20.319	ppb	20.319	12.61	1180	400000	
Co	59	2	72	0.221	ppb	0.221	15.15	730	2000	
Ni	60	2	72	2.924	ppb	2.924	8.83	4577	5000	
Cu	63	2	72	-0.154	ppb	-0.154	-51.43	1250	5000	
Zn	66	2	72	1.084	ppb	1.084	8.09	1063	5000	
As	75	2	72	0.003	ppb	0.003	160.05	39	2000	
Se	78	1	72	32.369	ppb	32.369	4.38	9640	2000	
Sr	88	2	72	125.485	ppb	125.485	1.31	104878	4000	
Zr	90	2	72	-30.282	ppb	-30.282	-36.41	493	1000	
Nb	93	2	72	264.112	ppb	264.112	284.33	33	200	
Mo	95	2	115	0.077	ppb	0.077	19.84	143	2000	
Pd	105	2	115	7.981	ppb	7.981	181.26	50	100	
Ag	107	2	115	0.028	ppb	0.028	87.26	143	100	
Cd	111	2	115	0.051	ppb	0.051	44.72	33	2000	
Sn	120	2	115	0.143	ppb	0.143	56.17	803	2000	
Sb	121	2	115	0.074	ppb	0.074	11.96	127	1000	
Ba	137	2	115	0.339	ppb	0.339	26.38	210	5000	
W	182	2	165	-0.184	ppb	-0.184	-9.13	1937	100	
Pt	195	2	165	-2.227	ppb	-2.227	-1821.19	50	100	
Tl	205	2	165	0.092	ppb	0.092	17.32	887	2000	
Pb	208	2	165	0.005	ppb	0.005	504.77	1727	5000	
Th	232	2	193	0.836	ppb	0.836	22.50	18439	2000	
U	238	2	193	1.745	ppb	1.745	5.01	19093	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	612033	0.95	579603	105.60	60	120	
Sc (IS)	45	1	HMI H2	18764237	0.34	17043241	110.10	60	120	
Sc (IS)	45	2	HMI He	970720	0.37	797526	121.72	60	120	IS Failed
Sc (IS)	45	3	No Gas	35211445	1.02	28509182	123.51	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	10082866	0.30	9074377	111.11	60	120	
Ge Internal standard	72	2	HMI He	1409977	1.39	1113151	126.67	60	120	IS Failed
In Internal standard	115	2	HMI He	3883211	0.69	3301939	117.60	60	120	
Ho-165	165	2	HMI He	14993904	0.25	12873604	116.47	60	120	
Ir (IS)	193	2	HMI He	11116149	1.17	10633585	104.54	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-D MS@10
Data File Name	292SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:11:31-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	517.991	ppb	517.991	0.56	5230928	50000	
Be	9	1	6	4.029	ppb	4.029	11.43	1020	2000	
B	11	1	6	129.040	ppb	129.040	1.77	28150	2000	
Na	23	2	45	516079.828	ppb	516079.828	0.46	113227778	400000	
Mg	24	2	45	747289.044	ppb	747289.044	0.49	76055747	400000	
Al	27	2	45	158.317	ppb	158.317	3.14	4351	400000	
Si	28	2	45	55.543	ppb	55.543	9.68	21271	10000	
P	31	2	45	7.732	ppb	7.732	71.64	62	10000	
K	39	2	45	5330.821	ppb	5330.821	1.05	470137	400000	
Ca	40	1	45	43754.035	ppb	43754.035	0.29	154736638	400000	
Ti	47	2	45	6.170	ppb	6.170	27.04	197	4000	
V	51	2	72	3.574	ppb	3.574	3.71	6328	2000	
Cr	52	2	72	3.771	ppb	3.771	4.10	7305	5000	
Mn	55	2	72	302.749	ppb	302.749	1.43	217833	10000	
Fe	56	1	72	176.290	ppb	176.290	1.01	1443308	10000	
(Fe)	57	2	72	159.880	ppb	159.880	9.72	5761	400000	
Co	59	2	72	4.795	ppb	4.795	2.57	14257	2000	
Ni	60	2	72	17.149	ppb	17.149	2.75	16272	5000	
Cu	63	2	72	4.214	ppb	4.214	7.23	10861	5000	
Zn	66	2	72	6.074	ppb	6.074	6.64	3024	5000	
As	75	2	72	3.715	ppb	3.715	5.81	1274	2000	
Se	78	1	72	194.221	ppb	194.221	1.29	55686	2000	
Sr	88	2	72	717.786	ppb	717.786	0.68	595669	4000	
Zr	90	2	72	133.734	ppb	133.734	20.48	1383	1000	
Nb	93	2	72	193.058	ppb	193.058	5.81	30	200	
Mo	95	2	115	4.516	ppb	4.516	5.67	4601	2000	
Pd	105	2	115	1.464	ppb	1.464	891.79	37	100	
Ag	107	2	115	3.564	ppb	3.564	2.24	12125	100	
Cd	111	2	115	4.278	ppb	4.278	2.66	2050	2000	
Sn	120	2	115	3.713	ppb	3.713	3.98	5278	2000	
Sb	121	2	115	4.100	ppb	4.100	2.10	5521	1000	
Ba	137	2	115	5.872	ppb	5.872	9.55	2340	5000	
W	182	2	165	0.029	ppb	0.029	176.63	2667	100	
Pt	195	2	165	37.970	ppb	37.970	291.34	57	100	
Tl	205	2	165	4.188	ppb	4.188	1.70	29774	2000	
Pb	208	2	165	3.779	ppb	3.779	2.71	38124	5000	
Th	232	2	193	7.225	ppb	7.225	6.71	69043	2000	
U	238	2	193	14.277	ppb	14.277	0.76	142897	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	564612	0.48	579603	97.41	60	120	
Sc (IS)	45	1	HMI H2	18255336	0.93	17043241	107.11	60	120	
Sc (IS)	45	2	HMI He	968901	0.70	797526	121.49	60	120	IS Failed
Sc (IS)	45	3	No Gas	34018164	0.37	28509182	119.32	60	120	
Ge Internal standard	72	1	HMI H2	9724698	0.64	9074377	107.17	60	120	
Ge Internal standard	72	2	HMI He	1401654	1.75	1113151	125.92	60	120	IS Failed
In Internal standard	115	2	HMI He	3741085	0.37	3301939	113.30	60	120	
Ho-165	165	2	HMI He	14260951	1.27	12873604	110.78	60	120	
Ir (IS)	193	2	HMI He	10291962	1.15	10633585	96.79	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-E MSD@10
Data File Name	293SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:15:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	456.448	ppb	456.448	1.21	4923655	50000	
Be	9	1	6	3.783	ppb	3.783	14.64	947	2000	
B	11	1	6	121.537	ppb	121.537	3.13	26277	2000	
Na	23	2	45	502134.645	ppb	502134.645	0.61	108304718	400000	
Mg	24	2	45	724514.837	ppb	724514.837	0.59	72486051	400000	
Al	27	2	45	151.983	ppb	151.983	5.61	4121	400000	
Si	28	2	45	58.044	ppb	58.044	4.60	21321	10000	
P	31	2	45	12.451	ppb	12.451	22.38	74	10000	
K	39	2	45	5230.128	ppb	5230.128	0.91	454334	400000	
Ca	40	1	45	39988.547	ppb	39988.547	1.70	139935845	400000	
Ti	47	2	45	6.627	ppb	6.627	14.09	207	4000	
V	51	2	72	3.582	ppb	3.582	4.12	6245	2000	
Cr	52	2	72	3.636	ppb	3.636	7.18	6965	5000	
Mn	55	2	72	293.852	ppb	293.852	1.28	208192	10000	
Fe	56	1	72	163.600	ppb	163.600	2.54	1331324	10000	
(Fe)	57	2	72	162.006	ppb	162.006	5.68	5741	400000	
Co	59	2	72	4.663	ppb	4.663	4.33	13659	2000	
Ni	60	2	72	16.465	ppb	16.465	2.74	15471	5000	
Cu	63	2	72	4.102	ppb	4.102	3.14	10450	5000	
Zn	66	2	72	5.757	ppb	5.757	4.75	2854	5000	
As	75	2	72	3.831	ppb	3.831	2.16	1293	2000	
Se	78	1	72	183.509	ppb	183.509	1.30	51970	2000	
Sr	88	2	72	667.660	ppb	667.660	0.93	545532	4000	
Zr	90	2	72	100.760	ppb	100.760	38.54	1183	1000	
Nb	93	2	72	134.863	ppb	134.863	253.02	27	200	
Mo	95	2	115	4.405	ppb	4.405	8.04	4431	2000	
Pd	105	2	115	1.751	ppb	1.751	380.48	37	100	
Ag	107	2	115	3.610	ppb	3.610	1.76	12118	100	
Cd	111	2	115	4.364	ppb	4.364	8.63	2064	2000	
Sn	120	2	115	3.903	ppb	3.903	1.50	5444	2000	
Sb	121	2	115	3.906	ppb	3.906	2.66	5191	1000	
Ba	137	2	115	5.877	ppb	5.877	12.99	2310	5000	
W	182	2	165	-0.035	ppb	-0.035	-84.44	2404	100	
Pt	195	2	165	-48.151	ppb	-48.151	-104.96	37	100	
Tl	205	2	165	4.120	ppb	4.120	1.87	29112	2000	
Pb	208	2	165	3.640	ppb	3.640	1.31	36549	5000	
Th	232	2	193	5.515	ppb	5.515	5.25	54689	2000	
U	238	2	193	13.751	ppb	13.751	0.71	136536	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	557299	1.16	579603	96.15	60	120	
Sc (IS)	45	1	HMI H2	18062539	0.47	17043241	105.98	60	120	
Sc (IS)	45	2	HMI He	952466	1.48	797526	119.43	60	120	
Sc (IS)	45	3	No Gas	34409849	1.73	28509182	120.70	60	120	IS Failed
Ge Internal standard	72	1	HMI H2	9605541	0.63	9074377	105.85	60	120	
Ge Internal standard	72	2	HMI He	1380076	2.17	1113151	123.98	60	120	IS Failed
In Internal standard	115	2	HMI He	3691748	0.24	3301939	111.81	60	120	
Ho-165	165	2	HMI He	14175069	0.29	12873604	110.11	60	120	
Ir (IS)	193	2	HMI He	10208546	0.58	10633585	96.00	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-1-C pds@10
Data File Name	294SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:19:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	630.577	ppb	630.577	0.18	5736923	50000	
Be	9	1	6	201.604	ppb	201.604	0.56	48639	2000	
B	11	1	6	128.324	ppb	128.324	3.14	27095	2000	
Na	23	2	45	499072.163	ppb	499072.163	0.69	104427685	400000	
Mg	24	2	45	714606.606	ppb	714606.606	0.44	69362029	400000	
Al	27	2	45	1880.722	ppb	1880.722	0.91	45765	400000	
Si	28	2	45	243.056	ppb	243.056	2.51	49606	10000	
P	31	2	45	1909.259	ppb	1909.259	3.70	5114	10000	
K	39	2	45	5128.607	ppb	5128.607	0.77	433151	400000	
Ca	40	1	45	42011.557	ppb	42011.557	0.65	147851778	400000	
Ti	47	2	45	201.059	ppb	201.059	3.30	5748	4000	
V	51	2	72	196.811	ppb	196.811	0.39	239026	2000	
Cr	52	2	72	194.254	ppb	194.254	1.28	295278	5000	
Mn	55	2	72	501.853	ppb	501.853	0.66	317727	10000	
Fe	56	1	72	91.843	ppb	91.843	1.58	792090	10000	
(Fe)	57	2	72	99.499	ppb	99.499	9.26	3327	400000	
Co	59	2	72	188.507	ppb	188.507	0.86	491305	2000	
Ni	60	2	72	196.353	ppb	196.353	0.92	144406	5000	
Cu	63	2	72	188.371	ppb	188.371	0.58	366729	5000	
Zn	66	2	72	189.206	ppb	189.206	1.26	66253	5000	
As	75	2	72	199.192	ppb	199.192	1.46	58424	2000	
Se	78	1	72	381.375	ppb	381.375	0.32	107120	2000	
Sr	88	2	72	945.829	ppb	945.829	0.53	691226	4000	
Zr	90	2	72	2306.162	ppb	2306.162	12.18	11625	1000	
Nb	93	2	72	767.022	ppb	767.022	30.91	50	200	
Mo	95	2	115	200.711	ppb	200.711	0.86	194591	2000	
Pd	105	2	115	113.837	ppb	113.837	33.40	227	100	
Ag	107	2	115	46.640	ppb	46.640	1.62	152434	100	
Cd	111	2	115	182.685	ppb	182.685	0.55	84070	2000	
Sn	120	2	115	194.834	ppb	194.834	1.70	237501	2000	
Sb	121	2	115	198.116	ppb	198.116	0.58	256063	1000	
Ba	137	2	115	198.795	ppb	198.795	0.12	74074	5000	
W	182	2	165	63.389	ppb	63.389	1.71	243199	100	
Pt	195	2	165	201.271	ppb	201.271	66.26	93	100	
Tl	205	2	165	188.454	ppb	188.454	7.96	1311304	2000	
Pb	208	2	165	180.036	ppb	180.036	0.31	1716212	5000	
Th	232	2	193	50.458	ppb	50.458	5.79	417692	2000	
U	238	2	193	244.560	ppb	244.560	2.31	2425144	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	546323	0.64	579603	94.26	60	120	
Sc (IS)	45	1	HMI H2	18165961	0.36	17043241	106.59	60	120	
Sc (IS)	45	2	HMI He	924013	1.03	797526	115.86	60	120	
Sc (IS)	45	3	No Gas	33105455	0.84	28509182	116.12	60	120	
Ge Internal standard	72	1	HMI H2	9528465	0.13	9074377	105.00	60	120	
Ge Internal standard	72	2	HMI He	1234336	0.56	1113151	110.89	60	120	
In Internal standard	115	2	HMI He	3605746	0.58	3301939	109.20	60	120	
Ho-165	165	2	HMI He	14053295	0.60	12873604	109.16	60	120	
Ir (IS)	193	2	HMI He	10213875	0.93	10633585	96.05	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-2-C@10
Data File Name	295SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:23:04-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	197.916	ppb	197.916	0.80	3264233	50000	
Be	9	1	6	0.327	ppb	0.327	26.75	97	2000	
B	11	1	6	186.696	ppb	186.696	0.52	39523	2000	
Na	23	2	45	275449.114	ppb	275449.114	0.33	56791761	400000	
Mg	24	2	45	321824.319	ppb	321824.319	0.97	30736321	400000	
Al	27	2	45	53.420	ppb	53.420	30.74	1587	400000	
Si	28	2	45	56.240	ppb	56.240	6.32	20049	10000	
P	31	2	45	11.237	ppb	11.237	40.91	67	10000	
K	39	2	45	2613.993	ppb	2613.993	0.61	240215	400000	
Ca	40	1	45	38797.158	ppb	38797.158	0.20	136820178	400000	
Ti	47	2	45	1.376	ppb	1.376	26.19	50	4000	
V	51	2	72	-0.371	ppb	-0.371	-10.51	817	2000	
Cr	52	2	72	0.045	ppb	0.045	158.52	790	5000	
Mn	55	2	72	62.692	ppb	62.692	4.82	40413	10000	
Fe	56	1	72	50.872	ppb	50.872	0.99	502497	10000	
(Fe)	57	2	72	63.032	ppb	63.032	20.55	2290	400000	
Co	59	2	72	0.208	ppb	0.208	11.79	610	2000	
Ni	60	2	72	7.873	ppb	7.873	16.34	7655	5000	
Cu	63	2	72	0.409	ppb	0.409	21.09	2207	5000	
Zn	66	2	72	1.606	ppb	1.606	16.88	1120	5000	
As	75	2	72	0.071	ppb	0.071	99.61	54	2000	
Se	78	1	72	164.928	ppb	164.928	1.07	47493	2000	
Sr	88	2	72	611.905	ppb	611.905	1.18	450967	4000	
Zr	90	2	72	62.390	ppb	62.390	22.79	883	1000	
Nb	93	2	72	1821.240	ppb	1821.240	68.24	93	200	>LDR
Mo	95	2	115	2.035	ppb	2.035	6.52	2030	2000	
Pd	105	2	115	-5.471	ppb	-5.471	-252.07	23	100	
Ag	107	2	115	0.054	ppb	0.054	22.81	217	100	
Cd	111	2	115	0.260	ppb	0.260	20.30	127	2000	
Sn	120	2	115	1.202	ppb	1.202	9.96	2034	2000	
Sb	121	2	115	1.606	ppb	1.606	5.13	2097	1000	
Ba	137	2	115	1.623	ppb	1.623	15.86	673	5000	
W	182	2	165	0.624	ppb	0.624	15.10	4938	100	
Pt	195	2	165	81.280	ppb	81.280	110.10	67	100	
Tl	205	2	165	0.237	ppb	0.237	4.14	1864	2000	
Pb	208	2	165	0.068	ppb	0.068	40.30	2237	5000	
Th	232	2	193	0.696	ppb	0.696	27.79	16316	2000	
U	238	2	193	5.518	ppb	5.518	2.51	56724	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	559201	0.81	579603	96.48	60	120	
Sc (IS)	45	1	HMI H2	18200912	0.79	17043241	106.79	60	120	
Sc (IS)	45	2	HMI He	908229	0.38	797526	113.88	60	120	
Sc (IS)	45	3	No Gas	33218850	1.08	28509182	116.52	60	120	
Ge Internal standard	72	1	HMI H2	9766638	0.60	9074377	107.63	60	120	
Ge Internal standard	72	2	HMI He	1244924	2.98	1113151	111.84	60	120	
In Internal standard	115	2	HMI He	3604024	1.22	3301939	109.15	60	120	
Ho-165	165	2	HMI He	14207651	0.57	12873604	110.36	60	120	
Ir (IS)	193	2	HMI He	10541728	0.22	10633585	99.14	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-3-C@10
Data File Name	296SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:26:55-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	257.224	ppb	257.224	3.31	3547215	50000	
Be	9	1	6	0.060	ppb	0.060	121.74	30	2000	
B	11	1	6	88.133	ppb	88.133	2.03	19148	2000	
Na	23	2	45	935640.587	ppb	935640.587	0.75	193320330	400000	
Mg	24	2	45	408461.676	ppb	408461.676	0.53	39228151	400000	
Al	27	2	45	24.089	ppb	24.089	38.20	897	400000	
Si	28	2	45	50.313	ppb	50.313	8.54	19252	10000	
P	31	2	45	2.711	ppb	2.711	142.61	45	10000	
K	39	2	45	3153.359	ppb	3153.359	0.65	281686	400000	
Ca	40	1	45	38999.504	ppb	38999.504	0.80	136817418	400000	
Ti	47	2	45	0.419	ppb	0.419	48.75	23	4000	
V	51	2	72	-0.438	ppb	-0.438	-25.50	730	2000	
Cr	52	2	72	-0.008	ppb	-0.008	-536.69	707	5000	
Mn	55	2	72	1672.280	ppb	1672.280	4.33	1065233	10000	
Fe	56	1	72	40.524	ppb	40.524	2.86	415644	10000	
(Fe)	57	2	72	48.846	ppb	48.846	13.45	1870	400000	
Co	59	2	72	11.517	ppb	11.517	6.20	30275	2000	
Ni	60	2	72	25.558	ppb	25.558	7.53	20570	5000	
Cu	63	2	72	0.601	ppb	0.601	13.40	2577	5000	
Zn	66	2	72	6.316	ppb	6.316	10.44	2767	5000	
As	75	2	72	0.017	ppb	0.017	166.85	39	2000	
Se	78	1	72	0.474	ppb	0.474	18.64	155	2000	
Sr	88	2	72	785.517	ppb	785.517	4.30	578241	4000	
Zr	90	2	72	80.127	ppb	80.127	14.92	967	1000	
Nb	93	2	72	115.243	ppb	115.243	131.89	23	200	
Mo	95	2	115	0.431	ppb	0.431	32.46	477	2000	
Pd	105	2	115	-7.592	ppb	-7.592	-153.23	20	100	
Ag	107	2	115	0.160	ppb	0.160	22.96	563	100	
Cd	111	2	115	1.725	ppb	1.725	16.58	803	2000	
Sn	120	2	115	0.181	ppb	0.181	23.08	793	2000	
Sb	121	2	115	0.344	ppb	0.344	8.71	467	1000	
Ba	137	2	115	1.673	ppb	1.673	3.07	693	5000	
W	182	2	165	0.216	ppb	0.216	4.76	3347	100	
Pt	195	2	165	40.015	ppb	40.015	351.12	57	100	
Tl	205	2	165	0.334	ppb	0.334	6.27	2527	2000	
Pb	208	2	165	0.067	ppb	0.067	38.97	2213	5000	
Th	232	2	193	0.769	ppb	0.769	24.66	16680	2000	
U	238	2	193	12.577	ppb	12.577	0.81	127204	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	545671	0.63	579603	94.15	60	120	
Sc (IS)	45	1	HMI H2	18106311	0.83	17043241	106.24	60	120	
Sc (IS)	45	2	HMI He	913651	0.37	797526	114.56	60	120	
Sc (IS)	45	3	No Gas	32681523	1.18	28509182	114.64	60	120	
Ge Internal standard	72	1	HMI H2	9565603	0.63	9074377	105.41	60	120	
Ge Internal standard	72	2	HMI He	1244820	4.55	1113151	111.83	60	120	
In Internal standard	115	2	HMI He	3613172	0.56	3301939	109.43	60	120	
Ho-165	165	2	HMI He	14102055	0.09	12873604	109.54	60	120	
Ir (IS)	193	2	HMI He	10397253	0.59	10633585	97.78	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	297_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:30:48-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	97.361	ppb	5.640	2637146	100	97.4	90	110	
Be	9	1	6	46.757	ppb	5.565	11995	50	93.5	90	110	
B	11	1	6	459.751	ppb	0.888	98218	50	919.5	90	110	>+\-10%
Na	23	2	45	46720.451	ppb	0.410	9735692	51000	91.6	90	110	
Mg	24	2	45	8806.171	ppb	0.542	884496	11000	80.1	90	110	>+\-10%
Al	27	2	45	881.594	ppb	1.560	20930	1000	88.2	90	110	>+\-10%
Si	28	2	45	39.340	ppb	3.649	17183	500	7.9	90	110	>+\-10%
P	31	2	45	2275.840	ppb	1.181	5892	2500	91.0	90	110	
K	39	2	45	9272.100	ppb	0.566	720221	11000	84.3	90	110	>+\-10%
Ca	40	1	45	10327.305	ppb	1.343	36763849	11000	93.9	90	110	
(Ca)	44	1	45	9159.619	ppb	2.596	1121069	11000	83.3	90	110	>+\-10%
Ti	47	2	45	46.557	ppb	7.254	1297	50	93.1	90	110	
V	51	2	72	45.412	ppb	4.239	56898	50	90.8	90	110	
Cr	52	2	72	46.668	ppb	4.267	72457	50	93.3	90	110	
Mn	55	2	72	45.292	ppb	6.022	29490	50	90.6	90	110	
Fe	56	1	72	895.825	ppb	0.550	6995596	1000	89.6	90	110	>+\-10%
(Fe)	56	2	72	819.404	ppb	4.888	1067444	1000	81.9	90	110	>+\-10%
(Fe)	57	2	72	902.233	ppb	3.151	26966	1000	90.2	90	110	
Co	59	2	72	44.826	ppb	4.406	118478	50	89.7	90	110	>+\-10%
Ni	60	2	72	46.420	ppb	6.358	36046	50	92.8	90	110	
Cu	63	2	72	44.628	ppb	4.099	89159	50	89.3	90	110	>+\-10%
Zn	66	2	72	46.492	ppb	5.767	16923	50	93.0	90	110	
As	75	2	72	45.259	ppb	6.431	13473	50	90.5	90	110	
Se	78	1	72	44.308	ppb	2.289	12984	50	88.6	90	110	>+\-10%
Sr	88	2	72	95.282	ppb	3.772	70710	100	95.3	90	110	
Zr	90	2	72	161.872	ppb	18.595	1377	50	323.7	90	110	>+\-10%
Nb	93	2	72	353.232	ppb	109.548	33	100	353.2	90	110	>+\-10%
Mo	95	2	115	46.384	ppb	0.705	46130	50	92.8	90	110	
Pd	105	2	115	156.275	ppb	17.200	307	50	312.5	90	110	>+\-10%
Ag	107	2	115	45.327	ppb	0.467	151826	50	90.7	90	110	
Cd	111	2	115	44.598	ppb	1.538	21038	50	89.2	90	110	>+\-10%
Sn	120	2	115	46.372	ppb	1.293	58374	50	92.7	90	110	
Sb	121	2	115	47.182	ppb	1.830	62510	50	94.4	90	110	
Ba	137	2	115	48.196	ppb	2.681	18458	50	96.4	90	110	
W	182	2	165	45.512	ppb	2.454	180886	50	91.0	90	110	
Pt	195	2	165	89.617	ppb	170.633	70	50	179.2	90	110	>+\-10%
Tl	205	2	165	44.746	ppb	0.839	321444	50	89.5	90	110	>+\-10%
Pb	208	2	165	44.642	ppb	1.336	440253	50	89.3	90	110	>+\-10%
Th	232	2	193	40.847	ppb	4.340	373401	50	81.7	90	110	>+\-10%
U	238	2	193	48.502	ppb	1.827	528513	50	97.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	580240	0.33	579603	100.11	60	120	
Sc (IS)	45	1	HMI H2	18303326	1.03	17043241	107.39	60	120	
Sc (IS)	45	2	HMI He	894221	0.54	797526	112.12	60	120	
Sc (IS)	45	3	No Gas	32625248	0.62	28509182	114.44	60	120	
Ge Internal standard	72	1	HMI H2	9926386	0.26	9074377	109.39	60	120	
Ge Internal standard	72	2	HMI He	1253007	4.99	1113151	112.56	60	120	
In Internal standard	115	2	HMI He	3695107	0.26	3301939	111.91	60	120	
Ho-165	165	2	HMI He	14499217	0.68	12873604	112.63	60	120	
Ir (IS)	193	2	HMI He	11217868	0.43	10633585	105.49	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	298_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:34:40-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-13.864	ppb	-32.0	2016577	10	
Be	9	1	6	0.111	ppb	19.3	47	0.5	
B	11	1	6	7.390	ppb	14.4	3557	0.5	>RL
Na	23	2	45	-449.186	ppb	-2.4	209282	25	
Mg	24	2	45	-309.310	ppb	-1.7	28571	25	
Al	27	2	45	3.634	ppb	61.1	393	15	
K	39	2	45	-75.497	ppb	-13.3	40546	50	
Ti	47	2	45	-0.408	ppb	0.0	0	0.5	
V	51	2	72	-0.461	ppb	-21.0	700	1	
Cr	52	2	72	-0.028	ppb	-154.1	673	1	
Mn	55	2	72	0.431	ppb	43.1	747	0.5	
(Fe)	57	2	72	14.726	ppb	23.1	873	25	
Co	59	2	72	0.056	ppb	24.4	210	0.5	
Ni	60	2	72	0.586	ppb	93.8	2317	1	
Cu	63	2	72	-0.124	ppb	-40.5	1157	1	
Zn	66	2	72	0.515	ppb	20.9	737	5	
As	75	2	72	-0.024	ppb	-188.2	26	1	
Se	78	1	72	0.061	ppb	22.5	40	1	
Sr	88	2	72	0.491	ppb	33.5	477	0.5	
Zr	90	2	72	-30.593	ppb	-61.8	433	1	
Nb	93	2	72	-48.018	ppb	-283.1	17	2	
Mo	95	2	115	0.421	ppb	14.4	487	0.5	
Pd	105	2	115	-17.360	ppb	-19.0	3	1	
Ag	107	2	115	0.035	ppb	15.6	160	1	
Cd	111	2	115	0.033	ppb	35.3	23	0.5	
Sn	120	2	115	0.747	ppb	20.3	1547	1	
Sb	121	2	115	0.329	ppb	15.7	467	0.6	
Ba	137	2	115	0.156	ppb	114.8	133	0.5	
W	182	2	165	0.373	ppb	26.1	4057	1	
Pt	195	2	165	19.075	ppb	133.8	53	1	>RL
Tl	205	2	165	0.072	ppb	30.2	713	0.1	
Pb	208	2	165	0.033	ppb	58.6	1943	0.5	
Th	232	2	193	0.822	ppb	11.4	18576	1	
U	238	2	193	0.096	ppb	10.7	1320	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	599229	0.76	579603	103.39	60	120	
Sc (IS)	45	1	HMI H2	18431343	0.36	17043241	108.14	60	120	
Sc (IS)	45	2	HMI He	881836	0.53	797526	110.57	60	120	
Sc (IS)	45	3	No Gas	32769262	0.54	28509182	114.94	60	120	
Ge Internal standard	72	1	HMI H2	9974184	0.16	9074377	109.92	60	120	
Ge Internal standard	72	2	HMI He	1240548	3.56	1113151	111.44	60	120	
In Internal standard	115	2	HMI He	3763859	1.47	3301939	113.99	60	120	
Ho-165	165	2	HMI He	14499417	0.69	12873604	112.63	60	120	
Ir (IS)	193	2	HMI He	11279073	0.29	10633585	106.07	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-4-C@10
Data File Name	299SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:38:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-9.007	ppb	-9.007	-25.64	2041471	50000	
Be	9	1	6	0.170	ppb	0.170	100.40	60	2000	
B	11	1	6	100.010	ppb	100.010	3.53	22776	2000	
Na	23	2	45	59830.911	ppb	59830.911	0.90	12147614	400000	
Mg	24	2	45	23147.207	ppb	23147.207	1.04	2188111	400000	
Al	27	2	45	-0.055	ppb	-0.055	-5314.59	307	400000	
Si	28	2	45	28.364	ppb	28.364	18.39	15231	10000	
P	31	2	45	-0.256	ppb	-0.256	-2551.69	36	10000	
K	39	2	45	1066.726	ppb	1066.726	3.24	121740	400000	
Ca	40	1	45	44115.298	ppb	44115.298	0.70	156907868	400000	
Ti	47	2	45	-0.037	ppb	-0.037	-989.45	10	4000	
V	51	2	72	-0.592	ppb	-0.592	-4.28	570	2000	
Cr	52	2	72	-0.150	ppb	-0.150	-36.36	510	5000	
Mn	55	2	72	25.845	ppb	25.845	4.92	17627	10000	
Fe	56	1	72	11.206	ppb	11.206	5.08	207986	10000	
(Fe)	57	2	72	11.144	ppb	11.144	49.16	800	400000	
Co	59	2	72	0.270	ppb	0.270	10.55	803	2000	
Ni	60	2	72	1.837	ppb	1.837	20.39	3370	5000	
Cu	63	2	72	-0.319	ppb	-0.319	-16.64	810	5000	
Zn	66	2	72	0.847	ppb	0.847	40.67	887	5000	
As	75	2	72	-0.022	ppb	-0.022	-40.59	28	2000	
Se	78	1	72	0.070	ppb	0.070	47.96	43	2000	
Sr	88	2	72	449.244	ppb	449.244	5.51	344139	4000	
Zr	90	2	72	-6.921	ppb	-6.921	-103.20	570	1000	
Nb	93	2	72	95.180	ppb	95.180	292.63	23	200	
Mo	95	2	115	0.430	ppb	0.430	28.17	493	2000	
Pd	105	2	115	1.470	ppb	1.470	589.08	37	100	
Ag	107	2	115	0.026	ppb	0.026	11.54	130	100	
Cd	111	2	115	0.047	ppb	0.047	77.05	30	2000	
Sn	120	2	115	-0.050	ppb	-0.050	-95.95	530	2000	
Sb	121	2	115	0.083	ppb	0.083	19.21	133	1000	
Ba	137	2	115	1.653	ppb	1.653	19.92	710	5000	
W	182	2	165	0.016	ppb	0.016	137.12	2664	100	
Pt	195	2	165	-9.901	ppb	-9.901	-244.16	47	100	
Tl	205	2	165	0.081	ppb	0.081	14.66	783	2000	
Pb	208	2	165	-0.010	ppb	-0.010	-62.21	1520	5000	
Th	232	2	193	1.678	ppb	1.678	7.77	25917	2000	
U	238	2	193	0.903	ppb	0.903	2.41	10044	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	578352	0.38	579603	99.78	60	120	
Sc (IS)	45	1	HMI H2	18360310	0.47	17043241	107.73	60	120	
Sc (IS)	45	2	HMI He	877269	0.62	797526	110.00	60	120	
Sc (IS)	45	3	No Gas	32725983	1.49	28509182	114.79	60	120	
Ge Internal standard	72	1	HMI H2	10008303	0.54	9074377	110.29	60	120	
Ge Internal standard	72	2	HMI He	1296064	5.24	1113151	116.43	60	120	
In Internal standard	115	2	HMI He	3742605	0.37	3301939	113.35	60	120	
Ho-165	165	2	HMI He	14540872	0.20	12873604	112.95	60	120	
Ir (IS)	193	2	HMI He	11152377	0.28	10633585	104.88	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-5-C@10
Data File Name	300SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:42:28-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.260	ppb	-15.260	-28.00	1970920	50000	
Be	9	1	6	0.065	ppb	0.065	241.84	33	2000	
B	11	1	6	96.095	ppb	96.095	2.77	21948	2000	
Na	23	2	45	57958.819	ppb	57958.819	1.32	11513766	400000	
Mg	24	2	45	22678.938	ppb	22678.938	1.30	2097184	400000	
Al	27	2	45	-3.015	ppb	-3.015	-64.04	233	400000	
Si	28	2	45	29.524	ppb	29.524	1.62	15057	10000	
P	31	2	45	2.239	ppb	2.239	155.91	41	10000	
K	39	2	45	1048.505	ppb	1048.505	3.82	117750	400000	
Ca	40	1	45	42902.986	ppb	42902.986	0.34	153416128	400000	
Ti	47	2	45	-0.156	ppb	-0.156	-280.38	7	4000	
V	51	2	72	-0.649	ppb	-0.649	-11.75	473	2000	
Cr	52	2	72	-0.067	ppb	-0.067	-71.18	610	5000	
Mn	55	2	72	25.752	ppb	25.752	6.62	16732	10000	
Fe	56	1	72	9.305	ppb	9.305	2.44	195158	10000	
(Fe)	57	2	72	13.789	ppb	13.789	37.57	840	400000	
Co	59	2	72	0.285	ppb	0.285	16.82	807	2000	
Ni	60	2	72	2.470	ppb	2.470	6.27	3681	5000	
Cu	63	2	72	-0.282	ppb	-0.282	-6.67	847	5000	
Zn	66	2	72	-0.059	ppb	-0.059	-819.56	530	5000	
As	75	2	72	-0.056	ppb	-0.056	-17.99	17	2000	
Se	78	1	72	0.042	ppb	0.042	92.56	35	2000	
Sr	88	2	72	448.260	ppb	448.260	3.49	327471	4000	
Zr	90	2	72	-19.984	ppb	-19.984	-46.85	480	1000	
Nb	93	2	72	-368.494	ppb	-368.494	-38.88	3	200	
Mo	95	2	115	0.259	ppb	0.259	49.14	313	2000	
Pd	105	2	115	11.762	ppb	11.762	224.45	53	100	
Ag	107	2	115	0.008	ppb	0.008	42.69	67	100	
Cd	111	2	115	0.063	ppb	0.063	70.25	37	2000	
Sn	120	2	115	-0.082	ppb	-0.082	-114.77	477	2000	
Sb	121	2	115	0.070	ppb	0.070	38.17	113	1000	
Ba	137	2	115	1.816	ppb	1.816	15.78	753	5000	
W	182	2	165	0.011	ppb	0.011	266.36	2617	100	
Pt	195	2	165	63.875	ppb	63.875	78.63	63	100	
Tl	205	2	165	0.080	ppb	0.080	11.95	763	2000	
Pb	208	2	165	-0.014	ppb	-0.014	-219.49	1470	5000	
Th	232	2	193	1.126	ppb	1.126	12.07	20989	2000	
U	238	2	193	0.855	ppb	0.855	1.90	9497	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	578145	0.48	579603	99.75	60	120	
Sc (IS)	45	1	HMI H2	18458538	0.85	17043241	108.30	60	120	
Sc (IS)	45	2	HMI He	857701	0.76	797526	107.55	60	120	
Sc (IS)	45	3	No Gas	32153575	0.51	28509182	112.78	60	120	
Ge Internal standard	72	1	HMI H2	10106044	0.33	9074377	111.37	60	120	
Ge Internal standard	72	2	HMI He	1234683	3.71	1113151	110.92	60	120	
In Internal standard	115	2	HMI He	3645280	0.70	3301939	110.40	60	120	
Ho-165	165	2	HMI He	14376709	0.82	12873604	111.68	60	120	
Ir (IS)	193	2	HMI He	11120387	0.86	10633585	104.58	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-6-C@10
Data File Name	301SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:46:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	220.202	ppb	220.202	3.11	3219547	50000	
Be	9	1	6	0.093	ppb	0.093	116.00	37	2000	
B	11	1	6	80.368	ppb	80.368	1.51	16912	2000	
Na	23	2	45	880027.506	ppb	880027.506	1.47	170022231	400000	
Mg	24	2	45	381891.334	ppb	381891.334	1.08	34296739	400000	
Al	27	2	45	47.955	ppb	47.955	28.51	1374	400000	
Si	28	2	45	54.565	ppb	54.565	9.63	18611	10000	
P	31	2	45	6.050	ppb	6.050	70.00	51	10000	
K	39	2	45	3598.922	ppb	3598.922	0.73	294312	400000	
Ca	40	1	45	37460.436	ppb	37460.436	1.49	128943478	400000	
Ti	47	2	45	0.347	ppb	0.347	106.79	20	4000	
V	51	2	72	-0.233	ppb	-0.233	-9.62	920	2000	
Cr	52	2	72	0.029	ppb	0.029	417.87	713	5000	
Mn	55	2	72	1524.680	ppb	1524.680	0.38	909552	10000	
Fe	56	1	72	83.604	ppb	83.604	1.59	727754	10000	
(Fe)	57	2	72	99.886	ppb	99.886	9.23	3147	400000	
Co	59	2	72	11.209	ppb	11.209	1.66	27614	2000	
Ni	60	2	72	32.888	ppb	32.888	1.06	24292	5000	
Cu	63	2	72	1.159	ppb	1.159	8.04	3434	5000	
Zn	66	2	72	5.363	ppb	5.363	6.74	2280	5000	
As	75	2	72	0.120	ppb	0.120	13.46	65	2000	
Se	78	1	72	0.264	ppb	0.264	35.37	95	2000	
Sr	88	2	72	698.477	ppb	698.477	0.36	481517	4000	
Zr	90	2	72	202.182	ppb	202.182	4.89	1457	1000	
Nb	93	2	72	836.164	ppb	836.164	80.41	50	200	
Mo	95	2	115	0.785	ppb	0.785	10.96	793	2000	
Pd	105	2	115	19.021	ppb	19.021	150.16	63	100	
Ag	107	2	115	0.011	ppb	0.011	116.00	73	100	
Cd	111	2	115	2.326	ppb	2.326	17.77	1043	2000	
Sn	120	2	115	-0.130	ppb	-0.130	-34.28	400	2000	
Sb	121	2	115	0.140	ppb	0.140	40.75	197	1000	
Ba	137	2	115	2.497	ppb	2.497	9.34	967	5000	
W	182	2	165	0.138	ppb	0.138	22.79	2980	100	
Pt	195	2	165	-13.853	ppb	-13.853	-193.47	43	100	
Tl	205	2	165	0.399	ppb	0.399	6.80	2910	2000	
Pb	208	2	165	0.025	ppb	0.025	41.17	1770	5000	
Th	232	2	193	5.145	ppb	5.145	18.00	52265	2000	
U	238	2	193	11.359	ppb	11.359	1.03	114107	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	523833	0.65	579603	90.38	60	120	
Sc (IS)	45	1	HMI H2	17764689	0.20	17043241	104.23	60	120	
Sc (IS)	45	2	HMI He	854337	1.48	797526	107.12	60	120	
Sc (IS)	45	3	No Gas	31525457	0.90	28509182	110.58	60	120	
Ge Internal standard	72	1	HMI H2	9481115	0.18	9074377	104.48	60	120	
Ge Internal standard	72	2	HMI He	1164253	1.18	1113151	104.59	60	120	
In Internal standard	115	2	HMI He	3490839	0.66	3301939	105.72	60	120	
Ho-165	165	2	HMI He	13786007	0.97	12873604	107.09	60	120	
Ir (IS)	193	2	HMI He	10324617	0.42	10633585	97.09	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-7-C@10
Data File Name	302SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:50:16-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-25.942	ppb	-25.942	-15.41	1883907	50000	
Be	9	1	6	0.039	ppb	0.039	231.78	27	2000	
B	11	1	6	0.730	ppb	0.730	145.11	2054	2000	
Na	23	2	45	-392.718	ppb	-392.718	-8.77	212600	400000	
Mg	24	2	45	-298.548	ppb	-298.548	-5.53	28511	400000	
Al	27	2	45	-5.619	ppb	-5.619	-38.83	173	400000	
Si	28	2	45	-4.104	ppb	-4.104	-89.74	10083	10000	
P	31	2	45	2.366	ppb	2.366	103.07	41	10000	
K	39	2	45	-80.958	ppb	-80.958	-13.02	38709	400000	
Ca	40	1	45	18.239	ppb	18.239	8.46	254311	400000	
Ti	47	2	45	-0.280	ppb	-0.280	-79.39	3	4000	
V	51	2	72	-0.683	ppb	-0.683	-9.78	417	2000	
Cr	52	2	72	0.001	ppb	0.001	4183.04	690	5000	
Mn	55	2	72	0.733	ppb	0.733	31.01	903	10000	
Fe	56	1	72	-3.453	ppb	-3.453	-5.10	93091	10000	
(Fe)	57	2	72	-0.535	ppb	-0.535	-351.72	413	400000	
Co	59	2	72	0.014	ppb	0.014	42.26	97	2000	
Ni	60	2	72	0.516	ppb	0.516	35.94	2180	5000	
Cu	63	2	72	-0.272	ppb	-0.272	-16.92	837	5000	
Zn	66	2	72	1.009	ppb	1.009	5.19	873	5000	
As	75	2	72	-0.024	ppb	-0.024	-124.65	25	2000	
Se	78	1	72	-0.024	ppb	-0.024	-118.41	15	2000	
Sr	88	2	72	0.556	ppb	0.556	36.27	507	4000	
Zr	90	2	72	-4.425	ppb	-4.425	-477.36	537	1000	
Nb	93	2	72	-32.940	ppb	-32.940	-1583.98	17	200	
Mo	95	2	115	-0.006	ppb	-0.006	-667.91	53	2000	
Pd	105	2	115	-1.846	ppb	-1.846	-558.05	30	100	
Ag	107	2	115	0.008	ppb	0.008	56.38	67	100	
Cd	111	2	115	-0.016	ppb	-0.016	0.00	0	2000	
Sn	120	2	115	-0.144	ppb	-0.144	-16.45	403	2000	
Sb	121	2	115	0.039	ppb	0.039	48.67	73	1000	
Ba	137	2	115	0.096	ppb	0.096	112.25	107	5000	
W	182	2	165	-0.150	ppb	-0.150	-38.22	1957	100	
Pt	195	2	165	-91.392	ppb	-91.392	-99.06	27	100	
Tl	205	2	165	-0.007	ppb	-0.007	-59.37	143	2000	
Pb	208	2	165	-0.035	ppb	-0.035	-75.22	1237	5000	
Th	232	2	193	-0.336	ppb	-0.336	-14.58	8146	2000	
U	238	2	193	0.013	ppb	0.013	18.84	403	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	581716	0.36	579603	100.36	60	120	
Sc (IS)	45	1	HMI H2	17977115	0.33	17043241	105.48	60	120	
Sc (IS)	45	2	HMI He	850066	0.86	797526	106.59	60	120	
Sc (IS)	45	3	No Gas	31693695	1.23	28509182	111.17	60	120	
Ge Internal standard	72	1	HMI H2	9854422	0.39	9074377	108.60	60	120	
Ge Internal standard	72	2	HMI He	1191398	0.93	1113151	107.03	60	120	
In Internal standard	115	2	HMI He	3661125	1.27	3301939	110.88	60	120	
Ho-165	165	2	HMI He	14127604	0.38	12873604	109.74	60	120	
Ir (IS)	193	2	HMI He	11138301	0.45	10633585	104.75	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-8-C@10
Data File Name	303SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:54:10-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	317.405	ppb	317.405	1.92	3737238	50000	
Be	9	1	6	0.022	ppb	0.022	692.38	20	2000	
B	11	1	6	86.418	ppb	86.418	3.34	18020	2000	
Na	23	2	45	497299.573	ppb	497299.573	1.03	94678719	400000	
Mg	24	2	45	794090.996	ppb	794090.996	0.67	70124889	400000	
Al	27	2	45	9.997	ppb	9.997	94.95	513	400000	
Si	28	2	45	33.145	ppb	33.145	13.02	15267	10000	
P	31	2	45	10.287	ppb	10.287	22.66	60	10000	
K	39	2	45	5796.350	ppb	5796.350	1.24	439703	400000	
Ca	40	1	45	38879.468	ppb	38879.468	0.43	131531691	400000	
Ti	47	2	45	-0.151	ppb	-0.151	-147.07	7	4000	
V	51	2	72	-0.420	ppb	-0.420	-19.54	697	2000	
Cr	52	2	72	0.035	ppb	0.035	200.24	713	5000	
Mn	55	2	72	68.796	ppb	68.796	0.50	40921	10000	
Fe	56	1	72	20.625	ppb	20.625	1.46	259348	10000	
(Fe)	57	2	72	25.890	ppb	25.890	18.45	1110	400000	
Co	59	2	72	0.208	ppb	0.208	21.81	563	2000	
Ni	60	2	72	4.999	ppb	4.999	8.36	5131	5000	
Cu	63	2	72	0.768	ppb	0.768	17.55	2687	5000	
Zn	66	2	72	2.450	ppb	2.450	16.03	1307	5000	
As	75	2	72	-0.008	ppb	-0.008	-293.69	29	2000	
Se	78	1	72	428.473	ppb	428.473	0.60	116718	2000	
Sr	88	2	72	904.097	ppb	904.097	0.17	615040	4000	
Zr	90	2	72	88.720	ppb	88.720	47.17	933	1000	
Nb	93	2	72	691.041	ppb	691.041	110.86	43	200	
Mo	95	2	115	0.327	ppb	0.327	18.49	357	2000	
Pd	105	2	115	1.259	ppb	1.259	713.71	33	100	
Ag	107	2	115	0.006	ppb	0.006	159.63	57	100	
Cd	111	2	115	0.045	ppb	0.045	75.78	27	2000	
Sn	120	2	115	-0.108	ppb	-0.108	-18.55	417	2000	
Sb	121	2	115	0.051	ppb	0.051	18.54	83	1000	
Ba	137	2	115	1.829	ppb	1.829	9.67	710	5000	
W	182	2	165	0.046	ppb	0.046	114.12	2607	100	
Pt	195	2	165	-10.430	ppb	-10.430	-1109.22	43	100	
Tl	205	2	165	0.683	ppb	0.683	3.48	4784	2000	
Pb	208	2	165	-0.011	ppb	-0.011	-124.04	1417	5000	
Th	232	2	193	2.407	ppb	2.407	20.55	29357	2000	
U	238	2	193	12.637	ppb	12.637	2.25	124343	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	522732	0.56	579603	90.19	60	120	
Sc (IS)	45	1	HMI H2	17460726	0.63	17043241	102.45	60	120	
Sc (IS)	45	2	HMI He	840796	2.21	797526	105.43	60	120	
Sc (IS)	45	3	No Gas	31408613	0.41	28509182	110.17	60	120	
Ge Internal standard	72	1	HMI H2	9241222	0.26	9074377	101.84	60	120	
Ge Internal standard	72	2	HMI He	1148945	1.59	1113151	103.22	60	120	
In Internal standard	115	2	HMI He	3418773	2.39	3301939	103.54	60	120	
Ho-165	165	2	HMI He	13601053	1.62	12873604	105.65	60	120	
Ir (IS)	193	2	HMI He	10116952	1.20	10633585	95.14	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-9-C@10
Data File Name	304SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T04:58:04-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	114.325	ppb	114.325	7.27	2620592	50000	
Be	9	1	6	-0.010	ppb	-0.010	-249.04	13	2000	
B	11	1	6	59.884	ppb	59.884	2.75	13519	2000	
Na	23	2	45	212946.049	ppb	212946.049	0.72	40104599	400000	
Mg	24	2	45	74900.723	ppb	74900.723	1.04	6565325	400000	
Al	27	2	45	-0.954	ppb	-0.954	-219.29	270	400000	
Si	28	2	45	35.180	ppb	35.180	6.18	15334	10000	
P	31	2	45	1.699	ppb	1.699	124.84	39	10000	
K	39	2	45	2375.737	ppb	2375.737	1.10	203030	400000	
Ca	40	1	45	35921.708	ppb	35921.708	0.34	124036338	400000	
Ti	47	2	45	0.114	ppb	0.114	524.10	13	4000	
V	51	2	72	-0.562	ppb	-0.562	-11.11	537	2000	
Cr	52	2	72	-0.155	ppb	-0.155	-52.53	443	5000	
Mn	55	2	72	88.191	ppb	88.191	2.12	52142	10000	
Fe	56	1	72	-3.740	ppb	-3.740	-0.98	88497	10000	
(Fe)	57	2	72	-2.021	ppb	-2.021	-92.76	357	400000	
Co	59	2	72	0.639	ppb	0.639	7.55	1603	2000	
Ni	60	2	72	6.572	ppb	6.572	1.68	6171	5000	
Cu	63	2	72	0.364	ppb	0.364	6.61	1947	5000	
Zn	66	2	72	1.532	ppb	1.532	17.57	1007	5000	
As	75	2	72	-0.010	ppb	-0.010	-144.73	28	2000	
Se	78	1	72	30.936	ppb	30.936	2.24	8768	2000	
Sr	88	2	72	709.576	ppb	709.576	0.57	480958	4000	
Zr	90	2	72	32.053	ppb	32.053	50.97	677	1000	
Nb	93	2	72	-9.195	ppb	-9.195	-4416.13	17	200	
Mo	95	2	115	0.280	ppb	0.280	6.74	317	2000	
Pd	105	2	115	5.133	ppb	5.133	114.19	40	100	
Ag	107	2	115	0.010	ppb	0.010	29.80	70	100	
Cd	111	2	115	0.112	ppb	0.112	64.23	57	2000	
Sn	120	2	115	-0.102	ppb	-0.102	-31.30	430	2000	
Sb	121	2	115	0.053	ppb	0.053	38.32	87	1000	
Ba	137	2	115	0.897	ppb	0.897	23.95	387	5000	
W	182	2	165	-0.084	ppb	-0.084	-41.50	2134	100	
Pt	195	2	165	-27.173	ppb	-27.173	-327.69	40	100	
Tl	205	2	165	0.147	ppb	0.147	10.00	1180	2000	
Pb	208	2	165	-0.032	ppb	-0.032	-13.37	1230	5000	
Th	232	2	193	-0.001	ppb	-0.001	-5929.16	10551	2000	
U	238	2	193	12.105	ppb	12.105	1.67	124653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	543123	0.44	579603	93.71	60	120	
Sc (IS)	45	1	HMI H2	17819050	0.55	17043241	104.55	60	120	
Sc (IS)	45	2	HMI He	828270	0.61	797526	103.86	60	120	
Sc (IS)	45	3	No Gas	31282670	0.28	28509182	109.73	60	120	
Ge Internal standard	72	1	HMI H2	9592784	0.63	9074377	105.71	60	120	
Ge Internal standard	72	2	HMI He	1144771	1.43	1113151	102.84	60	120	
In Internal standard	115	2	HMI He	3462506	1.07	3301939	104.86	60	120	
Ho-165	165	2	HMI He	13645288	1.29	12873604	105.99	60	120	
Ir (IS)	193	2	HMI He	10586382	1.21	10633585	99.56	60	120	

Sample Report

Sample Table

Sample Name	280-165874-D-10-E@10
Data File Name	305SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T05:01:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	585231 6020b
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	202.375	ppb	202.375	3.85	3140117	50000	
Be	9	1	6	0.020	ppb	0.020	565.04	20	2000	
B	11	1	6	54.557	ppb	54.557	1.33	12262	2000	
Na	23	2	45	421775.848	ppb	421775.848	0.84	79609680	400000	
Mg	24	2	45	123076.384	ppb	123076.384	0.99	10814744	400000	
Al	27	2	45	-3.797	ppb	-3.797	-33.72	210	400000	
Si	28	2	45	48.860	ppb	48.860	7.95	17346	10000	
P	31	2	45	5.827	ppb	5.827	201.19	49	10000	
K	39	2	45	3112.675	ppb	3112.675	0.62	254091	400000	
Ca	40	1	45	35430.707	ppb	35430.707	0.56	122795008	400000	
Ti	47	2	45	-0.151	ppb	-0.151	-295.17	7	4000	
V	51	2	72	-0.472	ppb	-0.472	-7.46	647	2000	
Cr	52	2	72	0.071	ppb	0.071	39.12	773	5000	
Mn	55	2	72	19.354	ppb	19.354	4.88	11965	10000	
Fe	56	1	72	-4.752	ppb	-4.752	-5.94	81689	10000	
(Fe)	57	2	72	-4.798	ppb	-4.798	-54.32	287	400000	
Co	59	2	72	1.067	ppb	1.067	2.70	2677	2000	
Ni	60	2	72	11.489	ppb	11.489	6.24	9626	5000	
Cu	63	2	72	2.025	ppb	2.025	2.53	5011	5000	
Zn	66	2	72	2.513	ppb	2.513	12.56	1343	5000	
As	75	2	72	-0.010	ppb	-0.010	-261.32	29	2000	
Se	78	1	72	93.846	ppb	93.846	3.27	26778	2000	
Sr	88	2	72	760.273	ppb	760.273	1.34	523190	4000	
Zr	90	2	72	91.031	ppb	91.031	11.21	953	1000	
Nb	93	2	72	238.937	ppb	238.937	165.02	27	200	
Mo	95	2	115	1.477	ppb	1.477	5.21	1440	2000	
Pd	105	2	115	25.209	ppb	25.209	84.43	73	100	
Ag	107	2	115	0.000	ppb	0.000	807.05	40	100	
Cd	111	2	115	0.119	ppb	0.119	18.25	60	2000	
Sn	120	2	115	-0.133	ppb	-0.133	-59.01	397	2000	
Sb	121	2	115	0.092	ppb	0.092	35.52	137	1000	
Ba	137	2	115	1.325	ppb	1.325	23.43	543	5000	
W	182	2	165	-0.071	ppb	-0.071	-100.42	2204	100	
Pt	195	2	165	-28.712	ppb	-28.712	-269.50	40	100	
Tl	205	2	165	0.208	ppb	0.208	13.74	1607	2000	
Pb	208	2	165	-0.025	ppb	-0.025	-53.62	1300	5000	
Th	232	2	193	0.119	ppb	0.119	81.98	11488	2000	
U	238	2	193	23.996	ppb	23.996	0.78	245469	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	533903	0.36	579603	92.12	60	120	
Sc (IS)	45	1	HMI H2	17885741	1.08	17043241	104.94	60	120	
Sc (IS)	45	2	HMI He	833062	1.09	797526	104.46	60	120	
Sc (IS)	45	3	No Gas	31707133	0.57	28509182	111.22	60	120	
Ge Internal standard	72	1	HMI H2	9674763	0.39	9074377	106.62	60	120	
Ge Internal standard	72	2	HMI He	1162206	0.26	1113151	104.41	60	120	
In Internal standard	115	2	HMI He	3485777	0.56	3301939	105.57	60	120	
Ho-165	165	2	HMI He	13775092	0.47	12873604	107.00	60	120	
Ir (IS)	193	2	HMI He	10525745	0.51	10633585	98.99	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7343174
Data File Name	306_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T05:05:53-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	57.746	ppb	16.212	2334871	100	57.7	90	110	>+\-10%
Be	9	1	6	49.835	ppb	1.935	12228	50	99.7	90	110	
B	11	1	6	468.243	ppb	1.772	95649	50	936.5	90	110	>+\-10%
Na	23	2	45	46134.024	ppb	0.870	9062238	51000	90.5	90	110	
Mg	24	2	45	8660.012	ppb	1.384	820523	11000	78.7	90	110	>+\-10%
Al	27	2	45	877.384	ppb	1.114	19629	1000	87.7	90	110	>+\-10%
Si	28	2	45	35.808	ppb	3.178	15688	500	7.2	90	110	>+\-10%
P	31	2	45	2184.232	ppb	3.189	5330	2500	87.4	90	110	>+\-10%
K	39	2	45	9299.127	ppb	1.408	680490	11000	84.5	90	110	>+\-10%
Ca	40	1	45	10344.543	ppb	0.316	36265084	11000	94.0	90	110	
(Ca)	44	1	45	9029.557	ppb	0.394	1088176	11000	82.1	90	110	>+\-10%
Ti	47	2	45	45.989	ppb	9.613	1207	50	92.0	90	110	
V	51	2	72	47.345	ppb	2.388	55941	50	94.7	90	110	
Cr	52	2	72	47.283	ppb	0.536	69290	50	94.6	90	110	
Mn	55	2	72	44.870	ppb	3.054	27594	50	89.7	90	110	>+\-10%
Fe	56	1	72	900.830	ppb	1.213	6922256	1000	90.1	90	110	
(Fe)	56	2	72	833.649	ppb	0.845	1025044	1000	83.4	90	110	>+\-10%
(Fe)	57	2	72	901.370	ppb	1.679	25420	1000	90.1	90	110	
Co	59	2	72	46.376	ppb	0.749	115709	50	92.8	90	110	
Ni	60	2	72	47.373	ppb	2.612	34704	50	94.7	90	110	
Cu	63	2	72	46.503	ppb	1.959	87648	50	93.0	90	110	
Zn	66	2	72	48.869	ppb	0.328	16769	50	97.7	90	110	
As	75	2	72	47.362	ppb	1.389	13318	50	94.7	90	110	
Se	78	1	72	44.749	ppb	1.893	12905	50	89.5	90	110	>+\-10%
Sr	88	2	72	96.820	ppb	1.050	67814	100	96.8	90	110	
Zr	90	2	72	155.830	ppb	35.748	1267	50	311.7	90	110	>+\-10%
Nb	93	2	72	736.201	ppb	71.234	47	100	736.2	90	110	>+\-10%
Mo	95	2	115	48.546	ppb	1.327	46628	50	97.1	90	110	
Pd	105	2	115	176.186	ppb	19.468	330	50	352.4	90	110	>+\-10%
Ag	107	2	115	46.381	ppb	0.540	150035	50	92.8	90	110	
Cd	111	2	115	46.206	ppb	2.144	21048	50	92.4	90	110	
Sn	120	2	115	46.284	ppb	0.827	56270	50	92.6	90	110	
Sb	121	2	115	47.374	ppb	1.917	60623	50	94.7	90	110	
Ba	137	2	115	47.979	ppb	2.361	17744	50	96.0	90	110	
W	182	2	165	46.564	ppb	1.320	181233	50	93.1	90	110	
Pt	195	2	165	110.341	ppb	20.413	73	50	220.7	90	110	>+\-10%
Tl	205	2	165	45.553	ppb	1.542	320535	50	91.1	90	110	
Pb	208	2	165	45.612	ppb	0.473	440600	50	91.2	90	110	
Th	232	2	193	42.019	ppb	5.664	380326	50	84.0	90	110	>+\-10%
U	238	2	193	48.837	ppb	0.413	527596	50	97.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	555051	0.84	579603	95.76	60	120	
Sc (IS)	45	1	HMI H2	18023527	0.10	17043241	105.75	60	120	
Sc (IS)	45	2	HMI He	842648	0.94	797526	105.66	60	120	
Sc (IS)	45	3	No Gas	31572982	0.78	28509182	110.75	60	120	
Ge Internal standard	72	1	HMI H2	9768985	0.55	9074377	107.65	60	120	
Ge Internal standard	72	2	HMI He	1181176	0.53	1113151	106.11	60	120	
In Internal standard	115	2	HMI He	3568613	0.99	3301939	108.08	60	120	
Ho-165	165	2	HMI He	14202589	1.01	12873604	110.32	60	120	
Ir (IS)	193	2	HMI He	11121342	1.19	10633585	104.59	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7343166
Data File Name	307_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T05:09:48-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	199CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	45	-33.805	ppb	-19.5	1874231	10	
Be	9	1	6	0.076	ppb	203.6	37	0.5	
B	11	1	6	5.748	ppb	20.9	3140	0.5	>RL
Na	23	2	45	-628.733	ppb	-1.3	167278	25	
Mg	24	2	45	-371.221	ppb	-0.7	22018	25	
Al	27	2	45	2.318	ppb	66.4	350	15	
K	39	2	45	-91.485	ppb	-16.0	37980	50	
Ti	47	2	45	-0.027	ppb	-1399.9	10	0.5	
V	51	2	72	-0.523	ppb	-3.1	610	1	
Cr	52	2	72	-0.065	ppb	-20.8	600	1	
Mn	55	2	72	0.143	ppb	68.6	550	0.5	
(Fe)	57	2	72	13.478	ppb	33.3	813	25	
Co	59	2	72	0.041	ppb	36.6	167	0.5	
Ni	60	2	72	0.689	ppb	31.8	2327	1	
Cu	63	2	72	-0.056	ppb	-71.0	1253	1	
Zn	66	2	72	0.440	ppb	41.2	690	5	
As	75	2	72	0.005	ppb	821.0	34	1	
Se	78	1	72	0.041	ppb	52.0	35	1	
Sr	88	2	72	0.624	ppb	27.4	560	0.5	>RL
Zr	90	2	72	5.202	ppb	231.1	587	1	>RL
Nb	93	2	72	-200.793	ppb	-125.1	10	2	
Mo	95	2	115	0.409	ppb	21.9	470	0.5	
Pd	105	2	115	-0.394	ppb	-4387.1	33	1	
Ag	107	2	115	0.046	ppb	35.0	197	1	
Cd	111	2	115	0.005	ppb	397.3	10	0.5	
Sn	120	2	115	0.602	ppb	17.9	1347	1	
Sb	121	2	115	0.300	ppb	33.0	423	0.6	
Ba	137	2	115	0.022	ppb	120.3	80	0.5	
W	182	2	165	0.351	ppb	24.1	3987	1	
Pt	195	2	165	-38.269	ppb	-293.9	40	1	
Tl	205	2	165	0.076	ppb	25.6	747	0.1	
Pb	208	2	165	0.042	ppb	73.8	2037	0.5	
Th	232	2	193	0.931	ppb	11.2	20205	1	
U	238	2	193	0.090	ppb	3.9	1300	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	587506	0.90	579603	101.36	60	120	
Sc (IS)	45	1	HMI H2	18648300	0.51	17043241	109.42	60	120	
Sc (IS)	45	2	HMI He	850010	0.19	797526	106.58	60	120	
Sc (IS)	45	3	No Gas	32268797	1.62	28509182	113.19	60	120	
Ge Internal standard	72	1	HMI H2	10188467	0.83	9074377	112.28	60	120	
Ge Internal standard	72	2	HMI He	1204088	0.46	1113151	108.17	60	120	
In Internal standard	115	2	HMI He	3725824	0.49	3301939	112.84	60	120	
Ho-165	165	2	HMI He	14564711	0.78	12873604	113.14	60	120	
Ir (IS)	193	2	HMI He	11653172	0.59	10633585	109.59	60	120	

Sample Table

Sample Name	rinse-7316801
Data File Name	308SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\ALL082922.b
Acq Date Time	2022-08-30T07:27:37-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	199CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	9.204	ppb	9.204	84.70	2174892	50000	
Be	9	1	6	-0.026	ppb	-0.026	-152.50	10	2000	
B	11	1	6	-4.638	ppb	-4.638	-11.36	923	2000	
Na	23	2	45	-1216.260	ppb	-1216.260	-0.57	53260	400000	
Mg	24	2	45	-385.478	ppb	-385.478	-1.99	20270	400000	
Al	27	2	45	-1.755	ppb	-1.755	-180.53	253	400000	
Si	28	2	45	32.687	ppb	32.687	88.38	15034	10000	
P	31	2	45	6.416	ppb	6.416	80.69	50	10000	
K	39	2	45	-183.920	ppb	-183.920	-4.14	30869	400000	
Ca	40	1	45	-24.655	ppb	-24.655	-2.73	106657	400000	
Ti	47	2	45	-0.147	ppb	-0.147	-153.48	7	4000	
V	51	2	72	-0.732	ppb	-0.732	-14.40	363	2000	
Cr	52	2	72	-0.068	ppb	-0.068	-116.57	597	5000	
Mn	55	2	72	-0.188	ppb	-0.188	-115.26	347	10000	
Fe	56	1	72	9.978	ppb	9.978	0.37	200383	10000	
(Fe)	57	2	72	11.469	ppb	11.469	42.71	760	400000	
Co	59	2	72	-0.003	ppb	-0.003	-408.40	53	2000	
Ni	60	2	72	-0.231	ppb	-0.231	-118.92	1687	5000	
Cu	63	2	72	-0.241	ppb	-0.241	-34.77	910	5000	
Zn	66	2	72	0.561	ppb	0.561	29.53	737	5000	
As	75	2	72	-0.036	ppb	-0.036	-119.82	22	2000	
Se	78	1	72	-0.052	ppb	-0.052	-39.22	7	2000	
Sr	88	2	72	0.084	ppb	0.084	52.16	177	4000	
Zr	90	2	72	-35.145	ppb	-35.145	-51.31	400	1000	
Nb	93	2	72	-203.248	ppb	-203.248	-5.45	10	200	
Mo	95	2	115	0.045	ppb	0.045	147.60	110	2000	
Pd	105	2	115	-6.601	ppb	-6.601	-125.31	23	100	
Ag	107	2	115	-0.005	ppb	-0.005	-126.11	27	100	
Cd	111	2	115	-0.009	ppb	-0.009	-127.72	3	2000	
Sn	120	2	115	0.291	ppb	0.291	11.74	1000	2000	
Sb	121	2	115	0.067	ppb	0.067	27.08	117	1000	
Ba	137	2	115	0.096	ppb	0.096	195.62	113	5000	
W	182	2	165	0.039	ppb	0.039	279.47	2957	100	
Pt	195	2	165	-62.740	ppb	-62.740	-96.38	37	100	
Tl	205	2	165	-0.005	ppb	-0.005	-172.13	173	2000	
Pb	208	2	165	0.005	ppb	0.005	311.76	1793	5000	
Th	232	2	193	0.156	ppb	0.156	52.52	14277	2000	
U	238	2	193	0.010	ppb	0.010	55.97	423	2000	

QC ISTD Table

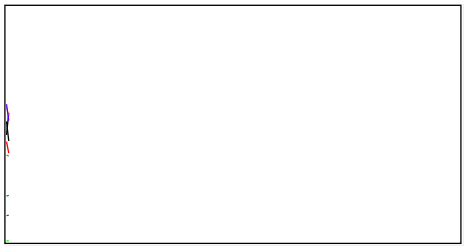
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	579492	0.68	579603	99.98	60	120	
Sc (IS)	45	1	HMI H2	18241799	1.09	17043241	107.03	60	120	
Sc (IS)	45	2	HMI He	830419	0.48	797526	104.12	60	120	
Sc (IS)	45	3	No Gas	33181744	0.38	28509182	116.39	60	120	
Ge Internal standard	72	1	HMI H2	10104035	0.28	9074377	111.35	60	120	
Ge Internal standard	72	2	HMI He	1215385	4.59	1113151	109.18	60	120	
In Internal standard	115	2	HMI He	3896475	0.37	3301939	118.01	60	120	
Ho-165	165	2	HMI He	15608685	0.53	12873604	121.25	60	120	IS Failed
Ir (IS)	193	2	HMI He	12737984	0.28	10633585	119.79	60	120	

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	2022-08-24 12:05:34 PM
Instrument Name	G3281A JP12422099
Batch Folder	D:\Agilent\ICPMH\1\DATA\all082422.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	100000	54873	50215	13.116
2	59	100000	53759	55470	4.362
3	63	500000	2297	2235	3.927
4	70	5000	2148	2356	12.444
5	80	5000000	565594	564460	0.284
6	89	200000	75495	80411	8.646
7	115	200000	72977	73381	0.780
8	118	5000	992	985	1.078
9	137	20000	8322	8189	2.308
10	140	200000	72705	76685	7.339
11	205	100000	51571	55078	9.003
12	6	100000	30010	31905	8.397
13	70/140	5	2.955 %	3.066 %	5.128
14	156/140	2	2.171 %	1.838 %	25.611

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-54 V
Extract 2	-95.0 V	Q1 Exit	---	Deflect	14.4 V
Omega Bias	-55 V	Cell Focus	---	Plate Bias	-50 V
Omega Lens	5.8 V	Cell Entrance	-38 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	190 V
H2 Flow	0.0 mL/min	OctP Bias	-8.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-5.0 V
Mass Offset	126	Axis Offset	-0.01		

Torch

Current Signal

Torch H	-1.3 mm	Torch V	0.0 mm		

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Meter

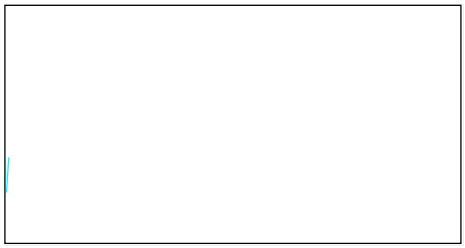
Name	Value	Unit
IF/BK Press	1.92E+2	Pa
Analyzer Press	3.67E-4	Pa
Water RF/WC/IF	1.25	L/min
Nebulizer Gas	0.75	L/min
Reflected Power	20	W

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	2022-08-24 12:05:46 PM
Instrument Name	G3281A JP12422099
Batch Folder	D:\Agilent\ICPMH\1\DATA\all082422.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	100	36	29	37.216
2	51	500	110	121	12.857
3	53	1000	68	51	47.141
4	59	50000	9102	8647	7.436
5	66	5000	393	483	26.236
6	70	2000	470	446	7.778
7	78	20	1	1	0.000
8	115	50000	6063	6199	3.103
9	118	2000	114	103	15.104
10	137	5000	720	773	9.613
11	140	100000	15360	14906	4.307
12	205	50000	15780	15589	1.731
13	51/59	2	1.209 %	1.410 %	20.196
14	70/140	5	3.060 %	2.987 %	3.477
15	156/140	1	0.319 %	0.319 %	0.159

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-54 V
Extract 2	-95.0 V	Q1 Exit	---	Deflect	-2.4 V
Omega Bias	-55 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	5.8 V	Cell Entrance	-22 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	5.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	0.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Current Signal

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Meter

Name	Value	Unit
IF/BK Press	1.91E+2	Pa
Analyzer Press	4.46E-4	Pa
Water RF/WC/IF	1.25	L/min
Nebulizer Gas	0.75	L/min
Reflected Power	12	W

Current Signal

Operator Name	Denver Metals
Acq. Date-Time	2022-08-24 12:06:06 PM
Instrument Name	G3281A JP12422099
Batch Folder	D:\Agilent\ICPMH\1\DATA\all082422.b

[HMI H2]

Sensitivity

Ch	Mass	Range	Count	Avg Count	RSD%
1	7	2000	1362	1182	25.057
2	9	5000	3910	3239	22.787
3	59	50000	11183	10286	15.746
4	63	50000	272	238	13.232
5	70	5000	1161	1038	15.880
6	78	20	1	2	44.659
7	89	200000	52324	45497	9.747
8	115	200000	43567	41537	8.826
9	118	5000	641	622	7.398
10	137	20000	4683	4634	8.607
11	140	200000	38032	38081	13.549
12	205	100000	25298	25760	5.118
13	238	100000	36034	36806	5.454
14	70/140	5	3.054 %	2.728 %	10.535
15	156/140	2	1.007 %	0.939 %	11.490

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-64 V
Extract 2	-95.0 V	Q1 Exit	---	Deflect	0.8 V
Omega Bias	-55 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	5.8 V	Cell Entrance	-36 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	150 V
H2 Flow	4.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Current Signal

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Meter

Name	Value	Unit
IF/BK Press	1.97E+2	Pa
Analyzer Press	1.17E-3	Pa
Water RF/WC/IF	1.24	L/min
Nebulizer Gas	0.75	L/min
Reflected Power	11	W

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq. Date-Time	2022-08-24 12:14:04 PM
Report Comment	---
Instrument Name	G3281A JP12422099

[HMI H2]

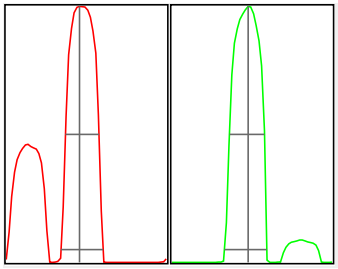
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7		898	8977.30	3.698	5.000	
9		2394	23938.48	1.173	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	850	887	902	941	909
9	2431	2389	2392	2353	2404

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	1501.55	6.90	6.90 - 7.10	
9	3913.09	8.95	8.90 - 9.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.62	0.779	0.900	
9	0.64	0.781	0.900	

Integration Time [sec] 0.1
Acquisition Time [sec] 51.09
Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	0.8 V

US EPA Tune Check Report

Extract 2	-95.0 V	Cell Entrance	-36 V	Plate Bias	-60 V
Omega Bias	-55 V	Cell Exit	-64 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	4.0 mL/min	OctP RF	150 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

[HMI He]

Sensitivity

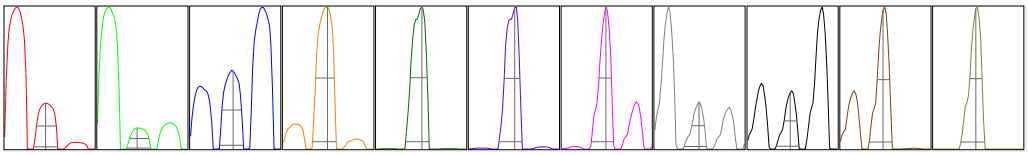
Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
24		2080	20802.28	0.711	5.000	
25		302	3017.37	1.977	5.000	
26		379	3789.26	1.731	5.000	
59		4693	46931.73	0.563	5.000	
103		10019	100185.15	0.834	5.000	
115		3125	31253.46	0.899	5.000	
205		6372	63721.69	1.032	5.000	
206		2111	21106.15	0.829	5.000	
207		1896	18956.68	0.544	5.000	
208		4559	45586.20	0.630	5.000	
238		9559	95591.19	0.835	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	2065	2096	2096	2071	2073
25	292	306	306	304	300
26	385	383	379	368	378
59	4709	4696	4652	4689	4721
103	10098	9893	10058	9976	10069
115	3080	3124	3126	3151	3146
205	6310	6407	6367	6465	6312
206	2098	2138	2097	2118	2102
207	1899	1886	1903	1907	1883
208	4525	4603	4560	4545	4561
238	9563	9462	9528	9682	9562

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	3352.93	23.90	23.90 - 24.10	
25	498.77	24.85	24.90 - 25.10	Fail
26	621.26	25.95	25.90 - 26.10	
59	7904.75	59.00	58.90 - 59.10	
103	18495.70	103.05	102.90 - 103.10	
115	6108.86	115.05	114.90 - 115.10	
205	14808.39	205.00	204.90 - 205.10	
206	4883.57	206.00	205.90 - 206.10	
207	4199.15	206.95	206.90 - 207.10	
208	10343.84	207.95	207.90 - 208.10	
238	21687.49	237.95	237.90 - 238.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
24	0.65	0.785	0.900	
25	0.63	0.787	0.900	
26	0.64	0.787	0.900	
59	0.61	0.783	0.900	
103	0.56	0.774	0.900	
115	0.52	0.755	0.900	
205	0.41	0.734	0.900	
206	0.41	0.733	0.900	
207	0.42	0.751	0.900	
208	0.41	0.755	0.900	
238	0.42	0.786	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 235.339999999997

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode --- Nebulizer Gas Dilution Gas 0.28 L/min

US EPA Tune Check Report

RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	-2.4 V
Extract 2	-95.0 V	Cell Entrance	-22 V	Plate Bias	-60 V
Omega Bias	-55 V	Cell Exit	-54 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	5.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

[No Gas]

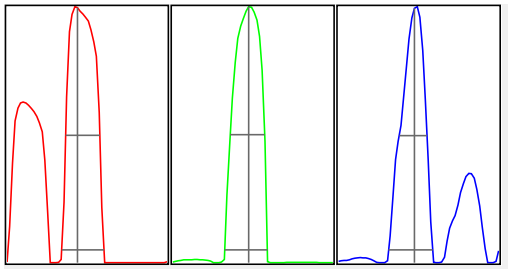
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	10.00	17826	178262.28	0.879	5.000	
89		29692	296924.27	0.825	5.000	
205		15536	155363.10	0.549	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	17721	17779	18104	17763	17765
89	29939	29711	29668	29299	29845
205	15558	15467	15670	15460	15526

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	29514.02	6.85	6.90 - 7.10	Fail
89	48897.92	88.95	88.90 - 89.10	
205	30889.00	204.95	204.90 - 205.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.63	0.780	0.900	
89	0.64	0.788	0.900	
205	0.51	0.813	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	92.3700000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	14.4 V
Extract 2	-95.0 V	Cell Entrance	-38 V	Plate Bias	-50 V
Omega Bias	-55 V	Cell Exit	-54 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-5.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq. Date-Time	2022-08-24 12:27:42 PM
Report Comment	---
Instrument Name	G3281A JP12422099

[HMI H2]

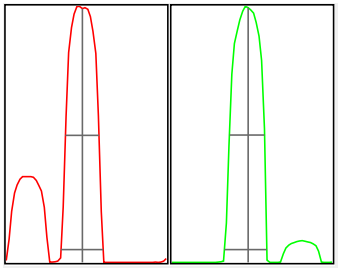
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7		861	8610.03	2.732	5.000	
9		2413	24129.12	2.797	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	844	849	843	872	897
9	2443	2508	2415	2357	2342

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	1426.99	6.95	6.90 - 7.10	
9	3906.25	8.95	8.90 - 9.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.62	0.779	0.900	
9	0.64	0.781	0.900	

Integration Time [sec] 0.1
Acquisition Time [sec] 51.09
Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	0.8 V

US EPA Tune Check Report

Extract 2	-95.0 V	Cell Entrance	-36 V	Plate Bias	-60 V
Omega Bias	-55 V	Cell Exit	-64 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	4.0 mL/min	OctP RF	150 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm

[HMI He]

Sensitivity

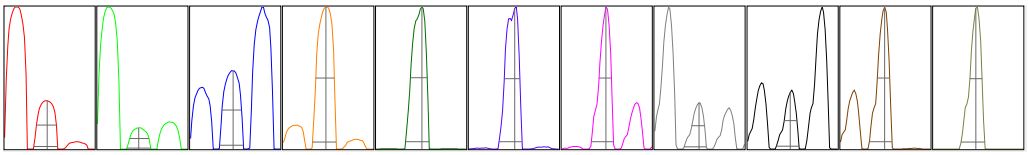
Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
24		1984	19843.99	1.753	5.000	
25		285	2845.33	0.799	5.000	
26		370	3704.34	1.885	5.000	
59		4618	46184.86	1.433	5.000	
103		9768	97682.25	1.723	5.000	
115		3029	30291.82	1.089	5.000	
205		6211	62114.97	0.915	5.000	
206		2064	20643.30	0.320	5.000	
207		1824	18239.70	1.474	5.000	
208		4373	43727.22	1.059	5.000	
238		9313	93131.06	0.995	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	1953	2004	1955	1976	2035
25	288	284	284	283	283
26	364	368	376	365	379
59	4618	4536	4591	4630	4717
103	9524	9679	9825	9954	9859
115	3000	3010	3029	3023	3085
205	6131	6182	6220	6249	6276
206	2063	2058	2071	2072	2058
207	1790	1833	1817	1816	1863
208	4327	4331	4376	4390	4439
238	9160	9354	9330	9409	9313

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	3178.78	23.95	23.90 - 24.10	
25	475.61	24.90	24.90 - 25.10	
26	605.05	25.95	25.90 - 26.10	
59	7791.15	58.95	58.90 - 59.10	
103	18214.22	103.05	102.90 - 103.10	
115	5936.78	115.05	114.90 - 115.10	
205	14444.09	205.00	204.90 - 205.10	
206	4715.67	206.00	205.90 - 206.10	
207	4048.51	206.95	206.90 - 207.10	
208	10137.01	208.00	207.90 - 208.10	
238	21459.43	237.95	237.90 - 238.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
24	0.65	0.786	0.900	
25	0.63	0.785	0.900	
26	0.64	0.786	0.900	
59	0.61	0.782	0.900	
103	0.55	0.773	0.900	
115	0.52	0.754	0.900	
205	0.41	0.733	0.900	
206	0.42	0.731	0.900	
207	0.42	0.746	0.900	
208	0.41	0.751	0.900	
238	0.41	0.782	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 235.339999999997

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode --- Nebulizer Gas Dilution Gas 0.28 L/min

US EPA Tune Check Report

RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	-2.4 V
Extract 2	-95.0 V	Cell Entrance	-22 V	Plate Bias	-60 V
Omega Bias	-55 V	Cell Exit	-54 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	5.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

[No Gas]

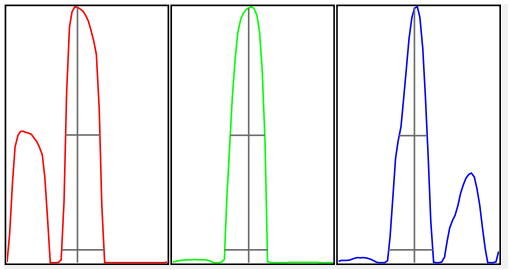
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	10.00	17449	174492.52	1.472	5.000	
89		29136	291360.00	0.269	5.000	
205		15195	151951.79	0.378	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	17024	17407	17621	17659	17536
89	29135	29200	29171	29173	29002
205	15268	15186	15111	15188	15223

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	28695.09	6.85	6.90 - 7.10	Fail
89	47191.55	88.95	88.90 - 89.10	
205	30078.20	204.95	204.90 - 205.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.63	0.780	0.900	
89	0.64	0.788	0.900	
205	0.51	0.813	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	92.3700000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	5.8 V	Deflect	14.4 V
Extract 2	-95.0 V	Cell Entrance	-38 V	Plate Bias	-50 V
Omega Bias	-55 V	Cell Exit	-54 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	146	Axis Gain	1.0028	QP Bias	-5.0 V
Mass Offset	126	Axis Offset	-0.01		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1703 V	Pulse HV	1243 V

Torch

Torch H	-1.3 mm	Torch V	0.0 mm		

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	6		0.079792	☑
	9		0.086488	☑
	23		0.089584	☑
	24		0.088431	☑
	27		0.088750	☑
	39		0.090370	☑
	45		0.089662	☑
	48		0.089630	☑
	51		0.089353	☑
	52		0.087521	☑
	55		0.086893	☑
	59		0.085142	☑
	60		0.080427	☑
	63		0.079227	☑
	66		0.080124	☑
	72		0.081788	☑
	75		0.082557	☑
	88		0.084150	☑
	98		0.081397	☑
	102		0.083785	☑
	106		0.076388	☑
	114		0.079086	☑
	115		0.079790	☑
	118		0.075827	☑
	121		0.080974	☑

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	138		0.079398	☑
	175		0.076174	☑
	193		0.075146	☑
	205		0.070974	☑
	208		0.070457	☑
	209		0.071897	☑
	232		0.073626	☑
	238		0.073783	☑

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	001WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T12:52:53-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	002WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T12:56:26-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	003WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:00:00-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	004WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:03:34-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	005WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:07:08-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	006WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:10:42-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	007WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:14:14-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	008WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:17:49-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	rinse-7329444
Data File Name	009WASH.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:21:22-06:00
Sample Type	WASH
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	icis-7337549
Data File Name	010CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Method	
Acq Date Time	2022-08-24T13:24:54-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	6	3	No Gas	8605315	0.00
Be	9	6	1	HMI H2	27	292.44
B	11	6	1	HMI H2	3250	0.08
Na	23	45	2	HMI He	21237	0.01
Mg	24	45	2	HMI He	427	5.55
Al	27	45	2	HMI He	330	2.75
K	39	45	2	HMI He	11055	0.05
V	51	72	2	HMI He	294	12.95
Cr	52	72	2	HMI He	1271	1.86
Mn	55	72	2	HMI He	424	2.75
(Fe)	57	72	2	HMI He	828	1.83
Co	59	72	2	HMI He	20	249.75
Ni	60	72	2	HMI He	410	2.14
Cu	63	72	2	HMI He	1462	0.74
Zn	66	72	2	HMI He	764	3.05
As	75	72	2	HMI He	63	71.90
Se	78	72	1	HMI H2	17	203.37
Sr	88	45	2	HMI He	107	20.28
Zr	90	72	2	HMI He	1305	1.05
Nb	93	72	2	HMI He	53	123.34
Mo	95	115	2	HMI He	123	18.96
Pd	105	115	2	HMI He	194	6.73
Ag	107	115	2	HMI He	43	61.43
Cd	111	115	2	HMI He	23	105.94
Sn	120	115	2	HMI He	1715	0.26
Sb	121	115	2	HMI He	80	56.28
Ba	137	115	2	HMI He	73	28.38
W	182	165	2	HMI He	2069	0.12
Pt	195	165	2	HMI He	83	43.95
Tl	205	165	2	HMI He	3721	0.25
Pb	208	165	2	HMI He	2990	0.34
Th	232	193	2	HMI He	32587	0.00
U	238	193	2	HMI He	1939	0.39

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal standard	6	1	HMI H2	3709622	2.42
Sc (IS)	45	2	HMI He	2724914	2.55
Sc (IS)	45	3	No Gas	82891317	4.48
Ge Internal standard	72	1	HMI H2	19447282	2.65
Ge Internal standard	72	2	HMI He	2615067	0.59
In Internal standard	115	2	HMI He	6700003	1.85
Ho-165	165	2	HMI He	26090315	1.21
Ir (IS)	193	2	HMI He	19253459	1.63

Calibration Standard Report

Sample Table

Sample Name	ic-7337551
Data File Name	011CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
method	
Acq Date Time	2022-08-24T13:28:30-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	cal 4
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	6	3	No Gas	8616588	0.00
Be	9	6	1	HMI H2	10	999.00
B	11	6	1	HMI H2	3564	0.18
Na	23	45	2	HMI He	61119917	0.00
Mg	24	45	2	HMI He	5070703	0.00
Al	27	45	2	HMI He	1318	0.78
K	39	45	2	HMI He	3502228	0.00
V	51	72	2	HMI He	364	1.90
Cr	52	72	2	HMI He	2286	0.07
Mn	55	72	2	HMI He	888	2.33
(Fe)	57	72	2	HMI He	1565	0.27
Co	59	72	2	HMI He	184	7.48
Ni	60	72	2	HMI He	671	0.39
Cu	63	72	2	HMI He	1812	0.05
Zn	66	72	2	HMI He	1912	0.36
As	75	72	2	HMI He	107	10.14
Se	78	72	1	HMI H2	35	76.87
Sr	88	45	2	HMI He	1361	0.73
Zr	90	72	2	HMI He	1605	0.65
Nb	93	72	2	HMI He	70	35.31
Mo	95	115	2	HMI He	190	21.96
Pd	105	115	2	HMI He	257	0.88
Ag	107	115	2	HMI He	83	21.97
Cd	111	115	2	HMI He	7	2595.48
Sn	120	115	2	HMI He	2493	0.23
Sb	121	115	2	HMI He	107	35.49
Ba	137	115	2	HMI He	230	1.89
W	182	165	2	HMI He	2066	0.13
Pt	195	165	2	HMI He	234	10.11
Tl	205	165	2	HMI He	3120	0.06
Pb	208	165	2	HMI He	3861	0.11
Th	232	193	2	HMI He	48159	0.00
U	238	193	2	HMI He	2673	0.18

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3573842	2.59	3709622	96.34	60	125	
Sc (IS)	45	2	HMI He	2944734	0.90	2724914	108.07	60	125	
Sc (IS)	45	3	No Gas	87014427	1.85	82891317	104.97	60	120	
Ge Internal standard	72	1	HMI H2	20597172	3.09	19447282	105.91	60	125	
Ge Internal standard	72	2	HMI He	2621291	1.73	2615067	100.24	60	125	
In Internal standard	115	2	HMI He	7022806	2.59	6700003	104.82	60	125	
Ho-165	165	2	HMI He	26434581	1.20	26090315	101.32	60	125	
Ir (IS)	193	2	HMI He	18261085	0.71	19253459	94.85	60	125	

Calibration Standard Report

Sample Table

Sample Name	ic-7337550
Data File Name	012CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
method	
Acq Date Time	2022-08-24T13:32:02-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	cal
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	6	3	No Gas	13436568	0.00
Be	9	6	1	HMI H2	87180	0.00
B	11	6	1	HMI H2	906847	0.00
Na	23	45	2	HMI He	1319456	0.00
Mg	24	45	2	HMI He	514959	0.00
Al	27	45	2	HMI He	138418	0.00
K	39	45	2	HMI He	365855	0.00
V	51	72	2	HMI He	309554	0.00
Cr	52	72	2	HMI He	417880	0.00
Mn	55	72	2	HMI He	189635	0.00
(Fe)	57	72	2	HMI He	161099	0.00
Co	59	72	2	HMI He	647447	0.00
Ni	60	72	2	HMI He	174526	0.00
Cu	63	72	2	HMI He	458886	0.00
Zn	66	72	2	HMI He	71957	0.00
As	75	72	2	HMI He	40845	0.01
Se	78	72	1	HMI H2	63011	0.00
Sr	88	45	2	HMI He	324354	0.00
Zr	90	72	2	HMI He	2249	0.26
Nb	93	72	2	HMI He	87	50.35
Mo	95	115	2	HMI He	222637	0.00
Pd	105	115	2	HMI He	194	1.54
Ag	107	115	2	HMI He	640222	0.00
Cd	111	115	2	HMI He	87573	0.00
Sn	120	115	2	HMI He	212527	0.00
Sb	121	115	2	HMI He	189172	0.00
Ba	137	115	2	HMI He	61805	0.00
W	182	165	2	HMI He	684094	0.00
Pt	195	165	2	HMI He	127	9.51
Tl	205	165	2	HMI He	1187570	0.00
Pb	208	165	2	HMI He	1567546	0.00
Th	232	193	2	HMI He	1354513	0.00
U	238	193	2	HMI He	1825223	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3548335	2.35	3709622	95.65	60	125	
Sc (IS)	45	2	HMI He	2880620	3.04	2724914	105.71	60	125	
Sc (IS)	45	3	No Gas	81580792	0.83	82891317	98.42	60	120	
Ge Internal standard	72	1	HMI H2	20973972	2.04	19447282	107.85	60	125	
Ge Internal standard	72	2	HMI He	2646837	0.52	2615067	101.21	60	125	
In Internal standard	115	2	HMI He	6984614	2.90	6700003	104.25	60	125	
Ho-165	165	2	HMI He	26749685	1.06	26090315	102.53	60	125	
Ir (IS)	193	2	HMI He	19284728	0.65	19253459	100.16	60	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7337554
Data File Name	013_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:35:34-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	125.440	ppb	17.231	10670109	80	156.8	90	110	>+\-10%
Be	9	1	6	37.927	ppb	3.038	33982	40	94.8	90	110	
B	11	1	6	756.984	ppb	2.079	706578	400	189.2	90	110	>+\-10%
Na	23	2	45	13712.126	ppb	2.344	7978406	12800	107.1	90	110	
Mg	24	2	45	5293.379	ppb	2.192	1275038	2400	220.6	90	110	>+\-10%
Al	27	2	45	851.431	ppb	2.973	57440	800	106.4	90	110	
Si	28	2	45	429.515	ppb	2.332	21000	40	1073.8	90	110	>+\-10%
P	31	2	45	1043.234	ppb	4.428	6457	2400	43.5	90	110	>+\-10%
K	39	2	45	5290.904	ppb	4.006	888298	4800	110.2	90	110	>+\-10%
Ca	40	1	45	5228.025	ppb	3.138	61318469	4800	108.9	90	110	
(Ca)	44	1	45	4614.540	ppb	3.126	1912834	4800	96.1	90	110	
V	51	2	72	40.047	ppb	4.212	127644	40	100.1	90	110	
Cr	52	2	72	40.343	ppb	2.162	174235	40	100.9	90	110	
Mn	55	2	72	39.073	ppb	1.838	76519	40	97.7	90	110	
Fe	56	1	72	841.191	ppb	2.868	15373046	800	105.1	90	110	
(Fe)	57	2	72	800.418	ppb	0.608	66864	800	100.1	90	110	
Co	59	2	72	39.942	ppb	4.177	265957	40	99.9	90	110	
Ni	60	2	72	39.920	ppb	1.361	71946	40	99.8	90	110	
Cu	63	2	72	40.802	ppb	3.278	193462	40	102.0	90	110	
Zn	66	2	72	79.299	ppb	0.733	58872	80	99.1	90	110	
As	75	2	72	37.058	ppb	9.716	15589	40	92.6	90	110	
Se	78	1	72	42.582	ppb	2.585	26220	40	106.5	90	110	
Sr	88	2	45	126.789	ppb	0.954	199840	80	158.5	90	110	>+\-10%
Zr	90	2	72	33.337	ppb	28.577	1678	40	83.3	90	110	>+\-10%
Nb	93	2	72	-71.818	ppb	-232.207	43	80	-89.8	90	110	>+\-10%
Mo	95	2	115	42.091	ppb	2.808	93627	40	105.2	90	110	
Pd	105	2	115	309.972	ppb	59.132	367	40	774.9	90	110	>+\-10%
Ag	107	2	115	82.626	ppb	1.429	527962	80	103.3	90	110	
Cd	111	2	115	40.475	ppb	1.208	35395	40	101.2	90	110	
Sn	120	2	115	42.500	ppb	0.467	91251	40	106.3	90	110	
Sb	121	2	115	40.633	ppb	0.842	76795	40	101.6	90	110	
Ba	137	2	115	41.030	ppb	1.408	25358	40	102.6	90	110	
W	182	2	165	42.029	ppb	2.641	289117	40	105.1	90	110	
Pt	195	2	165	11.191	ppb	285.397	103	40	28.0	90	110	>+\-10%
Tl	205	2	165	40.671	ppb	1.600	486072	40	101.7	90	110	
Pb	208	2	165	41.440	ppb	2.254	652292	40	103.6	90	110	
Th	232	2	193	87.959	ppb	3.081	1176031	80	109.9	90	110	
U	238	2	193	43.912	ppb	1.700	789605	40	109.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3645762	1.95	3709622	98.28	60	125	
Sc (IS)	45	2	HMI He	2797427	1.77	2724914	102.66	60	125	
Sc (IS)	45	3	No Gas	81057537	7.54	82891317	97.79	60	120	
Ge Internal standard	72	1	HMI H2	20487224	0.41	19447282	105.35	60	125	
Ge Internal standard	72	2	HMI He	2723753	2.99	2615067	104.16	60	125	
In Internal standard	115	2	HMI He	6968596	2.17	6700003	104.01	60	125	
Ho-165	165	2	HMI He	26798217	3.39	26090315	102.71	60	125	
Ir (IS)	193	2	HMI He	18974966	1.52	19253459	98.55	60	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	icb-7337549
Data File Name	014_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:40:37-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6.646	ppb	21.2	8340936	0.05	>RL
Be	9	1	0.004	ppb	781.4	30	0.5	
B	11	1	19.017	ppb	6.4	20873	0.1	>RL
Na	23	2	3.953	ppb	8.6	24698	25	
Mg	24	2	1.672	ppb	19.7	864	25	
Al	27	2	-0.197	ppb	-130.5	334	15	
K	39	2	0.596	ppb	370.1	11722	50	
V	51	2	-0.001	ppb	-1003.2	297	1	
Cr	52	2	0.028	ppb	165.0	1418	1	
Mn	55	2	0.011	ppb	568.2	454	0.5	
(Fe)	57	2	-1.094	ppb	-107.4	761	25	
Co	59	2	0.022	ppb	47.4	164	0.5	
Ni	60	2	0.033	ppb	414.5	484	1	
Cu	63	2	-0.043	ppb	-83.6	1301	1	
Zn	66	2	0.064	ppb	301.3	828	5	
As	75	2	0.026	ppb	570.1	77	1	
Se	78	1	0.045	ppb	72.2	47	1	
Sr	88	2	0.007	ppb	95.7	123	1	
Zr	90	2	-12.267	ppb	-63.8	1221	1	
Nb	93	2	-87.766	ppb	-129.3	40	2	
Mo	95	2	0.154	ppb	14.9	474	0.5	
Pd	105	2	-81.901	ppb	-160.5	157	1	
Ag	107	2	0.160	ppb	19.6	1071	1	
Cd	111	2	0.002	ppb	526.9	27	0.5	
Sn	120	2	0.823	ppb	14.3	3544	1	
Sb	121	2	0.028	ppb	132.9	137	1	
Ba	137	2	0.005	ppb	495.5	80	0.5	
W	182	2	0.362	ppb	8.8	4585	1	
Pt	195	2	0.766	ppb	1005.7	87	1	
Tl	205	2	0.002	ppb	1322.4	3828	0.1	
Pb	208	2	0.023	ppb	77.1	3417	0.5	
Th	232	2	3.698	ppb	3.5	81697	1	>RL
U	238	2	0.095	ppb	28.8	3684	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3651453	3.10	3709622	98.43	60	125	
Sc (IS)	45	2	HMI He	2865174	1.70	2724914	105.15	60	125	
Sc (IS)	45	3	No Gas	84135300	2.35	82891317	101.50	60	120	
Ge Internal standard	72	1	HMI H2	20517873	4.28	19447282	105.51	60	125	
Ge Internal standard	72	2	HMI He	2680051	2.61	2615067	102.49	60	125	
In Internal standard	115	2	HMI He	7015657	3.03	6700003	104.71	60	125	
Ho-165	165	2	HMI He	26714222	0.08	26090315	102.39	60	125	
Ir (IS)	193	2	HMI He	19322426	0.57	19253459	100.36	60	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	cri-7337555
Data File Name	015LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:52:46-06:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1.055	ppb	13.414	971	1	105.5	80	120	
Na	23	2	45	53.879	ppb	5.086	54100	50	107.8	80	120	
Mg	24	2	45	55.367	ppb	1.341	14043	50	110.7	80	120	
Al	27	2	45	47.037	ppb	3.466	3561	50	94.1	80	1200	
K	39	2	45	99.167	ppb	4.507	28334	100	99.2	80	120	
Ca	40	1	45	74.153	ppb	1.745	1046457	50	148.3	80	120	
V	51	2	72	5.048	ppb	7.021	15870	5	101.0	80	120	
Cr	52	2	72	2.183	ppb	2.683	10373	2	109.2	80	120	
Mn	55	2	72	1.143	ppb	10.069	2589	1	114.3	80	120	
(Fe)	57	2	72	48.861	ppb	2.991	4749	50	97.7	80	120	
Co	59	2	72	0.999	ppb	4.275	6481	1	99.9	80	120	
Ni	60	2	72	2.132	ppb	16.133	4115	2	106.6	80	120	
Cu	63	2	72	2.240	ppb	5.450	11709	2	112.0	80	120	
Zn	66	2	72	11.046	ppb	3.037	8621	10	110.5	80	120	
As	75	2	72	4.986	ppb	10.569	2092	5	99.7	80	120	
Se	78	1	72	5.245	ppb	1.146	3312	5	104.9	80	120	
Sr	88	2	45	1.016	ppb	18.647	1739	1	101.6	80	120	
Zr	90	2	72	-3.583	ppb	-280.744	1285	0.5	-716.6	80	120	>+/-30%
Nb	93	2	72	14.811	ppb	911.339	57	2	740.6	80	120	>+/-30%
Mo	95	2	115	2.059	ppb	4.609	4709	2	102.9	80	120	
Pd	105	2	115	-75.498	ppb	-139.412	160	1	-7549.8	80	120	>+/-30%
Ag	107	2	115	0.930	ppb	10.358	6000	1	93.0	80	120	
Cd	111	2	115	1.012	ppb	24.912	911	1	101.2	80	120	
Sn	120	2	115	10.188	ppb	2.916	23256	10	101.9	80	120	
Sb	121	2	115	1.626	ppb	8.023	3157	2	81.3	80	120	
Ba	137	2	115	1.192	ppb	13.520	811	1	119.2	80	120	
W	182	2	165	5.350	ppb	3.676	37852	1	535.0	80	120	>+/-30%
Pt	195	2	165	-9.221	ppb	-138.666	70	1	-922.1	80	120	>+/-30%
Tl	205	2	165	0.829	ppb	2.644	13366	1	82.9	80	120	
Pb	208	2	165	1.112	ppb	7.080	20052	1	111.2	80	120	
Th	232	2	193	3.194	ppb	4.219	75822	2	159.7	80	120	>+/-30%
U	238	2	193	1.014	ppb	4.115	20685	1	101.4	80	1200	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3656737	5.57	3709622	98.57	60	125	
Sc (IS)	45	2	HMI He	2851997	2.57	2724914	104.66	60	125	
Sc (IS)	45	3	No Gas	81057280	1.99	82891317	97.79	60	120	
Ge Internal standard	72	1	HMI H2	20904704	2.57	19447282	107.49	60	125	
Ge Internal standard	72	2	HMI He	2643665	2.86	2615067	101.09	60	125	
In Internal standard	115	2	HMI He	6976126	0.88	6700003	104.12	60	125	
Ho-165	165	2	HMI He	26236442	2.70	26090315	100.56	60	125	
Ir (IS)	193	2	HMI He	19530925	0.96	19253459	101.44	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7335817
Data File Name	016ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T13:58:06-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	23.325	ppb	69.3	8091329	10	>RL or LOD
Be	9	1	6	-0.008	ppb	-312.2	17	1	
B	11	1	6	5.289	ppb	2.3	7282	10	
Na	23	2	45	98507.305	ppb	3.9	60134459	100000	
Mg	24	2	45	97228.877	ppb	2.9	24615743	100000	
Al	27	2	45	96238.599	ppb	1.2	6786801	100000	
K	39	2	45	99445.391	ppb	2.1	17340219	100000	
V	51	2	72	0.035	ppb	40.4	387	1	
Cr	52	2	72	1.454	ppb	8.1	7012	1	>RL or LOD
Mn	55	2	72	0.418	ppb	13.4	1165	1	
Co	59	2	72	0.231	ppb	21.5	1452	1	
Ni	60	2	72	0.512	ppb	19.3	1248	1	
Cu	63	2	72	0.261	ppb	17.1	2553	1	
Zn	66	2	72	1.229	ppb	18.5	1572	1	>RL or LOD
As	75	2	72	0.004	ppb	1176.9	63	1	
Se	78	1	72	0.086	ppb	17.5	69	1	
Sr	88	2	45	1.726	ppb	9.3	2973	1	>RL or LOD
Nb	93	2	72	175.264	ppb	163.5	80	1	>RL or LOD
Mo	95	2	115	1900.018	ppb	6.0	4063905	2000	
Pd	105	2	115	-172.233	ppb	-37.8	103	1	
Ag	107	2	115	0.067	ppb	7.6	457	1	
Cd	111	2	115	0.313	ppb	26.0	287	1	
Sn	120	2	115	0.046	ppb	50.2	1815	1	
Sb	121	2	115	0.067	ppb	58.5	200	1	
Ba	137	2	115	1.864	ppb	5.2	1181	1	>RL or LOD
W	182	2	165	0.259	ppb	6.2	3771	1	
Pt	195	2	165	66.184	ppb	41.2	180	1	>RL or LOD
Tl	205	2	165	-0.171	ppb	-7.4	1735	1	
Pb	208	2	165	0.089	ppb	9.5	4321	1	
Th	232	2	193	4.589	ppb	2.2	86162	1	>RL or LOD
U	238	2	193	-0.028	ppb	-42.5	1318	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3273654	1.21	3709622	88.25	60	125	
Sc (IS)	45	2	HMI He	2940674	1.16	2724914	107.92	60	125	
Sc (IS)	45	3	No Gas	84308719	3.23	82891317	101.71	60	120	
Ge Internal standard	72	1	HMI H2	20059866	1.10	19447282	103.15	60	125	
Ge Internal standard	72	2	HMI He	2531116	3.55	2615067	96.79	60	125	
In Internal standard	115	2	HMI He	6718434	3.70	6700003	100.28	60	125	
Ho-165	165	2	HMI He	25955346	0.23	26090315	99.48	60	125	
Ir (IS)	193	2	HMI He	17805907	1.42	19253459	92.48	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7335818
Data File Name	017ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:01:36-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	217.836	ppb	11.790	12152474	100	217.8	80	120	>+\-20%
Be	9	1	6	99.095	ppb	5.788	71746	100	99.1	80	120	
B	11	1	6	1005.571	ppb	5.998	757369	100	1005.6	80	120	>+\-20%
V	51	2	72	103.367	ppb	7.250	321425	100	103.4	80	120	
Cr	52	2	72	100.654	ppb	3.864	422939	100	100.7	80	120	
Mn	55	2	72	102.217	ppb	4.231	194876	100	102.2	80	120	
Co	59	2	72	94.627	ppb	2.955	616219	100	94.6	80	120	
Ni	60	2	72	93.902	ppb	2.298	164942	100	93.9	80	120	
Cu	63	2	72	92.663	ppb	0.548	428175	100	92.7	80	120	
Zn	66	2	72	91.116	ppb	2.528	66024	100	91.1	80	120	
As	75	2	72	93.402	ppb	1.668	38423	100	93.4	80	120	
Se	78	1	72	103.798	ppb	4.196	61263	100	103.8	80	120	
Sr	88	2	45	205.965	ppb	1.914	339360	100	206.0	80	120	>+\-20%
Zr	90	2	72	160.672	ppb	16.985	2826	100	160.7	80	120	>+\-20%
Nb	93	2	72	2850.073	ppb	11.057	537	100	2850.1	80	120	>+\-20%
Mo	95	2	115	2112.972	ppb	3.346	4459665	100	2113.0	80	120	>+\-20%
Pd	105	2	115	83.245	ppb	21.857	234	100	83.2	80	120	>+\-20%
Ag	107	2	115	96.505	ppb	2.674	585748	100	96.5	80	120	
Cd	111	2	115	98.891	ppb	2.610	82084	100	98.9	80	120	
Sn	120	2	115	109.981	ppb	1.651	221644	100	110.0	80	120	
Sb	121	2	115	102.644	ppb	0.267	184197	100	102.6	80	120	
Ba	137	2	115	110.702	ppb	2.168	64849	100	110.7	80	120	
W	182	2	165	100.083	ppb	1.609	643734	100	100.1	80	120	
Pt	195	2	165	169.389	ppb	20.278	320	100	169.4	80	120	
Tl	205	2	165	95.863	ppb	3.159	1070705	100	95.9	80	120	
Pb	208	2	165	95.320	ppb	3.776	1404763	100	95.3	80	120	
Th	232	2	193	116.626	ppb	2.876	1432745	100	116.6	80	120	
U	238	2	193	103.382	ppb	3.097	1717869	100	103.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2950654	4.32	3709622	79.54	60	125	
Sc (IS)	45	2	HMI He	2924660	0.72	2724914	107.33	60	125	
Sc (IS)	45	3	No Gas	86077527	2.13	82891317	103.84	60	120	
Ge Internal standard	72	1	HMI H2	19668250	4.03	19447282	101.14	60	125	
Ge Internal standard	72	2	HMI He	2664166	4.06	2615067	101.88	60	125	
In Internal standard	115	2	HMI He	6620898	2.75	6700003	98.82	60	125	
Ho-165	165	2	HMI He	25156526	2.78	26090315	96.42	60	125	
Ir (IS)	193	2	HMI He	17552547	1.68	19253459	91.17	60	125	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	018SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:05:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	9.980	ppb	9.980	151.33	8302803	40000	
Be	9	1	6	0.108	ppb	0.108	38.99	123	2000	
B	11	1	6	27.181	ppb	27.181	2.91	28634	100	
Na	23	2	45	59.383	ppb	59.383	9.38	59228	400000	
Mg	24	2	45	47.639	ppb	47.639	8.07	12534	400000	
Al	27	2	45	40.708	ppb	40.708	8.40	3230	400000	
K	39	2	45	61.743	ppb	61.743	9.51	22707	400000	
V	51	2	72	0.048	ppb	0.048	10.24	464	2000	
Cr	52	2	72	0.054	ppb	0.054	57.00	1578	5000	
Mn	55	2	72	0.013	ppb	0.013	279.47	470	10000	
(Fe)	57	2	72	161.780	ppb	161.780	3.77	14384	400000	
Co	59	2	72	0.042	ppb	0.042	43.51	304	2000	
Ni	60	2	72	0.054	ppb	0.054	88.69	531	5000	
Cu	63	2	72	0.091	ppb	0.091	14.01	1975	5000	
Zn	66	2	72	0.054	ppb	0.054	103.26	844	5000	
As	75	2	72	-0.033	ppb	-0.033	-205.13	53	2000	
Se	78	1	72	0.166	ppb	0.166	35.48	125	2000	
Sr	88	2	45	0.069	ppb	0.069	50.93	230	2000	
Zr	90	2	72	-7.455	ppb	-7.455	-206.03	1301	1000	
Nb	93	2	72	-56.725	ppb	-56.725	-322.84	47	200	
Mo	95	2	115	5.563	ppb	5.563	6.26	13005	2000	
Pd	105	2	115	-181.512	ppb	-181.512	-51.30	107	100	
Ag	107	2	115	0.328	ppb	0.328	7.35	2229	100	
Cd	111	2	115	0.027	ppb	0.027	106.13	50	2000	
Sn	120	2	115	0.115	ppb	0.115	79.74	2112	2000	
Sb	121	2	115	0.197	ppb	0.197	11.74	474	1000	
Ba	137	2	115	0.031	ppb	0.031	252.48	100	5000	
W	182	2	165	0.929	ppb	0.929	3.16	8621	100	
Pt	195	2	165	14.682	ppb	14.682	83.13	110	100	
Tl	205	2	165	0.030	ppb	0.030	82.78	4242	2000	
Pb	208	2	165	0.055	ppb	0.055	34.47	4008	5000	
Th	232	2	193	2.878	ppb	2.878	5.53	71229	2000	
U	238	2	193	0.098	ppb	0.098	18.44	3754	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3669150	0.87	3709622	98.91	60	125	
Sc (IS)	45	2	HMI He	2944844	1.35	2724914	108.07	60	125	
Sc (IS)	45	3	No Gas	86572048	7.72	82891317	104.44	60	120	
Ge Internal standard	72	1	HMI H2	21338471	4.29	19447282	109.72	60	125	
Ge Internal standard	72	2	HMI He	2756777	2.68	2615067	105.42	60	125	
In Internal standard	115	2	HMI He	7261612	1.66	6700003	108.38	60	125	
Ho-165	165	2	HMI He	27262662	2.32	26090315	104.49	60	125	
Ir (IS)	193	2	HMI He	19432257	0.92	19253459	100.93	60	125	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7316798
Data File Name	019_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:08:38-06:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1938.499	ppb	1.446	1634125	2000	96.9	90	110	
V	51	2	72	1947.613	ppb	1.056	5881146	2000	97.4	90	110	
Cr	52	2	72	4821.847	ppb	2.035	19614646	5000	96.4	90	110	
(Cr)	53	2	72	4680.526	ppb	0.792	2365739	5000	93.6	90	110	
Mn	55	2	72	9501.466	ppb	0.435	17553235	10000	95.0	90	110	
Co	59	2	72	1934.118	ppb	1.556	12226615	2000	96.7	90	110	
Ni	60	2	72	4642.487	ppb	1.997	7892760	5000	92.8	90	110	
Cu	63	2	72	4871.032	ppb	1.900	21755806	5000	97.4	90	110	
Zn	66	2	72	4755.119	ppb	2.858	3305147	5000	95.1	90	110	
As	75	2	72	1956.425	ppb	0.916	779163	2000	97.8	90	110	
Se	78	1	72	1969.060	ppb	0.326	1213129	2000	98.5	90	110	
(Se)	82	1	72	2057.225	ppb	2.431	536174	2000	102.9	90	110	
Mo	95	2	115	1996.587	ppb	2.308	4277879	2000	99.8	90	110	
Cd	111	2	115	1983.606	ppb	1.289	1671733	2000	99.2	90	110	
(Cd)	114	2	115	1951.137	ppb	1.727	4091840	2000	97.6	90	110	
Sn	120	2	115	2036.023	ppb	0.954	4135761	2000	101.8	90	110	
Sb	121	2	115	1020.536	ppb	1.343	1858368	1000	102.1	90	110	
Ba	137	2	115	5022.064	ppb	1.285	2985190	5000	100.4	90	110	
Tl	205	2	165	944.363	ppb	1.249	11099344	1000	94.4	90	110	
(Pb)	206	2	165	4807.590	ppb	1.584	18445553	5000	96.2	90	110	
(Pb)	207	2	165	4741.423	ppb	1.720	16502383	5000	94.8	90	110	
Pb	208	2	165	4781.589	ppb	3.134	74247437	5000	95.6	90	110	
Th	232	2	193	1164.702	ppb	0.473	15042166	1000	116.5	90	110	LRS Main CR1 Failed
U	238	2	193	2065.381	ppb	0.570	36710900	2000	103.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3431563	0.67	3709622	92.50	60	125	
Sc (IS)	45	2	HMI He	2829624	2.48	2724914	103.84	60	125	
Sc (IS)	45	3	No Gas	82924400	3.53	82891317	100.04	60	120	
Ge Internal standard	72	1	HMI H2	20513633	1.75	19447282	105.48	60	125	
Ge Internal standard	72	2	HMI He	2584387	0.69	2615067	98.83	60	125	
In Internal standard	115	2	HMI He	6721802	2.28	6700003	100.33	60	125	
Ho-165	165	2	HMI He	26547185	0.47	26090315	101.75	60	125	
Ir (IS)	193	2	HMI He	18799491	1.31	19253459	97.64	60	125	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	020SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:12:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	13.289	ppb	13.289	112.81	7881952	40000	
Be	9	1	6	1.428	ppb	1.428	2.80	1268	2000	
B	11	1	6	65.904	ppb	65.904	3.23	62655	100	
Na	23	2	45	7.595	ppb	7.595	31.44	25303	400000	
Mg	24	2	45	8.427	ppb	8.427	12.85	2383	400000	
Al	27	2	45	8.684	ppb	8.684	16.82	888	400000	
K	39	2	45	17.651	ppb	17.651	16.81	13772	400000	
V	51	2	72	0.828	ppb	0.828	4.94	2786	2000	
Cr	52	2	72	2.042	ppb	2.042	6.73	9556	5000	
Mn	55	2	72	3.503	ppb	3.503	11.64	6885	10000	
(Fe)	57	2	72	40.728	ppb	40.728	3.16	4001	400000	
Co	59	2	72	0.762	ppb	0.762	6.09	4836	2000	
Ni	60	2	72	1.736	ppb	1.736	10.86	3354	5000	
Cu	63	2	72	2.155	ppb	2.155	8.14	11058	5000	
Zn	66	2	72	1.831	ppb	1.831	8.28	2025	5000	
As	75	2	72	1.025	ppb	1.025	30.48	470	2000	
Se	78	1	72	2.391	ppb	2.391	8.27	1460	2000	
Sr	88	2	45	0.773	ppb	0.773	3.35	1281	2000	
Zr	90	2	72	-23.326	ppb	-23.326	-59.67	1078	1000	
Nb	93	2	72	-179.838	ppb	-179.838	-39.17	23	200	
Mo	95	2	115	5.313	ppb	5.313	4.86	11399	2000	
Pd	105	2	115	-219.394	ppb	-219.394	-36.53	80	100	
Ag	107	2	115	0.038	ppb	0.038	12.05	277	100	
Cd	111	2	115	1.009	ppb	1.009	22.43	861	2000	
Sn	120	2	115	20.666	ppb	20.666	13.36	43165	2000	
Sb	121	2	115	0.928	ppb	0.928	8.29	1752	1000	
Ba	137	2	115	1.850	ppb	1.850	20.21	1158	5000	
W	182	2	165	0.080	ppb	0.080	15.15	2579	100	
Pt	195	2	165	25.723	ppb	25.723	55.49	120	100	
Tl	205	2	165	1.429	ppb	1.429	2.06	20053	2000	
Pb	208	2	165	2.228	ppb	2.228	4.86	36720	5000	
Th	232	2	193	24.666	ppb	24.666	7.32	357475	2000	
U	238	2	193	3.235	ppb	3.235	4.43	60729	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3543716	3.21	3709622	95.53	60	125	
Sc (IS)	45	2	HMI He	2702451	3.88	2724914	99.18	60	125	
Sc (IS)	45	3	No Gas	79291010	3.90	82891317	95.66	60	120	
Ge Internal standard	72	1	HMI H2	20071668	1.19	19447282	103.21	60	125	
Ge Internal standard	72	2	HMI He	2582279	0.29	2615067	98.75	60	125	
In Internal standard	115	2	HMI He	6665377	4.30	6700003	99.48	60	125	
Ho-165	165	2	HMI He	25877003	3.24	26090315	99.18	60	125	
Ir (IS)	193	2	HMI He	19225362	2.94	19253459	99.85	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	021_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:15:35-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	119.136	ppb	19.081	10100236	100	119.1	90	110	>+\-10%
Be	9	1	6	49.848	ppb	6.484	41963	50	99.7	90	110	
B	11	1	6	507.211	ppb	2.467	445724	500	101.4	90	110	
Na	23	2	45	51025.489	ppb	3.189	29870534	51000	100.0	90	110	
Mg	24	2	45	11175.912	ppb	1.088	2714380	11000	101.6	90	110	
(Mg)	25	2	45	10519.940	ppb	2.412	398168	11000	95.6	90	110	
Al	27	2	45	1018.111	ppb	4.733	69169	1000	101.8	90	110	
Si	28	2	45	514.612	ppb	7.193	24662	500	102.9	90	110	
P	31	2	45	2042.666	ppb	2.205	12675	2500	81.7	90	110	>+\-10%
K	39	2	45	11339.557	ppb	5.397	1906370	11000	103.1	90	110	
Ca	40	1	45	11207.752	ppb	1.638	127610275	11000	101.9	90	110	
(Ca)	44	1	45	9585.870	ppb	1.294	3858408	11000	87.1	90	110	>+\-10%
Ti	47	2	45	49.614	ppb	5.395	4045	50	99.2	90	110	
V	51	2	72	49.288	ppb	1.562	153288	50	98.6	90	110	
Cr	52	2	72	50.902	ppb	2.827	214113	50	101.8	90	110	
Mn	55	2	72	49.189	ppb	4.562	93800	50	98.4	90	110	
Fe	56	1	72	1029.579	ppb	2.567	18206423	20000	5.1	90	110	>+\-10%
(Fe)	56	2	72	1044.949	ppb	1.340	3309885	20000	5.2	90	110	>+\-10%
(Fe)	57	2	72	1026.666	ppb	2.181	83443	1000	102.7	90	110	
Co	59	2	72	49.022	ppb	3.259	318505	50	98.0	90	110	
Ni	60	2	72	48.760	ppb	2.091	85626	50	97.5	90	110	
Cu	63	2	72	47.494	ppb	1.950	219520	50	95.0	90	110	
Zn	66	2	72	48.759	ppb	6.585	35584	50	97.5	90	110	
As	75	2	72	48.916	ppb	1.857	20088	50	97.8	90	110	
Se	78	1	72	51.905	ppb	0.793	31007	50	103.8	90	110	
Sr	88	2	45	104.226	ppb	2.902	165614	100	104.2	90	110	
Zr	90	2	72	32.832	ppb	73.308	1632	50	65.7	90	110	>+\-10%
Nb	93	2	72	112.713	ppb	76.886	73	100	112.7	90	110	>+\-10%
Mo	95	2	115	53.144	ppb	7.109	116963	50	106.3	90	110	
Pd	105	2	115	-119.526	ppb	-98.163	133	50	-239.1	90	110	>+\-10%
Ag	107	2	115	50.373	ppb	4.617	318866	50	100.7	90	110	
Cd	111	2	115	49.901	ppb	5.446	43198	50	99.8	90	110	
Sn	120	2	115	59.030	ppb	5.312	124810	50	118.1	90	110	>+\-10%
Sb	121	2	115	51.764	ppb	3.916	96907	50	103.5	90	110	
Ba	137	2	115	52.706	ppb	7.405	32210	50	105.4	90	110	
W	182	2	165	51.827	ppb	4.099	350793	50	103.7	90	110	
Pt	195	2	165	23.356	ppb	123.443	120	50	46.7	90	110	>+\-10%
Tl	205	2	165	50.317	ppb	5.115	591396	50	100.6	90	110	
Pb	208	2	165	51.161	ppb	2.562	793017	50	102.3	90	110	
Bi	209	2	193	-614.702	ppb	-105.339	1872	500	-122.9	90	110	>+\-10%
Th	232	2	193	64.513	ppb	2.130	865851	50	129.0	90	110	>+\-10%
U	238	2	193	53.511	ppb	2.655	956119	50	107.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3426332	2.89	3709622	92.36	60	125	
Sc (IS)	45	2	HMI He	2820726	2.18	2724914	103.52	60	125	
Sc (IS)	45	3	No Gas	83582118	4.89	82891317	100.83	60	120	
Ge Internal standard	72	1	HMI H2	19882855	3.98	19447282	102.24	60	125	
Ge Internal standard	72	2	HMI He	2657178	2.23	2615067	101.61	60	125	
In Internal standard	115	2	HMI He	6912686	5.19	6700003	103.17	60	125	
Ho-165	165	2	HMI He	26409266	2.59	26090315	101.22	60	125	
Ir (IS)	193	2	HMI He	18858173	1.11	19253459	97.95	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	022_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:19:07-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	15.478	ppb	143.7	7879828	0.05	>RL
Be	9	1	6	0.120	ppb	55.9	143	0.5	
B	11	1	6	26.893	ppb	4.9	30195	0.1	>RL
Na	23	2	45	24.176	ppb	9.2	37024	25	
Mg	24	2	45	6.653	ppb	7.8	2109	25	
Al	27	2	45	1.598	ppb	50.8	460	15	
K	39	2	45	11.231	ppb	19.6	13639	50	
V	51	2	72	0.076	ppb	59.2	537	1	
Cr	52	2	72	0.243	ppb	29.3	2326	1	
Mn	55	2	72	0.362	ppb	4.4	1131	0.5	
(Fe)	57	2	72	15.365	ppb	18.2	2096	25	
Co	59	2	72	0.094	ppb	27.4	644	0.5	
Ni	60	2	72	0.219	ppb	13.3	808	1	
Cu	63	2	72	0.279	ppb	29.6	2786	1	
Zn	66	2	72	0.268	ppb	26.6	978	5	
As	75	2	72	0.108	ppb	97.5	110	1	
Se	78	1	72	0.220	ppb	47.2	149	1	
Sr	88	2	45	0.074	ppb	44.2	234	1	
Zr	90	2	72	6.645	ppb	556.8	1401	1	>RL
Nb	93	2	72	-246.369	ppb	-34.8	13	2	
Mo	95	2	115	0.546	ppb	10.2	1318	0.5	>RL
Pd	105	2	115	-120.240	ppb	-79.7	133	1	
Ag	107	2	115	0.321	ppb	10.8	2059	1	
Cd	111	2	115	0.105	ppb	32.8	113	0.5	
Sn	120	2	115	3.965	ppb	1.9	9946	1	>RL
Sb	121	2	115	0.104	ppb	68.4	274	1	
Ba	137	2	115	0.174	ppb	19.6	180	0.5	
W	182	2	165	0.367	ppb	7.6	4595	1	
Pt	195	2	165	-10.172	ppb	-58.1	70	1	
Tl	205	2	165	0.075	ppb	39.9	4665	0.1	
Pb	208	2	165	0.253	ppb	4.5	6984	0.5	
Th	232	2	193	6.965	ppb	5.2	126493	1	>RL
U	238	2	193	0.388	ppb	7.3	9145	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3906479	0.76	3709622	105.31	60	125	
Sc (IS)	45	2	HMI He	2890682	2.46	2724914	106.08	60	125	
Sc (IS)	45	3	No Gas	81604547	1.46	82891317	98.45	60	120	
Ge Internal standard	72	1	HMI H2	19992359	2.22	19447282	102.80	60	125	
Ge Internal standard	72	2	HMI He	2687512	4.03	2615067	102.77	60	125	
In Internal standard	115	2	HMI He	6841771	0.52	6700003	102.12	60	125	
Ho-165	165	2	HMI He	26605297	2.09	26090315	101.97	60	125	
Ir (IS)	193	2	HMI He	19557877	1.13	19253459	101.58	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	023LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:34:33-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	5.677	ppb	368.439	8144798	50	11.4	70	130	>+/-30%
Be	9	1	6	1.041	ppb	12.867	1018	1	104.1	70	130	
Na	23	2	45	58.823	ppb	6.292	54414	50	117.6	70	130	
Mg	24	2	45	58.374	ppb	1.864	14106	50	116.7	70	130	
Al	27	2	45	55.340	ppb	14.682	3931	50	110.7	70	130	
K	39	2	45	111.251	ppb	6.741	28962	100	111.3	70	130	
V	51	2	72	5.173	ppb	6.986	16274	5	103.5	70	130	
Cr	52	2	72	2.086	ppb	3.230	9969	2	104.3	70	130	
Mn	55	2	72	1.278	ppb	12.713	2843	1	127.8	70	130	
(Fe)	57	2	72	61.583	ppb	3.222	5767	50	123.2	70	130	
Co	59	2	72	1.022	ppb	3.010	6631	1	102.2	70	130	
Ni	60	2	72	1.942	ppb	8.944	3794	2	97.1	70	130	
Cu	63	2	72	2.367	ppb	6.382	12293	2	118.3	70	130	
Zn	66	2	72	10.911	ppb	9.604	8527	10	109.1	70	130	
As	75	2	72	5.018	ppb	6.180	2109	5	100.4	70	130	
Se	78	1	72	5.212	ppb	3.841	3192	5	104.2	70	130	
Sr	88	2	45	1.064	ppb	7.645	1735	1	106.4	70	130	
Zr	90	2	72	3.426	ppb	404.632	1351	0.5	685.2	70	130	>+/-30%
Nb	93	2	72	-163.858	ppb	-110.689	27	2	-8192.9	70	130	>+/-30%
Mo	95	2	115	2.252	ppb	4.630	5099	2	112.6	70	130	
Pd	105	2	115	-198.080	ppb	-14.437	93	1	-19808.0	70	130	>+/-30%
Ag	107	2	115	0.960	ppb	3.836	6141	1	96.0	70	130	
Cd	111	2	115	1.037	ppb	6.569	924	1	103.7	70	130	
Sn	120	2	115	11.356	ppb	2.061	25521	10	113.6	70	130	
Sb	121	2	115	1.825	ppb	9.359	3504	2	91.2	70	130	
Ba	137	2	115	1.130	ppb	3.720	767	1	113.0	70	130	
W	182	2	165	5.397	ppb	2.498	38497	1	539.7	70	130	>+/-30%
Pt	195	2	165	32.663	ppb	49.044	133	1	3266.3	70	130	>+/-30%
Tl	205	2	165	0.858	ppb	7.954	13813	1	85.8	70	130	
Pb	208	2	165	1.165	ppb	4.033	21053	1	116.5	70	130	
Th	232	2	193	3.410	ppb	4.643	78698	2	170.5	70	130	>+/-30%
U	238	2	193	1.029	ppb	1.001	20958	1	102.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3870900	0.15	3709622	104.35	60	125	
Sc (IS)	45	2	HMI He	2722744	3.74	2724914	99.92	60	125	
Sc (IS)	45	3	No Gas	79254428	2.84	82891317	95.61	60	120	
Ge Internal standard	72	1	HMI H2	20286046	3.01	19447282	104.31	60	125	
Ge Internal standard	72	2	HMI He	2644028	0.56	2615067	101.11	60	125	
In Internal standard	115	2	HMI He	6922783	0.63	6700003	103.33	60	125	
Ho-165	165	2	HMI He	26453207	0.79	26090315	101.39	60	125	
Ir (IS)	193	2	HMI He	19529580	1.50	19253459	101.43	60	125	

Blank Report

Sample Table

Sample Name	MB 280-584457/1-A
Data File Name	024_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:38:07-06:00
Sample Type	Blank
Dilution	1
Comment	584457 soil 6020b
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	6	2.206	ppb	257.1088364	8436590	0.05
Be	9	1	6	0.003	ppb	603.1791412	30	0.5
Na	23	2	45	68.838	ppb	2.988027394	65427	25
Mg	24	2	45	21.110	ppb	10.54527082	5847	25
Al	27	2	45	6.483	ppb	22.82155387	821	15
K	39	2	45	12.343	ppb	32.15077284	14173	50
V	51	2	72	0.067	ppb	47.66232013	504	1
Cr	52	2	72	1.118	ppb	6.025948781	5944	1
Mn	55	2	72	1.073	ppb	8.689043062	2459	0.5
(Fe)	57	2	72	28.262	ppb	18.45174134	3100	25
Co	59	2	72	0.092	ppb	21.05369297	617	0.5
Ni	60	2	72	0.498	ppb	20.84609333	1281	1
Cu	63	2	72	1.484	ppb	16.42730204	8247	1
Zn	66	2	72	1.753	ppb	5.641439673	2022	5
As	75	2	72	0.053	ppb	147.7102533	87	1
Se	78	1	72	0.039	ppb	30.17041627	43	1
Sr	88	2	45	0.490	ppb	15.76184977	934	1
Zr	90	2	72	14.826	ppb	148.3192405	1455	1
Nb	93	2	72	-25.960	ppb	-183.3943142	50	2
Mo	95	2	115	0.573	ppb	12.61788168	1418	0.5
Pd	105	2	115	-189.034	ppb	-25.37708382	100	1
Ag	107	2	115	0.020	ppb	42.30667922	174	1
Cd	111	2	115	0.131	ppb	65.83423015	140	0.5
Sn	120	2	115	12.157	ppb	2.135526852	27674	1
Sb	121	2	115	0.176	ppb	9.640313133	420	1
Ba	137	2	115	0.690	ppb	6.945481136	507	0.5
W	182	2	165	0.191	ppb	14.72584585	3574	1
Pt	195	2	165	17.403	ppb	142.7407091	117	1
Tl	205	2	165	-0.041	ppb	-20.52583384	3471	0.1
Pb	208	2	165	0.283	ppb	9.656192335	7835	0.5
Th	232	2	193	15.579	ppb	4.397135223	239016	1
U	238	2	193	0.174	ppb	13.81786363	5096	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3727549	6.70	3709622	100.48	60	125	
Sc (IS)	45	2	HMI He	2963535	2.41	2724914	108.76	60	125	
Sc (IS)	45	3	No Gas	81844872	0.47	82891317	98.74	60	120	
Ge Internal standard	72	1	HMI H2	20827982	3.83	19447282	107.10	60	125	
Ge Internal standard	72	2	HMI He	2649899	4.04	2615067	101.33	60	125	
In Internal standard	115	2	HMI He	7045554	1.38	6700003	105.16	60	125	
Ho-165	165	2	HMI He	27947106	2.04	26090315	107.12	60	125	
Ir (IS)	193	2	HMI He	19301820	4.60	19253459	100.25	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584457/2-A
Data File Name	025LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:41:40-06:00
Sample Type	LCS-s
Dilution	1
Analyst	Denver Metals
Comment	584457 soil 6020b
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	217.060	217.060	ppb	10.710	12441736	2000	10.9	80	120	NewName Main CR1 Failed
Be	9	1	6	191.937	191.937	ppb	3.212	171288	200	96.0	80	120	
Na	23	2	45	4220.507	4220.507	ppb	6.996	2567463	200	2110.3	80	120	NewName Main CR1 Failed
Mg	24	2	45	4241.023	4241.023	ppb	6.424	1061953	200000	2.1	80	120	NewName Main CR1 Failed
Al	27	2	45	3992.515	3992.515	ppb	5.774	278649	200000	2.0	80	120	NewName Main CR1 Failed
K	39	2	45	4144.429	4144.429	ppb	1.744	726564	200000	2.1	80	120	NewName Main CR1 Failed
V	51	2	72	196.159	196.159	ppb	3.617	631918	200	98.1	80	120	
Cr	52	2	72	197.878	197.878	ppb	2.631	859834	200	98.9	80	120	
(Cr)	53	2	72	196.225	196.225	ppb	3.290	106106	200	98.1	80	120	
Mn	55	2	72	187.014	187.014	ppb	0.417	368912	200	93.5	80	120	
(Fe)	57	2	72	3914.445	3914.445	ppb	1.748	327478	200000	2.0	80	120	NewName Main CR1 Failed
Co	59	2	72	199.535	199.535	ppb	5.379	1345043	200	99.8	80	120	
Ni	60	2	72	199.972	199.972	ppb	4.617	363080	200	100.0	80	120	
Cu	63	2	72	190.973	190.973	ppb	0.524	911220	200	95.5	80	120	
Zn	66	2	72	185.787	185.787	ppb	0.936	138508	200	92.9	80	120	
As	75	2	72	180.029	180.029	ppb	1.408	76518	200	90.0	80	120	
Se	78	1	72	183.820	183.820	ppb	3.962	109180	200	91.9	80	120	
(Se)	82	1	72	154.856	154.856	ppb	8.413	50198	200	77.4	80	120	NewName Main CR1 Failed
Sr	88	2	45	409.552	409.552	ppb	2.371	671078	200	204.8	80	120	NewName Main CR1 Failed
Nb	93	2	72	-112.774	-112.774	ppb	-77.027	37	400	-28.2	80	120	NewName Main CR1 Failed
Mo	95	2	115	207.431	207.431	ppb	3.288	460324	200	103.7	80	120	
Pd	105	2	115	-104.538	-104.538	ppb	-139.031	143	200	-52.3	80	120	NewName Main CR1 Failed
Ag	107	2	115	188.231	188.231	ppb	7.122	1200082	200	94.1	80	120	
Cd	111	2	115	196.093	196.093	ppb	3.571	171115	200	98.0	80	120	
(Cd)	114	2	115	194.690	194.690	ppb	2.075	422885	200	97.3	80	120	
Sn	120	2	115	214.228	214.228	ppb	3.165	452036	200	107.1	80	120	
Sb	121	2	115	194.253	194.253	ppb	1.866	366358	200	97.1	80	110	
Ba	137	2	115	206.436	206.436	ppb	2.361	127116	200	103.2	80	120	
W	182	2	165	1.803	1.803	ppb	5.590	14478	200	0.9	80	120	NewName Main CR1 Failed
Pt	195	2	165	17.981	17.981	ppb	38.742	113	200	9.0	80	120	NewName Main CR1 Failed
Tl	205	2	165	199.184	199.184	ppb	2.187	2372278	200	99.6	80	120	
(Pb)	206	2	165	210.548	210.548	ppb	3.237	817981	200	105.3	80	120	
(Pb)	207	2	165	198.962	198.962	ppb	2.727	702255	200	99.5	80	120	
Pb	208	2	165	204.384	204.384	ppb	2.673	3214306	200	102.2	80	120	
Th	232	2	193	208.412	208.412	ppb	1.783	2887692	200	104.2	80	120	
U	238	2	193	198.355	198.355	ppb	1.582	3748249	200	99.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3633128	4.16	3709622	97.94	60	125	
Sc (IS)	45	2	HMI He	2910478	3.27	2724914	106.81	60	125	
Sc (IS)	45	3	No Gas	84470318	2.84	82891317	101.90	60	120	
Ge Internal standard	72	1	HMI H2	19793279	4.21	19447282	101.78	60	125	
Ge Internal standard	72	2	HMI He	2756186	1.10	2615067	105.40	60	125	
In Internal standard	115	2	HMI He	6962385	3.30	6700003	103.92	60	125	
Ho-165	165	2	HMI He	26876962	3.25	26090315	103.02	60	125	
Ir (IS)	193	2	HMI He	19976834	0.96	19253459	103.76	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-A@10
Data File Name	026SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:45:11-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	22.359	ppb	22.359	30.05	8602739	40000	
Be	9	1	6	1.010	ppb	1.010	10.02	898	2000	
B	11	1	6	13.222	ppb	13.222	6.56	14911	100	
Na	23	2	45	169.910	ppb	169.910	5.71	124972	400000	
Mg	24	2	45	9357.153	ppb	9357.153	5.60	2338479	400000	
Al	27	2	45	15032.115	ppb	15032.115	4.51	1046757	400000	
K	39	2	45	4241.980	ppb	4241.980	4.79	741518	400000	
V	51	2	72	30.747	ppb	30.747	3.42	93718	2000	
Cr	52	2	72	19.363	ppb	19.363	3.95	80527	5000	
Mn	55	2	72	2553.013	ppb	2553.013	3.28	4747752	10000	
(Fe)	57	2	72	18495.235	ppb	18495.235	2.21	1457308	400000	
Co	59	2	72	11.887	ppb	11.887	4.33	75634	2000	
Ni	60	2	72	20.043	ppb	20.043	5.89	34702	5000	
Cu	63	2	72	291.168	ppb	291.168	2.83	1310235	5000	
Zn	66	2	72	477.218	ppb	477.218	3.07	334539	5000	
As	75	2	72	43.798	ppb	43.798	5.89	17617	2000	
Se	78	1	72	0.599	ppb	0.599	16.79	393	2000	
Sr	88	2	45	62.404	ppb	62.404	5.63	102124	2000	
Zr	90	2	72	3453.956	ppb	3453.956	2.39	32784	1000	>LDR
Nb	93	2	72	11577.783	ppb	11577.783	4.18	1965	200	>LDR
Mo	95	2	115	1.057	ppb	1.057	8.21	2416	2000	
Pd	105	2	115	-100.312	ppb	-100.312	-36.67	143	100	
Ag	107	2	115	2.890	ppb	2.890	11.25	18078	100	
Cd	111	2	115	1.451	ppb	1.451	6.33	1261	2000	
Sn	120	2	115	5.059	ppb	5.059	1.24	12137	2000	
Sb	121	2	115	0.375	ppb	0.375	14.02	774	1000	
Ba	137	2	115	231.451	ppb	231.451	1.18	139266	5000	
W	182	2	165	0.243	ppb	0.243	9.74	3811	100	
Pt	195	2	165	9.309	ppb	9.309	268.09	100	100	
Tl	205	2	165	0.325	ppb	0.325	4.22	7723	2000	
Pb	208	2	165	266.348	ppb	266.348	0.42	4205731	5000	
Th	232	2	193	16.512	ppb	16.512	1.35	246181	2000	
U	238	2	193	0.897	ppb	0.897	1.53	17955	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3511267	1.66	3709622	94.65	60	125	
Sc (IS)	45	2	HMI He	2905830	3.45	2724914	106.64	60	125	
Sc (IS)	45	3	No Gas	83671729	8.15	82891317	100.94	60	120	
Ge Internal standard	72	1	HMI H2	20883270	2.23	19447282	107.38	60	125	
Ge Internal standard	72	2	HMI He	2602153	2.53	2615067	99.51	60	125	
In Internal standard	115	2	HMI He	6803249	2.11	6700003	101.54	60	125	
Ho-165	165	2	HMI He	26977059	2.19	26090315	103.40	60	125	
Ir (IS)	193	2	HMI He	18919049	1.31	19253459	98.26	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-Asd@50
Data File Name	027SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:48:43-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	23.576	ppb	23.576	93.43	8321620	40000	
Be	9	1	6	0.274	ppb	0.274	22.30	260	2000	
B	11	1	6	6.824	ppb	6.824	4.50	9128	100	
Na	23	2	45	35.479	ppb	35.479	3.68	42679	400000	
Mg	24	2	45	2083.813	ppb	2083.813	1.56	505496	400000	
Al	27	2	45	3350.884	ppb	3350.884	3.27	226591	400000	
K	39	2	45	972.273	ppb	972.273	0.95	173626	400000	
V	51	2	72	6.574	ppb	6.574	4.43	20927	2000	
Cr	52	2	72	4.260	ppb	4.260	6.51	19296	5000	
Mn	55	2	72	555.664	ppb	555.664	7.23	1066435	10000	
(Fe)	57	2	72	4056.437	ppb	4056.437	3.12	330480	400000	
Co	59	2	72	2.532	ppb	2.532	4.38	16644	2000	
Ni	60	2	72	4.354	ppb	4.354	0.87	8113	5000	
Cu	63	2	72	65.834	ppb	65.834	2.53	306918	5000	
Zn	66	2	72	105.968	ppb	105.968	1.97	77291	5000	
As	75	2	72	9.953	ppb	9.953	0.84	4185	2000	
Se	78	1	72	0.087	ppb	0.087	33.49	73	2000	
Sr	88	2	45	13.756	ppb	13.756	1.33	21919	2000	
Zr	90	2	72	770.006	ppb	770.006	0.76	8587	1000	
Nb	93	2	72	1911.881	ppb	1911.881	22.27	380	200	>LDR
Mo	95	2	115	0.268	ppb	0.268	5.85	737	2000	
Pd	105	2	115	-153.324	ppb	-153.324	-36.30	120	100	
Ag	107	2	115	0.497	ppb	0.497	16.26	3274	100	
Cd	111	2	115	0.388	ppb	0.388	20.99	370	2000	
Sn	120	2	115	1.769	ppb	1.769	4.37	5603	2000	
Sb	121	2	115	0.076	ppb	0.076	30.18	230	1000	
Ba	137	2	115	49.237	ppb	49.237	1.93	30933	5000	
W	182	2	165	0.053	ppb	0.053	7.55	2463	100	
Pt	195	2	165	5.750	ppb	5.750	779.53	93	100	
Tl	205	2	165	-0.101	ppb	-0.101	-18.52	2600	2000	
Pb	208	2	165	60.654	ppb	60.654	1.39	943768	5000	
Th	232	2	193	6.214	ppb	6.214	3.26	117938	2000	
U	238	2	193	0.148	ppb	0.148	7.30	4766	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3490716	1.82	3709622	94.10	60	125	
Sc (IS)	45	2	HMI He	2815302	1.03	2724914	103.32	60	125	
Sc (IS)	45	3	No Gas	78086134	0.82	82891317	94.20	60	120	
Ge Internal standard	72	1	HMI H2	20965783	1.72	19447282	107.81	60	125	
Ge Internal standard	72	2	HMI He	2685713	2.85	2615067	102.70	60	125	
In Internal standard	115	2	HMI He	7089722	1.74	6700003	105.82	60	125	
Ho-165	165	2	HMI He	26517155	0.36	26090315	101.64	60	125	
Ir (IS)	193	2	HMI He	19816973	1.56	19253459	102.93	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-B MS@10
Data File Name	028SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:52:14-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	41.878	ppb	41.878	55.44	8362772	40000	
Be	9	1	6	21.661	ppb	21.661	4.10	18164	2000	
B	11	1	6	14.977	ppb	14.977	4.95	15976	100	
Na	23	2	45	661.566	ppb	661.566	7.89	405557	400000	
Mg	24	2	45	10482.465	ppb	10482.465	9.67	2522288	400000	
Al	27	2	45	19761.117	ppb	19761.117	4.91	1326199	400000	
K	39	2	45	5653.416	ppb	5653.416	4.61	948849	400000	
V	51	2	72	50.415	ppb	50.415	10.98	159744	2000	
Cr	52	2	72	39.099	ppb	39.099	10.25	167953	5000	
Mn	55	2	72	3685.755	ppb	3685.755	5.11	7152428	10000	
(Fe)	57	2	72	18229.072	ppb	18229.072	5.17	1497911	400000	
Co	59	2	72	28.413	ppb	28.413	2.12	188779	2000	
Ni	60	2	72	39.982	ppb	39.982	1.24	71933	5000	
Cu	63	2	72	319.640	ppb	319.640	3.85	1501824	5000	
Zn	66	2	72	1057.719	ppb	1057.719	0.74	773938	5000	
As	75	2	72	65.023	ppb	65.023	2.62	27272	2000	
Se	78	1	72	18.566	ppb	18.566	4.68	11628	2000	
Sr	88	2	45	111.816	ppb	111.816	6.60	176214	2000	
Zr	90	2	72	4153.039	ppb	4153.039	8.15	40795	1000	>LDR
Nb	93	2	72	15823.665	ppb	15823.665	13.86	2773	200	>LDR
Mo	95	2	115	16.712	ppb	16.712	2.17	37210	2000	
Pd	105	2	115	-50.346	ppb	-50.346	-191.20	174	100	
Ag	107	2	115	21.395	ppb	21.395	3.96	136595	100	
Cd	111	2	115	22.512	ppb	22.512	3.66	19671	2000	
Sn	120	2	115	8.678	ppb	8.678	3.38	20025	2000	
Sb	121	2	115	1.712	ppb	1.712	4.33	3310	1000	
Ba	137	2	115	262.413	ppb	262.413	2.36	161541	5000	
W	182	2	165	0.401	ppb	0.401	13.50	4802	100	
Pt	195	2	165	-7.351	ppb	-7.351	-333.62	73	100	
Tl	205	2	165	20.619	ppb	20.619	2.03	245038	2000	
Pb	208	2	165	289.752	ppb	289.752	3.21	4483387	5000	
Th	232	2	193	27.245	ppb	27.245	3.47	388169	2000	
U	238	2	193	20.573	ppb	20.573	1.85	372649	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3406198	3.21	3709622	91.82	60	125	
Sc (IS)	45	2	HMI He	2800861	3.65	2724914	102.79	60	125	
Sc (IS)	45	3	No Gas	81673487	3.49	82891317	98.53	60	120	
Ge Internal standard	72	1	HMI H2	20837570	2.77	19447282	107.15	60	125	
Ge Internal standard	72	2	HMI He	2717992	5.68	2615067	103.94	60	125	
In Internal standard	115	2	HMI He	6959474	0.29	6700003	103.87	60	125	
Ho-165	165	2	HMI He	26445600	2.11	26090315	101.36	60	125	
Ir (IS)	193	2	HMI He	19064640	2.18	19253459	99.02	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-C MSD@10
Data File Name	029SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:55:46-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	41.066	ppb	41.066	47.54	8686778	40000	
Be	9	1	6	21.942	ppb	21.942	10.50	18722	2000	
B	11	1	6	17.598	ppb	17.598	5.41	18611	100	
Na	23	2	45	667.149	ppb	667.149	5.57	429388	400000	
Mg	24	2	45	12274.244	ppb	12274.244	8.80	3101648	400000	
Al	27	2	45	22406.767	ppb	22406.767	11.44	1575842	400000	
K	39	2	45	6579.463	ppb	6579.463	1.40	1158195	400000	
V	51	2	72	64.359	ppb	64.359	3.70	198105	2000	
Cr	52	2	72	47.371	ppb	47.371	3.81	197462	5000	
Mn	55	2	72	3797.851	ppb	3797.851	1.78	7145920	10000	
(Fe)	57	2	72	23199.967	ppb	23199.967	3.79	1850007	400000	
Co	59	2	72	32.922	ppb	32.922	3.36	211972	2000	
Ni	60	2	72	46.505	ppb	46.505	6.50	80957	5000	
Cu	63	2	72	400.100	ppb	400.100	3.23	1822146	5000	
Zn	66	2	72	781.415	ppb	781.415	0.50	553936	5000	
As	75	2	72	74.507	ppb	74.507	1.81	30286	2000	
Se	78	1	72	18.574	ppb	18.574	4.51	11573	2000	
Sr	88	2	45	118.910	ppb	118.910	4.81	196830	2000	
Zr	90	2	72	5365.726	ppb	5365.726	3.52	50781	1000	>LDR
Nb	93	2	72	20425.975	ppb	20425.975	3.18	3464	200	>LDR
Mo	95	2	115	16.873	ppb	16.873	5.01	37381	2000	
Pd	105	2	115	-62.331	ppb	-62.331	-169.98	167	100	
Ag	107	2	115	22.480	ppb	22.480	3.12	142883	100	
Cd	111	2	115	23.811	ppb	23.811	3.84	20727	2000	
Sn	120	2	115	8.319	ppb	8.319	1.74	19193	2000	
Sb	121	2	115	1.291	ppb	1.291	2.62	2506	1000	
Ba	137	2	115	325.452	ppb	325.452	3.37	199405	5000	
W	182	2	165	0.353	ppb	0.353	10.63	4452	100	
Pt	195	2	165	6.071	ppb	6.071	221.25	93	100	
Tl	205	2	165	21.133	ppb	21.133	1.87	249737	2000	
Pb	208	2	165	287.842	ppb	287.842	1.12	4431129	5000	
Th	232	2	193	32.110	ppb	32.110	5.44	443308	2000	
U	238	2	193	21.750	ppb	21.750	5.41	386443	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3472044	2.36	3709622	93.60	60	125	
Sc (IS)	45	2	HMI He	2940375	3.64	2724914	107.91	60	125	
Sc (IS)	45	3	No Gas	82432974	2.62	82891317	99.45	60	120	
Ge Internal standard	72	1	HMI H2	20716381	0.45	19447282	106.53	60	125	
Ge Internal standard	72	2	HMI He	2632178	2.42	2615067	100.65	60	125	
In Internal standard	115	2	HMI He	6930099	2.21	6700003	103.43	60	125	
Ho-165	165	2	HMI He	26304587	1.73	26090315	100.82	60	125	
Ir (IS)	193	2	HMI He	18728829	4.51	19253459	97.28	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-Apds@10
Data File Name	030SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T14:59:15-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	268.882	ppb	268.882	4.39	13225833	40000	
Be	9	1	6	210.110	ppb	210.110	1.81	180094	2000	
B	11	1	6	13.564	ppb	13.564	5.27	15118	100	
Na	23	2	45	235.967	ppb	235.967	3.10	163665	400000	
Mg	24	2	45	10023.323	ppb	10023.323	2.76	2489313	400000	
Al	27	2	45	18790.134	ppb	18790.134	4.43	1300113	400000	
K	39	2	45	4549.235	ppb	4549.235	2.18	789216	400000	
V	51	2	72	240.207	ppb	240.207	1.75	753547	2000	
Cr	52	2	72	233.246	ppb	233.246	4.05	986256	5000	
Mn	55	2	72	2841.663	ppb	2841.663	1.29	5453442	10000	
(Fe)	57	2	72	19264.501	ppb	19264.501	0.54	1566365	400000	
Co	59	2	72	228.173	ppb	228.173	1.27	1498118	2000	
Ni	60	2	72	230.600	ppb	230.600	3.98	407413	5000	
Cu	63	2	72	489.692	ppb	489.692	4.07	2271926	5000	
Zn	66	2	72	705.355	ppb	705.355	2.16	509840	5000	
As	75	2	72	255.396	ppb	255.396	3.67	105639	2000	
Se	78	1	72	215.336	ppb	215.336	2.41	135701	2000	
Sr	88	2	45	283.771	ppb	283.771	0.49	461136	2000	
Zr	90	2	72	4472.841	ppb	4472.841	2.13	43397	1000	>LDR
Nb	93	2	72	12183.522	ppb	12183.522	7.35	2129	200	>LDR
Mo	95	2	115	225.225	ppb	225.225	1.41	498218	2000	
Pd	105	2	115	894.531	ppb	894.531	36.94	681	100	>LDR
Ag	107	2	115	58.055	ppb	58.055	1.25	369353	100	
Cd	111	2	115	222.993	ppb	222.993	1.28	193990	2000	
Sn	120	2	115	230.372	ppb	230.372	1.64	484461	2000	
Sb	121	2	115	214.304	ppb	214.304	2.21	402815	1000	
Ba	137	2	115	472.757	ppb	472.757	1.43	290009	5000	
W	182	2	165	80.921	ppb	80.921	2.03	536731	100	
Pt	195	2	165	5.070	ppb	5.070	380.12	90	100	
Tl	205	2	165	222.855	ppb	222.855	3.75	2561162	2000	
Pb	208	2	165	519.473	ppb	519.473	1.69	7879478	5000	
Th	232	2	193	57.444	ppb	57.444	16.73	772844	2000	
U	238	2	193	232.742	ppb	232.742	2.77	4157596	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3489590	1.91	3709622	94.07	60	125	
Sc (IS)	45	2	HMI He	2884542	1.91	2724914	105.86	60	125	
Sc (IS)	45	3	No Gas	81729642	5.47	82891317	98.60	60	120	
Ge Internal standard	72	1	HMI H2	20980899	0.57	19447282	107.89	60	125	
Ge Internal standard	72	2	HMI He	2684077	2.11	2615067	102.64	60	125	
In Internal standard	115	2	HMI He	6936720	0.50	6700003	103.53	60	125	
Ho-165	165	2	HMI He	25914524	2.92	26090315	99.33	60	125	
Ir (IS)	193	2	HMI He	18899161	4.70	19253459	98.16	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	031_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:02:45-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	115.370	ppb	6.635	10354256	100	115.4	90	110	>+\-10%
Be	9	1	6	51.884	ppb	0.987	43397	50	103.8	90	110	
B	11	1	6	506.429	ppb	3.736	442128	500	101.3	90	110	
Na	23	2	45	50917.371	ppb	1.508	30315566	51000	99.8	90	110	
Mg	24	2	45	11342.067	ppb	3.365	2800256	11000	103.1	90	110	
(Mg)	25	2	45	10468.552	ppb	2.084	402741	11000	95.2	90	110	
Al	27	2	45	1037.540	ppb	6.454	71631	1000	103.8	90	110	
Si	28	2	45	507.026	ppb	5.628	24755	500	101.4	90	110	
P	31	2	45	2067.795	ppb	2.582	13042	2500	82.7	90	110	>+\-10%
K	39	2	45	11461.434	ppb	1.816	1958725	11000	104.2	90	110	
Ca	40	1	45	11521.181	ppb	2.489	138433057	11000	104.7	90	110	
(Ca)	44	1	45	9901.540	ppb	2.427	4205277	11000	90.0	90	110	
Ti	47	2	45	56.818	ppb	3.121	4699	50	113.6	90	110	>+\-10%
V	51	2	72	50.157	ppb	0.908	155471	50	100.3	90	110	
Cr	52	2	72	51.457	ppb	1.243	215757	50	102.9	90	110	
Mn	55	2	72	50.783	ppb	2.084	96551	50	101.6	90	110	
Fe	56	1	72	1080.937	ppb	0.375	20412512	20000	5.4	90	110	>+\-10%
(Fe)	56	2	72	1088.436	ppb	4.092	3434648	20000	5.4	90	110	>+\-10%
(Fe)	57	2	72	1097.225	ppb	0.251	88797	1000	109.7	90	110	
Co	59	2	72	50.295	ppb	1.699	325793	50	100.6	90	110	
Ni	60	2	72	50.700	ppb	1.084	88737	50	101.4	90	110	
Cu	63	2	72	49.928	ppb	2.830	229948	50	99.9	90	110	
Zn	66	2	72	49.123	ppb	2.248	35755	50	98.2	90	110	
As	75	2	72	49.603	ppb	3.121	20302	50	99.2	90	110	
Se	78	1	72	51.624	ppb	1.544	32935	50	103.2	90	110	
Sr	88	2	45	105.218	ppb	1.387	170015	100	105.2	90	110	
Zr	90	2	72	206.815	ppb	15.769	3240	50	413.6	90	110	>+\-10%
Nb	93	2	72	472.023	ppb	44.249	133	100	472.0	90	110	>+\-10%
Mo	95	2	115	51.555	ppb	2.366	117816	50	103.1	90	110	
Pd	105	2	115	-162.433	ppb	-43.370	117	50	-324.9	90	110	>+\-10%
Ag	107	2	115	50.242	ppb	2.813	329832	50	100.5	90	110	
Cd	111	2	115	48.680	ppb	1.217	43723	50	97.4	90	110	
Sn	120	2	115	54.057	ppb	1.499	118728	50	108.1	90	110	
Sb	121	2	115	52.335	ppb	0.586	101599	50	104.7	90	110	
Ba	137	2	115	51.569	ppb	2.315	32718	50	103.1	90	110	
W	182	2	165	51.208	ppb	3.177	352770	50	102.4	90	110	
Pt	195	2	165	16.444	ppb	159.474	110	50	32.9	90	110	>+\-10%
Tl	205	2	165	48.875	ppb	3.497	584670	50	97.8	90	110	
Pb	208	2	165	50.027	ppb	4.174	788650	50	100.1	90	110	
Bi	209	2	193	-94.368	ppb	-1934.079	1999	500	-18.9	90	110	>+\-10%
Th	232	2	193	51.784	ppb	4.393	719167	50	103.6	90	110	
U	238	2	193	50.519	ppb	2.797	925737	50	101.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3402545	2.26	3709622	91.72	60	125	
Sc (IS)	45	2	HMI He	2867254	2.21	2724914	105.22	60	125	
Sc (IS)	45	3	No Gas	78742479	2.82	82891317	94.99	60	120	
Ge Internal standard	72	1	HMI H2	21229875	0.98	19447282	109.17	60	125	
Ge Internal standard	72	2	HMI He	2647963	0.36	2615067	101.26	60	125	
In Internal standard	115	2	HMI He	7159606	1.47	6700003	106.86	60	125	
Ho-165	165	2	HMI He	26873886	3.74	26090315	103.00	60	125	
Ir (IS)	193	2	HMI He	19349538	2.48	19253459	100.50	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	032_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:06:16-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	12.689	ppb	67.0	7903262	0.05	>RL
Be	9	1	6	0.116	ppb	35.7	130	0.5	
B	11	1	6	16.672	ppb	5.1	18511	0.1	>RL
Na	23	2	45	26.802	ppb	15.5	38783	25	>RL
Mg	24	2	45	8.892	ppb	9.5	2680	25	
Al	27	2	45	3.876	ppb	38.4	621	15	
K	39	2	45	10.276	ppb	22.8	13539	50	
V	51	2	72	0.058	ppb	70.2	501	1	
Cr	52	2	72	0.091	ppb	31.1	1749	1	
Mn	55	2	72	0.517	ppb	24.4	1475	0.5	>RL
(Fe)	57	2	72	25.164	ppb	9.3	2990	25	>RL
Co	59	2	72	0.051	ppb	35.1	364	0.5	
Ni	60	2	72	0.028	ppb	293.7	487	1	
Cu	63	2	72	0.091	ppb	36.8	1985	1	
Zn	66	2	72	0.354	ppb	39.2	1074	5	
As	75	2	72	-0.024	ppb	-298.4	57	1	
Se	78	1	72	0.145	ppb	21.3	112	1	
Sr	88	2	45	0.075	ppb	19.2	237	1	
Zr	90	2	72	83.765	ppb	7.0	2199	1	>RL
Nb	93	2	72	-38.620	ppb	-384.3	50	2	
Mo	95	2	115	0.272	ppb	12.1	737	0.5	
Pd	105	2	115	-244.105	ppb	-26.4	70	1	
Ag	107	2	115	0.438	ppb	11.5	2866	1	
Cd	111	2	115	0.071	ppb	58.5	87	0.5	
Sn	120	2	115	2.031	ppb	3.8	6107	1	>RL
Sb	121	2	115	0.665	ppb	8.7	1348	1	
Ba	137	2	115	0.059	ppb	40.9	113	0.5	
W	182	2	165	0.448	ppb	7.0	5209	1	
Pt	195	2	165	6.798	ppb	452.6	97	1	>RL
Tl	205	2	165	-0.015	ppb	-166.5	3664	0.1	
Pb	208	2	165	0.123	ppb	13.4	5032	0.5	
Th	232	2	193	3.753	ppb	4.5	84474	1	>RL
U	238	2	193	0.181	ppb	10.7	5390	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3610679	5.72	3709622	97.33	60	125	
Sc (IS)	45	2	HMI He	2903770	1.35	2724914	106.56	60	125	
Sc (IS)	45	3	No Gas	82788877	3.34	82891317	99.88	60	120	
Ge Internal standard	72	1	HMI H2	21347632	2.61	19447282	109.77	60	125	
Ge Internal standard	72	2	HMI He	2773780	0.89	2615067	106.07	60	125	
In Internal standard	115	2	HMI He	7024744	1.84	6700003	104.85	60	125	
Ho-165	165	2	HMI He	26936303	0.65	26090315	103.24	60	125	
Ir (IS)	193	2	HMI He	19809149	1.20	19253459	102.89	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-22-A@10
Data File Name	033SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:09:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	22.157	ppb	22.157	47.10	8012184	40000	
Be	9	1	6	0.735	ppb	0.735	22.17	674	2000	
B	11	1	6	14.875	ppb	14.875	4.20	16718	100	
Na	23	2	45	169.277	ppb	169.277	2.66	122664	400000	
Mg	24	2	45	8615.349	ppb	8615.349	1.88	2121155	400000	
Al	27	2	45	14775.735	ppb	14775.735	2.60	1013479	400000	
K	39	2	45	4210.042	ppb	4210.042	1.25	724788	400000	
V	51	2	72	30.753	ppb	30.753	5.75	95162	2000	
Cr	52	2	72	18.586	ppb	18.586	2.54	78542	5000	
Mn	55	2	72	2382.676	ppb	2382.676	1.89	4499286	10000	
(Fe)	57	2	72	18540.279	ppb	18540.279	1.24	1483321	400000	
Co	59	2	72	9.663	ppb	9.663	2.35	62472	2000	
Ni	60	2	72	20.564	ppb	20.564	1.93	36143	5000	
Cu	63	2	72	248.900	ppb	248.900	4.10	1137236	5000	
Zn	66	2	72	422.091	ppb	422.091	2.78	300525	5000	
As	75	2	72	43.337	ppb	43.337	6.69	17697	2000	
Se	78	1	72	0.299	ppb	0.299	14.49	208	2000	
Sr	88	2	45	55.674	ppb	55.674	0.71	89739	2000	
Zr	90	2	72	3408.154	ppb	3408.154	1.24	32867	1000	>LDR
Nb	93	2	72	10389.390	ppb	10389.390	9.28	1795	200	>LDR
Mo	95	2	115	0.625	ppb	0.625	20.06	1505	2000	
Pd	105	2	115	-142.135	ppb	-142.135	-15.32	123	100	
Ag	107	2	115	1.404	ppb	1.404	2.85	8961	100	
Cd	111	2	115	1.364	ppb	1.364	22.88	1208	2000	
Sn	120	2	115	1.855	ppb	1.855	14.16	5657	2000	
Sb	121	2	115	0.430	ppb	0.430	7.27	891	1000	
Ba	137	2	115	217.922	ppb	217.922	2.35	133451	5000	
W	182	2	165	0.314	ppb	0.314	11.79	4322	100	
Pt	195	2	165	23.700	ppb	23.700	36.41	123	100	
Tl	205	2	165	0.040	ppb	0.040	46.45	4345	2000	
Pb	208	2	165	194.620	ppb	194.620	2.58	3092184	5000	
Th	232	2	193	6.737	ppb	6.737	6.00	121589	2000	
U	238	2	193	0.553	ppb	0.553	5.98	12013	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3579685	2.99	3709622	96.50	60	125	
Sc (IS)	45	2	HMI He	2858625	1.92	2724914	104.91	60	125	
Sc (IS)	45	3	No Gas	81072886	1.04	82891317	97.81	60	120	
Ge Internal standard	72	1	HMI H2	21028079	1.42	19447282	108.13	60	125	
Ge Internal standard	72	2	HMI He	2641538	1.58	2615067	101.01	60	125	
In Internal standard	115	2	HMI He	6925588	2.92	6700003	103.37	60	125	
Ho-165	165	2	HMI He	27150852	3.18	26090315	104.06	60	125	
Ir (IS)	193	2	HMI He	19277739	2.50	19253459	100.13	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-33-A@10
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:13:23-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	30.636	ppb	30.636	72.41	8220048	40000	
Be	9	1	6	0.845	ppb	0.845	12.73	737	2000	
B	11	1	6	13.150	ppb	13.150	13.29	14500	100	
Na	23	2	45	165.100	ppb	165.100	2.44	120033	400000	
Mg	24	2	45	9305.927	ppb	9305.927	3.27	2287268	400000	
Al	27	2	45	14464.902	ppb	14464.902	3.16	990592	400000	
K	39	2	45	4490.775	ppb	4490.775	1.53	771225	400000	
V	51	2	72	30.327	ppb	30.327	4.64	93807	2000	
Cr	52	2	72	17.036	ppb	17.036	2.26	72069	5000	
Mn	55	2	72	2857.430	ppb	2857.430	2.51	5392124	10000	
(Fe)	57	2	72	17671.182	ppb	17671.182	1.43	1413237	400000	
Co	59	2	72	9.273	ppb	9.273	2.92	59896	2000	
Ni	60	2	72	19.325	ppb	19.325	3.17	33970	5000	
Cu	63	2	72	542.637	ppb	542.637	0.27	2477907	5000	
Zn	66	2	72	404.413	ppb	404.413	3.31	287821	5000	
As	75	2	72	61.334	ppb	61.334	3.60	25010	2000	
Se	78	1	72	0.297	ppb	0.297	26.84	205	2000	
Sr	88	2	45	62.353	ppb	62.353	1.99	100339	2000	
Zr	90	2	72	3480.803	ppb	3480.803	3.42	33512	1000	>LDR
Nb	93	2	72	10174.787	ppb	10174.787	6.05	1759	200	>LDR
Mo	95	2	115	0.585	ppb	0.585	11.74	1442	2000	
Pd	105	2	115	-85.070	ppb	-85.070	-110.38	157	100	
Ag	107	2	115	1.470	ppb	1.470	4.08	9532	100	
Cd	111	2	115	1.789	ppb	1.789	9.31	1602	2000	
Sn	120	2	115	1.506	ppb	1.506	1.76	5006	2000	
Sb	121	2	115	0.359	ppb	0.359	12.20	767	1000	
Ba	137	2	115	250.344	ppb	250.344	1.97	155901	5000	
W	182	2	165	0.328	ppb	0.328	18.15	4268	100	
Pt	195	2	165	-2.732	ppb	-2.732	-400.11	80	100	
Tl	205	2	165	0.055	ppb	0.055	10.19	4368	2000	
Pb	208	2	165	206.870	ppb	206.870	2.84	3173450	5000	
Th	232	2	193	5.526	ppb	5.526	3.15	103888	2000	
U	238	2	193	0.456	ppb	0.456	4.32	10077	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3431519	0.72	3709622	92.50	60	125	
Sc (IS)	45	2	HMI He	2854475	0.91	2724914	104.75	60	125	
Sc (IS)	45	3	No Gas	80302531	5.32	82891317	96.88	60	120	
Ge Internal standard	72	1	HMI H2	20987236	1.09	19447282	107.92	60	125	
Ge Internal standard	72	2	HMI He	2640630	2.28	2615067	100.98	60	125	
In Internal standard	115	2	HMI He	7040800	2.20	6700003	105.09	60	125	
Ho-165	165	2	HMI He	26209632	1.60	26090315	100.46	60	125	
Ir (IS)	193	2	HMI He	18957291	1.55	19253459	98.46	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-44-A@10
Data File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:16:54-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	27.030	ppb	27.030	18.77	8116342	40000	
Be	9	1	6	0.712	ppb	0.712	15.23	677	2000	
B	11	1	6	13.799	ppb	13.799	4.79	16304	100	
Na	23	2	45	155.203	ppb	155.203	4.66	115178	400000	
Mg	24	2	45	9492.703	ppb	9492.703	4.54	2352835	400000	
Al	27	2	45	16345.930	ppb	16345.930	3.10	1128959	400000	
K	39	2	45	4254.836	ppb	4254.836	0.84	738154	400000	
V	51	2	72	30.999	ppb	30.999	2.41	95238	2000	
Cr	52	2	72	18.582	ppb	18.582	3.41	77935	5000	
Mn	55	2	72	2630.989	ppb	2630.989	2.52	4931165	10000	
(Fe)	57	2	72	18829.880	ppb	18829.880	1.44	1495484	400000	
Co	59	2	72	9.482	ppb	9.482	5.04	60804	2000	
Ni	60	2	72	19.790	ppb	19.790	3.28	34538	5000	
Cu	63	2	72	184.966	ppb	184.966	3.80	839259	5000	
Zn	66	2	72	381.391	ppb	381.391	0.34	269729	5000	
As	75	2	72	27.737	ppb	27.737	6.64	11268	2000	
Se	78	1	72	0.240	ppb	0.240	6.16	172	2000	
Sr	88	2	45	61.047	ppb	61.047	2.87	99134	2000	
Zr	90	2	72	3791.239	ppb	3791.239	0.84	36144	1000	>LDR
Nb	93	2	72	10729.400	ppb	10729.400	6.51	1839	200	>LDR
Mo	95	2	115	0.472	ppb	0.472	11.89	1208	2000	
Pd	105	2	115	-137.489	ppb	-137.489	-72.71	130	100	
Ag	107	2	115	0.858	ppb	0.858	6.70	5673	100	
Cd	111	2	115	1.171	ppb	1.171	6.92	1074	2000	
Sn	120	2	115	1.107	ppb	1.107	14.28	4221	2000	
Sb	121	2	115	0.176	ppb	0.176	27.87	427	1000	
Ba	137	2	115	205.062	ppb	205.062	2.25	129692	5000	
W	182	2	165	0.251	ppb	0.251	17.14	3754	100	
Pt	195	2	165	8.602	ppb	8.602	115.79	97	100	
Tl	205	2	165	0.009	ppb	0.009	394.76	3838	2000	
Pb	208	2	165	146.093	ppb	146.093	1.11	2242617	5000	
Th	232	2	193	5.969	ppb	5.969	2.19	108689	2000	
U	238	2	193	0.499	ppb	0.499	1.20	10751	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3709498	2.50	3709622	100.00	60	125	
Sc (IS)	45	2	HMI He	2881397	3.63	2724914	105.74	60	125	
Sc (IS)	45	3	No Gas	81814763	2.97	82891317	98.70	60	120	
Ge Internal standard	72	1	HMI H2	21238463	0.93	19447282	109.21	60	125	
Ge Internal standard	72	2	HMI He	2622273	2.08	2615067	100.28	60	125	
In Internal standard	115	2	HMI He	7149520	0.31	6700003	106.71	60	125	
Ho-165	165	2	HMI He	26208813	1.04	26090315	100.45	60	125	
Ir (IS)	193	2	HMI He	18789764	0.64	19253459	97.59	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-55-A@10
Data File Name	036SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:20:25-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	13.131	ppb	13.131	28.33	8105788	40000	
Be	9	1	6	0.766	ppb	0.766	31.41	697	2000	
B	11	1	6	11.575	ppb	11.575	2.12	13569	100	
Na	23	2	45	186.006	ppb	186.006	3.96	133405	400000	
Mg	24	2	45	9642.170	ppb	9642.170	3.04	2387932	400000	
Al	27	2	45	16702.605	ppb	16702.605	2.76	1152201	400000	
K	39	2	45	4255.480	ppb	4255.480	2.08	736943	400000	
V	51	2	72	31.132	ppb	31.132	1.90	96641	2000	
Cr	52	2	72	17.267	ppb	17.267	2.76	73268	5000	
Mn	55	2	72	2471.492	ppb	2471.492	2.33	4680024	10000	
(Fe)	57	2	72	20155.702	ppb	20155.702	2.47	1616967	400000	
Co	59	2	72	10.771	ppb	10.771	1.73	69812	2000	
Ni	60	2	72	21.168	ppb	21.168	5.57	37293	5000	
Cu	63	2	72	218.143	ppb	218.143	2.66	999949	5000	
Zn	66	2	72	733.441	ppb	733.441	0.40	523249	5000	
As	75	2	72	22.732	ppb	22.732	1.82	9342	2000	
Se	78	1	72	0.295	ppb	0.295	26.52	200	2000	
Sr	88	2	45	56.856	ppb	56.856	1.76	92214	2000	
Zr	90	2	72	4012.655	ppb	4012.655	1.03	38571	1000	>LDR
Nb	93	2	72	11794.618	ppb	11794.618	10.27	2036	200	>LDR
Mo	95	2	115	0.501	ppb	0.501	9.95	1255	2000	
Pd	105	2	115	-53.130	ppb	-53.130	-120.68	174	100	
Ag	107	2	115	0.839	ppb	0.839	6.07	5456	100	
Cd	111	2	115	1.802	ppb	1.802	2.41	1615	2000	
Sn	120	2	115	0.995	ppb	0.995	18.04	3914	2000	
Sb	121	2	115	0.155	ppb	0.155	26.39	380	1000	
Ba	137	2	115	194.460	ppb	194.460	4.67	121046	5000	
W	182	2	165	0.187	ppb	0.187	13.31	3364	100	
Pt	195	2	165	1.046	ppb	1.046	851.34	87	100	
Tl	205	2	165	-0.019	ppb	-0.019	-100.16	3554	2000	
Pb	208	2	165	151.771	ppb	151.771	0.99	2357025	5000	
Th	232	2	193	5.947	ppb	5.947	2.25	107302	2000	
U	238	2	193	0.571	ppb	0.571	9.75	11900	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3547049	3.44	3709622	95.62	60	125	
Sc (IS)	45	2	HMI He	2876948	2.75	2724914	105.58	60	125	
Sc (IS)	45	3	No Gas	82117892	3.54	82891317	99.07	60	120	
Ge Internal standard	72	1	HMI H2	20590219	3.48	19447282	105.88	60	125	
Ge Internal standard	72	2	HMI He	2648926	0.96	2615067	101.29	60	125	
In Internal standard	115	2	HMI He	7041733	2.71	6700003	105.10	60	125	
Ho-165	165	2	HMI He	26519068	2.39	26090315	101.64	60	125	
Ir (IS)	193	2	HMI He	18602241	1.92	19253459	96.62	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-1-B@10
Data File Name	037SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:23:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	10.179	ppb	10.179	151.10	8889230	40000	
Be	9	1	6	0.923	ppb	0.923	11.22	824	2000	
B	11	1	6	7.645	ppb	7.645	11.91	9959	100	
Na	23	2	45	721.458	ppb	721.458	1.35	484360	400000	
Mg	24	2	45	7552.142	ppb	7552.142	3.32	1999513	400000	
Al	27	2	45	22649.834	ppb	22649.834	1.53	1670864	400000	
K	39	2	45	3257.630	ppb	3257.630	4.14	605941	400000	
V	51	2	72	48.577	ppb	48.577	3.00	154634	2000	
Cr	52	2	72	24.708	ppb	24.708	1.95	107096	5000	
Mn	55	2	72	1401.539	ppb	1401.539	5.34	2724075	10000	
(Fe)	57	2	72	83594.783	ppb	83594.783	6.27	6880919	400000	
Co	59	2	72	26.901	ppb	26.901	2.38	178978	2000	
Ni	60	2	72	33.840	ppb	33.840	1.68	60968	5000	
Cu	63	2	72	3459.247	ppb	3459.247	3.05	16258135	5000	
Zn	66	2	72	588.029	ppb	588.029	1.35	430862	5000	
As	75	2	72	21.991	ppb	21.991	3.57	9282	2000	
Se	78	1	72	1.222	ppb	1.222	2.01	819	2000	
Sr	88	2	45	103.404	ppb	103.404	4.04	179156	2000	
Zr	90	2	72	3835.539	ppb	3835.539	3.50	37906	1000	>LDR
Nb	93	2	72	11911.165	ppb	11911.165	8.78	2112	200	>LDR
Mo	95	2	115	0.895	ppb	0.895	5.95	2212	2000	
Pd	105	2	115	-200.677	ppb	-200.677	-5.69	97	100	
Ag	107	2	115	1.682	ppb	1.682	1.86	11282	100	
Cd	111	2	115	0.968	ppb	0.968	11.75	908	2000	
Sn	120	2	115	3.023	ppb	3.023	2.94	8514	2000	
Sb	121	2	115	0.159	ppb	0.159	19.66	400	1000	
Ba	137	2	115	142.675	ppb	142.675	1.08	91922	5000	
W	182	2	165	0.603	ppb	0.603	4.46	6451	100	
Pt	195	2	165	-1.828	ppb	-1.828	-1188.29	87	100	
Tl	205	2	165	-0.115	ppb	-0.115	-4.90	2539	2000	
Pb	208	2	165	94.872	ppb	94.872	3.75	1538794	5000	
Th	232	2	193	5.161	ppb	5.161	7.00	96230	2000	
U	238	2	193	2.046	ppb	2.046	2.36	37456	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3528298	1.67	3709622	95.11	60	125	
Sc (IS)	45	2	HMI He	3076306	2.86	2724914	112.90	60	125	
Sc (IS)	45	3	No Gas	85908733	1.20	82891317	103.64	60	120	
Ge Internal standard	72	1	HMI H2	21785375	2.98	19447282	112.02	60	125	
Ge Internal standard	72	2	HMI He	2719873	1.41	2615067	104.01	60	125	
In Internal standard	115	2	HMI He	7281781	2.30	6700003	108.68	60	125	
Ho-165	165	2	HMI He	27694392	3.92	26090315	106.15	60	125	
Ir (IS)	193	2	HMI He	18409724	2.96	19253459	95.62	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-2-B@10
Data File Name	038SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:27:27-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	17.719	ppb	17.719	26.98	8406472	40000	
Be	9	1	6	0.378	ppb	0.378	22.17	374	2000	
B	11	1	6	5.168	ppb	5.168	12.17	8160	100	
Na	23	2	45	420.688	ppb	420.688	5.67	279802	400000	
Mg	24	2	45	5049.213	ppb	5049.213	6.62	1279096	400000	
Al	27	2	45	17638.258	ppb	17638.258	5.83	1244746	400000	
K	39	2	45	1965.853	ppb	1965.853	2.50	355105	400000	
V	51	2	72	20.049	ppb	20.049	1.81	64275	2000	
Cr	52	2	72	12.706	ppb	12.706	2.28	55949	5000	
Mn	55	2	72	905.260	ppb	905.260	3.14	1767351	10000	
(Fe)	57	2	72	25212.702	ppb	25212.702	5.13	2084538	400000	
Co	59	2	72	21.266	ppb	21.266	2.86	142070	2000	
Ni	60	2	72	16.236	ppb	16.236	3.72	29591	5000	
Cu	63	2	72	2035.489	ppb	2035.489	1.35	9608179	5000	
Zn	66	2	72	270.060	ppb	270.060	1.58	199127	5000	
As	75	2	72	7.016	ppb	7.016	3.77	3020	2000	
Se	78	1	72	0.283	ppb	0.283	34.47	200	2000	
Sr	88	2	45	79.625	ppb	79.625	2.75	132159	2000	
Zr	90	2	72	3280.913	ppb	3280.913	2.85	32764	1000	>LDR
Nb	93	2	72	10095.810	ppb	10095.810	2.97	1805	200	>LDR
Mo	95	2	115	0.642	ppb	0.642	6.03	1628	2000	
Pd	105	2	115	-177.442	ppb	-177.442	-26.75	110	100	
Ag	107	2	115	0.449	ppb	0.449	6.39	3053	100	
Cd	111	2	115	0.294	ppb	0.294	32.59	294	2000	
Sn	120	2	115	1.541	ppb	1.541	10.45	5269	2000	
Sb	121	2	115	0.054	ppb	0.054	44.13	194	1000	
Ba	137	2	115	88.777	ppb	88.777	0.47	57378	5000	
W	182	2	165	0.157	ppb	0.157	18.17	3294	100	
Pt	195	2	165	-3.217	ppb	-3.217	-1144.73	83	100	
Tl	205	2	165	-0.161	ppb	-0.161	-4.71	1969	2000	
Pb	208	2	165	28.961	ppb	28.961	2.35	470564	5000	
Th	232	2	193	3.244	ppb	3.244	4.50	74695	2000	
U	238	2	193	0.758	ppb	0.758	2.81	15580	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3723763	2.37	3709622	100.38	60	125	
Sc (IS)	45	2	HMI He	2946854	4.33	2724914	108.14	60	125	
Sc (IS)	45	3	No Gas	83493820	0.97	82891317	100.73	60	120	
Ge Internal standard	72	1	HMI H2	21401175	2.65	19447282	110.05	60	125	
Ge Internal standard	72	2	HMI He	2731296	1.82	2615067	104.44	60	125	
In Internal standard	115	2	HMI He	7300017	1.06	6700003	108.96	60	125	
Ho-165	165	2	HMI He	27599779	1.84	26090315	105.79	60	125	
Ir (IS)	193	2	HMI He	19076163	1.96	19253459	99.08	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-3-B@10
Data File Name	039SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:30:58-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	6.395	ppb	6.395	100.45	8373611	40000	
Be	9	1	6	0.231	ppb	0.231	10.90	230	2000	
B	11	1	6	7.318	ppb	7.318	10.83	9883	100	
Na	23	2	45	1409.180	ppb	1409.180	3.68	924231	400000	
Mg	24	2	45	3634.221	ppb	3634.221	5.50	963350	400000	
Al	27	2	45	6332.421	ppb	6332.421	1.67	468002	400000	
K	39	2	45	4690.466	ppb	4690.466	1.03	868787	400000	
V	51	2	72	53.272	ppb	53.272	1.89	175231	2000	
Cr	52	2	72	23.222	ppb	23.222	3.66	104086	5000	
Mn	55	2	72	128.151	ppb	128.151	2.08	257920	10000	
(Fe)	57	2	72	126614.057	ppb	126614.057	0.87	10775217	400000	
Co	59	2	72	4.408	ppb	4.408	2.23	30319	2000	
Ni	60	2	72	6.013	ppb	6.013	1.21	11559	5000	
Cu	63	2	72	2434.603	ppb	2434.603	2.07	11825465	5000	
Zn	66	2	72	88.625	ppb	88.625	2.34	67823	5000	
As	75	2	72	39.203	ppb	39.203	0.64	17049	2000	
Se	78	1	72	2.127	ppb	2.127	5.43	1439	2000	
Sr	88	2	45	60.716	ppb	60.716	3.53	105384	2000	
Zr	90	2	72	1393.995	ppb	1393.995	4.21	15139	1000	>LDR
Nb	93	2	72	9862.130	ppb	9862.130	6.77	1815	200	>LDR
Mo	95	2	115	1.491	ppb	1.491	2.48	3541	2000	
Pd	105	2	115	-127.132	ppb	-127.132	-59.58	137	100	
Ag	107	2	115	23.121	ppb	23.121	4.07	151855	100	
Cd	111	2	115	0.179	ppb	0.179	52.99	184	2000	
Sn	120	2	115	24.740	ppb	24.740	1.67	55378	2000	
Sb	121	2	115	0.550	ppb	0.550	7.82	1151	1000	
Ba	137	2	115	112.006	ppb	112.006	3.74	70986	5000	
W	182	2	165	2.219	ppb	2.219	5.04	17621	100	
Pt	195	2	165	-2.798	ppb	-2.798	-318.55	83	100	
Tl	205	2	165	-0.092	ppb	-0.092	-7.68	2780	2000	
Pb	208	2	165	186.820	ppb	186.820	3.52	2988278	5000	
Th	232	2	193	0.995	ppb	0.995	3.87	44916	2000	
U	238	2	193	3.252	ppb	3.252	1.46	60059	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3609456	3.02	3709622	97.30	60	125	
Sc (IS)	45	2	HMI He	3080656	3.22	2724914	113.06	60	125	
Sc (IS)	45	3	No Gas	87590249	1.60	82891317	105.67	60	120	
Ge Internal standard	72	1	HMI H2	22228293	2.05	19447282	114.30	60	125	
Ge Internal standard	72	2	HMI He	2810821	1.70	2615067	107.49	60	125	
In Internal standard	115	2	HMI He	7168051	4.36	6700003	106.99	60	125	
Ho-165	165	2	HMI He	27329259	1.75	26090315	104.75	60	125	
Ir (IS)	193	2	HMI He	18913805	1.33	19253459	98.24	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	040_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T15:36:44-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	84.875	ppb	14.164	9912685	100	84.9	90	110	>+\-10%
Be	9	1	6	50.267	ppb	3.574	44177	50	100.5	90	110	
B	11	1	6	478.857	ppb	1.282	439624	500	95.8	90	110	
Na	23	2	45	51737.392	ppb	7.090	32157212	51000	101.4	90	110	
Mg	24	2	45	11081.775	ppb	4.590	2856930	11000	100.7	90	110	
(Mg)	25	2	45	10370.859	ppb	2.247	416832	11000	94.3	90	110	
Al	27	2	45	1017.291	ppb	2.316	73409	1000	101.7	90	110	
Si	28	2	45	512.475	ppb	4.448	26112	500	102.5	90	110	
P	31	2	45	2048.510	ppb	1.263	13500	2500	81.9	90	110	>+\-10%
K	39	2	45	11230.539	ppb	1.700	2005817	11000	102.1	90	110	
Ca	40	1	45	11285.941	ppb	0.831	142386703	11000	102.6	90	110	
(Ca)	44	1	45	9747.229	ppb	2.221	4347577	11000	88.6	90	110	>+\-10%
Ti	47	2	45	55.476	ppb	2.130	4795	50	111.0	90	110	>+\-10%
V	51	2	72	51.152	ppb	1.556	167339	50	102.3	90	110	
Cr	52	2	72	51.168	ppb	3.528	226367	50	102.3	90	110	
Mn	55	2	72	50.758	ppb	3.967	101846	50	101.5	90	110	
Fe	56	1	72	1104.874	ppb	3.793	22054179	20000	5.5	90	110	>+\-10%
(Fe)	56	2	72	1122.594	ppb	2.362	3738371	20000	5.6	90	110	>+\-10%
(Fe)	57	2	72	1101.433	ppb	3.089	94055	1000	110.1	90	110	>+\-10%
Co	59	2	72	49.745	ppb	2.576	340035	50	99.5	90	110	
Ni	60	2	72	49.609	ppb	4.015	91622	50	99.2	90	110	
Cu	63	2	72	50.720	ppb	5.217	246403	50	101.4	90	110	
Zn	66	2	72	50.094	ppb	1.569	38470	50	100.2	90	110	
As	75	2	72	50.680	ppb	3.440	21899	50	101.4	90	110	
Se	78	1	72	48.799	ppb	1.449	32941	50	97.6	90	110	
Sr	88	2	45	103.336	ppb	1.183	174416	100	103.3	90	110	
Zr	90	2	72	467.733	ppb	0.461	5977	50	935.5	90	110	>+\-10%
Nb	93	2	72	429.003	ppb	30.291	133	100	429.0	90	110	>+\-10%
Mo	95	2	115	51.332	ppb	3.104	119691	50	102.7	90	110	
Pd	105	2	115	-190.337	ppb	-36.232	103	50	-380.7	90	110	>+\-10%
Ag	107	2	115	49.325	ppb	2.808	330522	50	98.7	90	110	
Cd	111	2	115	49.549	ppb	3.813	45409	50	99.1	90	110	
Sn	120	2	115	51.697	ppb	3.184	115948	50	103.4	90	110	
Sb	121	2	115	49.783	ppb	4.738	98575	50	99.6	90	110	
Ba	137	2	115	50.929	ppb	5.512	32952	50	101.9	90	110	
W	182	2	165	51.700	ppb	1.917	354572	50	103.4	90	110	
Pt	195	2	165	18.472	ppb	112.009	113	50	36.9	90	110	>+\-10%
Tl	205	2	165	50.170	ppb	1.680	597502	50	100.3	90	110	
Pb	208	2	165	50.363	ppb	1.369	790719	50	100.7	90	110	
Bi	209	2	193	5178.841	ppb	26.638	2850	500	1035.8	90	110	>+\-10%
Th	232	2	193	50.935	ppb	0.919	715165	50	101.9	90	110	
U	238	2	193	50.130	ppb	4.433	927126	50	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3577636	2.54	3709622	96.44	60	125	
Sc (IS)	45	2	HMI He	2995124	1.49	2724914	109.92	60	125	
Sc (IS)	45	3	No Gas	82205511	1.58	82891317	99.17	60	120	
Ge Internal standard	72	1	HMI H2	22465812	3.75	19447282	115.52	60	125	
Ge Internal standard	72	2	HMI He	2795272	2.24	2615067	106.89	60	125	
In Internal standard	115	2	HMI He	7311590	4.24	6700003	109.13	60	125	
Ho-165	165	2	HMI He	26738484	0.65	26090315	102.48	60	125	
Ir (IS)	193	2	HMI He	19537386	3.02	19253459	101.47	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	041_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:05:02-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	7.879	ppb	123.7	8310790	0.05	>RL
Be	9	1	6	-0.004	ppb	-292.5	23	0.5	
B	11	1	6	1.587	ppb	57.7	4809	0.1	>RL
Na	23	2	45	-6.227	ppb	-7.9	19937	25	
Mg	24	2	45	0.181	ppb	104.8	531	25	
Al	27	2	45	-0.051	ppb	-1501.3	367	15	
K	39	2	45	-1.415	ppb	-335.3	12153	50	
V	51	2	72	0.014	ppb	57.6	370	1	
Cr	52	2	72	0.011	ppb	192.5	1455	1	
Mn	55	2	72	-0.019	ppb	-149.2	430	0.5	
(Fe)	57	2	72	5.144	ppb	34.6	1368	25	
Co	59	2	72	0.004	ppb	141.7	53	0.5	
Ni	60	2	72	0.054	ppb	9.5	557	1	
Cu	63	2	72	0.041	ppb	136.3	1829	1	
Zn	66	2	72	-0.076	ppb	-178.3	787	5	
As	75	2	72	0.045	ppb	94.8	90	1	
Se	78	1	72	0.043	ppb	45.7	48	1	
Sr	88	2	45	-0.012	ppb	-140.1	100	1	
Zr	90	2	72	11.453	ppb	80.2	1562	1	>RL
Nb	93	2	72	115.438	ppb	59.7	80	2	>RL
Mo	95	2	115	0.073	ppb	21.1	307	0.5	
Pd	105	2	115	-179.120	ppb	-10.2	110	1	
Ag	107	2	115	0.008	ppb	67.6	100	1	
Cd	111	2	115	-0.028	ppb	0.0	0	0.5	
Sn	120	2	115	0.139	ppb	15.7	2196	1	
Sb	121	2	115	0.026	ppb	24.0	140	1	
Ba	137	2	115	0.000	ppb	-17958.1	80	0.5	
W	182	2	165	0.156	ppb	28.5	3200	1	
Pt	195	2	165	7.406	ppb	300.9	97	1	>RL
Tl	205	2	165	-0.175	ppb	-12.1	1752	0.1	
Pb	208	2	165	0.002	ppb	1521.9	3107	0.5	
Th	232	2	193	-0.589	ppb	-10.4	25329	1	
U	238	2	193	-0.051	ppb	-10.2	1034	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3794486	9.70	3709622	102.29	60	125	
Sc (IS)	45	2	HMI He	3063030	1.90	2724914	112.41	60	125	
Sc (IS)	45	3	No Gas	90587850	2.08	82891317	109.29	60	120	
Ge Internal standard	72	1	HMI H2	21826673	3.40	19447282	112.24	60	125	
Ge Internal standard	72	2	HMI He	2892390	3.47	2615067	110.60	60	125	
In Internal standard	115	2	HMI He	7360979	2.10	6700003	109.87	60	125	
Ho-165	165	2	HMI He	26879612	3.58	26090315	103.03	60	125	
Ir (IS)	193	2	HMI He	19651534	1.03	19253459	102.07	60	125	

Blank Report

Sample Table

Sample Name	MB 280-584582/1-B
Data File Name	042_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:08:36-06:00
Sample Type	Blank
Dilution	1
Comment	584767 200.8
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	6	2.916	ppb	586.8828571	8657537	0.05
Be	9	1	6	-0.010	ppb	-72.70982872	17	0.5
Na	23	2	45	0.785	ppb	67.63209194	23659	25
Mg	24	2	45	1.692	ppb	30.17293035	901	25
Al	27	2	45	2.680	ppb	39.23070091	551	15
K	39	2	45	4.081	ppb	26.79794346	12767	50
V	51	2	72	0.018	ppb	112.2329953	377	1
Cr	52	2	72	0.025	ppb	203.9844517	1488	1
Mn	55	2	72	0.466	ppb	12.54590008	1401	0.5
(Fe)	57	2	72	9.186	ppb	25.3217778	1685	25
Co	59	2	72	0.003	ppb	238.7090183	40	0.5
Ni	60	2	72	0.071	ppb	88.10652969	577	1
Cu	63	2	72	0.083	ppb	9.566996838	1989	1
Zn	66	2	72	1.213	ppb	10.84030667	1752	5
As	75	2	72	-0.058	ppb	-23.06332582	43	1
Se	78	1	72	0.008	ppb	119.8182392	25	1
Sr	88	2	45	0.020	ppb	81.5591085	150	1
Zr	90	2	72	79.216	ppb	19.12171791	2202	1
Nb	93	2	72	-155.594	ppb	-34.86978439	30	2
Mo	95	2	115	0.009	ppb	241.7892191	157	0.5
Pd	105	2	115	-144.913	ppb	-46.21210487	130	1
Ag	107	2	115	0.023	ppb	28.43825359	200	1
Cd	111	2	115	-0.014	ppb	-120.9102833	13	0.5
Sn	120	2	115	0.074	ppb	143.1090182	2049	1
Sb	121	2	115	0.008	ppb	265.4804344	103	1
Ba	137	2	115	0.092	ppb	33.90185808	140	0.5
W	182	2	165	0.023	ppb	108.4877226	2272	1
Pt	195	2	165	-28.169	ppb	-58.63647023	43	1
Tl	205	2	165	-0.241	ppb	-1.878167794	964	0.1
Pb	208	2	165	0.010	ppb	62.81199836	3220	0.5
Th	232	2	193	0.984	ppb	5.802611792	47104	1
U	238	2	193	-0.070	ppb	-8.190072166	684	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3665080	8.45	3709622	98.80	60	125	
Sc (IS)	45	2	HMI He	2971437	0.52	2724914	109.05	60	125	
Sc (IS)	45	3	No Gas	88872447	5.91	82891317	107.22	60	120	
Ge Internal standard	72	1	HMI H2	22655686	3.57	19447282	116.50	60	125	
Ge Internal standard	72	2	HMI He	2834130	1.15	2615067	108.38	60	125	
In Internal standard	115	2	HMI He	7365269	1.64	6700003	109.93	60	125	
Ho-165	165	2	HMI He	26748691	3.34	26090315	102.52	60	125	
Ir (IS)	193	2	HMI He	19899909	1.83	19253459	103.36	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584582/2-B
Data File Name	043_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:12:10-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584767 200.8
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	48.451	48.451	ppb	49.601	9271700	400	12.1	80	120	>+/-20%
Be	9	1	6	39.795	39.795	ppb	4.226	37605	40	99.5	80	120	
Na	23	2	45	859.276	859.276	ppb	1.776	563896	40	2148.2	80	120	>+/-20%
Mg	24	2	45	871.704	871.704	ppb	4.115	227853	40	2179.3	80	120	>+/-20%
Al	27	2	45	816.564	816.564	ppb	1.589	59710	40	2041.4	80	120	>+/-20%
K	39	2	45	834.461	834.461	ppb	2.270	162142	40	2086.2	80	120	>+/-20%
V	51	2	72	41.178	41.178	ppb	4.426	138518	40	102.9	80	120	
Cr	52	2	72	41.833	41.833	ppb	2.622	190540	40	104.6	80	120	
Mn	55	2	72	38.964	38.964	ppb	3.636	80473	40	97.4	80	120	
(Fe)	57	2	72	799.425	799.425	ppb	0.720	70438	40	1998.6	80	120	>+/-20%
Co	59	2	72	40.986	40.986	ppb	2.342	288044	40	102.5	80	120	
Ni	60	2	72	40.582	40.582	ppb	0.906	77149	40	101.5	80	120	
Cu	63	2	72	41.059	41.059	ppb	0.831	205452	40	102.6	80	120	
Zn	66	2	72	41.545	41.545	ppb	1.995	32933	40	103.9	80	120	
As	75	2	72	41.124	41.124	ppb	0.911	18275	40	102.8	80	120	
Se	78	1	72	45.569	45.569	ppb	4.318	30000	40	113.9	80	120	
Sr	88	2	45	83.488	83.488	ppb	3.311	142585	40	208.7	80	120	>+/-20%
Nb	93	2	72	-29.390	-29.390	ppb	-600.767	53	40	-73.5	80	120	>+/-20%
Mo	95	2	115	41.120	41.120	ppb	3.714	95764	40	102.8	80	120	
Pd	105	2	115	-124.076	-124.076	ppb	-31.440	140	40	-310.2	80	120	>+/-20%
Ag	107	2	115	41.728	41.728	ppb	1.632	279248	40	104.3	80	120	
Cd	111	2	115	42.668	42.668	ppb	0.892	39067	40	106.7	80	120	
Sn	120	2	115	41.049	41.049	ppb	0.472	92354	40	102.6	80	120	
Sb	121	2	115	41.240	41.240	ppb	3.882	81589	40	103.1	80	120	
Ba	137	2	115	41.432	41.432	ppb	1.421	26812	40	103.6	80	120	
W	182	2	165	0.313	0.313	ppb	16.459	4372	40	0.8	80	120	>+/-20%
Pt	195	2	165	-0.916	-0.916	ppb	-2647.931	87	40	-2.3	80	120	>+/-20%
Tl	205	2	165	39.605	39.605	ppb	0.729	485972	40	99.0	80	120	
Pb	208	2	165	41.211	41.211	ppb	1.350	666029	40	103.0	80	120	
Th	232	2	193	38.320	38.320	ppb	4.064	573022	40	95.8	80	120	
U	238	2	193	37.672	37.672	ppb	3.799	732136	40	94.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3845766	1.59	3709622	103.67	60	125	
Sc (IS)	45	2	HMI He	3030803	1.41	2724914	111.23	60	125	
Sc (IS)	45	3	No Gas	89993538	2.04	82891317	108.57	60	120	
Ge Internal standard	72	1	HMI H2	21917992	2.55	19447282	112.70	60	125	
Ge Internal standard	72	2	HMI He	2872825	0.47	2615067	109.86	60	125	
In Internal standard	115	2	HMI He	7297696	1.78	6700003	108.92	60	125	
Ho-165	165	2	HMI He	27500561	0.28	26090315	105.41	60	125	
Ir (IS)	193	2	HMI He	20512318	3.91	19253459	106.54	60	125	

Sample Report

Sample Table

Sample Name	280-165537-F-1-B
Data File Name	044SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:15:44-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	25.434	ppb	25.434	63.00	8402382	40000	
Be	9	1	6	0.035	ppb	0.035	153.87	57	2000	
B	11	1	6	8.268	ppb	8.268	7.83	10861	100	
Na	23	2	45	2257.383	ppb	2257.383	5.37	1403186	400000	
Mg	24	2	45	35356.255	ppb	35356.255	6.06	8969930	400000	
Al	27	2	45	7.994	ppb	7.994	31.03	921	400000	
K	39	2	45	839.163	ppb	839.163	2.18	158539	400000	
V	51	2	72	0.094	ppb	0.094	47.19	634	2000	
Cr	52	2	72	0.091	ppb	0.091	63.78	1795	5000	
Mn	55	2	72	13.684	ppb	13.684	9.08	28398	10000	
(Fe)	57	2	72	119.235	ppb	119.235	4.16	11222	400000	
Co	59	2	72	0.133	ppb	0.133	29.07	944	2000	
Ni	60	2	72	1.870	ppb	1.870	12.44	3964	5000	
Cu	63	2	72	1.512	ppb	1.512	11.98	9065	5000	
Zn	66	2	72	269.656	ppb	269.656	4.00	208120	5000	
As	75	2	72	0.326	ppb	0.326	47.29	214	2000	
Se	78	1	72	1.233	ppb	1.233	12.14	840	2000	
Sr	88	2	45	311.533	ppb	311.533	6.44	517075	2000	
Zr	90	2	72	38.361	ppb	38.361	52.59	1812	1000	
Nb	93	2	72	6.952	ppb	6.952	3402.33	60	200	
Mo	95	2	115	3.619	ppb	3.619	4.51	8457	2000	
Pd	105	2	115	-191.453	ppb	-191.453	-32.68	100	100	
Ag	107	2	115	0.209	ppb	0.209	4.98	1432	100	
Cd	111	2	115	0.412	ppb	0.412	14.48	397	2000	
Sn	120	2	115	1.043	ppb	1.043	31.60	4131	2000	
Sb	121	2	115	1.317	ppb	1.317	4.22	2663	1000	
Ba	137	2	115	60.505	ppb	60.505	5.15	38676	5000	
W	182	2	165	0.339	ppb	0.339	17.91	4552	100	
Pt	195	2	165	23.172	ppb	23.172	145.15	123	100	
Tl	205	2	165	-0.081	ppb	-0.081	-38.45	2937	2000	
Pb	208	2	165	0.393	ppb	0.393	4.37	9457	5000	
Th	232	2	193	2.361	ppb	2.361	25.93	64431	2000	
U	238	2	193	25.688	ppb	25.688	7.29	473444	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3641621	1.79	3709622	98.17	60	125	
Sc (IS)	45	2	HMI He	2947999	1.21	2724914	108.19	60	125	
Sc (IS)	45	3	No Gas	87942375	8.21	82891317	106.09	60	120	
Ge Internal standard	72	1	HMI H2	22123301	2.92	19447282	113.76	60	125	
Ge Internal standard	72	2	HMI He	2860011	2.73	2615067	109.37	60	125	
In Internal standard	115	2	HMI He	7224151	4.76	6700003	107.82	60	125	
Ho-165	165	2	HMI He	27455741	1.63	26090315	105.23	60	125	
Ir (IS)	193	2	HMI He	19431138	2.00	19253459	100.92	60	125	

Sample Report

Sample Table

Sample Name	280-165537-F-1-C MS
Data File Name	045SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:19:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	56.148	ppb	56.148	21.93	9501796	40000	
Be	9	1	6	38.318	ppb	38.318	9.25	35112	2000	
B	11	1	6	7.529	ppb	7.529	10.62	10424	100	
Na	23	2	45	3063.459	ppb	3063.459	1.94	1908069	400000	
Mg	24	2	45	34605.524	ppb	34605.524	2.91	8836046	400000	
Al	27	2	45	807.930	ppb	807.930	2.78	57815	400000	
K	39	2	45	1654.657	ppb	1654.657	1.60	302829	400000	
V	51	2	72	40.351	ppb	40.351	2.17	129192	2000	
Cr	52	2	72	40.893	ppb	40.893	1.06	177290	5000	
Mn	55	2	72	52.629	ppb	52.629	0.49	103292	10000	
(Fe)	57	2	72	908.201	ppb	908.201	1.69	76030	400000	
Co	59	2	72	39.826	ppb	39.826	2.17	266344	2000	
Ni	60	2	72	42.181	ppb	42.181	2.52	76288	5000	
Cu	63	2	72	41.008	ppb	41.008	0.63	195271	5000	
Zn	66	2	72	312.156	ppb	312.156	1.54	230295	5000	
As	75	2	72	41.236	ppb	41.236	2.49	17436	2000	
Se	78	1	72	44.206	ppb	44.206	2.55	29155	2000	
Sr	88	2	45	374.835	ppb	374.835	2.22	626168	2000	
Zr	90	2	72	63.103	ppb	63.103	34.22	1969	1000	
Nb	93	2	72	-149.211	ppb	-149.211	-77.25	30	200	
Mo	95	2	115	43.512	ppb	43.512	3.31	99559	2000	
Pd	105	2	115	-179.951	ppb	-179.951	-7.04	107	100	
Ag	107	2	115	40.198	ppb	40.198	3.63	264205	100	
Cd	111	2	115	41.306	ppb	41.306	2.92	37174	2000	
Sn	120	2	115	40.516	ppb	40.516	4.04	89533	2000	
Sb	121	2	115	41.799	ppb	41.799	3.57	81237	1000	
Ba	137	2	115	99.593	ppb	99.593	4.46	63164	5000	
W	182	2	165	0.601	ppb	0.601	3.34	6181	100	
Pt	195	2	165	-10.085	ppb	-10.085	-61.04	70	100	
Tl	205	2	165	41.784	ppb	41.784	0.90	495102	2000	
Pb	208	2	165	42.196	ppb	42.196	1.27	658740	5000	
Th	232	2	193	43.333	ppb	43.333	0.73	595448	2000	
U	238	2	193	68.628	ppb	68.628	1.27	1232419	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3734305	3.23	3709622	100.67	60	125	
Sc (IS)	45	2	HMI He	2965585	0.17	2724914	108.83	60	125	
Sc (IS)	45	3	No Gas	85383520	6.64	82891317	103.01	60	120	
Ge Internal standard	72	1	HMI H2	21953397	2.31	19447282	112.89	60	125	
Ge Internal standard	72	2	HMI He	2733813	0.28	2615067	104.54	60	125	
In Internal standard	115	2	HMI He	7171159	3.09	6700003	107.03	60	125	
Ho-165	165	2	HMI He	26569464	1.48	26090315	101.84	60	125	
Ir (IS)	193	2	HMI He	18963027	1.00	19253459	98.49	60	125	

Sample Report

Sample Table

Sample Name	280-165537-F-1-D MSD
Data File Name	046SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:22:49-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	58.896	ppb	58.896	32.44	9580444	40000	
Be	9	1	6	39.557	ppb	39.557	4.64	35934	2000	
B	11	1	6	8.298	ppb	8.298	9.39	11054	100	
Na	23	2	45	3128.245	ppb	3128.245	2.02	1913723	400000	
Mg	24	2	45	33879.637	ppb	33879.637	1.09	8497492	400000	
Al	27	2	45	800.893	ppb	800.893	4.50	56269	400000	
K	39	2	45	1667.896	ppb	1667.896	1.48	299687	400000	
V	51	2	72	40.248	ppb	40.248	3.08	128725	2000	
Cr	52	2	72	40.129	ppb	40.129	0.97	173844	5000	
Mn	55	2	72	52.667	ppb	52.667	3.04	103246	10000	
(Fe)	57	2	72	893.667	ppb	893.667	2.48	74744	400000	
Co	59	2	72	39.591	ppb	39.591	1.77	264514	2000	
Ni	60	2	72	41.651	ppb	41.651	0.62	75273	5000	
Cu	63	2	72	40.791	ppb	40.791	1.74	194113	5000	
Zn	66	2	72	310.809	ppb	310.809	1.86	229059	5000	
As	75	2	72	40.945	ppb	40.945	0.60	17299	2000	
Se	78	1	72	44.586	ppb	44.586	3.73	28767	2000	
Sr	88	2	45	381.200	ppb	381.200	3.25	625220	2000	
Zr	90	2	72	58.130	ppb	58.130	20.30	1919	1000	
Nb	93	2	72	-113.074	ppb	-113.074	-203.08	37	200	
Mo	95	2	115	43.636	ppb	43.636	1.74	99245	2000	
Pd	105	2	115	-130.214	ppb	-130.214	-44.04	133	100	
Ag	107	2	115	39.912	ppb	39.912	0.69	260824	100	
Cd	111	2	115	42.051	ppb	42.051	1.71	37592	2000	
Sn	120	2	115	41.754	ppb	41.754	0.82	91687	2000	
Sb	121	2	115	41.720	ppb	41.720	0.59	80621	1000	
Ba	137	2	115	98.408	ppb	98.408	2.17	62069	5000	
W	182	2	165	0.589	ppb	0.589	8.64	6211	100	
Pt	195	2	165	9.185	ppb	9.185	569.21	100	100	
Tl	205	2	165	39.592	ppb	39.592	1.73	478711	2000	
Pb	208	2	165	40.444	ppb	40.444	3.56	643791	5000	
Th	232	2	193	44.587	ppb	44.587	1.39	615489	2000	
U	238	2	193	65.655	ppb	65.655	3.11	1185968	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3694462	0.67	3709622	99.59	60	125	
Sc (IS)	45	2	HMI He	2912876	1.82	2724914	106.90	60	125	
Sc (IS)	45	3	No Gas	88025978	6.53	82891317	106.19	60	120	
Ge Internal standard	72	1	HMI H2	21476935	1.65	19447282	110.44	60	125	
Ge Internal standard	72	2	HMI He	2731432	1.69	2615067	104.45	60	125	
In Internal standard	115	2	HMI He	7125108	1.04	6700003	106.34	60	125	
Ho-165	165	2	HMI He	27105764	3.54	26090315	103.89	60	125	
Ir (IS)	193	2	HMI He	19082642	2.03	19253459	99.11	60	125	

Sample Report

Sample Table

Sample Name	280-165566-D-1-C
Data File Name	047SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:26:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	36.512	ppb	36.512	16.41	8675735	40000	
Be	9	1	6	0.078	ppb	0.078	10.10	87	2000	
B	11	1	6	46.285	ppb	46.285	5.27	41863	100	
Na	23	2	45	73858.785	ppb	73858.785	6.63	44418187	400000	
Mg	24	2	45	50127.365	ppb	50127.365	6.45	12503839	400000	
Al	27	2	45	21.019	ppb	21.019	21.79	1809	400000	
K	39	2	45	8307.152	ppb	8307.152	6.06	1439010	400000	
V	51	2	72	0.136	ppb	0.136	36.25	711	2000	
Cr	52	2	72	0.370	ppb	0.370	18.44	2783	5000	
Mn	55	2	72	143.880	ppb	143.880	5.39	268776	10000	
(Fe)	57	2	72	235.538	ppb	235.538	4.55	19437	400000	
Co	59	2	72	0.421	ppb	0.421	4.13	2710	2000	
Ni	60	2	72	1.304	ppb	1.304	6.12	2650	5000	
Cu	63	2	72	1.719	ppb	1.719	4.21	9218	5000	
Zn	66	2	72	29.319	ppb	29.319	2.73	21351	5000	
As	75	2	72	0.158	ppb	0.158	67.05	127	2000	
Se	78	1	72	0.185	ppb	0.185	25.23	128	2000	
Sr	88	2	45	1563.467	ppb	1563.467	2.52	2554034	2000	
Zr	90	2	72	4.041	ppb	4.041	506.54	1338	1000	
Nb	93	2	72	-83.905	ppb	-83.905	-131.19	40	200	
Mo	95	2	115	0.466	ppb	0.466	10.93	1111	2000	
Pd	105	2	115	3.065	ppb	3.065	336.74	194	100	
Ag	107	2	115	0.266	ppb	0.266	5.09	1665	100	
Cd	111	2	115	0.044	ppb	0.044	27.27	60	2000	
Sn	120	2	115	1.333	ppb	1.333	5.17	4385	2000	
Sb	121	2	115	0.219	ppb	0.219	29.93	474	1000	
Ba	137	2	115	13.375	ppb	13.375	5.89	7940	5000	
W	182	2	165	0.018	ppb	0.018	219.06	2176	100	
Pt	195	2	165	-1.957	ppb	-1.957	-651.13	80	100	
Tl	205	2	165	-0.022	ppb	-0.022	-54.58	3447	2000	
Pb	208	2	165	0.055	ppb	0.055	46.13	3804	5000	
Th	232	2	193	3.606	ppb	3.606	1.06	74742	2000	
U	238	2	193	0.338	ppb	0.338	1.45	7533	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3307371	4.18	3709622	89.16	60	125	
Sc (IS)	45	2	HMI He	2901521	3.63	2724914	106.48	60	125	
Sc (IS)	45	3	No Gas	85109171	7.27	82891317	102.68	60	120	
Ge Internal standard	72	1	HMI H2	19978823	4.23	19447282	102.73	60	125	
Ge Internal standard	72	2	HMI He	2613276	4.47	2615067	99.93	60	125	
In Internal standard	115	2	HMI He	6653901	0.99	6700003	99.31	60	125	
Ho-165	165	2	HMI He	25961107	2.11	26090315	99.50	60	125	
Ir (IS)	193	2	HMI He	17945904	0.20	19253459	93.21	60	125	

Sample Report

Sample Table

Sample Name	280-165537-G-1-C
Data File Name	048SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:29:53-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	20.855	ppb	20.855	78.38	8817120	40000	
Be	9	1	6	0.013	ppb	0.013	282.07	40	2000	
B	11	1	6	4.486	ppb	4.486	1.73	7779	100	
Na	23	2	45	2138.579	ppb	2138.579	2.40	1305730	400000	
Mg	24	2	45	32867.077	ppb	32867.077	0.14	8186186	400000	
Al	27	2	45	4.516	ppb	4.516	14.77	664	400000	
K	39	2	45	767.436	ppb	767.436	2.35	143256	400000	
V	51	2	72	0.048	ppb	0.048	52.75	464	2000	
Cr	52	2	72	0.053	ppb	0.053	96.72	1568	5000	
Mn	55	2	72	12.698	ppb	12.698	2.08	25397	10000	
(Fe)	57	2	72	8.957	ppb	8.957	29.24	1615	400000	
Co	59	2	72	0.113	ppb	0.113	15.37	784	2000	
Ni	60	2	72	1.913	ppb	1.913	4.74	3891	5000	
Cu	63	2	72	0.064	ppb	0.064	35.47	1839	5000	
Zn	66	2	72	169.860	ppb	169.860	1.12	126380	5000	
As	75	2	72	0.221	ppb	0.221	75.85	160	2000	
Se	78	1	72	1.135	ppb	1.135	8.70	736	2000	
Sr	88	2	45	303.170	ppb	303.170	3.53	493798	2000	
Zr	90	2	72	3.350	ppb	3.350	284.16	1405	1000	
Nb	93	2	72	-73.551	ppb	-73.551	-315.74	43	200	
Mo	95	2	115	3.282	ppb	3.282	1.27	7452	2000	
Pd	105	2	115	-205.156	ppb	-205.156	-12.91	90	100	
Ag	107	2	115	0.054	ppb	0.054	27.26	390	100	
Cd	111	2	115	0.003	ppb	0.003	579.95	27	2000	
Sn	120	2	115	0.463	ppb	0.463	32.00	2760	2000	
Sb	121	2	115	1.324	ppb	1.324	15.41	2583	1000	
Ba	137	2	115	47.676	ppb	47.676	6.80	29495	5000	
W	182	2	165	0.320	ppb	0.320	9.20	4302	100	
Pt	195	2	165	18.267	ppb	18.267	101.46	113	100	
Tl	205	2	165	-0.209	ppb	-0.209	-5.50	1335	2000	
Pb	208	2	165	-0.007	ppb	-0.007	-209.79	2956	5000	
Th	232	2	193	0.445	ppb	0.445	24.91	38904	2000	
U	238	2	193	24.859	ppb	24.859	2.72	459782	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3851245	1.81	3709622	103.82	60	125	
Sc (IS)	45	2	HMI He	2892812	2.11	2724914	106.16	60	125	
Sc (IS)	45	3	No Gas	87673730	0.78	82891317	105.77	60	120	
Ge Internal standard	72	1	HMI H2	21034053	1.10	19447282	108.16	60	125	
Ge Internal standard	72	2	HMI He	2749207	0.63	2615067	105.13	60	125	
In Internal standard	115	2	HMI He	6995853	5.30	6700003	104.42	60	125	
Ho-165	165	2	HMI He	26741711	1.71	26090315	102.50	60	125	
Ir (IS)	193	2	HMI He	19487707	2.50	19253459	101.22	60	125	

Sample Report

Sample Table

Sample Name	280-165553-B-1-E
Data File Name	049SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:33:25-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	14.891	ppb	14.891	174.58	8393970	40000	
Be	9	1	6	0.135	ppb	0.135	62.40	147	2000	
B	11	1	6	4.451	ppb	4.451	10.82	7372	100	
Na	23	2	45	9396.234	ppb	9396.234	1.77	5551619	400000	
Mg	24	2	45	13051.896	ppb	13051.896	2.77	3187152	400000	
Al	27	2	45	143.682	ppb	143.682	3.73	10113	400000	
K	39	2	45	1721.973	ppb	1721.973	0.83	300973	400000	
V	51	2	72	0.022	ppb	0.022	34.60	370	2000	
Cr	52	2	72	0.055	ppb	0.055	35.00	1535	5000	
Mn	55	2	72	1038.416	ppb	1038.416	7.84	1986294	10000	
(Fe)	57	2	72	35.912	ppb	35.912	10.30	3761	400000	
Co	59	2	72	8.348	ppb	8.348	1.83	54728	2000	
Ni	60	2	72	11.174	ppb	11.174	5.88	20098	5000	
Cu	63	2	72	78.023	ppb	78.023	5.06	362489	5000	
Zn	66	2	72	231.568	ppb	231.568	4.70	167495	5000	
As	75	2	72	0.279	ppb	0.279	40.01	180	2000	
Se	78	1	72	0.106	ppb	0.106	29.52	85	2000	
Sr	88	2	45	345.135	ppb	345.135	1.54	551447	2000	
Zr	90	2	72	17.621	ppb	17.621	79.18	1505	1000	
Nb	93	2	72	-125.038	ppb	-125.038	-75.86	33	200	
Mo	95	2	115	0.152	ppb	0.152	20.60	474	2000	
Pd	105	2	115	-207.512	ppb	-207.512	-31.31	90	100	
Ag	107	2	115	0.021	ppb	0.021	19.13	184	100	
Cd	111	2	115	1.289	ppb	1.289	11.21	1168	2000	
Sn	120	2	115	0.176	ppb	0.176	21.04	2189	2000	
Sb	121	2	115	0.062	ppb	0.062	58.82	204	1000	
Ba	137	2	115	25.498	ppb	25.498	2.68	16024	5000	
W	182	2	165	0.008	ppb	0.008	251.16	2152	100	
Pt	195	2	165	14.771	ppb	14.771	176.08	107	100	
Tl	205	2	165	0.159	ppb	0.159	9.52	5643	2000	
Pb	208	2	165	0.015	ppb	0.015	109.69	3267	5000	
Th	232	2	193	0.077	ppb	0.077	89.52	32998	2000	
U	238	2	193	0.074	ppb	0.074	6.21	3234	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3664743	2.78	3709622	98.79	60	125	
Sc (IS)	45	2	HMI He	2836780	1.82	2724914	104.11	60	125	
Sc (IS)	45	3	No Gas	83151643	2.63	82891317	100.31	60	120	
Ge Internal standard	72	1	HMI H2	20956178	1.01	19447282	107.76	60	125	
Ge Internal standard	72	2	HMI He	2679733	3.20	2615067	102.47	60	125	
In Internal standard	115	2	HMI He	7073697	1.16	6700003	105.58	60	125	
Ho-165	165	2	HMI He	26493286	1.08	26090315	101.54	60	125	
Ir (IS)	193	2	HMI He	18901498	2.41	19253459	98.17	60	125	

Sample Report

Sample Table

Sample Name	280-165553-C-3-C
Data File Name	050SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:36:59-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	19.229	ppb	19.229	40.54	8916671	40000	
Be	9	1	6	-0.022	ppb	-0.022	-30.14	7	2000	
B	11	1	6	3.736	ppb	3.736	14.45	6361	100	
Na	23	2	45	23797.345	ppb	23797.345	2.41	13577734	400000	
Mg	24	2	45	22284.950	ppb	22284.950	2.00	5267815	400000	
Al	27	2	45	4289.015	ppb	4289.015	2.70	282651	400000	
K	39	2	45	3323.285	ppb	3323.285	2.99	551755	400000	
V	51	2	72	0.050	ppb	0.050	39.93	430	2000	
Cr	52	2	72	0.949	ppb	0.949	4.06	4986	5000	
Mn	55	2	72	443.870	ppb	443.870	2.11	799388	10000	
(Fe)	57	2	72	39.798	ppb	39.798	11.48	3828	400000	
Co	59	2	72	2.009	ppb	2.009	2.95	12400	2000	
Ni	60	2	72	0.374	ppb	0.374	2.27	1014	5000	
Cu	63	2	72	2.512	ppb	2.512	4.09	12347	5000	
Zn	66	2	72	1.428	ppb	1.428	20.07	1702	5000	
As	75	2	72	0.708	ppb	0.708	32.39	337	2000	
Se	78	1	72	0.226	ppb	0.226	35.32	152	2000	
Sr	88	2	45	729.171	ppb	729.171	5.44	1126770	2000	
Zr	90	2	72	16.598	ppb	16.598	71.36	1405	1000	
Nb	93	2	72	-72.739	ppb	-72.739	-166.68	40	200	
Mo	95	2	115	0.487	ppb	0.487	16.13	1171	2000	
Pd	105	2	115	-182.653	ppb	-182.653	-53.20	100	100	
Ag	107	2	115	0.017	ppb	0.017	45.80	147	100	
Cd	111	2	115	0.067	ppb	0.067	47.64	80	2000	
Sn	120	2	115	0.096	ppb	0.096	123.29	1922	2000	
Sb	121	2	115	0.054	ppb	0.054	29.44	180	1000	
Ba	137	2	115	6.031	ppb	6.031	7.75	3681	5000	
W	182	2	165	-0.008	ppb	-0.008	-725.67	1999	100	
Pt	195	2	165	9.812	ppb	9.812	339.82	97	100	
Tl	205	2	165	0.768	ppb	0.768	6.18	12471	2000	
Pb	208	2	165	-0.026	ppb	-0.026	-65.96	2566	5000	
Th	232	2	193	-0.072	ppb	-0.072	-87.42	29812	2000	
U	238	2	193	0.021	ppb	0.021	56.31	2179	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3483827	5.61	3709622	93.91	60	125	
Sc (IS)	45	2	HMI He	2746550	3.30	2724914	100.79	60	125	
Sc (IS)	45	3	No Gas	82699120	0.63	82891317	99.77	60	120	
Ge Internal standard	72	1	HMI H2	19746534	1.59	19447282	101.54	60	125	
Ge Internal standard	72	2	HMI He	2518793	2.03	2615067	96.32	60	125	
In Internal standard	115	2	HMI He	6754560	3.00	6700003	100.81	60	125	
Ho-165	165	2	HMI He	25847726	1.23	26090315	99.07	60	125	
Ir (IS)	193	2	HMI He	18147522	1.62	19253459	94.26	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	051_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:40:33-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	129.635	ppb	10.982	10826554	100	129.6	90	110	>+\-10%
Be	9	1	6	45.002	ppb	5.439	40284	50	90.0	90	110	
B	11	1	6	424.072	ppb	4.792	396933	500	84.8	90	110	>+\-10%
Na	23	2	45	52039.098	ppb	1.783	28875789	51000	102.0	90	110	
Mg	24	2	45	11247.776	ppb	3.520	2588788	11000	102.3	90	110	
(Mg)	25	2	45	10525.072	ppb	2.073	377537	11000	95.7	90	110	
Al	27	2	45	1017.372	ppb	3.486	65512	1000	101.7	90	110	
Si	28	2	45	521.937	ppb	2.921	23672	500	104.4	90	110	
P	31	2	45	2065.019	ppb	1.899	12141	2500	82.6	90	110	>+\-10%
K	39	2	45	11490.050	ppb	2.084	1830318	11000	104.5	90	110	
Ca	40	1	45	11664.574	ppb	2.447	131013624	11000	106.0	90	110	
(Ca)	44	1	45	9996.752	ppb	1.271	3970392	11000	90.9	90	110	
Ti	47	2	45	48.444	ppb	4.524	3741	50	96.9	90	110	
V	51	2	72	49.955	ppb	2.272	149132	50	99.9	90	110	
Cr	52	2	72	49.570	ppb	3.002	200192	50	99.1	90	110	
Mn	55	2	72	48.215	ppb	1.789	88317	50	96.4	90	110	
Fe	56	1	72	1009.000	ppb	0.645	17547455	20000	5.0	90	110	>+\-10%
(Fe)	56	2	72	994.970	ppb	2.597	3027261	20000	5.0	90	110	>+\-10%
(Fe)	57	2	72	980.969	ppb	2.903	76566	1000	98.1	90	110	
Co	59	2	72	48.221	ppb	1.311	300932	50	96.4	90	110	
Ni	60	2	72	47.722	ppb	3.574	80450	50	95.4	90	110	
Cu	63	2	72	47.043	ppb	4.269	208701	50	94.1	90	110	
Zn	66	2	72	47.295	ppb	4.210	33174	50	94.6	90	110	
As	75	2	72	50.395	ppb	3.737	19861	50	100.8	90	110	
Se	78	1	72	49.426	ppb	1.928	29014	50	98.9	90	110	
Sr	88	2	45	108.857	ppb	1.922	163949	100	108.9	90	110	
Zr	90	2	72	67.611	ppb	29.313	1875	50	135.2	90	110	>+\-10%
Nb	93	2	72	358.529	ppb	31.272	110	100	358.5	90	110	>+\-10%
Mo	95	2	115	49.704	ppb	1.598	107087	50	99.4	90	110	
Pd	105	2	115	-110.374	ppb	-81.350	137	50	-220.7	90	110	>+\-10%
Ag	107	2	115	49.194	ppb	2.889	304440	50	98.4	90	110	
Cd	111	2	115	49.464	ppb	2.162	41886	50	98.9	90	110	
Sn	120	2	115	51.514	ppb	4.225	106739	50	103.0	90	110	
Sb	121	2	115	50.152	ppb	2.436	91790	50	100.3	90	110	
Ba	137	2	115	51.247	ppb	0.726	30662	50	102.5	90	110	
W	182	2	165	49.708	ppb	2.505	334618	50	99.4	90	110	
Pt	195	2	165	53.366	ppb	108.624	164	50	106.7	90	110	
Tl	205	2	165	49.045	ppb	1.855	573383	50	98.1	90	110	
Pb	208	2	165	50.181	ppb	2.689	773180	50	100.4	90	110	
Bi	209	2	193	1367.599	ppb	27.513	2089	500	273.5	90	110	>+\-10%
Th	232	2	193	49.813	ppb	2.841	649476	50	99.6	90	110	
U	238	2	193	53.025	ppb	2.983	910071	50	106.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3648439	5.21	3709622	98.35	60	125	
Sc (IS)	45	2	HMI He	2672305	0.87	2724914	98.07	60	125	
Sc (IS)	45	3	No Gas	81323799	6.29	82891317	98.11	60	120	
Ge Internal standard	72	1	HMI H2	19536885	1.76	19447282	100.46	60	125	
Ge Internal standard	72	2	HMI He	2550900	1.95	2615067	97.55	60	125	
In Internal standard	115	2	HMI He	6750972	2.96	6700003	100.76	60	125	
Ho-165	165	2	HMI He	26245639	1.34	26090315	100.60	60	125	
Ir (IS)	193	2	HMI He	18128944	3.49	19253459	94.16	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	052_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:44:05-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	20.009	ppb	13.1	8500104	0.05	>RL
Be	9	1	6	0.034	ppb	22.8	57	0.5	
B	11	1	6	13.931	ppb	4.0	16070	0.1	>RL
Na	23	2	45	43.449	ppb	10.5	44893	25	>RL
Mg	24	2	45	10.254	ppb	15.0	2773	25	
Al	27	2	45	0.830	ppb	167.4	377	15	
K	39	2	45	8.734	ppb	47.4	12206	50	
V	51	2	72	0.024	ppb	124.7	354	1	
Cr	52	2	72	0.025	ppb	234.2	1331	1	
Mn	55	2	72	0.034	ppb	176.7	470	0.5	
(Fe)	57	2	72	2.547	ppb	44.4	994	25	
Co	59	2	72	0.051	ppb	5.9	334	0.5	
Ni	60	2	72	0.026	ppb	10.5	440	1	
Cu	63	2	72	0.026	ppb	92.4	1525	1	
Zn	66	2	72	0.102	ppb	70.3	808	5	
As	75	2	72	0.099	ppb	49.2	100	1	
Se	78	1	72	0.071	ppb	23.3	57	1	
Sr	88	2	45	0.152	ppb	22.2	334	1	
Zr	90	2	72	2.915	ppb	529.6	1288	1	>RL
Nb	93	2	72	-9.757	ppb	-1293.3	50	2	
Mo	95	2	115	0.181	ppb	13.2	511	0.5	
Pd	105	2	115	-256.908	ppb	-7.2	60	1	
Ag	107	2	115	0.314	ppb	17.5	1975	1	
Cd	111	2	115	0.024	ppb	161.4	43	0.5	
Sn	120	2	115	0.899	ppb	11.8	3544	1	
Sb	121	2	115	0.072	ppb	44.1	210	1	
Ba	137	2	115	-0.039	ppb	-147.6	50	0.5	
W	182	2	165	0.385	ppb	0.9	4569	1	
Pt	195	2	165	-1.921	ppb	-1391.9	80	1	
Tl	205	2	165	-0.116	ppb	-4.3	2346	0.1	
Pb	208	2	165	0.022	ppb	93.1	3287	0.5	
Th	232	2	193	3.038	ppb	1.0	69717	1	>RL
U	238	2	193	0.114	ppb	14.1	3841	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3631975	2.44	3709622	97.91	60	125	
Sc (IS)	45	2	HMI He	2672593	3.13	2724914	98.08	60	125	
Sc (IS)	45	3	No Gas	81501421	2.60	82891317	98.32	60	120	
Ge Internal standard	72	1	HMI H2	18945245	1.64	19447282	97.42	60	125	
Ge Internal standard	72	2	HMI He	2527772	1.04	2615067	96.66	60	125	
In Internal standard	115	2	HMI He	6715313	0.77	6700003	100.23	60	125	
Ho-165	165	2	HMI He	25741801	1.49	26090315	98.66	60	125	
Ir (IS)	193	2	HMI He	18464831	2.11	19253459	95.90	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-1-G
Data File Name	053SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:47:39-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	57.015	ppb	57.015	14.68	8819466	40000	
Be	9	1	6	-0.017	ppb	-0.017	-121.32	10	2000	
B	11	1	6	108.214	ppb	108.214	2.97	96120	100	
Na	23	2	45	116629.795	ppb	116629.795	5.52	66650094	400000	
Mg	24	2	45	18016.387	ppb	18016.387	3.38	4272220	400000	
Al	27	2	45	8.545	ppb	8.545	9.42	898	400000	
K	39	2	45	8320.800	ppb	8320.800	2.85	1369330	400000	
V	51	2	72	2.585	ppb	2.585	1.68	7773	2000	
Cr	52	2	72	0.179	ppb	0.179	18.71	1905	5000	
Mn	55	2	72	1.221	ppb	1.221	14.46	2563	10000	
(Fe)	57	2	72	21.273	ppb	21.273	18.33	2389	400000	
Co	59	2	72	0.151	ppb	0.151	1.55	938	2000	
Ni	60	2	72	2.411	ppb	2.411	1.58	4325	5000	
Cu	63	2	72	2.841	ppb	2.841	3.18	13565	5000	
Zn	66	2	72	5.207	ppb	5.207	10.21	4201	5000	
As	75	2	72	1.945	ppb	1.945	7.22	804	2000	
Se	78	1	72	0.767	ppb	0.767	11.57	473	2000	
Sr	88	2	45	944.869	ppb	944.869	2.35	1465784	2000	
Zr	90	2	72	49.428	ppb	49.428	40.82	1665	1000	
Nb	93	2	72	-69.007	ppb	-69.007	-82.21	40	200	
Mo	95	2	115	4.028	ppb	4.028	2.99	8788	2000	
Pd	105	2	115	-116.792	ppb	-116.792	-35.49	133	100	
Ag	107	2	115	0.066	ppb	0.066	26.47	454	100	
Cd	111	2	115	0.004	ppb	0.004	779.48	27	2000	
Sn	120	2	115	0.331	ppb	0.331	16.32	2403	2000	
Sb	121	2	115	0.450	ppb	0.450	24.45	904	1000	
Ba	137	2	115	110.739	ppb	110.739	1.55	66129	5000	
W	182	2	165	1.000	ppb	1.000	3.78	8591	100	
Pt	195	2	165	5.446	ppb	5.446	239.39	90	100	
Tl	205	2	165	-0.225	ppb	-0.225	-2.48	1104	2000	
Pb	208	2	165	0.062	ppb	0.062	12.35	3881	5000	
Th	232	2	193	0.959	ppb	0.959	11.12	42611	2000	
U	238	2	193	14.007	ppb	14.007	3.11	241951	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3378483	0.35	3709622	91.07	60	125	
Sc (IS)	45	2	HMI He	2754821	1.41	2724914	101.10	60	125	
Sc (IS)	45	3	No Gas	81602062	4.73	82891317	98.44	60	120	
Ge Internal standard	72	1	HMI H2	19763021	1.76	19447282	101.62	60	125	
Ge Internal standard	72	2	HMI He	2481980	3.21	2615067	94.91	60	125	
In Internal standard	115	2	HMI He	6746887	0.91	6700003	100.70	60	125	
Ho-165	165	2	HMI He	25710543	1.96	26090315	98.54	60	125	
Ir (IS)	193	2	HMI He	18130564	0.40	19253459	94.17	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-1-H MS
Data File Name	054SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:51:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	92.992	ppb	92.992	1.34	9759002	40000	
Be	9	1	6	37.481	ppb	37.481	5.82	31832	2000	
B	11	1	6	103.520	ppb	103.520	5.15	94181	100	
Na	23	2	45	117130.042	ppb	117130.042	1.24	66668328	400000	
Mg	24	2	45	18980.129	ppb	18980.129	2.17	4482459	400000	
Al	27	2	45	810.723	ppb	810.723	2.94	53635	400000	
K	39	2	45	9062.663	ppb	9062.663	0.48	1484415	400000	
V	51	2	72	43.332	ppb	43.332	1.82	129134	2000	
Cr	52	2	72	40.808	ppb	40.808	3.49	164706	5000	
Mn	55	2	72	40.248	ppb	40.248	2.29	73630	10000	
(Fe)	57	2	72	809.073	ppb	809.073	4.31	63131	400000	
Co	59	2	72	39.464	ppb	39.464	2.32	245686	2000	
Ni	60	2	72	40.754	ppb	40.754	1.56	68633	5000	
Cu	63	2	72	39.286	ppb	39.286	2.39	174206	5000	
Zn	66	2	72	41.758	ppb	41.758	2.63	29320	5000	
As	75	2	72	41.793	ppb	41.793	5.15	16458	2000	
Se	78	1	72	42.648	ppb	42.648	1.30	25372	2000	
Sr	88	2	45	1037.269	ppb	1037.269	3.07	1602229	2000	
Zr	90	2	72	39.626	ppb	39.626	48.53	1625	1000	
Nb	93	2	72	-32.013	ppb	-32.013	-495.21	47	200	
Mo	95	2	115	44.191	ppb	44.191	2.43	95391	2000	
Pd	105	2	115	-200.761	ppb	-200.761	-41.00	90	100	
Ag	107	2	115	37.354	ppb	37.354	2.18	231676	100	
Cd	111	2	115	39.504	ppb	39.504	4.07	33520	2000	
Sn	120	2	115	40.846	ppb	40.846	1.35	85170	2000	
Sb	121	2	115	41.250	ppb	41.250	0.52	75663	1000	
Ba	137	2	115	150.802	ppb	150.802	1.23	90234	5000	
W	182	2	165	1.179	ppb	1.179	5.38	10020	100	
Pt	195	2	165	-12.022	ppb	-12.022	-113.05	67	100	
Tl	205	2	165	38.056	ppb	38.056	0.77	448061	2000	
Pb	208	2	165	38.478	ppb	38.478	0.49	596712	5000	
Th	232	2	193	41.971	ppb	41.971	2.51	527054	2000	
U	238	2	193	57.247	ppb	57.247	2.52	938064	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3459677	3.73	3709622	93.26	60	125	
Sc (IS)	45	2	HMI He	2742928	2.17	2724914	100.66	60	125	
Sc (IS)	45	3	No Gas	80343757	6.15	82891317	96.93	60	120	
Ge Internal standard	72	1	HMI H2	19795839	1.22	19447282	101.79	60	125	
Ge Internal standard	72	2	HMI He	2545238	1.04	2615067	97.33	60	125	
In Internal standard	115	2	HMI He	6762712	0.87	6700003	100.94	60	125	
Ho-165	165	2	HMI He	26379186	0.91	26090315	101.11	60	125	
Ir (IS)	193	2	HMI He	17307052	2.60	19253459	89.89	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-1-I MSD
Data File Name	055SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:54:46-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	92.540	ppb	92.540	11.40	9798962	40000	
Be	9	1	6	39.357	ppb	39.357	3.17	33524	2000	
B	11	1	6	105.384	ppb	105.384	3.66	96065	100	
Na	23	2	45	121029.515	ppb	121029.515	2.47	68849926	400000	
Mg	24	2	45	19444.568	ppb	19444.568	4.08	4588852	400000	
Al	27	2	45	823.300	ppb	823.300	3.62	54434	400000	
K	39	2	45	9383.601	ppb	9383.601	3.56	1535139	400000	
V	51	2	72	43.816	ppb	43.816	2.52	131983	2000	
Cr	52	2	72	39.702	ppb	39.702	1.56	162022	5000	
Mn	55	2	72	41.528	ppb	41.528	1.45	76800	10000	
(Fe)	57	2	72	815.967	ppb	815.967	0.85	64376	400000	
Co	59	2	72	38.745	ppb	38.745	2.95	243820	2000	
Ni	60	2	72	40.525	ppb	40.525	2.72	69015	5000	
Cu	63	2	72	38.892	ppb	38.892	1.69	174358	5000	
Zn	66	2	72	41.143	ppb	41.143	3.28	29234	5000	
As	75	2	72	42.403	ppb	42.403	2.77	16872	2000	
Se	78	1	72	42.192	ppb	42.192	0.78	25151	2000	
Sr	88	2	45	1059.113	ppb	1059.113	3.67	1634777	2000	
Zr	90	2	72	40.687	ppb	40.687	71.85	1648	1000	
Nb	93	2	72	-77.174	ppb	-77.174	-79.60	40	200	
Mo	95	2	115	44.633	ppb	44.633	3.32	96925	2000	
Pd	105	2	115	-0.413	ppb	-0.413	-27344.37	197	100	
Ag	107	2	115	38.507	ppb	38.507	3.17	240233	100	
Cd	111	2	115	40.317	ppb	40.317	2.66	34412	2000	
Sn	120	2	115	41.329	ppb	41.329	2.76	86662	2000	
Sb	121	2	115	41.190	ppb	41.190	2.43	75998	1000	
Ba	137	2	115	156.036	ppb	156.036	3.59	93901	5000	
W	182	2	165	1.265	ppb	1.265	5.56	10471	100	
Pt	195	2	165	5.079	ppb	5.079	982.05	90	100	
Tl	205	2	165	39.458	ppb	39.458	3.60	458490	2000	
Pb	208	2	165	39.535	ppb	39.535	3.44	605187	5000	
Th	232	2	193	45.449	ppb	45.449	3.09	574508	2000	
U	238	2	193	57.566	ppb	57.566	2.15	953677	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3465714	1.92	3709622	93.42	60	125	
Sc (IS)	45	2	HMI He	2741544	1.66	2724914	100.61	60	125	
Sc (IS)	45	3	No Gas	84906029	2.02	82891317	102.43	60	120	
Ge Internal standard	72	1	HMI H2	19836301	2.69	19447282	102.00	60	125	
Ge Internal standard	72	2	HMI He	2573219	1.83	2615067	98.40	60	125	
In Internal standard	115	2	HMI He	6805304	2.48	6700003	101.57	60	125	
Ho-165	165	2	HMI He	26061555	3.34	26090315	99.89	60	125	
Ir (IS)	193	2	HMI He	17491386	0.73	19253459	90.85	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-2-C
Data File Name	056SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T16:58:18-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	49.312	ppb	49.312	31.64	8611344	40000	
Be	9	1	6	0.077	ppb	0.077	99.90	90	2000	
B	11	1	6	91.776	ppb	91.776	5.51	83577	100	
Na	23	2	45	99194.398	ppb	99194.398	2.60	58064702	400000	
Mg	24	2	45	13249.574	ppb	13249.574	1.83	3217935	400000	
Al	27	2	45	9.111	ppb	9.111	21.16	958	400000	
K	39	2	45	8660.006	ppb	8660.006	3.22	1459002	400000	
V	51	2	72	2.331	ppb	2.331	9.76	7472	2000	
Cr	52	2	72	0.182	ppb	0.182	5.93	2039	5000	
Mn	55	2	72	4.002	ppb	4.002	1.46	7966	10000	
(Fe)	57	2	72	49.366	ppb	49.366	16.05	4772	400000	
Co	59	2	72	0.164	ppb	0.164	6.46	1074	2000	
Ni	60	2	72	1.559	ppb	1.559	2.26	3117	5000	
Cu	63	2	72	4.501	ppb	4.501	6.22	21972	5000	
Zn	66	2	72	4.545	ppb	4.545	5.32	3991	5000	
As	75	2	72	1.206	ppb	1.206	4.98	554	2000	
Se	78	1	72	2.763	ppb	2.763	4.19	1663	2000	
Sr	88	2	45	576.238	ppb	576.238	2.47	915364	2000	
Zr	90	2	72	74.038	ppb	74.038	47.04	1999	1000	
Nb	93	2	72	316.197	ppb	316.197	61.04	107	200	>LDR
Mo	95	2	115	4.435	ppb	4.435	3.96	10043	2000	
Pd	105	2	115	-187.870	ppb	-187.870	-10.36	100	100	
Ag	107	2	115	0.281	ppb	0.281	13.58	1855	100	
Cd	111	2	115	-0.009	ppb	-0.009	-151.03	17	2000	
Sn	120	2	115	0.959	ppb	0.959	22.95	3824	2000	
Sb	121	2	115	0.587	ppb	0.587	12.50	1198	1000	
Ba	137	2	115	78.473	ppb	78.473	0.69	48706	5000	
W	182	2	165	0.647	ppb	0.647	5.28	6344	100	
Pt	195	2	165	-4.448	ppb	-4.448	-227.81	77	100	
Tl	205	2	165	-0.130	ppb	-0.130	-4.80	2212	2000	
Pb	208	2	165	0.085	ppb	0.085	23.29	4268	5000	
Th	232	2	193	3.198	ppb	3.198	3.46	69225	2000	
U	238	2	193	4.864	ppb	4.864	2.08	83730	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3447530	2.62	3709622	92.93	60	125	
Sc (IS)	45	2	HMI He	2820567	0.65	2724914	103.51	60	125	
Sc (IS)	45	3	No Gas	81982236	5.35	82891317	98.90	60	120	
Ge Internal standard	72	1	HMI H2	19813215	2.11	19447282	101.88	60	125	
Ge Internal standard	72	2	HMI He	2635632	0.49	2615067	100.79	60	125	
In Internal standard	115	2	HMI He	7009371	0.81	6700003	104.62	60	125	
Ho-165	165	2	HMI He	25967746	0.79	26090315	99.53	60	125	
Ir (IS)	193	2	HMI He	17819442	1.15	19253459	92.55	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-3-C
Data File Name	057SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:01:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	48.481	ppb	48.481	53.26	8680231	40000	
Be	9	1	6	-0.018	ppb	-0.018	-115.03	10	2000	
B	11	1	6	91.836	ppb	91.836	4.46	83956	100	
Na	23	2	45	90673.456	ppb	90673.456	2.44	52070051	400000	
Mg	24	2	45	12266.196	ppb	12266.196	0.83	2923244	400000	
Al	27	2	45	11.294	ppb	11.294	3.61	1084	400000	
K	39	2	45	8049.865	ppb	8049.865	4.31	1330756	400000	
V	51	2	72	2.437	ppb	2.437	2.88	7833	2000	
Cr	52	2	72	0.161	ppb	0.161	8.09	1959	5000	
Mn	55	2	72	2.896	ppb	2.896	5.95	5907	10000	
(Fe)	57	2	72	45.982	ppb	45.982	3.65	4522	400000	
Co	59	2	72	0.114	ppb	0.114	3.62	757	2000	
Ni	60	2	72	1.423	ppb	1.423	4.30	2893	5000	
Cu	63	2	72	3.921	ppb	3.921	1.64	19413	5000	
Zn	66	2	72	4.087	ppb	4.087	8.08	3681	5000	
As	75	2	72	1.513	ppb	1.513	22.85	681	2000	
Se	78	1	72	2.550	ppb	2.550	6.64	1521	2000	
Sr	88	2	45	583.117	ppb	583.117	3.77	908581	2000	
Zr	90	2	72	51.540	ppb	51.540	35.34	1799	1000	
Nb	93	2	72	214.130	ppb	214.130	1.45	90	200	>LDR
Mo	95	2	115	4.548	ppb	4.548	4.14	10050	2000	
Pd	105	2	115	-127.568	ppb	-127.568	-47.86	130	100	
Ag	107	2	115	0.052	ppb	0.052	19.72	374	100	
Cd	111	2	115	-0.001	ppb	-0.001	-2823.25	23	2000	
Sn	120	2	115	0.379	ppb	0.379	4.42	2536	2000	
Sb	121	2	115	0.649	ppb	0.649	7.70	1285	1000	
Ba	137	2	115	85.199	ppb	85.199	1.98	51631	5000	
W	182	2	165	0.653	ppb	0.653	5.22	6338	100	
Pt	195	2	165	-11.093	ppb	-11.093	-229.67	67	100	
Tl	205	2	165	-0.228	ppb	-0.228	-2.21	1071	2000	
Pb	208	2	165	0.051	ppb	0.051	55.85	3724	5000	
Th	232	2	193	1.055	ppb	1.055	8.61	42831	2000	
U	238	2	193	5.705	ppb	5.705	2.70	97406	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3459065	1.08	3709622	93.25	60	125	
Sc (IS)	45	2	HMI He	2767809	2.60	2724914	101.57	60	125	
Sc (IS)	45	3	No Gas	80090953	5.96	82891317	96.62	60	120	
Ge Internal standard	72	1	HMI H2	19641433	0.65	19447282	101.00	60	125	
Ge Internal standard	72	2	HMI He	2646618	0.58	2615067	101.21	60	125	
In Internal standard	115	2	HMI He	6845781	1.58	6700003	102.18	60	125	
Ho-165	165	2	HMI He	25788335	1.43	26090315	98.84	60	125	
Ir (IS)	193	2	HMI He	17731512	1.03	19253459	92.10	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-4-C
Data File Name	058SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:05:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	37.114	ppb	37.114	51.38	8695540	40000	
Be	9	1	6	-0.021	ppb	-0.021	-32.63	7	2000	
B	11	1	6	87.534	ppb	87.534	5.75	78855	100	
Na	23	2	45	89849.299	ppb	89849.299	2.03	51126428	400000	
Mg	24	2	45	12496.211	ppb	12496.211	2.22	2949528	400000	
Al	27	2	45	39.229	ppb	39.229	4.79	2913	400000	
K	39	2	45	6920.959	ppb	6920.959	1.58	1135596	400000	
V	51	2	72	2.648	ppb	2.648	7.48	8320	2000	
Cr	52	2	72	0.240	ppb	0.240	6.10	2246	5000	
Mn	55	2	72	5.137	ppb	5.137	6.99	9963	10000	
(Fe)	57	2	72	67.187	ppb	67.187	2.62	6104	400000	
Co	59	2	72	0.157	ppb	0.157	11.43	1018	2000	
Ni	60	2	72	1.525	ppb	1.525	17.75	3010	5000	
Cu	63	2	72	3.243	ppb	3.243	1.19	16010	5000	
Zn	66	2	72	4.300	ppb	4.300	10.28	3764	5000	
As	75	2	72	1.027	ppb	1.027	15.86	474	2000	
Se	78	1	72	2.480	ppb	2.480	1.61	1491	2000	
Sr	88	2	45	619.441	ppb	619.441	2.68	956419	2000	
Zr	90	2	72	55.223	ppb	55.223	14.53	1799	1000	
Nb	93	2	72	403.520	ppb	403.520	81.24	120	200	>LDR
Mo	95	2	115	4.518	ppb	4.518	7.49	9980	2000	
Pd	105	2	115	-196.197	ppb	-196.197	-14.33	93	100	
Ag	107	2	115	0.026	ppb	0.026	15.36	207	100	
Cd	111	2	115	-0.012	ppb	-0.012	-140.92	13	2000	
Sn	120	2	115	0.166	ppb	0.166	38.20	2096	2000	
Sb	121	2	115	0.547	ppb	0.547	5.63	1098	1000	
Ba	137	2	115	74.229	ppb	74.229	4.54	44988	5000	
W	182	2	165	0.782	ppb	0.782	1.82	7312	100	
Pt	195	2	165	1.506	ppb	1.506	1016.70	87	100	
Tl	205	2	165	-0.249	ppb	-0.249	-4.04	844	2000	
Pb	208	2	165	0.126	ppb	0.126	12.59	4939	5000	
Th	232	2	193	0.267	ppb	0.267	38.73	32817	2000	
U	238	2	193	8.171	ppb	8.171	3.84	136915	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3404398	2.54	3709622	91.77	60	125	
Sc (IS)	45	2	HMI He	2742480	3.38	2724914	100.64	60	125	
Sc (IS)	45	3	No Gas	81328157	1.50	82891317	98.11	60	120	
Ge Internal standard	72	1	HMI H2	19780423	3.59	19447282	101.71	60	125	
Ge Internal standard	72	2	HMI He	2597091	1.52	2615067	99.31	60	125	
In Internal standard	115	2	HMI He	6851111	3.63	6700003	102.26	60	125	
Ho-165	165	2	HMI He	26234771	3.07	26090315	100.55	60	125	
Ir (IS)	193	2	HMI He	17506933	2.97	19253459	90.93	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-5-C
Data File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:08:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	41.534	ppb	41.534	14.53	9008402	40000	
Be	9	1	6	-0.018	ppb	-0.018	-116.71	10	2000	
B	11	1	6	90.412	ppb	90.412	6.85	82022	100	
Na	23	2	45	89412.016	ppb	89412.016	1.32	50980259	400000	
Mg	24	2	45	12697.191	ppb	12697.191	2.09	3003294	400000	
Al	27	2	45	8.212	ppb	8.212	20.32	874	400000	
K	39	2	45	6530.179	ppb	6530.179	5.08	1073811	400000	
V	51	2	72	2.822	ppb	2.822	2.87	8808	2000	
Cr	52	2	72	0.166	ppb	0.166	32.32	1929	5000	
Mn	55	2	72	1.662	ppb	1.662	5.00	3487	10000	
(Fe)	57	2	72	35.932	ppb	35.932	15.72	3621	400000	
Co	59	2	72	0.128	ppb	0.128	6.65	828	2000	
Ni	60	2	72	1.508	ppb	1.508	7.14	2967	5000	
Cu	63	2	72	2.715	ppb	2.715	1.11	13572	5000	
Zn	66	2	72	2.804	ppb	2.804	9.93	2706	5000	
As	75	2	72	1.231	ppb	1.231	8.08	554	2000	
Se	78	1	72	2.489	ppb	2.489	10.04	1463	2000	
Sr	88	2	45	634.430	ppb	634.430	3.54	981312	2000	
Zr	90	2	72	37.743	ppb	37.743	60.81	1628	1000	
Nb	93	2	72	23.294	ppb	23.294	644.96	57	200	
Mo	95	2	115	4.816	ppb	4.816	5.79	10547	2000	
Pd	105	2	115	-209.147	ppb	-209.147	-48.18	87	100	
Ag	107	2	115	0.019	ppb	0.019	47.35	160	100	
Cd	111	2	115	-0.016	ppb	-0.016	-70.38	10	2000	
Sn	120	2	115	0.083	ppb	0.083	81.34	1912	2000	
Sb	121	2	115	0.592	ppb	0.592	16.61	1168	1000	
Ba	137	2	115	72.599	ppb	72.599	3.09	43657	5000	
W	182	2	165	0.787	ppb	0.787	3.67	7152	100	
Pt	195	2	165	-12.833	ppb	-12.833	-112.37	63	100	
Tl	205	2	165	-0.259	ppb	-0.259	-3.95	711	2000	
Pb	208	2	165	0.290	ppb	0.290	9.26	7271	5000	
Th	232	2	193	-0.213	ppb	-0.213	-52.40	27355	2000	
U	238	2	193	9.541	ppb	9.541	1.50	161361	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3431900	1.56	3709622	92.51	60	125	
Sc (IS)	45	2	HMI He	2747237	1.70	2724914	100.82	60	125	
Sc (IS)	45	3	No Gas	79639248	4.55	82891317	96.08	60	120	
Ge Internal standard	72	1	HMI H2	19348699	1.10	19447282	99.49	60	125	
Ge Internal standard	72	2	HMI He	2584533	3.00	2615067	98.83	60	125	
In Internal standard	115	2	HMI He	6793560	2.54	6700003	101.40	60	125	
Ho-165	165	2	HMI He	25554933	1.03	26090315	97.95	60	125	
Ir (IS)	193	2	HMI He	17693146	1.22	19253459	91.90	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-6-C
Data File Name	060SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:12:31-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	38.429	ppb	38.429	40.11	8339735	40000	
Be	9	1	6	-0.029	ppb	-0.029	0.00	0	2000	
B	11	1	6	105.775	ppb	105.775	6.04	90039	100	
Na	23	2	45	94691.121	ppb	94691.121	1.88	53875488	400000	
Mg	24	2	45	14157.737	ppb	14157.737	1.31	3341866	400000	
Al	27	2	45	6.616	ppb	6.616	12.04	767	400000	
K	39	2	45	5939.180	ppb	5939.180	2.22	975910	400000	
V	51	2	72	3.020	ppb	3.020	2.02	9622	2000	
Cr	52	2	72	0.203	ppb	0.203	23.18	2132	5000	
Mn	55	2	72	1.574	ppb	1.574	9.63	3407	10000	
(Fe)	57	2	72	25.094	ppb	25.094	6.51	2843	400000	
Co	59	2	72	0.136	ppb	0.136	14.88	901	2000	
Ni	60	2	72	1.578	ppb	1.578	0.41	3160	5000	
Cu	63	2	72	2.115	ppb	2.115	7.81	11128	5000	
Zn	66	2	72	3.791	ppb	3.791	14.12	3460	5000	
As	75	2	72	1.411	ppb	1.411	16.18	637	2000	
Se	78	1	72	2.100	ppb	2.100	6.42	1272	2000	
Sr	88	2	45	736.276	ppb	736.276	1.62	1137018	2000	
Zr	90	2	72	29.245	ppb	29.245	56.91	1588	1000	
Nb	93	2	72	-4.956	ppb	-4.956	-1269.18	53	200	
Mo	95	2	115	4.607	ppb	4.607	2.16	10283	2000	
Pd	105	2	115	-148.396	ppb	-148.396	-48.97	120	100	
Ag	107	2	115	0.019	ppb	0.019	37.75	167	100	
Cd	111	2	115	-0.001	ppb	-0.001	-2481.37	23	2000	
Sn	120	2	115	0.411	ppb	0.411	31.99	2630	2000	
Sb	121	2	115	0.475	ppb	0.475	10.52	971	1000	
Ba	137	2	115	79.724	ppb	79.724	2.53	48806	5000	
W	182	2	165	0.734	ppb	0.734	3.12	6762	100	
Pt	195	2	165	15.264	ppb	15.264	107.50	103	100	
Tl	205	2	165	-0.259	ppb	-0.259	-4.84	714	2000	
Pb	208	2	165	0.048	ppb	0.048	22.56	3620	5000	
Th	232	2	193	-0.386	ppb	-0.386	-14.05	25162	2000	
U	238	2	193	12.891	ppb	12.891	1.84	216557	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3240309	4.13	3709622	87.35	60	125	
Sc (IS)	45	2	HMI He	2741614	2.11	2724914	100.61	60	125	
Sc (IS)	45	3	No Gas	79187149	1.80	82891317	95.53	60	120	
Ge Internal standard	72	1	HMI H2	19913722	4.70	19447282	102.40	60	125	
Ge Internal standard	72	2	HMI He	2643547	2.55	2615067	101.09	60	125	
In Internal standard	115	2	HMI He	6914276	1.31	6700003	103.20	60	125	
Ho-165	165	2	HMI He	25380372	1.61	26090315	97.28	60	125	
Ir (IS)	193	2	HMI He	17625012	1.40	19253459	91.54	60	125	

Sample Report

Sample Table

Sample Name	280-165567-B-7-C
Data File Name	061SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:16:04-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	34.654	ppb	34.654	47.91	8726027	40000	
Be	9	1	6	-0.022	ppb	-0.022	-61.97	7	2000	
B	11	1	6	98.748	ppb	98.748	2.83	88900	100	
Na	23	2	45	91325.313	ppb	91325.313	1.75	51901107	400000	
Mg	24	2	45	13915.164	ppb	13915.164	2.48	3280279	400000	
Al	27	2	45	4.397	ppb	4.397	4.68	621	400000	
K	39	2	45	5631.400	ppb	5631.400	1.52	924966	400000	
V	51	2	72	3.175	ppb	3.175	6.17	9579	2000	
Cr	52	2	72	0.222	ppb	0.222	16.03	2096	5000	
Mn	55	2	72	0.617	ppb	0.617	8.78	1515	10000	
(Fe)	57	2	72	14.326	ppb	14.326	6.45	1882	400000	
Co	59	2	72	0.127	ppb	0.127	13.06	801	2000	
Ni	60	2	72	1.455	ppb	1.455	6.43	2793	5000	
Cu	63	2	72	2.338	ppb	2.338	2.46	11539	5000	
Zn	66	2	72	2.751	ppb	2.751	3.22	2589	5000	
As	75	2	72	1.626	ppb	1.626	19.58	687	2000	
Se	78	1	72	2.110	ppb	2.110	5.77	1276	2000	
Sr	88	2	45	695.945	ppb	695.945	2.23	1073319	2000	
Zr	90	2	72	33.595	ppb	33.595	22.22	1548	1000	
Nb	93	2	72	54.007	ppb	54.007	98.61	60	200	
Mo	95	2	115	4.766	ppb	4.766	6.04	10243	2000	
Pd	105	2	115	-204.215	ppb	-204.215	-30.40	87	100	
Ag	107	2	115	0.009	ppb	0.009	94.58	97	100	
Cd	111	2	115	-0.008	ppb	-0.008	-178.86	17	2000	
Sn	120	2	115	0.070	ppb	0.070	225.14	1845	2000	
Sb	121	2	115	0.637	ppb	0.637	13.11	1228	1000	
Ba	137	2	115	81.382	ppb	81.382	1.09	47999	5000	
W	182	2	165	0.727	ppb	0.727	14.63	6728	100	
Pt	195	2	165	-5.697	ppb	-5.697	-245.28	73	100	
Tl	205	2	165	-0.261	ppb	-0.261	-3.92	684	2000	
Pb	208	2	165	0.025	ppb	0.025	22.17	3283	5000	
Th	232	2	193	-0.534	ppb	-0.534	-13.79	22960	2000	
U	238	2	193	12.484	ppb	12.484	2.14	206049	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3415871	3.11	3709622	92.08	60	125	
Sc (IS)	45	2	HMI He	2738777	2.46	2724914	100.51	60	125	
Sc (IS)	45	3	No Gas	78368087	3.72	82891317	94.54	60	120	
Ge Internal standard	72	1	HMI H2	19870581	3.85	19447282	102.18	60	125	
Ge Internal standard	72	2	HMI He	2509542	3.07	2615067	95.96	60	125	
In Internal standard	115	2	HMI He	6661031	0.61	6700003	99.42	60	125	
Ho-165	165	2	HMI He	25408788	1.22	26090315	97.39	60	125	
Ir (IS)	193	2	HMI He	17313147	1.85	19253459	89.92	60	125	

Sample Report

Sample Table

Sample Name	280-165566-E-1-B
Data File Name	062SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:19:40-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584767 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	57.507	ppb	57.507	2.10	8756220	40000	
Be	9	1	6	-0.025	ppb	-0.025	-31.28	3	2000	
B	11	1	6	45.648	ppb	45.648	3.16	39100	100	
Na	23	2	45	70216.754	ppb	70216.754	2.16	40192236	400000	
Mg	24	2	45	49778.584	ppb	49778.584	1.07	11819560	400000	
Al	27	2	45	11.915	ppb	11.915	13.53	1121	400000	
K	39	2	45	8165.325	ppb	8165.325	3.06	1345593	400000	
V	51	2	72	0.032	ppb	0.032	26.31	380	2000	
Cr	52	2	72	0.231	ppb	0.231	8.51	2166	5000	
Mn	55	2	72	130.413	ppb	130.413	1.66	237868	10000	
(Fe)	57	2	72	35.531	ppb	35.531	8.15	3547	400000	
Co	59	2	72	0.323	ppb	0.323	9.65	2029	2000	
Ni	60	2	72	0.976	ppb	0.976	18.99	2036	5000	
Cu	63	2	72	0.760	ppb	0.760	13.99	4769	5000	
Zn	66	2	72	6.318	ppb	6.318	6.56	5073	5000	
As	75	2	72	0.098	ppb	0.098	46.76	100	2000	
Se	78	1	72	0.081	ppb	0.081	85.52	63	2000	
Sr	88	2	45	1606.450	ppb	1606.450	2.07	2494829	2000	
Zr	90	2	72	-1.855	ppb	-1.855	-445.66	1255	1000	
Nb	93	2	72	-157.567	ppb	-157.567	-59.49	27	200	
Mo	95	2	115	0.118	ppb	0.118	36.11	377	2000	
Pd	105	2	115	-27.061	ppb	-27.061	-236.91	180	100	
Ag	107	2	115	0.014	ppb	0.014	19.04	130	100	
Cd	111	2	115	-0.020	ppb	-0.020	-34.48	7	2000	
Sn	120	2	115	0.000	ppb	0.000	16832.53	1725	2000	
Sb	121	2	115	0.044	ppb	0.044	96.06	160	1000	
Ba	137	2	115	4.850	ppb	4.850	3.21	2960	5000	
W	182	2	165	-0.004	ppb	-0.004	-360.99	1955	100	
Pt	195	2	165	26.224	ppb	26.224	177.92	117	100	
Tl	205	2	165	-0.199	ppb	-0.199	-10.18	1361	2000	
Pb	208	2	165	-0.012	ppb	-0.012	-52.37	2693	5000	
Th	232	2	193	-0.472	ppb	-0.472	-18.33	23762	2000	
U	238	2	193	0.149	ppb	0.149	14.91	4198	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3127350	2.86	3709622	84.30	60	125	
Sc (IS)	45	2	HMI He	2757826	1.20	2724914	101.21	60	125	
Sc (IS)	45	3	No Gas	79142093	4.42	82891317	95.48	60	120	
Ge Internal standard	72	1	HMI H2	18853644	2.88	19447282	96.95	60	125	
Ge Internal standard	72	2	HMI He	2547319	0.61	2615067	97.41	60	125	
In Internal standard	115	2	HMI He	6730928	1.07	6700003	100.46	60	125	
Ho-165	165	2	HMI He	25010498	1.48	26090315	95.86	60	125	
Ir (IS)	193	2	HMI He	17359036	1.34	19253459	90.16	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	063_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:23:12-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	148.828	ppb	15.933	11227489	100	148.8	90	110	>+\-10%
Be	9	1	6	46.767	ppb	6.899	39956	50	93.5	90	110	
B	11	1	6	462.081	ppb	5.083	412559	500	92.4	90	110	
Na	23	2	45	48662.320	ppb	4.000	27867347	51000	95.4	90	110	
Mg	24	2	45	10963.580	ppb	1.173	2604971	11000	99.7	90	110	
(Mg)	25	2	45	10169.172	ppb	3.268	376510	11000	92.4	90	110	
Al	27	2	45	1023.826	ppb	4.862	68053	1000	102.4	90	110	
Si	28	2	45	503.143	ppb	3.149	23696	500	100.6	90	110	
P	31	2	45	2001.276	ppb	2.804	12151	2500	80.1	90	110	>+\-10%
K	39	2	45	11344.604	ppb	3.246	1865774	11000	103.1	90	110	
Ca	40	1	45	12176.210	ppb	0.835	132206303	11000	110.7	90	110	>+\-10%
(Ca)	44	1	45	10309.613	ppb	1.420	3957850	11000	93.7	90	110	
Ti	47	2	45	50.859	ppb	5.947	4055	50	101.7	90	110	
V	51	2	72	49.067	ppb	1.865	149337	50	98.1	90	110	
Cr	52	2	72	48.751	ppb	0.780	200770	50	97.5	90	110	
Mn	55	2	72	48.556	ppb	2.416	90657	50	97.1	90	110	
Fe	56	1	72	1007.928	ppb	0.316	16971587	20000	5.0	90	110	>+\-10%
(Fe)	56	2	72	991.827	ppb	1.629	3075913	20000	5.0	90	110	>+\-10%
(Fe)	57	2	72	972.862	ppb	1.027	77397	1000	97.3	90	110	
Co	59	2	72	47.342	ppb	2.915	301119	50	94.7	90	110	
Ni	60	2	72	47.353	ppb	1.960	81415	50	94.7	90	110	
Cu	63	2	72	46.634	ppb	1.942	210984	50	93.3	90	110	
Zn	66	2	72	46.888	ppb	2.262	33542	50	93.8	90	110	
As	75	2	72	46.890	ppb	2.549	18849	50	93.8	90	110	
Se	78	1	72	51.868	ppb	3.675	29481	50	103.7	90	110	
Sr	88	2	45	109.161	ppb	2.243	169721	100	109.2	90	110	
Zr	90	2	72	33.393	ppb	14.424	1602	50	66.8	90	110	>+\-10%
Nb	93	2	72	446.583	ppb	29.124	127	100	446.6	90	110	>+\-10%
Mo	95	2	115	49.443	ppb	1.879	108222	50	98.9	90	110	
Pd	105	2	115	-121.353	ppb	-75.078	133	50	-242.7	90	110	>+\-10%
Ag	107	2	115	48.429	ppb	2.252	304548	50	96.9	90	110	
Cd	111	2	115	50.207	ppb	5.403	43168	50	100.4	90	110	
Sn	120	2	115	51.945	ppb	2.213	109343	50	103.9	90	110	
Sb	121	2	115	52.014	ppb	1.326	96722	50	104.0	90	110	
Ba	137	2	115	51.915	ppb	1.778	31565	50	103.8	90	110	
W	182	2	165	49.995	ppb	1.823	334697	50	100.0	90	110	
Pt	195	2	165	16.107	ppb	264.525	107	50	32.2	90	110	>+\-10%
Tl	205	2	165	49.290	ppb	2.246	572999	50	98.6	90	110	
Pb	208	2	165	50.058	ppb	1.639	767073	50	100.1	90	110	
Bi	209	2	193	1359.290	ppb	103.457	2096	500	271.9	90	110	>+\-10%
Th	232	2	193	50.110	ppb	1.908	655643	50	100.2	90	110	
U	238	2	193	52.637	ppb	1.847	907036	50	105.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3482976	4.59	3709622	93.89	60	125	
Sc (IS)	45	2	HMI He	2759757	2.39	2724914	101.28	60	125	
Sc (IS)	45	3	No Gas	77710713	3.11	82891317	93.75	60	120	
Ge Internal standard	72	1	HMI H2	18915322	0.97	19447282	97.26	60	125	
Ge Internal standard	72	2	HMI He	2600009	1.11	2615067	99.42	60	125	
In Internal standard	115	2	HMI He	6858983	2.51	6700003	102.37	60	125	
Ho-165	165	2	HMI He	26101116	1.81	26090315	100.04	60	125	
Ir (IS)	193	2	HMI He	18191633	1.09	19253459	94.49	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	064_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:26:52-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	19.350	ppb	26.5	8358654	0.05	>RL
Be	9	1	6	0.031	ppb	77.5	53	0.5	
B	11	1	6	16.101	ppb	4.4	18107	0.1	>RL
Na	23	2	45	43.583	ppb	8.5	45702	25	>RL
Mg	24	2	45	10.773	ppb	21.7	2943	25	
Al	27	2	45	0.383	ppb	438.4	354	15	
K	39	2	45	10.804	ppb	19.6	12741	50	
V	51	2	72	0.048	ppb	72.2	427	1	
Cr	52	2	72	0.030	ppb	143.2	1351	1	
Mn	55	2	72	0.033	ppb	54.4	470	0.5	
(Fe)	57	2	72	1.466	ppb	75.9	914	25	
Co	59	2	72	0.036	ppb	27.3	240	0.5	
Ni	60	2	72	0.006	ppb	1160.6	407	1	
Cu	63	2	72	-0.004	ppb	-848.7	1398	1	
Zn	66	2	72	0.099	ppb	54.3	808	5	
As	75	2	72	0.014	ppb	602.5	67	1	
Se	78	1	72	0.106	ppb	16.6	79	1	
Sr	88	2	45	0.133	ppb	43.3	310	1	
Zr	90	2	72	1.052	ppb	1155.5	1275	1	>RL
Nb	93	2	72	-260.315	ppb	-23.7	10	2	
Mo	95	2	115	0.148	ppb	9.5	457	0.5	
Pd	105	2	115	-199.336	ppb	-56.1	93	1	
Ag	107	2	115	0.286	ppb	8.9	1875	1	
Cd	111	2	115	0.037	ppb	89.1	57	0.5	
Sn	120	2	115	0.827	ppb	20.8	3531	1	
Sb	121	2	115	0.051	ppb	47.1	180	1	
Ba	137	2	115	0.169	ppb	88.5	180	0.5	
W	182	2	165	0.338	ppb	1.4	4385	1	
Pt	195	2	165	-12.085	ppb	-140.3	67	1	
Tl	205	2	165	-0.112	ppb	-19.0	2466	0.1	
Pb	208	2	165	0.041	ppb	23.5	3681	0.5	
Th	232	2	193	2.722	ppb	2.2	66869	1	>RL
U	238	2	193	0.104	ppb	8.3	3738	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3636142	2.09	3709622	98.02	60	125	
Sc (IS)	45	2	HMI He	2713807	0.36	2724914	99.59	60	125	
Sc (IS)	45	3	No Gas	77431915	3.01	82891317	93.41	60	120	
Ge Internal standard	72	1	HMI H2	19278187	1.70	19447282	99.13	60	125	
Ge Internal standard	72	2	HMI He	2534315	1.07	2615067	96.91	60	125	
In Internal standard	115	2	HMI He	6976740	0.13	6700003	104.13	60	125	
Ho-165	165	2	HMI He	26499415	1.35	26090315	101.57	60	125	
Ir (IS)	193	2	HMI He	18787009	2.06	19253459	97.58	60	125	

Blank Report

Sample Table

Sample Name	MB 280-584807/1-A
Data File Name	065_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:30:27-06:00
Sample Type	Blank
Dilution	1
Comment	584807 200.8
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	6	33.886	ppb	35.48131716	8833251	0.05
Be	9	1	6	-0.010	ppb	-166.9795569	17	0.5
Na	23	2	45	10.562	ppb	10.33327165	26469	25
Mg	24	2	45	2.602	ppb	29.45161405	1011	25
Al	27	2	45	3.666	ppb	28.53042451	554	15
K	39	2	45	2.471	ppb	38.51439796	11131	50
V	51	2	72	0.006	ppb	267.5109847	304	1
Cr	52	2	72	0.050	ppb	52.99239486	1432	1
Mn	55	2	72	0.079	ppb	91.99989264	554	0.5
(Fe)	57	2	72	11.232	ppb	9.278062501	1665	25
Co	59	2	72	0.001	ppb	157.4893074	23	0.5
Ni	60	2	72	0.161	ppb	28.62986718	667	1
Cu	63	2	72	0.091	ppb	12.97933156	1815	1
Zn	66	2	72	1.385	ppb	8.66268033	1685	5
As	75	2	72	-0.012	ppb	-1401.647522	57	1
Se	78	1	72	0.036	ppb	162.835398	39	1
Sr	88	2	45	0.017	ppb	63.54045407	130	1
Zr	90	2	72	10.984	ppb	136.5685264	1365	1
Nb	93	2	72	-75.056	ppb	-158.2503044	40	2
Mo	95	2	115	-0.009	ppb	-307.2123824	107	0.5
Pd	105	2	115	-272.525	ppb	-3.051841627	53	1
Ag	107	2	115	0.048	ppb	23.39746034	350	1
Cd	111	2	115	-0.024	ppb	-26.95307038	3	0.5
Sn	120	2	115	0.352	ppb	17.60366186	2503	1
Sb	121	2	115	-0.007	ppb	-318.2580175	70	1
Ba	137	2	115	0.023	ppb	237.9049009	90	0.5
W	182	2	165	0.064	ppb	74.49818294	2529	1
Pt	195	2	165	21.442	ppb	171.3312927	117	1
Tl	205	2	165	-0.240	ppb	-4.716684936	958	0.1
Pb	208	2	165	0.019	ppb	50.08352043	3330	0.5
Th	232	2	193	1.145	ppb	18.2496864	46020	1
U	238	2	193	-0.033	ppb	-16.42561728	1291	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3621061	4.41	3709622	97.61	60	125	
Sc (IS)	45	2	HMI He	2649543	0.83	2724914	97.23	60	125	
Sc (IS)	45	3	No Gas	77762646	3.19	82891317	93.81	60	120	
Ge Internal standard	72	1	HMI H2	19598383	0.36	19447282	100.78	60	125	
Ge Internal standard	72	2	HMI He	2537668	2.57	2615067	97.04	60	125	
In Internal standard	115	2	HMI He	6901156	2.83	6700003	103.00	60	125	
Ho-165	165	2	HMI He	26435024	0.28	26090315	101.32	60	125	
Ir (IS)	193	2	HMI He	18585174	1.45	19253459	96.53	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584807/2-A
Data File Name	066_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:34:02-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584807 200.8
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	61.507	61.507	ppb	10.286	9409799	400	15.4	80	120	>+/-20%
Be	9	1	6	37.279	37.279	ppb	3.337	34129	40	93.2	80	120	
Na	23	2	45	838.949	838.949	ppb	1.932	479390	40	2097.4	80	120	>+/-20%
Mg	24	2	45	860.763	860.763	ppb	2.230	195732	40	2151.9	80	120	>+/-20%
Al	27	2	45	846.189	846.189	ppb	4.092	53792	40	2115.5	80	120	>+/-20%
K	39	2	45	863.035	863.035	ppb	2.021	145492	40	2157.6	80	120	>+/-20%
V	51	2	72	39.680	39.680	ppb	3.669	117093	40	99.2	80	120	
Cr	52	2	72	40.179	40.179	ppb	3.054	160567	40	100.4	80	120	
Mn	55	2	72	39.022	39.022	ppb	4.024	70679	40	97.6	80	120	
(Fe)	57	2	72	778.300	778.300	ppb	2.248	60190	40	1945.7	80	120	>+/-20%
Co	59	2	72	39.224	39.224	ppb	0.787	241867	40	98.1	80	120	
Ni	60	2	72	39.517	39.517	ppb	3.297	65910	40	98.8	80	120	
Cu	63	2	72	39.316	39.316	ppb	4.115	172582	40	98.3	80	120	
Zn	66	2	72	42.898	42.898	ppb	2.828	29828	40	107.2	80	120	
As	75	2	72	40.598	40.598	ppb	6.093	15816	40	101.5	80	120	
Se	78	1	72	43.165	43.165	ppb	1.739	24978	40	107.9	80	120	
Sr	88	2	45	87.568	87.568	ppb	3.439	130095	40	218.9	80	120	>+/-20%
Nb	93	2	72	-218.066	-218.066	ppb	-16.532	17	40	-545.2	80	120	>+/-20%
Mo	95	2	115	39.372	39.372	ppb	3.088	85635	40	98.4	80	120	
Pd	105	2	115	-277.284	-277.284	ppb	-30.109	50	40	-693.2	80	120	>+/-20%
Ag	107	2	115	39.737	39.737	ppb	4.168	248247	40	99.3	80	120	
Cd	111	2	115	40.998	40.998	ppb	5.658	35024	40	102.5	80	120	
Sn	120	2	115	42.039	42.039	ppb	2.259	88268	40	105.1	80	120	
Sb	121	2	115	42.373	42.373	ppb	4.051	78267	40	105.9	80	120	
Ba	137	2	115	43.206	43.206	ppb	3.562	26093	40	108.0	80	120	
W	182	2	165	0.282	0.282	ppb	7.759	4035	40	0.7	80	120	>+/-20%
Pt	195	2	165	-3.546	-3.546	ppb	-209.301	80	40	-8.9	80	120	>+/-20%
Tl	205	2	165	39.906	39.906	ppb	1.280	475165	40	99.8	80	120	
Pb	208	2	165	41.899	41.899	ppb	2.179	657027	40	104.7	80	120	
Th	232	2	193	42.838	42.838	ppb	2.657	581618	40	107.1	80	120	
U	238	2	193	41.484	41.484	ppb	4.286	736081	40	103.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3724978	1.43	3709622	100.41	60	125	
Sc (IS)	45	2	HMI He	2636048	1.25	2724914	96.74	60	125	
Sc (IS)	45	3	No Gas	76420424	3.47	82891317	92.19	60	120	
Ge Internal standard	72	1	HMI H2	19255891	1.63	19447282	99.02	60	125	
Ge Internal standard	72	2	HMI He	2520893	2.55	2615067	96.40	60	125	
In Internal standard	115	2	HMI He	6816214	3.09	6700003	101.73	60	125	
Ho-165	165	2	HMI He	26691381	1.65	26090315	102.30	60	125	
Ir (IS)	193	2	HMI He	18735116	2.97	19253459	97.31	60	125	

Sample Report

Sample Table

Sample Name	280-165748-A-1-A
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:37:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584807 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	35.192	ppb	35.192	49.74	8851578	40000	
Be	9	1	6	0.008	ppb	0.008	352.43	33	2000	
B	11	1	6	23.662	ppb	23.662	9.52	24932	100	
Na	23	2	45	28662.135	ppb	28662.135	1.53	15769314	400000	
Mg	24	2	45	10803.270	ppb	10803.270	2.83	2464002	400000	
Al	27	2	45	87.627	ppb	87.627	7.30	5887	400000	
K	39	2	45	2313.234	ppb	2313.234	0.71	373798	400000	
V	51	2	72	1.087	ppb	1.087	4.50	3497	2000	
Cr	52	2	72	5.119	ppb	5.119	6.08	21605	5000	
Mn	55	2	72	4.270	ppb	4.270	8.05	8123	10000	
(Fe)	57	2	72	128.433	ppb	128.433	3.20	10637	400000	
Co	59	2	72	0.099	ppb	0.099	10.85	634	2000	
Ni	60	2	72	2.254	ppb	2.254	10.56	4158	5000	
Cu	63	2	72	14.236	ppb	14.236	2.00	63666	5000	
Zn	66	2	72	4.499	ppb	4.499	8.97	3798	5000	
As	75	2	72	0.527	ppb	0.527	17.63	267	2000	
Se	78	1	72	4.144	ppb	4.144	3.65	2383	2000	
Sr	88	2	45	423.136	ppb	423.136	2.94	631132	2000	
Zr	90	2	72	9.225	ppb	9.225	182.04	1345	1000	
Nb	93	2	72	153.081	ppb	153.081	95.72	77	200	
Mo	95	2	115	5.167	ppb	5.167	2.90	11796	2000	
Pd	105	2	115	-165.415	ppb	-165.415	-34.71	113	100	
Ag	107	2	115	0.216	ppb	0.216	22.26	1445	100	
Cd	111	2	115	0.021	ppb	0.021	57.86	43	2000	
Sn	120	2	115	0.712	ppb	0.712	32.45	3327	2000	
Sb	121	2	115	0.509	ppb	0.509	9.19	1061	1000	
Ba	137	2	115	45.628	ppb	45.628	4.56	28616	5000	
W	182	2	165	0.135	ppb	0.135	29.49	3020	100	
Pt	195	2	165	14.432	ppb	14.432	159.22	107	100	
Tl	205	2	165	-0.115	ppb	-0.115	-7.07	2426	2000	
Pb	208	2	165	0.109	ppb	0.109	16.16	4735	5000	
Th	232	2	193	2.808	ppb	2.808	4.59	66132	2000	
U	238	2	193	2.818	ppb	2.818	4.61	50539	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3617444	4.11	3709622	97.52	60	125	
Sc (IS)	45	2	HMI He	2648409	0.82	2724914	97.19	60	125	
Sc (IS)	45	3	No Gas	80615531	1.27	82891317	97.25	60	120	
Ge Internal standard	72	1	HMI H2	19020569	2.85	19447282	97.81	60	125	
Ge Internal standard	72	2	HMI He	2531007	2.79	2615067	96.79	60	125	
In Internal standard	115	2	HMI He	7085050	4.86	6700003	105.75	60	125	
Ho-165	165	2	HMI He	26529787	0.82	26090315	101.68	60	125	
Ir (IS)	193	2	HMI He	18284706	1.35	19253459	94.97	60	125	

Sample Report

Sample Table

Sample Name	280-165748-A-1-B MS
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:41:07-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584807 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	82.077	ppb	82.077	26.97	9880194	40000	
Be	9	1	6	36.816	ppb	36.816	6.70	32792	2000	
B	11	1	6	24.932	ppb	24.932	3.43	26225	100	
Na	23	2	45	29698.040	ppb	29698.040	2.66	16877492	400000	
Mg	24	2	45	11907.891	ppb	11907.891	1.74	2805375	400000	
Al	27	2	45	906.088	ppb	906.088	1.94	59777	400000	
K	39	2	45	3165.512	ppb	3165.512	0.51	524430	400000	
V	51	2	72	40.090	ppb	40.090	0.84	122847	2000	
Cr	52	2	72	43.420	ppb	43.420	2.49	180085	5000	
Mn	55	2	72	42.015	ppb	42.015	2.56	79004	10000	
(Fe)	57	2	72	874.514	ppb	874.514	4.12	70079	400000	
Co	59	2	72	36.938	ppb	36.938	3.90	236367	2000	
Ni	60	2	72	40.365	ppb	40.365	2.28	69879	5000	
Cu	63	2	72	51.117	ppb	51.117	1.77	232571	5000	
Zn	66	2	72	42.795	ppb	42.795	3.70	30868	5000	
As	75	2	72	38.904	ppb	38.904	3.39	15746	2000	
Se	78	1	72	47.800	ppb	47.800	2.05	27833	2000	
Sr	88	2	45	501.492	ppb	501.492	1.53	772859	2000	
Zr	90	2	72	5.166	ppb	5.166	398.34	1355	1000	
Nb	93	2	72	-81.559	ppb	-81.559	-71.13	40	200	
Mo	95	2	115	44.251	ppb	44.251	0.46	98008	2000	
Pd	105	2	115	-192.788	ppb	-192.788	-35.33	97	100	
Ag	107	2	115	37.905	ppb	37.905	2.00	241174	100	
Cd	111	2	115	39.399	ppb	39.399	2.16	34299	2000	
Sn	120	2	115	40.558	ppb	40.558	1.90	86765	2000	
Sb	121	2	115	40.881	ppb	40.881	2.61	76913	1000	
Ba	137	2	115	91.109	ppb	91.109	2.52	55955	5000	
W	182	2	165	0.423	ppb	0.423	2.63	4939	100	
Pt	195	2	165	-9.520	ppb	-9.520	-359.65	70	100	
Tl	205	2	165	40.449	ppb	40.449	3.77	475924	2000	
Pb	208	2	165	40.859	ppb	40.859	2.67	633390	5000	
Th	232	2	193	44.077	ppb	44.077	3.48	579571	2000	
U	238	2	193	45.060	ppb	45.060	1.85	775937	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3629865	4.82	3709622	97.85	60	125	
Sc (IS)	45	2	HMI He	2736468	1.76	2724914	100.42	60	125	
Sc (IS)	45	3	No Gas	78278783	2.99	82891317	94.44	60	120	
Ge Internal standard	72	1	HMI H2	19379112	2.19	19447282	99.65	60	125	
Ge Internal standard	72	2	HMI He	2616466	1.13	2615067	100.05	60	125	
In Internal standard	115	2	HMI He	6938073	1.71	6700003	103.55	60	125	
Ho-165	165	2	HMI He	26383633	1.48	26090315	101.12	60	125	
Ir (IS)	193	2	HMI He	18177847	3.66	19253459	94.41	60	125	

Sample Report

Sample Table

Sample Name	280-165748-A-1-C MSD
Data File Name	069SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:44:40-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584807 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	65.807	ppb	65.807	5.76	9808518	40000	
Be	9	1	6	37.065	ppb	37.065	5.88	33654	2000	
B	11	1	6	23.339	ppb	23.339	8.04	25196	100	
Na	23	2	45	28500.606	ppb	28500.606	2.34	16493438	400000	
Mg	24	2	45	11136.111	ppb	11136.111	2.95	2671029	400000	
Al	27	2	45	891.944	ppb	891.944	1.21	59920	400000	
K	39	2	45	3052.360	ppb	3052.360	1.71	515212	400000	
V	51	2	72	41.314	ppb	41.314	1.47	125016	2000	
Cr	52	2	72	43.995	ppb	43.995	1.29	180178	5000	
Mn	55	2	72	42.879	ppb	42.879	2.04	79611	10000	
(Fe)	57	2	72	891.899	ppb	891.899	2.51	70605	400000	
Co	59	2	72	38.454	ppb	38.454	1.69	243083	2000	
Ni	60	2	72	41.355	ppb	41.355	2.15	70689	5000	
Cu	63	2	72	52.041	ppb	52.041	1.35	233795	5000	
Zn	66	2	72	43.254	ppb	43.254	0.66	30808	5000	
As	75	2	72	40.790	ppb	40.790	4.60	16307	2000	
Se	78	1	72	47.690	ppb	47.690	0.39	27879	2000	
Sr	88	2	45	486.079	ppb	486.079	2.33	762677	2000	
Zr	90	2	72	33.789	ppb	33.789	26.98	1595	1000	
Nb	93	2	72	44.908	ppb	44.908	282.92	60	200	
Mo	95	2	115	45.945	ppb	45.945	0.87	99860	2000	
Pd	105	2	115	-182.298	ppb	-182.298	-12.11	100	100	
Ag	107	2	115	39.157	ppb	39.157	1.33	244525	100	
Cd	111	2	115	41.864	ppb	41.864	3.66	35757	2000	
Sn	120	2	115	42.354	ppb	42.354	2.37	88858	2000	
Sb	121	2	115	42.603	ppb	42.603	1.46	78669	1000	
Ba	137	2	115	91.405	ppb	91.405	2.35	55088	5000	
W	182	2	165	0.387	ppb	0.387	2.44	4599	100	
Pt	195	2	165	23.378	ppb	23.378	122.54	117	100	
Tl	205	2	165	41.673	ppb	41.673	2.91	480333	2000	
Pb	208	2	165	42.506	ppb	42.506	2.31	645507	5000	
Th	232	2	193	46.596	ppb	46.596	1.74	624100	2000	
U	238	2	193	45.391	ppb	45.391	1.27	798163	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3698575	3.76	3709622	99.70	60	125	
Sc (IS)	45	2	HMI He	2785982	1.05	2724914	102.24	60	125	
Sc (IS)	45	3	No Gas	79506541	5.28	82891317	95.92	60	120	
Ge Internal standard	72	1	HMI H2	19451839	1.57	19447282	100.02	60	125	
Ge Internal standard	72	2	HMI He	2583851	1.71	2615067	98.81	60	125	
In Internal standard	115	2	HMI He	6809310	1.63	6700003	101.63	60	125	
Ho-165	165	2	HMI He	25855818	2.86	26090315	99.10	60	125	
Ir (IS)	193	2	HMI He	18555517	0.90	19253459	96.37	60	125	

Sample Report

Sample Table

Sample Name	280-165748-A-3-A
Data File Name	070SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:48:13-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584807 200.8
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	28.130	ppb	28.130	53.10	8365458	40000	
Be	9	1	6	0.022	ppb	0.022	243.16	43	2000	
B	11	1	6	33.367	ppb	33.367	1.92	32394	100	
Na	23	2	45	165289.994	ppb	165289.994	4.66	96117427	400000	
Mg	24	2	45	11859.995	ppb	11859.995	4.36	2862069	400000	
Al	27	2	45	123.511	ppb	123.511	5.47	8647	400000	
K	39	2	45	4924.204	ppb	4924.204	1.70	829458	400000	
V	51	2	72	1.248	ppb	1.248	5.63	4131	2000	
Cr	52	2	72	4.465	ppb	4.465	2.84	19777	5000	
Mn	55	2	72	5.139	ppb	5.139	5.43	10096	10000	
(Fe)	57	2	72	124.026	ppb	124.026	3.17	10714	400000	
Co	59	2	72	0.089	ppb	0.089	18.71	594	2000	
Ni	60	2	72	2.178	ppb	2.178	10.47	4181	5000	
Cu	63	2	72	6.456	ppb	6.456	4.05	30834	5000	
Zn	66	2	72	3.092	ppb	3.092	5.49	2957	5000	
As	75	2	72	0.452	ppb	0.452	14.02	247	2000	
Se	78	1	72	4.370	ppb	4.370	2.67	2624	2000	
Sr	88	2	45	484.049	ppb	484.049	1.57	764346	2000	
Zr	90	2	72	-14.307	ppb	-14.307	-74.53	1181	1000	
Nb	93	2	72	-43.301	ppb	-43.301	-204.69	47	200	
Mo	95	2	115	5.343	ppb	5.343	5.17	11863	2000	
Pd	105	2	115	-83.417	ppb	-83.417	-143.51	153	100	
Ag	107	2	115	0.271	ppb	0.271	13.97	1759	100	
Cd	111	2	115	0.030	ppb	0.030	130.38	50	2000	
Sn	120	2	115	6.124	ppb	6.124	5.57	14511	2000	
Sb	121	2	115	0.570	ppb	0.570	7.06	1148	1000	
Ba	137	2	115	57.210	ppb	57.210	2.91	34934	5000	
W	182	2	165	0.116	ppb	0.116	25.01	2897	100	
Pt	195	2	165	11.869	ppb	11.869	339.53	103	100	
Tl	205	2	165	-0.107	ppb	-0.107	-15.61	2536	2000	
Pb	208	2	165	0.081	ppb	0.081	34.82	4308	5000	
Th	232	2	193	2.976	ppb	2.976	1.85	67395	2000	
U	238	2	193	2.956	ppb	2.956	3.46	52266	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3453639	1.27	3709622	93.10	60	125	
Sc (IS)	45	2	HMI He	2803976	2.16	2724914	102.90	60	125	
Sc (IS)	45	3	No Gas	82676602	2.27	82891317	99.74	60	120	
Ge Internal standard	72	1	HMI H2	19863982	1.95	19447282	102.14	60	125	
Ge Internal standard	72	2	HMI He	2632178	1.17	2615067	100.65	60	125	
In Internal standard	115	2	HMI He	6895620	2.86	6700003	102.92	60	125	
Ho-165	165	2	HMI He	26598851	2.11	26090315	101.95	60	125	
Ir (IS)	193	2	HMI He	18053790	0.28	19253459	93.77	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	071_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:51:46-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	138.463	ppb	6.920	10870364	100	138.5	90	110	>+\-10%
Be	9	1	6	46.074	ppb	1.655	40631	50	92.1	90	110	
B	11	1	6	439.598	ppb	0.349	405044	500	87.9	90	110	>+\-10%
Na	23	2	45	49475.524	ppb	1.082	28056089	51000	97.0	90	110	
Mg	24	2	45	11156.928	ppb	2.352	2623709	11000	101.4	90	110	
(Mg)	25	2	45	10493.027	ppb	4.447	384501	11000	95.4	90	110	
Al	27	2	45	1026.908	ppb	3.202	67568	1000	102.7	90	110	
Si	28	2	45	539.532	ppb	0.608	24892	500	107.9	90	110	
P	31	2	45	2097.602	ppb	2.754	12602	2500	83.9	90	110	>+\-10%
K	39	2	45	11434.444	ppb	3.470	1861336	11000	103.9	90	110	
Ca	40	1	45	11191.392	ppb	2.402	128285489	11000	101.7	90	110	
(Ca)	44	1	45	9684.453	ppb	3.086	3924578	11000	88.0	90	110	>+\-10%
Ti	47	2	45	51.614	ppb	2.529	4071	50	103.2	90	110	
V	51	2	72	48.153	ppb	4.812	147298	50	96.3	90	110	
Cr	52	2	72	47.426	ppb	2.694	196419	50	94.9	90	110	
Mn	55	2	72	47.005	ppb	3.844	88243	50	94.0	90	110	
Fe	56	1	72	1008.116	ppb	1.570	17716789	20000	5.0	90	110	>+\-10%
(Fe)	56	2	72	970.449	ppb	0.904	3029325	20000	4.9	90	110	>+\-10%
(Fe)	57	2	72	963.414	ppb	3.496	77065	1000	96.3	90	110	
Co	59	2	72	46.704	ppb	3.930	298602	50	93.4	90	110	
Ni	60	2	72	45.913	ppb	2.429	79378	50	91.8	90	110	
Cu	63	2	72	45.289	ppb	3.363	206040	50	90.6	90	110	
Zn	66	2	72	45.925	ppb	4.400	33040	50	91.9	90	110	
As	75	2	72	49.363	ppb	3.783	19975	50	98.7	90	110	
Se	78	1	72	49.680	ppb	1.716	29477	50	99.4	90	110	
Sr	88	2	45	109.543	ppb	0.774	168598	100	109.5	90	110	
Zr	90	2	72	38.177	ppb	37.947	1655	50	76.4	90	110	>+\-10%
Nb	93	2	72	343.177	ppb	63.728	110	100	343.2	90	110	>+\-10%
Mo	95	2	115	48.336	ppb	1.429	107822	50	96.7	90	110	
Pd	105	2	115	-118.688	ppb	-118.487	137	50	-237.4	90	110	>+\-10%
Ag	107	2	115	46.975	ppb	1.865	301090	50	94.0	90	110	
Cd	111	2	115	48.018	ppb	2.402	42100	50	96.0	90	110	
Sn	120	2	115	51.445	ppb	3.685	110374	50	102.9	90	110	
Sb	121	2	115	48.875	ppb	2.390	92619	50	97.7	90	110	
Ba	137	2	115	51.599	ppb	1.558	31959	50	103.2	90	110	
W	182	2	165	49.014	ppb	2.597	334472	50	98.0	90	110	
Pt	195	2	165	16.672	ppb	148.329	110	50	33.3	90	110	>+\-10%
Tl	205	2	165	48.091	ppb	1.158	569958	50	96.2	90	110	
Pb	208	2	165	49.296	ppb	1.435	769995	50	98.6	90	110	
Bi	209	2	193	2382.287	ppb	64.669	2242	500	476.5	90	110	>+\-10%
Th	232	2	193	54.096	ppb	0.788	704443	50	108.2	90	110	
U	238	2	193	53.196	ppb	1.647	915327	50	106.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3587779	0.55	3709622	96.72	60	125	
Sc (IS)	45	2	HMI He	2731263	1.36	2724914	100.23	60	125	
Sc (IS)	45	3	No Gas	79507874	1.45	82891317	95.92	60	120	
Ge Internal standard	72	1	HMI H2	19743402	0.56	19447282	101.52	60	125	
Ge Internal standard	72	2	HMI He	2615812	3.47	2615067	100.03	60	125	
In Internal standard	115	2	HMI He	6988989	1.24	6700003	104.31	60	125	
Ho-165	165	2	HMI He	26602102	1.41	26090315	101.96	60	125	
Ir (IS)	193	2	HMI He	18165323	1.26	19253459	94.35	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	072_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:55:17-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	26.360	ppb	51.7	8907410	0.05	>RL
Be	9	1	6	0.026	ppb	110.3	50	0.5	
B	11	1	6	15.908	ppb	6.5	18181	0.1	>RL
Na	23	2	45	48.316	ppb	9.1	47679	25	>RL
Mg	24	2	45	9.619	ppb	13.1	2640	25	
Al	27	2	45	1.764	ppb	79.1	437	15	
K	39	2	45	14.883	ppb	2.6	13205	50	
V	51	2	72	0.062	ppb	84.1	480	1	
Cr	52	2	72	-0.004	ppb	-583.8	1251	1	
Mn	55	2	72	0.044	ppb	133.7	501	0.5	
(Fe)	57	2	72	-0.143	ppb	-995.7	811	25	
Co	59	2	72	0.050	ppb	31.8	337	0.5	
Ni	60	2	72	0.060	ppb	37.8	511	1	
Cu	63	2	72	-0.006	ppb	-217.8	1425	1	
Zn	66	2	72	-0.094	ppb	-79.1	694	5	
As	75	2	72	0.027	ppb	314.0	73	1	
Se	78	1	72	0.170	ppb	2.7	117	1	
Sr	88	2	45	0.112	ppb	41.7	274	1	
Zr	90	2	72	-6.311	ppb	-424.0	1235	1	
Nb	93	2	72	-198.382	ppb	-62.7	20	2	
Mo	95	2	115	0.200	ppb	8.8	567	0.5	
Pd	105	2	115	-266.299	ppb	-16.0	57	1	
Ag	107	2	115	0.358	ppb	20.9	2313	1	
Cd	111	2	115	0.027	ppb	204.5	47	0.5	
Sn	120	2	115	0.941	ppb	9.8	3724	1	
Sb	121	2	115	0.083	ppb	3.8	237	1	
Ba	137	2	115	0.035	ppb	213.0	97	0.5	
W	182	2	165	0.344	ppb	5.6	4335	1	
Pt	195	2	165	16.103	ppb	21.9	107	1	>RL
Tl	205	2	165	-0.091	ppb	-28.6	2656	0.1	
Pb	208	2	165	0.020	ppb	132.4	3283	0.5	
Th	232	2	193	3.452	ppb	1.1	74882	1	>RL
U	238	2	193	0.110	ppb	13.3	3771	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3690516	2.63	3709622	99.48	60	125	
Sc (IS)	45	2	HMI He	2674882	1.94	2724914	98.16	60	125	
Sc (IS)	45	3	No Gas	77302573	2.49	82891317	93.26	60	120	
Ge Internal standard	72	1	HMI H2	19620543	1.96	19447282	100.89	60	125	
Ge Internal standard	72	2	HMI He	2598491	3.27	2615067	99.37	60	125	
In Internal standard	115	2	HMI He	6894091	1.21	6700003	102.90	60	125	
Ho-165	165	2	HMI He	25950757	0.76	26090315	99.47	60	125	
Ir (IS)	193	2	HMI He	18447865	2.22	19253459	95.82	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	073LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T17:58:49-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	29.430	ppb	41.290	8371303	50	58.9	70	130	>+/-30%
Be	9	1	6	0.745	ppb	14.851	687	1	74.5	70	130	
Na	23	2	45	53.242	ppb	3.603	49934	50	106.5	70	130	
Mg	24	2	45	57.467	ppb	9.202	13522	50	114.9	70	130	
Al	27	2	45	52.056	ppb	4.116	3631	50	104.1	70	130	
K	39	2	45	106.780	ppb	4.007	27508	100	106.8	70	130	
V	51	2	72	4.690	ppb	4.506	14454	5	93.8	70	130	
Cr	52	2	72	1.901	ppb	5.978	8991	2	95.0	70	130	
Mn	55	2	72	1.116	ppb	2.739	2479	1	111.6	70	130	
(Fe)	57	2	72	48.616	ppb	9.746	4622	50	97.2	70	130	
Co	59	2	72	1.017	ppb	2.179	6451	1	101.7	70	130	
Ni	60	2	72	1.941	ppb	3.310	3704	2	97.0	70	130	
Cu	63	2	72	2.104	ppb	2.402	10841	2	105.2	70	130	
Zn	66	2	72	10.353	ppb	3.391	7950	10	103.5	70	130	
As	75	2	72	4.973	ppb	14.023	2042	5	99.5	70	130	
Se	78	1	72	5.388	ppb	5.157	3058	5	107.8	70	130	
Sr	88	2	45	1.014	ppb	7.040	1618	1	101.4	70	130	
Zr	90	2	72	-10.238	ppb	-165.181	1198	0.5	-2047.6	70	130	>+/-30%
Nb	93	2	72	-118.913	ppb	-78.543	33	2	-5945.7	70	130	>+/-30%
Mo	95	2	115	2.018	ppb	0.930	4572	2	100.9	70	130	
Pd	105	2	115	-266.518	ppb	-14.141	57	1	-26651.8	70	130	>+/-30%
Ag	107	2	115	0.922	ppb	5.193	5884	1	92.2	70	130	
Cd	111	2	115	0.936	ppb	3.144	834	1	93.6	70	130	
Sn	120	2	115	10.787	ppb	2.061	24275	10	107.9	70	130	
Sb	121	2	115	1.922	ppb	11.075	3677	2	96.1	70	130	
Ba	137	2	115	1.232	ppb	21.592	828	1	123.2	70	130	
W	182	2	165	5.050	ppb	2.887	35631	1	505.0	70	130	>+/-30%
Pt	195	2	165	15.748	ppb	108.119	107	1	1574.8	70	130	>+/-30%
Tl	205	2	165	0.828	ppb	5.209	13272	1	82.8	70	130	
Pb	208	2	165	1.108	ppb	1.002	19881	1	110.8	70	130	
Th	232	2	193	3.420	ppb	9.156	75591	2	171.0	70	130	>+/-30%
U	238	2	193	1.020	ppb	1.732	19963	1	102.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3621115	2.53	3709622	97.61	60	125	
Sc (IS)	45	2	HMI He	2650250	2.16	2724914	97.26	60	125	
Sc (IS)	45	3	No Gas	75625160	1.64	82891317	91.23	60	120	
Ge Internal standard	72	1	HMI H2	18798157	0.92	19447282	96.66	60	125	
Ge Internal standard	72	2	HMI He	2584196	0.87	2615067	98.82	60	125	
In Internal standard	115	2	HMI He	6906665	1.21	6700003	103.08	60	125	
Ho-165	165	2	HMI He	26072683	1.21	26090315	99.93	60	125	
Ir (IS)	193	2	HMI He	18741545	2.71	19253459	97.34	60	125	

Blank Report

Sample Table

Sample Name	MB 280-584879/1-A
Data File Name	074_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:02:24-06:00
Sample Type	Blank
Dilution	1
Comment	584879 6020a
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	6	30.119	ppb	65.96849898	8491665	0.05
Be	9	1	6	-0.018	ppb	-60.18469292	10	0.5
Na	23	2	45	15.739	ppb	8.6265551	30198	25
Mg	24	2	45	4.332	ppb	25.81763926	1452	25
Al	27	2	45	2.603	ppb	78.31977309	501	15
K	39	2	45	-0.043	ppb	-4642.353481	11054	50
V	51	2	72	-0.024	ppb	-61.64538411	214	1
Cr	52	2	72	0.246	ppb	21.39672538	2202	1
Mn	55	2	72	0.191	ppb	30.90264243	751	0.5
(Fe)	57	2	72	2.769	ppb	130.5151873	1011	25
Co	59	2	72	0.008	ppb	28.83816807	67	0.5
Ni	60	2	72	0.053	ppb	52.77600269	484	1
Cu	63	2	72	0.006	ppb	453.9982723	1435	1
Zn	66	2	72	0.439	ppb	21.45210037	1034	5
As	75	2	72	0.032	ppb	371.3613151	73	1
Se	78	1	72	0.025	ppb	90.70267153	31	1
Sr	88	2	45	0.110	ppb	33.26065513	277	1
Zr	90	2	72	22.551	ppb	108.5920062	1455	1
Nb	93	2	72	-195.536	ppb	-57.55455134	20	2
Mo	95	2	115	0.048	ppb	50.02673056	240	0.5
Pd	105	2	115	-170.777	ppb	-30.2964243	110	1
Ag	107	2	115	0.040	ppb	26.77586252	304	1
Cd	111	2	115	-0.009	ppb	-383.4114058	17	0.5
Sn	120	2	115	0.636	ppb	14.99710206	3174	1
Sb	121	2	115	0.074	ppb	66.07020223	227	1
Ba	137	2	115	0.025	ppb	235.1287933	93	0.5
W	182	2	165	0.116	ppb	22.0023143	2846	1
Pt	195	2	165	-2.417	ppb	-857.7644864	80	1
Tl	205	2	165	-0.227	ppb	-5.217682236	1101	0.1
Pb	208	2	165	0.008	ppb	61.07629385	3127	0.5
Th	232	2	193	8.500	ppb	9.752360355	139321	1
U	238	2	193	-0.018	ppb	-38.73976031	1545	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3599367	2.98	3709622	97.03	60	125	
Sc (IS)	45	2	HMI He	2729183	2.43	2724914	100.16	60	125	
Sc (IS)	45	3	No Gas	82054152	4.74	82891317	98.99	60	120	
Ge Internal standard	72	1	HMI H2	18664868	2.76	19447282	95.98	60	125	
Ge Internal standard	72	2	HMI He	2520665	2.89	2615067	96.39	60	125	
In Internal standard	115	2	HMI He	7075946	1.97	6700003	105.61	60	125	
Ho-165	165	2	HMI He	26159303	1.01	26090315	100.26	60	125	
Ir (IS)	193	2	HMI He	18535769	1.86	19253459	96.27	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584879/2-A
Data File Name	075_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:05:59-06:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	584879 6020a
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	58.686	58.686	ppb	22.849	9195786	400	14.7	80	120	>+/-20%
Be	9	1	6	35.770	35.770	ppb	2.835	31465	40	89.4	80	120	
Na	23	2	45	796.124	796.124	ppb	1.697	471549	40	1990.3	80	120	>+/-20%
Mg	24	2	45	828.856	828.856	ppb	0.697	194984	40	2072.1	80	120	>+/-20%
Al	27	2	45	801.677	801.677	ppb	2.393	52731	40	2004.2	80	120	>+/-20%
K	39	2	45	823.025	823.025	ppb	3.515	143997	40	2057.6	80	120	>+/-20%
V	51	2	72	37.954	37.954	ppb	1.924	114320	40	94.9	80	120	
Cr	52	2	72	38.324	38.324	ppb	0.990	156359	40	95.8	80	120	
Mn	55	2	72	38.624	38.624	ppb	0.753	71412	40	96.6	80	120	
(Fe)	57	2	72	747.514	747.514	ppb	3.232	58999	40	1868.8	80	120	>+/-20%
Co	59	2	72	37.436	37.436	ppb	2.731	235472	40	93.6	80	120	
Ni	60	2	72	38.680	38.680	ppb	2.654	65840	40	96.7	80	120	
Cu	63	2	72	37.223	37.223	ppb	0.519	166860	40	93.1	80	120	
Zn	66	2	72	40.115	40.115	ppb	2.219	28491	40	100.3	80	120	
As	75	2	72	37.088	37.088	ppb	3.286	14758	40	92.7	80	120	
Se	78	1	72	35.929	35.929	ppb	4.386	20274	40	89.8	80	120	
Sr	88	2	45	84.161	84.161	ppb	1.486	129315	40	210.4	80	120	>+/-20%
Nb	93	2	72	-199.587	-199.587	ppb	-53.312	20	40	-499.0	80	120	>+/-20%
Mo	95	2	115	37.103	37.103	ppb	2.386	85853	40	92.8	80	120	
Pd	105	2	115	-170.793	-170.793	ppb	-18.985	113	40	-427.0	80	120	>+/-20%
Ag	107	2	115	29.413	29.413	ppb	2.021	195627	40	73.5	80	120	>+/-20%
Cd	111	2	115	36.970	36.970	ppb	3.743	33607	40	92.4	80	120	
Sn	120	2	115	37.684	37.684	ppb	0.970	84359	40	94.2	80	120	
Sb	121	2	115	36.899	36.899	ppb	1.267	72542	40	92.2	80	120	
Ba	137	2	115	39.461	39.461	ppb	4.945	25348	40	98.7	80	120	
W	182	2	165	0.346	0.346	ppb	21.018	4392	40	0.9	80	120	>+/-20%
Pt	195	2	165	1.725	1.725	ppb	904.077	87	40	4.3	80	120	>+/-20%
Tl	205	2	165	39.650	39.650	ppb	2.345	464707	40	99.1	80	120	
Pb	208	2	165	40.730	40.730	ppb	3.116	628773	40	101.8	80	120	
Th	232	2	193	43.678	43.678	ppb	2.270	579459	40	109.2	80	120	
U	238	2	193	40.733	40.733	ppb	2.154	707257	40	101.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3578754	1.24	3709622	96.47	60	125	
Sc (IS)	45	2	HMI He	2726307	1.26	2724914	100.05	60	125	
Sc (IS)	45	3	No Gas	78795765	4.17	82891317	95.06	60	120	
Ge Internal standard	72	1	HMI H2	18779183	1.70	19447282	96.56	60	125	
Ge Internal standard	72	2	HMI He	2571483	0.72	2615067	98.33	60	125	
In Internal standard	115	2	HMI He	7248456	2.63	6700003	108.19	60	125	
Ho-165	165	2	HMI He	26277993	2.63	26090315	100.72	60	125	
Ir (IS)	193	2	HMI He	18321653	1.95	19253459	95.16	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-1-A
Data File Name	076SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:09:34-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	88.451	ppb	88.451	12.77	9207484	40000	
Be	9	1	6	0.024	ppb	0.024	120.19	47	2000	
B	11	1	6	268.338	ppb	268.338	1.18	246098	100	
Na	23	2	45	51265.292	ppb	51265.292	3.22	30105630	400000	
Mg	24	2	45	37121.277	ppb	37121.277	4.92	9036882	400000	
Al	27	2	45	71.663	ppb	71.663	19.64	5204	400000	
K	39	2	45	4775.182	ppb	4775.182	3.26	811829	400000	
V	51	2	72	0.509	ppb	0.509	27.30	1865	2000	
Cr	52	2	72	8.181	ppb	8.181	6.18	35223	5000	
Mn	55	2	72	242.627	ppb	242.627	0.78	457957	10000	
(Fe)	57	2	72	306.446	ppb	306.446	6.53	25291	400000	
Co	59	2	72	1.542	ppb	1.542	6.35	9963	2000	
Ni	60	2	72	6.801	ppb	6.801	5.65	12207	5000	
Cu	63	2	72	19.324	ppb	19.324	3.43	89525	5000	
Zn	66	2	72	8.294	ppb	8.294	1.82	6655	5000	
As	75	2	72	0.097	ppb	0.097	56.25	103	2000	
Se	78	1	72	0.098	ppb	0.098	23.24	73	2000	
Sr	88	2	45	710.711	ppb	710.711	1.61	1132411	2000	
Zr	90	2	72	34.342	ppb	34.342	107.52	1638	1000	
Nb	93	2	72	237.337	ppb	237.337	143.33	93	200	>LDR
Mo	95	2	115	2.521	ppb	2.521	4.92	5750	2000	
Pd	105	2	115	-157.068	ppb	-157.068	-35.65	117	100	
Ag	107	2	115	0.484	ppb	0.484	2.83	3150	100	
Cd	111	2	115	0.033	ppb	0.033	106.23	53	2000	
Sn	120	2	115	1.155	ppb	1.155	7.99	4235	2000	
Sb	121	2	115	2.075	ppb	2.075	4.48	4018	1000	
Ba	137	2	115	125.027	ppb	125.027	3.52	77415	5000	
W	182	2	165	22.183	ppb	22.183	1.57	153028	100	
Pt	195	2	165	-3.902	ppb	-3.902	-584.81	80	100	
Tl	205	2	165	-0.173	ppb	-0.173	-13.37	1762	2000	
Pb	208	2	165	0.088	ppb	0.088	23.30	4438	5000	
Th	232	2	193	3.986	ppb	3.986	4.87	78870	2000	
U	238	2	193	0.201	ppb	0.201	4.80	5186	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3553326	0.73	3709622	95.79	60	125	
Sc (IS)	45	2	HMI He	2829465	2.32	2724914	103.84	60	125	
Sc (IS)	45	3	No Gas	80857485	2.83	82891317	97.55	60	120	
Ge Internal standard	72	1	HMI H2	19114994	1.31	19447282	98.29	60	125	
Ge Internal standard	72	2	HMI He	2637767	1.98	2615067	100.87	60	125	
In Internal standard	115	2	HMI He	7000129	2.74	6700003	104.48	60	125	
Ho-165	165	2	HMI He	26689391	1.96	26090315	102.30	60	125	
Ir (IS)	193	2	HMI He	17821854	0.86	19253459	92.56	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-2-A
Data File Name	077SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:13:06-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	36.594	ppb	36.594	50.56	8759349	40000	
Be	9	1	6	-0.010	ppb	-0.010	-229.78	17	2000	
B	11	1	6	63.348	ppb	63.348	5.08	60103	100	
Na	23	2	45	24546.884	ppb	24546.884	0.97	14438283	400000	
Mg	24	2	45	38755.054	ppb	38755.054	0.85	9444883	400000	
Al	27	2	45	72.119	ppb	72.119	6.67	5236	400000	
K	39	2	45	1642.346	ppb	1642.346	2.87	286939	400000	
V	51	2	72	0.359	ppb	0.359	13.86	1408	2000	
Cr	52	2	72	0.407	ppb	0.407	15.44	2987	5000	
Mn	55	2	72	423.092	ppb	423.092	1.76	802047	10000	
(Fe)	57	2	72	169.878	ppb	169.878	3.33	14470	400000	
Co	59	2	72	0.742	ppb	0.742	5.76	4832	2000	
Ni	60	2	72	1.792	ppb	1.792	1.80	3541	5000	
Cu	63	2	72	0.386	ppb	0.386	1.25	3250	5000	
Zn	66	2	72	13.899	ppb	13.899	3.33	10681	5000	
As	75	2	72	1.354	ppb	1.354	12.43	617	2000	
Se	78	1	72	0.014	ppb	0.014	161.74	25	2000	
Sr	88	2	45	427.258	ppb	427.258	0.79	681244	2000	
Zr	90	2	72	41.507	ppb	41.507	21.34	1708	1000	
Nb	93	2	72	213.105	ppb	213.105	167.29	90	200	>LDR
Mo	95	2	115	2.634	ppb	2.634	8.10	6010	2000	
Pd	105	2	115	-132.852	ppb	-132.852	-21.86	130	100	
Ag	107	2	115	0.095	ppb	0.095	18.48	657	100	
Cd	111	2	115	0.215	ppb	0.215	16.98	214	2000	
Sn	120	2	115	0.497	ppb	0.497	33.75	2843	2000	
Sb	121	2	115	0.067	ppb	0.067	43.71	210	1000	
Ba	137	2	115	75.912	ppb	75.912	3.21	47103	5000	
W	182	2	165	0.216	ppb	0.216	7.72	3514	100	
Pt	195	2	165	6.784	ppb	6.784	337.41	93	100	
Tl	205	2	165	-0.233	ppb	-0.233	-6.60	1024	2000	
Pb	208	2	165	0.060	ppb	0.060	35.31	3911	5000	
Th	232	2	193	1.841	ppb	1.841	5.70	52078	2000	
U	238	2	193	7.944	ppb	7.944	1.70	134149	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3535869	3.94	3709622	95.32	60	125	
Sc (IS)	45	2	HMI He	2830569	0.83	2724914	103.88	60	125	
Sc (IS)	45	3	No Gas	79063210	2.06	82891317	95.38	60	120	
Ge Internal standard	72	1	HMI H2	19687597	4.17	19447282	101.24	60	125	
Ge Internal standard	72	2	HMI He	2650508	0.11	2615067	101.36	60	125	
In Internal standard	115	2	HMI He	7008651	1.50	6700003	104.61	60	125	
Ho-165	165	2	HMI He	26141864	2.02	26090315	100.20	60	125	
Ir (IS)	193	2	HMI He	17629455	2.72	19253459	91.57	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-3-A
Data File Name	078SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:16:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	60.608	ppb	60.608	34.87	8820851	40000	
Be	9	1	6	0.014	ppb	0.014	314.75	37	2000	
B	11	1	6	191.920	ppb	191.920	1.82	170145	100	
Na	23	2	45	39398.776	ppb	39398.776	0.93	22915689	400000	
Mg	24	2	45	45666.271	ppb	45666.271	0.88	11009965	400000	
Al	27	2	45	805.406	ppb	805.406	4.67	54419	400000	
K	39	2	45	3858.574	ppb	3858.574	1.35	651659	400000	
V	51	2	72	3.595	ppb	3.595	10.53	10998	2000	
Cr	52	2	72	11.041	ppb	11.041	109.38	45159	5000	
Mn	55	2	72	461.050	ppb	461.050	3.26	840139	10000	
(Fe)	57	2	72	1505.643	ppb	1505.643	1.55	116963	400000	
Co	59	2	72	2.811	ppb	2.811	2.05	17543	2000	
Ni	60	2	72	12.818	ppb	12.818	0.87	21892	5000	
Cu	63	2	72	19.802	ppb	19.802	1.37	88633	5000	
Zn	66	2	72	12.103	ppb	12.103	2.26	9038	5000	
As	75	2	72	1.807	ppb	1.807	12.48	771	2000	
Se	78	1	72	0.149	ppb	0.149	14.29	105	2000	
Sr	88	2	45	1202.925	ppb	1202.925	4.65	1896559	2000	
Zr	90	2	72	241.069	ppb	241.069	15.88	3427	1000	
Nb	93	2	72	3188.505	ppb	3188.505	12.04	567	200	>LDR
Mo	95	2	115	3.108	ppb	3.108	4.90	7122	2000	
Pd	105	2	115	-78.241	ppb	-78.241	-115.94	160	100	
Ag	107	2	115	0.041	ppb	0.041	13.48	310	100	
Cd	111	2	115	0.365	ppb	0.365	4.22	347	2000	
Sn	120	2	115	1.165	ppb	1.165	15.41	4285	2000	
Sb	121	2	115	2.421	ppb	2.421	10.96	4712	1000	
Ba	137	2	115	262.030	ppb	262.030	3.37	163506	5000	
W	182	2	165	5.955	ppb	5.955	2.62	41755	100	
Pt	195	2	165	4.161	ppb	4.161	118.27	90	100	
Tl	205	2	165	-0.085	ppb	-0.085	-14.18	2743	2000	
Pb	208	2	165	1.170	ppb	1.170	1.37	20893	5000	
Th	232	2	193	1.288	ppb	1.288	3.82	44574	2000	
U	238	2	193	1.083	ppb	1.083	4.27	19458	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3418167	1.00	3709622	92.14	60	125	
Sc (IS)	45	2	HMI He	2800513	1.97	2724914	102.77	60	125	
Sc (IS)	45	3	No Gas	78798363	3.21	82891317	95.06	60	120	
Ge Internal standard	72	1	HMI H2	19592963	1.71	19447282	100.75	60	125	
Ge Internal standard	72	2	HMI He	2548519	1.15	2615067	97.46	60	125	
In Internal standard	115	2	HMI He	7057887	2.47	6700003	105.34	60	125	
Ho-165	165	2	HMI He	26152230	3.21	26090315	100.24	60	125	
Ir (IS)	193	2	HMI He	17307094	1.10	19253459	89.89	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-4-A
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:20:10-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	11.549	ppb	11.549	58.87	8090009	40000	
Be	9	1	6	-0.002	ppb	-0.002	-1062.54	23	2000	
B	11	1	6	22.203	ppb	22.203	1.12	22553	100	
Na	23	2	45	10781.464	ppb	10781.464	3.04	6281068	400000	
Mg	24	2	45	10264.739	ppb	10264.739	1.95	2473838	400000	
Al	27	2	45	189.444	ppb	189.444	2.39	13055	400000	
K	39	2	45	284.500	ppb	284.500	1.15	58539	400000	
V	51	2	72	1.160	ppb	1.160	3.93	3794	2000	
Cr	52	2	72	0.610	ppb	0.610	12.97	3744	5000	
Mn	55	2	72	22.541	ppb	22.541	3.54	42061	10000	
(Fe)	57	2	72	141.307	ppb	141.307	2.37	11876	400000	
Co	59	2	72	0.196	ppb	0.196	15.44	1261	2000	
Ni	60	2	72	2.509	ppb	2.509	5.64	4672	5000	
Cu	63	2	72	0.557	ppb	0.557	18.27	3928	5000	
Zn	66	2	72	2.951	ppb	2.951	15.98	2806	5000	
As	75	2	72	0.688	ppb	0.688	17.97	337	2000	
Se	78	1	72	2.581	ppb	2.581	1.86	1508	2000	
Sr	88	2	45	92.296	ppb	92.296	4.41	145541	2000	
Zr	90	2	72	67.380	ppb	67.380	41.01	1899	1000	
Nb	93	2	72	310.078	ppb	310.078	66.55	103	200	>LDR
Mo	95	2	115	0.103	ppb	0.103	17.00	370	2000	
Pd	105	2	115	-199.496	ppb	-199.496	-44.75	97	100	
Ag	107	2	115	0.030	ppb	0.030	50.89	247	100	
Cd	111	2	115	0.049	ppb	0.049	44.28	70	2000	
Sn	120	2	115	0.124	ppb	0.124	33.33	2122	2000	
Sb	121	2	115	0.108	ppb	0.108	40.46	297	1000	
Ba	137	2	115	60.399	ppb	60.399	2.11	38670	5000	
W	182	2	165	0.070	ppb	0.070	33.13	2523	100	
Pt	195	2	165	-1.762	ppb	-1.762	-2230.09	80	100	
Tl	205	2	165	-0.238	ppb	-0.238	-4.15	964	2000	
Pb	208	2	165	0.087	ppb	0.087	12.99	4298	5000	
Th	232	2	193	0.455	ppb	0.455	50.44	35897	2000	
U	238	2	193	0.041	ppb	0.041	29.18	2493	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3451742	2.22	3709622	93.05	60	125	
Sc (IS)	45	2	HMI He	2799139	1.74	2724914	102.72	60	125	
Sc (IS)	45	3	No Gas	77083192	4.94	82891317	92.99	60	120	
Ge Internal standard	72	1	HMI H2	19235255	1.20	19447282	98.91	60	125	
Ge Internal standard	72	2	HMI He	2585269	1.39	2615067	98.86	60	125	
In Internal standard	115	2	HMI He	7227791	1.16	6700003	107.88	60	125	
Ho-165	165	2	HMI He	25968112	2.34	26090315	99.53	60	125	
Ir (IS)	193	2	HMI He	17936753	3.45	19253459	93.16	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-5-A
Data File Name	080SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:23:42-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	56.783	ppb	56.783	2.72	8505958	40000	
Be	9	1	6	-0.018	ppb	-0.018	-58.98	10	2000	
B	11	1	6	50.415	ppb	50.415	1.92	51161	100	
Na	23	2	45	25535.191	ppb	25535.191	1.40	14919655	400000	
Mg	24	2	45	40832.367	ppb	40832.367	1.04	9885869	400000	
Al	27	2	45	31.918	ppb	31.918	6.30	2493	400000	
K	39	2	45	1845.721	ppb	1845.721	2.08	318985	400000	
V	51	2	72	1.586	ppb	1.586	7.37	5179	2000	
Cr	52	2	72	0.355	ppb	0.355	16.43	2756	5000	
Mn	55	2	72	604.698	ppb	604.698	2.64	1139296	10000	
(Fe)	57	2	72	70.093	ppb	70.093	3.46	6424	400000	
Co	59	2	72	1.084	ppb	1.084	3.51	7008	2000	
Ni	60	2	72	3.734	ppb	3.734	4.10	6885	5000	
Cu	63	2	72	0.386	ppb	0.386	7.42	3230	5000	
Zn	66	2	72	24.037	ppb	24.037	4.11	17797	5000	
As	75	2	72	0.339	ppb	0.339	79.96	200	2000	
Se	78	1	72	0.024	ppb	0.024	189.94	32	2000	
Sr	88	2	45	582.778	ppb	582.778	0.41	923024	2000	
Zr	90	2	72	30.770	ppb	30.770	68.85	1598	1000	
Nb	93	2	72	-6.084	ppb	-6.084	-3834.08	53	200	
Mo	95	2	115	2.932	ppb	2.932	1.78	6655	2000	
Pd	105	2	115	-179.967	ppb	-179.967	-57.70	103	100	
Ag	107	2	115	0.009	ppb	0.009	46.36	100	100	
Cd	111	2	115	0.476	ppb	0.476	28.67	440	2000	
Sn	120	2	115	0.235	ppb	0.235	33.75	2282	2000	
Sb	121	2	115	0.125	ppb	0.125	15.58	320	1000	
Ba	137	2	115	125.067	ppb	125.067	2.03	77240	5000	
W	182	2	165	0.056	ppb	0.056	30.67	2509	100	
Pt	195	2	165	-3.776	ppb	-3.776	-463.14	80	100	
Tl	205	2	165	-0.239	ppb	-0.239	-5.31	984	2000	
Pb	208	2	165	0.037	ppb	0.037	20.98	3647	5000	
Th	232	2	193	0.131	ppb	0.131	17.17	31413	2000	
U	238	2	193	10.651	ppb	10.651	3.70	179216	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3728994	2.33	3709622	100.52	60	125	
Sc (IS)	45	2	HMI He	2811948	0.04	2724914	103.19	60	125	
Sc (IS)	45	3	No Gas	78379443	2.29	82891317	94.56	60	120	
Ge Internal standard	72	1	HMI H2	19495798	2.34	19447282	100.25	60	125	
Ge Internal standard	72	2	HMI He	2635686	2.23	2615067	100.79	60	125	
In Internal standard	115	2	HMI He	6979487	1.53	6700003	104.17	60	125	
Ho-165	165	2	HMI He	26781739	1.65	26090315	102.65	60	125	
Ir (IS)	193	2	HMI He	17625447	1.10	19253459	91.54	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	081_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:27:13-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	137.155	ppb	4.169	10215003	100	137.2	90	110	>+\-10%
Be	9	1	6	46.718	ppb	3.564	39394	50	93.4	90	110	
B	11	1	6	462.567	ppb	2.583	407481	500	92.5	90	110	
Na	23	2	45	49636.581	ppb	5.522	28072364	51000	97.3	90	110	
Mg	24	2	45	11134.530	ppb	5.611	2611525	11000	101.2	90	110	
(Mg)	25	2	45	10400.330	ppb	5.966	380141	11000	94.5	90	110	
Al	27	2	45	1055.809	ppb	6.097	69276	1000	105.6	90	110	
Si	28	2	45	576.855	ppb	6.369	26309	500	115.4	90	110	>+\-10%
P	31	2	45	2084.033	ppb	6.975	12483	2500	83.4	90	110	>+\-10%
K	39	2	45	11521.287	ppb	2.943	1872883	11000	104.7	90	110	
Ca	40	1	45	11819.925	ppb	2.522	129474349	11000	107.5	90	110	
(Ca)	44	1	45	10028.276	ppb	3.054	3883492	11000	91.2	90	110	
Ti	47	2	45	51.072	ppb	7.461	4015	50	102.1	90	110	
V	51	2	72	49.502	ppb	0.246	150501	50	99.0	90	110	
Cr	52	2	72	48.592	ppb	1.156	199881	50	97.2	90	110	
Mn	55	2	72	48.182	ppb	3.083	89853	50	96.4	90	110	
Fe	56	1	72	1001.616	ppb	2.538	17714969	20000	5.0	90	110	>+\-10%
(Fe)	56	2	72	962.567	ppb	3.438	2982306	20000	4.8	90	110	>+\-10%
(Fe)	57	2	72	970.346	ppb	4.043	77095	1000	97.0	90	110	
Co	59	2	72	47.057	ppb	2.171	298909	50	94.1	90	110	
Ni	60	2	72	46.381	ppb	1.738	79648	50	92.8	90	110	
Cu	63	2	72	45.474	ppb	3.569	205479	50	90.9	90	110	
Zn	66	2	72	47.463	ppb	3.727	33896	50	94.9	90	110	
As	75	2	72	48.335	ppb	3.652	19400	50	96.7	90	110	
Se	78	1	72	48.923	ppb	1.681	29200	50	97.8	90	110	
Sr	88	2	45	110.220	ppb	4.344	169257	100	110.2	90	110	>+\-10%
Zr	90	2	72	35.426	ppb	12.782	1618	50	70.9	90	110	>+\-10%
Nb	93	2	72	384.326	ppb	72.587	117	100	384.3	90	110	>+\-10%
Mo	95	2	115	46.943	ppb	1.712	107497	50	93.9	90	110	
Pd	105	2	115	-155.163	ppb	-74.279	120	50	-310.3	90	110	>+\-10%
Ag	107	2	115	46.337	ppb	1.786	304870	50	92.7	90	110	
Cd	111	2	115	48.116	ppb	1.522	43304	50	96.2	90	110	
Sn	120	2	115	50.834	ppb	0.266	112003	50	101.7	90	110	
Sb	121	2	115	49.943	ppb	2.743	97155	50	99.9	90	110	
Ba	137	2	115	50.851	ppb	2.737	32343	50	101.7	90	110	
W	182	2	165	48.705	ppb	1.584	333997	50	97.4	90	110	
Pt	195	2	165	33.924	ppb	41.483	137	50	67.8	90	110	>+\-10%
Tl	205	2	165	47.984	ppb	1.868	571419	50	96.0	90	110	
Pb	208	2	165	49.037	ppb	0.774	769644	50	98.1	90	110	
Bi	209	2	193	1660.020	ppb	137.112	2142	500	332.0	90	110	>+\-10%
Th	232	2	193	47.606	ppb	1.698	625603	50	95.2	90	110	
U	238	2	193	53.346	ppb	1.580	920992	50	106.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3432059	2.06	3709622	92.52	60	125	
Sc (IS)	45	2	HMI He	2729312	5.51	2724914	100.16	60	125	
Sc (IS)	45	3	No Gas	78221763	1.70	82891317	94.37	60	120	
Ge Internal standard	72	1	HMI H2	19864635	1.66	19447282	102.15	60	125	
Ge Internal standard	72	2	HMI He	2597128	1.54	2615067	99.31	60	125	
In Internal standard	115	2	HMI He	7174702	2.00	6700003	107.09	60	125	
Ho-165	165	2	HMI He	26727222	0.28	26090315	102.44	60	125	
Ir (IS)	193	2	HMI He	18223311	0.75	19253459	94.65	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	082_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:30:45-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	7.706	ppb	182.7	7847651	0.05	>RL
Be	9	1	6	0.036	ppb	118.9	57	0.5	
B	11	1	6	16.987	ppb	4.3	18411	0.1	>RL
Na	23	2	45	41.451	ppb	14.4	44184	25	>RL
Mg	24	2	45	10.140	ppb	13.7	2776	25	
Al	27	2	45	-0.663	ppb	-77.5	284	15	
K	39	2	45	13.042	ppb	36.9	13011	50	
V	51	2	72	0.049	ppb	62.6	444	1	
Cr	52	2	72	0.006	ppb	92.8	1301	1	
Mn	55	2	72	0.059	ppb	52.5	534	0.5	
(Fe)	57	2	72	0.094	ppb	670.4	838	25	
Co	59	2	72	0.050	ppb	26.9	344	0.5	
Ni	60	2	72	0.057	ppb	37.8	511	1	
Cu	63	2	72	0.024	ppb	24.0	1575	1	
Zn	66	2	72	-0.161	ppb	-64.1	651	5	
As	75	2	72	-0.042	ppb	-123.2	47	1	
Se	78	1	72	0.145	ppb	6.9	101	1	
Sr	88	2	45	0.097	ppb	26.8	254	1	
Zr	90	2	72	-7.004	ppb	-315.7	1241	1	
Nb	93	2	72	-220.440	ppb	-58.0	17	2	
Mo	95	2	115	0.147	ppb	25.3	460	0.5	
Pd	105	2	115	-201.323	ppb	-19.7	93	1	
Ag	107	2	115	0.333	ppb	10.0	2199	1	
Cd	111	2	115	0.036	ppb	64.4	57	0.5	
Sn	120	2	115	0.783	ppb	3.2	3481	1	
Sb	121	2	115	0.080	ppb	7.5	237	1	
Ba	137	2	115	0.052	ppb	76.8	110	0.5	
W	182	2	165	0.328	ppb	1.6	4288	1	
Pt	195	2	165	-2.858	ppb	-239.0	80	1	
Tl	205	2	165	-0.152	ppb	-13.4	1979	0.1	
Pb	208	2	165	0.027	ppb	49.9	3437	0.5	
Th	232	2	193	3.441	ppb	4.5	72503	1	>RL
U	238	2	193	0.117	ppb	5.4	3781	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3535045	2.95	3709622	95.29	60	125	
Sc (IS)	45	2	HMI He	2694240	1.04	2724914	98.87	60	125	
Sc (IS)	45	3	No Gas	77278905	2.91	82891317	93.23	60	120	
Ge Internal standard	72	1	HMI H2	19385294	1.97	19447282	99.68	60	125	
Ge Internal standard	72	2	HMI He	2620846	2.02	2615067	100.22	60	125	
In Internal standard	115	2	HMI He	7064764	1.70	6700003	105.44	60	125	
Ho-165	165	2	HMI He	26323063	1.24	26090315	100.89	60	125	
Ir (IS)	193	2	HMI He	17894688	0.44	19253459	92.94	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	083LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:34:17-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	32.197	ppb	23.178	8433663	50	64.4	70	130	>+/-30%
Be	9	1	6	0.946	ppb	22.981	868	1	94.6	70	130	
Na	23	2	45	48.806	ppb	1.800	48632	50	97.6	70	130	
Mg	24	2	45	54.582	ppb	2.853	13171	50	109.2	70	130	
Al	27	2	45	54.934	ppb	9.333	3898	50	109.9	70	130	
K	39	2	45	112.149	ppb	5.401	29019	100	112.1	70	130	
V	51	2	72	4.940	ppb	3.038	15115	5	98.8	70	130	
Cr	52	2	72	1.933	ppb	1.371	9061	2	96.6	70	130	
Mn	55	2	72	1.287	ppb	2.369	2780	1	128.7	70	130	
(Fe)	57	2	72	48.361	ppb	10.419	4575	50	96.7	70	130	
Co	59	2	72	1.007	ppb	7.127	6344	1	100.7	70	130	
Ni	60	2	72	1.975	ppb	2.539	3741	2	98.7	70	130	
Cu	63	2	72	2.087	ppb	0.709	10697	2	104.3	70	130	
Zn	66	2	72	9.438	ppb	5.656	7272	10	94.4	70	130	
As	75	2	72	5.256	ppb	9.421	2142	5	105.1	70	130	
Se	78	1	72	5.389	ppb	5.246	3047	5	107.8	70	130	
Sr	88	2	45	1.222	ppb	7.805	1975	1	122.2	70	130	
Zr	90	2	72	5.635	ppb	278.015	1331	0.5	1127.0	70	130	>+/-30%
Nb	93	2	72	-56.192	ppb	-62.249	43	2	-2809.6	70	130	>+/-30%
Mo	95	2	115	1.823	ppb	0.417	4198	2	91.1	70	130	
Pd	105	2	115	-161.967	ppb	-77.056	113	1	-16196.7	70	130	>+/-30%
Ag	107	2	115	0.922	ppb	2.251	5964	1	92.2	70	130	
Cd	111	2	115	0.922	ppb	3.517	834	1	92.2	70	130	
Sn	120	2	115	10.430	ppb	6.052	23834	10	104.3	70	130	
Sb	121	2	115	1.984	ppb	10.793	3841	2	99.2	70	130	
Ba	137	2	115	1.172	ppb	12.318	801	1	117.2	70	130	
W	182	2	165	4.868	ppb	3.858	34815	1	486.8	70	130	>+/-30%
Pt	195	2	165	12.669	ppb	159.305	103	1	1266.9	70	130	>+/-30%
Tl	205	2	165	0.738	ppb	4.592	12367	1	73.8	70	130	
Pb	208	2	165	1.067	ppb	3.434	19477	1	106.7	70	130	
Th	232	2	193	3.175	ppb	2.885	69513	2	158.7	70	130	>+/-30%
U	238	2	193	1.069	ppb	1.377	19973	1	106.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3631629	1.83	3709622	97.90	60	125	
Sc (IS)	45	2	HMI He	2713538	3.14	2724914	99.58	60	125	
Sc (IS)	45	3	No Gas	75840921	1.08	82891317	91.49	60	120	
Ge Internal standard	72	1	HMI H2	18722743	1.17	19447282	96.27	60	125	
Ge Internal standard	72	2	HMI He	2568448	1.79	2615067	98.22	60	125	
In Internal standard	115	2	HMI He	7002269	2.72	6700003	104.51	60	125	
Ho-165	165	2	HMI He	26363167	0.70	26090315	101.05	60	125	
Ir (IS)	193	2	HMI He	17970977	2.10	19253459	93.34	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-6-A
Data File Name	084SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:37:53-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	23.445	ppb	23.445	34.56	7923353	40000	
Be	9	1	6	-0.022	ppb	-0.022	-60.08	7	2000	
B	11	1	6	15.452	ppb	15.452	5.68	17115	100	
Na	23	2	45	16427.124	ppb	16427.124	1.81	9428723	400000	
Mg	24	2	45	16895.686	ppb	16895.686	0.76	4015593	400000	
Al	27	2	45	82.880	ppb	82.880	3.81	5820	400000	
K	39	2	45	437.315	ppb	437.315	2.52	82726	400000	
V	51	2	72	0.689	ppb	0.689	5.89	2386	2000	
Cr	52	2	72	0.384	ppb	0.384	7.47	2840	5000	
Mn	55	2	72	34.787	ppb	34.787	1.34	65136	10000	
(Fe)	57	2	72	85.351	ppb	85.351	4.59	7553	400000	
Co	59	2	72	0.169	ppb	0.169	12.22	1098	2000	
Ni	60	2	72	4.614	ppb	4.614	2.43	8310	5000	
Cu	63	2	72	1.031	ppb	1.031	6.30	6091	5000	
Zn	66	2	72	5.432	ppb	5.432	11.54	4565	5000	
As	75	2	72	0.175	ppb	0.175	45.60	133	2000	
Se	78	1	72	0.067	ppb	0.067	18.80	55	2000	
Sr	88	2	45	138.596	ppb	138.596	0.44	215559	2000	
Zr	90	2	72	38.731	ppb	38.731	25.68	1652	1000	
Nb	93	2	72	7222.745	ppb	7222.745	170.71	1245	200	>LDR
Mo	95	2	115	0.354	ppb	0.354	3.53	938	2000	
Pd	105	2	115	-281.046	ppb	-281.046	-17.84	50	100	
Ag	107	2	115	0.033	ppb	0.033	20.93	264	100	
Cd	111	2	115	0.054	ppb	0.054	29.84	73	2000	
Sn	120	2	115	0.529	ppb	0.529	13.20	2967	2000	
Sb	121	2	115	0.122	ppb	0.122	22.51	320	1000	
Ba	137	2	115	81.894	ppb	81.894	1.92	51724	5000	
W	182	2	165	0.126	ppb	0.126	18.43	2893	100	
Pt	195	2	165	4.675	ppb	4.675	284.21	90	100	
Tl	205	2	165	-0.218	ppb	-0.218	-3.12	1195	2000	
Pb	208	2	165	0.043	ppb	0.043	29.88	3630	5000	
Th	232	2	193	3.945	ppb	3.945	9.04	78578	2000	
U	238	2	193	0.716	ppb	0.716	4.91	13890	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3558433	3.51	3709622	95.92	60	125	
Sc (IS)	45	2	HMI He	2760285	0.55	2724914	101.30	60	125	
Sc (IS)	45	3	No Gas	77124413	0.95	82891317	93.04	60	120	
Ge Internal standard	72	1	HMI H2	18832963	2.80	19447282	96.84	60	125	
Ge Internal standard	72	2	HMI He	2602617	1.90	2615067	99.52	60	125	
In Internal standard	115	2	HMI He	7134881	1.99	6700003	106.49	60	125	
Ho-165	165	2	HMI He	25947513	1.51	26090315	99.45	60	125	
Ir (IS)	193	2	HMI He	17881270	1.90	19253459	92.87	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-6-Asd@5
Data File Name	085SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:41:27-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	24.489	ppb	24.489	39.89	8205025	40000	
Be	9	1	6	-0.026	ppb	-0.026	-24.64	3	2000	
B	11	1	6	5.782	ppb	5.782	1.79	8728	100	
Na	23	2	45	3701.978	ppb	3701.978	1.05	2136925	400000	
Mg	24	2	45	3937.157	ppb	3937.157	3.79	933925	400000	
Al	27	2	45	19.173	ppb	19.173	11.25	1598	400000	
K	39	2	45	101.088	ppb	101.088	5.37	27672	400000	
V	51	2	72	0.133	ppb	0.133	6.32	687	2000	
Cr	52	2	72	0.068	ppb	0.068	14.41	1522	5000	
Mn	55	2	72	8.273	ppb	8.273	3.84	15596	10000	
(Fe)	57	2	72	19.483	ppb	19.483	4.32	2326	400000	
Co	59	2	72	0.056	ppb	0.056	0.89	374	2000	
Ni	60	2	72	1.227	ppb	1.227	3.76	2476	5000	
Cu	63	2	72	0.400	ppb	0.400	23.34	3207	5000	
Zn	66	2	72	2.215	ppb	2.215	16.65	2276	5000	
As	75	2	72	-0.015	ppb	-0.015	-731.68	57	2000	
Se	78	1	72	-0.004	ppb	-0.004	-443.81	15	2000	
Sr	88	2	45	31.529	ppb	31.529	2.73	48997	2000	
Zr	90	2	72	-5.230	ppb	-5.230	-384.88	1235	1000	
Nb	93	2	72	-35.851	ppb	-35.851	-88.29	47	200	
Mo	95	2	115	0.030	ppb	0.030	28.08	197	2000	
Pd	105	2	115	-286.598	ppb	-286.598	-14.81	47	100	
Ag	107	2	115	0.031	ppb	0.031	25.08	244	100	
Cd	111	2	115	-0.005	ppb	-0.005	-221.53	20	2000	
Sn	120	2	115	0.113	ppb	0.113	24.02	2046	2000	
Sb	121	2	115	0.005	ppb	0.005	690.16	93	1000	
Ba	137	2	115	18.551	ppb	18.551	7.31	11622	5000	
W	182	2	165	-0.003	ppb	-0.003	-1610.08	2059	100	
Pt	195	2	165	3.780	ppb	3.780	925.23	90	100	
Tl	205	2	165	-0.261	ppb	-0.261	-1.54	704	2000	
Pb	208	2	165	0.003	ppb	0.003	24.19	3043	5000	
Th	232	2	193	-0.625	ppb	-0.625	-9.63	22429	2000	
U	238	2	193	0.117	ppb	0.117	25.82	3748	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3713709	0.17	3709622	100.11	60	125	
Sc (IS)	45	2	HMI He	2753945	1.44	2724914	101.07	60	125	
Sc (IS)	45	3	No Gas	78640647	3.18	82891317	94.87	60	120	
Ge Internal standard	72	1	HMI H2	19417813	0.89	19447282	99.85	60	125	
Ge Internal standard	72	2	HMI He	2567194	2.23	2615067	98.17	60	125	
In Internal standard	115	2	HMI He	7043344	1.16	6700003	105.12	60	125	
Ho-165	165	2	HMI He	26182728	2.01	26090315	100.35	60	125	
Ir (IS)	193	2	HMI He	17749129	1.87	19253459	92.19	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-6-B MS
Data File Name	086SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:45:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	50.360	ppb	50.360	35.62	8733386	40000	
Be	9	1	6	34.211	ppb	34.211	1.66	29179	2000	
B	11	1	6	14.765	ppb	14.765	3.79	16093	100	
Na	23	2	45	16480.617	ppb	16480.617	1.29	9594851	400000	
Mg	24	2	45	16668.323	ppb	16668.323	2.78	4018442	400000	
Al	27	2	45	789.949	ppb	789.949	2.79	53354	400000	
K	39	2	45	1177.672	ppb	1177.672	4.96	206558	400000	
V	51	2	72	36.508	ppb	36.508	4.25	110374	2000	
Cr	52	2	72	35.587	ppb	35.587	1.16	145879	5000	
Mn	55	2	72	72.899	ppb	72.899	3.50	134922	10000	
(Fe)	57	2	72	739.615	ppb	739.615	3.33	58614	400000	
Co	59	2	72	34.666	ppb	34.666	4.04	218873	2000	
Ni	60	2	72	39.799	ppb	39.799	1.96	68020	5000	
Cu	63	2	72	34.118	ppb	34.118	0.43	153702	5000	
Zn	66	2	72	35.574	ppb	35.574	5.72	25440	5000	
As	75	2	72	33.996	ppb	33.996	2.32	13586	2000	
Se	78	1	72	33.152	ppb	33.152	0.49	18837	2000	
Sr	88	2	45	216.060	ppb	216.060	5.32	340457	2000	
Zr	90	2	72	42.006	ppb	42.006	42.15	1668	1000	
Nb	93	2	72	166.454	ppb	166.454	133.51	80	200	
Mo	95	2	115	35.319	ppb	35.319	1.90	79490	2000	
Pd	105	2	115	-237.566	ppb	-237.566	-19.65	73	100	
Ag	107	2	115	28.174	ppb	28.174	0.42	182185	100	
Cd	111	2	115	35.102	ppb	35.102	1.12	31059	2000	
Sn	120	2	115	35.398	ppb	35.398	2.15	77174	2000	
Sb	121	2	115	35.947	ppb	35.947	3.29	68703	1000	
Ba	137	2	115	124.307	ppb	124.307	3.78	77506	5000	
W	182	2	165	0.301	ppb	0.301	22.41	4095	100	
Pt	195	2	165	-13.922	ppb	-13.922	-124.63	63	100	
Tl	205	2	165	36.098	ppb	36.098	1.86	423195	2000	
Pb	208	2	165	37.019	ppb	37.019	1.64	571481	5000	
Th	232	2	193	38.763	ppb	38.763	3.57	504304	2000	
U	238	2	193	39.141	ppb	39.141	4.06	661955	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3469030	1.10	3709622	93.51	60	125	
Sc (IS)	45	2	HMI He	2800632	4.13	2724914	102.78	60	125	
Sc (IS)	45	3	No Gas	78483039	3.94	82891317	94.68	60	120	
Ge Internal standard	72	1	HMI H2	18902214	0.56	19447282	97.20	60	125	
Ge Internal standard	72	2	HMI He	2582352	2.14	2615067	98.75	60	125	
In Internal standard	115	2	HMI He	7049689	2.62	6700003	105.22	60	125	
Ho-165	165	2	HMI He	26257227	1.16	26090315	100.64	60	125	
Ir (IS)	193	2	HMI He	17850009	2.23	19253459	92.71	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-6-C MSD
Data File Name	087SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:48:32-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	53.682	ppb	53.682	20.10	9012141	40000	
Be	9	1	6	33.595	ppb	33.595	8.16	29580	2000	
B	11	1	6	13.147	ppb	13.147	6.35	15165	100	
Na	23	2	45	17298.787	ppb	17298.787	3.86	9896339	400000	
Mg	24	2	45	17590.457	ppb	17590.457	2.96	4168009	400000	
Al	27	2	45	843.513	ppb	843.513	4.96	55974	400000	
K	39	2	45	1182.398	ppb	1182.398	2.32	204013	400000	
V	51	2	72	38.108	ppb	38.108	1.11	114803	2000	
Cr	52	2	72	36.398	ppb	36.398	1.12	148614	5000	
Mn	55	2	72	77.059	ppb	77.059	1.29	142092	10000	
(Fe)	57	2	72	790.722	ppb	790.722	3.14	62377	400000	
Co	59	2	72	35.726	ppb	35.726	0.98	224793	2000	
Ni	60	2	72	40.244	ppb	40.244	1.77	68495	5000	
Cu	63	2	72	34.930	ppb	34.930	0.69	156710	5000	
Zn	66	2	72	37.772	ppb	37.772	1.81	26881	5000	
As	75	2	72	35.510	ppb	35.510	2.21	14137	2000	
Se	78	1	72	34.520	ppb	34.520	1.59	19891	2000	
Sr	88	2	45	217.167	ppb	217.167	2.33	336699	2000	
Zr	90	2	72	70.139	ppb	70.139	20.61	1915	1000	
Nb	93	2	72	-16.235	ppb	-16.235	-642.21	50	200	
Mo	95	2	115	36.453	ppb	36.453	1.77	81830	2000	
Pd	105	2	115	-213.178	ppb	-213.178	-30.05	87	100	
Ag	107	2	115	29.007	ppb	29.007	2.03	187031	100	
Cd	111	2	115	35.536	ppb	35.536	1.93	31343	2000	
Sn	120	2	115	37.867	ppb	37.867	3.25	82189	2000	
Sb	121	2	115	37.322	ppb	37.322	1.64	71166	1000	
Ba	137	2	115	123.480	ppb	123.480	2.38	76827	5000	
W	182	2	165	0.363	ppb	0.363	9.40	4485	100	
Pt	195	2	165	-7.203	ppb	-7.203	-289.80	73	100	
Tl	205	2	165	37.197	ppb	37.197	1.81	433580	2000	
Pb	208	2	165	37.953	ppb	37.953	3.16	582491	5000	
Th	232	2	193	42.325	ppb	42.325	1.35	538960	2000	
U	238	2	193	40.498	ppb	40.498	2.59	673878	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3596902	8.05	3709622	96.96	60	125	
Sc (IS)	45	2	HMI He	2753059	2.44	2724914	101.03	60	125	
Sc (IS)	45	3	No Gas	79544283	2.01	82891317	95.96	60	120	
Ge Internal standard	72	1	HMI H2	19170217	1.46	19447282	98.58	60	125	
Ge Internal standard	72	2	HMI He	2572146	0.93	2615067	98.36	60	125	
In Internal standard	115	2	HMI He	7029332	0.90	6700003	104.92	60	125	
Ho-165	165	2	HMI He	26116407	2.27	26090315	100.10	60	125	
Ir (IS)	193	2	HMI He	17553106	1.67	19253459	91.17	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-6-A pds
Data File Name	088SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:52:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	253.126	ppb	253.126	6.01	13002338	40000	
Be	9	1	6	170.479	ppb	170.479	4.00	151761	2000	
B	11	1	6	13.804	ppb	13.804	5.89	15920	100	
Na	23	2	45	16524.525	ppb	16524.525	0.64	9375292	400000	
Mg	24	2	45	17419.847	ppb	17419.847	2.15	4091663	400000	
Al	27	2	45	2187.757	ppb	2187.757	0.90	143449	400000	
K	39	2	45	463.826	ppb	463.826	3.95	86040	400000	
V	51	2	72	195.782	ppb	195.782	3.47	597563	2000	
Cr	52	2	72	196.106	ppb	196.106	2.34	807419	5000	
Mn	55	2	72	232.205	ppb	232.205	3.82	433792	10000	
(Fe)	57	2	72	98.105	ppb	98.105	8.23	8574	400000	
Co	59	2	72	193.651	ppb	193.651	1.81	1237425	2000	
Ni	60	2	72	186.592	ppb	186.592	4.65	320838	5000	
Cu	63	2	72	182.841	ppb	182.841	4.29	826358	5000	
Zn	66	2	72	181.893	ppb	181.893	4.14	128473	5000	
As	75	2	72	187.466	ppb	187.466	4.75	75472	2000	
Se	78	1	72	173.226	ppb	173.226	2.78	101736	2000	
Sr	88	2	45	357.201	ppb	357.201	2.84	548849	2000	
Zr	90	2	72	115.104	ppb	115.104	38.48	2349	1000	
Nb	93	2	72	577.651	ppb	577.651	43.06	150	200	>LDR
Mo	95	2	115	191.985	ppb	191.985	1.86	439892	2000	
Pd	105	2	115	485.130	ppb	485.130	15.83	477	100	>LDR
Ag	107	2	115	41.272	ppb	41.272	2.18	271984	100	
Cd	111	2	115	182.680	ppb	182.680	3.05	164596	2000	
Sn	120	2	115	197.003	ppb	197.003	0.63	429428	2000	
Sb	121	2	115	192.167	ppb	192.167	3.02	374102	1000	
Ba	137	2	115	289.391	ppb	289.391	1.60	183905	5000	
W	182	2	165	71.661	ppb	71.661	1.89	480125	100	
Pt	195	2	165	-7.282	ppb	-7.282	-461.53	73	100	
Tl	205	2	165	203.663	ppb	203.663	3.23	2361710	2000	
Pb	208	2	165	208.375	ppb	208.375	2.54	3191367	5000	
Th	232	2	193	131.924	ppb	131.924	2.23	1596382	2000	
U	238	2	193	230.404	ppb	230.404	2.90	3775844	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3626026	2.87	3709622	97.75	60	125	
Sc (IS)	45	2	HMI He	2728258	0.97	2724914	100.12	60	125	
Sc (IS)	45	3	No Gas	77144448	3.13	82891317	93.07	60	120	
Ge Internal standard	72	1	HMI H2	19553662	0.64	19447282	100.55	60	125	
Ge Internal standard	72	2	HMI He	2613085	3.39	2615067	99.92	60	125	
In Internal standard	115	2	HMI He	7185733	1.35	6700003	107.25	60	125	
Ho-165	165	2	HMI He	26164704	1.07	26090315	100.29	60	125	
Ir (IS)	193	2	HMI He	17325705	0.57	19253459	89.99	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-7-A
Data File Name	089SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:55:37-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	58.931	ppb	58.931	11.02	9008485	40000	
Be	9	1	6	0.156	ppb	0.156	54.33	163	2000	
B	11	1	6	55.082	ppb	55.082	3.44	53671	100	
Na	23	2	45	24699.002	ppb	24699.002	7.27	14409247	400000	
Mg	24	2	45	38711.003	ppb	38711.003	6.81	9359557	400000	
Al	27	2	45	73.738	ppb	73.738	15.19	5296	400000	
K	39	2	45	1657.987	ppb	1657.987	3.34	287681	400000	
V	51	2	72	0.485	ppb	0.485	16.75	1769	2000	
Cr	52	2	72	0.474	ppb	0.474	6.40	3214	5000	
Mn	55	2	72	429.003	ppb	429.003	3.26	799813	10000	
(Fe)	57	2	72	187.466	ppb	187.466	7.37	15616	400000	
Co	59	2	72	0.908	ppb	0.908	2.27	5813	2000	
Ni	60	2	72	2.006	ppb	2.006	12.81	3848	5000	
Cu	63	2	72	0.391	ppb	0.391	2.96	3220	5000	
Zn	66	2	72	11.690	ppb	11.690	2.42	8958	5000	
As	75	2	72	1.952	ppb	1.952	1.65	848	2000	
Se	78	1	72	0.314	ppb	0.314	15.19	197	2000	
Sr	88	2	45	439.057	ppb	439.057	5.41	694800	2000	
Zr	90	2	72	32.473	ppb	32.473	19.11	1598	1000	
Nb	93	2	72	222.602	ppb	222.602	29.18	90	200	>LDR
Mo	95	2	115	2.971	ppb	2.971	4.54	6808	2000	
Pd	105	2	115	-244.212	ppb	-244.212	-12.34	70	100	
Ag	107	2	115	0.608	ppb	0.608	8.21	3974	100	
Cd	111	2	115	0.225	ppb	0.225	15.50	224	2000	
Sn	120	2	115	3.624	ppb	3.624	4.61	9516	2000	
Sb	121	2	115	2.310	ppb	2.310	5.73	4495	1000	
Ba	137	2	115	76.899	ppb	76.899	1.89	47980	5000	
W	182	2	165	0.385	ppb	0.385	1.59	4692	100	
Pt	195	2	165	-9.739	ppb	-9.739	-209.36	70	100	
Tl	205	2	165	-0.052	ppb	-0.052	-27.34	3157	2000	
Pb	208	2	165	0.133	ppb	0.133	6.19	5082	5000	
Th	232	2	193	4.910	ppb	4.910	4.29	87778	2000	
U	238	2	193	8.985	ppb	8.985	1.00	149091	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3599127	0.92	3709622	97.02	60	125	
Sc (IS)	45	2	HMI He	2814854	5.37	2724914	103.30	60	125	
Sc (IS)	45	3	No Gas	76578456	0.45	82891317	92.38	60	120	
Ge Internal standard	72	1	HMI H2	19100886	0.95	19447282	98.22	60	125	
Ge Internal standard	72	2	HMI He	2607197	0.97	2615067	99.70	60	125	
In Internal standard	115	2	HMI He	7047082	1.46	6700003	105.18	60	125	
Ho-165	165	2	HMI He	26434038	0.60	26090315	101.32	60	125	
Ir (IS)	193	2	HMI He	17347505	1.48	19253459	90.10	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-8-A
Data File Name	090SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T18:59:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	19.803	ppb	19.803	68.19	8044887	40000	
Be	9	1	6	-0.022	ppb	-0.022	-31.00	7	2000	
B	11	1	6	4.399	ppb	4.399	5.20	6995	100	
Na	23	2	45	9.868	ppb	9.868	14.62	26522	400000	
Mg	24	2	45	15.893	ppb	15.893	22.73	4115	400000	
Al	27	2	45	3.126	ppb	3.126	48.20	527	400000	
K	39	2	45	-0.179	ppb	-0.179	-278.33	10891	400000	
V	51	2	72	0.002	ppb	0.002	1382.24	297	2000	
Cr	52	2	72	0.363	ppb	0.363	21.52	2736	5000	
Mn	55	2	72	0.282	ppb	0.282	8.00	941	10000	
(Fe)	57	2	72	4.758	ppb	4.758	36.30	1191	400000	
Co	59	2	72	0.010	ppb	0.010	76.55	80	2000	
Ni	60	2	72	0.083	ppb	0.083	23.63	547	5000	
Cu	63	2	72	0.036	ppb	0.036	77.73	1608	5000	
Zn	66	2	72	0.766	ppb	0.766	40.64	1288	5000	
As	75	2	72	-0.032	ppb	-0.032	-359.59	50	2000	
Se	78	1	72	0.007	ppb	0.007	132.54	21	2000	
Sr	88	2	45	0.275	ppb	0.275	22.05	524	2000	
Zr	90	2	72	9.916	ppb	9.916	69.19	1381	1000	
Nb	93	2	72	-281.429	ppb	-281.429	-25.18	7	200	
Mo	95	2	115	0.063	ppb	0.063	56.39	280	2000	
Pd	105	2	115	-241.568	ppb	-241.568	-32.95	73	100	
Ag	107	2	115	0.108	ppb	0.108	15.22	767	100	
Cd	111	2	115	0.005	ppb	0.005	363.09	30	2000	
Sn	120	2	115	1.375	ppb	1.375	10.11	4869	2000	
Sb	121	2	115	0.518	ppb	0.518	5.83	1104	1000	
Ba	137	2	115	0.069	ppb	0.069	54.05	123	5000	
W	182	2	165	0.126	ppb	0.126	17.48	2993	100	
Pt	195	2	165	-17.122	ppb	-17.122	-68.38	60	100	
Tl	205	2	165	-0.233	ppb	-0.233	-5.17	1054	2000	
Pb	208	2	165	-0.003	ppb	-0.003	-350.74	3040	5000	
Th	232	2	193	1.644	ppb	1.644	6.98	50800	2000	
U	238	2	193	0.056	ppb	0.056	16.16	2766	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3503359	3.01	3709622	94.44	60	125	
Sc (IS)	45	2	HMI He	2693056	1.30	2724914	98.83	60	125	
Sc (IS)	45	3	No Gas	76789352	1.84	82891317	92.64	60	120	
Ge Internal standard	72	1	HMI H2	19067032	2.58	19447282	98.04	60	125	
Ge Internal standard	72	2	HMI He	2587631	0.61	2615067	98.95	60	125	
In Internal standard	115	2	HMI He	7249109	1.53	6700003	108.20	60	125	
Ho-165	165	2	HMI He	26889059	2.32	26090315	103.06	60	125	
Ir (IS)	193	2	HMI He	18011916	2.72	19253459	93.55	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-9-A
Data File Name	091SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:02:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	22.710	ppb	22.710	46.63	8339939	40000	
Be	9	1	6	-0.022	ppb	-0.022	-60.68	7	2000	
B	11	1	6	2.683	ppb	2.683	8.59	5673	100	
Na	23	2	45	16.488	ppb	16.488	2.61	30472	400000	
Mg	24	2	45	4.149	ppb	4.149	18.28	1398	400000	
Al	27	2	45	1.152	ppb	1.152	56.46	404	400000	
K	39	2	45	3.073	ppb	3.073	56.60	11505	400000	
V	51	2	72	-0.017	ppb	-0.017	-37.73	240	2000	
Cr	52	2	72	0.222	ppb	0.222	6.78	2182	5000	
Mn	55	2	72	-0.035	ppb	-0.035	-127.85	357	10000	
(Fe)	57	2	72	2.495	ppb	2.495	46.86	1024	400000	
Co	59	2	72	0.001	ppb	0.001	449.20	27	2000	
Ni	60	2	72	0.042	ppb	0.042	206.45	484	5000	
Cu	63	2	72	-0.001	ppb	-0.001	-1236.59	1455	5000	
Zn	66	2	72	1.654	ppb	1.654	19.80	1925	5000	
As	75	2	72	0.000	ppb	0.000	-31593.99	63	2000	
Se	78	1	72	0.027	ppb	0.027	44.08	32	2000	
Sr	88	2	45	0.078	ppb	0.078	37.48	227	2000	
Zr	90	2	72	1.228	ppb	1.228	1431.82	1315	1000	
Nb	93	2	72	-61.422	ppb	-61.422	-202.34	43	200	
Mo	95	2	115	0.000	ppb	0.000	-7665.42	130	2000	
Pd	105	2	115	-176.300	ppb	-176.300	-46.76	107	100	
Ag	107	2	115	0.069	ppb	0.069	26.38	491	100	
Cd	111	2	115	-0.013	ppb	-0.013	-50.07	13	2000	
Sn	120	2	115	0.751	ppb	0.751	13.43	3400	2000	
Sb	121	2	115	0.236	ppb	0.236	13.19	534	1000	
Ba	137	2	115	0.106	ppb	0.106	64.82	143	5000	
W	182	2	165	0.051	ppb	0.051	51.04	2439	100	
Pt	195	2	165	-13.944	ppb	-13.944	-164.11	63	100	
Tl	205	2	165	-0.255	ppb	-0.255	-0.43	787	2000	
Pb	208	2	165	-0.016	ppb	-0.016	-59.69	2776	5000	
Th	232	2	193	0.595	ppb	0.595	6.14	37790	2000	
U	238	2	193	-0.027	ppb	-0.027	-16.86	1358	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3635247	2.16	3709622	98.00	60	125	
Sc (IS)	45	2	HMI He	2715698	0.51	2724914	99.66	60	125	
Sc (IS)	45	3	No Gas	75435874	0.55	82891317	91.01	60	120	
Ge Internal standard	72	1	HMI H2	18836059	1.46	19447282	96.86	60	125	
Ge Internal standard	72	2	HMI He	2613022	1.13	2615067	99.92	60	125	
In Internal standard	115	2	HMI He	7039534	2.01	6700003	105.07	60	125	
Ho-165	165	2	HMI He	26448525	2.63	26090315	101.37	60	125	
Ir (IS)	193	2	HMI He	17988379	0.92	19253459	93.43	60	125	

Sample Report

Sample Table

Sample Name	280-165769-A-10-A
Data File Name	092SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:06:20-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584879 6020a
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	20.684	ppb	20.684	25.17	8211258	40000	
Be	9	1	6	-0.015	ppb	-0.015	-87.03	13	2000	
B	11	1	6	2.194	ppb	2.194	7.94	5309	100	
Na	23	2	45	0.362	ppb	0.362	223.57	21614	400000	
Mg	24	2	45	5.183	ppb	5.183	12.59	1655	400000	
Al	27	2	45	2.799	ppb	2.799	32.11	517	400000	
K	39	2	45	0.761	ppb	0.761	697.26	11241	400000	
V	51	2	72	-0.020	ppb	-0.020	-182.23	230	2000	
Cr	52	2	72	0.330	ppb	0.330	26.72	2610	5000	
Mn	55	2	72	0.217	ppb	0.217	13.07	824	10000	
(Fe)	57	2	72	28.380	ppb	28.380	5.67	3053	400000	
Co	59	2	72	0.008	ppb	0.008	33.90	70	2000	
Ni	60	2	72	0.082	ppb	0.082	128.85	547	5000	
Cu	63	2	72	3.324	ppb	3.324	0.39	16374	5000	
Zn	66	2	72	0.841	ppb	0.841	35.09	1345	5000	
As	75	2	72	-0.025	ppb	-0.025	-574.34	53	2000	
Se	78	1	72	0.011	ppb	0.011	166.24	23	2000	
Sr	88	2	45	0.206	ppb	0.206	9.92	427	2000	
Zr	90	2	72	4.286	ppb	4.286	396.20	1335	1000	
Nb	93	2	72	-118.982	ppb	-118.982	-129.85	33	200	
Mo	95	2	115	-0.016	ppb	-0.016	-14.22	97	2000	
Pd	105	2	115	-230.108	ppb	-230.108	-33.10	80	100	
Ag	107	2	115	0.035	ppb	0.035	27.37	280	100	
Cd	111	2	115	-0.002	ppb	-0.002	-1131.26	23	2000	
Sn	120	2	115	0.701	ppb	0.701	15.20	3394	2000	
Sb	121	2	115	0.165	ppb	0.165	22.10	410	1000	
Ba	137	2	115	0.022	ppb	0.022	86.26	93	5000	
W	182	2	165	0.052	ppb	0.052	34.81	2433	100	
Pt	195	2	165	-5.012	ppb	-5.012	-164.41	77	100	
Tl	205	2	165	-0.257	ppb	-0.257	-4.30	757	2000	
Pb	208	2	165	-0.024	ppb	-0.024	-53.22	2653	5000	
Th	232	2	193	0.319	ppb	0.319	24.76	34185	2000	
U	238	2	193	-0.034	ppb	-0.034	-37.16	1225	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3697875	0.27	3709622	99.68	60	125	
Sc (IS)	45	2	HMI He	2744679	2.07	2724914	100.73	60	125	
Sc (IS)	45	3	No Gas	77159019	2.51	82891317	93.08	60	120	
Ge Internal standard	72	1	HMI H2	18688035	0.95	19447282	96.10	60	125	
Ge Internal standard	72	2	HMI He	2597682	1.04	2615067	99.34	60	125	
In Internal standard	115	2	HMI He	7250557	0.83	6700003	108.22	60	125	
Ho-165	165	2	HMI He	26293459	1.45	26090315	100.78	60	125	
Ir (IS)	193	2	HMI He	17900099	3.68	19253459	92.97	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	093_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:09:54-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	137.162	ppb	13.792	10150483	100	137.2	90	110	>+\-10%
Be	9	1	6	44.868	ppb	2.618	38528	50	89.7	90	110	>+\-10%
B	11	1	6	410.843	ppb	1.603	368800	500	82.2	90	110	>+\-10%
Na	23	2	45	47791.872	ppb	0.643	27674613	51000	93.7	90	110	
Mg	24	2	45	10701.135	ppb	1.747	2570031	11000	97.3	90	110	
(Mg)	25	2	45	10002.072	ppb	1.754	374305	11000	90.9	90	110	
Al	27	2	45	1010.525	ppb	1.169	67909	1000	101.1	90	110	
Si	28	2	45	505.876	ppb	5.367	24040	500	101.2	90	110	
P	31	2	45	2003.979	ppb	3.260	12296	2500	80.2	90	110	>+\-10%
K	39	2	45	11533.100	ppb	1.990	1917516	11000	104.8	90	110	
Ca	40	1	45	11540.064	ppb	1.768	124362903	11000	104.9	90	110	
(Ca)	44	1	45	9916.048	ppb	1.264	3778819	11000	90.1	90	110	
Ti	47	2	45	46.596	ppb	8.572	3761	50	93.2	90	110	
V	51	2	72	48.678	ppb	2.428	147719	50	97.4	90	110	
Cr	52	2	72	47.965	ppb	2.736	196953	50	95.9	90	110	
Mn	55	2	72	46.005	ppb	1.800	85682	50	92.0	90	110	
Fe	56	1	72	959.978	ppb	1.609	16556461	20000	4.8	90	110	>+\-10%
(Fe)	56	2	72	933.928	ppb	2.451	2889974	20000	4.7	90	110	>+\-10%
(Fe)	57	2	72	933.390	ppb	0.940	74086	1000	93.3	90	110	
Co	59	2	72	45.750	ppb	0.991	290171	50	91.5	90	110	
Ni	60	2	72	46.536	ppb	3.326	79756	50	93.1	90	110	
Cu	63	2	72	45.664	ppb	3.033	206047	50	91.3	90	110	
Zn	66	2	72	45.873	ppb	6.333	32723	50	91.7	90	110	
As	75	2	72	48.316	ppb	1.894	19363	50	96.6	90	110	
Se	78	1	72	48.553	ppb	1.667	28256	50	97.1	90	110	
Sr	88	2	45	106.665	ppb	3.199	167576	100	106.7	90	110	
Zr	90	2	72	34.114	ppb	66.024	1602	50	68.2	90	110	>+\-10%
Nb	93	2	72	264.670	ppb	55.867	97	100	264.7	90	110	>+\-10%
Mo	95	2	115	45.844	ppb	2.307	105993	50	91.7	90	110	
Pd	105	2	115	-127.536	ppb	-40.998	137	50	-255.1	90	110	>+\-10%
Ag	107	2	115	43.835	ppb	3.725	291112	50	87.7	90	110	>+\-10%
Cd	111	2	115	45.099	ppb	0.573	41007	50	90.2	90	110	
Sn	120	2	115	47.311	ppb	2.543	105358	50	94.6	90	110	
Sb	121	2	115	47.735	ppb	3.939	93733	50	95.5	90	110	
Ba	137	2	115	49.058	ppb	0.660	31504	50	98.1	90	110	
W	182	2	165	48.576	ppb	1.604	321245	50	97.2	90	110	
Pt	195	2	165	65.072	ppb	43.606	177	50	130.1	90	110	>+\-10%
Tl	205	2	165	49.034	ppb	1.771	563052	50	98.1	90	110	
Pb	208	2	165	49.733	ppb	2.808	752645	50	99.5	90	110	
Bi	209	2	193	2083.664	ppb	57.140	2139	500	416.7	90	110	>+\-10%
Th	232	2	193	48.793	ppb	4.489	621382	50	97.6	90	110	
U	238	2	193	54.247	ppb	2.362	908949	50	108.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3493615	0.74	3709622	94.18	60	125	
Sc (IS)	45	2	HMI He	2789037	2.41	2724914	102.35	60	125	
Sc (IS)	45	3	No Gas	75842909	4.67	82891317	91.50	60	120	
Ge Internal standard	72	1	HMI H2	19368536	2.31	19447282	99.60	60	125	
Ge Internal standard	72	2	HMI He	2593020	1.98	2615067	99.16	60	125	
In Internal standard	115	2	HMI He	7246131	3.11	6700003	108.15	60	125	
Ho-165	165	2	HMI He	25781479	2.18	26090315	98.82	60	125	
Ir (IS)	193	2	HMI He	17695976	3.10	19253459	91.91	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	094_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:13:26-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	4.356	ppb	160.3	7957820	0.05	>RL
Be	9	1	6	0.052	ppb	49.5	70	0.5	
B	11	1	6	14.801	ppb	10.2	16454	0.1	>RL
Na	23	2	45	42.585	ppb	8.9	43772	25	>RL
Mg	24	2	45	10.564	ppb	11.0	2806	25	
Al	27	2	45	1.192	ppb	58.5	394	15	
K	39	2	45	18.122	ppb	38.5	13492	50	
V	51	2	72	0.034	ppb	74.5	400	1	
Cr	52	2	72	0.000	ppb	-24415.8	1288	1	
Mn	55	2	72	0.067	ppb	80.1	554	0.5	
(Fe)	57	2	72	0.660	ppb	119.5	891	25	
Co	59	2	72	0.045	ppb	18.9	310	0.5	
Ni	60	2	72	0.033	ppb	141.5	474	1	
Cu	63	2	72	0.034	ppb	83.6	1632	1	
Zn	66	2	72	-0.046	ppb	-162.2	741	5	
As	75	2	72	0.024	ppb	351.8	73	1	
Se	78	1	72	0.146	ppb	20.2	101	1	
Sr	88	2	45	0.151	ppb	9.7	327	1	
Zr	90	2	72	-8.571	ppb	-15.4	1241	1	
Nb	93	2	72	-182.713	ppb	-106.1	23	2	
Mo	95	2	115	0.128	ppb	6.5	417	0.5	
Pd	105	2	115	-227.306	ppb	-38.8	80	1	
Ag	107	2	115	0.354	ppb	8.9	2326	1	
Cd	111	2	115	0.015	ppb	306.5	37	0.5	
Sn	120	2	115	1.285	ppb	12.5	4539	1	>RL
Sb	121	2	115	0.185	ppb	29.1	434	1	
Ba	137	2	115	0.130	ppb	74.7	157	0.5	
W	182	2	165	0.320	ppb	17.3	4221	1	
Pt	195	2	165	-4.842	ppb	-536.5	77	1	
Tl	205	2	165	-0.156	ppb	-9.3	1935	0.1	
Pb	208	2	165	0.023	ppb	14.0	3370	0.5	
Th	232	2	193	4.578	ppb	1.6	87809	1	>RL
U	238	2	193	0.146	ppb	13.3	4342	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3545037	4.16	3709622	95.56	60	125	
Sc (IS)	45	2	HMI He	2631609	0.77	2724914	96.58	60	125	
Sc (IS)	45	3	No Gas	77142057	0.72	82891317	93.06	60	120	
Ge Internal standard	72	1	HMI H2	19219332	1.93	19447282	98.83	60	125	
Ge Internal standard	72	2	HMI He	2646291	2.48	2615067	101.19	60	125	
In Internal standard	115	2	HMI He	7042827	3.55	6700003	105.12	60	125	
Ho-165	165	2	HMI He	26252562	1.72	26090315	100.62	60	125	
Ir (IS)	193	2	HMI He	18180461	2.95	19253459	94.43	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	095LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:16:59-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	23.456	ppb	59.489	8250526	50	46.9	70	130	>+/-30%
Be	9	1	6	0.881	ppb	14.655	801	1	88.1	70	130	
Na	23	2	45	48.149	ppb	8.732	48385	50	96.3	70	130	
Mg	24	2	45	54.413	ppb	3.338	13175	50	108.8	70	130	
Al	27	2	45	50.390	ppb	7.968	3621	50	100.8	70	130	
K	39	2	45	110.470	ppb	4.252	28845	100	110.5	70	130	
V	51	2	72	4.642	ppb	2.268	14437	5	92.8	70	130	
Cr	52	2	72	1.941	ppb	4.901	9238	2	97.1	70	130	
Mn	55	2	72	1.112	ppb	5.368	2496	1	111.2	70	130	
(Fe)	57	2	72	47.558	ppb	6.732	4582	50	95.1	70	130	
Co	59	2	72	0.951	ppb	0.498	6087	1	95.1	70	130	
Ni	60	2	72	1.953	ppb	8.139	3758	2	97.6	70	130	
Cu	63	2	72	2.016	ppb	4.120	10540	2	100.8	70	130	
Zn	66	2	72	10.153	ppb	2.483	7883	10	101.5	70	130	
As	75	2	72	5.010	ppb	10.850	2076	5	100.2	70	130	
Se	78	1	72	5.096	ppb	4.021	2972	5	101.9	70	130	
Sr	88	2	45	1.141	ppb	16.155	1852	1	114.1	70	130	
Zr	90	2	72	-22.596	ppb	-54.280	1094	0.5	-4519.1	70	130	>+/-30%
Nb	93	2	72	-181.250	ppb	-19.056	23	2	-9062.5	70	130	>+/-30%
Mo	95	2	115	1.842	ppb	2.970	4292	2	92.1	70	130	
Pd	105	2	115	-250.537	ppb	-40.196	67	1	-25053.7	70	130	>+/-30%
Ag	107	2	115	0.928	ppb	2.444	6077	1	92.8	70	130	
Cd	111	2	115	0.863	ppb	18.397	791	1	86.3	70	130	
Sn	120	2	115	10.522	ppb	5.238	24335	10	105.2	70	130	
Sb	121	2	115	1.996	ppb	3.109	3918	2	99.8	70	130	
Ba	137	2	115	1.186	ppb	13.150	821	1	118.6	70	130	
W	182	2	165	4.875	ppb	2.167	34929	1	487.5	70	130	>+/-30%
Pt	195	2	165	8.153	ppb	382.129	97	1	815.3	70	130	>+/-30%
Tl	205	2	165	0.780	ppb	3.861	12888	1	78.0	70	130	
Pb	208	2	165	1.076	ppb	4.409	19658	1	107.6	70	130	
Th	232	2	193	3.446	ppb	6.171	72875	2	172.3	70	130	>+/-30%
U	238	2	193	1.049	ppb	9.805	19629	1	104.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3584011	2.67	3709622	96.61	60	125	
Sc (IS)	45	2	HMI He	2722515	3.56	2724914	99.91	60	125	
Sc (IS)	45	3	No Gas	76219721	4.00	82891317	91.95	60	120	
Ge Internal standard	72	1	HMI H2	19294002	3.03	19447282	99.21	60	125	
Ge Internal standard	72	2	HMI He	2608033	1.11	2615067	99.73	60	125	
In Internal standard	115	2	HMI He	7086743	0.90	6700003	105.77	60	125	
Ho-165	165	2	HMI He	26425292	1.91	26090315	101.28	60	125	
Ir (IS)	193	2	HMI He	17979887	1.74	19253459	93.39	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-A
Data File Name	096SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:20:33-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	146.346	ppb	146.346	5.45	9879558	40000	
Be	9	1	6	7.198	ppb	7.198	1.14	5256	2000	
B	11	1	6	77.122	ppb	77.122	4.04	60706	100	
Na	23	2	45	1498.723	ppb	1498.723	0.96	909863	400000	
Mg	24	2	45	81206.998	ppb	81206.998	1.09	19959879	400000	
Al	27	2	45	144413.269	ppb	144413.269	0.79	9885304	400000	
K	39	2	45	43007.612	ppb	43007.612	1.45	7287064	400000	
V	51	2	72	288.908	ppb	288.908	3.05	860308	2000	
Cr	52	2	72	166.628	ppb	166.628	2.56	669498	5000	
Mn	55	2	72	24089.599	ppb	24089.599	2.79	43882325	10000	
(Fe)	57	2	72	165585.753	ppb	165585.753	0.51	12778341	400000	
Co	59	2	72	99.613	ppb	99.613	1.07	621035	2000	
Ni	60	2	72	161.746	ppb	161.746	1.68	271560	5000	
Cu	63	2	72	2375.575	ppb	2375.575	0.88	10465845	5000	
Zn	66	2	72	3767.489	ppb	3767.489	0.87	2583392	5000	
As	75	2	72	393.573	ppb	393.573	2.04	154656	2000	
Se	78	1	72	2.639	ppb	2.639	7.26	1348	2000	
Sr	88	2	45	653.090	ppb	653.090	3.54	1049641	2000	
Zr	90	2	72	34759.351	ppb	34759.351	2.60	311621	1000	>LDR
Nb	93	2	72	113898.705	ppb	113898.705	3.58	18465	200	>LDR
Mo	95	2	115	5.216	ppb	5.216	4.64	11465	2000	
Pd	105	2	115	639.170	ppb	639.170	25.75	534	100	>LDR
Ag	107	2	115	5.978	ppb	5.978	6.03	37408	100	
Cd	111	2	115	11.539	ppb	11.539	5.48	9886	2000	
Sn	120	2	115	8.750	ppb	8.750	2.59	19771	2000	
Sb	121	2	115	1.368	ppb	1.368	4.98	2610	1000	
Ba	137	2	115	2292.932	ppb	2292.932	2.30	1382223	5000	
W	182	2	165	2.460	ppb	2.460	2.02	17086	100	
Pt	195	2	165	4.479	ppb	4.479	510.84	83	100	
Tl	205	2	165	2.161	ppb	2.161	2.23	26572	2000	
Pb	208	2	165	2514.189	ppb	2514.189	0.35	35560652	5000	
Th	232	2	193	64.685	ppb	64.685	6.39	735202	2000	
U	238	2	193	5.063	ppb	5.063	4.97	78073	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2959546	3.76	3709622	79.78	60	125	
Sc (IS)	45	2	HMI He	2854794	1.99	2724914	104.77	60	125	
Sc (IS)	45	3	No Gas	76399972	1.30	82891317	92.17	60	120	
Ge Internal standard	72	1	HMI H2	16832860	2.88	19447282	86.56	60	125	
Ge Internal standard	72	2	HMI He	2549082	2.64	2615067	97.48	60	125	
In Internal standard	115	2	HMI He	6819318	1.40	6700003	101.78	60	125	
Ho-165	165	2	HMI He	24180285	0.88	26090315	92.68	60	125	
Ir (IS)	193	2	HMI He	15994955	4.29	19253459	83.08	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-Asd@5
Data File Name	097SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:24:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	47.438	ppb	47.438	39.88	8303154	40000	
Be	9	1	6	1.246	ppb	1.246	6.98	1104	2000	
B	11	1	6	19.957	ppb	19.957	2.64	21020	100	
Na	23	2	45	318.953	ppb	318.953	4.77	202211	400000	
Mg	24	2	45	18531.681	ppb	18531.681	5.25	4361181	400000	
Al	27	2	45	30270.129	ppb	30270.129	4.92	1984232	400000	
K	39	2	45	9266.136	ppb	9266.136	4.97	1512868	400000	
V	51	2	72	59.215	ppb	59.215	2.11	178011	2000	
Cr	52	2	72	34.983	ppb	34.983	2.14	142677	5000	
Mn	55	2	72	4986.922	ppb	4986.922	2.29	9158156	10000	
(Fe)	57	2	72	35130.084	ppb	35130.084	3.04	2732336	400000	
Co	59	2	72	21.027	ppb	21.027	2.91	132127	2000	
Ni	60	2	72	35.392	ppb	35.392	2.33	60214	5000	
Cu	63	2	72	517.479	ppb	517.479	1.03	2298537	5000	
Zn	66	2	72	866.823	ppb	866.823	0.63	599565	5000	
As	75	2	72	88.138	ppb	88.138	3.33	34949	2000	
Se	78	1	72	0.618	ppb	0.618	13.94	380	2000	
Sr	88	2	45	134.872	ppb	134.872	5.36	207692	2000	
Zr	90	2	72	7458.251	ppb	7458.251	1.22	68421	1000	>LDR
Nb	93	2	72	24328.961	ppb	24328.961	4.15	4018	200	>LDR
Mo	95	2	115	1.026	ppb	1.026	5.72	2429	2000	
Pd	105	2	115	-121.061	ppb	-121.061	-57.75	137	100	
Ag	107	2	115	2.328	ppb	2.328	1.85	15055	100	
Cd	111	2	115	2.463	ppb	2.463	6.66	2196	2000	
Sn	120	2	115	1.742	ppb	1.742	8.46	5500	2000	
Sb	121	2	115	0.275	ppb	0.275	16.28	607	1000	
Ba	137	2	115	453.581	ppb	453.581	1.11	281985	5000	
W	182	2	165	0.412	ppb	0.412	16.04	4959	100	
Pt	195	2	165	-10.669	ppb	-10.669	-57.45	70	100	
Tl	205	2	165	0.196	ppb	0.196	10.23	6167	2000	
Pb	208	2	165	516.271	ppb	516.271	2.50	8127260	5000	
Th	232	2	193	11.732	ppb	11.732	4.90	171167	2000	
U	238	2	193	0.985	ppb	0.985	4.53	18152	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3526490	2.14	3709622	95.06	60	125	
Sc (IS)	45	2	HMI He	2735762	2.94	2724914	100.40	60	125	
Sc (IS)	45	3	No Gas	79965806	2.25	82891317	96.47	60	120	
Ge Internal standard	72	1	HMI H2	19552465	0.89	19447282	100.54	60	125	
Ge Internal standard	72	2	HMI He	2568738	0.82	2615067	98.23	60	125	
In Internal standard	115	2	HMI He	7029740	0.20	6700003	104.92	60	125	
Ho-165	165	2	HMI He	26907260	1.18	26090315	103.13	60	125	
Ir (IS)	193	2	HMI He	17595538	3.07	19253459	91.39	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-B MS
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:27:31-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	403.875	ppb	403.875	4.62	15357808	40000	
Be	9	1	6	175.909	ppb	175.909	3.20	123101	2000	
B	11	1	6	97.025	ppb	97.025	1.77	72959	100	
Na	23	2	45	5601.633	ppb	5601.633	4.94	3285077	400000	
Mg	24	2	45	90318.605	ppb	90318.605	3.75	21838527	400000	
Al	27	2	45	179021.243	ppb	179021.243	4.12	12057154	400000	
K	39	2	45	55714.563	ppb	55714.563	3.11	9284246	400000	
V	51	2	72	503.963	ppb	503.963	2.62	1528518	2000	
Cr	52	2	72	381.359	ppb	381.359	1.93	1559253	5000	
Mn	55	2	72	35927.885	ppb	35927.885	2.18	66656764	10000	
(Fe)	57	2	72	164937.818	ppb	164937.818	1.28	12960649	400000	
Co	59	2	72	260.669	ppb	260.669	1.98	1654836	2000	
Ni	60	2	72	326.316	ppb	326.316	1.19	557561	5000	
Cu	63	2	72	2600.107	ppb	2600.107	2.06	11664793	5000	
Zn	66	2	72	8311.962	ppb	8311.962	1.66	5802362	5000	>LDR
As	75	2	72	579.894	ppb	579.894	1.14	231962	2000	
Se	78	1	72	145.688	ppb	145.688	3.16	76166	2000	
Sr	88	2	45	1128.921	ppb	1128.921	0.46	1786369	2000	
Zr	90	2	72	41675.415	ppb	41675.415	0.34	380301	1000	>LDR
Nb	93	2	72	169041.133	ppb	169041.133	4.45	27884	200	>LDR
Mo	95	2	115	150.170	ppb	150.170	0.44	331599	2000	
Pd	105	2	115	511.038	ppb	511.038	15.84	474	100	>LDR
Ag	107	2	115	171.010	ppb	171.010	4.52	1085680	100	>LDR
Cd	111	2	115	188.931	ppb	188.931	1.10	164049	2000	
Sn	120	2	115	72.562	ppb	72.562	0.31	153527	2000	
Sb	121	2	115	14.781	ppb	14.781	2.47	27810	1000	
Ba	137	2	115	2619.492	ppb	2619.492	1.47	1603533	5000	
W	182	2	165	3.997	ppb	3.997	3.02	26378	100	
Pt	195	2	165	58.930	ppb	58.930	62.14	157	100	
Tl	205	2	165	190.801	ppb	190.801	0.60	2031817	2000	
Pb	208	2	165	2666.358	ppb	2666.358	0.63	37462344	5000	
Th	232	2	193	305.222	ppb	305.222	2.01	3445956	2000	
U	238	2	193	217.048	ppb	217.048	2.76	3353921	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2849371	1.91	3709622	76.81	60	125	
Sc (IS)	45	2	HMI He	2809540	2.00	2724914	103.11	60	125	
Sc (IS)	45	3	No Gas	78687283	1.68	82891317	94.93	60	120	
Ge Internal standard	72	1	HMI H2	17411691	2.32	19447282	89.53	60	125	
Ge Internal standard	72	2	HMI He	2595192	1.19	2615067	99.24	60	125	
In Internal standard	115	2	HMI He	6923445	0.40	6700003	103.33	60	125	
Ho-165	165	2	HMI He	24019450	0.24	26090315	92.06	60	125	
Ir (IS)	193	2	HMI He	16338825	1.25	19253459	84.86	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-C MSD
Data File Name	099SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:30:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	429.857	ppb	429.857	1.65	16252637	40000	
Be	9	1	6	171.719	ppb	171.719	3.38	123974	2000	
B	11	1	6	111.891	ppb	111.891	1.89	86366	100	
Na	23	2	45	6436.417	ppb	6436.417	2.03	3715177	400000	
Mg	24	2	45	114947.550	ppb	114947.550	1.28	27365063	400000	
Al	27	2	45	228230.148	ppb	228230.148	0.35	15133302	400000	
K	39	2	45	65993.483	ppb	65993.483	3.01	10823190	400000	
V	51	2	72	639.285	ppb	639.285	3.33	1869261	2000	
Cr	52	2	72	433.020	ppb	433.020	3.00	1706328	5000	
Mn	55	2	72	36469.105	ppb	36469.105	2.12	65224582	10000	
(Fe)	57	2	72	215430.889	ppb	215430.889	2.04	16319194	400000	
Co	59	2	72	300.688	ppb	300.688	1.68	1840918	2000	
Ni	60	2	72	389.681	ppb	389.681	0.63	641871	5000	
Cu	63	2	72	3338.619	ppb	3338.619	1.83	14437423	5000	
Zn	66	2	72	6158.942	ppb	6158.942	1.46	4144905	5000	>LDR
As	75	2	72	671.481	ppb	671.481	1.68	258949	2000	
Se	78	1	72	149.144	ppb	149.144	2.58	75402	2000	
Sr	88	2	45	1298.498	ppb	1298.498	4.66	2021428	2000	
Zr	90	2	72	55495.280	ppb	55495.280	1.12	487844	1000	>LDR
Nb	93	2	72	192194.773	ppb	192194.773	2.09	30564	200	>LDR
Mo	95	2	115	148.690	ppb	148.690	1.07	327896	2000	
Pd	105	2	115	666.922	ppb	666.922	24.80	557	100	>LDR
Ag	107	2	115	173.222	ppb	173.222	1.67	1098413	100	>LDR
Cd	111	2	115	192.519	ppb	192.519	0.77	166928	2000	
Sn	120	2	115	70.949	ppb	70.949	3.02	149928	2000	
Sb	121	2	115	13.181	ppb	13.181	0.68	24773	1000	
Ba	137	2	115	3337.800	ppb	3337.800	1.55	2040202	5000	
W	182	2	165	3.600	ppb	3.600	4.00	23387	100	
Pt	195	2	165	71.165	ppb	71.165	72.35	170	100	
Tl	205	2	165	201.166	ppb	201.166	2.93	2091853	2000	
Pb	208	2	165	2715.455	ppb	2715.455	2.48	37261443	5000	
Th	232	2	193	343.626	ppb	343.626	1.68	3783024	2000	
U	238	2	193	223.411	ppb	223.411	1.28	3369292	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2938836	1.08	3709622	79.22	60	125	
Sc (IS)	45	2	HMI He	2765231	1.82	2724914	101.48	60	125	
Sc (IS)	45	3	No Gas	78873934	1.31	82891317	95.15	60	120	
Ge Internal standard	72	1	HMI H2	16830327	0.68	19447282	86.54	60	125	
Ge Internal standard	72	2	HMI He	2502427	1.40	2615067	95.69	60	125	
In Internal standard	115	2	HMI He	6913803	0.77	6700003	103.19	60	125	
Ho-165	165	2	HMI He	23465569	1.85	26090315	89.94	60	125	
Ir (IS)	193	2	HMI He	15944015	0.54	19253459	82.81	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-11-A pds
Data File Name	100SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:34:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	399.200	ppb	399.200	5.23	15348824	40000	
Be	9	1	6	171.571	ppb	171.571	2.36	125777	2000	
B	11	1	6	72.806	ppb	72.806	3.83	57968	100	
Na	23	2	45	1621.710	ppb	1621.710	2.51	942250	400000	
Mg	24	2	45	84112.548	ppb	84112.548	0.20	19818802	400000	
Al	27	2	45	153528.532	ppb	153528.532	1.48	10075931	400000	
K	39	2	45	44607.987	ppb	44607.987	1.49	7245694	400000	
V	51	2	72	511.446	ppb	511.446	1.68	1508711	2000	
Cr	52	2	72	378.498	ppb	378.498	0.37	1504990	5000	
Mn	55	2	72	24610.686	ppb	24610.686	2.38	44395063	10000	
(Fe)	57	2	72	165251.938	ppb	165251.938	1.88	12628953	400000	
Co	59	2	72	297.263	ppb	297.263	4.04	1834523	2000	
Ni	60	2	72	330.006	ppb	330.006	0.63	548317	5000	
Cu	63	2	72	2538.574	ppb	2538.574	2.34	11071419	5000	
Zn	66	2	72	3915.900	ppb	3915.900	0.89	2658477	5000	
As	75	2	72	571.169	ppb	571.169	2.23	222160	2000	
Se	78	1	72	173.988	ppb	173.988	1.93	89437	2000	
Sr	88	2	45	915.134	ppb	915.134	2.06	1410470	2000	
Zr	90	2	72	36270.214	ppb	36270.214	3.04	321931	1000	>LDR
Nb	93	2	72	109997.809	ppb	109997.809	5.34	17660	200	>LDR
Mo	95	2	115	204.998	ppb	204.998	0.98	442192	2000	
Pd	105	2	115	1155.562	ppb	1155.562	10.03	801	100	>LDR
Ag	107	2	115	46.224	ppb	46.224	3.21	286788	100	
Cd	111	2	115	191.770	ppb	191.770	1.97	162655	2000	
Sn	120	2	115	217.469	ppb	217.469	1.67	446034	2000	
Sb	121	2	115	192.116	ppb	192.116	1.06	352130	1000	
Ba	137	2	115	2541.427	ppb	2541.427	0.94	1519818	5000	
W	182	2	165	74.399	ppb	74.399	1.51	454087	100	
Pt	195	2	165	57.172	ppb	57.172	28.24	153	100	
Tl	205	2	165	203.039	ppb	203.039	3.25	2145470	2000	
Pb	208	2	165	2697.415	ppb	2697.415	1.23	37618856	5000	
Th	232	2	193	93.939	ppb	93.939	9.32	1072567	2000	
U	238	2	193	229.075	ppb	229.075	1.64	3514972	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2984654	1.82	3709622	80.46	60	125	
Sc (IS)	45	2	HMI He	2736697	1.17	2724914	100.43	60	125	
Sc (IS)	45	3	No Gas	77793177	4.36	82891317	93.85	60	120	
Ge Internal standard	72	1	HMI H2	17115299	1.36	19447282	88.01	60	125	
Ge Internal standard	72	2	HMI He	2524046	2.08	2615067	96.52	60	125	
In Internal standard	115	2	HMI He	6763635	0.59	6700003	100.95	60	125	
Ho-165	165	2	HMI He	23843293	1.57	26090315	91.39	60	125	
Ir (IS)	193	2	HMI He	16223892	1.25	19253459	84.26	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	101_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:37:52-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	126.447	ppb	5.154	10787202	100	126.4	90	110	>+\-10%
Be	9	1	6	44.476	ppb	0.553	39538	50	89.0	90	110	>+\-10%
B	11	1	6	408.703	ppb	2.079	379826	500	81.7	90	110	>+\-10%
Na	23	2	45	49186.317	ppb	1.157	27885244	51000	96.4	90	110	
Mg	24	2	45	11186.328	ppb	2.911	2629879	11000	101.7	90	110	
(Mg)	25	2	45	10415.074	ppb	2.248	381637	11000	94.7	90	110	
Al	27	2	45	1154.660	ppb	2.020	75924	1000	115.5	90	110	>+\-10%
Si	28	2	45	536.034	ppb	1.893	24745	500	107.2	90	110	
P	31	2	45	2116.693	ppb	0.866	12715	2500	84.7	90	110	>+\-10%
K	39	2	45	11752.547	ppb	1.807	1912696	11000	106.8	90	110	
Ca	40	1	45	12026.928	ppb	2.599	133066472	11000	109.3	90	110	
(Ca)	44	1	45	10258.864	ppb	0.928	4013172	11000	93.3	90	110	
Ti	47	2	45	59.609	ppb	7.980	4695	50	119.2	90	110	>+\-10%
V	51	2	72	47.149	ppb	1.571	149697	50	94.3	90	110	
Cr	52	2	72	45.986	ppb	1.690	197600	50	92.0	90	110	
Mn	55	2	72	65.349	ppb	2.618	127104	50	130.7	90	110	>+\-10%
Fe	56	1	72	1237.478	ppb	1.757	22434548	20000	6.2	90	110	>+\-10%
(Fe)	56	2	72	1126.538	ppb	2.404	3639256	20000	5.6	90	110	>+\-10%
(Fe)	57	2	72	1132.181	ppb	1.086	93817	1000	113.2	90	110	>+\-10%
Co	59	2	72	45.014	ppb	2.360	298591	50	90.0	90	110	
Ni	60	2	72	45.134	ppb	2.511	80939	50	90.3	90	110	
Cu	63	2	72	45.901	ppb	2.478	216607	50	91.8	90	110	
Zn	66	2	72	49.094	ppb	5.056	36594	50	98.2	90	110	
As	75	2	72	47.113	ppb	4.842	19754	50	94.2	90	110	
Se	78	1	72	48.102	ppb	2.751	29474	50	96.2	90	110	
Sr	88	2	45	112.286	ppb	1.911	172765	100	112.3	90	110	>+\-10%
Zr	90	2	72	1271.465	ppb	2.330	13442	50	2542.9	90	110	>+\-10%
Nb	93	2	72	857.068	ppb	27.588	204	100	857.1	90	110	>+\-10%
Mo	95	2	115	46.285	ppb	1.985	110420	50	92.6	90	110	
Pd	105	2	115	-188.884	ppb	-68.115	107	50	-377.8	90	110	>+\-10%
Ag	107	2	115	44.682	ppb	2.461	306233	50	89.4	90	110	>+\-10%
Cd	111	2	115	43.854	ppb	2.305	41117	50	87.7	90	110	>+\-10%
Sn	120	2	115	51.416	ppb	1.228	117982	50	102.8	90	110	
Sb	121	2	115	48.782	ppb	2.957	98843	50	97.6	90	110	
Ba	137	2	115	51.813	ppb	0.849	34323	50	103.6	90	110	
W	182	2	165	47.146	ppb	2.671	325575	50	94.3	90	110	
Pt	195	2	165	17.793	ppb	110.182	113	50	35.6	90	110	>+\-10%
Tl	205	2	165	47.120	ppb	0.702	565083	50	94.2	90	110	
Pb	208	2	165	49.420	ppb	1.238	780998	50	98.8	90	110	
Bi	209	2	193	2604.648	ppb	57.391	2256	500	520.9	90	110	>+\-10%
Th	232	2	193	58.647	ppb	1.040	755306	50	117.3	90	110	>+\-10%
U	238	2	193	53.268	ppb	2.401	909689	50	106.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3616531	0.33	3709622	97.49	60	125	
Sc (IS)	45	2	HMI He	2730377	0.48	2724914	100.20	60	125	
Sc (IS)	45	3	No Gas	82548832	1.96	82891317	99.59	60	120	
Ge Internal standard	72	1	HMI H2	20401024	3.28	19447282	104.90	60	125	
Ge Internal standard	72	2	HMI He	2712521	2.35	2615067	103.73	60	125	
In Internal standard	115	2	HMI He	7474332	1.65	6700003	111.56	60	125	
Ho-165	165	2	HMI He	26913012	1.06	26090315	103.15	60	125	
Ir (IS)	193	2	HMI He	18027831	2.44	19253459	93.63	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	102_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:41:25-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	24.241	ppb	40.4	8505450	0.05	>RL
Be	9	1	6	0.076	ppb	29.9	90	0.5	
B	11	1	6	16.434	ppb	7.1	17673	0.1	>RL
Na	23	2	45	43.699	ppb	0.7	44883	25	>RL
Mg	24	2	45	16.370	ppb	6.4	4168	25	
Al	27	2	45	8.139	ppb	26.3	841	15	
K	39	2	45	22.666	ppb	5.8	14364	50	
V	51	2	72	0.049	ppb	4.1	444	1	
Cr	52	2	72	0.069	ppb	10.7	1558	1	
Mn	55	2	72	1.676	ppb	18.0	3567	0.5	>RL
(Fe)	57	2	72	47.584	ppb	11.0	4609	25	>RL
Co	59	2	72	0.062	ppb	19.5	417	0.5	
Ni	60	2	72	0.096	ppb	31.2	577	1	
Cu	63	2	72	0.379	ppb	19.5	3180	1	
Zn	66	2	72	0.571	ppb	32.9	1168	5	
As	75	2	72	0.114	ppb	92.4	110	1	
Se	78	1	72	0.186	ppb	5.0	128	1	
Sr	88	2	45	0.220	ppb	50.2	434	1	
Zr	90	2	72	704.513	ppb	7.4	7783	1	>RL
Nb	93	2	72	138.556	ppb	88.3	77	2	>RL
Mo	95	2	115	0.153	ppb	13.6	480	0.5	
Pd	105	2	115	-215.005	ppb	-27.9	87	1	
Ag	107	2	115	0.901	ppb	6.7	5947	1	
Cd	111	2	115	0.050	ppb	56.7	70	0.5	
Sn	120	2	115	1.716	ppb	11.0	5527	1	>RL
Sb	121	2	115	0.517	ppb	16.4	1084	1	
Ba	137	2	115	0.284	ppb	10.8	257	0.5	
W	182	2	165	0.373	ppb	3.4	4615	1	
Pt	195	2	165	16.721	ppb	139.0	110	1	>RL
Tl	205	2	165	-0.085	ppb	-19.3	2770	0.1	
Pb	208	2	165	0.261	ppb	14.4	7078	0.5	
Th	232	2	193	4.860	ppb	4.0	89715	1	>RL
U	238	2	193	0.145	ppb	6.5	4245	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3489741	1.47	3709622	94.07	60	125	
Sc (IS)	45	2	HMI He	2661029	0.87	2724914	97.66	60	125	
Sc (IS)	45	3	No Gas	77267500	6.70	82891317	93.22	60	120	
Ge Internal standard	72	1	HMI H2	19771835	1.98	19447282	101.67	60	125	
Ge Internal standard	72	2	HMI He	2622037	1.16	2615067	100.27	60	125	
In Internal standard	115	2	HMI He	7141268	2.06	6700003	106.59	60	125	
Ho-165	165	2	HMI He	26464677	1.40	26090315	101.43	60	125	
Ir (IS)	193	2	HMI He	17853331	0.72	19253459	92.73	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-22-A
Data File Name	103SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:44:57-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	158.776	ppb	158.776	5.51	10782779	40000	
Be	9	1	6	6.356	ppb	6.356	8.83	4745	2000	
B	11	1	6	75.421	ppb	75.421	8.75	60796	100	
Na	23	2	45	1537.292	ppb	1537.292	3.19	905410	400000	
Mg	24	2	45	77197.823	ppb	77197.823	1.97	18403729	400000	
Al	27	2	45	145682.392	ppb	145682.392	1.30	9674206	400000	
K	39	2	45	40091.005	ppb	40091.005	3.34	6588703	400000	
V	51	2	72	284.283	ppb	284.283	3.88	853018	2000	
Cr	52	2	72	160.649	ppb	160.649	4.65	650187	5000	
Mn	55	2	72	22832.677	ppb	22832.677	2.62	41912512	10000	
(Fe)	57	2	72	166836.415	ppb	166836.415	2.29	12976588	400000	
Co	59	2	72	81.619	ppb	81.619	3.30	512754	2000	
Ni	60	2	72	166.619	ppb	166.619	2.93	281880	5000	
Cu	63	2	72	1991.344	ppb	1991.344	3.28	8837795	5000	
Zn	66	2	72	3162.003	ppb	3162.003	1.78	2184857	5000	
As	75	2	72	356.729	ppb	356.729	2.85	141205	2000	
Se	78	1	72	2.500	ppb	2.500	10.27	1317	2000	
Sr	88	2	45	566.830	ppb	566.830	3.55	883770	2000	
Zr	90	2	72	33278.348	ppb	33278.348	3.28	300707	1000	>LDR
Nb	93	2	72	104578.099	ppb	104578.099	5.40	17082	200	>LDR
Mo	95	2	115	4.897	ppb	4.897	2.83	10671	2000	
Pd	105	2	115	335.169	ppb	335.169	49.29	370	100	>LDR
Ag	107	2	115	7.650	ppb	7.650	4.84	47416	100	
Cd	111	2	115	11.452	ppb	11.452	4.93	9719	2000	
Sn	120	2	115	8.533	ppb	8.533	4.70	19137	2000	
Sb	121	2	115	1.370	ppb	1.370	7.74	2586	1000	
Ba	137	2	115	2122.874	ppb	2122.874	1.79	1267740	5000	
W	182	2	165	2.299	ppb	2.299	5.76	16017	100	
Pt	195	2	165	24.255	ppb	24.255	58.87	110	100	
Tl	205	2	165	1.878	ppb	1.878	1.92	23428	2000	
Pb	208	2	165	1860.284	ppb	1860.284	0.53	26183380	5000	
Th	232	2	193	63.437	ppb	63.437	1.51	719274	2000	
U	238	2	193	5.415	ppb	5.415	3.65	83103	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3028168	1.72	3709622	81.63	60	125	
Sc (IS)	45	2	HMI He	2769670	2.38	2724914	101.64	60	125	
Sc (IS)	45	3	No Gas	77393529	2.37	82891317	93.37	60	120	
Ge Internal standard	72	1	HMI H2	17358637	3.07	19447282	89.26	60	125	
Ge Internal standard	72	2	HMI He	2569793	4.25	2615067	98.27	60	125	
In Internal standard	115	2	HMI He	6755250	1.43	6700003	100.82	60	125	
Ho-165	165	2	HMI He	24060701	1.09	26090315	92.22	60	125	
Ir (IS)	193	2	HMI He	15922590	2.16	19253459	82.70	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-33-A
Data File Name	104SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:48:26-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	158.126	ppb	158.126	4.80	10821521	40000	
Be	9	1	6	6.338	ppb	6.338	5.59	4475	2000	
B	11	1	6	73.685	ppb	73.685	2.15	56274	100	
Na	23	2	45	1364.468	ppb	1364.468	4.18	811854	400000	
Mg	24	2	45	79472.797	ppb	79472.797	5.12	19093196	400000	
Al	27	2	45	138425.525	ppb	138425.525	3.87	9266704	400000	
K	39	2	45	44825.205	ppb	44825.205	0.73	7430873	400000	
V	51	2	72	271.933	ppb	271.933	5.39	804072	2000	
Cr	52	2	72	148.830	ppb	148.830	4.01	594093	5000	
Mn	55	2	72	26747.645	ppb	26747.645	5.56	48372294	10000	
(Fe)	57	2	72	156418.815	ppb	156418.815	5.42	11980714	400000	
Co	59	2	72	77.533	ppb	77.533	5.30	479847	2000	
Ni	60	2	72	151.340	ppb	151.340	4.74	252321	5000	
Cu	63	2	72	4468.137	ppb	4468.137	2.60	19551946	5000	
Zn	66	2	72	3117.344	ppb	3117.344	3.16	2123242	5000	
As	75	2	72	504.511	ppb	504.511	1.46	196938	2000	
Se	78	1	72	2.782	ppb	2.782	12.42	1468	2000	
Sr	88	2	45	659.079	ppb	659.079	3.54	1036133	2000	
Zr	90	2	72	34764.989	ppb	34764.989	3.73	309610	1000	>LDR
Nb	93	2	72	102600.102	ppb	102600.102	10.02	16501	200	>LDR
Mo	95	2	115	4.768	ppb	4.768	7.89	10637	2000	
Pd	105	2	115	485.416	ppb	485.416	21.76	460	100	>LDR
Ag	107	2	115	8.213	ppb	8.213	3.78	52117	100	
Cd	111	2	115	13.341	ppb	13.341	3.24	11592	2000	
Sn	120	2	115	8.110	ppb	8.110	4.08	18706	2000	
Sb	121	2	115	1.887	ppb	1.887	8.07	3614	1000	
Ba	137	2	115	2444.786	ppb	2444.786	2.62	1494564	5000	
W	182	2	165	2.501	ppb	2.501	3.95	16893	100	
Pt	195	2	165	48.339	ppb	48.339	37.58	140	100	
Tl	205	2	165	2.040	ppb	2.040	2.27	24627	2000	
Pb	208	2	165	1856.809	ppb	1856.809	3.83	25584992	5000	
Th	232	2	193	57.019	ppb	57.019	2.89	641948	2000	
U	238	2	193	4.588	ppb	4.588	2.37	69879	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2864611	3.32	3709622	77.22	60	125	
Sc (IS)	45	2	HMI He	2793357	3.37	2724914	102.51	60	125	
Sc (IS)	45	3	No Gas	77051172	4.41	82891317	92.95	60	120	
Ge Internal standard	72	1	HMI H2	17364347	1.60	19447282	89.29	60	125	
Ge Internal standard	72	2	HMI He	2533515	4.04	2615067	96.88	60	125	
In Internal standard	115	2	HMI He	6916730	2.13	6700003	103.23	60	125	
Ho-165	165	2	HMI He	23567095	2.02	26090315	90.33	60	125	
Ir (IS)	193	2	HMI He	15743665	0.86	19253459	81.77	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-44-A
Data File Name	105SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:51:55-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	170.405	ppb	170.405	7.24	11079760	40000	
Be	9	1	6	6.374	ppb	6.374	8.15	4685	2000	
B	11	1	6	78.453	ppb	78.453	3.83	61998	100	
Na	23	2	45	1287.481	ppb	1287.481	2.87	739620	400000	
Mg	24	2	45	80963.308	ppb	80963.308	2.04	18755587	400000	
Al	27	2	45	149136.596	ppb	149136.596	2.60	9621903	400000	
K	39	2	45	40846.966	ppb	40846.966	1.64	6524158	400000	
V	51	2	72	262.195	ppb	262.195	2.34	768095	2000	
Cr	52	2	72	147.727	ppb	147.727	1.48	584008	5000	
Mn	55	2	72	22782.838	ppb	22782.838	2.71	40825563	10000	
(Fe)	57	2	72	153692.001	ppb	153692.001	1.79	11664573	400000	
Co	59	2	72	75.102	ppb	75.102	2.35	460508	2000	
Ni	60	2	72	153.940	ppb	153.940	2.18	254209	5000	
Cu	63	2	72	1377.640	ppb	1377.640	2.08	5968781	5000	
Zn	66	2	72	2748.085	ppb	2748.085	2.17	1853386	5000	
As	75	2	72	217.161	ppb	217.161	2.83	83952	2000	
Se	78	1	72	2.181	ppb	2.181	2.30	1145	2000	
Sr	88	2	45	590.643	ppb	590.643	2.41	895075	2000	
Zr	90	2	72	34412.152	ppb	34412.152	1.61	303494	1000	>LDR
Nb	93	2	72	91543.511	ppb	91543.511	4.05	14608	200	>LDR
Mo	95	2	115	4.446	ppb	4.446	4.31	9586	2000	
Pd	105	2	115	380.851	ppb	380.851	73.17	390	100	>LDR
Ag	107	2	115	4.628	ppb	4.628	2.93	28372	100	
Cd	111	2	115	9.416	ppb	9.416	5.39	7906	2000	
Sn	120	2	115	6.550	ppb	6.550	2.74	14915	2000	
Sb	121	2	115	0.849	ppb	0.849	11.65	1615	1000	
Ba	137	2	115	2013.613	ppb	2013.613	1.61	1188319	5000	
W	182	2	165	2.358	ppb	2.358	3.13	16562	100	
Pt	195	2	165	23.605	ppb	23.605	186.37	110	100	
Tl	205	2	165	1.639	ppb	1.639	3.70	21115	2000	
Pb	208	2	165	1243.497	ppb	1243.497	1.16	17704497	5000	
Th	232	2	193	62.829	ppb	62.829	8.12	719752	2000	
U	238	2	193	4.877	ppb	4.877	3.10	75849	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2973297	3.36	3709622	80.15	60	125	
Sc (IS)	45	2	HMI He	2691055	1.57	2724914	98.76	60	125	
Sc (IS)	45	3	No Gas	79682275	3.41	82891317	96.13	60	120	
Ge Internal standard	72	1	HMI H2	17248616	1.09	19447282	88.69	60	125	
Ge Internal standard	72	2	HMI He	2506662	1.04	2615067	95.85	60	125	
In Internal standard	115	2	HMI He	6674917	1.02	6700003	99.63	60	125	
Ho-165	165	2	HMI He	24340927	1.59	26090315	93.29	60	125	
Ir (IS)	193	2	HMI He	16109028	3.62	19253459	83.67	60	125	

Sample Report

Sample Table

Sample Name	240-171025-C-55-A
Data File Name	106SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:55:23-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	184.304	ppb	184.304	12.79	11079234	40000	
Be	9	1	6	7.106	ppb	7.106	2.69	5113	2000	
B	11	1	6	72.588	ppb	72.588	4.63	56496	100	
Na	23	2	45	1571.573	ppb	1571.573	3.29	918232	400000	
Mg	24	2	45	85489.168	ppb	85489.168	1.00	20245688	400000	
Al	27	2	45	152690.969	ppb	152690.969	1.10	10073051	400000	
K	39	2	45	42156.624	ppb	42156.624	2.33	6882024	400000	
V	51	2	72	281.350	ppb	281.350	1.42	847428	2000	
Cr	52	2	72	144.959	ppb	144.959	3.41	588994	5000	
Mn	55	2	72	22323.282	ppb	22323.282	3.25	41108874	10000	
(Fe)	57	2	72	169929.414	ppb	169929.414	0.61	13259069	400000	
Co	59	2	72	88.819	ppb	88.819	2.22	559800	2000	
Ni	60	2	72	169.224	ppb	169.224	4.17	287142	5000	
Cu	63	2	72	1705.758	ppb	1705.758	1.24	7598098	5000	
Zn	66	2	72	5525.600	ppb	5525.600	1.52	3830206	5000	>LDR
As	75	2	72	190.686	ppb	190.686	2.56	75767	2000	
Se	78	1	72	2.296	ppb	2.296	9.96	1213	2000	
Sr	88	2	45	591.734	ppb	591.734	0.32	916873	2000	
Zr	90	2	72	36113.024	ppb	36113.024	2.13	327340	1000	>LDR
Nb	93	2	72	108403.302	ppb	108403.302	2.75	17774	200	>LDR
Mo	95	2	115	4.084	ppb	4.084	0.32	9148	2000	
Pd	105	2	115	436.963	ppb	436.963	27.16	434	100	>LDR
Ag	107	2	115	4.964	ppb	4.964	1.97	31567	100	
Cd	111	2	115	15.412	ppb	15.412	2.87	13405	2000	
Sn	120	2	115	6.628	ppb	6.628	2.06	15643	2000	
Sb	121	2	115	0.513	ppb	0.513	16.79	1048	1000	
Ba	137	2	115	1880.755	ppb	1880.755	1.61	1151575	5000	
W	182	2	165	1.895	ppb	1.895	2.38	13746	100	
Pt	195	2	165	1.275	ppb	1.275	1510.21	80	100	
Tl	205	2	165	1.597	ppb	1.597	3.23	20754	2000	
Pb	208	2	165	1385.922	ppb	1385.922	1.89	19815929	5000	
Th	232	2	193	69.490	ppb	69.490	5.08	793197	2000	
U	238	2	193	5.640	ppb	5.640	1.86	87400	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2917930	2.27	3709622	78.66	60	125	
Sc (IS)	45	2	HMI He	2750879	1.89	2724914	100.95	60	125	
Sc (IS)	45	3	No Gas	78682008	4.07	82891317	94.92	60	120	
Ge Internal standard	72	1	HMI H2	17360253	1.18	19447282	89.27	60	125	
Ge Internal standard	72	2	HMI He	2577417	2.48	2615067	98.56	60	125	
In Internal standard	115	2	HMI He	6927295	3.76	6700003	103.39	60	125	
Ho-165	165	2	HMI He	24441694	1.50	26090315	93.68	60	125	
Ir (IS)	193	2	HMI He	16088421	2.06	19253459	83.56	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-1-B
Data File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T19:58:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	194.623	ppb	194.623	5.09	12760820	40000	
Be	9	1	6	6.608	ppb	6.608	3.30	4859	2000	
B	11	1	6	35.739	ppb	35.739	3.72	29767	100	
Na	23	2	45	6227.875	ppb	6227.875	4.44	3796718	400000	
Mg	24	2	45	64058.514	ppb	64058.514	3.05	16109858	400000	
Al	27	2	45	206348.456	ppb	206348.456	2.96	14453494	400000	
K	39	2	45	31395.638	ppb	31395.638	1.65	5447437	400000	
V	51	2	72	443.659	ppb	443.659	3.32	1372469	2000	
Cr	52	2	72	206.938	ppb	206.938	2.02	863532	5000	
Mn	55	2	72	12022.610	ppb	12022.610	2.67	22745563	10000	
(Fe)	57	2	72	697105.650	ppb	697105.650	1.08	55864221	400000	
Co	59	2	72	241.040	ppb	241.040	3.15	1560527	2000	
Ni	60	2	72	257.812	ppb	257.812	2.15	449322	5000	
Cu	63	2	72	26957.680	ppb	26957.680	0.81	123325420	5000	>LDR
Zn	66	2	72	4505.393	ppb	4505.393	0.95	3208518	5000	
As	75	2	72	187.811	ppb	187.811	3.21	76662	2000	
Se	78	1	72	9.460	ppb	9.460	5.24	5313	2000	
Sr	88	2	45	1088.255	ppb	1088.255	1.58	1790623	2000	
Zr	90	2	72	34920.066	ppb	34920.066	1.77	325208	1000	>LDR
Nb	93	2	72	115087.418	ppb	115087.418	6.33	19374	200	>LDR
Mo	95	2	115	7.465	ppb	7.465	4.77	17299	2000	
Pd	105	2	115	200.648	ppb	200.648	39.72	320	100	>LDR
Ag	107	2	115	9.717	ppb	9.717	2.73	64314	100	
Cd	111	2	115	8.316	ppb	8.316	1.52	7546	2000	
Sn	120	2	115	24.329	ppb	24.329	3.10	54843	2000	
Sb	121	2	115	0.806	ppb	0.806	5.59	1662	1000	
Ba	137	2	115	1358.136	ppb	1358.136	0.99	866100	5000	
W	182	2	165	6.035	ppb	6.035	2.28	40133	100	
Pt	195	2	165	38.398	ppb	38.398	68.47	133	100	
Tl	205	2	165	0.807	ppb	0.807	4.47	12394	2000	
Pb	208	2	165	856.880	ppb	856.880	0.68	12432876	5000	
Th	232	2	193	45.402	ppb	45.402	3.10	514025	2000	
U	238	2	193	19.512	ppb	19.512	3.13	290553	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2981516	2.00	3709622	80.37	60	125	
Sc (IS)	45	2	HMI He	2921943	1.82	2724914	107.23	60	125	
Sc (IS)	45	3	No Gas	86276381	5.49	82891317	104.08	60	120	
Ge Internal standard	72	1	HMI H2	18646656	3.40	19447282	95.88	60	125	
Ge Internal standard	72	2	HMI He	2647300	1.57	2615067	101.23	60	125	
In Internal standard	115	2	HMI He	7212130	0.52	6700003	107.64	60	125	
Ho-165	165	2	HMI He	24802371	1.38	26090315	95.06	60	125	
Ir (IS)	193	2	HMI He	15669204	1.94	19253459	81.38	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-2-B
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:02:21-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	169.542	ppb	169.542	6.01	12447386	40000	
Be	9	1	6	3.533	ppb	3.533	6.86	2806	2000	
B	11	1	6	22.010	ppb	22.010	1.64	20783	100	
Na	23	2	45	3678.540	ppb	3678.540	1.84	2104914	400000	
Mg	24	2	45	43507.373	ppb	43507.373	2.29	10226338	400000	
Al	27	2	45	160720.562	ppb	160720.562	0.46	10522778	400000	
K	39	2	45	18776.018	ppb	18776.018	3.27	3049122	400000	
V	51	2	72	177.737	ppb	177.737	0.68	533448	2000	
Cr	52	2	72	108.863	ppb	108.863	1.63	441116	5000	
Mn	55	2	72	8131.034	ppb	8131.034	4.65	14917820	10000	
(Fe)	57	2	72	221653.620	ppb	221653.620	2.82	17226074	400000	
Co	59	2	72	188.762	ppb	188.762	2.52	1185309	2000	
Ni	60	2	72	129.807	ppb	129.807	1.54	219634	5000	
Cu	63	2	72	16462.591	ppb	16462.591	2.78	73030452	5000	
Zn	66	2	72	2052.696	ppb	2052.696	1.65	1417833	5000	
As	75	2	72	57.664	ppb	57.664	1.05	22874	2000	
Se	78	1	72	2.695	ppb	2.695	3.44	1512	2000	
Sr	88	2	45	792.583	ppb	792.583	3.56	1218554	2000	
Zr	90	2	72	33869.512	ppb	33869.512	0.35	305995	1000	>LDR
Nb	93	2	72	85426.069	ppb	85426.069	3.41	13966	200	>LDR
Mo	95	2	115	5.000	ppb	5.000	5.39	11425	2000	
Pd	105	2	115	132.004	ppb	132.004	28.56	277	100	>LDR
Ag	107	2	115	2.429	ppb	2.429	2.55	15833	100	
Cd	111	2	115	2.255	ppb	2.255	9.03	2029	2000	
Sn	120	2	115	13.505	ppb	13.505	5.23	30729	2000	
Sb	121	2	115	0.404	ppb	0.404	2.92	861	1000	
Ba	137	2	115	849.626	ppb	849.626	1.72	532411	5000	
W	182	2	165	1.722	ppb	1.722	3.70	13225	100	
Pt	195	2	165	10.555	ppb	10.555	158.41	97	100	
Tl	205	2	165	0.353	ppb	0.353	5.26	7623	2000	
Pb	208	2	165	265.590	ppb	265.590	0.61	3966094	5000	
Th	232	2	193	37.585	ppb	37.585	0.81	456108	2000	
U	238	2	193	7.871	ppb	7.871	2.01	125262	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3205094	2.28	3709622	86.40	60	125	
Sc (IS)	45	2	HMI He	2730367	1.07	2724914	100.20	60	125	
Sc (IS)	45	3	No Gas	85960317	1.21	82891317	103.70	60	120	
Ge Internal standard	72	1	HMI H2	18486522	1.57	19447282	95.06	60	125	
Ge Internal standard	72	2	HMI He	2567430	1.19	2615067	98.18	60	125	
In Internal standard	115	2	HMI He	7087224	0.60	6700003	105.78	60	125	
Ho-165	165	2	HMI He	25510732	1.31	26090315	97.78	60	125	
Ir (IS)	193	2	HMI He	16610120	1.66	19253459	86.27	60	125	

Sample Report

Sample Table

Sample Name	240-171311-A-3-B
Data File Name	109SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:05:48-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584457 soil 6020b
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	65.399	ppb	65.399	16.93	10092268	40000	
Be	9	1	6	1.440	ppb	1.440	23.12	1181	2000	
B	11	1	6	44.379	ppb	44.379	4.69	39836	100	
Na	23	2	45	12378.421	ppb	12378.421	1.33	7524377	400000	
Mg	24	2	45	31684.336	ppb	31684.336	0.41	7968026	400000	
Al	27	2	45	60472.109	ppb	60472.109	2.42	4235898	400000	
K	39	2	45	47556.796	ppb	47556.796	3.31	8242217	400000	
V	51	2	72	523.456	ppb	523.456	2.92	1625377	2000	
Cr	52	2	72	214.726	ppb	214.726	6.96	898717	5000	
Mn	55	2	72	1222.859	ppb	1222.859	1.03	2324019	10000	
(Fe)	57	2	72	1137265.269	ppb	1137265.269	2.37	91491177	400000	
Co	59	2	72	38.111	ppb	38.111	1.62	247789	2000	
Ni	60	2	72	52.031	ppb	52.031	5.43	91319	5000	
Cu	63	2	72	21124.757	ppb	21124.757	5.07	96962552	5000	
Zn	66	2	72	698.223	ppb	698.223	3.83	499591	5000	
As	75	2	72	342.070	ppb	342.070	4.16	140078	2000	
Se	78	1	72	19.100	ppb	19.100	3.07	11110	2000	
Sr	88	2	45	641.873	ppb	641.873	1.61	1055967	2000	
Zr	90	2	72	10100.090	ppb	10100.090	1.83	95387	1000	>LDR
Nb	93	2	72	93221.217	ppb	93221.217	0.11	15780	200	>LDR
Mo	95	2	115	12.941	ppb	12.941	4.79	29478	2000	
Pd	105	2	115	-9.038	ppb	-9.038	-1577.89	200	100	
Ag	107	2	115	185.827	ppb	185.827	2.15	1212594	100	>LDR
Cd	111	2	115	1.523	ppb	1.523	9.57	1381	2000	
Sn	120	2	115	231.877	ppb	231.877	5.08	499828	2000	
Sb	121	2	115	5.789	ppb	5.789	4.57	11245	1000	
Ba	137	2	115	1056.696	ppb	1056.696	2.01	664840	5000	
W	182	2	165	19.796	ppb	19.796	1.85	130640	100	
Pt	195	2	165	43.097	ppb	43.097	77.05	143	100	
Tl	205	2	165	0.972	ppb	0.972	6.64	14601	2000	
Pb	208	2	165	1681.051	ppb	1681.051	0.53	25063739	5000	
Th	232	2	193	10.549	ppb	10.549	4.08	138396	2000	
U	238	2	193	33.898	ppb	33.898	2.67	498545	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3269265	0.79	3709622	88.13	60	125	
Sc (IS)	45	2	HMI He	2920779	1.10	2724914	107.19	60	125	
Sc (IS)	45	3	No Gas	87628514	2.81	82891317	105.71	60	120	
Ge Internal standard	72	1	HMI H2	19340247	0.82	19447282	99.45	60	125	
Ge Internal standard	72	2	HMI He	2658550	2.99	2615067	101.66	60	125	
In Internal standard	115	2	HMI He	7118286	3.54	6700003	106.24	60	125	
Ho-165	165	2	HMI He	25486940	2.00	26090315	97.69	60	125	
Ir (IS)	193	2	HMI He	15507915	0.51	19253459	80.55	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	110_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:09:18-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	119.354	ppb	13.380	11422288	100	119.4	90	110	>+\-10%
Be	9	1	6	44.516	ppb	6.717	39026	50	89.0	90	110	>+\-10%
B	11	1	6	417.849	ppb	4.280	383058	500	83.6	90	110	>+\-10%
Na	23	2	45	50020.669	ppb	0.377	27842154	51000	98.1	90	110	
Mg	24	2	45	11270.587	ppb	3.577	2601630	11000	102.5	90	110	
(Mg)	25	2	45	10278.153	ppb	0.683	369798	11000	93.4	90	110	
Al	27	2	45	1066.641	ppb	0.753	68890	1000	106.7	90	110	
Si	28	2	45	533.606	ppb	1.352	24200	500	106.7	90	110	
P	31	2	45	2092.532	ppb	2.187	12344	2500	83.7	90	110	>+\-10%
K	39	2	45	12117.228	ppb	0.614	1935911	11000	110.2	90	110	>+\-10%
Ca	40	1	45	11751.476	ppb	2.008	133226378	11000	106.8	90	110	
(Ca)	44	1	45	10190.093	ppb	0.775	4084021	11000	92.6	90	110	
Ti	47	2	45	59.018	ppb	6.416	4562	50	118.0	90	110	>+\-10%
V	51	2	72	47.798	ppb	0.515	149097	50	95.6	90	110	
Cr	52	2	72	46.999	ppb	2.136	198356	50	94.0	90	110	
Mn	55	2	72	50.221	ppb	4.191	96047	50	100.4	90	110	
Fe	56	1	72	1982.423	ppb	3.831	36469216	20000	9.9	90	110	>+\-10%
(Fe)	56	2	72	1471.414	ppb	3.542	4658891	20000	7.4	90	110	>+\-10%
(Fe)	57	2	72	1418.815	ppb	1.667	115271	1000	141.9	90	110	>+\-10%
Co	59	2	72	45.999	ppb	2.729	299747	50	92.0	90	110	
Ni	60	2	72	45.328	ppb	2.991	79847	50	90.7	90	110	
Cu	63	2	72	53.897	ppb	2.524	249611	50	107.8	90	110	
Zn	66	2	72	47.810	ppb	1.026	35036	50	95.6	90	110	
As	75	2	72	46.883	ppb	3.462	19307	50	93.8	90	110	
Se	78	1	72	45.892	ppb	2.916	28642	50	91.8	90	110	
Sr	88	2	45	111.961	ppb	1.233	169126	100	112.0	90	110	>+\-10%
Zr	90	2	72	1086.406	ppb	1.354	11472	50	2172.8	90	110	>+\-10%
Nb	93	2	72	1298.482	ppb	22.421	274	100	1298.5	90	110	>+\-10%
Mo	95	2	115	46.752	ppb	1.101	110122	50	93.5	90	110	
Pd	105	2	115	-86.833	ppb	-78.079	164	50	-173.7	90	110	>+\-10%
Ag	107	2	115	45.809	ppb	2.245	310026	50	91.6	90	110	
Cd	111	2	115	45.678	ppb	1.645	42288	50	91.4	90	110	
Sn	120	2	115	50.547	ppb	2.682	114539	50	101.1	90	110	
Sb	121	2	115	47.463	ppb	1.753	94967	50	94.9	90	110	
Ba	137	2	115	50.644	ppb	1.192	33119	50	101.3	90	110	
W	182	2	165	46.089	ppb	0.945	320957	50	92.2	90	110	
Pt	195	2	165	19.363	ppb	304.691	117	50	38.7	90	110	>+\-10%
Tl	205	2	165	46.502	ppb	1.477	562291	50	93.0	90	110	
Pb	208	2	165	47.288	ppb	0.252	753572	50	94.6	90	110	
Bi	209	2	193	27502.875	ppb	13.579	5807	500	5500.6	90	110	>+\-10%
Th	232	2	193	58.206	ppb	2.484	740639	50	116.4	90	110	>+\-10%
U	238	2	193	54.276	ppb	1.077	915240	50	108.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3570943	2.97	3709622	96.26	60	125	
Sc (IS)	45	2	HMI He	2680814	1.22	2724914	98.38	60	125	
Sc (IS)	45	3	No Gas	85663624	4.05	82891317	103.34	60	120	
Ge Internal standard	72	1	HMI H2	20773747	1.66	19447282	106.82	60	125	
Ge Internal standard	72	2	HMI He	2664321	1.29	2615067	101.88	60	125	
In Internal standard	115	2	HMI He	7379273	1.14	6700003	110.14	60	125	
Ho-165	165	2	HMI He	27132577	0.31	26090315	103.99	60	125	
Ir (IS)	193	2	HMI He	17802174	1.57	19253459	92.46	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	111_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:12:51-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	21.942	ppb	106.2	9426031	0.05	>RL
Be	9	1	6	0.057	ppb	100.8	77	0.5	
B	11	1	6	14.689	ppb	5.6	16794	0.1	>RL
Na	23	2	45	39.502	ppb	7.7	43260	25	>RL
Mg	24	2	45	13.748	ppb	1.7	3627	25	
Al	27	2	45	8.882	ppb	31.0	904	15	
K	39	2	45	24.560	ppb	18.1	14894	50	
V	51	2	72	0.043	ppb	44.2	437	1	
Cr	52	2	72	0.066	ppb	15.0	1585	1	
Mn	55	2	72	0.760	ppb	9.2	1892	0.5	>RL
(Fe)	57	2	72	101.630	ppb	5.0	9105	25	>RL
Co	59	2	72	0.052	ppb	18.5	364	0.5	
Ni	60	2	72	0.098	ppb	37.8	594	1	
Cu	63	2	72	1.664	ppb	7.8	9218	1	>RL
Zn	66	2	72	0.501	ppb	31.2	1145	5	
As	75	2	72	0.052	ppb	163.2	87	1	
Se	78	1	72	0.116	ppb	48.3	89	1	
Sr	88	2	45	0.198	ppb	28.3	407	1	
Zr	90	2	72	579.139	ppb	3.4	6785	1	>RL
Nb	93	2	72	187.081	ppb	47.6	87	2	>RL
Mo	95	2	115	0.137	ppb	27.3	447	0.5	
Pd	105	2	115	-258.023	ppb	-28.8	63	1	
Ag	107	2	115	0.759	ppb	5.1	5056	1	
Cd	111	2	115	0.009	ppb	67.0	33	0.5	
Sn	120	2	115	1.209	ppb	6.2	4475	1	>RL
Sb	121	2	115	0.109	ppb	53.9	297	1	
Ba	137	2	115	0.091	ppb	75.6	137	0.5	
W	182	2	165	0.344	ppb	20.0	4499	1	
Pt	195	2	165	4.460	ppb	570.7	93	1	>RL
Tl	205	2	165	-0.111	ppb	-9.4	2509	0.1	
Pb	208	2	165	0.167	ppb	3.5	5719	0.5	
Th	232	2	193	1.883	ppb	13.9	53706	1	>RL
U	238	2	193	0.039	ppb	43.7	2479	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3636497	1.11	3709622	98.03	60	125	
Sc (IS)	45	2	HMI He	2705466	2.87	2724914	99.29	60	125	
Sc (IS)	45	3	No Gas	84502853	1.94	82891317	101.94	60	120	
Ge Internal standard	72	1	HMI H2	20420398	0.45	19447282	105.00	60	125	
Ge Internal standard	72	2	HMI He	2683396	0.28	2615067	102.61	60	125	
In Internal standard	115	2	HMI He	7201473	1.24	6700003	107.48	60	125	
Ho-165	165	2	HMI He	26917083	1.54	26090315	103.17	60	125	
Ir (IS)	193	2	HMI He	18000201	0.62	19253459	93.49	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	112LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:16:26-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	29.564	ppb	67.277	9178511	50	59.1	70	130	>+/-30%
Be	9	1	6	0.764	ppb	4.785	734	1	76.4	70	130	
Na	23	2	45	42.884	ppb	3.769	44364	50	85.8	70	130	
Mg	24	2	45	55.057	ppb	4.946	13018	50	110.1	70	130	
Al	27	2	45	54.954	ppb	10.272	3821	50	109.9	70	130	
K	39	2	45	110.594	ppb	4.034	28193	100	110.6	70	130	
V	51	2	72	4.777	ppb	4.057	14881	5	95.5	70	130	
Cr	52	2	72	1.943	ppb	13.923	9268	2	97.2	70	130	
Mn	55	2	72	1.537	ppb	14.361	3297	1	153.7	70	130	>+/-30%
(Fe)	57	2	72	101.439	ppb	8.267	8851	50	202.9	70	130	>+/-30%
Co	59	2	72	0.945	ppb	4.258	6060	1	94.5	70	130	
Ni	60	2	72	2.008	ppb	4.642	3864	2	100.4	70	130	
Cu	63	2	72	2.969	ppb	3.292	14874	2	148.5	70	130	>+/-30%
Zn	66	2	72	9.841	ppb	5.497	7679	10	98.4	70	130	
As	75	2	72	5.476	ppb	9.522	2269	5	109.5	70	130	
Se	78	1	72	5.332	ppb	4.643	3168	5	106.6	70	130	
Sr	88	2	45	1.115	ppb	13.982	1772	1	111.5	70	130	
Zr	90	2	72	477.404	ppb	8.259	5677	0.5	95480.8	70	130	>+/-30%
Nb	93	2	72	279.775	ppb	54.010	100	2	13988.7	70	130	>+/-30%
Mo	95	2	115	1.906	ppb	6.283	4498	2	95.3	70	130	
Pd	105	2	115	-239.733	ppb	-12.992	73	1	-23973.3	70	130	>+/-30%
Ag	107	2	115	1.017	ppb	8.850	6731	1	101.7	70	130	
Cd	111	2	115	0.896	ppb	5.945	831	1	89.6	70	130	
Sn	120	2	115	10.035	ppb	3.225	23583	10	100.3	70	130	
Sb	121	2	115	1.851	ppb	6.688	3681	2	92.5	70	130	
Ba	137	2	115	1.158	ppb	9.369	814	1	115.8	70	130	
W	182	2	165	4.793	ppb	3.550	33903	1	479.3	70	130	>+/-30%
Pt	195	2	165	-7.186	ppb	-285.813	73	1	-718.6	70	130	>+/-30%
Tl	205	2	165	0.726	ppb	8.707	12087	1	72.6	70	130	
Pb	208	2	165	1.120	ppb	1.190	20072	1	112.0	70	130	
Th	232	2	193	2.147	ppb	8.338	57265	2	107.3	70	130	
U	238	2	193	0.994	ppb	0.927	18837	1	99.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3765317	2.29	3709622	101.50	60	125	
Sc (IS)	45	2	HMI He	2657067	1.09	2724914	97.51	60	125	
Sc (IS)	45	3	No Gas	81754244	4.00	82891317	98.63	60	120	
Ge Internal standard	72	1	HMI H2	19680743	1.27	19447282	101.20	60	125	
Ge Internal standard	72	2	HMI He	2614449	1.29	2615067	99.98	60	125	
In Internal standard	115	2	HMI He	7177682	2.55	6700003	107.13	60	125	
Ho-165	165	2	HMI He	26067532	2.34	26090315	99.91	60	125	
Ir (IS)	193	2	HMI He	18097608	0.33	19253459	94.00	60	125	

Blank Report

Sample Table

Sample Name	MB 280-584778/1-A
Data File Name	113_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:19:59-06:00
Sample Type	Blank
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	3	6	2.142	ppb	507.4331481	9147756	0.05
Be	9	1	6	-0.008	ppb	-363.0578506	20	0.5
Na	23	2	45	50.064	ppb	2.904945797	47411	25
Mg	24	2	45	19.163	ppb	4.192514621	4712	25
Al	27	2	45	12.984	ppb	17.65614558	1128	15
K	39	2	45	27.878	ppb	13.84137632	14874	50
V	51	2	72	-0.025	ppb	-122.8212607	210	1
Cr	52	2	72	0.807	ppb	7.791938971	4468	1
Mn	55	2	72	0.800	ppb	6.233251739	1869	0.5
(Fe)	57	2	72	69.620	ppb	2.715781256	6171	25
Co	59	2	72	0.022	ppb	10.6832033	153	0.5
Ni	60	2	72	0.301	ppb	43.95401911	904	1
Cu	63	2	72	3.082	ppb	3.011218012	14988	1
Zn	66	2	72	2.766	ppb	7.233139711	2636	5
As	75	2	72	0.028	ppb	418.4370853	73	1
Se	78	1	72	0.022	ppb	48.99615645	29	1
Sr	88	2	45	0.321	ppb	19.29989875	574	1
Zr	90	2	72	195.561	ppb	5.699396029	3017	1
Nb	93	2	72	294.671	ppb	80.80405793	100	2
Mo	95	2	115	0.194	ppb	24.04377008	574	0.5
Pd	105	2	115	-240.193	ppb	-30.51701452	73	1
Ag	107	2	115	0.060	ppb	5.730519887	440	1
Cd	111	2	115	-0.009	ppb	-187.8205955	17	0.5
Sn	120	2	115	12.946	ppb	1.177614946	29749	1
Sb	121	2	115	0.079	ppb	12.16463038	237	1
Ba	137	2	115	0.554	ppb	22.78504727	427	0.5
W	182	2	165	0.200	ppb	20.19916354	3407	1
Pt	195	2	165	8.662	ppb	114.2210769	97	1
Tl	205	2	165	-0.233	ppb	-2.79369332	1028	0.1
Pb	208	2	165	0.123	ppb	16.09780387	4889	0.5
Th	232	2	193	1.640	ppb	15.08307973	50605	1
U	238	2	193	-0.018	ppb	-40.24090821	1498	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3770335	1.75	3709622	101.64	60	125	
Sc (IS)	45	2	HMI He	2606668	1.06	2724914	95.66	60	125	
Sc (IS)	45	3	No Gas	82507102	1.77	82891317	99.54	60	120	
Ge Internal standard	72	1	HMI H2	18822060	0.23	19447282	96.79	60	125	
Ge Internal standard	72	2	HMI He	2546047	1.66	2615067	97.36	60	125	
In Internal standard	115	2	HMI He	7139493	1.40	6700003	106.56	60	125	
Ho-165	165	2	HMI He	26178189	0.99	26090315	100.34	60	125	
Ir (IS)	193	2	HMI He	17965042	0.88	19253459	93.31	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-584778/2-A
Data File Name	114LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:23:32-06:00
Sample Type	LCS-s
Dilution	1
Analyst	Denver Metals
Comment	584778 soil 6020a dod
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	216.609	216.609	ppb	11.622	14327879	2000	10.8	80	120	NewName Main CR1 Failed
Be	9	1	6	167.951	167.951	ppb	2.364	147899	200	84.0	80	120	
Na	23	2	45	4040.028	4040.028	ppb	4.865	2225214	200	2020.0	80	120	NewName Main CR1 Failed
Mg	24	2	45	4077.295	4077.295	ppb	6.885	923194	200000	2.0	80	120	NewName Main CR1 Failed
Al	27	2	45	3893.710	3893.710	ppb	7.442	245737	200000	1.9	80	120	NewName Main CR1 Failed
K	39	2	45	4117.135	4117.135	ppb	3.711	652605	200000	2.1	80	120	NewName Main CR1 Failed
V	51	2	72	186.234	186.234	ppb	2.314	563172	200	93.1	80	120	
Cr	52	2	72	182.561	182.561	ppb	2.873	744694	200	91.3	80	120	
(Cr)	53	2	72	179.861	179.861	ppb	1.354	91308	200	89.9	80	120	
Mn	55	2	72	178.387	178.387	ppb	1.093	330274	200	89.2	80	120	
(Fe)	57	2	72	3668.143	3668.143	ppb	1.018	288081	200000	1.8	80	120	NewName Main CR1 Failed
Co	59	2	72	191.223	191.223	ppb	2.904	1209888	200	95.6	80	120	
Ni	60	2	72	180.942	180.942	ppb	2.350	308298	200	90.5	80	120	
Cu	63	2	72	177.933	177.933	ppb	1.349	796865	200	89.0	80	120	
Zn	66	2	72	174.018	174.018	ppb	0.705	121813	200	87.0	80	120	
As	75	2	72	180.662	180.662	ppb	1.524	72078	200	90.3	80	120	
Se	78	1	72	171.341	171.341	ppb	1.103	98214	200	85.7	80	120	
(Se)	82	1	72	145.382	145.382	ppb	1.285	46241	200	72.7	80	120	NewName Main CR1 Failed
Sr	88	2	45	429.079	429.079	ppb	5.348	635577	200	214.5	80	120	NewName Main CR1 Failed
Nb	93	2	72	509.712	509.712	ppb	68.344	137	400	127.4	80	120	NewName Main CR1 Failed
Mo	95	2	115	180.798	180.798	ppb	3.710	404935	200	90.4	80	120	
Pd	105	2	115	-190.235	-190.235	ppb	-45.513	100	200	-95.1	80	120	NewName Main CR1 Failed
Ag	107	2	115	174.073	174.073	ppb	4.645	1120919	200	87.0	80	120	
Cd	111	2	115	180.779	180.779	ppb	3.237	159234	200	90.4	80	120	
(Cd)	114	2	115	177.876	177.876	ppb	1.810	390085	200	88.9	80	120	
Sn	120	2	115	207.014	207.014	ppb	4.015	440961	200	103.5	80	120	
Sb	121	2	115	180.255	180.255	ppb	3.981	343035	200	90.1	80	110	
Ba	137	2	115	206.254	206.254	ppb	2.767	128164	200	103.1	80	120	
W	182	2	165	1.514	1.514	ppb	4.982	12133	200	0.8	80	120	NewName Main CR1 Failed
Pt	195	2	165	4.425	4.425	ppb	138.266	90	200	2.2	80	120	NewName Main CR1 Failed
Tl	205	2	165	194.031	194.031	ppb	1.759	2241434	200	97.0	80	120	
(Pb)	206	2	165	201.398	201.398	ppb	1.998	758872	200	100.7	80	120	
(Pb)	207	2	165	188.597	188.597	ppb	1.696	645721	200	94.3	80	120	
Pb	208	2	165	198.260	198.260	ppb	2.193	3024480	200	99.1	80	120	
Th	232	2	193	222.210	222.210	ppb	1.139	2840268	200	111.1	80	120	
U	238	2	193	206.438	206.438	ppb	2.109	3601069	200	103.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3584906	1.39	3709622	96.64	60	125	
Sc (IS)	45	2	HMI He	2633380	3.99	2724914	96.64	60	125	
Sc (IS)	45	3	No Gas	81960607	0.63	82891317	98.88	60	120	
Ge Internal standard	72	1	HMI H2	19085344	2.35	19447282	98.14	60	125	
Ge Internal standard	72	2	HMI He	2586904	0.85	2615067	98.92	60	125	
In Internal standard	115	2	HMI He	7028225	3.17	6700003	104.90	60	125	
Ho-165	165	2	HMI He	26063194	2.35	26090315	99.90	60	125	
Ir (IS)	193	2	HMI He	18442262	1.61	19253459	95.79	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-1-A
Data File Name	115SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:27:03-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	181.571	ppb	181.571	12.09	13373987	40000	
Be	9	1	6	8.240	ppb	8.240	1.09	7135	2000	
B	11	1	6	59.709	ppb	59.709	2.47	56532	100	
Na	23	2	45	1453.610	ppb	1453.610	4.62	873076	400000	
Mg	24	2	45	57579.232	ppb	57579.232	3.93	13990571	400000	
Al	27	2	45	232879.332	ppb	232879.332	3.73	15759278	400000	
K	39	2	45	20699.399	ppb	20699.399	3.79	3473450	400000	
V	51	2	72	535.437	ppb	535.437	4.37	1620482	2000	
Cr	52	2	72	307.331	ppb	307.331	1.80	1254344	5000	
Mn	55	2	72	7278.704	ppb	7278.704	2.50	13477129	10000	
(Fe)	57	2	72	264562.874	ppb	264562.874	4.56	20742469	400000	
Co	59	2	72	94.357	ppb	94.357	3.80	597786	2000	
Ni	60	2	72	237.331	ppb	237.331	1.68	404864	5000	
Cu	63	2	72	314.122	ppb	314.122	0.42	1407825	5000	
Zn	66	2	72	741.671	ppb	741.671	2.10	517386	5000	
As	75	2	72	104.954	ppb	104.954	1.46	41955	2000	
Se	78	1	72	5.002	ppb	5.002	3.18	2862	2000	
Sr	88	2	45	291.298	ppb	291.298	1.29	463177	2000	
Zr	90	2	72	79873.703	ppb	79873.703	2.63	726253	1000	>LDR
Nb	93	2	72	27155.626	ppb	27155.626	3.77	4518	200	>LDR
Mo	95	2	115	6.584	ppb	6.584	2.95	14631	2000	
Pd	105	2	115	484.562	ppb	484.562	36.12	460	100	>LDR
Ag	107	2	115	1.906	ppb	1.906	7.89	12110	100	
Cd	111	2	115	4.045	ppb	4.045	3.54	3531	2000	
Sn	120	2	115	8.057	ppb	8.057	2.94	18585	2000	
Sb	121	2	115	0.489	ppb	0.489	11.87	998	1000	
Ba	137	2	115	2494.200	ppb	2494.200	1.75	1524130	5000	
W	182	2	165	0.491	ppb	0.491	12.47	5086	100	
Pt	195	2	165	109.844	ppb	109.844	38.73	234	100	>LDR
Tl	205	2	165	3.424	ppb	3.424	2.57	41264	2000	
Pb	208	2	165	299.445	ppb	299.445	2.73	4361305	5000	
Th	232	2	193	131.566	ppb	131.566	1.20	1578778	2000	
U	238	2	193	13.860	ppb	13.860	2.16	226869	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3512854	0.54	3709622	94.70	60	125	
Sc (IS)	45	2	HMI He	2822916	1.32	2724914	103.60	60	125	
Sc (IS)	45	3	No Gas	87436216	1.02	82891317	105.48	60	120	
Ge Internal standard	72	1	HMI H2	18939290	1.39	19447282	97.39	60	125	
Ge Internal standard	72	2	HMI He	2590703	1.36	2615067	99.07	60	125	
In Internal standard	115	2	HMI He	6912076	2.42	6700003	103.17	60	125	
Ho-165	165	2	HMI He	24888372	1.38	26090315	95.39	60	125	
Ir (IS)	193	2	HMI He	17183402	1.71	19253459	89.25	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-2-A
Data File Name	116SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:30:31-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	153.865	ppb	153.865	8.21	12434608	40000	
Be	9	1	6	6.690	ppb	6.690	6.71	6191	2000	
B	11	1	6	48.425	ppb	48.425	0.97	49509	100	
Na	23	2	45	1734.794	ppb	1734.794	2.96	1051808	400000	
Mg	24	2	45	38960.131	ppb	38960.131	3.97	9591600	400000	
Al	27	2	45	161405.195	ppb	161405.195	3.26	11068149	400000	
K	39	2	45	14909.899	ppb	14909.899	1.85	2539062	400000	
V	51	2	72	407.864	ppb	407.864	1.45	1267428	2000	
Cr	52	2	72	205.485	ppb	205.485	1.23	861435	5000	
Mn	55	2	72	6189.687	ppb	6189.687	5.14	11755677	10000	
(Fe)	57	2	72	199109.048	ppb	199109.048	3.84	16020286	400000	
Co	59	2	72	73.289	ppb	73.289	2.45	476718	2000	
Ni	60	2	72	198.695	ppb	198.695	1.93	348071	5000	
Cu	63	2	72	161.767	ppb	161.767	1.15	744912	5000	
Zn	66	2	72	407.039	ppb	407.039	1.25	291862	5000	
As	75	2	72	91.899	ppb	91.899	4.16	37695	2000	
Se	78	1	72	2.603	ppb	2.603	2.70	1567	2000	
Sr	88	2	45	262.891	ppb	262.891	1.51	423620	2000	
Zr	90	2	72	72707.743	ppb	72707.743	1.82	678865	1000	>LDR
Nb	93	2	72	11430.453	ppb	11430.453	7.06	1982	200	>LDR
Mo	95	2	115	4.623	ppb	4.623	4.39	10738	2000	
Pd	105	2	115	387.963	ppb	387.963	50.71	424	100	>LDR
Ag	107	2	115	0.372	ppb	0.372	12.87	2503	100	
Cd	111	2	115	0.985	ppb	0.985	7.36	914	2000	
Sn	120	2	115	4.202	ppb	4.202	4.66	10971	2000	
Sb	121	2	115	0.161	ppb	0.161	4.91	400	1000	
Ba	137	2	115	1181.836	ppb	1181.836	1.95	751688	5000	
W	182	2	165	0.252	ppb	0.252	16.81	3667	100	
Pt	195	2	165	91.216	ppb	91.216	3.63	214	100	
Tl	205	2	165	2.564	ppb	2.564	2.76	32643	2000	
Pb	208	2	165	110.082	ppb	110.082	2.09	1648510	5000	
Th	232	2	193	90.192	ppb	90.192	5.51	1077038	2000	
U	238	2	193	9.189	ppb	9.189	3.77	149084	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3746194	2.66	3709622	100.99	60	125	
Sc (IS)	45	2	HMI He	2861183	2.56	2724914	105.00	60	125	
Sc (IS)	45	3	No Gas	88560196	1.17	82891317	106.84	60	120	
Ge Internal standard	72	1	HMI H2	19823147	1.46	19447282	101.93	60	125	
Ge Internal standard	72	2	HMI He	2659904	3.44	2615067	101.71	60	125	
In Internal standard	115	2	HMI He	7192406	1.17	6700003	107.35	60	125	
Ho-165	165	2	HMI He	25557935	0.97	26090315	97.96	60	125	
Ir (IS)	193	2	HMI He	16977685	3.83	19253459	88.18	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-3-A
Data File Name	117SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:34:01-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	106.534	ppb	106.534	16.85	10702664	40000	
Be	9	1	6	3.564	ppb	3.564	3.52	2683	2000	
B	11	1	6	66.961	ppb	66.961	2.75	54457	100	
Na	23	2	45	1417.242	ppb	1417.242	2.65	791188	400000	
Mg	24	2	45	58643.234	ppb	58643.234	2.15	13234280	400000	
Al	27	2	45	117830.146	ppb	117830.146	1.92	7407019	400000	
K	39	2	45	9447.315	ppb	9447.315	3.75	1478818	400000	
V	51	2	72	276.802	ppb	276.802	2.71	781595	2000	
Cr	52	2	72	637.979	ppb	637.979	4.80	2427242	5000	
Mn	55	2	72	7106.729	ppb	7106.729	0.44	12276805	10000	
(Fe)	57	2	72	279399.192	ppb	279399.192	2.84	20436374	400000	
Co	59	2	72	79.442	ppb	79.442	1.13	469583	2000	
Ni	60	2	72	887.572	ppb	887.572	3.31	1411060	5000	
Cu	63	2	72	4629.175	ppb	4629.175	2.16	19330128	5000	
Zn	66	2	72	19678.569	ppb	19678.569	3.43	12785275	5000	>LDR
As	75	2	72	64.136	ppb	64.136	3.78	23934	2000	
Se	78	1	72	3.925	ppb	3.925	5.14	2041	2000	
Sr	88	2	45	634.560	ppb	634.560	1.86	936919	2000	
Zr	90	2	72	57007.357	ppb	57007.357	2.67	483844	1000	>LDR
Nb	93	2	72	70473.769	ppb	70473.769	6.81	10848	200	>LDR
Mo	95	2	115	30.994	ppb	30.994	4.67	67216	2000	
Pd	105	2	115	238.471	ppb	238.471	101.58	320	100	>LDR
Ag	107	2	115	14.083	ppb	14.083	3.29	87773	100	
Cd	111	2	115	88.539	ppb	88.539	4.25	75407	2000	
Sn	120	2	115	36.872	ppb	36.872	3.10	77382	2000	
Sb	121	2	115	2.898	ppb	2.898	6.91	5410	1000	
Ba	137	2	115	3912.003	ppb	3912.003	1.87	2349704	5000	
W	182	2	165	19.769	ppb	19.769	6.60	118919	100	
Pt	195	2	165	32.288	ppb	32.288	143.77	117	100	
Tl	205	2	165	1.341	ppb	1.341	0.71	17096	2000	
Pb	208	2	165	3660.647	ppb	3660.647	1.37	49735623	5000	
Th	232	2	193	52.808	ppb	52.808	0.72	580117	2000	
U	238	2	193	10.117	ppb	10.117	2.67	147976	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3037255	3.43	3709622	81.88	60	125	
Sc (IS)	45	2	HMI He	2621776	2.06	2724914	96.22	60	125	
Sc (IS)	45	3	No Gas	80241325	2.47	82891317	96.80	60	120	
Ge Internal standard	72	1	HMI H2	17191640	1.72	19447282	88.40	60	125	
Ge Internal standard	72	2	HMI He	2416659	1.78	2615067	92.41	60	125	
In Internal standard	115	2	HMI He	6795455	2.90	6700003	101.42	60	125	
Ho-165	165	2	HMI He	23229259	0.94	26090315	89.03	60	125	
Ir (IS)	193	2	HMI He	15309287	1.09	19253459	79.51	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-4-A
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:37:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	189.048	ppb	189.048	7.10	13202077	40000	
Be	9	1	6	9.853	ppb	9.853	2.78	8644	2000	
B	11	1	6	75.079	ppb	75.079	3.15	71240	100	
Na	23	2	45	3837.569	ppb	3837.569	1.15	2269548	400000	
Mg	24	2	45	53601.773	ppb	53601.773	2.23	13026220	400000	
Al	27	2	45	211540.979	ppb	211540.979	1.03	14320289	400000	
K	39	2	45	18569.419	ppb	18569.419	1.08	3118265	400000	
V	51	2	72	513.372	ppb	513.372	0.97	1590896	2000	
Cr	52	2	72	266.336	ppb	266.336	1.10	1113066	5000	
Mn	55	2	72	13004.681	ppb	13004.681	0.84	24654463	10000	
(Fe)	57	2	72	261404.142	ppb	261404.142	1.50	20986165	400000	
Co	59	2	72	130.936	ppb	130.936	3.21	849568	2000	
Ni	60	2	72	388.622	ppb	388.622	0.35	678394	5000	
Cu	63	2	72	220.254	ppb	220.254	2.13	1010884	5000	
Zn	66	2	72	544.962	ppb	544.962	0.32	389415	5000	
As	75	2	72	113.287	ppb	113.287	2.14	46350	2000	
Se	78	1	72	4.326	ppb	4.326	10.62	2503	2000	
Sr	88	2	45	330.825	ppb	330.825	1.24	526025	2000	
Zr	90	2	72	86778.212	ppb	86778.212	1.82	807653	1000	>LDR
Nb	93	2	72	22977.141	ppb	22977.141	12.15	3918	200	>LDR
Mo	95	2	115	5.067	ppb	5.067	3.85	11559	2000	
Pd	105	2	115	840.385	ppb	840.385	27.41	664	100	>LDR
Ag	107	2	115	0.560	ppb	0.560	7.86	3681	100	
Cd	111	2	115	1.826	ppb	1.826	12.93	1645	2000	
Sn	120	2	115	5.323	ppb	5.323	4.41	13185	2000	
Sb	121	2	115	0.134	ppb	0.134	40.01	340	1000	
Ba	137	2	115	2387.676	ppb	2387.676	1.20	1493518	5000	
W	182	2	165	0.525	ppb	0.525	11.51	5340	100	
Pt	195	2	165	75.277	ppb	75.277	62.84	187	100	
Tl	205	2	165	3.796	ppb	3.796	3.33	45664	2000	
Pb	208	2	165	158.284	ppb	158.284	1.04	2322819	5000	
Th	232	2	193	113.191	ppb	113.191	2.81	1326216	2000	
U	238	2	193	14.509	ppb	14.509	3.08	231084	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3561554	2.07	3709622	96.01	60	125	
Sc (IS)	45	2	HMI He	2822916	0.96	2724914	103.60	60	125	
Sc (IS)	45	3	No Gas	85945586	3.03	82891317	103.68	60	120	
Ge Internal standard	72	1	HMI H2	19138598	1.08	19447282	98.41	60	125	
Ge Internal standard	72	2	HMI He	2651916	1.03	2615067	101.41	60	125	
In Internal standard	115	2	HMI He	7075217	1.06	6700003	105.60	60	125	
Ho-165	165	2	HMI He	25060476	1.76	26090315	96.05	60	125	
Ir (IS)	193	2	HMI He	16729928	2.11	19253459	86.89	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	119_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:40:57-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	128.908	ppb	15.768	12084315	100	128.9	90	110	>+\-10%
Be	9	1	6	43.027	ppb	5.157	40344	50	86.1	90	110	>+\-10%
B	11	1	6	388.710	ppb	2.032	381518	500	77.7	90	110	>+\-10%
Na	23	2	45	49484.581	ppb	4.070	28641040	51000	97.0	90	110	
Mg	24	2	45	11075.019	ppb	6.127	2657980	11000	100.7	90	110	
(Mg)	25	2	45	10115.681	ppb	2.493	378481	11000	92.0	90	110	
Al	27	2	45	1107.705	ppb	2.433	74401	1000	110.8	90	110	>+\-10%
Si	28	2	45	534.088	ppb	2.434	25189	500	106.8	90	110	
P	31	2	45	2101.594	ppb	2.009	12891	2500	84.1	90	110	>+\-10%
K	39	2	45	11795.882	ppb	0.701	1960632	11000	107.2	90	110	
Ca	40	1	45	11561.604	ppb	2.063	134748157	11000	105.1	90	110	
(Ca)	44	1	45	9891.369	ppb	1.222	4076731	11000	89.9	90	110	>+\-10%
Ti	47	2	45	58.589	ppb	3.838	4712	50	117.2	90	110	>+\-10%
V	51	2	72	47.660	ppb	1.608	153674	50	95.3	90	110	
Cr	52	2	72	46.014	ppb	2.733	200815	50	92.0	90	110	
Mn	55	2	72	51.909	ppb	1.375	102646	50	103.8	90	110	
Fe	56	1	72	1318.615	ppb	2.869	25331756	20000	6.6	90	110	>+\-10%
(Fe)	56	2	72	1212.549	ppb	2.605	3976161	20000	6.1	90	110	>+\-10%
(Fe)	57	2	72	1178.438	ppb	0.473	99137	1000	117.8	90	110	>+\-10%
Co	59	2	72	45.918	ppb	1.466	309379	50	91.8	90	110	
Ni	60	2	72	46.411	ppb	1.921	84526	50	92.8	90	110	
Cu	63	2	72	45.945	ppb	1.819	220221	50	91.9	90	110	
Zn	66	2	72	47.105	ppb	0.879	35695	50	94.2	90	110	
As	75	2	72	47.946	ppb	1.855	20416	50	95.9	90	110	
Se	78	1	72	45.458	ppb	4.283	29557	50	90.9	90	110	
Sr	88	2	45	111.933	ppb	0.486	175875	100	111.9	90	110	>+\-10%
Zr	90	2	72	3665.972	ppb	2.130	36759	50	7331.9	90	110	>+\-10%
Nb	93	2	72	2312.238	ppb	3.933	460	100	2312.2	90	110	>+\-10%
Mo	95	2	115	47.954	ppb	1.951	112435	50	95.9	90	110	
Pd	105	2	115	-184.694	ppb	-21.901	107	50	-369.4	90	110	>+\-10%
Ag	107	2	115	45.356	ppb	1.730	305539	50	90.7	90	110	
Cd	111	2	115	45.848	ppb	2.129	42248	50	91.7	90	110	
Sn	120	2	115	51.236	ppb	2.932	115568	50	102.5	90	110	
Sb	121	2	115	49.250	ppb	1.962	98109	50	98.5	90	110	
Ba	137	2	115	53.782	ppb	3.801	34998	50	107.6	90	110	
W	182	2	165	46.217	ppb	2.776	317605	50	92.4	90	110	
Pt	195	2	165	31.328	ppb	106.781	133	50	62.7	90	110	>+\-10%
Tl	205	2	165	46.112	ppb	4.436	550134	50	92.2	90	110	
Pb	208	2	165	47.636	ppb	2.896	749146	50	95.3	90	110	
Bi	209	2	193	2566.111	ppb	50.502	2202	500	513.2	90	110	>+\-10%
Th	232	2	193	56.360	ppb	6.083	710590	50	112.7	90	110	>+\-10%
U	238	2	193	53.934	ppb	1.975	900576	50	107.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3820011	4.31	3709622	102.98	60	125	
Sc (IS)	45	2	HMI He	2788301	1.22	2724914	102.33	60	125	
Sc (IS)	45	3	No Gas	91302259	2.71	82891317	110.15	60	120	
Ge Internal standard	72	1	HMI H2	21638241	1.54	19447282	111.27	60	125	
Ge Internal standard	72	2	HMI He	2754305	0.48	2615067	105.32	60	125	
In Internal standard	115	2	HMI He	7346500	2.27	6700003	109.65	60	125	
Ho-165	165	2	HMI He	26785861	2.23	26090315	102.67	60	125	
Ir (IS)	193	2	HMI He	17624678	1.07	19253459	91.54	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	120_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:44:29-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	25.289	ppb	20.3	9744413	0.05	>RL
Be	9	1	6	0.066	ppb	81.0	90	0.5	
B	11	1	6	14.995	ppb	6.0	18140	0.1	>RL
Na	23	2	45	43.181	ppb	14.5	46375	25	>RL
Mg	24	2	45	18.662	ppb	7.3	4886	25	
Al	27	2	45	14.353	ppb	21.8	1288	15	
K	39	2	45	26.776	ppb	14.7	15616	50	
V	51	2	72	0.045	ppb	26.7	450	1	
Cr	52	2	72	0.069	ppb	41.3	1635	1	
Mn	55	2	72	0.984	ppb	11.6	2376	0.5	>RL
(Fe)	57	2	72	67.257	ppb	4.8	6458	25	>RL
Co	59	2	72	0.062	ppb	18.7	437	0.5	
Ni	60	2	72	0.059	ppb	153.6	537	1	
Cu	63	2	72	0.786	ppb	9.8	5259	1	
Zn	66	2	72	0.814	ppb	23.5	1401	5	
As	75	2	72	0.085	ppb	182.3	103	1	
Se	78	1	72	0.147	ppb	10.8	108	1	
Sr	88	2	45	0.168	ppb	35.2	370	1	
Zr	90	2	72	1342.922	ppb	4.9	14287	1	>RL
Nb	93	2	72	173.421	ppb	111.2	87	2	>RL
Mo	95	2	115	0.128	ppb	9.6	440	0.5	
Pd	105	2	115	-243.871	ppb	-37.1	73	1	
Ag	107	2	115	0.523	ppb	5.7	3611	1	
Cd	111	2	115	0.076	ppb	25.5	97	0.5	
Sn	120	2	115	1.001	ppb	3.2	4155	1	>RL
Sb	121	2	115	0.082	ppb	13.7	254	1	
Ba	137	2	115	0.199	ppb	79.0	214	0.5	
W	182	2	165	0.339	ppb	3.8	4492	1	
Pt	195	2	165	-9.154	ppb	-526.6	73	1	
Tl	205	2	165	-0.117	ppb	-10.1	2463	0.1	
Pb	208	2	165	0.187	ppb	3.1	6073	0.5	
Th	232	2	193	3.696	ppb	3.7	76331	1	>RL
U	238	2	193	0.058	ppb	33.3	2803	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3861857	0.49	3709622	104.10	60	125	
Sc (IS)	45	2	HMI He	2768924	1.25	2724914	101.62	60	125	
Sc (IS)	45	3	No Gas	87226134	5.87	82891317	105.23	60	120	
Ge Internal standard	72	1	HMI H2	20351628	2.53	19447282	104.65	60	125	
Ge Internal standard	72	2	HMI He	2745472	1.97	2615067	104.99	60	125	
In Internal standard	115	2	HMI He	7436408	3.07	6700003	110.99	60	125	
Ho-165	165	2	HMI He	27095348	1.45	26090315	103.85	60	125	
Ir (IS)	193	2	HMI He	18064536	1.96	19253459	93.82	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	121LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:48:04-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	21.654	ppb	43.851	9243650	50	43.3	70	130	>+/-30%
Be	9	1	6	0.771	ppb	7.603	734	1	77.1	70	130	
Na	23	2	45	42.627	ppb	1.324	45301	50	85.3	70	130	
Mg	24	2	45	54.117	ppb	1.357	13111	50	108.2	70	130	
Al	27	2	45	58.181	ppb	4.883	4128	50	116.4	70	130	
K	39	2	45	121.153	ppb	0.682	30580	100	121.2	70	130	
V	51	2	72	4.620	ppb	3.399	15068	5	92.4	70	130	
Cr	52	2	72	2.010	ppb	6.258	9976	2	100.5	70	130	
Mn	55	2	72	1.625	ppb	11.413	3624	1	162.5	70	130	>+/-30%
(Fe)	57	2	72	88.661	ppb	4.420	8203	50	177.3	70	130	>+/-30%
Co	59	2	72	0.915	ppb	4.725	6144	1	91.5	70	130	
Ni	60	2	72	1.947	ppb	5.718	3931	2	97.4	70	130	
Cu	63	2	72	2.628	ppb	5.977	13943	2	131.4	70	130	>+/-30%
Zn	66	2	72	9.505	ppb	3.652	7793	10	95.0	70	130	
As	75	2	72	4.759	ppb	14.536	2072	5	95.2	70	130	
Se	78	1	72	4.860	ppb	4.042	2999	5	97.2	70	130	
Sr	88	2	45	1.131	ppb	7.145	1842	1	113.1	70	130	
Zr	90	2	72	931.294	ppb	5.377	10287	0.5	186258.7	70	130	>+/-30%
Nb	93	2	72	118.392	ppb	237.840	77	2	5919.6	70	130	>+/-30%
Mo	95	2	115	1.904	ppb	8.885	4565	2	95.2	70	130	
Pd	105	2	115	-243.822	ppb	-45.612	73	1	-24382.2	70	130	>+/-30%
Ag	107	2	115	0.963	ppb	2.220	6501	1	96.3	70	130	
Cd	111	2	115	1.001	ppb	9.435	941	1	100.1	70	130	
Sn	120	2	115	10.435	ppb	5.737	24880	10	104.4	70	130	
Sb	121	2	115	1.810	ppb	2.360	3667	2	90.5	70	130	
Ba	137	2	115	1.102	ppb	9.842	791	1	110.2	70	130	
W	182	2	165	4.768	ppb	2.807	34173	1	476.8	70	130	>+/-30%
Pt	195	2	165	-5.308	ppb	-313.110	77	1	-530.8	70	130	>+/-30%
Tl	205	2	165	0.717	ppb	3.699	12133	1	71.7	70	130	
Pb	208	2	165	1.125	ppb	3.067	20396	1	112.5	70	130	
Th	232	2	193	2.812	ppb	4.955	66188	2	140.6	70	130	>+/-30%
U	238	2	193	1.034	ppb	5.097	19702	1	103.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3734757	4.92	3709622	100.68	60	125	
Sc (IS)	45	2	HMI He	2721818	1.02	2724914	99.89	60	125	
Sc (IS)	45	3	No Gas	86601953	2.71	82891317	104.48	60	120	
Ge Internal standard	72	1	HMI H2	20420624	1.28	19447282	105.01	60	125	
Ge Internal standard	72	2	HMI He	2735212	1.95	2615067	104.59	60	125	
In Internal standard	115	2	HMI He	7304987	2.01	6700003	109.03	60	125	
Ho-165	165	2	HMI He	26387955	0.59	26090315	101.14	60	125	
Ir (IS)	193	2	HMI He	18289065	2.44	19253459	94.99	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-5-A
Data File Name	122SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:51:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	195.948	ppb	195.948	6.46	12644105	40000	
Be	9	1	6	10.243	ppb	10.243	3.34	8657	2000	
B	11	1	6	48.465	ppb	48.465	4.24	45370	100	
Na	23	2	45	2483.659	ppb	2483.659	2.47	1496881	400000	
Mg	24	2	45	53514.797	ppb	53514.797	3.24	13183520	400000	
Al	27	2	45	264915.860	ppb	264915.860	3.05	18176632	400000	
K	39	2	45	20663.167	ppb	20663.167	5.23	3515241	400000	
V	51	2	72	574.632	ppb	574.632	0.53	1755137	2000	
Cr	52	2	72	319.643	ppb	319.643	0.35	1316267	5000	
Mn	55	2	72	4907.818	ppb	4907.818	2.49	9170293	10000	
(Fe)	57	2	72	305610.396	ppb	305610.396	2.66	24183955	400000	
Co	59	2	72	77.913	ppb	77.913	3.15	498168	2000	
Ni	60	2	72	225.210	ppb	225.210	0.99	387657	5000	
Cu	63	2	72	272.998	ppb	272.998	0.91	1234609	5000	
Zn	66	2	72	630.249	ppb	630.249	1.12	443765	5000	
As	75	2	72	124.945	ppb	124.945	0.58	50385	2000	
Se	78	1	72	4.592	ppb	4.592	1.57	2710	2000	
Sr	88	2	45	406.336	ppb	406.336	2.44	654904	2000	
Zr	90	2	72	87751.095	ppb	87751.095	1.99	805044	1000	>LDR
Nb	93	2	72	14284.910	ppb	14284.910	9.92	2423	200	>LDR
Mo	95	2	115	5.408	ppb	5.408	1.17	12330	2000	
Pd	105	2	115	419.477	ppb	419.477	26.21	434	100	>LDR
Ag	107	2	115	0.291	ppb	0.291	4.06	1932	100	
Cd	111	2	115	1.327	ppb	1.327	5.57	1201	2000	
Sn	120	2	115	3.668	ppb	3.668	2.33	9652	2000	
Sb	121	2	115	0.130	ppb	0.130	18.86	334	1000	
Ba	137	2	115	1824.308	ppb	1824.308	0.86	1141348	5000	
W	182	2	165	0.426	ppb	0.426	15.68	4549	100	
Pt	195	2	165	43.393	ppb	43.393	37.71	137	100	
Tl	205	2	165	3.771	ppb	3.771	0.87	43887	2000	
Pb	208	2	165	189.842	ppb	189.842	1.27	2692162	5000	
Th	232	2	193	130.497	ppb	130.497	2.64	1462481	2000	
U	238	2	193	15.508	ppb	15.508	3.39	236843	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3434232	4.55	3709622	92.58	60	125	
Sc (IS)	45	2	HMI He	2861512	0.42	2724914	105.01	60	125	
Sc (IS)	45	3	No Gas	86466919	1.84	82891317	104.31	60	120	
Ge Internal standard	72	1	HMI H2	19519020	0.37	19447282	100.37	60	125	
Ge Internal standard	72	2	HMI He	2613749	0.10	2615067	99.95	60	125	
In Internal standard	115	2	HMI He	7075879	1.38	6700003	105.61	60	125	
Ho-165	165	2	HMI He	24222672	1.33	26090315	92.84	60	125	
Ir (IS)	193	2	HMI He	16049428	1.98	19253459	83.36	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-5-Asd@5
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:55:07-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	45.099	ppb	45.099	32.93	10209952	40000	
Be	9	1	6	2.269	ppb	2.269	6.26	2066	2000	
B	11	1	6	13.410	ppb	13.410	11.89	15689	100	
Na	23	2	45	483.057	ppb	483.057	0.83	308321	400000	
Mg	24	2	45	11009.818	ppb	11009.818	1.79	2705704	400000	
Al	27	2	45	53892.809	ppb	53892.809	2.98	3688062	400000	
K	39	2	45	3873.622	ppb	3873.622	0.69	666809	400000	
V	51	2	72	109.669	ppb	109.669	2.68	344522	2000	
Cr	52	2	72	61.915	ppb	61.915	1.37	263093	5000	
Mn	55	2	72	987.543	ppb	987.543	2.70	1896649	10000	
(Fe)	57	2	72	61611.408	ppb	61611.408	0.97	5011729	400000	
Co	59	2	72	16.082	ppb	16.082	2.83	105691	2000	
Ni	60	2	72	47.529	ppb	47.529	1.42	84415	5000	
Cu	63	2	72	58.486	ppb	58.486	0.62	273050	5000	
Zn	66	2	72	144.435	ppb	144.435	1.50	105126	5000	
As	75	2	72	27.041	ppb	27.041	1.64	11258	2000	
Se	78	1	72	1.045	ppb	1.045	6.82	659	2000	
Sr	88	2	45	82.197	ppb	82.197	1.07	132253	2000	
Zr	90	2	72	17960.996	ppb	17960.996	1.34	170416	1000	>LDR
Nb	93	2	72	2949.007	ppb	2949.007	14.48	557	200	>LDR
Mo	95	2	115	1.111	ppb	1.111	3.02	2650	2000	
Pd	105	2	115	-172.170	ppb	-172.170	-38.58	110	100	
Ag	107	2	115	0.239	ppb	0.239	7.72	1605	100	
Cd	111	2	115	0.362	ppb	0.362	9.70	347	2000	
Sn	120	2	115	0.795	ppb	0.795	5.50	3527	2000	
Sb	121	2	115	0.006	ppb	0.006	269.43	97	1000	
Ba	137	2	115	352.052	ppb	352.052	1.68	221295	5000	
W	182	2	165	0.037	ppb	0.037	62.27	2336	100	
Pt	195	2	165	-16.279	ppb	-16.279	-127.90	60	100	
Tl	205	2	165	0.580	ppb	0.580	5.92	10521	2000	
Pb	208	2	165	37.741	ppb	37.741	2.76	585159	5000	
Th	232	2	193	22.201	ppb	22.201	1.31	293301	2000	
U	238	2	193	3.076	ppb	3.076	4.67	52159	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3663502	4.21	3709622	98.76	60	125	
Sc (IS)	45	2	HMI He	2854395	1.72	2724914	104.75	60	125	
Sc (IS)	45	3	No Gas	91750969	1.21	82891317	110.69	60	120	
Ge Internal standard	72	1	HMI H2	20421469	1.13	19447282	105.01	60	125	
Ge Internal standard	72	2	HMI He	2686549	1.02	2615067	102.73	60	125	
In Internal standard	115	2	HMI He	7107688	0.53	6700003	106.08	60	125	
Ho-165	165	2	HMI He	26379277	2.19	26090315	101.11	60	125	
Ir (IS)	193	2	HMI He	17344533	1.89	19253459	90.09	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-5-B MS
Data File Name	124SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T20:58:39-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	403.386	ppb	403.386	7.75	18571589	40000	
Be	9	1	6	170.282	ppb	170.282	0.27	153180	2000	
B	11	1	6	82.208	ppb	82.208	3.36	79894	100	
Na	23	2	45	6007.685	ppb	6007.685	8.55	3536687	400000	
Mg	24	2	45	53148.282	ppb	53148.282	7.09	12906416	400000	
Al	27	2	45	278082.776	ppb	278082.776	2.36	18827409	400000	
K	39	2	45	28238.358	ppb	28238.358	1.30	4737519	400000	
V	51	2	72	832.785	ppb	832.785	2.66	2560578	2000	
Cr	52	2	72	504.049	ppb	504.049	3.70	2088310	5000	
Mn	55	2	72	8927.319	ppb	8927.319	3.28	16790225	10000	
(Fe)	57	2	72	268843.522	ppb	268843.522	4.13	21410818	400000	
Co	59	2	72	362.669	ppb	362.669	4.71	2333473	2000	
Ni	60	2	72	379.742	ppb	379.742	2.78	657708	5000	
Cu	63	2	72	381.284	ppb	381.284	1.70	1735551	5000	
Zn	66	2	72	699.914	ppb	699.914	2.35	496006	5000	
As	75	2	72	274.197	ppb	274.197	1.57	111241	2000	
Se	78	1	72	159.514	ppb	159.514	1.14	95330	2000	
Sr	88	2	45	742.965	ppb	742.965	2.50	1181453	2000	
Zr	90	2	72	107419.637	ppb	107419.637	1.58	991885	1000	>LDR
Nb	93	2	72	22044.495	ppb	22044.495	10.34	3731	200	>LDR
Mo	95	2	115	127.134	ppb	127.134	1.33	289807	2000	
Pd	105	2	115	325.982	ppb	325.982	66.22	387	100	>LDR
Ag	107	2	115	167.356	ppb	167.356	2.67	1097007	100	>LDR
Cd	111	2	115	174.080	ppb	174.080	0.90	156032	2000	
Sn	120	2	115	27.389	ppb	27.389	2.47	60960	2000	
Sb	121	2	115	4.026	ppb	4.026	7.54	7876	1000	
Ba	137	2	115	2088.291	ppb	2088.291	1.69	1319537	5000	
W	182	2	165	0.348	ppb	0.348	15.66	4161	100	
Pt	195	2	165	67.283	ppb	67.283	71.63	174	100	
Tl	205	2	165	198.706	ppb	198.706	0.58	2184473	2000	
Pb	208	2	165	379.685	ppb	379.685	1.11	5509897	5000	
Th	232	2	193	357.527	ppb	357.527	1.37	4127013	2000	
U	238	2	193	223.184	ppb	223.184	1.02	3530426	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3661383	1.95	3709622	98.70	60	125	
Sc (IS)	45	2	HMI He	2824847	3.30	2724914	103.67	60	125	
Sc (IS)	45	3	No Gas	89897603	1.76	82891317	108.45	60	120	
Ge Internal standard	72	1	HMI H2	19897961	2.27	19447282	102.32	60	125	
Ge Internal standard	72	2	HMI He	2631915	1.99	2615067	100.64	60	125	
In Internal standard	115	2	HMI He	7146651	0.98	6700003	106.67	60	125	
Ho-165	165	2	HMI He	24797622	0.87	26090315	95.05	60	125	
Ir (IS)	193	2	HMI He	16722380	0.58	19253459	86.85	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-5-C MSD
Data File Name	125SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:02:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	374.064	ppb	374.064	3.82	18295429	40000	
Be	9	1	6	183.226	ppb	183.226	3.49	154864	2000	
B	11	1	6	83.737	ppb	83.737	2.97	76463	100	
Na	23	2	45	6166.024	ppb	6166.024	1.40	3636533	400000	
Mg	24	2	45	55689.788	ppb	55689.788	2.82	13546254	400000	
Al	27	2	45	264911.117	ppb	264911.117	2.05	17948000	400000	
K	39	2	45	26591.092	ppb	26591.092	2.96	4463597	400000	
V	51	2	72	782.388	ppb	782.388	0.94	2400735	2000	
Cr	52	2	72	510.141	ppb	510.141	0.88	2109909	5000	
Mn	55	2	72	3910.528	ppb	3910.528	0.63	7341353	10000	
(Fe)	57	2	72	274763.122	ppb	274763.122	1.85	21844392	400000	
Co	59	2	72	270.515	ppb	270.515	1.50	1737698	2000	
Ni	60	2	72	380.022	ppb	380.022	1.65	656897	5000	
Cu	63	2	72	379.260	ppb	379.260	1.71	1722726	5000	
Zn	66	2	72	694.280	ppb	694.280	0.26	491066	5000	
As	75	2	72	267.597	ppb	267.597	2.84	108333	2000	
Se	78	1	72	156.209	ppb	156.209	0.70	94343	2000	
Sr	88	2	45	753.188	ppb	753.188	2.17	1198561	2000	
Zr	90	2	72	114662.718	ppb	114662.718	2.02	1056422	1000	>LDR
Nb	93	2	72	29737.397	ppb	29737.397	8.13	5009	200	>LDR
Mo	95	2	115	137.444	ppb	137.444	2.68	308667	2000	
Pd	105	2	115	418.543	ppb	418.543	29.68	430	100	>LDR
Ag	107	2	115	167.666	ppb	167.666	2.44	1082773	100	>LDR
Cd	111	2	115	172.495	ppb	172.495	2.77	152307	2000	
Sn	120	2	115	30.074	ppb	30.074	1.84	65789	2000	
Sb	121	2	115	5.536	ppb	5.536	2.12	10651	1000	
Ba	137	2	115	1638.114	ppb	1638.114	2.01	1019841	5000	
W	182	2	165	0.469	ppb	0.469	6.48	4849	100	
Pt	195	2	165	47.450	ppb	47.450	23.33	143	100	
Tl	205	2	165	198.459	ppb	198.459	0.76	2145548	2000	
Pb	208	2	165	325.364	ppb	325.364	1.80	4643494	5000	
Th	232	2	193	372.670	ppb	372.670	3.36	4329427	2000	
U	238	2	193	226.543	ppb	226.543	1.80	3607939	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3442521	2.98	3709622	92.80	60	125	
Sc (IS)	45	2	HMI He	2825484	0.59	2724914	103.69	60	125	
Sc (IS)	45	3	No Gas	88422452	4.11	82891317	106.67	60	120	
Ge Internal standard	72	1	HMI H2	20107037	1.90	19447282	103.39	60	125	
Ge Internal standard	72	2	HMI He	2626035	0.58	2615067	100.42	60	125	
In Internal standard	115	2	HMI He	7043791	2.74	6700003	105.13	60	125	
Ho-165	165	2	HMI He	24388647	1.50	26090315	93.48	60	125	
Ir (IS)	193	2	HMI He	16839416	1.25	19253459	87.46	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-5-Apds
Data File Name	126SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:05:32-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	404.180	ppb	404.180	5.45	18066477	40000	
Be	9	1	6	170.755	ppb	170.755	0.35	142184	2000	
B	11	1	6	47.533	ppb	47.533	3.86	44020	100	
Na	23	2	45	2506.233	ppb	2506.233	3.04	1463665	400000	
Mg	24	2	45	54597.847	ppb	54597.847	1.27	13035771	400000	
Al	27	2	45	265651.025	ppb	265651.025	0.82	17666169	400000	
K	39	2	45	20602.725	ppb	20602.725	0.27	3397318	400000	
V	51	2	72	752.389	ppb	752.389	2.24	2284278	2000	
Cr	52	2	72	497.267	ppb	497.267	0.39	2034786	5000	
Mn	55	2	72	4931.065	ppb	4931.065	1.29	9158446	10000	
(Fe)	57	2	72	299606.768	ppb	299606.768	0.44	23567069	400000	
Co	59	2	72	266.753	ppb	266.753	1.11	1695344	2000	
Ni	60	2	72	381.246	ppb	381.246	1.12	652037	5000	
Cu	63	2	72	417.741	ppb	417.741	1.45	1877051	5000	
Zn	66	2	72	770.290	ppb	770.290	0.95	538950	5000	
As	75	2	72	294.204	ppb	294.204	3.21	117833	2000	
Se	78	1	72	167.704	ppb	167.704	1.23	95865	2000	
Sr	88	2	45	634.487	ppb	634.487	3.33	991118	2000	
Zr	90	2	72	88440.994	ppb	88440.994	1.77	806455	1000	>LDR
Nb	93	2	72	17953.677	ppb	17953.677	5.78	3013	200	>LDR
Mo	95	2	115	189.998	ppb	189.998	3.01	426991	2000	
Pd	105	2	115	1082.952	ppb	1082.952	12.06	794	100	>LDR
Ag	107	2	115	36.345	ppb	36.345	4.67	234888	100	
Cd	111	2	115	168.920	ppb	168.920	2.63	149292	2000	
Sn	120	2	115	195.803	ppb	195.803	0.08	418780	2000	
Sb	121	2	115	178.862	ppb	178.862	0.53	341706	1000	
Ba	137	2	115	1939.694	ppb	1939.694	0.81	1208952	5000	
W	182	2	165	68.318	ppb	68.318	1.52	426970	100	
Pt	195	2	165	95.859	ppb	95.859	73.44	210	100	
Tl	205	2	165	199.698	ppb	199.698	1.91	2160437	2000	
Pb	208	2	165	383.520	ppb	383.520	3.24	5476389	5000	
Th	232	2	193	162.031	ppb	162.031	3.65	1815935	2000	
U	238	2	193	234.012	ppb	234.012	4.99	3563521	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3389140	0.29	3709622	91.36	60	125	
Sc (IS)	45	2	HMI He	2773183	0.44	2724914	101.77	60	125	
Sc (IS)	45	3	No Gas	85824433	2.86	82891317	103.54	60	120	
Ge Internal standard	72	1	HMI H2	19029093	1.45	19447282	97.85	60	125	
Ge Internal standard	72	2	HMI He	2598164	0.64	2615067	99.35	60	125	
In Internal standard	115	2	HMI He	7050066	2.42	6700003	105.22	60	125	
Ho-165	165	2	HMI He	24405519	0.96	26090315	93.54	60	125	
Ir (IS)	193	2	HMI He	16112592	2.51	19253459	83.69	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-6-A
Data File Name	127SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:08:59-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	86.368	ppb	86.368	6.45	9805647	40000	
Be	9	1	6	3.432	ppb	3.432	3.33	2596	2000	
B	11	1	6	72.893	ppb	72.893	3.09	59364	100	
Na	23	2	45	1190.759	ppb	1190.759	1.94	663104	400000	
Mg	24	2	45	66511.498	ppb	66511.498	0.68	14900968	400000	
Al	27	2	45	100575.470	ppb	100575.470	3.27	6274209	400000	
K	39	2	45	9071.598	ppb	9071.598	2.15	1409373	400000	
V	51	2	72	251.856	ppb	251.856	2.62	714559	2000	
Cr	52	2	72	1103.773	ppb	1103.773	2.62	4218271	5000	
Mn	55	2	72	6584.096	ppb	6584.096	0.69	11428320	10000	
(Fe)	57	2	72	193996.539	ppb	193996.539	2.10	14258204	400000	
Co	59	2	72	81.575	ppb	81.575	2.39	484422	2000	
Ni	60	2	72	1111.318	ppb	1111.318	5.32	1774233	5000	
Cu	63	2	72	4106.043	ppb	4106.043	4.07	17221824	5000	
Zn	66	2	72	7685.848	ppb	7685.848	3.37	5017221	5000	>LDR
As	75	2	72	59.089	ppb	59.089	6.51	22143	2000	
Se	78	1	72	3.891	ppb	3.891	10.07	2064	2000	
Sr	88	2	45	616.410	ppb	616.410	2.33	903328	2000	
Zr	90	2	72	42573.165	ppb	42573.165	2.60	363323	1000	>LDR
Nb	93	2	72	92526.983	ppb	92526.983	4.60	14307	200	>LDR
Mo	95	2	115	38.548	ppb	38.548	2.68	82383	2000	
Pd	105	2	115	0.412	ppb	0.412	22377.92	194	100	
Ag	107	2	115	45.678	ppb	45.678	1.00	280547	100	
Cd	111	2	115	152.015	ppb	152.015	1.62	127628	2000	
Sn	120	2	115	68.541	ppb	68.541	2.54	140331	2000	
Sb	121	2	115	7.294	ppb	7.294	3.60	13305	1000	
Ba	137	2	115	5252.355	ppb	5252.355	0.59	3109264	5000	>LDR
W	182	2	165	21.314	ppb	21.314	0.93	129287	100	
Pt	195	2	165	48.905	ppb	48.905	38.11	140	100	
Tl	205	2	165	1.129	ppb	1.129	2.70	15059	2000	
Pb	208	2	165	4964.528	ppb	4964.528	1.64	68090579	5000	
Th	232	2	193	42.719	ppb	42.719	0.63	483396	2000	
U	238	2	193	7.197	ppb	7.197	2.10	107728	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3052868	1.85	3709622	82.30	60	125	
Sc (IS)	45	2	HMI He	2602169	1.37	2724914	95.50	60	125	
Sc (IS)	45	3	No Gas	78537607	2.57	82891317	94.75	60	120	
Ge Internal standard	72	1	HMI H2	17542311	1.11	19447282	90.20	60	125	
Ge Internal standard	72	2	HMI He	2428391	2.75	2615067	92.86	60	125	
In Internal standard	115	2	HMI He	6695541	2.04	6700003	99.93	60	125	
Ho-165	165	2	HMI He	23450755	1.50	26090315	89.88	60	125	
Ir (IS)	193	2	HMI He	15604295	1.23	19253459	81.05	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-7-A
Data File Name	128SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:12:30-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	156.526	ppb	156.526	12.96	12861082	40000	
Be	9	1	6	5.606	ppb	5.606	6.81	4745	2000	
B	11	1	6	51.058	ppb	51.058	3.38	47635	100	
Na	23	2	45	1630.840	ppb	1630.840	2.58	918241	400000	
Mg	24	2	45	50588.627	ppb	50588.627	2.28	11554857	400000	
Al	27	2	45	157485.940	ppb	157485.940	2.75	10017424	400000	
K	39	2	45	13992.173	ppb	13992.173	0.97	2210747	400000	
V	51	2	72	397.664	ppb	397.664	1.22	1165304	2000	
Cr	52	2	72	198.332	ppb	198.332	1.45	783975	5000	
Mn	55	2	72	9017.697	ppb	9017.697	2.73	16164565	10000	
(Fe)	57	2	72	189732.138	ppb	189732.138	2.39	14404744	400000	
Co	59	2	72	116.571	ppb	116.571	1.60	715093	2000	
Ni	60	2	72	212.604	ppb	212.604	1.62	351106	5000	
Cu	63	2	72	193.105	ppb	193.105	1.01	838235	5000	
Zn	66	2	72	464.273	ppb	464.273	0.84	313816	5000	
As	75	2	72	77.931	ppb	77.931	1.06	30173	2000	
Se	78	1	72	3.639	ppb	3.639	6.66	2056	2000	
Sr	88	2	45	265.779	ppb	265.779	3.07	397138	2000	
Zr	90	2	72	74130.887	ppb	74130.887	2.10	652612	1000	>LDR
Nb	93	2	72	61115.665	ppb	61115.665	4.23	9776	200	>LDR
Mo	95	2	115	6.187	ppb	6.187	4.50	13736	2000	
Pd	105	2	115	220.063	ppb	220.063	63.05	317	100	>LDR
Ag	107	2	115	1.238	ppb	1.238	5.01	7883	100	
Cd	111	2	115	3.761	ppb	3.761	8.52	3280	2000	
Sn	120	2	115	5.841	ppb	5.841	4.89	13946	2000	
Sb	121	2	115	0.608	ppb	0.608	13.25	1218	1000	
Ba	137	2	115	2532.128	ppb	2532.128	2.06	1544645	5000	
W	182	2	165	0.838	ppb	0.838	5.37	7302	100	
Pt	195	2	165	52.259	ppb	52.259	68.65	153	100	
Tl	205	2	165	2.222	ppb	2.222	1.26	28090	2000	
Pb	208	2	165	185.982	ppb	185.982	2.63	2715824	5000	
Th	232	2	193	90.364	ppb	90.364	3.17	1062344	2000	
U	238	2	193	8.579	ppb	8.579	2.37	137062	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3431732	2.56	3709622	92.51	60	125	
Sc (IS)	45	2	HMI He	2652937	0.93	2724914	97.36	60	125	
Sc (IS)	45	3	No Gas	85706796	1.95	82891317	103.40	60	120	
Ge Internal standard	72	1	HMI H2	18674391	1.40	19447282	96.03	60	125	
Ge Internal standard	72	2	HMI He	2507561	0.48	2615067	95.89	60	125	
In Internal standard	115	2	HMI He	6900563	1.31	6700003	102.99	60	125	
Ho-165	165	2	HMI He	24953289	3.87	26090315	95.64	60	125	
Ir (IS)	193	2	HMI He	16691870	0.82	19253459	86.70	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-10-A
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:16:00-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	170.850	ppb	170.850	12.45	12596555	40000	
Be	9	1	6	7.759	ppb	7.759	1.23	6768	2000	
B	11	1	6	49.625	ppb	49.625	2.95	47816	100	
Na	23	2	45	1189.041	ppb	1189.041	4.01	686511	400000	
Mg	24	2	45	43364.492	ppb	43364.492	4.33	10069687	400000	
Al	27	2	45	215993.951	ppb	215993.951	2.97	13972703	400000	
K	39	2	45	16491.104	ppb	16491.104	1.60	2648771	400000	
V	51	2	72	479.807	ppb	479.807	3.15	1438221	2000	
Cr	52	2	72	261.986	ppb	261.986	2.52	1059074	5000	
Mn	55	2	72	2620.590	ppb	2620.590	2.28	4805826	10000	
(Fe)	57	2	72	220124.006	ppb	220124.006	0.92	17098483	400000	
Co	59	2	72	56.223	ppb	56.223	1.70	352864	2000	
Ni	60	2	72	169.505	ppb	169.505	0.67	286504	5000	
Cu	63	2	72	145.135	ppb	145.135	1.35	644932	5000	
Zn	66	2	72	409.534	ppb	409.534	1.58	283305	5000	
As	75	2	72	69.808	ppb	69.808	1.97	27666	2000	
Se	78	1	72	3.726	ppb	3.726	9.05	2165	2000	
Sr	88	2	45	269.569	ppb	269.569	4.04	409588	2000	
Zr	90	2	72	91908.376	ppb	91908.376	0.90	827627	1000	>LDR
Nb	93	2	72	28444.928	ppb	28444.928	6.20	4685	200	>LDR
Mo	95	2	115	3.883	ppb	3.883	6.62	8564	2000	
Pd	105	2	115	454.356	ppb	454.356	60.21	437	100	>LDR
Ag	107	2	115	0.449	ppb	0.449	4.62	2850	100	
Cd	111	2	115	0.476	ppb	0.476	33.59	430	2000	
Sn	120	2	115	2.520	ppb	2.520	5.19	6935	2000	
Sb	121	2	115	0.223	ppb	0.223	19.28	494	1000	
Ba	137	2	115	2266.486	ppb	2266.486	3.47	1366186	5000	
W	182	2	165	0.388	ppb	0.388	2.66	4365	100	
Pt	195	2	165	32.297	ppb	32.297	97.99	123	100	
Tl	205	2	165	2.279	ppb	2.279	2.00	28210	2000	
Pb	208	2	165	94.192	ppb	94.192	2.46	1352899	5000	
Th	232	2	193	107.678	ppb	107.678	0.53	1254562	2000	
U	238	2	193	9.857	ppb	9.857	1.77	156477	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3537492	2.22	3709622	95.36	60	125	
Sc (IS)	45	2	HMI He	2699186	2.90	2724914	99.06	60	125	
Sc (IS)	45	3	No Gas	86925051	0.22	82891317	104.87	60	120	
Ge Internal standard	72	1	HMI H2	19192287	0.77	19447282	98.69	60	125	
Ge Internal standard	72	2	HMI He	2565830	1.63	2615067	98.12	60	125	
In Internal standard	115	2	HMI He	6817306	0.58	6700003	101.75	60	125	
Ho-165	165	2	HMI He	24506393	1.43	26090315	93.93	60	125	
Ir (IS)	193	2	HMI He	16615163	2.25	19253459	86.30	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	130_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:19:28-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	128.512	ppb	15.445	11763394	100	128.5	90	110	>+\-10%
Be	9	1	6	42.764	ppb	2.476	38732	50	85.5	90	110	>+\-10%
B	11	1	6	383.245	ppb	1.274	363088	500	76.6	90	110	>+\-10%
Na	23	2	45	48492.442	ppb	2.674	27735370	51000	95.1	90	110	
Mg	24	2	45	10762.372	ppb	3.874	2552748	11000	97.8	90	110	
(Mg)	25	2	45	9798.462	ppb	2.863	362240	11000	89.1	90	110	>+\-10%
Al	27	2	45	1077.987	ppb	3.931	71536	1000	107.8	90	110	
Si	28	2	45	525.095	ppb	1.291	24528	500	105.0	90	110	
P	31	2	45	2041.201	ppb	2.045	12374	2500	81.6	90	110	>+\-10%
K	39	2	45	11700.496	ppb	1.390	1921703	11000	106.4	90	110	
Ca	40	1	45	11659.572	ppb	1.959	128712665	11000	106.0	90	110	
(Ca)	44	1	45	10109.227	ppb	1.984	3945426	11000	91.9	90	110	
Ti	47	2	45	52.536	ppb	5.621	4178	50	105.1	90	110	
V	51	2	72	47.004	ppb	1.604	147555	50	94.0	90	110	
Cr	52	2	72	45.775	ppb	2.554	194477	50	91.6	90	110	
Mn	55	2	72	49.110	ppb	2.048	94568	50	98.2	90	110	
Fe	56	1	72	1340.215	ppb	2.614	23889535	20000	6.7	90	110	>+\-10%
(Fe)	56	2	72	1205.039	ppb	2.399	3847448	20000	6.0	90	110	>+\-10%
(Fe)	57	2	72	1193.727	ppb	2.737	97742	1000	119.4	90	110	>+\-10%
Co	59	2	72	44.273	ppb	1.249	290410	50	88.5	90	110	>+\-10%
Ni	60	2	72	44.954	ppb	3.085	79712	50	89.9	90	110	>+\-10%
Cu	63	2	72	44.908	ppb	1.635	209598	50	89.8	90	110	>+\-10%
Zn	66	2	72	44.668	ppb	2.482	32990	50	89.3	90	110	>+\-10%
As	75	2	72	46.658	ppb	1.676	19343	50	93.3	90	110	
Se	78	1	72	47.002	ppb	1.633	28363	50	94.0	90	110	
Sr	88	2	45	109.006	ppb	1.712	169221	100	109.0	90	110	
Zr	90	2	72	3709.247	ppb	6.468	36194	50	7418.5	90	110	>+\-10%
Nb	93	2	72	2149.702	ppb	28.847	420	100	2149.7	90	110	>+\-10%
Mo	95	2	115	45.790	ppb	0.854	105341	50	91.6	90	110	
Pd	105	2	115	-130.996	ppb	-107.708	133	50	-262.0	90	110	>+\-10%
Ag	107	2	115	44.249	ppb	2.278	292341	50	88.5	90	110	>+\-10%
Cd	111	2	115	44.041	ppb	2.965	39802	50	88.1	90	110	>+\-10%
Sn	120	2	115	49.424	ppb	2.233	109410	50	98.8	90	110	
Sb	121	2	115	47.419	ppb	3.748	92622	50	94.8	90	110	
Ba	137	2	115	52.980	ppb	5.496	33801	50	106.0	90	110	
W	182	2	165	44.845	ppb	0.221	308056	50	89.7	90	110	>+\-10%
Pt	195	2	165	16.143	ppb	72.043	110	50	32.3	90	110	>+\-10%
Tl	205	2	165	44.622	ppb	1.513	532296	50	89.2	90	110	>+\-10%
Pb	208	2	165	45.652	ppb	2.634	717513	50	91.3	90	110	
Bi	209	2	193	3305.433	ppb	7.090	2256	500	661.1	90	110	>+\-10%
Th	232	2	193	57.346	ppb	5.161	706370	50	114.7	90	110	>+\-10%
U	238	2	193	53.588	ppb	2.570	874286	50	107.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3685108	1.09	3709622	99.34	60	125	
Sc (IS)	45	2	HMI He	2755020	1.02	2724914	101.10	60	125	
Sc (IS)	45	3	No Gas	86465465	3.41	82891317	104.31	60	120	
Ge Internal standard	72	1	HMI H2	20080519	1.54	19447282	103.26	60	125	
Ge Internal standard	72	2	HMI He	2681505	0.85	2615067	102.54	60	125	
In Internal standard	115	2	HMI He	7205887	2.46	6700003	107.55	60	125	
Ho-165	165	2	HMI He	26759050	0.85	26090315	102.56	60	125	
Ir (IS)	193	2	HMI He	17229852	2.65	19253459	89.49	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	131_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:23:00-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	8.203	ppb	146.4	8994349	0.05	>RL
Be	9	1	6	0.072	ppb	35.2	90	0.5	
B	11	1	6	14.978	ppb	4.3	16845	0.1	>RL
Na	23	2	45	40.457	ppb	3.7	43779	25	>RL
Mg	24	2	45	19.160	ppb	3.1	4882	25	
Al	27	2	45	26.371	ppb	11.9	2039	15	>RL
K	39	2	45	23.012	ppb	26.1	14631	50	
V	51	2	72	0.114	ppb	29.5	661	1	
Cr	52	2	72	0.109	ppb	43.7	1769	1	
Mn	55	2	72	1.068	ppb	13.2	2489	0.5	>RL
(Fe)	57	2	72	85.735	ppb	6.0	7830	25	>RL
Co	59	2	72	0.072	ppb	18.8	494	0.5	
Ni	60	2	72	0.104	ppb	43.5	607	1	
Cu	63	2	72	0.581	ppb	4.0	4205	1	
Zn	66	2	72	0.663	ppb	14.6	1265	5	
As	75	2	72	0.035	ppb	269.8	80	1	
Se	78	1	72	0.134	ppb	17.8	99	1	
Sr	88	2	45	0.222	ppb	23.9	444	1	
Zr	90	2	72	1543.769	ppb	5.3	15890	1	>RL
Nb	93	2	72	323.537	ppb	37.8	110	2	>RL
Mo	95	2	115	0.166	ppb	43.3	521	0.5	
Pd	105	2	115	-242.781	ppb	-14.7	73	1	
Ag	107	2	115	0.563	ppb	9.7	3814	1	
Cd	111	2	115	0.070	ppb	30.2	90	0.5	
Sn	120	2	115	0.841	ppb	5.6	3728	1	
Sb	121	2	115	0.143	ppb	26.4	370	1	
Ba	137	2	115	0.382	ppb	25.5	327	0.5	
W	182	2	165	0.332	ppb	8.4	4318	1	
Pt	195	2	165	-18.631	ppb	-137.0	57	1	
Tl	205	2	165	-0.112	ppb	-15.3	2446	0.1	
Pb	208	2	165	0.215	ppb	4.0	6340	0.5	
Th	232	2	193	2.940	ppb	3.4	66299	1	>RL
U	238	2	193	0.080	ppb	22.9	3150	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3589703	5.55	3709622	96.77	60	125	
Sc (IS)	45	2	HMI He	2702511	3.38	2724914	99.18	60	125	
Sc (IS)	45	3	No Gas	84374398	3.52	82891317	101.79	60	120	
Ge Internal standard	72	1	HMI H2	20123851	0.42	19447282	103.48	60	125	
Ge Internal standard	72	2	HMI He	2689493	0.85	2615067	102.85	60	125	
In Internal standard	115	2	HMI He	7302924	1.50	6700003	109.00	60	125	
Ho-165	165	2	HMI He	26357340	1.03	26090315	101.02	60	125	
Ir (IS)	193	2	HMI He	17879917	0.53	19253459	92.87	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	132LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:26:33-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	30.444	ppb	58.842	9030422	50	60.9	70	130	>+/-30%
Be	9	1	6	0.982	ppb	12.995	901	1	98.2	70	130	
Na	23	2	45	45.394	ppb	3.279	45451	50	90.8	70	130	
Mg	24	2	45	56.084	ppb	3.349	13161	50	112.2	70	130	
Al	27	2	45	60.158	ppb	14.063	4125	50	120.3	70	130	
K	39	2	45	114.993	ppb	11.521	28678	100	115.0	70	130	
V	51	2	72	4.637	ppb	6.665	14778	5	92.7	70	130	
Cr	52	2	72	1.865	ppb	2.554	9148	2	93.2	70	130	
Mn	55	2	72	1.663	ppb	8.796	3611	1	166.3	70	130	>+/-30%
(Fe)	57	2	72	93.979	ppb	2.306	8454	50	188.0	70	130	>+/-30%
Co	59	2	72	0.976	ppb	6.971	6404	1	97.6	70	130	
Ni	60	2	72	1.878	ppb	5.621	3724	2	93.9	70	130	
Cu	63	2	72	2.449	ppb	5.039	12808	2	122.4	70	130	
Zn	66	2	72	9.821	ppb	3.005	7843	10	98.2	70	130	
As	75	2	72	4.795	ppb	10.088	2042	5	95.9	70	130	
Se	78	1	72	4.939	ppb	5.698	2999	5	98.8	70	130	
Sr	88	2	45	1.196	ppb	4.964	1882	1	119.6	70	130	
Zr	90	2	72	1159.072	ppb	1.032	12197	0.5	231814.4	70	130	>+/-30%
Nb	93	2	72	248.791	ppb	73.665	97	2	12439.6	70	130	>+/-30%
Mo	95	2	115	1.718	ppb	2.800	4061	2	85.9	70	130	
Pd	105	2	115	-251.758	ppb	-27.628	67	1	-25175.8	70	130	>+/-30%
Ag	107	2	115	1.001	ppb	6.044	6635	1	100.1	70	130	
Cd	111	2	115	0.937	ppb	12.726	868	1	93.7	70	130	
Sn	120	2	115	9.973	ppb	4.119	23446	10	99.7	70	130	
Sb	121	2	115	1.943	ppb	3.632	3861	2	97.1	70	130	
Ba	137	2	115	1.292	ppb	17.233	898	1	129.2	70	130	
W	182	2	165	4.623	ppb	2.204	32956	1	462.3	70	130	>+/-30%
Pt	195	2	165	-4.742	ppb	-241.924	77	1	-474.2	70	130	>+/-30%
Tl	205	2	165	0.721	ppb	12.110	12083	1	72.1	70	130	
Pb	208	2	165	1.083	ppb	5.716	19588	1	108.3	70	130	
Th	232	2	193	2.785	ppb	5.996	63311	2	139.2	70	130	>+/-30%
U	238	2	193	1.001	ppb	1.480	18416	1	100.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3625317	2.39	3709622	97.73	60	125	
Sc (IS)	45	2	HMI He	2640337	1.85	2724914	96.90	60	125	
Sc (IS)	45	3	No Gas	82666996	4.31	82891317	99.73	60	120	
Ge Internal standard	72	1	HMI H2	20088853	1.08	19447282	103.30	60	125	
Ge Internal standard	72	2	HMI He	2674381	1.68	2615067	102.27	60	125	
In Internal standard	115	2	HMI He	7174380	1.13	6700003	107.08	60	125	
Ho-165	165	2	HMI He	26214138	3.62	26090315	100.47	60	125	
Ir (IS)	193	2	HMI He	17584617	1.62	19253459	91.33	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-11-A
Data File Name	133SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:30:08-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	134.659	ppb	134.659	4.82	12260592	40000	
Be	9	1	6	6.289	ppb	6.289	3.31	5430	2000	
B	11	1	6	48.306	ppb	48.306	4.79	46090	100	
Na	23	2	45	645.117	ppb	645.117	1.89	390555	400000	
Mg	24	2	45	31815.627	ppb	31815.627	0.80	7552155	400000	
Al	27	2	45	157988.249	ppb	157988.249	2.22	10440773	400000	
K	39	2	45	18733.122	ppb	18733.122	2.48	3072136	400000	
V	51	2	72	392.517	ppb	392.517	1.85	1173674	2000	
Cr	52	2	72	241.050	ppb	241.050	1.79	971921	5000	
Mn	55	2	72	8046.013	ppb	8046.013	1.72	14714248	10000	
(Fe)	57	2	72	187719.629	ppb	187719.629	2.45	14538942	400000	
Co	59	2	72	85.603	ppb	85.603	1.74	535728	2000	
Ni	60	2	72	206.769	ppb	206.769	1.78	348386	5000	
Cu	63	2	72	309.679	ppb	309.679	2.80	1370439	5000	
Zn	66	2	72	826.368	ppb	826.368	0.88	569309	5000	
As	75	2	72	77.643	ppb	77.643	3.76	30664	2000	
Se	78	1	72	5.391	ppb	5.391	2.52	3127	2000	
Sr	88	2	45	218.519	ppb	218.519	1.32	339303	2000	
Zr	90	2	72	60106.418	ppb	60106.418	0.71	540210	1000	>LDR
Nb	93	2	72	149215.908	ppb	149215.908	1.10	24278	200	>LDR
Mo	95	2	115	8.809	ppb	8.809	3.50	19724	2000	
Pd	105	2	115	368.465	ppb	368.465	44.19	400	100	>LDR
Ag	107	2	115	1.358	ppb	1.358	1.97	8738	100	
Cd	111	2	115	10.214	ppb	10.214	1.71	8961	2000	
Sn	120	2	115	4.074	ppb	4.074	6.91	10374	2000	
Sb	121	2	115	0.705	ppb	0.705	8.54	1415	1000	
Ba	137	2	115	2052.345	ppb	2052.345	0.40	1266093	5000	
W	182	2	165	3.532	ppb	3.532	2.78	24697	100	
Pt	195	2	165	58.144	ppb	58.144	19.41	163	100	
Tl	205	2	165	2.309	ppb	2.309	2.46	29356	2000	
Pb	208	2	165	338.044	ppb	338.044	3.88	4986700	5000	
Th	232	2	193	93.132	ppb	93.132	6.71	1097193	2000	
U	238	2	193	13.276	ppb	13.276	4.63	211873	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3498172	2.91	3709622	94.30	60	125	
Sc (IS)	45	2	HMI He	2756662	2.01	2724914	101.17	60	125	
Sc (IS)	45	3	No Gas	84298499	2.00	82891317	101.70	60	120	
Ge Internal standard	72	1	HMI H2	19200957	2.62	19447282	98.73	60	125	
Ge Internal standard	72	2	HMI He	2558570	1.20	2615067	97.84	60	125	
In Internal standard	115	2	HMI He	6977107	0.89	6700003	104.14	60	125	
Ho-165	165	2	HMI He	25209590	1.32	26090315	96.62	60	125	
Ir (IS)	193	2	HMI He	16759903	3.02	19253459	87.05	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-14-A
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:33:38-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	121.201	ppb	121.201	16.40	11203252	40000	
Be	9	1	6	4.947	ppb	4.947	10.96	3974	2000	
B	11	1	6	43.140	ppb	43.140	9.34	38622	100	
Na	23	2	45	1380.685	ppb	1380.685	3.97	774155	400000	
Mg	24	2	45	38217.184	ppb	38217.184	4.83	8655204	400000	
Al	27	2	45	136962.825	ppb	136962.825	4.62	8639633	400000	
K	39	2	45	12521.457	ppb	12521.457	2.87	1963313	400000	
V	51	2	72	337.586	ppb	337.586	3.50	998112	2000	
Cr	52	2	72	223.193	ppb	223.193	0.96	889896	5000	
Mn	55	2	72	6527.581	ppb	6527.581	2.32	11806741	10000	
(Fe)	57	2	72	173620.695	ppb	173620.695	2.68	13300778	400000	
Co	59	2	72	76.735	ppb	76.735	0.99	474861	2000	
Ni	60	2	72	234.771	ppb	234.771	1.76	391103	5000	
Cu	63	2	72	276.962	ppb	276.962	2.72	1212306	5000	
Zn	66	2	72	754.208	ppb	754.208	1.15	513826	5000	
As	75	2	72	61.547	ppb	61.547	3.50	24057	2000	
Se	78	1	72	2.701	ppb	2.701	2.22	1591	2000	
Sr	88	2	45	389.338	ppb	389.338	4.20	576928	2000	
Zr	90	2	72	62105.039	ppb	62105.039	3.00	551847	1000	>LDR
Nb	93	2	72	78017.013	ppb	78017.013	2.39	12577	200	>LDR
Mo	95	2	115	6.048	ppb	6.048	4.36	13158	2000	
Pd	105	2	115	537.802	ppb	537.802	18.87	477	100	>LDR
Ag	107	2	115	1.028	ppb	1.028	1.87	6418	100	
Cd	111	2	115	8.655	ppb	8.655	10.41	7342	2000	
Sn	120	2	115	5.299	ppb	5.299	4.78	12544	2000	
Sb	121	2	115	0.339	ppb	0.339	6.20	701	1000	
Ba	137	2	115	2099.323	ppb	2099.323	4.27	1253464	5000	
W	182	2	165	1.318	ppb	1.318	5.60	10003	100	
Pt	195	2	165	36.544	ppb	36.544	32.75	127	100	
Tl	205	2	165	1.739	ppb	1.739	5.63	21964	2000	
Pb	208	2	165	283.486	ppb	283.486	2.05	3996491	5000	
Th	232	2	193	80.490	ppb	80.490	1.64	913433	2000	
U	238	2	193	8.061	ppb	8.061	2.83	124026	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3263104	4.98	3709622	87.96	60	125	
Sc (IS)	45	2	HMI He	2632803	2.90	2724914	96.62	60	125	
Sc (IS)	45	3	No Gas	83272207	3.51	82891317	100.46	60	120	
Ge Internal standard	72	1	HMI H2	19396606	1.74	19447282	99.74	60	125	
Ge Internal standard	72	2	HMI He	2529835	1.11	2615067	96.74	60	125	
In Internal standard	115	2	HMI He	6759901	3.62	6700003	100.89	60	125	
Ho-165	165	2	HMI He	24088071	1.39	26090315	92.33	60	125	
Ir (IS)	193	2	HMI He	16063030	1.07	19253459	83.43	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-15-A
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:37:07-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	88.694	ppb	88.694	2.87	11275205	40000	
Be	9	1	6	4.128	ppb	4.128	7.86	3751	2000	
B	11	1	6	28.352	ppb	28.352	3.23	29767	100	
Na	23	2	45	353.990	ppb	353.990	3.19	225239	400000	
Mg	24	2	45	18617.437	ppb	18617.437	2.04	4445515	400000	
Al	27	2	45	93206.178	ppb	93206.178	4.03	6195152	400000	
K	39	2	45	13053.345	ppb	13053.345	1.99	2157449	400000	
V	51	2	72	259.908	ppb	259.908	2.58	800998	2000	
Cr	52	2	72	141.312	ppb	141.312	2.53	587770	5000	
Mn	55	2	72	13748.054	ppb	13748.054	2.15	25915285	10000	
(Fe)	57	2	72	120612.464	ppb	120612.464	3.23	9629457	400000	
Co	59	2	72	108.205	ppb	108.205	1.05	698116	2000	
Ni	60	2	72	130.620	ppb	130.620	0.45	227078	5000	
Cu	63	2	72	85.107	ppb	85.107	1.80	389354	5000	
Zn	66	2	72	374.046	ppb	374.046	1.87	266036	5000	
As	75	2	72	63.546	ppb	63.546	1.09	25895	2000	
Se	78	1	72	4.782	ppb	4.782	7.01	2823	2000	
Sr	88	2	45	167.390	ppb	167.390	3.53	261474	2000	
Zr	90	2	72	28445.947	ppb	28445.947	2.59	264194	1000	>LDR
Nb	93	2	72	120146.239	ppb	120146.239	5.26	20145	200	>LDR
Mo	95	2	115	5.333	ppb	5.333	3.14	12220	2000	
Pd	105	2	115	27.691	ppb	27.691	246.08	220	100	
Ag	107	2	115	0.523	ppb	0.523	2.64	3454	100	
Cd	111	2	115	3.780	ppb	3.780	7.59	3394	2000	
Sn	120	2	115	3.574	ppb	3.574	3.20	9499	2000	
Sb	121	2	115	0.480	ppb	0.480	11.25	1011	1000	
Ba	137	2	115	2137.728	ppb	2137.728	4.39	1343789	5000	
W	182	2	165	0.356	ppb	0.356	12.98	4335	100	
Pt	195	2	165	17.293	ppb	17.293	205.74	107	100	
Tl	205	2	165	1.856	ppb	1.856	1.44	24594	2000	
Pb	208	2	165	208.150	ppb	208.150	0.38	3109383	5000	
Th	232	2	193	70.514	ppb	70.514	4.42	872310	2000	
U	238	2	193	8.849	ppb	8.849	2.71	147649	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3674274	0.75	3709622	99.05	60	125	
Sc (IS)	45	2	HMI He	2774039	3.27	2724914	101.80	60	125	
Sc (IS)	45	3	No Gas	85471419	3.58	82891317	103.11	60	120	
Ge Internal standard	72	1	HMI H2	19550032	1.70	19447282	100.53	60	125	
Ge Internal standard	72	2	HMI He	2637849	2.63	2615067	100.87	60	125	
In Internal standard	115	2	HMI He	7112001	1.20	6700003	106.15	60	125	
Ho-165	165	2	HMI He	25515908	0.68	26090315	97.80	60	125	
Ir (IS)	193	2	HMI He	17445471	2.54	19253459	90.61	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-16-A
Data File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:40:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	90.160	ppb	90.160	11.08	10108010	40000	
Be	9	1	6	2.932	ppb	2.932	5.79	2152	2000	
B	11	1	6	54.640	ppb	54.640	4.66	43725	100	
Na	23	2	45	1377.693	ppb	1377.693	1.26	768476	400000	
Mg	24	2	45	71646.999	ppb	71646.999	0.34	16145134	400000	
Al	27	2	45	88230.658	ppb	88230.658	2.82	5537324	400000	
K	39	2	45	6912.841	ppb	6912.841	2.90	1082835	400000	
V	51	2	72	242.291	ppb	242.291	1.89	680221	2000	
Cr	52	2	72	789.358	ppb	789.358	3.34	2985065	5000	
Mn	55	2	72	5782.144	ppb	5782.144	2.46	9928475	10000	
(Fe)	57	2	72	211541.148	ppb	211541.148	1.65	15383957	400000	
Co	59	2	72	72.832	ppb	72.832	2.85	427906	2000	
Ni	60	2	72	738.247	ppb	738.247	1.55	1167119	5000	
Cu	63	2	72	4240.344	ppb	4240.344	1.09	17607157	5000	
Zn	66	2	72	8548.744	ppb	8548.744	1.80	5522632	5000	>LDR
As	75	2	72	66.017	ppb	66.017	0.40	24495	2000	
Se	78	1	72	5.067	ppb	5.067	3.14	2624	2000	
Sr	88	2	45	747.432	ppb	747.432	1.54	1101708	2000	
Zr	90	2	72	40737.328	ppb	40737.328	1.51	344092	1000	>LDR
Nb	93	2	72	85026.624	ppb	85026.624	3.53	13008	200	>LDR
Mo	95	2	115	33.304	ppb	33.304	1.57	69246	2000	
Pd	105	2	115	214.459	ppb	214.459	78.75	297	100	>LDR
Ag	107	2	115	16.635	ppb	16.635	3.19	99401	100	
Cd	111	2	115	128.930	ppb	128.930	0.80	105285	2000	
Sn	120	2	115	40.753	ppb	40.753	2.11	81806	2000	
Sb	121	2	115	3.030	ppb	3.030	1.65	5423	1000	
Ba	137	2	115	2384.882	ppb	2384.882	1.93	1372963	5000	
W	182	2	165	44.149	ppb	44.149	1.18	256885	100	
Pt	195	2	165	21.585	ppb	21.585	145.45	100	100	
Tl	205	2	165	0.890	ppb	0.890	1.21	12160	2000	
Pb	208	2	165	3762.582	ppb	3762.582	3.68	49859184	5000	
Th	232	2	193	36.430	ppb	36.430	1.28	397177	2000	
U	238	2	193	8.473	ppb	8.473	0.31	120814	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	2958447	4.85	3709622	79.75	60	125	
Sc (IS)	45	2	HMI He	2617287	1.19	2724914	96.05	60	125	
Sc (IS)	45	3	No Gas	77998373	0.34	82891317	94.10	60	120	
Ge Internal standard	72	1	HMI H2	17146474	1.42	19447282	88.17	60	125	
Ge Internal standard	72	2	HMI He	2402282	1.27	2615067	91.86	60	125	
In Internal standard	115	2	HMI He	6511452	1.65	6700003	97.19	60	125	
Ho-165	165	2	HMI He	22662820	1.64	26090315	86.86	60	125	
Ir (IS)	193	2	HMI He	14894095	0.55	19253459	77.36	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-17-A
Data File Name	137SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:44:05-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	171.640	ppb	171.640	2.12	12757690	40000	
Be	9	1	6	10.015	ppb	10.015	3.81	8350	2000	
B	11	1	6	45.395	ppb	45.395	0.58	42140	100	
Na	23	2	45	2483.422	ppb	2483.422	3.59	1410425	400000	
Mg	24	2	45	50638.886	ppb	50638.886	3.48	11756725	400000	
Al	27	2	45	225713.670	ppb	225713.670	3.11	14596589	400000	
K	39	2	45	18211.922	ppb	18211.922	2.02	2922523	400000	
V	51	2	72	502.145	ppb	502.145	2.22	1491615	2000	
Cr	52	2	72	286.573	ppb	286.573	2.94	1147743	5000	
Mn	55	2	72	5903.799	ppb	5903.799	2.67	10727507	10000	
(Fe)	57	2	72	266746.286	ppb	266746.286	2.58	20528038	400000	
Co	59	2	72	78.279	ppb	78.279	0.71	486827	2000	
Ni	60	2	72	273.832	ppb	273.832	2.95	458282	5000	
Cu	63	2	72	223.755	ppb	223.755	2.18	984604	5000	
Zn	66	2	72	523.974	ppb	523.974	0.31	358982	5000	
As	75	2	72	97.967	ppb	97.967	2.66	38447	2000	
Se	78	1	72	4.449	ppb	4.449	3.98	2623	2000	
Sr	88	2	45	313.182	ppb	313.182	2.14	475924	2000	
Zr	90	2	72	79244.490	ppb	79244.490	2.47	707124	1000	>LDR
Nb	93	2	72	14130.648	ppb	14130.648	17.88	2329	200	>LDR
Mo	95	2	115	4.017	ppb	4.017	2.49	8855	2000	
Pd	105	2	115	833.338	ppb	833.338	22.66	637	100	>LDR
Ag	107	2	115	0.639	ppb	0.639	4.56	4035	100	
Cd	111	2	115	0.754	ppb	0.754	16.85	667	2000	
Sn	120	2	115	3.003	ppb	3.003	1.40	7927	2000	
Sb	121	2	115	0.092	ppb	0.092	27.96	250	1000	
Ba	137	2	115	1898.959	ppb	1898.959	1.78	1143853	5000	
W	182	2	165	0.445	ppb	0.445	2.83	4789	100	
Pt	195	2	165	38.725	ppb	38.725	43.79	133	100	
Tl	205	2	165	3.031	ppb	3.031	4.25	36819	2000	
Pb	208	2	165	152.771	ppb	152.771	2.72	2220664	5000	
Th	232	2	193	115.059	ppb	115.059	1.11	1298835	2000	
U	238	2	193	12.270	ppb	12.270	1.01	188636	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3386055	2.19	3709622	91.28	60	125	
Sc (IS)	45	2	HMI He	2698888	3.80	2724914	99.04	60	125	
Sc (IS)	45	3	No Gas	85903150	2.55	82891317	103.63	60	120	
Ge Internal standard	72	1	HMI H2	19493900	2.12	19447282	100.24	60	125	
Ge Internal standard	72	2	HMI He	2542412	1.32	2615067	97.22	60	125	
In Internal standard	115	2	HMI He	6813418	2.29	6700003	101.69	60	125	
Ho-165	165	2	HMI He	24826398	2.36	26090315	95.16	60	125	
Ir (IS)	193	2	HMI He	16121267	1.23	19253459	83.73	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-18-A
Data File Name	138SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:47:36-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	125.350	ppb	125.350	10.90	11713128	40000	
Be	9	1	6	6.161	ppb	6.161	4.56	5530	2000	
B	11	1	6	37.753	ppb	37.753	2.67	38171	100	
Na	23	2	45	1600.216	ppb	1600.216	4.50	935911	400000	
Mg	24	2	45	35679.618	ppb	35679.618	1.79	8462591	400000	
Al	27	2	45	165950.869	ppb	165950.869	2.90	10958326	400000	
K	39	2	45	13677.552	ppb	13677.552	1.68	2244023	400000	
V	51	2	72	372.014	ppb	372.014	3.00	1112950	2000	
Cr	52	2	72	208.712	ppb	208.712	3.93	842139	5000	
Mn	55	2	72	2447.274	ppb	2447.274	1.38	4480980	10000	
(Fe)	57	2	72	190333.142	ppb	190333.142	2.13	14755284	400000	
Co	59	2	72	47.224	ppb	47.224	2.56	295749	2000	
Ni	60	2	72	174.656	ppb	174.656	1.56	294618	5000	
Cu	63	2	72	145.588	ppb	145.588	2.11	645608	5000	
Zn	66	2	72	385.494	ppb	385.494	0.63	266234	5000	
As	75	2	72	68.245	ppb	68.245	1.70	26994	2000	
Se	78	1	72	2.907	ppb	2.907	7.99	1715	2000	
Sr	88	2	45	217.833	ppb	217.833	2.90	337928	2000	
Zr	90	2	72	68350.002	ppb	68350.002	4.19	614280	1000	>LDR
Nb	93	2	72	18306.721	ppb	18306.721	2.83	3027	200	>LDR
Mo	95	2	115	2.978	ppb	2.978	4.43	6665	2000	
Pd	105	2	115	272.810	ppb	272.810	47.81	344	100	>LDR
Ag	107	2	115	0.295	ppb	0.295	7.44	1912	100	
Cd	111	2	115	0.359	ppb	0.359	13.46	334	2000	
Sn	120	2	115	2.662	ppb	2.662	5.23	7306	2000	
Sb	121	2	115	0.090	ppb	0.090	22.42	250	1000	
Ba	137	2	115	2059.930	ppb	2059.930	2.70	1254203	5000	
W	182	2	165	0.280	ppb	0.280	6.55	3744	100	
Pt	195	2	165	5.563	ppb	5.563	357.98	87	100	
Tl	205	2	165	2.118	ppb	2.118	5.30	26789	2000	
Pb	208	2	165	83.764	ppb	83.764	4.44	1218353	5000	
Th	232	2	193	83.068	ppb	83.068	4.18	970100	2000	
U	238	2	193	9.885	ppb	9.885	3.50	156276	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3637232	1.95	3709622	98.05	60	125	
Sc (IS)	45	2	HMI He	2755070	2.65	2724914	101.11	60	125	
Sc (IS)	45	3	No Gas	85078554	4.24	82891317	102.64	60	120	
Ge Internal standard	72	1	HMI H2	19459102	2.59	19447282	100.06	60	125	
Ge Internal standard	72	2	HMI He	2561168	2.57	2615067	97.94	60	125	
In Internal standard	115	2	HMI He	6887522	1.37	6700003	102.80	60	125	
Ho-165	165	2	HMI He	24833320	3.35	26090315	95.18	60	125	
Ir (IS)	193	2	HMI He	16547857	1.81	19253459	85.95	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-19-A
Data File Name	139SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:51:08-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	154.723	ppb	154.723	3.29	12247481	40000	
Be	9	1	6	7.017	ppb	7.017	1.19	6040	2000	
B	11	1	6	31.700	ppb	31.700	1.59	31258	100	
Na	23	2	45	825.805	ppb	825.805	2.91	480649	400000	
Mg	24	2	45	40982.075	ppb	40982.075	5.60	9463434	400000	
Al	27	2	45	203619.257	ppb	203619.257	7.83	13090485	400000	
K	39	2	45	15145.400	ppb	15145.400	0.39	2420396	400000	
V	51	2	72	431.819	ppb	431.819	1.60	1253861	2000	
Cr	52	2	72	238.315	ppb	238.315	1.37	933005	5000	
Mn	55	2	72	1809.204	ppb	1809.204	0.55	3213352	10000	
(Fe)	57	2	72	230843.281	ppb	230843.281	0.75	17362474	400000	
Co	59	2	72	37.359	ppb	37.359	1.59	227017	2000	
Ni	60	2	72	150.981	ppb	150.981	2.26	247075	5000	
Cu	63	2	72	167.525	ppb	167.525	2.98	720363	5000	
Zn	66	2	72	468.824	ppb	468.824	2.73	313846	5000	
As	75	2	72	104.424	ppb	104.424	3.11	40019	2000	
Se	78	1	72	3.940	ppb	3.940	5.04	2287	2000	
Sr	88	2	45	235.757	ppb	235.757	3.91	356286	2000	
Zr	90	2	72	65474.824	ppb	65474.824	1.67	571160	1000	>LDR
Nb	93	2	72	15842.250	ppb	15842.250	6.38	2546	200	>LDR
Mo	95	2	115	3.799	ppb	3.799	2.07	8220	2000	
Pd	105	2	115	176.018	ppb	176.018	28.76	284	100	>LDR
Ag	107	2	115	0.195	ppb	0.195	6.26	1241	100	
Cd	111	2	115	0.230	ppb	0.230	26.64	217	2000	
Sn	120	2	115	2.335	ppb	2.335	3.41	6424	2000	
Sb	121	2	115	0.061	ppb	0.061	43.48	190	1000	
Ba	137	2	115	1937.944	ppb	1937.944	1.11	1145032	5000	
W	182	2	165	0.226	ppb	0.226	7.87	3330	100	
Pt	195	2	165	13.800	ppb	13.800	115.95	97	100	
Tl	205	2	165	2.404	ppb	2.404	4.42	29340	2000	
Pb	208	2	165	100.356	ppb	100.356	0.45	1430737	5000	
Th	232	2	193	90.297	ppb	90.297	2.53	1054886	2000	
U	238	2	193	12.971	ppb	12.971	0.79	205131	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3490166	2.31	3709622	94.08	60	125	
Sc (IS)	45	2	HMI He	2684566	2.91	2724914	98.52	60	125	
Sc (IS)	45	3	No Gas	82076922	3.12	82891317	99.02	60	120	
Ge Internal standard	72	1	HMI H2	19185515	0.95	19447282	98.65	60	125	
Ge Internal standard	72	2	HMI He	2484424	2.18	2615067	95.00	60	125	
In Internal standard	115	2	HMI He	6683469	2.22	6700003	99.75	60	125	
Ho-165	165	2	HMI He	24327485	1.49	26090315	93.24	60	125	
Ir (IS)	193	2	HMI He	16590882	1.22	19253459	86.17	60	125	

Sample Report

Sample Table

Sample Name	280-165725-A-20-A
Data File Name	140SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:54:37-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	584778 soil 6020a dod
ISTD Ref FileName	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	6	173.646	ppb	173.646	4.35	12736233	40000	
Be	9	1	6	7.362	ppb	7.362	7.06	6311	2000	
B	11	1	6	59.644	ppb	59.644	4.26	55906	100	
Na	23	2	45	3761.025	ppb	3761.025	2.06	2083881	400000	
Mg	24	2	45	50297.337	ppb	50297.337	2.43	11450694	400000	
Al	27	2	45	195871.220	ppb	195871.220	1.95	12418842	400000	
K	39	2	45	17287.184	ppb	17287.184	1.96	2719170	400000	
V	51	2	72	471.351	ppb	471.351	4.62	1391638	2000	
Cr	52	2	72	269.953	ppb	269.953	2.24	1074936	5000	
Mn	55	2	72	7895.218	ppb	7895.218	1.68	14264151	10000	
(Fe)	57	2	72	235314.422	ppb	235314.422	1.66	18006122	400000	
Co	59	2	72	86.472	ppb	86.472	3.23	534471	2000	
Ni	60	2	72	355.259	ppb	355.259	0.32	591085	5000	
Cu	63	2	72	203.451	ppb	203.451	2.16	889890	5000	
Zn	66	2	72	534.356	ppb	534.356	2.81	363953	5000	
As	75	2	72	86.640	ppb	86.640	2.42	33796	2000	
Se	78	1	72	3.477	ppb	3.477	7.42	1965	2000	
Sr	88	2	45	345.982	ppb	345.982	0.16	515240	2000	
Zr	90	2	72	84963.766	ppb	84963.766	2.32	753629	1000	>LDR
Nb	93	2	72	21636.116	ppb	21636.116	13.07	3517	200	>LDR
Mo	95	2	115	3.825	ppb	3.825	0.74	8324	2000	
Pd	105	2	115	915.215	ppb	915.215	10.50	671	100	>LDR
Ag	107	2	115	0.258	ppb	0.258	8.15	1632	100	
Cd	111	2	115	1.704	ppb	1.704	9.83	1462	2000	
Sn	120	2	115	3.532	ppb	3.532	3.60	8898	2000	
Sb	121	2	115	0.110	ppb	0.110	21.67	280	1000	
Ba	137	2	115	3119.327	ppb	3119.327	1.06	1854626	5000	
W	182	2	165	0.325	ppb	0.325	3.83	3965	100	
Pt	195	2	165	46.549	ppb	46.549	67.31	143	100	
Tl	205	2	165	3.351	ppb	3.351	5.82	39675	2000	
Pb	208	2	165	150.214	ppb	150.214	4.31	2147673	5000	
Th	232	2	193	108.430	ppb	108.430	2.41	1214395	2000	
U	238	2	193	11.057	ppb	11.057	3.21	168573	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3479970	2.58	3709622	93.81	60	125	
Sc (IS)	45	2	HMI He	2643761	0.92	2724914	97.02	60	125	
Sc (IS)	45	3	No Gas	82843834	1.68	82891317	99.94	60	120	
Ge Internal standard	72	1	HMI H2	18682579	2.46	19447282	96.07	60	125	
Ge Internal standard	72	2	HMI He	2527499	1.54	2615067	96.65	60	125	
In Internal standard	115	2	HMI He	6724178	1.00	6700003	100.36	60	125	
Ho-165	165	2	HMI He	24435490	3.33	26090315	93.66	60	125	
Ir (IS)	193	2	HMI He	15980619	2.94	19253459	83.00	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7337553
Data File Name	141_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T21:58:06-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	6	125.727	ppb	3.666	11588048	100	125.7	90	110	>+\-10%
Be	9	1	6	42.391	ppb	2.684	36168	50	84.8	90	110	>+\-10%
B	11	1	6	390.824	ppb	1.235	348787	500	78.2	90	110	>+\-10%
Na	23	2	45	47520.208	ppb	3.575	26210052	51000	93.2	90	110	
Mg	24	2	45	10861.923	ppb	2.017	2485363	11000	98.7	90	110	
(Mg)	25	2	45	9642.334	ppb	4.827	343692	11000	87.7	90	110	>+\-10%
Al	27	2	45	1052.664	ppb	4.250	67390	1000	105.3	90	110	
Si	28	2	45	501.384	ppb	3.546	22734	500	100.3	90	110	
P	31	2	45	1986.036	ppb	3.400	11611	2500	79.4	90	110	>+\-10%
K	39	2	45	11624.525	ppb	4.722	1840259	11000	105.7	90	110	
Ca	40	1	45	11723.629	ppb	1.882	126738512	11000	106.6	90	110	
(Ca)	44	1	45	9885.529	ppb	0.955	3778829	11000	89.9	90	110	>+\-10%
Ti	47	2	45	49.986	ppb	3.421	3838	50	100.0	90	110	
V	51	2	72	46.861	ppb	2.182	144477	50	93.7	90	110	
Cr	52	2	72	45.608	ppb	2.672	190309	50	91.2	90	110	
Mn	55	2	72	48.600	ppb	1.020	91941	50	97.2	90	110	
Fe	56	1	72	1344.492	ppb	1.634	23746198	20000	6.7	90	110	>+\-10%
(Fe)	56	2	72	1178.240	ppb	3.151	3694672	20000	5.9	90	110	>+\-10%
(Fe)	57	2	72	1118.893	ppb	2.087	90037	1000	111.9	90	110	>+\-10%
Co	59	2	72	43.401	ppb	1.768	279604	50	86.8	90	110	>+\-10%
Ni	60	2	72	44.234	ppb	1.016	77071	50	88.5	90	110	>+\-10%
Cu	63	2	72	42.911	ppb	2.523	196761	50	85.8	90	110	>+\-10%
Zn	66	2	72	43.689	ppb	0.379	31717	50	87.4	90	110	>+\-10%
As	75	2	72	44.069	ppb	6.546	17937	50	88.1	90	110	>+\-10%
Se	78	1	72	46.746	ppb	3.035	27946	50	93.5	90	110	
Sr	88	2	45	107.849	ppb	4.217	161423	100	107.8	90	110	
Zr	90	2	72	3815.152	ppb	3.699	36525	50	7630.3	90	110	>+\-10%
Nb	93	2	72	1966.085	ppb	38.037	384	100	1966.1	90	110	>+\-10%
Mo	95	2	115	45.111	ppb	2.107	101535	50	90.2	90	110	
Pd	105	2	115	-153.260	ppb	-27.977	120	50	-306.5	90	110	>+\-10%
Ag	107	2	115	43.252	ppb	2.929	279656	50	86.5	90	110	>+\-10%
Cd	111	2	115	45.660	ppb	4.218	40385	50	91.3	90	110	
Sn	120	2	115	48.827	ppb	3.802	105761	50	97.7	90	110	
Sb	121	2	115	47.102	ppb	1.955	90067	50	94.2	90	110	
Ba	137	2	115	51.654	ppb	2.095	32290	50	103.3	90	110	
W	182	2	165	45.720	ppb	4.784	298099	50	91.4	90	110	
Pt	195	2	165	19.902	ppb	29.100	110	50	39.8	90	110	>+\-10%
Tl	205	2	165	44.922	ppb	3.830	508792	50	89.8	90	110	>+\-10%
Pb	208	2	165	46.647	ppb	4.178	696219	50	93.3	90	110	
Bi	209	2	193	1844.797	ppb	99.972	2036	500	369.0	90	110	>+\-10%
Th	232	2	193	54.117	ppb	7.140	662062	50	108.2	90	110	
U	238	2	193	52.257	ppb	4.122	845264	50	104.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3472248	2.21	3709622	93.60	60	125	
Sc (IS)	45	2	HMI He	2658421	3.39	2724914	97.56	60	125	
Sc (IS)	45	3	No Gas	81414347	2.91	82891317	98.22	60	120	
Ge Internal standard	72	1	HMI H2	19897998	1.55	19447282	102.32	60	125	
Ge Internal standard	72	2	HMI He	2633978	1.65	2615067	100.72	60	125	
In Internal standard	115	2	HMI He	7053545	3.01	6700003	105.28	60	125	
Ho-165	165	2	HMI He	25431411	3.70	26090315	97.47	60	125	
Ir (IS)	193	2	HMI He	17079893	1.66	19253459	88.71	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7337549
Data File Name	142_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T22:01:39-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	3	6	16.162	ppb	39.5	8717450	0.05	>RL
Be	9	1	6	0.059	ppb	78.5	77	0.5	
B	11	1	6	14.541	ppb	7.3	16130	0.1	>RL
Na	23	2	45	40.432	ppb	10.2	41993	25	>RL
Mg	24	2	45	18.202	ppb	5.6	4478	25	
Al	27	2	45	22.916	ppb	7.0	1742	15	>RL
K	39	2	45	24.467	ppb	13.3	14283	50	
V	51	2	72	0.097	ppb	30.7	574	1	
Cr	52	2	72	0.046	ppb	125.3	1418	1	
Mn	55	2	72	1.088	ppb	10.1	2393	0.5	>RL
(Fe)	57	2	72	82.664	ppb	4.2	7192	25	>RL
Co	59	2	72	0.070	ppb	16.9	457	0.5	
Ni	60	2	72	0.165	ppb	27.2	677	1	
Cu	63	2	72	0.462	ppb	17.7	3450	1	
Zn	66	2	72	0.488	ppb	58.0	1074	5	
As	75	2	72	0.137	ppb	128.6	117	1	
Se	78	1	72	0.135	ppb	40.5	99	1	
Sr	88	2	45	0.267	ppb	25.9	491	1	
Zr	90	2	72	1422.772	ppb	7.4	13963	1	>RL
Nb	93	2	72	339.723	ppb	60.3	107	2	>RL
Mo	95	2	115	0.168	ppb	2.0	507	0.5	
Pd	105	2	115	-280.255	ppb	-13.6	50	1	
Ag	107	2	115	0.397	ppb	15.4	2613	1	
Cd	111	2	115	0.040	ppb	58.9	60	0.5	
Sn	120	2	115	0.542	ppb	22.8	2953	1	
Sb	121	2	115	0.069	ppb	24.5	217	1	
Ba	137	2	115	0.386	ppb	34.4	317	0.5	
W	182	2	165	0.315	ppb	14.8	4061	1	
Pt	195	2	165	19.962	ppb	160.5	110	1	>RL
Tl	205	2	165	-0.122	ppb	-35.1	2252	0.1	
Pb	208	2	165	0.173	ppb	13.5	5493	0.5	
Th	232	2	193	2.488	ppb	10.5	57439	1	>RL
U	238	2	193	0.050	ppb	26.8	2506	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3521542	2.40	3709622	94.93	60	125	
Sc (IS)	45	2	HMI He	2596377	2.86	2724914	95.28	60	125	
Sc (IS)	45	3	No Gas	79713503	2.35	82891317	96.17	60	120	
Ge Internal standard	72	1	HMI H2	19993994	1.98	19447282	102.81	60	125	
Ge Internal standard	72	2	HMI He	2549073	3.39	2615067	97.48	60	125	
In Internal standard	115	2	HMI He	7044487	2.70	6700003	105.14	60	125	
Ho-165	165	2	HMI He	25452212	1.22	26090315	97.55	60	125	
Ir (IS)	193	2	HMI He	16911139	1.67	19253459	87.83	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7337555
Data File Name	143LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\all082422.b
Acq Date Time	2022-08-24T22:05:11-06:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	010CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	6	21.202	ppb	47.347	8836583	50	42.4	70	130	>+/-30%
Be	9	1	6	0.800	ppb	0.875	707	1	80.0	70	130	
Na	23	2	45	39.522	ppb	7.405	41404	50	79.0	70	130	
Mg	24	2	45	56.120	ppb	2.163	12914	50	112.2	70	130	
Al	27	2	45	65.503	ppb	7.539	4378	50	131.0	70	130	>+/-30%
K	39	2	45	112.748	ppb	4.979	27786	100	112.7	70	130	
V	51	2	72	4.514	ppb	2.693	13969	5	90.3	70	130	
Cr	52	2	72	1.766	ppb	5.878	8481	2	88.3	70	130	
Mn	55	2	72	1.600	ppb	4.487	3390	1	160.0	70	130	>+/-30%
(Fe)	57	2	72	96.615	ppb	10.513	8397	50	193.2	70	130	>+/-30%
Co	59	2	72	0.928	ppb	6.631	5904	1	92.8	70	130	
Ni	60	2	72	1.963	ppb	6.697	3754	2	98.1	70	130	
Cu	63	2	72	2.328	ppb	3.171	11893	2	116.4	70	130	
Zn	66	2	72	9.611	ppb	4.421	7459	10	96.1	70	130	
As	75	2	72	4.745	ppb	10.269	1962	5	94.9	70	130	
Se	78	1	72	4.773	ppb	5.420	2787	5	95.5	70	130	
Sr	88	2	45	1.124	ppb	15.051	1742	1	112.4	70	130	
Zr	90	2	72	1052.888	ppb	6.218	10868	0.5	210577.7	70	130	>+/-30%
Nb	93	2	72	430.976	ppb	76.235	123	2	21548.8	70	130	>+/-30%
Mo	95	2	115	1.841	ppb	6.808	4191	2	92.1	70	130	
Pd	105	2	115	-291.495	ppb	-13.417	43	1	-29149.5	70	130	>+/-30%
Ag	107	2	115	0.967	ppb	6.340	6184	1	96.7	70	130	
Cd	111	2	115	0.865	ppb	13.202	777	1	86.5	70	130	
Sn	120	2	115	9.801	ppb	4.845	22267	10	98.0	70	130	
Sb	121	2	115	1.834	ppb	6.247	3521	2	91.7	70	130	
Ba	137	2	115	1.201	ppb	8.549	811	1	120.1	70	130	
W	182	2	165	4.547	ppb	3.512	31465	1	454.7	70	130	>+/-30%
Pt	195	2	165	10.811	ppb	266.430	97	1	1081.1	70	130	>+/-30%
Tl	205	2	165	0.695	ppb	6.149	11432	1	69.5	70	130	>+/-30%
Pb	208	2	165	1.061	ppb	3.035	18686	1	106.1	70	130	
Th	232	2	193	2.284	ppb	3.280	55996	2	114.2	70	130	
U	238	2	193	0.955	ppb	3.915	17250	1	95.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal standard	6	1	HMI H2	3471672	0.87	3709622	93.59	60	125	
Sc (IS)	45	2	HMI He	2588266	2.59	2724914	94.99	60	125	
Sc (IS)	45	3	No Gas	78428797	0.84	82891317	94.62	60	120	
Ge Internal standard	72	1	HMI H2	19334936	2.18	19447282	99.42	60	125	
Ge Internal standard	72	2	HMI He	2594756	2.68	2615067	99.22	60	125	
In Internal standard	115	2	HMI He	6928293	3.08	6700003	103.41	60	125	
Ho-165	165	2	HMI He	25411564	1.09	26090315	97.40	60	125	
Ir (IS)	193	2	HMI He	17187160	1.04	19253459	89.27	60	125	

Shipping and Receiving Documents

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

2 coolers

8169889960 60

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Client Information	Sampler: J. Spies / R. Zsamtu	Lab PM: McEntee, Patrick J	Carrier Tracking No(s): 8169 8899 6071	COC No: 280-121773-34095.1
Client Contact: Accounts Payable	Phone: 301-956-3896	E-Mail: Patrick.McEntee@et.eurofinsus.com	State of Origin: IA	Page: Page 1 of 1 1 of 2
Company: Jacobs Engineering Group, Inc.	PWSID:	Analysis Requested		Job #:

Address: PO BOX 241329	Due Date Requested:	
City: Denver	TAT Requested (days): Standard	
State, Zip: CO, 80224	Compliance Project: Δ Yes Δ No	
Phone: 618-410-1263(Tel)	PO #: ~~1480209576~~ 148029842	
Email: usapinvoices@jacobs.com	WO #:	
Project Name: Iowa Army Ammunition Plant RI/FS, IA	Project #: 28022660	
Site: OU11 2022	SSOW#:	

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SW6020A Total Manganese	SW6020A Dissolved Manganese	280-165769 Chain of Custody	Total Number of containers	Special Instructions/Note:
			Preservation Code:				DI	DI			
OU11-T-12-082222	8-22-22	1230	G	W	Y	N	X	X		2	
OU11-T-17-082122	8/21/22	1125	G	W	Y	N	X	X		2	
OU11-T-18-082222	8-22-22	1325	G	W	Y	N	X	X		2	
OU11-T-19-082022	8/20/22	1105	G	W	Y	N	X	X		2	
OU11-T-20-082022	8/20/22	1546	G	W	Y	N	X	X		2	
OU11-T-31-082122	8/21/22	0935	G	W	Y	Y	X	X		2	
OU11-T-31-082122-MS	8/21/22	0935	G	W	Y	Y	X	X		2	
OU11-T-31-082122-MSD	8/21/22	0935	G	W	Y	Y	X	X		2	
OU11-FD01-082122	8/21/22	1530	G	W	Y	N	X	X		2	
EB01-082122	8/21/22	1326	G	W	Y	N	X	X		2	
EB02-082122	8/21/22	1305	G	W	Y	N	X	X		2	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Level IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	J. Spies	8-22-22 / 1610	Jacobs		8/23/22 950	ETA/DEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 194875I, 194875O, 194875Z, 194875J

Cooler Temperature(s) °C and Other Remarks: 1.1, 0.8 1212 CF0.0

Ver: 01/16/2019

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: J. Spies / R Zsamba	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 280-121773-34095 1
Client Contact: Accounts Payable	Phone: 201-956-3896	E-Mail: Patrick.McEntee@et.eurofinsus.com	State of Origin: IA	Page: Page 1 of 1 2 of 2
Company: Jacobs Engineering Group, Inc.	PWSID:	Analysis Requested		Job #:
Address: PO BOX 241329	Due Date Requested:			Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other
City: Denver	TAT Requested (days):			
State, Zip: CO, 80224	Compliance Project: Δ Yes Δ No			
Phone: 618-410-1263(Tel)	PO #: ~~1480209576~~ 1480209942			
Email: usapinvoices@jacobs.com	WO #:			
Project Name: Iowa Army Ammunition Plant RI/FS, IA	Project #: 28022660			
Site: OU11 2022	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Manganese SW6020A	Dissolved Manganese SW6020A	Total Number of containers	Special Instructions/Note
			Preservation Code				DF	DF		
EB01-082222	8/22/22	0705	G	W	Y	N	X	X	2	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify): Level IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
				8/23/22 950	ETA/TGN
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

09/01/2022

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 280-165769-1

Login Number: 165769 **List Source: Eurofins Denver**
List Number: 1
Creator: Roehsner, Karen P

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Shane Lowe
Jacobs Engineering Group, Inc.
501 North Broadway
St. Louis MO 63102

Generated 3/6/2023 5:00 PM Revision 1

JOB DESCRIPTION

Iowa Army Ammunition Plant RI/FS, IA

JOB NUMBER

280-171373-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

Eurofins Denver

Job Notes

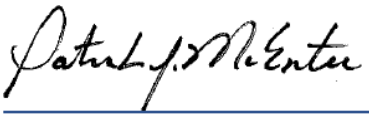
The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization



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Revision 1

Authorized for release by
Patrick J McEntee, Client Service Manager
Patrick.McEntee@et.eurofinsus.com
303 736-0107

Table of Contents

Table of Contents

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: Jacobs Engineering Group, Inc.

Project: Iowa Army Ammunition Plant RI/FS, IA

Report Number: 280-171373-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION 1, MARCH 7, 2023
The report and EDD were revised to correct the sample ID for OU11-FB01-011123 (280-171373-2) to OU11-FD01-011123 (280-171373-2) per client request.

RECEIPT
The samples were received on 1/13/2023 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4º C.

DISSOLVED METALS (ICP/MS)
Samples OU11-T-21-011123 (280-171373-1), OU11-FD01-011123 (280-171373-2) and EB01-011123 (280-171373-3) were analyzed for dissolved metals (ICP/MS) in accordance with 6020A. The samples were prepared on 01/26/2023 and analyzed on 01/27/2023 and 01/31/2023.

Manganese failed the recovery criteria high for the MS of sample OU11-T-21-011123MS (280-171373-1) in batch 280-600712.
Manganese failed the recovery criteria high for the MSD of sample OU11-T-21-011123MSD (280-171373-1) in batch 280-600712.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP/MS)
Samples OU11-T-21-011123 (280-171373-1), OU11-FD01-011123 (280-171373-2) and EB01-011123 (280-171373-3) were analyzed for total metals (ICP/MS) in accordance with 6020A. The samples were prepared on 01/23/2023 and analyzed on 01/24/2023 and 01/25/2023.

The low level continuing calibration verification (CCVL) associated with batch 280-600314 recovered below the lower control limit for Mn. The samples associated with this CCV were >10x the level of the CCVL for the affected analytes; therefore, the data have been reported.

Manganese failed the recovery criteria high for the MSD of sample OU11-T-21-011123MSD (280-171373-1) in batch 280-600314.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID: OU11-T-21-011123 Lab Sample ID: 280-171373-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	620	J1 Q	3.0	1.8	0.51	ug/L	1		6020A	Total/NA
Manganese	660	J1	3.0	1.8	0.51	ug/L	1		6020A	Dissolved

Client Sample ID: OU11-FD01-011123 Lab Sample ID: 280-171373-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	620	Q	3.0	1.8	0.51	ug/L	1		6020A	Total/NA
Manganese	630		3.0	1.8	0.51	ug/L	1		6020A	Dissolved

Client Sample ID: EB01-011123 Lab Sample ID: 280-171373-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.53	J	3.0	1.8	0.51	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: OU11-T-21-011123 — Lab Sample ID: 280-171373-1

Date Collected: 01/11/23 15:30 **Matrix: Water**
Date Received: 01/13/23 09:20

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	620	J1 Q	3.0	1.8	0.51	ug/L		01/24/23 17:03	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	660	J1	3.0	1.8	0.51	ug/L		01/27/23 22:28	1

Client Sample ID: OU11-FD01-011123 — Lab Sample ID: 280-171373-2

Date Collected: 01/11/23 12:30 **Matrix: Water**
Date Received: 01/13/23 09:20

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	620	Q	3.0	1.8	0.51	ug/L		01/24/23 17:09	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	630		3.0	1.8	0.51	ug/L		01/31/23 12:09	1

Client Sample ID: EB01-011123 — Lab Sample ID: 280-171373-3

Date Collected: 01/11/23 07:15 **Matrix: Water**
Date Received: 01/13/23 09:20

Method: SW846 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	1.8	U	3.0	1.8	0.51	ug/L		01/25/23 11:08	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	0.53	J	3.0	1.8	0.51	ug/L		01/31/23 12:10	1

Default Detection Limits

Client: Jacobs Engineering Group, Inc.
Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Method: 6020A - Metals (ICP/MS)

Prep: 3020A

Analyte	LOQ	DL	Units
Manganese	3.0	0.51	ug/L

Method: 6020A - Metals (ICP/MS) - Dissolved

Prep: 3005A

Analyte	LOQ	DL	Units
Manganese	3.0	0.51	ug/L

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-599874/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600373 — **Prep Batch: 599874**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	1.8	U	3.0	1.8	0.51	ug/L		01/25/23 11:05	1

Lab Sample ID: LCS 280-599874/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600373 — **Prep Batch: 599874**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	40.0	40.6		ug/L		102	87 - 115

Lab Sample ID: 280-171373-1 MS — **Client Sample ID: OU11-T-21-011123**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600314 — **Prep Batch: 599874**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	620	J1 Q	40.0	661	Q 4	ug/L		98	87 - 115

Lab Sample ID: 280-171373-1 MSD — **Client Sample ID: OU11-T-21-011123**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600314 — **Prep Batch: 599874**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	620	J1 Q	40.0	680	Q 4	ug/L		145	87 - 115	3	20

Lab Sample ID: MB 280-600236/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 600712 — **Prep Batch: 600236**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	1.8	U	3.0	1.8	0.51	ug/L		01/27/23 22:24	1

Lab Sample ID: LCS 280-600236/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 600712 — **Prep Batch: 600236**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	40.0	42.5		ug/L		106	87 - 115

Lab Sample ID: 280-171373-1 MS — **Client Sample ID: OU11-T-21-011123**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 600712 — **Prep Batch: 600236**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	660	J1	40.0	708	4	ug/L		127	87 - 115

Lab Sample ID: 280-171373-1 MSD — **Client Sample ID: OU11-T-21-011123**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 600712 — **Prep Batch: 600236**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	660	J1	40.0	714	4	ug/L		143	87 - 115	1	20

Metals

Prep Batch: 599874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-1	OU11-T-21-011123	Total/NA	Water	3020A	
280-171373-2	OU11-FD01-011123	Total/NA	Water	3020A	
280-171373-3	EB01-011123	Total/NA	Water	3020A	
MB 280-599874/1-A	Method Blank	Total/NA	Water	3005A	
LCS 280-599874/2-A	Lab Control Sample	Total/NA	Water	3005A	
280-171373-1 MS	OU11-T-21-011123	Total/NA	Water	3020A	
280-171373-1 MSD	OU11-T-21-011123	Total/NA	Water	3020A	

Prep Batch: 600236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-1	OU11-T-21-011123	Dissolved	Water	3005A	
280-171373-2	OU11-FD01-011123	Dissolved	Water	3005A	
280-171373-3	EB01-011123	Dissolved	Water	3005A	
MB 280-600236/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-600236/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-171373-1 MS	OU11-T-21-011123	Dissolved	Water	3005A	
280-171373-1 MSD	OU11-T-21-011123	Dissolved	Water	3005A	

Analysis Batch: 600314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-1	OU11-T-21-011123	Total/NA	Water	6020A	599874
280-171373-2	OU11-FD01-011123	Total/NA	Water	6020A	599874
280-171373-1 MS	OU11-T-21-011123	Total/NA	Water	6020A	599874
280-171373-1 MSD	OU11-T-21-011123	Total/NA	Water	6020A	599874

Analysis Batch: 600373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-3	EB01-011123	Total/NA	Water	6020A	599874
MB 280-599874/1-A	Method Blank	Total/NA	Water	6020A	599874
LCS 280-599874/2-A	Lab Control Sample	Total/NA	Water	6020A	599874

Analysis Batch: 600712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-1	OU11-T-21-011123	Dissolved	Water	6020A	600236
MB 280-600236/1-A	Method Blank	Total Recoverable	Water	6020A	600236
LCS 280-600236/2-A	Lab Control Sample	Total Recoverable	Water	6020A	600236
280-171373-1 MS	OU11-T-21-011123	Dissolved	Water	6020A	600236
280-171373-1 MSD	OU11-T-21-011123	Dissolved	Water	6020A	600236

Analysis Batch: 600899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-171373-2	OU11-FD01-011123	Dissolved	Water	6020A	600236
280-171373-3	EB01-011123	Dissolved	Water	6020A	600236

Lab Chronicle

Client: Jacobs Engineering Group, Inc. Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID: OU11-T-21-011123 Lab Sample ID: 280-171373-1

Date Collected: 01/11/23 15:30 **Matrix: Water**
Date Received: 01/13/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	600236	01/26/23 09:30	PFM	EET DEN
Dissolved	Analysis	6020A		1			600712	01/27/23 22:28	LRD	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	599874	01/23/23 08:20	LJS	EET DEN
Total/NA	Analysis	6020A		1			600314	01/24/23 17:03	LMT	EET DEN

Client Sample ID: OU11-FD01-011123 Lab Sample ID: 280-171373-2

Date Collected: 01/11/23 12:30 **Matrix: Water**
Date Received: 01/13/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	600236	01/26/23 09:30	PFM	EET DEN
Dissolved	Analysis	6020A		1			600899	01/31/23 12:09	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	599874	01/23/23 08:20	LJS	EET DEN
Total/NA	Analysis	6020A		1			600314	01/24/23 17:09	LMT	EET DEN

Client Sample ID: EB01-011123 Lab Sample ID: 280-171373-3

Date Collected: 01/11/23 07:15 **Matrix: Water**
Date Received: 01/13/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	600236	01/26/23 09:30	PFM	EET DEN
Dissolved	Analysis	6020A		1			600899	01/31/23 12:10	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	599874	01/23/23 08:20	LJS	EET DEN
Total/NA	Analysis	6020A		1			600373	01/25/23 11:08	LMT	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
Iowa	State	IA#370	12-01-24

Method Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
3020A	Preparation, Total Metals	SW846	EET DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Jacobs Engineering Group, Inc. Job ID: 280-171373-1
Project/Site: Iowa Army Ammunition Plant RI/FS, IA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-171373-1	OU11-T-21-011123	Water	01/11/23 15:30	01/13/23 09:20
280-171373-2	OU11-FD01-011123	Water	01/11/23 12:30	01/13/23 09:20
280-171373-3	EB01-011123	Water	01/11/23 07:15	01/13/23 09:20

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ms 77 cal std_02896	01/25/23	01/24/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
.CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 cal std_02899	01/28/23	01/27/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
.CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 cal std_02900	01/31/23	01/30/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
.CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 ccv_02904	01/25/23	01/24/23	5%HNO3/5% HCl, Lot 222846/221613	200 mL	ms 77 cal std_02896	100 mL	Manganese	50 ug/L
.ms 77 cal std_02896	01/25/23	01/24/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
..CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 ccv_02907	01/28/23	01/27/23	5%HNO3/5% HCl, Lot 222846/221613	200 mL	ms 77 cal std_02899	100 mL	Manganese	50 ug/L
.ms 77 cal std_02899	01/28/23	01/27/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
..CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 ccv_02908	01/31/23	01/30/23	5%HNO3/5% HCl, Lot 222846/221613	200 mL	ms 77 cal std_02900	100 mL	Manganese	50 ug/L
.ms 77 cal std_02900	01/31/23	01/30/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	CAL STD 1_00002	0.25 mL	Manganese	100 ug/L
..CAL STD 1_00002	06/27/23		CPI, Lot 1148545-1		(Purchased Reagent)		Manganese	100 mg/L
ms 77 icsa_00664	01/27/23	01/20/23	5%HNO3/5% HCl, Lot 212725/22c66200	100 mL	MS ICSA STOCK_00050	5 mL	Al	100 mg/L
							Ca	100 mg/L
							Fe	100 mg/L
							K	100 mg/L
							Mg	100 mg/L
							Mo	2 mg/L
							Na	100 mg/L
					MS ICSA STOCK_00051	5 mL	Al	100 mg/L
							Ca	100 mg/L
							Fe	100 mg/L
							K	100 mg/L
							Mg	100 mg/L
							Mo	2 mg/L
							Na	100 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
.MS ICSA STOCK_00051	04/20/24		CPI, Lot 1267033-1		(Purchased Reagent)		Al	1000 mg/L

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
ms 77 icsa_00665	02/03/23	01/27/23	5%HNO3/5% HCl, Lot 212725/22c66200	100 mL	MS ICSA STOCK_00050	5 mL	Al	100 mg/L
							Ca	100 mg/L
							Fe	100 mg/L
							K	100 mg/L
							Mg	100 mg/L
							Mo	2 mg/L
							Na	100 mg/L
					MS ICSA STOCK_00051	5 mL	Al	100 mg/L
							Ca	100 mg/L
							Fe	100 mg/L
							K	100 mg/L
							Mg	100 mg/L
							Mo	2 mg/L
							Na	100 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
.MS ICSA STOCK_00051	04/20/24		CPI, Lot 1267033-1		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
ms 77 icsab_00659	01/27/23	01/20/23	5%HNO3/5% HCl, Lot 222846/221613	100 mL	ICV MIX-1a_00001	0.1 mL	As	0.1 mg/L
							Ba	0.1 mg/L
							Be	0.1 mg/L
							Cd	0.1 mg/L
							Co	0.1 mg/L
							Cr	0.1 mg/L
							Cu	0.1 mg/L
							Manganese	0.1 mg/L
							Ni	0.1 mg/L
							Pb	0.1 mg/L
							Se	0.1 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sr	0.2 mg/L
							Tl	0.1 mg/L
							V	0.1 mg/L
					ICV MIX-1B_00001	0.1 mL	Mo	2.1 mg/L
							Sb	0.1 mg/L
							Sn	0.1 mg/L
					MS ICSA STOCK_00050	10 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Mo	2.1 mg/L
							Na	107 mg/L
					MS ICVMIX--3_00005	0.1 mL	U	0.1 mg/L
					MS ICVMIX--5_00002	0.1 mL	Ag	0.1 mg/L
							Ca	107 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Na	107 mg/L
							Sr	0.2 mg/L
							Th	0.1 mg/L
							Zn	0.1 mg/L
					MS ICVMIX-2_00005	0.1 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Na	107 mg/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L
							Cu	100 mg/L
							Manganese	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Se	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.ICV MIX-1B_00001	08/05/23		IV, Lot t2-meb722099		(Purchased Reagent)		Mo	100 mg/L
							Sb	100 mg/L
							Sn	100 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
.MS ICVMIX--3_00005	03/10/23		CPI, Lot 1072838-1		(Purchased Reagent)		U	100 mg/L
.MS ICVMIX--5_00002	08/01/23		IV, Lot t2-meb721663		(Purchased Reagent)		Ag	100 mg/L
							Ca	5000 mg/L
							K	5000 mg/L
							Mg	5000 mg/L
							Na	5000 mg/L
							Sr	100 mg/L
							Th	100 mg/L
							Zn	100 mg/L
.MS ICVMIX-2_00005	05/16/23		CPI, Lot 1146029-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L
							K	2000 mg/L
							Mg	2000 mg/L
							Na	2000 mg/L
ms 77 icsab_00660	02/03/23	01/27/23	5%HNO3/5% HCl, Lot 222846/221613	100 mL	ICV MIX-1a_00001	0.1 mL	As	0.1 mg/L
							Ba	0.1 mg/L
							Be	0.1 mg/L
							Cd	0.1 mg/L
							Co	0.1 mg/L
							Cr	0.1 mg/L
							Cu	0.1 mg/L
							Manganese	0.1 mg/L
							Ni	0.1 mg/L
							Pb	0.1 mg/L
							Se	0.1 mg/L
							Sr	0.2 mg/L
							Tl	0.1 mg/L
							V	0.1 mg/L
					ICV MIX-1B_00001	0.1 mL	Mo	2.1 mg/L
							Sb	0.1 mg/L
							Sn	0.1 mg/L
					MS ICSA STOCK_00050	10 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Mo	2.1 mg/L
							Na	107 mg/L
					MS ICVMIX--3_00005	0.1 mL	U	0.1 mg/L
					MS ICVMIX--5_00002	0.1 mL	Ag	0.1 mg/L
							Ca	107 mg/L
							K	107 mg/L

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg	107 mg/L
							Na	107 mg/L
							Sr	0.2 mg/L
							Th	0.1 mg/L
							Zn	0.1 mg/L
					MS ICVMIX-2_00005	0.1 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Na	107 mg/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L
							Cu	100 mg/L
							Manganese	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Se	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.ICV MIX-1B_00001	08/05/23		IV, Lot t2-meb722099		(Purchased Reagent)		Mo	100 mg/L
							Sb	100 mg/L
							Sn	100 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
.MS ICVMIX--3_00005	03/10/23		CPI, Lot 1072838-1		(Purchased Reagent)		U	100 mg/L
.MS ICVMIX--5_00002	08/01/23		IV, Lot t2-meb721663		(Purchased Reagent)		Ag	100 mg/L
							Ca	5000 mg/L
							K	5000 mg/L
							Mg	5000 mg/L
							Na	5000 mg/L
							Sr	100 mg/L
							Th	100 mg/L
							Zn	100 mg/L
.MS ICVMIX-2_00005	05/16/23		CPI, Lot 1146029-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L
							K	2000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg	2000 mg/L
							Na	2000 mg/L
ms 77 icsab_00661	02/06/23	01/30/23	5%HNO3/5% HCl, Lot 222846/221613	100 mL	ICV MIX-1a_00001	0.1 mL	As	0.1 mg/L
							Ba	0.1 mg/L
							Be	0.1 mg/L
							Cd	0.1 mg/L
							Co	0.1 mg/L
							Cr	0.1 mg/L
							Cu	0.1 mg/L
							Manganese	0.1 mg/L
							Ni	0.1 mg/L
							Pb	0.1 mg/L
							Se	0.1 mg/L
							Sr	0.2 mg/L
							Tl	0.1 mg/L
							V	0.1 mg/L
					ICV MIX-1B_00001	0.1 mL	Mo	2.1 mg/L
							Sb	0.1 mg/L
							Sn	0.1 mg/L
					MS ICSA STOCK_00050	10 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Mo	2.1 mg/L
							Na	107 mg/L
					MS ICVMIX--3_00005	0.1 mL	U	0.1 mg/L
					MS ICVMIX--5_00002	0.1 mL	Ag	0.1 mg/L
							Ca	107 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Na	107 mg/L
							Sr	0.2 mg/L
							Th	0.1 mg/L
							Zn	0.1 mg/L
					MS ICVMIX-2_00005	0.1 mL	Al	102 mg/L
							Ca	107 mg/L
							Fe	102 mg/L
							K	107 mg/L
							Mg	107 mg/L
							Na	107 mg/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cu	100 mg/L
							Manganese	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Se	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.ICV MIX-1B_00001	08/05/23		IV, Lot t2-meb722099		(Purchased Reagent)		Mo	100 mg/L
							Sb	100 mg/L
							Sn	100 mg/L
.MS ICSA STOCK_00050	08/01/23		IV, Lot s2-meb706044		(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
.MS ICVMIX--3_00005	03/10/23		CPI, Lot 1072838-1		(Purchased Reagent)		U	100 mg/L
.MS ICVMIX--5_00002	08/01/23		IV, Lot t2-meb721663		(Purchased Reagent)		Ag	100 mg/L
							Ca	5000 mg/L
							K	5000 mg/L
							Mg	5000 mg/L
							Na	5000 mg/L
							Sr	100 mg/L
							Th	100 mg/L
							Zn	100 mg/L
.MS ICVMIX-2_00005	05/16/23		CPI, Lot 1146029-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L
							K	2000 mg/L
							Mg	2000 mg/L
							Na	2000 mg/L
ms 77 icv_02906	01/25/23	01/24/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	ICV MIX-1a_00001	0.1 mL	Manganese	40 ug/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		Manganese	100 mg/L
ms 77 icv_02909	01/28/23	01/27/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	ICV MIX-1a_00001	0.1 mL	Manganese	40 ug/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		Manganese	100 mg/L
ms 77 icv_02910	01/31/23	01/30/23	2%HNO3/0.5% HCl, Lot 222846/222836	250 mL	ICV MIX-1a_00001	0.1 mL	Manganese	40 ug/L
.ICV MIX-1a_00001	08/09/23		IV, Lot t2-meb722098		(Purchased Reagent)		Manganese	100 mg/L
MS 77 LLCCV_02723	01/25/23	01/24/23	5%HNO3/5% HCl, Lot 222846/2228367	100 mL	MS LLCCV_00007	1 mL	Manganese	0.001 mg/L
.MS LLCCV_00007	09/30/23		CPI, Lot 220602		(Purchased Reagent)		Manganese	0.1 mg/L
MS 77 LLCCV_02726	01/28/23	01/27/23	5%HNO3/5% HCl, Lot 222846/2228367	100 mL	MS LLCCV_00007	1 mL	Manganese	0.001 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS LLCCV_00007	09/30/23	CPI, Lot 220602			(Purchased Reagent)		Manganese	0.1 mg/L
MS 77 LLCCV_02727	01/31/23	01/30/23	5%HNO3/5% HCl, Lot 222846/2228367	100 mL	MS LLCCV_00007	1 mL	Manganese	0.001 mg/L
.MS LLCCV_00007	09/30/23	CPI, Lot 220602			(Purchased Reagent)		Manganese	0.1 mg/L
MS 79 alt Mn_00007	01/31/23	01/30/23	5%HNO3/5% HCl, Lot 222846/2228367	50 mL	1 ppm Mn_00019	0.1 mL	Manganese	0.002 mg/L
.1 ppm Mn_00019	07/11/23	01/11/23	1% HNO3, Lot 22A2562002	50 mL	1000 Mn_00023	0.05 mL	Manganese	1 mg/L
..1000 Mn_00023	04/20/24	CPI, Lot 1137585-76			(Purchased Reagent)		Manganese	1000 mg/L
ms pds1 cpi_00009	02/26/23	11/28/22	1% HNO3, Lot 215109	100 mL	MS icvMIX-1_00005	20 mL	Manganese	20 mg/L
.MS icvMIX-1_00005	02/26/23	CPI, Lot 1128717-1			(Purchased Reagent)		Manganese	100 mg/L
ms spike 1_00015	03/12/23	09/12/22	1% HNO3, Lot 215109	500 mL	CALSTD-1_00002	100 mL	As	20000 ug/L
							Ba	20000 ug/L
							Be	20000 ug/L
							Cd	20000 ug/L
							Co	20000 ug/L
							Cr	20000 ug/L
							Cu	20000 ug/L
							Li	20000 ug/L
							Manganese	20000 ug/L
							Mo	20000 ug/L
							Ni	20000 ug/L
							Pb	20000 ug/L
							Sb	20000 ug/L
							Se	20000 ug/L
							Si	200000 ug/L
							SiO2	428000 ug/L
							Sn	20000 ug/L
							Sr	20000 ug/L
							Tl	20000 ug/L
							V	20000 ug/L
					MS CALSTD-2_00103	100 mL	Al	400000 ug/L
							Ca	400000 ug/L
							Fe	400000 ug/L
							K	400000 ug/L
							Mg	400000 ug/L
							Na	400000 ug/L
.CALSTD-1_00002	08/08/23	CPI, Lot 1148545-1			(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L
							Cu	100 mg/L
							Li	100 mg/L
							Manganese	100 mg/L
							Mo	100 mg/L
							Ni	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pb	100 mg/L
							Sb	100 mg/L
							Se	100 mg/L
							Si	1000 mg/L
							SiO2	2140 mg/L
							Sn	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.MS CALSTD-2_00103	01/26/24		CPI, Lot 1208136-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L
							K	2000 mg/L
							Mg	2000 mg/L
							Na	2000 mg/L
ms spike 1_00017	07/10/23	01/10/23	1% HNO3, Lot 215109	500 mL	CALSTD-1_00002	100 mL	As	20000 ug/L
							Ba	20000 ug/L
							Be	20000 ug/L
							Cd	20000 ug/L
							Co	20000 ug/L
							Cr	20000 ug/L
							Cu	20000 ug/L
							Li	20000 ug/L
							Manganese	20000 ug/L
							Mo	20000 ug/L
							Ni	20000 ug/L
							Pb	20000 ug/L
							Sb	20000 ug/L
							Se	20000 ug/L
							Si	200000 ug/L
							SiO2	428000 ug/L
							Sn	20000 ug/L
							Sr	20000 ug/L
							Tl	20000 ug/L
							V	20000 ug/L
					MS CALSTD-2_00103	100 mL	Al	400000 ug/L
							Ca	400000 ug/L
							Fe	400000 ug/L
							K	400000 ug/L
							Mg	400000 ug/L
							Na	400000 ug/L
.CALSTD-1_00002	08/08/23		CPI, Lot 1148545-1		(Purchased Reagent)		As	100 mg/L
							Ba	100 mg/L
							Be	100 mg/L
							Cd	100 mg/L
							Co	100 mg/L
							Cr	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cu	100 mg/L
							Li	100 mg/L
							Manganese	100 mg/L
							Mo	100 mg/L
							Ni	100 mg/L
							Pb	100 mg/L
							Sb	100 mg/L
							Se	100 mg/L
							Si	1000 mg/L
							SiO2	2140 mg/L
							Sn	100 mg/L
							Sr	100 mg/L
							Tl	100 mg/L
							V	100 mg/L
.MS CALSTD-2_00103	01/26/24		CPI, Lot 1208136-1		(Purchased Reagent)		Al	2000 mg/L
							Ca	2000 mg/L
							Fe	2000 mg/L
							K	2000 mg/L
							Mg	2000 mg/L
							Na	2000 mg/L
MS spike 2_00104	03/13/23	11/28/22	1% HNO3, Lot 275002	500 mL	1000 Ag_00018	10 mL	Ag	20 mg/L
					1000 Sr_00015	10 mL	Sr	20 mg/L
					1000 U_00043	10 mL	U	20 mg/L
					1000 Zn_00028	10 mL	Zn	20 mg/L
					10000 Th_00027	1 mL	Th	20 mg/L
.1000 Ag_00018	03/27/24		CPI, Lot 1211976-35		(Purchased Reagent)		Ag	1000 mg/L
.1000 Sr_00015	03/13/23		CPI, Lot 1096004-19		(Purchased Reagent)		Sr	1000 mg/L
.1000 U_00043	05/16/23		CPI, Lot 1062807-9		(Purchased Reagent)		U	1000 mg/L
.1000 Zn_00028	09/24/23		CPI, Lot 1095528-109		(Purchased Reagent)		Zn	1000 mg/L
.10000 Th_00027	09/24/23		CPI, Lot 1161822-1		(Purchased Reagent)		Th	10000 mg/L

Reagent

1000 Ag_00018

CPI INTERNATIONAL

7396303
ID: 1000 Ag_00018
Exp:03/27/24 Prpd:LRD Opn:10/06/22
1000 Ag CPI

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-1000511

SE Std Silver (Ag) – 1000 µg/mL

Product Lot #: 1211976-35

Matrix: 5% HNO_3

Source Material Lot #: X24E070

Element	Certified Concentration & Uncertainty
Ag	1006 ± 2 µg/mL (w/v)
	999.0 ± 2.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure silver (Ag) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #160729**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	0.6	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	0.6	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 27, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements
  (Registrar: TUV NORD)

Reagent

1000 Mn_00023

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Manganese (Mn) – 1000 µg/mL

Matrix: 5% HNO_3

7510810
ID: 1000 Mn_00023
Exp:04/20/24 Prpd:LRD Opn:12/13/22
1000 Mn CPI

Product #: TA-1000321

Production Lot #: 1137585-76

Source Material Lot #: MND052018A1

Element	Certified Concentration & Uncertainty
Mn	1010 ± 5 µg/mL (w/v)
	1005 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.98% pure manganese (Mn) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3132, lot #050429**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	13	Cs	<0.5	Hf	<0.2	Mg	30	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	12	Hg	<0.5	Mn	MAJOR	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	0.6	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

October 20, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

1000 Sr_00015

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Strontium (Sr) – 1000 µg/mL

Matrix: 5% HNO_3

6969200
ID: 1000 Sr_00015
Exp:03/13/23 Prpd:PNS Opn:12/01/21
1000 Sr CPI

Product #: TA-1000531

Lot #: 1096004-19

Source Material Lot #: SRZ082018A1

Element	Certified Concentration & Uncertainty
Sr	997.0 ± 6.0 µg/mL (w/v)
	993.0 ± 6.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	2	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	104	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	3
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	2	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	0.6	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 13, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

1000 u_00043

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Uranium (U) – 1000 µg/mL

Matrix: 5% HNO_3

Product #: TA-1000641

Product Lot #: 1112440-6

Source Material Lot #: AP18-81UX

Element	Certified Concentration & Uncertainty
U	996.0 ± 5.0 µg/mL (w/v)
	990.0 ± 5.0 µg/g (w/w)

7023033
ID: 1000 U_00043
Exp:05/15/23 Prpd:MAB Opn:01/14/22
1000 U CPI

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001, ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% Uranyl (VI) Nitrate Hexahydrate dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 10M64-1D, lot# 1733101**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	2	Hf	<0.2	Mg	<5	Pb	4	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	54	Pt	<0.5	Sm	<0.2	V	<1
Ba	5	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 16, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This RM was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

1000 Zn_00028

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Zinc (Zn) – 1000 µg/mL

Matrix: 5% HNO_3

7084653
ID: 1000 Zn_00028
Exp:09/24/23 Prpd:LRD Opn:03/07/22
1000 Zn CPI

Product #: TA-1000681

Lot #: 1095528-109

Source Material Lot #: L17Y005/Y28D045

Element	Certified Concentration & Uncertainty
Zn	998 ± 2 µg/mL (w/v)
	989 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	3	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 24, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

10000 Th_00027

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous RM

Thorium (Th) – 10,000 µg/mL

Matrix: 3% HNO_3

7084654
ID: 10000 Th_00027
Exp:09/24/23 Prpd:LRD Opn:03/07/22
10,000 Th CPI

Product #: S4400-10M591

Lot #: 1161822-1

Element	Certified Concentration & Uncertainty
Th	9971 ± 49 µg/mL (w/v)
	9064 ± 44 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to, **ISO 17034**, **ISO/IEC 17025** and **ISO 9001**. This RM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using pure thorium nitrate [$Th(NO_3)_4$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable method against an alternate lot as NIST SRM is not available. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	7	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	5	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	15	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	17	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	31	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 24, 2022
Certification Date

USA
5580 Skylane Boulevard P: 707.525.5788
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F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034:2016 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025:2017 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001:2015 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

Reagent

CAL STD 1_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

ICP ICPMS CAL Mix # 1

7043158
ID: ICP CAL STD 1_00013
Exp: 06/27/23 Prpd: LRD
ICP CAL STD 1 PRIMARY

Product #: TA-CAL1

Lot #: 1148545-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.98 ± 0.50 mg/L	Li	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.1 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Sr	99.98 ± 0.50 mg/L
Cd	100.1 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.1 ± 0.5 mg/L
Co	99.96 ± 0.50 mg/L	Pb	99.96 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.91 ± 0.50 mg/L	Sb	100.1 ± 0.5 mg/L	V	99.98 ± 0.50 mg/L
Cu	99.96 ± 0.50 mg/L	Se	99.97 ± 0.50 mg/L		

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
As	992330R	Li	170238	Si	1004988
Ba	994427	Mn	985946	Sn	1031164
Be	992601	Mo	1086465	Sr	1051374
Cd	173172	Ni	1070210R	Ti	984754
Co	983064	Pb	983061	Tl	1059794
Cr	1099019	Sb	660984R	V	154977
Cu	1140336R	Se	993619		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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The Netherlands

www.cpiinternational.com

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

December 27, 2021
Certification Date

Safety Data Sheet (SDS).

:o be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35.
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neity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing
:ainties.

rnational for further information about this material.

)ared under a quality management system that is registered/accredited to the following:
Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of

ıdditional requirements specified in ISO Guide 31 and ISO Guide 35
al Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and

ment Systems, Certificate Registration No. 56 100 19560101 – Requirements

T SRMs:

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3^-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163

Reagent

CALSTD-1_00002

CPI INTERNATIONAL

7150070
ID: CALSTD-1_00002
Exp:06/08/23 Prpd:LMT Opn:04/18/22
ICP-MS Cal Std 1 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1

ICP ICPMS CAL Mix # 1

Lot #: 1148545-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.98 ± 0.50 mg/L	Li	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.1 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Sr	99.98 ± 0.50 mg/L
Cd	100.1 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.1 ± 0.5 mg/L
Co	99.96 ± 0.50 mg/L	Pb	99.96 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.91 ± 0.50 mg/L	Sb	100.1 ± 0.5 mg/L	V	99.98 ± 0.50 mg/L
Cu	99.96 ± 0.50 mg/L	Se	99.97 ± 0.50 mg/L		

Source Material Lot # Chart

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Cr	1099019	Sb	660984R	V	154977
Cu	1140336R	Se	993619		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

February 8, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br-	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl-	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

ICV MIX-1a_00001

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

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inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-67795-A
Lot Number:	T2-MEB722098
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	100 µg/mL ea:

Arsenic, Barium,
Beryllium, Cadmium,
Cobalt, Chromium,
Copper, Lithium,
Manganese, Nickel,
Lead, Selenium,
Strontium, Thallium,
Vanadium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**100.0 ± 0.6 µg/mL**	**Barium, Ba**	**100.0 ± 0.4 µg/mL**
Beryllium, Be	**100.1 ± 0.5 µg/mL**	**Cadmium, Cd**	**100.0 ± 0.4 µg/mL**
Chromium, Cr	**100.0 ± 0.5 µg/mL**	**Cobalt, Co**	**100.0 ± 0.4 µg/mL**
Copper, Cu	**100.0 ± 0.4 µg/mL**	**Lead, Pb**	**100.0 ± 0.6 µg/mL**
Lithium, Li	**100.0 ± 0.4 µg/mL**	**Manganese, Mn**	**100.0 ± 0.5 µg/mL**
Nickel, Ni	**100.0 ± 0.6 µg/mL**	**Selenium, Se**	**100.0 ± 0.7 µg/mL**
Strontium, Sr	**100.0 ± 0.4 µg/mL**	**Thallium, Tl**	**100.0 ± 0.6 µg/mL**
Vanadium, V	**100.0 ± 0.4 µg/mL**		

Density: 1.031 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	traceable to 3103a	R2-AS691113
Ba	ICP Assay	3104a	140909
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	IC Assay	3165	160906
V	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 28, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 28, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

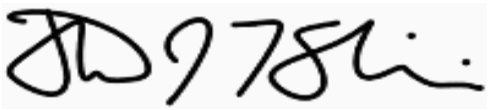
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

ICV MIX-1B_00001

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Certificate of Analysis

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-5065
Lot Number:	T2-MEB722099
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Silicon, 100 µg/mL ea: Tin, Titanium, Molybdenum, Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**100.0 ± 0.8 µg/mL**	**Molybdenum, Mo**	**100.0 ± 0.7 µg/mL**
Silicon, Si	**1 000 ± 6 µg/mL**	**Tin, Sn**	**100.0 ± 0.7 µg/mL**
Titanium, Ti	**100.0 ± 0.7 µg/mL**		

Density: 1.030 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 28, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 28, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

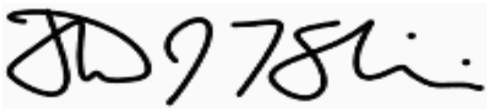
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS CALSTD-2_00103

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL2

ICP ICPMS CAL Mix # 2

7361018
ID: MS CALSTD-2_00103
Exp:01/26/24 Prpd: Opn:09/12/22
MS CAL STD 2

Lot #: 1208136-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	1077624	Fe	1114543	Mg	1075231
Ca	1121798	K	1156013	Na	1122654

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 26, 2022
Certification Date

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM
Ag	3151	-
Al	3101a	-
As	3103a	3103a
Au	3121	-
B	3107	3107
Ba	3104a	-
Be	3105a	3105a
Bi	3106	3106
Br^-	3184	-
Ca	3109a	3109a
Cd	3108	-
Ce	3110	3110
Cl^-	3182	1818a
Co	3113	3113
Cr	3112a	-
Cs	3111a	-
Cu	3114	-
Dy	3115a	-
Er	3116a	-
Eu	3117a	-
F^-	3183	-
Fe	3126a	-
Ga	3119a	-
Gd	3118a	-
Ge	3120a	-

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3^-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-
PO_4^{-3}	3186	-
Pr	3142a	-
Pt	3140	3140
Rb	3145a	-
Re	3143	-
Rh	3144	3144

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163
Y	3167a	3167a
Yb	3166a	-
Zn	3168a	3168a
Zr	3169	3169

Reagent

MS ICSA STOCK_00050

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	S2-MEB706044
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride, 2 000 µg/mL ea: Carbon, 1 000 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur, 20 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	**1 000 ± 3 µg/mL**	**Calcium, Ca**	**1 000 ± 4 µg/mL**
Carbon, C	**2 001 ± 4 µg/mL**	**Chloride, Cl**	**10 000.0 ± 50.0 µg/mL**
Iron, Fe	**1 000 ± 4 µg/mL**	**Magnesium, Mg**	**1 000 ± 4 µg/mL**
Molybdenum, Mo	**20.01 ± 0.12 µg/mL**	**Phosphorus, P**	**1 000 ± 6 µg/mL**
Potassium, K	**1 000 ± 4 µg/mL**	**Sodium, Na**	**1 000 ± 4 µg/mL**
Sulfur, S	**1 000 ± 4 µg/mL**	**Titanium, Ti**	**20.01 ± 0.14 µg/mL**

Density: 1.031 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000260	O	Cu	<	0.007300	M	La	<	0.000120	M	Pr	<	0.000010	M	Ta		0.000230
s	Al	<		M	Dy	<	0.000360	O	Li		0.002200	M	Pt	<	0.000120	M	Tb	<	0.000040
O	As	<	0.029000	M	Er	<	0.000040	M	Lu	<	0.000010	M	Rb		0.052000	M	Te	<	0.000860
M	Au	<	0.000240	M	Eu	<	0.000010	s	Mg	<		M	Re	<	0.000040	M	Th	<	0.000060
M	B	<	0.007400	s	Fe	<		M	Mn		0.002400	M	Rh	<	0.000080	s	Ti	<	
M	Ba		0.004600	M	Ga		0.026000	s	Mo	<		M	Ru	<	0.000290	M	Tl	<	0.000050
M	Be	<	0.000070	M	Gd	<	0.000100	s	Na	<		s	S	<		M	Tm	<	0.000010
M	Bi	<	0.000220	M	Ge	<	0.003100	M	Nb	<	0.000100	M	Sb		0.000540	M	U		0.000180
s	Ca	<		M	Hf	<	0.000100	M	Nd	<	0.000040	O	Sc	<	0.000520	O	V	<	0.002900
O	Cd	<	0.001100	M	Hg	<	0.000260	O	Ni		0.002500	M	Se	<	0.002400	M	W		0.001600
M	Ce	<	0.000220	M	Ho	<	0.000100	M	Os	<	0.000020	M	Si	<	0.024000	M	Y	<	0.000120
M	Co		0.002200	M	In	<	0.000260	s	P	<		M	Sm	<	0.000080	M	Yb	<	0.000020
M	Cr		0.020000	M	Ir	<	0.000010	M	Pb		0.000480	M	Sn		0.000430	M	Zn		0.005600
M	Cs		0.000700	s	K	<		M	Pd	<	0.000060	O	Sr		0.005800	M	Zr		0.000960

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 06, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 06, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

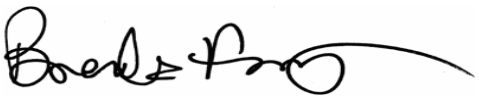
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS ICSA STOCK_00051

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

ICPMS ICSA Mix

7510937

ID: MS ICSA STOCK_00051
Exp:04/20/24 Prpd:LR0 Opn:12/13/22
ICP-MS ICS-0A STOCK SOLUT

Product #: TA-ICPMS-ICSA

Lot #: 1267033-1

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Na	1000 ± 5 mg/L
C	2000 ± 10 mg/L	K	1000 ± 5 mg/L	P	1000 ± 5 mg/L
Ca	1000 ± 5 mg/L	Mg	1000 ± 5 mg/L	S	1000 ± 5 mg/L
Cl	10,000 ± 50 mg/L	Mo	19.99 ± 0.10 mg/L	Ti	20.00 ± 0.10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	1249289	Fe	1249266	Na	1245609
C	R11H037	K	1156013	P	1225600
Ca	1232112	Mg	1075231	S	1207779
Cl	220348	Mo	1207790	Ti	1094307

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	MAJOR	Sb	<0.5	Te	<1
Al	MAJOR	Cs	<0.5	Hf	<0.2	Mg	MAJOR	Pb	<1	Sc	<5	Ti	MAJOR
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	3	Cu	<1	Ho	<0.2	Mo	MAJOR	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	MAJOR	Pt	<0.5	Sm	<0.2	V	<1
Ba	22	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	3	W	<0.5
Bi	<0.2	Eu	<0.2	K	MAJOR	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	MAJOR	Fe	MAJOR	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	18	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

October 20, 2022
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

MS ICVMIX--3_00005

6939098
ID: MS ICVMIX--3_00005
Exp:03/10/23 Prpd:LMT Opn:11/11/21
ICP-MS ICV Std 3 CPI reve

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CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL3-SS

Lot #: 1072838-1

ICP ICPMS CAL Mix # 3

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	1000 ± 5 mg/L	U	100.1 ± 0.5 mg/L
S	1000 ± 5 mg/L	W	100.1 ± 0.5 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #
P	AQ18-51PX	U	AN17-162UX
S	AM17-68SX	W	AH17-138WX

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 10, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
  - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM
Ag	3151	-
Al	3101a	-
As	3103a	3103a
Au	3121	-
B	3107	3107
Ba	3104a	-
Be	3105a	3105a
Bi	3106	3106
Br-	3184	-
Ca	3109a	3109a
Cd	3108	-
Ce	3110	3110
Cl-	3182	1818a
Co	3113	3113
Cr	3112a	-
Cs	3111a	-
Cu	3114	-
Dy	3115a	-
Er	3116a	-
Eu	3117a	-
F-	3183	-
Fe	3126a	-
Ga	3119a	-
Gd	3118a	-
Ge	3120a	-

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-
PO_4^{-3}	3186	-
Pr	3142a	-
Pt	3140	3140
Rb	3145a	-
Re	3143	-
Rh	3144	3144

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163
Y	3167a	3167a
Yb	3166a	-
Zn	3168a	3168a
Zr	3169	3169

Reagent

MS ICVMIX--5_00002

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

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inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	IV-67385
Lot Number:	T2-MEB721663
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 1 000 µg/mL ea: Phosphorus, Boron, 100 µg/mL ea: Silver, Lithium, Strontium, Thorium, Zinc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	**1 000 ± 6 µg/mL**	**Calcium, Ca**	**5 000 ± 22 µg/mL**
Lithium, Li	**100.0 ± 0.4 µg/mL**	**Magnesium, Mg**	**5 000 ± 21 µg/mL**
Phosphorus, P	**1 000 ± 5 µg/mL**	**Potassium, K**	**5 000 ± 22 µg/mL**
Silver, Ag	**100.0 ± 0.4 µg/mL**	**Sodium, Na**	**5 000 ± 22 µg/mL**
Strontium, Sr	**100.0 ± 0.4 µg/mL**	**Thorium, Th**	**100.0 ± 0.5 µg/mL**
Zinc, Zn	**100.0 ± 0.4 µg/mL**		

Density: 1.087 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
B	ICP Assay	3107	190605
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Na	ICP Assay	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 19, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 19, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

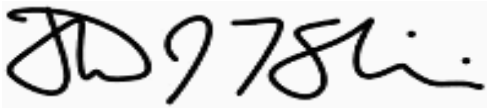
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MS icvMIX-1_00005

CPI INTERNATIONAL

6836948
ID: MS icvMIX-1_00005
Exp:02/26/23 Prpd:LMT Opn:09/13/21
ICP-MS ICV Std 1 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1-SS

ICP ICPMS CAL Mix # 1

Lot #: 1128717-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	99.80 ± 0.50 mg/L	Li	99.89 ± 0.50 mg/L	Si	999.9 ± 5.0 mg/L
Ba	99.98 ± 0.50 mg/L	Mn	99.86 ± 0.50 mg/L	Sn	99.86 ± 0.50 mg/L
Be	100.0 ± 0.5 mg/L	Mo	99.96 ± 0.50 mg/L	Sr	99.97 ± 0.50 mg/L
Cd	99.97 ± 0.50 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	99.99 ± 0.50 mg/L
Co	99.99 ± 0.50 mg/L	Pb	99.98 ± 0.50 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	99.98 ± 0.50 mg/L	Sb	99.97 ± 0.50 mg/L	V	99.89 ± 0.50 mg/L
Cu	99.97 ± 0.50 mg/L	Se	99.99 ± 0.50 mg/L		

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
As	AM18-92ASX	Li	AY18-54LIX	Si	AQ18-71SIX
Ba	AO18-63BAX	Mn	AO18-58MNX	Sn	AI18-100SNX
Be	AQ18-86BEX	Mo	2011930	Sr	AP18-82SRX
Cd	AP18-90CDX	Ni	AQ18-40NIX	Ti	1929801
Co	AQ18-68COX	Pb	AQ18-65PBX	Tl	1927327
Cr	AL18-66CRX	Sb	1916107	V	AM18-32VX
Cu	AV18-101CUX	Se	AO18-110SEX		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see final page)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see final page)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 26, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM
Ag	3151	-
Al	3101a	-
As	3103a	3103a
Au	3121	-
B	3107	3107
Ba	3104a	-
Be	3105a	3105a
Bi	3106	3106
Br-	3184	-
Ca	3109a	3109a
Cd	3108	-
Ce	3110	3110
Cl-	3182	1818a
Co	3113	3113
Cr	3112a	-
Cs	3111a	-
Cu	3114	-
Dy	3115a	-
Er	3116a	-
Eu	3117a	-
F-	3183	-
Fe	3126a	-
Ga	3119a	-
Gd	3118a	-
Ge	3120a	-

Analyte	Aq. SRM	MO SRM
Hf	3122	-
Hg	3133	3133
Ho	3123a	-
In	3124a	3124a
K	3141a	3141a
La	3127a	3127a
Li	3129a	3129a
Lu	3130a	-
Mg	3131a	3131a
Mn	3132	3132
Mo	3134	3134
Na	3152a	-
Nb	3137	-
Nd	3135a	-
Ni	3136	-
NO_3-	3185	-
P	3139a	3139a
Pb	3128	-
Pd	3138	-
PO_4^{-3}	3186	-
Pr	3142a	-
Pt	3140	3140
Rb	3145a	-
Re	3143	-
Rh	3144	3144

Analyte	Aq. SRM	MO SRM
S	3154	2770
Sb	3102a	3102a
Sc	3148a	3148a
Se	3149	3149
Si	3150	-
Sm	3147a	-
Sn	3161a	-
SO_4^{-2}	3181	-
Sr	3153a	3153a
Ta	3155	-
Tb	3157a	-
Te	3156	-
Th	-	-
Ti	3162a	3162a
Tl	3158	3158
Tm	3160a	-
U	3164	-
V	3165	-
W	3163	3163
Y	3167a	3167a
Yb	3166a	-
Zn	3168a	3168a
Zr	3169	3169

Reagent

MS ICVMIX-2_00005

7129049
ID: MS ICVMIX-2_00005
Exp:05/16/23 Prpd:LMT Opn:04/06/22
ICP-MS ICV Std 2 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL2-SS

ICP ICPMS CAL Mix # 2

Lot #: 1146029-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot # Chart

Element	Source Material Lot #	Element	Source Material Lot #	Element	Source Material Lot #
Al	AP18-72ALX	Fe	AR18-89FEX	Mg	AQ18-136MGX
Ca	AZ18-49CAX	K	AY18-96KX	Na	AT18-84NAX

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 16, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for the assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, A2LA Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, A2LA Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements *(Registrar: TUV NORD)*

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	-	Hf	3122	-	S	3154	2770
Al	3101a	-	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	-	Sc	3148a	3148a
Au	3121	-	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	-
Ba	3104a	-	La	3127a	3127a	Sm	3147a	-
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	-
Bi	3106	3106	Lu	3130a	-	SO_4^{-2}	3181	-
Br	3184	-	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	-
Cd	3108	-	Mo	3134	3134	Tb	3157a	-
Ce	3110	3110	Na	3152a	-	Te	3156	-
Cl	3182	1818a	Nb	3137	-	Th	-	-
Co	3113	3113	Nd	3135a	-	Ti	3162a	3162a
Cr	3112a	-	Ni	3136	-	Tl	3158	3158
Cs	3111a	-	NO_3^-	3185	-	Tm	3160a	-
Cu	3114	-	P	3139a	3139a	U	3164	-
Dy	3115a	-	Pb	3128	-	V	3165	-
Er	3116a	-	Pd	3138	-	W	3163	3163
Eu	3117a	-	PO_4^{-3}	3186	-	Y	3167a	3167a
F-	3183	-	Pr	3142a	-	Yb	3166a	-
Fe	3126a	-	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	-	Rb	3145a	-	Zr	3169	3169
Gd	3118a	-	Re	3143	-			
Ge	3120a	-	Rh	3144	3144			

Reagent

MS LLCCV_00007

CPI INTERNATIONAL

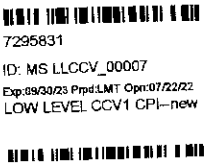
Certificate of Analysis

ICP-MS Low Level CCV

Catalog Number: TA-CM-APR19-DEN2
Lot Number: 220602
Manufacture Date: 07/12/22

Expiration: 09/30/2023
Matrix: 2% HNO3/Tr. HF
Hazards: Irritant, Corrosive

Analyte	Certified Concentration (ppm)
Aluminum (Al)	5.00 ± 0.029
Antimony (Sb)	0.200 ± 0.001
Arsenic (As)	0.500 ± 0.003
Barium (Ba)	0.100 ± 0.001
Beryllium (Be)	0.100 ± 0.001
Boron (B)	0.100 ± 0.001
Cadmium (Cd)	0.100 ± 0.001
Calcium (Ca)	5.00 ± 0.029
Chromium (Cr)	0.200 ± 0.001
Cobalt (Co)	0.100 ± 0.001
Copper (Cu)	0.200 ± 0.001
Iron (Fe)	5.00 ± 0.029
Lead (Pb)	0.100 ± 0.001
Lithium (Li)	1.00 ± 0.006
Magnesium (Mg)	5.00 ± 0.029
Manganese (Mn)	0.100 ± 0.001
Molybdenum (Mo)	0.200 ± 0.001
Nickel (Ni)	0.200 ± 0.001
Potassium (K)	10.0 ± 0.058
Selenium (Se)	0.500 ± 0.003
Silver (Ag)	0.100 ± 0.001
Sodium (Na)	5.00 ± 0.029
Strontium (Sr)	0.100 ± 0.001
Thallium (Tl)	0.100 ± 0.001
Thorium (Th)	0.200 ± 0.001
Tin (Sn)	1.00 ± 0.006
Titanium (Ti)	0.100 ± 0.001
Tungsten (W)	0.500 ± 0.003
Uranium (U)	0.100 ± 0.001
Vanadium (V)	0.500 ± 0.003
Zinc (Zn)	1.00 ± 0.006



CPI INTERNATIONAL

Catalog Number: TA-CM-APR19-DEN2
Lot Number: 220602

Packaging, Storage, Instructions For Use

Store at room temperature (15-30°C).

This certified reference material (CRM) is packaged in HDPE as a whole volume ready to use sample. No secondary preparative steps are necessary. Allow to equilibrate to room temperature before use. Small aliquots should be poured out of the bottle rather than directly pipetted out of bottle in order to prevent contamination or premature degradation. This CRM was manufactured by NSI Lab Solutions following quality procedures meeting the requirements of ISO 9001, ISO 17025, and ISO 17034.

Traceability Information

Analyte Source Materials: The highest purity analyte source materials are used in the manufacture of this CRM.

Method: This CRM was verified by ICP.

Balance: All analytical balances are calibrated on a semiannual basis by an ISO 17025 accredited calibration laboratory and are traceable to NIST. Traceable Calibration Certificate available upon request.

All balances are checked daily by an in-house standard operating procedure. The weights used for this daily verification are calibrated annually by an ISO 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calibration and Traceability available upon request.

Thermometer: All thermometers are NIST traceable through thermometers that are calibrated annually by an ISO 17025 accredited calibration laboratory.

Glassware: All glassware used in the manufacture of our CRMs is Class A. An in-house standard operating procedure is used to verify all glassware prior to it being placed into service. Volumetric pipetors are calibrated every four months by an ISO 17025 accredited calibration laboratory.

Intended Uses

- Calibration of analytical instruments
- Validation of analytical methods
- Preparation of working level reference materials, i.e. "check standards"
- Detection limit studies

Uncertainty

The ± uncertainty associated with the concentration is the expanded manufacturing uncertainty at 95% confidence interval (CI) with K=2.

Homogeneity

This CRM was thoroughly mixed in production and is guaranteed homogeneous.

Ewart Morris

Ewart Morris, Inorganics Technical Manager

Mark Hammersla

Mark Hammersla, President

METALS

COVER PAGE
METALS

Lab Name: Eurofins Denver Job Number: 280-171373-1

SDG No.:

Project: Iowa Army Ammunition Plant RI/FS, IA

Client Sample ID	Lab Sample ID
OU11-T-21-011123	280-171373-1
OU11-FD01-011123	280-171373-2
EB01-011123	280-171373-3

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-T-21-011123 Lab Sample ID: 280-171373-1

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 15:30

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	620	3.0	1.8	0.51	ug/L		J1 Q	1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-T-21-011123 Lab Sample ID: 280-171373-1

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 15:30

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	660	3.0	1.8	0.51	ug/L		J1	1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OU11-FD01-011123 Lab Sample ID: 280-171373-2

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 12:30

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	620	3.0	1.8	0.51	ug/L		Q	1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: OU11-FD01-011123 Lab Sample ID: 280-171373-2

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 12:30

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	630	3.0	1.8	0.51	ug/L			1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: EB01-011123 Lab Sample ID: 280-171373-3

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 07:15

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	1.8	3.0	1.8	0.51	ug/L	U		1	6020A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: EB01-011123 Lab Sample ID: 280-171373-3

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG ID.:

Matrix: Water Date Sampled: 01/11/2023 07:15

Reporting Basis: WET Date Received: 01/13/2023 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Manganese	0.53	3.0	1.8	0.51	ug/L	J		1	6020A

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02906 Concentration Units: ug/L

CCV Source: ms 77 ccv_02904

Analyte	ICV 280-600314/17 01/24/2023 12:33				CCV 280-600314/140 01/24/2023 16:48				CCV 280-600314/153 01/24/2023 17:12			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	42.3		40.0	106	50.2		50.0	100	49.2		50.0	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02906 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02723

Analyte	ICV 280-600314/17 01/24/2023 12:33				CCVL 280-600314/142 01/24/2023 16:52				CCVL 280-600314/155 01/24/2023 17:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	42.3		40.0	106	1.8	U	1.00	39	1.8	U	1.00	42

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02906 Concentration Units: ug/L

CCV Source: ms 77 ccv_02904

Analyte	CCV 280-600373/36 01/25/2023 08:44				ICV 280-600373/58 01/25/2023 10:54				CCV 280-600373/59 01/25/2023 10:56			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	54.7		50.0	109	41.1		40.0	103	48.1		50.0	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02906 Concentration Units: ug/L

CCV Source: ms 77 ccv_02904

Analyte	CCV 280-600373/66 01/25/2023 11:12											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	48.0		50.0	96								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02906 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02723

Analyte	ICV 280-600373/58 01/25/2023 10:54				CCVL 280-600373/61 01/25/2023 11:00				CCVL 280-600373/68 01/25/2023 11:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	41.1		40.0	103	1.04	J	1.00	104	0.797	J	1.00	80

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02909 Concentration Units: ug/L

CCV Source: ms 77 ccv_02907

Analyte	ICV 280-600712/17 01/27/2023 20:11				CCV 280-600712/72 01/27/2023 22:18				CCV 280-600712/82 01/27/2023 22:41			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	41.6		40.0	104	51.2		50.0	102	51.2		50.0	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02909 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02726

Analyte	ICV 280-600712/17 01/27/2023 20:11				CCVL 280-600712/74 01/27/2023 22:22				CCVL 280-600712/84 01/27/2023 22:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	41.6		40.0	104	0.965	J	1.00	97	1.02	J	1.00	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02910 Concentration Units: ug/L

CCV Source: ms 77 ccv_02908

Analyte	ICV 280-600899/55 01/31/2023 12:01				CCV 280-600899/56 01/31/2023 12:03				CCV 280-600899/63 01/31/2023 12:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	41.3		40.0	103	47.2		50.0	94	48.5		50.0	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

ICV Source: ms 77 icv_02910 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_02727

Analyte	ICV 280-600899/55 01/31/2023 12:01				CCVL 280-600899/58 01/31/2023 12:07				CCVL 280-600899/65 01/31/2023 12:20			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Manganese	41.3		40.0	103	1.05	J	1.00	105	0.906	J	1.00	91

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Method: 6020A Instrument ID: MT_079

Lab Sample ID: CRI 280-600314/19 Concentration Units: ug/L

CRQL Check Standard Source: MS 77 LLCCV_02723

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	1.00	1.01	J	101	80-120

Lab Sample ID: CRI 280-600373/19 Concentration Units: ug/L

CRQL Check Standard Source: MS 77 LLCCV_02723

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	1.00	1.01	J	101	80-120

Lab Sample ID: CRI 280-600712/19 Concentration Units: ug/L

CRQL Check Standard Source: MS 77 LLCCV_02726

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	1.00	1.06	J	106	80-120

Lab Sample ID: CRI 280-600899/9 Concentration Units: ug/L

CRQL Check Standard Source: MS 79 alt Mn_00007

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Manganese	2.00	2.11		105	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-600314/18 01/24/2023 12:36		CCB 280-600314/141 01/24/2023 16:50		CCB 280-600314/154 01/24/2023 17:14			
		Found	C	Found	C	Found	C	Found	C
Manganese	2.0	1.8	U	1.8	U	1.8	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-600373/18 01/24/2023 12:36		CCB 280-600373/37 01/25/2023 08:46		CCB 280-600373/60 01/25/2023 10:58		CCB 280-600373/67 01/25/2023 11:14	
		Found	C	Found	C	Found	C	Found	C
Manganese	2.0	1.8	U	1.8	U	1.8	U	1.8	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-600712/18 01/27/2023 20:13		CCB 280-600712/73 01/27/2023 22:20		CCB 280-600712/83 01/27/2023 22:44			
		Found	C	Found	C	Found	C	Found	C
Manganese	2.0	1.8	U	1.8	U	1.8	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 280-600899/7 01/30/2023 15:01		CCB 280-600899/57 01/31/2023 12:05		CCB 280-600899/64 01/31/2023 12:18			
		Found	C	Found	C	Found	C	Found	C
Manganese	2.0	1.8	U	1.8	U	1.8	U		

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 280-599874/1-A

Instrument Code: MT_079 Batch No.: 600373

CAS No.	Analyte	Concentration	C	Q	Method
7439-96-5	Manganese	1.8	U		6020A_DOD5

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 280-600236/1-A

Instrument Code: MT_079 Batch No.: 600712

CAS No.	Analyte	Concentration	C	Q	Method
7439-96-5	Manganese	1.8	U		6020A_DOD5

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600314/21 Instrument ID: MT_079

Lab File ID: 021ICSA.d ICS Source: ms 77 icsa_00664

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.101**	
Aluminum	*100000*	*96811*	*97*
Antimony		*0.206*	
Arsenic		*0.0850*	
Beryllium		*0.0000*	
Ca	*100000*	*97120*	*97*
Cadmium		*0.200*	
Chromium		*1.34*	
Cobalt		*0.191*	
Copper		*0.219*	
Fe	*100000*	*99788*	*100*
K	*100000*	*94016*	*94*
Lead		*0.216*	
Mg	*100000*	*94667*	*95*
Molybdenum	*2000*	*2001*	*100*
Na	*100000*	*97864*	*98*
Nickel		*0.454*	
Selenium		*0.0670*	
Silver		*0.0180*	
Strontium		*0.641*	
Thallium		*-0.0100*	
Thorium		*0.123*	
Tin		*0.707*	
Uranium		*0.0030*	
Vanadium		*0.0150*	
Zinc		*1.02*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600373/21 Instrument ID: MT_079

Lab File ID: 021ICSA.d ICS Source: ms 77 icsa_00664

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.101**	
Aluminum	*100000*	*96811*	*97*
Antimony		*0.206*	
Arsenic		*0.0850*	
Beryllium		*0.0000*	
Ca	*100000*	*97120*	*97*
Cadmium		*0.200*	
Chromium		*1.34*	
Cobalt		*0.191*	
Copper		*0.219*	
Fe	*100000*	*99788*	*100*
K	*100000*	*94016*	*94*
Lead		*0.216*	
Mg	*100000*	*94667*	*95*
Molybdenum	*2000*	*2001*	*100*
Na	*100000*	*97864*	*98*
Nickel		*0.454*	
Selenium		*0.0670*	
Silver		*0.0180*	
Strontium		*0.641*	
Thallium		*-0.0100*	
Thorium		*0.123*	
Tin		*0.707*	
Uranium		*0.0030*	
Vanadium		*0.0150*	
Zinc		*1.02*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600314/22 Instrument ID: MT_079

Lab File ID: 022ICSB.d ICS Source: ms 77 icsab_00659

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Manganese	**100**	**98.6**	**99**
Aluminum	*102000*	*98358*	*96*
Antimony	*100*	*105*	*105*
Arsenic	*100*	*98.7*	*99*
Barium	*100*	*107*	*107*
Beryllium	*100*	*97.1*	*97*
Ca	*107000*	*104047*	*97*
Cadmium	*100*	*98.5*	*99*
Chromium	*100*	*98.5*	*98*
Cobalt	*100*	*97.0*	*97*
Copper	*100*	*97.5*	*97*
Fe	*102000*	*99815*	*98*
K	*107000*	*101887*	*95*
Lead	*100*	*99.1*	*99*
Mg	*107000*	*100275*	*94*
Molybdenum	*2100*	*2124*	*101*
Na	*107000*	*104958*	*98*
Nickel	*100*	*96.3*	*96*
Selenium	*100*	*101*	*101*
Silver	*100*	*99.8*	*100*
Strontium	*200*	*195*	*97*
Thallium	*100*	*98.8*	*99*
Thorium	*100*	*102*	*102*
Tin	*100*	*104*	*104*
Uranium	*100*	*102*	*102*
Vanadium	*100*	*99.0*	*99*
Zinc	*100*	*92.7*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600373/22 Instrument ID: MT_079

Lab File ID: 022ICSB.d ICS Source: ms 77 icsab_00659

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**98.6**	**99**
Aluminum	*102000*	*98358*	*96*
Antimony	*100*	*105*	*105*
Arsenic	*100*	*98.7*	*99*
Barium	*100*	*107*	*107*
Beryllium	*100*	*97.1*	*97*
Ca	*107000*	*104047*	*97*
Cadmium	*100*	*98.5*	*99*
Chromium	*100*	*98.5*	*98*
Cobalt	*100*	*97.0*	*97*
Copper	*100*	*97.5*	*97*
Fe	*102000*	*99815*	*98*
K	*107000*	*101887*	*95*
Lead	*100*	*99.1*	*99*
Mg	*107000*	*100275*	*94*
Molybdenum	*2100*	*2124*	*101*
Na	*107000*	*104958*	*98*
Nickel	*100*	*96.3*	*96*
Selenium	*100*	*101*	*101*
Silver	*100*	*99.8*	*100*
Strontium	*200*	*195*	*97*
Thallium	*100*	*98.8*	*99*
Thorium	*100*	*102*	*102*
Tin	*100*	*104*	*104*
Uranium	*100*	*102*	*102*
Vanadium	*100*	*99.0*	*99*
Zinc	*100*	*92.7*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600373/40 Instrument ID: MT_079

Lab File ID: 319ICSB.d ICS Source: ms 77 icsab_00659

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**97.6**	**98**
Aluminum	*102000*	*99848*	*98*
Antimony	*100*	*102*	*102*
Arsenic	*100*	*99.5*	*100*
Barium	*100*	*105*	*105*
Beryllium	*100*	*95.8*	*96*
Ca	*107000*	*104738*	*98*
Cadmium	*100*	*101*	*101*
Chromium	*100*	*96.5*	*96*
Cobalt	*100*	*96.8*	*97*
Copper	*100*	*97.2*	*97*
Fe	*102000*	*95669*	*94*
K	*107000*	*99106*	*93*
Lead	*100*	*98.1*	*98*
Mg	*107000*	*101561*	*95*
Molybdenum	*2100*	*2130*	*101*
Na	*107000*	*103066*	*96*
Nickel	*100*	*93.6*	*94*
Selenium	*100*	*97.6*	*98*
Silver	*100*	*99.5*	*99*
Strontium	*200*	*196*	*98*
Thallium	*100*	*98.3*	*98*
Thorium	*100*	*100*	*100*
Tin	*100*	*101*	*101*
Uranium	*100*	*102*	*102*
Vanadium	*100*	*98.2*	*98*
Zinc	*100*	*93.8*	*94*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600373/42 Instrument ID: MT_079

Lab File ID: 321ICSA.d ICS Source: ms 77 icsa_00664

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.428**	
Aluminum	*100000*	*94660*	*95*
Antimony		*0.183*	
Arsenic		*0.116*	
Beryllium		*0.0000*	
Ca	*100000*	*96123*	*96*
Cadmium		*0.245*	
Cobalt		*0.224*	
Copper		*0.247*	
Fe	*100000*	*91592*	*92*
K	*100000*	*90570*	*91*
Lead		*0.209*	
Mg	*100000*	*92229*	*92*
Molybdenum	*2000*	*1973*	*99*
Na	*100000*	*93902*	*94*
Nickel		*0.279*	
Selenium		*0.111*	
Silver		*0.0250*	
Strontium		*0.889*	
Thallium		*0.0160*	
Thorium		*0.219*	
Tin		*0.310*	
Uranium		*0.0530*	
Vanadium		*0.0910*	
Zinc		*0.877*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600712/22 Instrument ID: MT_079

Lab File ID: 023ICSA.d ICS Source: ms 77 icsa_00665

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.406**	
Aluminum	*100000*	*96842*	*97*
Antimony		*0.192*	
Arsenic		*0.138*	
Beryllium		*0.0000*	
Ca	*100000*	*100214*	*100*
Cadmium		*0.139*	
Chromium		*0.964*	
Cobalt		*0.195*	
Copper		*0.164*	
Fe	*100000*	*95572*	*96*
K	*100000*	*95632*	*96*
Lead		*0.157*	
Mg	*100000*	*94649*	*95*
Molybdenum	*2000*	*2038*	*102*
Na	*100000*	*95397*	*95*
Nickel		*0.390*	
Selenium		*-0.0260*	
Silver		*0.0220*	
Strontium		*0.817*	
Thallium		*-0.0660*	
Thorium		*0.0230*	
Tin		*0.206*	
Uranium		*0.0280*	
Vanadium		*-0.513*	
Zinc		*1.19*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600712/23 Instrument ID: MT_079

Lab File ID: 024ICSB.d ICS Source: ms 77 icsab_00660

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Manganese	**100**	**99.3**	**99**
Aluminum	*102000*	*99263*	*97*
Antimony	*100*	*104*	*104*
Arsenic	*100*	*96.4*	*96*
Barium	*100*	*107*	*107*
Beryllium	*100*	*105*	*105*
Ca	*107000*	*113983*	*107*
Cadmium	*100*	*99.1*	*99*
Chromium	*100*	*98.4*	*98*
Cobalt	*100*	*96.3*	*96*
Copper	*100*	*97.2*	*97*
Fe	*102000*	*104938*	*103*
K	*107000*	*103904*	*97*
Lead	*100*	*100.0*	*100*
Mg	*107000*	*100263*	*94*
Molybdenum	*2100*	*2109*	*100*
Na	*107000*	*102536*	*96*
Nickel	*100*	*95.7*	*96*
Selenium	*100*	*112*	*112*
Silver	*100*	*100*	*100*
Strontium	*200*	*200*	*100*
Thallium	*100*	*98.4*	*98*
Thorium	*100*	*101*	*101*
Tin	*100*	*102*	*102*
Uranium	*100*	*103*	*103*
Vanadium	*100*	*99.3*	*99*
Zinc	*100*	*94.9*	*95*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600899/10 Instrument ID: MT_079

Lab File ID: 043ICSA.d ICS Source: ms 77 icsa_00665

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.386**	
Aluminum	*100000*	*91457*	*91*
Antimony		*0.126*	
Arsenic		*-0.0270*	
Beryllium		*0.0770*	
Ca	*100000*	*93134*	*93*
Cadmium		*0.178*	
Chromium		*0.996*	
Cobalt		*0.225*	
Copper		*0.0970*	
Fe	*100000*	*94160*	*94*
K	*100000*	*94245*	*94*
Lead		*0.144*	
Mg	*100000*	*95350*	*95*
Molybdenum	*2000*	*1954*	*98*
Na	*100000*	*98198*	*98*
Nickel		*0.116*	
Selenium		*0.0020*	
Silver		*0.0120*	
Strontium		*0.691*	
Thallium		*-0.0370*	
Thorium		*-0.322*	
Tin		*0.139*	
Uranium		*0.0130*	
Vanadium		*-0.0430*	
Zinc		*1.14*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600899/11 Instrument ID: MT_079

Lab File ID: 044ICSB.d ICS Source: ms 77 icsab_00661

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**103**	**103**
Aluminum	*102000*	*96084*	*94*
Antimony	*100*	*99.0*	*99*
Arsenic	*100*	*100*	*100*
Barium	*100*	*103*	*103*
Beryllium	*100*	*96.6*	*97*
Ca	*107000*	*102142*	*95*
Cadmium	*100*	*96.0*	*96*
Chromium	*100*	*101*	*101*
Cobalt	*100*	*99.6*	*100*
Copper	*100*	*99.5*	*99*
Fe	*102000*	*100674*	*99*
K	*107000*	*101993*	*95*
Lead	*100*	*96.1*	*96*
Mg	*107000*	*103773*	*97*
Molybdenum	*2100*	*2044*	*97*
Na	*107000*	*106480*	*100*
Nickel	*100*	*97.9*	*98*
Selenium	*100*	*102*	*102*
Silver	*100*	*95.7*	*96*
Strontium	*200*	*201*	*101*
Thallium	*100*	*95.6*	*96*
Thorium	*100*	*98.5*	*98*
Tin	*100*	*97.1*	*97*
Uranium	*100*	*98.7*	*99*
Vanadium	*100*	*103*	*103*
Zinc	*100*	*100*	*100*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSA 280-600899/41 Instrument ID: MT_079

Lab File ID: 226ICSA.d ICS Source: ms 77 icsa_00665

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Manganese		**0.710**	
Aluminum	*100000*	*95681*	*96*
Antimony		*0.121*	
Arsenic		*0.183*	
Beryllium		*-0.0430*	
Ca	*100000*	*95445*	*95*
Cadmium		*0.244*	
Chromium		*1.24*	
Cobalt		*0.231*	
Copper		*0.168*	
Fe	*100000*	*89081*	*89*
K	*100000*	*96207*	*96*
Lead		*0.169*	
Mg	*100000*	*92265*	*92*
Molybdenum	*2000*	*1993*	*100*
Na	*100000*	*94355*	*94*
Nickel		*0.256*	
Selenium		*-0.0050*	
Silver		*0.0430*	
Strontium		*0.664*	
Thallium		*0.0150*	
Thorium		*0.0860*	
Tin		*0.395*	
Uranium		*0.0270*	
Vanadium		*-0.155*	
Zinc		*1.09*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Lab Sample ID: ICSAB 280-600899/42 Instrument ID: MT_079

Lab File ID: 227ICSB.d ICS Source: ms 77 icsab_00661

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Manganese	**100**	**98.6**	**99**
Aluminum	*102000*	*101124*	*99*
Antimony	*100*	*101*	*101*
Arsenic	*100*	*93.2*	*93*
Barium	*100*	*106*	*106*
Beryllium	*100*	*94.7*	*95*
Ca	*107000*	*104141*	*97*
Cadmium	*100*	*99.6*	*100*
Chromium	*100*	*99.1*	*99*
Cobalt	*100*	*92.9*	*93*
Copper	*100*	*94.5*	*95*
Fe	*102000*	*94806*	*93*
K	*107000*	*104379*	*98*
Lead	*100*	*100*	*100*
Mg	*107000*	*98173*	*92*
Molybdenum	*2100*	*2155*	*103*
Na	*107000*	*101976*	*95*
Nickel	*100*	*94.3*	*94*
Selenium	*100*	*99.9*	*100*
Silver	*100*	*99.7*	*100*
Strontium	*200*	*193*	*96*
Thallium	*100*	*98.2*	*98*
Thorium	*100*	*101*	*101*
Tin	*100*	*102*	*102*
Uranium	*100*	*101*	*101*
Vanadium	*100*	*97.9*	*98*
Zinc	*100*	*94.2*	*94*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OU11-T-21-011123 MS
Lab ID: 280-171373-1 MS
Lab Name: Eurofins Denver
Job No.: 280-171373-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	661		620		40.0	98	87-115	Q 4	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-21-011123 MS
Lab ID: 280-171373-1 MS
Lab Name: Eurofins Denver
Job No.: 280-171373-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	708		660		40.0	127	87-115	4	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: OU11-T-21-011123 MSD
Lab ID: 280-171373-1 MSD
Lab Name: Eurofins Denver
Job No.: 280-171373-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Manganese	680		40.0	145	87-115	3	20	Q 4	6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-21-011123 MSD
Lab ID: 280-171373-1 MSD
Lab Name: Eurofins Denver
Job No.: 280-171373-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Manganese	714		40.0	143	87-115	1	20	4	6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: OU11-T-21-011123 PDS
Lab ID: 280-171373-1 PDS
Lab Name: Eurofins Denver
Job No.: 280-171373-1
SDG No.:
Matrix: Water
Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Manganese	861		660		200	102	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-599874/2-A

Lab Name: Eurofins Denver Job No.: 280-171373-1

Sample Matrix: Water LCS Source: ms spike 1_00015

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Manganese	40.0	40.6		102	87	115		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 280-600236/2-A

Lab Name: Eurofins Denver Job No.: 280-171373-1

Sample Matrix: Water LCS Source: ms spike 1_00017

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Manganese	40.0	42.5		106	87	115		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 280-171373-1

SDG No:

Lab Name: Eurofins Denver Job No: 280-171373-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Manganese	660		660		0.38	D	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins Denver Job Number: 280-171373-1

SDG Number:

Matrix: Water Instrument ID: MT_079

Method: 6020A DL Date: 09/01/2022 00:00

Prep Method: 3020A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Manganese		3	0.51

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins Denver Job Number: 280-171373-1

SDG Number:

Matrix: Water Instrument ID: MT_079

Method: 6020A XMDL Date: 01/03/2023 12:35

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Manganese		3	0.51

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins Denver Job Number: 280-171373-1

SDG Number:

Matrix: Water Instrument ID: MT_079

Method: 6020A DL Date: 09/01/2022 00:00

Prep Method: 3005A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Manganese		3	0.51

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins Denver Job Number: 280-171373-1

SDG Number:

Matrix: Water Instrument ID: MT_079

Method: 6020A XMDL Date: 01/03/2023 12:35

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Manganese		3	0.51

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins Denver Job No: 280-171373-1

SDG No.:

Instrument ID: MT_079 Date: 10/06/2022 14:28

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Manganese		18000	6020A

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Prep Method: 3020A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-599874/1-A	01/23/2023 08:20	599874		50	50
LCS 280-599874/2-A	01/23/2023 08:20	599874		50	50
280-171373-1	01/23/2023 08:20	599874		50	50
280-171373-1 MS	01/23/2023 08:20	599874		50	50
280-171373-1 MSD	01/23/2023 08:20	599874		50	50
280-171373-2	01/23/2023 08:20	599874		50	50
280-171373-3	01/23/2023 08:20	599874		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-600236/1-A	01/26/2023 09:30	600236		50	50
LCS 280-600236/2-A	01/26/2023 09:30	600236		50	50
280-171373-1	01/26/2023 09:30	600236		50	50
280-171373-1 MS	01/26/2023 09:30	600236		50	50
280-171373-1 MSD	01/26/2023 09:30	600236		50	50
280-171373-2	01/26/2023 09:30	600236		50	50
280-171373-3	01/26/2023 09:30	600236		50	50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/24/2023 17:16

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
RINSE 280-600314/1			11:53																									
RINSE 280-600314/2			11:55																									
RINSE 280-600314/3			11:57																									
RINSE 280-600314/4			11:59																									
RINSE 280-600314/5			12:00																									
RINSE 280-600314/6			12:05																									
RINSE 280-600314/7			12:07																									
RINSE 280-600314/8			12:10																									
RINSE 280-600314/9			12:12																									
RINSE 280-600314/10			12:14																									
RINSE 280-600314/11			12:16																									
RINSE 280-600314/12			12:18																									
RINSE 280-600314/13			12:23																									
ICIS 280-600314/14			12:25	X																								
IC 280-600314/15	1		12:27	X																								
IC 280-600314/16	1		12:28	X																								
ICV 280-600314/17	1		12:33	X																								
ICB 280-600314/18	1		12:36	X																								
CRI 280-600314/19	1		12:38	X																								
CRI 280-600314/20			12:44																									
ICSA 280-600314/21	1		12:47	X																								
ICSAB 280-600314/22	1		12:50	X																								
RINSE 280-600314/23			12:52																									
LRA 280-600314/24			12:54																									
RINSE 280-600314/25			12:55																									
CCV 280-600314/26			12:57																									
CCB 280-600314/27			12:59																									
CCVL 280-600314/28			13:01																									
ZZZZZZ			13:03																									
ZZZZZZ			13:05																									
ZZZZZZ			13:07																									
ZZZZZZ			13:09																									
ZZZZZZ			13:10																									
ZZZZZZ			13:12																									
ZZZZZZ			13:14																									
ZZZZZZ			13:16																									
ZZZZZZ			13:18																									
ZZZZZZ			13:20																									
CCV 280-600314/39			13:21																									
CCB 280-600314/40			13:23																									
CCVL 280-600314/41			13:25																									
ZZZZZZ			13:27																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/24/2023 17:16

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
ZZZZZZ			13:29	
ZZZZZZ			13:31	
ZZZZZZ			13:33	
ZZZZZZ			13:35	
ZZZZZZ			13:37	
ZZZZZZ			13:38	
ZZZZZZ			13:40	
ZZZZZZ			13:42	
ZZZZZZ			13:44	
CCV 280-600314/52			13:46	
CCB 280-600314/53			13:48	
CCVL 280-600314/54			13:50	
ZZZZZZ			13:52	
ZZZZZZ			13:53	
ZZZZZZ			13:55	
ZZZZZZ			13:57	
ZZZZZZ			13:59	
CCV 280-600314/60			14:01	
CCB 280-600314/61			14:03	
CCVL 280-600314/62			14:05	
ZZZZZZ			14:07	
ZZZZZZ			14:08	
ZZZZZZ			14:10	
ZZZZZZ			14:12	
ZZZZZZ			14:14	
ZZZZZZ			14:16	
ZZZZZZ			14:18	
ZZZZZZ			14:20	
ZZZZZZ			14:22	
CCV 280-600314/72			14:23	
CCB 280-600314/73			14:25	
CCVL 280-600314/74			14:27	
ZZZZZZ			14:29	
ZZZZZZ			14:31	
ZZZZZZ			14:33	
ZZZZZZ			14:35	
ZZZZZZ			14:36	
ZZZZZZ			14:38	
CCV 280-600314/81			14:40	
CCB 280-600314/82			14:42	
CCVL 280-600314/83			14:44	
ZZZZZZ			14:46	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/24/2023 17:16

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			14:48																									
ZZZZZZ			14:50																									
ZZZZZZ			14:51																									
ZZZZZZ			14:53																									
ZZZZZZ			14:55																									
ZZZZZZ			15:00																									
ZZZZZZ			15:02																									
ZZZZZZ			15:05																									
CCV 280-600314/93			15:09																									
CCB 280-600314/94			15:14																									
ZZZZZZ			15:18																									
ZZZZZZ			15:22																									
ZZZZZZ			15:24																									
ZZZZZZ			15:28																									
CCV 280-600314/99			15:30																									
CCB 280-600314/100			15:32																									
ZZZZZZ			15:34																									
ZZZZZZ			15:36																									
ZZZZZZ			15:38																									
ZZZZZZ			15:40																									
ZZZZZZ			15:42																									
ZZZZZZ			15:44																									
ZZZZZZ			15:46																									
ZZZZZZ			15:48																									
CCV 280-600314/109			15:49																									
CCB 280-600314/110			15:51																									
ZZZZZZ			15:53																									
ZZZZZZ			15:55																									
ZZZZZZ			15:57																									
ZZZZZZ			15:59																									
ZZZZZZ			16:01																									
ZZZZZZ			16:03																									
ZZZZZZ			16:05																									
ZZZZZZ			16:06																									
ZZZZZZ			16:08																									
CCV 280-600314/120			16:10																									
CCB 280-600314/121			16:12																									
CCVL 280-600314/122			16:14																									
ZZZZZZ			16:16																									
ZZZZZZ			16:18																									
ZZZZZZ			16:20																									
ZZZZZZ			16:22																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/24/2023 17:16

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			16:23																									
ZZZZZZ			16:25																									
ZZZZZZ			16:27																									
ZZZZZZ			16:29																									
CCV 280-600314/131			16:31																									
CCB 280-600314/132			16:33																									
CCVL 280-600314/133			16:35																									
ZZZZZZ			16:37																									
ZZZZZZ			16:38																									
ZZZZZZ			16:40																									
ZZZZZZ			16:42																									
ZZZZZZ			16:44																									
ZZZZZZ			16:46																									
CCV 280-600314/140	1		16:48	X																								
CCB 280-600314/141	1		16:50	X																								
CCVL 280-600314/142	1		16:52	X																								
ZZZZZZ			16:53																									
ZZZZZZ			16:55																									
ZZZZZZ			16:57																									
ZZZZZZ			16:59																									
ZZZZZZ			17:01																									
280-171373-1	1	T	17:03	X																								
280-171373-1 MS	1	T	17:05	X																								
280-171373-1 MSD	1	T	17:07	X																								
280-171373-2	1	T	17:09	X																								
ZZZZZZ			17:10																									
CCV 280-600314/153	1		17:12	X																								
CCB 280-600314/154	1		17:14	X																								
CCVL 280-600314/155	1		17:16	X																								

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/25/2023 11:52

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
RINSE 280-600373/1			11:53																									
RINSE 280-600373/2			11:55																									
RINSE 280-600373/3			11:57																									
RINSE 280-600373/4			11:59																									
RINSE 280-600373/5			12:00																									
RINSE 280-600373/6			12:05																									
RINSE 280-600373/7			12:07																									
RINSE 280-600373/8			12:10																									
RINSE 280-600373/9			12:12																									
RINSE 280-600373/10			12:14																									
RINSE 280-600373/11			12:16																									
RINSE 280-600373/12			12:18																									
RINSE 280-600373/13			12:23																									
ICIS 280-600373/14			12:25	X																								
IC 280-600373/15			12:27	X																								
IC 280-600373/16			12:28	X																								
ICV 280-600373/17			12:33																									
ICB 280-600373/18	1		12:36	X																								
CRI 280-600373/19	1		12:38	X																								
CRI 280-600373/20			12:44																									
ICSA 280-600373/21	1		12:47	X																								
ICSAB 280-600373/22	1		12:50	X																								
RINSE 280-600373/23			12:52																									
LRA 280-600373/24			12:54																									
RINSE 280-600373/25			12:55																									
CCV 280-600373/26			12:57																									
CCB 280-600373/27			12:59																									
CCVL 280-600373/28			13:01																									
RINSE 280-600373/29			08:24																									
RINSE 280-600373/30			08:26																									
RINSE 280-600373/31			08:28																									
ICIS 280-600373/32			08:30	X																								
IC 280-600373/33			08:32	X																								
IC 280-600373/34			08:34	X																								
ICV 280-600373/35			08:36																									
CCV 280-600373/36	1		08:44	X																								
CCB 280-600373/37	1		08:46	X																								
CCVL 280-600373/38			08:48																									
ZZZZZZ			08:50																									
ICSAB 280-600373/40	1		08:51	X																								
RINSE 280-600373/41			09:16																									
ICSA 280-600373/42	1		09:18	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/25/2023 11:52

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
RINSE 280-600373/43			09:20	
ZZZZZZ			09:22	
CCV 280-600373/45			09:23	
CCB 280-600373/46			09:29	
ZZZZZZ			09:31	
CCV 280-600373/48			09:41	
CCB 280-600373/49			10:37	
RINSE 280-600373/50			10:39	
RINSE 280-600373/51			10:41	
RINSE 280-600373/52			10:43	
RINSE 280-600373/53			10:45	
RINSE 280-600373/54			10:47	
ICIS 280-600373/55			10:49	X
IC 280-600373/56	1		10:50	X
IC 280-600373/57	1		10:52	X
ICV 280-600373/58	1		10:54	X
CCV 280-600373/59	1		10:56	X
CCB 280-600373/60	1		10:58	X
CCVL 280-600373/61	1		11:00	X
MB 280-599874/1-A	1	T	11:05	X
LCS 280-599874/2-A	1	T	11:07	X
280-171373-3	1	T	11:08	X
ZZZZZZ			11:10	
CCV 280-600373/66	1		11:12	X
CCB 280-600373/67	1		11:14	X
CCVL 280-600373/68	1		11:16	X
ZZZZZZ			11:18	
ZZZZZZ			11:20	
ZZZZZZ			11:22	
ZZZZZZ			11:24	
ZZZZZZ			11:25	
ZZZZZZ			11:27	
ZZZZZZ			11:29	
ZZZZZZ			11:31	
ZZZZZZ			11:33	
ZZZZZZ			11:35	
CCV 280-600373/79			11:37	
CCB 280-600373/80			11:39	
RINSE 280-600373/81			11:41	
RINSE 280-600373/82			11:42	
RINSE 280-600373/83			11:44	
RINSE 280-600373/84			11:46	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/24/2023 11:53 End Date: 01/25/2023 11:52

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			11:48																									
CCV 280-600373/86			11:50																									
CCB 280-600373/87			11:52																									

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/27/2023 19:36 End Date: 01/28/2023 00:43

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
RINSE 280-600712/1			19:36	
RINSE 280-600712/2			19:40	
RINSE 280-600712/3			19:42	
RINSE 280-600712/4			19:44	
RINSE 280-600712/5			19:46	
RINSE 280-600712/6			19:50	
RINSE 280-600712/7			19:52	
RINSE 280-600712/8			19:54	
RINSE 280-600712/9			19:56	
RINSE 280-600712/10			19:58	
RINSE 280-600712/11			20:00	
RINSE 280-600712/12			20:02	
RINSE 280-600712/13			20:04	
ICIS 280-600712/14			20:06	X
IC 280-600712/15	1		20:07	X
IC 280-600712/16	1		20:09	X
ICV 280-600712/17	1		20:11	X
ICB 280-600712/18	1		20:13	X
CRI 280-600712/19	1		20:15	X
CRI 280-600712/20			20:22	
ZZZZZZ			20:31	
ICSA 280-600712/22	1		20:33	X
ICSAB 280-600712/23	1		20:35	X
RINSE 280-600712/24			20:36	
LRA 280-600712/25			20:38	
ZZZZZZ			20:40	
RINSE 280-600712/27			20:42	
CCV 280-600712/28			20:44	
CCB 280-600712/29			20:48	
CCVL 280-600712/30			20:50	
ZZZZZZ			20:54	
ZZZZZZ			20:56	
ZZZZZZ			20:58	
ZZZZZZ			20:59	
ZZZZZZ			21:01	
ZZZZZZ			21:05	
ZZZZZZ			21:09	
ZZZZZZ			21:11	
ZZZZZZ			21:13	
ZZZZZZ			21:15	
CCV 280-600712/41			21:17	
CCB 280-600712/42			21:19	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/27/2023 19:36 End Date: 01/28/2023 00:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			21:21																									
ZZZZZZ			21:22																									
ZZZZZZ			21:24																									
ZZZZZZ			21:26																									
ZZZZZZ			21:28																									
ZZZZZZ			21:30																									
ZZZZZZ			21:32																									
ZZZZZZ			21:33																									
CCV 280-600712/51			21:35																									
CCB 280-600712/52			21:37																									
ZZZZZZ			21:39																									
ZZZZZZ			21:41																									
ZZZZZZ			21:43																									
ZZZZZZ			21:45																									
ZZZZZZ			21:47																									
ZZZZZZ			21:48																									
ZZZZZZ			21:50																									
CCV 280-600712/60			21:52																									
CCB 280-600712/61			21:54																									
ZZZZZZ			21:56																									
ZZZZZZ			21:58																									
ZZZZZZ			22:00																									
ZZZZZZ			22:05																									
ZZZZZZ			22:07																									
ZZZZZZ			22:09																									
ZZZZZZ			22:11																									
ZZZZZZ			22:12																									
ZZZZZZ			22:14																									
ZZZZZZ			22:16																									
CCV 280-600712/72	1		22:18	X																								
CCB 280-600712/73	1		22:20	X																								
CCVL 280-600712/74	1		22:22	X																								
MB 280-600236/1-A	1	R	22:24	X																								
LCS 280-600236/2-A	1	R	22:26	X																								
280-171373-1	1	D	22:28	X																								
280-171373-1 SD	5	D	22:29	X																								
280-171373-1 MS	1	D	22:31	X																								
280-171373-1 MSD	1	D	22:33	X																								
280-171373-1 PDS	1	D	22:39	X																								
CCV 280-600712/82	1		22:41	X																								
CCB 280-600712/83	1		22:44	X																								
CCVL 280-600712/84	1		22:45	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/27/2023 19:36 End Date: 01/28/2023 00:43

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
ZZZZZZ			22:47	
ZZZZZZ			22:49	
ZZZZZZ			22:51	
ZZZZZZ			22:53	
ZZZZZZ			22:55	
ZZZZZZ			22:57	
ZZZZZZ			22:59	
ZZZZZZ			23:01	
ZZZZZZ			23:02	
CCV 280-600712/94			23:04	
CCB 280-600712/95			23:06	
CCVL 280-600712/96			23:08	
ZZZZZZ			23:10	
ZZZZZZ			23:12	
ZZZZZZ			23:14	
ZZZZZZ			23:16	
CCV 280-600712/101			23:18	
CCB 280-600712/102			23:19	
CCVL 280-600712/103			23:21	
ZZZZZZ			23:23	
ZZZZZZ			23:25	
ZZZZZZ			23:27	
ZZZZZZ			23:29	
ZZZZZZ			23:31	
ZZZZZZ			23:33	
CCV 280-600712/110			23:35	
CCB 280-600712/111			23:36	
CCVL 280-600712/112			23:38	
ZZZZZZ			23:40	
ZZZZZZ			23:42	
ZZZZZZ			23:44	
ZZZZZZ			23:46	
ZZZZZZ			23:48	
ZZZZZZ			23:50	
ZZZZZZ			23:52	
ZZZZZZ			23:53	
ZZZZZZ			23:55	
ZZZZZZ			23:57	
CCV 280-600712/123			23:59	
CCB 280-600712/124			00:01	
ZZZZZZ			00:03	
ZZZZZZ			00:05	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/27/2023 19:36 End Date: 01/28/2023 00:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								
ZZZZZZ			00:07																									
ZZZZZZ			00:08																									
ZZZZZZ			00:10																									
ZZZZZZ			00:12																									
ZZZZZZ			00:14																									
ZZZZZZ			00:16																									
ZZZZZZ			00:18																									
ZZZZZZ			00:20																									
CCV 280-600712/135			00:22																									
CCB 280-600712/136			00:24																									
ZZZZZZ			00:26																									
ZZZZZZ			00:27																									
ZZZZZZ			00:29																									
ZZZZZZ			00:31																									
ZZZZZZ			00:33																									
ZZZZZZ			00:35																									
ZZZZZZ			00:37																									
ZZZZZZ			00:39																									
CCV 280-600712/145			00:41																									
CCB 280-600712/146			00:43																									

Prep Types:
D = Dissolved
R = Total Recoverable

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/30/2023 14:47 End Date: 01/31/2023 14:24

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
RINSE 280-600899/1			14:47	
RINSE 280-600899/2			14:50	
ICIS 280-600899/3			14:52	X
IC 280-600899/4			14:54	X
IC 280-600899/5			14:56	X
ICV 280-600899/6			14:57	
ICB 280-600899/7	1		15:01	X
CRI 280-600899/8			15:04	
CRI 280-600899/9	1		15:08	X
ICSA 280-600899/10	1		15:13	X
ICSAB 280-600899/11	1		15:16	X
RINSE 280-600899/12			15:20	
ZZZZZZ			15:22	
ZZZZZZ			15:24	
ZZZZZZ			15:26	
RINSE 280-600899/16			15:28	
CCV 280-600899/17			15:30	
CCB 280-600899/18			15:32	
CCVL 280-600899/19			15:34	
RINSE 280-600899/20			16:08	
ICIS 280-600899/21			16:10	X
IC 280-600899/22			16:12	X
IC 280-600899/23			16:14	X
ICV 280-600899/24			16:15	
CCV 280-600899/25			16:17	
CCB 280-600899/26			16:19	
LRA 280-600899/27			16:25	
RINSE 280-600899/28			08:27	
RINSE 280-600899/29			08:28	
RINSE 280-600899/30			08:30	
RINSE 280-600899/31			08:32	
RINSE 280-600899/32			08:34	
ICIS 280-600899/33			08:36	X
IC 280-600899/34			08:38	X
IC 280-600899/35			08:40	X
ICV 280-600899/36			08:42	
ZZZZZZ			08:43	
CCV 280-600899/38			09:12	
CCV 280-600899/39			09:16	
CCB 280-600899/40			09:48	
ICSA 280-600899/41	1		09:50	X
ICSAB 280-600899/42	1		09:52	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/30/2023 14:47 End Date: 01/31/2023 14:24

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
RINSE 280-600899/43			09:54	
CCV 280-600899/44			09:56	
CCB 280-600899/45			09:58	
RINSE 280-600899/46			11:44	
RINSE 280-600899/47			11:46	
RINSE 280-600899/48			11:48	
RINSE 280-600899/49			11:50	
RINSE 280-600899/50			11:52	
RINSE 280-600899/51			11:53	
ICIS 280-600899/52			11:55	X
IC 280-600899/53			11:57	X
IC 280-600899/54	1		11:59	X
ICV 280-600899/55	1		12:01	X
CCV 280-600899/56	1		12:03	X
CCB 280-600899/57	1		12:05	X
CCVL 280-600899/58	1		12:07	X
280-171373-2	1	D	12:09	X
280-171373-3	1	D	12:10	X
ZZZZZZ			12:13	
ZZZZZZ			12:15	
CCV 280-600899/63	1		12:16	X
CCB 280-600899/64	1		12:18	X
CCVL 280-600899/65	1		12:20	X
ZZZZZZ			12:22	
ZZZZZZ			12:24	
ZZZZZZ			12:26	
ZZZZZZ			12:28	
ZZZZZZ			12:30	
CCV 280-600899/71			12:32	
CCB 280-600899/72			12:33	
RINSE 280-600899/73			12:35	
RINSE 280-600899/74			12:38	
RINSE 280-600899/75			12:39	
RINSE 280-600899/76			12:41	
RINSE 280-600899/77			12:43	
ICIS 280-600899/78			12:45	X
IC 280-600899/79			12:47	X
IC 280-600899/80			12:49	X
ICV 280-600899/81			12:51	
CCV 280-600899/82			12:58	
CCB 280-600899/83			13:00	
CCV 280-600899/84			13:03	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/30/2023 14:47 End Date: 01/31/2023 14:24

Lab Sample Id	D/F	Type	Time	Analytes
				Mn
CCB 280-600899/85			13:05	
ZZZZZZ			13:07	
ZZZZZZ			13:08	
ZZZZZZ			13:10	
CCV 280-600899/89			13:12	
CCB 280-600899/90			13:14	
CCV 280-600899/91			13:17	
CCV 280-600899/92			13:18	
ZZZZZZ			13:20	
RINSE 280-600899/94			13:24	
RINSE 280-600899/95			13:26	
ICIS 280-600899/96			13:28	X
IC 280-600899/97			13:30	X
IC 280-600899/98			13:32	X
ICV 280-600899/99			13:33	
CCV 280-600899/100			13:35	
CCB 280-600899/101			13:37	
RINSE 280-600899/102			13:39	
ZZZZZZ			13:41	
ZZZZZZ			13:43	
RINSE 280-600899/105			13:46	
RINSE 280-600899/106			13:48	
RINSE 280-600899/107			13:50	
ICIS 280-600899/108			13:52	X
IC 280-600899/109			13:53	X
IC 280-600899/110			13:56	X
ICV 280-600899/111			13:58	
CCV 280-600899/112			14:01	
CCB 280-600899/113			14:03	
ZZZZZZ			14:05	
ZZZZZZ			14:07	
ZZZZZZ			14:09	
ZZZZZZ			14:11	
ZZZZZZ			14:13	
ZZZZZZ			14:15	
ZZZZZZ			14:17	
ZZZZZZ			14:18	
ZZZZZZ			14:20	
CCV 280-600899/123			14:22	
CCB 280-600899/124			14:24	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Instrument ID: MT_079 Analysis Method: 6020A

Start Date: 01/30/2023 14:47 End Date: 01/31/2023 14:24

Lab Sample Id	D/F	Type	Time	Analytes																								
				Mn																								

Prep Types:
D = Dissolved

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600314

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/24/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6/1	Q	Element Li-6/2	Q	Element Sc/2	Q	Element Sc/3	Q	Element Ge/2	Q
IC 280-600314/15	12:27	96		96		97		97		92	
IC 280-600314/16	12:28	104		101		100		99		105	
ICV 280-600314/17	12:33	100		101		99		97		100	
ICB 280-600314/18	12:36	100		102		102		99		101	
CRI 280-600314/19	12:38	100		99		98		98		98	
ICSA 280-600314/21	12:47	99		100		101		99		101	
ICSAB 280-600314/22	12:50	101		101		102		100		102	
CCV 280-600314/140	16:48	106		97		100		98		100	
CCB 280-600314/141	16:50	105		99		101		98		101	
CCVL 280-600314/142	16:52	106		99		102		99		102	
280-171373-1	17:03	101		99		101		100		102	
280-171373-1 MS	17:05	104		97		100		98		102	
280-171373-1 MSD	17:07	104		100		101		98		104	
280-171373-2	17:09	107		100		102		99		105	
CCV 280-600314/153	17:12	102		98		101		99		102	
CCB 280-600314/154	17:14	106		99		101		98		99	
CCVL 280-600314/155	17:16	109		99		101		99		102	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600314

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/24/2023

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ir 193	Element Sc/2 45	Element Sc/3 45	Element Li-6/1 6
Manganese	55					
Aluminum	27				X	
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Ca	40			X		
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Fe	56					
K	39				X	
Lead	208		X			
Mg	24				X	
Molybdenum	95	X				
Na	23				X	
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					
Thallium	205		X			
Thorium	232		X			
Tin	120	X				
Uranium	238		X			
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal Standard	Ir (IS)	Sc (IS)	Sc (IS)	Li-6 Internal standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600314

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/24/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In	Q	Element Ir	Q	Element	Q	Element	Q
IC 280-600314/15	12:27	93		100		98					
IC 280-600314/16	12:28	104		102		101					
ICV 280-600314/17	12:33	100		100		99					
ICB 280-600314/18	12:36	100		100		101					
CRI 280-600314/19	12:38	98		100		102					
ICSA 280-600314/21	12:47	105		99		99					
ICSAB 280-600314/22	12:50	104		98		98					
CCV 280-600314/140	16:48	102		103		98					
CCB 280-600314/141	16:50	99		102		98					
CCVL 280-600314/142	16:52	102		104		101					
280-171373-1	17:03	104		104		101					
280-171373-1 MS	17:05	104		101		100					
280-171373-1 MSD	17:07	105		101		101					
280-171373-2	17:09	104		102		98					
CCV 280-600314/153	17:12	104		102		99					
CCB 280-600314/154	17:14	103		102		101					
CCVL 280-600314/155	17:16	102		102		101					

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600314

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/24/2023

Analyte	Mass	Internal Standard Used:				
		Element Li-6/26	Element Ge/272	Element Ge/372	Element	Element
Manganese	55			X		
Aluminum	27					
Antimony	121					
Arsenic	75			X		
Barium	137					
Beryllium	9	X				
Ca	40					
Cadmium	111					
Chromium	52			X		
Cobalt	59			X		
Copper	63			X		
Fe	56		X			
K	39					
Lead	208					
Mg	24					
Molybdenum	95					
Na	23					
Nickel	60			X		
Selenium	78		X			
Silver	107					
Strontium	88			X		
Thallium	205					
Thorium	232					
Tin	120					
Uranium	238					
Vanadium	51			X		
Zinc	66			X		
Internal Standard Name on Instrument		Li-6 Internal standard	Ge Internal standard	Ge Internal standard		

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600373

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/25/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6/1	Q	Element Li-6/2	Q	Element Sc/2	Q	Element Sc/3	Q	Element Ge/2	Q
ICB 280-600373/18	12:36	100		102		102		99		101	
CRI 280-600373/19	12:38	100		99		98		98		98	
ICSA 280-600373/21	12:47	99		100		101		99		101	
ICSAB 280-600373/22	12:50	101		101		102		100		102	
CCV 280-600373/36	08:44	100		106		105		95		107	
CCB 280-600373/37	08:46	107		105		105		96		106	
ICSAB 280-600373/40	08:51	101		101		102		95		104	
ICSA 280-600373/42	09:18	103		99		99		94		101	
IC 280-600373/56	10:50	100		97		96		98		92	
IC 280-600373/57	10:52	103		102		102		105		105	
ICV 280-600373/58	10:54	106		104		105		101		103	
CCV 280-600373/59	10:56	96		100		100		102		101	
CCB 280-600373/60	10:58	95		101		101		102		102	
CCVL 280-600373/61	11:00	96		99		99		101		99	
MB 280-599874/1-A	11:05	91		97		96		98		93	
LCS 280-599874/2-A	11:07	94		99		97		101		99	
280-171373-3	11:08	98		100		98		103		100	
CCV 280-600373/66	11:12	99		100		101		100		101	
CCB 280-600373/67	11:14	96		100		99		100		102	
CCVL 280-600373/68	11:16	100		99		100		101		102	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600373

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/25/2023

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ir 193	Element Sc/2 45	Element Sc/3 45	Element Li-6/1 6
Manganese	55					
Aluminum	27				X	
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Ca	40			X		
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Fe	56					
K	39				X	
Lead	208		X			
Mg	24				X	
Molybdenum	95	X				
Na	23				X	
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					
Thallium	205		X			
Thorium	232		X			
Tin	120	X				
Uranium	238		X			
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal Standard	Ir (IS)	Sc (IS)	Sc (IS)	Li-6 Internal standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600373

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/25/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In	Q	Element Ir	Q	Element	Q	Element	Q
ICB 280-600373/18	12:36	100		100		101					
CRI 280-600373/19	12:38	98		100		102					
ICSA 280-600373/21	12:47	105		99		99					
ICSAB 280-600373/22	12:50	104		98		98					
CCV 280-600373/36	08:44	91		96		96					
CCB 280-600373/37	08:46	93		97		97					
ICSAB 280-600373/40	08:51	98		94		99					
ICSA 280-600373/42	09:18	94		93		95					
IC 280-600373/56	10:50	95		100		100					
IC 280-600373/57	10:52	115		106		106					
ICV 280-600373/58	10:54	109		103		104					
CCV 280-600373/59	10:56	107		102		103					
CCB 280-600373/60	10:58	104		103		103					
CCVL 280-600373/61	11:00	102		100		101					
MB 280-599874/1-A	11:05	98		98		100					
LCS 280-599874/2-A	11:07	108		102		103					
280-171373-3	11:08	110		102		105					
CCV 280-600373/66	11:12	106		99		102					
CCB 280-600373/67	11:14	104		99		101					
CCVL 280-600373/68	11:16	105		101		103					

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600373

ICP-MS Instrument ID: MT_079 Start Date: 01/24/2023 End Date: 01/25/2023

Analyte	Mass	Internal Standard Used:				
		Element Li-6/26	Element Ge/272	Element Ge/372	Element	Element
Manganese	55			X		
Aluminum	27					
Antimony	121					
Arsenic	75			X		
Barium	137					
Beryllium	9	X				
Ca	40					
Cadmium	111					
Chromium	52			X		
Cobalt	59			X		
Copper	63			X		
Fe	56		X			
K	39					
Lead	208					
Mg	24					
Molybdenum	95					
Na	23					
Nickel	60			X		
Selenium	78		X			
Silver	107					
Strontium	88			X		
Thallium	205					
Thorium	232					
Tin	120					
Uranium	238					
Vanadium	51			X		
Zinc	66			X		
Internal Standard Name on Instrument		Li-6 Internal standard	Ge Internal standard	Ge Internal standard		

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600712

ICP-MS Instrument ID: MT_079 Start Date: 01/27/2023 End Date: 01/27/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6/1	Q	Element Li-6/2	Q	Element Sc/2	Q	Element Sc/3	Q	Element Ge/2	Q
IC 280-600712/15	20:07	101		98		102		101		97	
IC 280-600712/16	20:09	101		99		100		103		104	
ICV 280-600712/17	20:11	96		98		100		102		100	
ICB 280-600712/18	20:13	100		99		99		102		100	
CRI 280-600712/19	20:15	101		99		101		103		102	
ICSA 280-600712/22	20:33	100		98		101		104		105	
ICSAB 280-600712/23	20:35	98		91		96		105		98	
CCV 280-600712/72	22:18	97		96		100		101		102	
CCB 280-600712/73	22:20	94		96		100		101		103	
CCVL 280-600712/74	22:22	98		97		100		101		102	
MB 280-600236/1-A	22:24	94		95		99		100		104	
LCS 280-600236/2-A	22:26	94		92		96		102		101	
280-171373-1	22:28	95		95		100		102		105	
280-171373-1 SD	22:29	96		96		100		101		104	
280-171373-1 MS	22:31	94		94		99		103		106	
280-171373-1 MSD	22:33	95		94		99		102		105	
280-171373-1 PDS	22:39	95		92		94		99		103	
CCV 280-600712/82	22:41	96		95		97		99		99	
CCB 280-600712/83	22:44	99		94		96		96		97	
CCVL 280-600712/84	22:45	93		93		95		98		99	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600712

ICP-MS Instrument ID: MT_079 Start Date: 01/27/2023 End Date: 01/27/2023

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ir 193	Element Sc/2 45	Element Sc/3 45	Element Li-6/1 6
Manganese	55					
Aluminum	27				X	
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Ca	40			X		
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Fe	56					
K	39				X	
Lead	208		X			
Mg	24				X	
Molybdenum	95	X				
Na	23				X	
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					
Thallium	205		X			
Thorium	232		X			
Tin	120	X				
Uranium	238		X			
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal Standard	Ir (IS)	Sc (IS)	Sc (IS)	Li-6 Internal standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600712

ICP-MS Instrument ID: MT_079 Start Date: 01/27/2023 End Date: 01/27/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In	Q	Element Ir	Q	Element	Q	Element	Q
IC 280-600712/15	20:07	100		101		103					
IC 280-600712/16	20:09	109		102		101					
ICV 280-600712/17	20:11	103		100		103					
ICB 280-600712/18	20:13	103		102		104					
CRI 280-600712/19	20:15	103		102		104					
ICSA 280-600712/22	20:33	110		99		100					
ICSAB 280-600712/23	20:35	111		100		100					
CCV 280-600712/72	22:18	105		104		104					
CCB 280-600712/73	22:20	106		102		105					
CCVL 280-600712/74	22:22	104		102		106					
MB 280-600236/1-A	22:24	107		103		103					
LCS 280-600236/2-A	22:26	108		104		105					
280-171373-1	22:28	109		105		103					
280-171373-1 SD	22:29	108		102		104					
280-171373-1 MS	22:31	108		104		104					
280-171373-1 MSD	22:33	108		104		104					
280-171373-1 PDS	22:39	104		100		99					
CCV 280-600712/82	22:41	101		101		101					
CCB 280-600712/83	22:44	99		97		101					
CCVL 280-600712/84	22:45	100		99		101					

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600712

ICP-MS Instrument ID: MT_079 Start Date: 01/27/2023 End Date: 01/27/2023

Analyte	Mass	Internal Standard Used:				
		Element Li-6/26	Element Ge/272	Element Ge/372	Element	Element
Manganese	55			X		
Aluminum	27					
Antimony	121					
Arsenic	75			X		
Barium	137					
Beryllium	9	X				
Ca	40					
Cadmium	111					
Chromium	52			X		
Cobalt	59			X		
Copper	63			X		
Fe	56		X			
K	39					
Lead	208					
Mg	24					
Molybdenum	95					
Na	23					
Nickel	60			X		
Selenium	78		X			
Silver	107					
Strontium	88			X		
Thallium	205					
Thorium	232					
Tin	120					
Uranium	238					
Vanadium	51			X		
Zinc	66			X		
Internal Standard Name on Instrument		Li-6 Internal standard	Ge Internal standard	Ge Internal standard		

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600899

ICP-MS Instrument ID: MT_079 Start Date: 01/30/2023 End Date: 01/31/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6/1	Q	Element Li-6/2	Q	Element Sc/2	Q	Element Sc/3	Q	Element Ge/2	Q
ICB 280-600899/7	15:01	103		97		96		94		97	
CRI 280-600899/9	15:08	99		100		102		104		96	
ICSA 280-600899/10	15:13	98		98		100		100		108	
ICSAB 280-600899/11	15:16	101		97		101		99		106	
ICSA 280-600899/41	09:50	99		104		108		103		107	
ICSAB 280-600899/42	09:52	94		106		110		98		107	
IC 280-600899/54	11:59	106		103		104		104		108	
ICV 280-600899/55	12:01	105		97		96		98		96	
CCV 280-600899/56	12:03	101		99		98		98		97	
CCB 280-600899/57	12:05	100		101		100		98		98	
CCVL 280-600899/58	12:07	97		98		97		98		101	
280-171373-2	12:09	98		96		97		102		101	
280-171373-3	12:10	101		98		101		97		99	
CCV 280-600899/63	12:16	102		102		103		97		102	
CCB 280-600899/64	12:18	101		100		97		101		96	
CCVL 280-600899/65	12:20	102		96		93		100		93	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600899

ICP-MS Instrument ID: MT_079 Start Date: 01/30/2023 End Date: 01/31/2023

Analyte	Mass	Internal Standard Used:				
		Element In 115	Element Ir 193	Element Sc/2 45	Element Sc/3 45	Element Li-6/1 6
Manganese	55					
Aluminum	27				X	
Antimony	121	X				
Arsenic	75					
Barium	137	X				
Beryllium	9					
Ca	40			X		
Cadmium	111	X				
Chromium	52					
Cobalt	59					
Copper	63					
Fe	56					
K	39				X	
Lead	208		X			
Mg	24				X	
Molybdenum	95	X				
Na	23				X	
Nickel	60					
Selenium	78					
Silver	107	X				
Strontium	88					
Thallium	205		X			
Thorium	232		X			
Tin	120	X				
Uranium	238		X			
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In Internal Standard	Ir (IS)	Sc (IS)	Sc (IS)	Li-6 Internal standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600899

ICP-MS Instrument ID: MT_079 Start Date: 01/30/2023 End Date: 01/31/2023

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In	Q	Element Ir	Q	Element	Q	Element	Q
ICB 280-600899/7	15:01	97		96		97					
CRI 280-600899/9	15:08	102		103		105					
ICSA 280-600899/10	15:13	113		97		97					
ICSAB 280-600899/11	15:16	107		96		98					
ICSA 280-600899/41	09:50	106		98		100					
ICSAB 280-600899/42	09:52	101		93		95					
IC 280-600899/54	11:59	108		104		104					
ICV 280-600899/55	12:01	101		100		101					
CCV 280-600899/56	12:03	97		98		99					
CCB 280-600899/57	12:05	97		97		98					
CCVL 280-600899/58	12:07	97		99		99					
280-171373-2	12:09	106		104		100					
280-171373-3	12:10	99		98		95					
CCV 280-600899/63	12:16	98		97		97					
CCB 280-600899/64	12:18	102		102		102					
CCVL 280-600899/65	12:20	102		100		102					

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.: Analysis Batch No.: 600899

ICP-MS Instrument ID: MT_079 Start Date: 01/30/2023 End Date: 01/31/2023

Analyte	Mass	Internal Standard Used:				
		Element Li-6/26	Element Ge/272	Element Ge/372	Element	Element
Manganese	55			X		
Aluminum	27					
Antimony	121					
Arsenic	75			X		
Barium	137					
Beryllium	9	X				
Ca	40					
Cadmium	111					
Chromium	52			X		
Cobalt	59			X		
Copper	63			X		
Fe	56		X			
K	39					
Lead	208					
Mg	24					
Molybdenum	95					
Na	23					
Nickel	60			X		
Selenium	78		X			
Silver	107					
Strontium	88			X		
Thallium	205					
Thorium	232					
Tin	120					
Uranium	238					
Vanadium	51			X		
Zinc	66			X		
Internal Standard Name on Instrument		Li-6 Internal standard	Ge Internal standard	Ge Internal standard		

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Batch Number: 599874 Batch Start Date: 01/23/23 08:20 Batch Analyst: Sweet, Lydia J

Batch Method: 3005A Batch End Date: 01/23/23 14:33

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ms spike 1 00015	MS spike 2 00104		
MB 280-599874/1		3005A, 6020A		50 mL	50 mL				
LCS 280-599874/2		3005A, 6020A		50 mL	50 mL	0.1 mL	0.1 mL		

Batch Notes	
Digestion Tube/Cup ID	2209103
Pipette/Syringe/Dispenser ID	MET88
Analyst ID - Spike Analyst	LJS
Sufficient Volume for Batch QC	YES
Hydrochloric Acid ID	222836-1/24
Nitric Acid ID	225037-1/24
Digestion Unit ID	03
Thermometer ID	V78153
Thermometer Location ID	A4
Temperature - Uncorrected - Start	90 Degrees C
Temperature - Corrected - Start	90 Degrees C
Digestion Start Time	01/23/2023 08:20
Digestion End Time	01/23/2023 14:33
Temperature - Uncorrected - End	93 Degrees C
Temperature - Corrected - End	93 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Batch Number: 599874 Batch Start Date: 01/23/23 08:20 Batch Analyst: Sweet, Lydia J

Batch Method: 3020A Batch End Date: 01/23/23 14:33

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ms spike 1 00015	MS spike 2 00104	
280-171373-A-1	OU11-T-21-011123	3020A, 6020A	T	<2 SU	50 mL	50 mL			
280-171373-A-1 MS	OU11-T-21-011123	3020A, 6020A	T	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-171373-A-1 MSD	OU11-T-21-011123	3020A, 6020A	T	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-171373-A-2	OU11-FD01-011123	3020A, 6020A	T	<2 SU	50 mL	50 mL			
280-171373-A-3	EB01-011123	3020A, 6020A	T	<2 SU	50 mL	50 mL			

Batch Notes	
Digestion Tube/Cup ID	2209103
Pipette/Syringe/Dispenser ID	MET88
Analyst ID - Spike Analyst	LJS
Sufficient Volume for Batch QC	YES
Hydrochloric Acid ID	222836-1/24
Nitric Acid ID	225037-1/24
Digestion Unit ID	03
Thermometer ID	V78153
Thermometer Location ID	A4
Temperature - Uncorrected - Start	90 Degrees C
Temperature - Corrected - Start	90 Degrees C
Digestion Start Time	01/23/2023 08:20
Digestion End Time	01/23/2023 14:33
Temperature - Uncorrected - End	93 Degrees C
Temperature - Corrected - End	93 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Denver Job No.: 280-171373-1

SDG No.:

Batch Number: 600236 Batch Start Date: 01/26/23 09:30 Batch Analyst: Mukarakate, Penelope F

Batch Method: 3005A Batch End Date: 01/26/23 14:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ms spike 1 00017	MS spike 2 00104	
MB 280-600236/1		3005A, 6020A			50 mL	50 mL			
LCS 280-600236/2		3005A, 6020A			50 mL	50 mL	0.1 mL	0.1 mL	
280-171373-B-1	OU11-T-21-011123	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-171373-B-1 MS	OU11-T-21-011123	3005A, 6020A	D	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-171373-B-1 MSD	OU11-T-21-011123	3005A, 6020A	D	<2 SU	50 mL	50 mL	0.1 mL	0.1 mL	
280-171373-B-2	OU11-FD01-011123	3005A, 6020A	D	<2 SU	50 mL	50 mL			
280-171373-B-3	EB01-011123	3005A, 6020A	D	<2 SU	50 mL	50 mL			

Batch Notes	
Digestion Tube/Cup ID	2209103
Pipette/Syringe/Dispenser ID	MET88
Analyst ID - Spike Analyst	MSM
Analyst ID - Spike Witness Analyst	PM
Sufficient Volume for Batch QC	YES
Hydrochloric Acid ID	222836-1/24
Nitric Acid ID	225037-1/24
Digestion Unit ID	08
Thermometer ID	940201
Thermometer Location ID	B1
Temperature - Uncorrected - Start	91 Degrees C
Temperature - Corrected - Start	91 Degrees C
Digestion Start Time	01/26/2023 09:30
Digestion End Time	01/26/2023 14:55
Temperature - Uncorrected - End	93 Degrees C
Temperature - Corrected - End	93 Degrees C

Basis	Basis Description
D	Dissolved

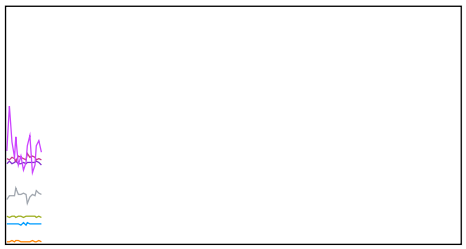
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/24/2023 10:26:16 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	20000	4063	4047	2.077
2	59	50000	4037	4055	2 903
3	63	20000	172	183	6 135
4	70	1000	145	145	5.676
5	80	2000000	601447	604757	0.439
6	89	20000	6132	6317	1.681
7	115	20000	6636	6802	1.443
8	118	10000	57	62	13.885
9	137	10000	781	808	3.396
10	140	20000	7034	7178	2.253
11	205	50000	5408	5520	1.967
12	6	5000	6763	6848	1.355
13	70/140	10	2.062 %	2.028 %	7.019
14	156/140	1	0 384 %	0 393 %	17.975

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-50 V
Extract 2	175 0 V	Q1 Exit		Def ect	11 6 V
Omega Bias	85 V	Cel Focus		P ate Bias	35 V
Omega Lens	8.0 V	Cel Entrance	30 V		

Cell Parameters

Use Gas	No	3rd Gas F ow		Axia Acce eration	
He F ow	0.0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0 0 mL/min	OctP Bias	8 0 V	Energy Discrimination	5 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	-3 0 V
Mass Offset	122	Axis Offset	0.07		

Torch

Current Signal

Torch H	0 2 mm	Torch V	0 2 mm		

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

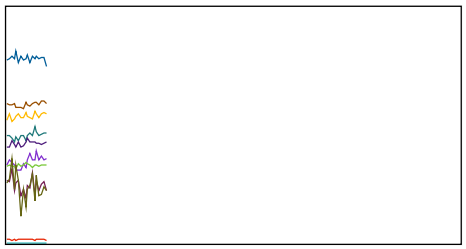
Name	Value	Unit
F/BK Press	2.56E+2	Pa
Ana yzer Press	1 02E 4	Pa
Reflected Power	1	W
Forward Power	1600	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/24/2023 10:26:50 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	200	124	120	8.456
2	9	500	179	172	6 899
3	59	1000	646	643	4 928
4	63	500	16	14	31 348
5	70	200	47	51	14 082
6	78	20	0	0	0.000
7	89	10000	5508	5385	2.400
8	115	20000	6641	6572	1 681
9	118	5000	58	66	11 607
10	137	2000	933	912	3.392
11	140	10000	4270	4216	2.588
12	205	10000	5925	5876	1.715
13	238	10000	7472	7842	1.943
14	70/140	5	1 101 %	1 218 %	13.476
15	156/140	2	0.445 %	0.477 %	25 219

Integration Time [sec] 0 1

Tune Parameters

Plasma Parameters

P asma Mode		Nebulizer Gas	0.64 L/min	Dilution Gas	0.26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1 40 V	Nebulizer Pump	0 10 rps	P asma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance		Cel Exit	60 V
Extract 2	180 0 V	Q1 Exit		Def ect	1 2 V
Omega Bias	90 V	Cel Focus		P ate Bias	60 V
Omega Lens	7 4 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	0 0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	5 0 mL/min	OctP Bias	18.0 V	Energy Discrimination	3 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Current Signal

Torch

Torch H	0 2 mm	Torch V	-0 2 mm		

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

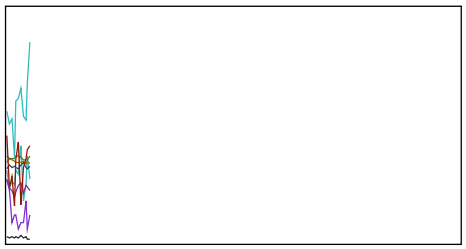
Name	Value	Unit
F/BK Press	2.63E+2	Pa
Ana yzer Press	4.89E 4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/24/2023 10:27:12 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	53	100	27	28	22 633
2	59	5000	1312	1291	1 976
3	66	500	49	43	12.344
4	70	100	57	40	20 249
5	78	20	1	1	142 725
6	115	5000	1622	1614	2.614
7	118	1000	17	22	19 040
8	137	1000	222	231	8 972
9	140	10000	3351	3437	1.675
10	205	10000	3693	3611	1.973
11	51/59	5	2.059 %	1.615 %	32 237
12	70/140	2	1.701 %	1.165 %	21 092
13	156/140	1	0.119 %	0.127 %	53 509

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas	---	Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-60 V
Extract 2	190 0 V	Q1 Exit		Def ect	0 8 V
Omega Bias	90 V	Cel Focus		P ate Bias	55 V
Omega Lens	7.3 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	4.3 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0.0 mL/min	OctP Bias	18 0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0.07		

Torch

Torch H	0.2 mm	Torch V	0.2 mm

Current Signal

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

Name	Value	Unit
F/BK Press	2 57E+2	Pa
Ana yzer Press	2 57E-4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 10:34:55 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

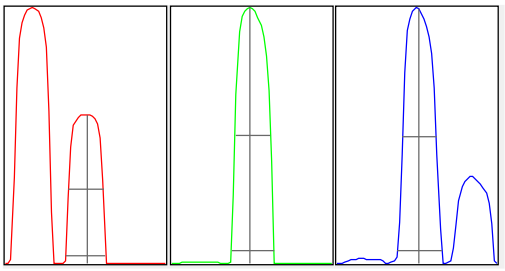
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2523	25225 43	0.545	5 000	
89		3979	39785 10	0.484	5 000	
205		3299	32988 39	1.122	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2510	2522	2545	2521	2514
89	3992	3965	4002	3977	3955
205	3238	3312	3328	3291	3325

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3978.80	7.05	6 90 7 10	
89	6328.75	89.00	88 90 89.10	
205	5440 83	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.65	0.742	0.900	
89	0.65	0.785	0.900	
205	0.62	0.822	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

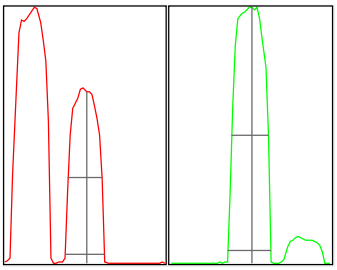
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		73	734 43	3 349	5.000	
9		109	1093 56	1.254	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	77	70	74	73	74
9	111	108	109	110	108

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	120 06	7 05	6.90 - 7.10	
9	168 96	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.742	0.900	
9	0.66	0.787	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		133	1325.99	1 927	5.000	
25		20	198 80	3 174	5.000	
26		24	240.20	6.237	5 000	Fai
59		853	8531 76	0.756	5 000	
103		2391	23912.19	0 947	5.000	
115		1018	10179.26	0 544	5.000	
205		2194	21937.26	0 470	5.000	
206		725	7251 19	0.903	5 000	
207		632	6321 65	0.914	5 000	

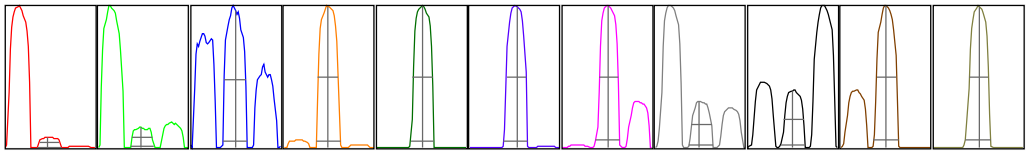
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1562	15622.68	0 455	5.000	
238		3214	32139.16	0 319	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	137	132	131	132	132
25	20	20	20	21	19
26	22	24	25	26	24
59	849	858	861	853	845
103	2391	2367	2373	2423	2402
115	1013	1025	1012	1019	1022
205	2189	2191	2184	2211	2194
206	717	721	725	727	735
207	631	636	631	624	640
208	1567	1567	1569	1556	1553
238	3220	3214	3201	3207	3227

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	210.67	23.95	23 90 24.10	
25	30.40	24.95	24 90 25.10	
26	36 25	26 00	25.90 - 26 10	
59	1316 48	59 00	58.90 - 59 10	
103	3851.03	103.05	102.90 103.10	
115	1631.04	115.10	114.90 115.10	
205	3595.79	205.05	204.90 205.10	
206	1164 79	206 00	205 90 - 206 10	
207	1012 16	207 00	206 90 - 207 10	
208	2519.76	208.05	207.90 208.10	
238	5140.44	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 67	0 790	0 900	
25	0.69	0.790	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.69	0.792	0.900	
59	0.68	0.790	0.900	
103	0 65	0 784	0 900	
115	0 64	0 779	0 900	
205	0.63	0.793	0.900	
206	0.64	0.791	0.900	
207	0.64	0.808	0.900	
208	0 64	0 821	0 900	
238	0 65	0 843	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 10:43:51 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

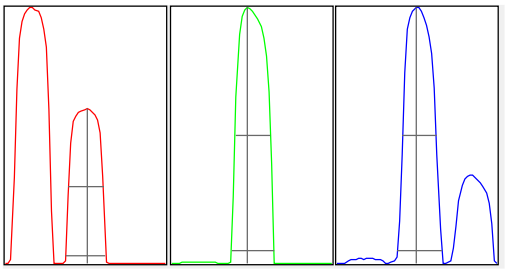
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2572	25719 39	0.585	5 000	
89		4101	41011 75	0.703	5 000	
205		3324	33238 80	0.370	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2581	2585	2559	2582	2552
89	4078	4065	4129	4128	4107
205	3329	3331	3335	3321	3304

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4074.02	7.05	6 90 7 10	
89	6558.43	88.95	88 90 89.10	
205	5485 26	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.65	0.742	0.900	
89	0.65	0.785	0.900	
205	0.62	0.822	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

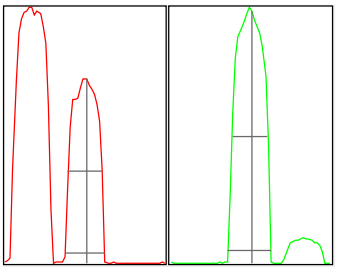
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		74	738 93	3 102	5.000	
9		113	1125 67	2.900	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	77	73	72	72	76
9	114	117	109	113	110

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	122 76	7 05	6.90 - 7.10	
9	179 26	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.743	0.900	
9	0.66	0.786	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		135	1347.19	2 417	5.000	
25		19	194 10	4 741	5.000	
26		24	244.50	1.835	5 000	
59		870	8695 81	0.600	5 000	
103		2446	24462.99	0 531	5.000	
115		1052	10517.55	0 867	5.000	
205		2213	22131.52	0 659	5.000	
206		729	7291 83	1.298	5 000	
207		640	6397 61	0.985	5 000	

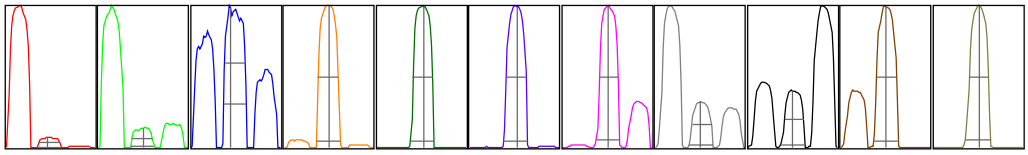
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1581	15805.33	0 690	5.000	
238		3226	32264.84	0 684	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	133	136	140	132	133
25	19	18	20	21	20
26	24	25	24	24	25
59	870	870	870	876	861
103	2451	2434	2460	2456	2431
115	1057	1052	1036	1054	1060
205	2228	2218	2192	2205	2223
206	726	727	717	732	743
207	647	643	630	639	639
208	1584	1580	1576	1596	1566
238	3249	3225	3194	3220	3244

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	206.77	23.95	23 90 24.10	
25	29.30	25.05	24 90 25.10	
26	36 50	25 85	25.90 - 26 10	Fail
59	1336 60	59 05	58.90 - 59 10	
103	3888.74	103.10	102.90 103.10	
115	1690.97	115.10	114.90 115.10	
205	3657.31	205.05	204.90 205.10	
206	1180 50	206 05	205 90 - 206 10	
207	1030 72	207 00	206 90 - 207 10	
208	2534.83	208.05	207.90 208.10	
238	5215.29	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 68	0 790	0 900	
25	0.69	0.790	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.66	0.738	0.900	
59	0.68	0.789	0.900	
103	0 65	0 784	0 900	
115	0 64	0 779	0 900	
205	0.62	0.786	0.900	
206	0.64	0.790	0.900	
207	0.64	0.802	0.900	
208	0 64	0 822	0 900	
238	0 64	0 841	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 11:11:06 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

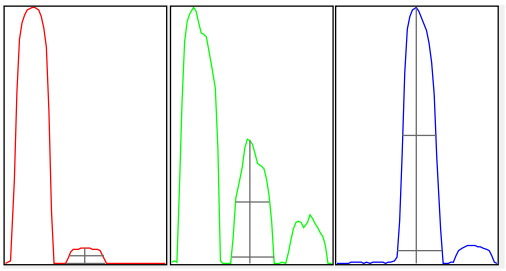
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		231	2312 78	1.617	5 000	
89		13	126.80	7.690	5 000	Fai
205		304	3035 34	5.409	5 000	Fai

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	232	235	232	231	225
89	14	13	12	11	13
205	328	305	308	292	285

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	368.00	7.00	6 90 7 10	
89	22.95	89.00	88 90 89.10	
205	508 30	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.63	0.741	0.900	
89	0.62	0.781	0.900	
205	0.62	0.823	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

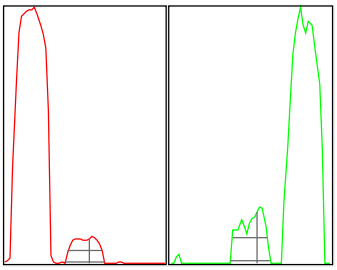
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		10	99 10	3 697	5.000	
9		1	8 60	16 133	5 000	Fai

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	10	10	10	10	10
9	1	1	1	1	1

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	15 65	7 10	6.90 - 7.10	
9	1 55	9 15	8.90 - 9.10	Fail

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.739	0.900	
9	0.64	0.738	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		11	107 70	6 636	5.000	Fai
25		2	16 80	21.728	5.000	Fai
26		2	17.00	26 059	5 000	Fai
59		16	163.60	4.791	5 000	
103		1	10 00	20.000	5.000	Fai
115		30	303 81	3 199	5.000	
205		169	1693.07	3 007	5.000	
206		13	127.20	8.035	5 000	Fai
207		12	116.70	5.057	5 000	Fai

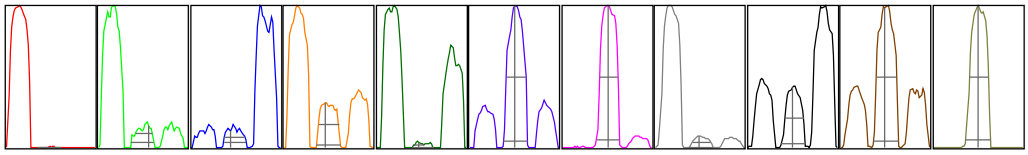
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		28	284 71	3 977	5.000	
238		157	1570.65	3 082	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	10	12	10	11	10
25	1	2	2	1	2
26	2	1	2	2	2
59	17	17	17	16	15
103	1	1	1	1	1
115	30	31	32	29	30
205	174	175	167	167	164
206	14	13	12	11	13
207	12	12	11	11	12
208	29	29	28	27	29
238	162	156	157	161	150

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	16.40	24.05	23 90 24.10	
25	2.75	25.20	24 90 25.10	Fail
26	2 25	25 85	25.90 - 26 10	Fail
59	25 50	58 90	58.90 - 59 10	
103	1.80	102.95	102.90 103.10	
115	51.70	115.05	114.90 115.10	
205	281.58	205.05	204.90 205.10	
206	22 80	206 00	205 90 - 206 10	
207	19 55	207 00	206 90 - 207 10	
208	45.60	208.00	207.90 208.10	
238	256.43	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 67	0 790	0 900	
25	0.56	0.761	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.66	0.747	0.900	
59	0.67	0.786	0.900	
103	0 35	0 723	0 900	
115	0 63	0 780	0 900	
205	0.62	0.783	0.900	
206	0.60	0.775	0.900	
207	0.62	0.792	0.900	
208	0 66	0 827	0 900	
238	0 64	0 829	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 11:32:50 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

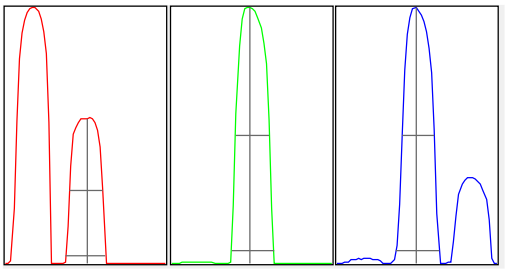
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2303	23032 32	2.511	5 000	
89		3795	37952 91	2.383	5 000	
205		2969	29694 25	1.967	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2238	2257	2302	2345	2375
89	3690	3725	3790	3897	3875
205	2885	2938	2986	3008	3030

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3801.37	7.05	6 90 7 10	
89	6340.77	89.00	88 90 89.10	
205	5130 94	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.807	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

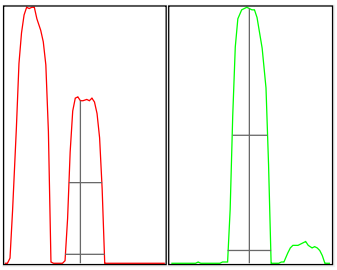
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		72	718 53	3 690	5.000	
9		106	1061 96	3.146	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	75	69	70	71	75
9	107	106	110	101	108

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	116 81	6 95	6.90 - 7.10	
9	170 06	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.62	0.738	0.900	
9	0.64	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		125	1247.99	2 555	5.000	
25		18	180 10	2 758	5.000	
26		23	228.50	5.649	5 000	Fai
59		851	8512 20	0.518	5 000	
103		2281	22813.31	0 538	5.000	
115		995	9946.14	0 663	5.000	
205		2065	20650.37	0 615	5.000	
206		679	6785 53	0.592	5 000	
207		601	6013 33	0.378	5 000	

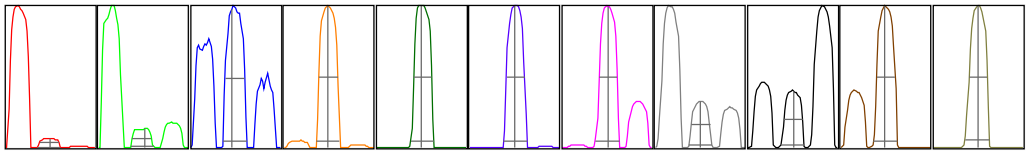
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1455	14549.82	0 470	5.000	
238		2998	29983.30	0 639	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	129	125	121	127	123
25	19	18	17	18	19
26	23	21	22	23	25
59	845	848	853	854	856
103	2296	2267	2272	2281	2290
115	992	996	986	994	1004
205	2071	2069	2051	2053	2081
206	677	677	677	677	686
207	603	604	599	600	602
208	1446	1457	1465	1454	1453
238	2996	2971	3006	3024	2995

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	210.07	24.00	23 90 24.10	
25	28.15	25.10	24 90 25.10	
26	37 05	25 90	25.90 - 26 10	
59	1380 89	59 00	58.90 - 59 10	
103	3908.90	103.00	102.90 103.10	
115	1708.64	115.05	114.90 115.10	
205	3529.00	205.05	204.90 205.10	
206	1153 58	206 05	205 90 - 206 10	
207	999 95	207 05	206 90 - 207 10	
208	2501.12	208.00	207.90 208.10	
238	5063.52	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 739	0 900	
25	0.65	0.778	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.64	0.784	0.900	
59	0.64	0.782	0.900	
103	0 60	0 771	0 900	
115	0 60	0 770	0 900	
205	0.60	0.801	0.900	
206	0.61	0.745	0.900	
207	0.62	0.746	0.900	
208	0 60	0 776	0 900	
238	0 61	0 817	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name Denver Metals

Acq/Data Batch D:\Agi ent\ICPMH\1\DATA\79 012423.b

Acq. Date-Time 1/24/2023 11:43:12 AM

Report Comment ---

Instrument Name G8422A SG22251392

[No Gas]

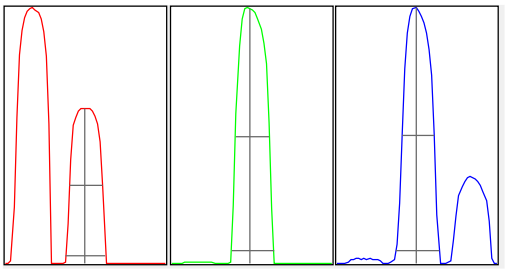
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2432	24318 38	0.622	5 000	
89		4012	40123 69	0.501	5 000	
205		3143	31426 52	0.128	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2428	2422	2434	2419	2457
89	4024	4024	3993	4032	3988
205	3138	3149	3141	3144	3142

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4048.70	7.00	6 90 7 10	
89	6713.63	89.00	88 90 89.10	
205	5438 36	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.806	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

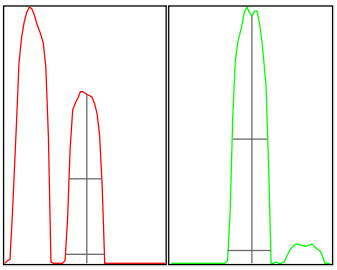
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		73	732 23	2 032	5.000	
9		110	1104 97	2.578	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	72	72	76	73	73
9	111	107	111	114	110

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	121 66	7 05	6.90 - 7.10	
9	173 96	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.62	0.737	0.900	
9	0.65	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		128	1275.59	1 371	5.000	
25		19	186 20	3 124	5.000	
26		23	228.80	3.143	5 000	
59		861	8613 00	0.790	5 000	
103		2315	23154.21	0 967	5.000	
115		1011	10106.53	0 888	5.000	
205		2086	20855.72	0 364	5.000	
206		687	6871 61	1.068	5 000	
207		605	6048 36	0.814	5 000	

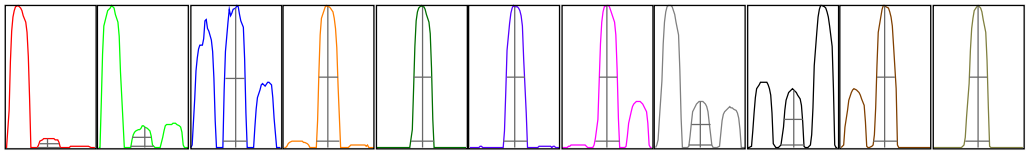
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1462	14623.18	0 416	5.000	
238		3022	30220.82	0 531	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	125	130	127	129	127
25	19	18	19	18	19
26	24	23	23	24	22
59	862	873	856	859	857
103	2345	2304	2333	2295	2300
115	1025	1003	1002	1011	1012
205	2098	2080	2086	2085	2078
206	695	695	685	679	682
207	603	603	608	598	611
208	1462	1473	1458	1461	1458
238	3043	3031	3010	3024	3003

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	209.47	23.95	23 90 24.10	
25	30.75	25.10	24 90 25.10	
26	36 05	26 00	25.90 - 26 10	
59	1388 40	59 00	58.90 - 59 10	
103	4028.55	103.05	102.90 103.10	
115	1734.07	115.05	114.90 115.10	
205	3575.73	205.00	204.90 205.10	
206	1157 78	206 05	205 90 - 206 10	
207	1019 31	207 05	206 90 - 207 10	
208	2507.43	208.00	207.90 208.10	
238	5131.09	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 740	0 900	
25	0.64	0.777	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.785	0.900	
59	0.64	0.782	0.900	
103	0 59	0 770	0 900	
115	0 60	0 770	0 900	
205	0.60	0.799	0.900	
206	0.61	0.753	0.900	
207	0.62	0.746	0.900	
208	0 60	0 775	0 900	
238	0 61	0 814	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
6		0.078366	☑
9		0.085932	☑
23		0.087336	☑
24		0.089890	☑
27		0.092797	☑
39		0.095820	☑
45		0.096563	☑
48		0.098689	☑
51		0.099525	☑
52		0.099504	☑
55		0.100005	☑
59		0.101731	☑
60		0.103518	☑
63		0.103968	☑
66		0.103979	☑
72		0.103801	☑
75		0.103497	☑
88		0.103236	☑
98		0.103736	☑
102		0.104164	☑
106		0.105740	☑
114		0.104406	☑
115		0.103889	☑

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
118		0.106361	☑
121		0.105307	☑
138		0.105726	☑
175		0.112837	☑
193		0.107537	☑
205		0.113248	☑
208		0.114519	☑
209		0.105879	☑
232		0.109615	☑
238		0.114084	☑

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:53:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:55:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:57:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:59:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:00:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:05:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	007SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:07:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	008SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:10:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	009SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:12:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	010SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:14:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	011SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:16:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	012SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:18:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	013SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:23:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	014CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-24T12:25:08-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	29845	0.00
Mg	24	45	3	HMI He	130	0.00
Al	27	45	3	HMI He	67	64.89
K	39	45	3	HMI He	21338	0.04
Ca	40	45	2	HMI H2	11189	0.03
V	51	72	3	HMI He	158	14.02
Cr	52	72	3	HMI He	1736	0.23
Mn	55	72	3	HMI He	535	1.49
Fe	56	72	2	HMI H2	10735	0.02
Co	59	72	3	HMI He	38	39.33
Ni	60	72	3	HMI He	190	2.77
Cu	63	72	3	HMI He	518	1.68
Zn	66	72	3	HMI He	157	12.29
As	75	72	3	HMI He	37	93.64
Se	78	72	2	HMI H2	1	6495.19
(Se)	78	72	3	HMI He	13	429.74
Sr	88	72	3	HMI He	15	222.20
Mo	95	115	3	HMI He	57	9.00
Ag	107	115	3	HMI He	22	268.08
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	653	1.36
Sb	121	115	3	HMI He	67	17.19
Ba	137	115	3	HMI He	48	44.57
Tl	205	193	3	HMI He	396	0.66
(Pb)	206	193	3	HMI He	175	9.09
(Pb)	207	193	3	HMI He	375	1.88
Pb	208	193	3	HMI He	931	0.63
Th	232	193	3	HMI He	4202	0.01
U	238	193	3	HMI He	1586	0.31

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4299393	0.89
Sc (IS)	45	3	HMI He	674661	1.07
Ge Internal standard	72	2	HMI H2	2269722	1.08
Ge Internal standard	72	3	HMI He	739017	1.48
In Internal Standard	115	3	HMI He	2543041	2.84
Ir (IS)	193	3	HMI He	5570851	0.25

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	015CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T12:27:01-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5	3466.41
Na	23	45	3	HMI He	12613225	0.00
Mg	24	45	3	HMI He	1336979	0.00
Al	27	45	3	HMI He	224	10.08
K	39	45	3	HMI He	1022416	0.00
V	51	72	3	HMI He	197	7.35
Cr	52	72	3	HMI He	2299	0.27
Mn	55	72	3	HMI He	673	1.12
Co	59	72	3	HMI He	68	16.36
Ni	60	72	3	HMI He	260	3.39
Cu	63	72	3	HMI He	738	0.60
Zn	66	72	3	HMI He	430	3.39
As	75	72	3	HMI He	52	78.02
Se	78	72	2	HMI H2	2	5000.00
(Se)	78	72	3	HMI He	22	162.85
Sr	88	72	3	HMI He	460	3.28
Mo	95	115	3	HMI He	108	35.49
Ag	107	115	3	HMI He	48	24.71
Cd	111	115	3	HMI He	7	649.52
Sn	120	115	3	HMI He	1223	0.65
Sb	121	115	3	HMI He	102	20.15
Ba	137	115	3	HMI He	137	13.74
Tl	205	193	3	HMI He	491	1.53
(Pb)	206	193	3	HMI He	285	4.04
(Pb)	207	193	3	HMI He	415	3.20
Pb	208	193	3	HMI He	1259	0.36
Th	232	193	3	HMI He	4442	0.05
U	238	193	3	HMI He	1651	0.37

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4159773	1.64	4299393	96.75	60	120	
Sc (IS)	45	3	HMI He	654672	0.96	674661	97.04	60	120	
Ge Internal standard	72	2	HMI H2	2081219	1.81	2269722	91.69	60	120	
Ge Internal standard	72	3	HMI He	689612	0.14	739017	93.31	60	120	
In Internal Standard	115	3	HMI He	2533291	1.30	2543041	99.62	60	120	
Ir (IS)	193	3	HMI He	5457471	0.63	5570851	97.96	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	016CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T12:28:52-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5852	0.01
Na	23	45	3	HMI He	300642	0.00
Mg	24	45	3	HMI He	135080	0.00
Al	27	45	3	HMI He	48769	0.01
K	39	45	3	HMI He	121567	0.00
V	51	72	3	HMI He	65383	0.00
Cr	52	72	3	HMI He	85689	0.00
Mn	55	72	3	HMI He	44601	0.00
Co	59	72	3	HMI He	136221	0.00
Ni	60	72	3	HMI He	38180	0.00
Cu	63	72	3	HMI He	102641	0.00
Zn	66	72	3	HMI He	17728	0.01
As	75	72	3	HMI He	12109	0.00
Se	78	72	2	HMI H2	6214	0.06
(Se)	78	72	3	HMI He	763	0.78
Sr	88	72	3	HMI He	112758	0.00
Mo	95	115	3	HMI He	53898	0.00
Ag	107	115	3	HMI He	177208	0.00
Cd	111	115	3	HMI He	25782	0.00
Sn	120	115	3	HMI He	76468	0.00
Sb	121	115	3	HMI He	77031	0.00
Ba	137	115	3	HMI He	24304	0.00
Tl	205	193	3	HMI He	372960	0.00
(Pb)	206	193	3	HMI He	124573	0.00
(Pb)	207	193	3	HMI He	109997	0.00
Pb	208	193	3	HMI He	502020	0.00
Th	232	193	3	HMI He	505907	0.00
U	238	193	3	HMI He	529449	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306174	1.31	4299393	100.16	60	120	
Sc (IS)	45	3	HMI He	670405	0.98	674661	99.37	60	120	
Ge Internal standard	72	2	HMI H2	2377860	1.43	2269722	104.76	60	120	
Ge Internal standard	72	3	HMI He	771394	1.17	739017	104.38	60	120	
In Internal Standard	115	3	HMI He	2603249	0.52	2543041	102.37	60	120	
Ir (IS)	193	3	HMI He	5643403	0.25	5570851	101.30	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	017_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:33:29-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.247	ppb	3.983	2289	40	98.1	90	110	
Na	23	3	45	13284.811	ppb	1.702	1707209	12800	103.8	90	110	
Mg	24	3	45	4717.163	ppb	2.357	316661	4800	98.3	90	110	
Al	27	3	45	781.218	ppb	1.575	18718	800	97.7	90	110	
K	39	3	45	4720.815	ppb	1.814	258145	4800	98.4	90	110	
Ca	40	2	45	4912.696	ppb	2.185	2912573	4800	102.3	90	110	
V	51	3	72	41.734	ppb	0.513	26103	40	104.3	90	110	
Cr	52	3	72	42.012	ppb	2.837	35307	40	105.0	90	110	
Mn	55	3	72	42.257	ppb	2.969	18266	40	105.6	90	110	
Fe	56	2	72	864.529	ppb	2.380	1311438	800	108.1	90	110	
Co	59	3	72	41.512	ppb	2.037	53919	40	103.8	90	110	
Ni	60	3	72	40.785	ppb	1.055	14956	40	102.0	90	110	
Cu	63	3	72	43.550	ppb	2.275	42888	40	108.9	90	110	
Zn	66	3	72	82.051	ppb	3.190	13887	80	102.6	90	110	
As	75	3	72	41.885	ppb	4.047	4858	40	104.7	90	110	
Se	78	2	72	43.812	ppb	5.046	2592	40	109.5	90	110	
(Se)	78	3	72	41.501	ppb	10.400	310	40	103.8	90	110	
Sr	88	3	72	123.908	ppb	2.959	66577	120	103.3	90	110	
Mo	95	3	115	41.581	ppb	2.261	21830	40	104.0	90	110	
Ag	107	3	115	80.752	ppb	0.591	139157	80	100.9	90	110	
Cd	111	3	115	42.130	ppb	1.713	10564	40	105.3	90	110	
Sn	120	3	115	40.611	ppb	1.056	30585	40	101.5	90	110	
Sb	121	3	115	41.579	ppb	1.235	31184	40	103.9	90	110	
Ba	137	3	115	41.464	ppb	5.763	9825	40	103.7	90	110	
Tl	205	3	193	41.070	ppb	0.537	149577	40	102.7	90	110	
(Pb)	206	3	193	40.707	ppb	0.626	49544	40	101.8	90	110	
(Pb)	207	3	193	40.415	ppb	0.565	43566	40	101.0	90	110	
Pb	208	3	193	40.806	ppb	1.174	200271	40	102.0	90	110	
Th	232	3	193	82.066	ppb	0.694	405530	80	102.6	90	110	
U	238	3	193	41.460	ppb	1.898	214926	40	103.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4272688	2.05	4299393	99.38	60	120	
Sc (IS)	45	3	HMI He	657219	1.29	674661	97.41	60	120	
Ge Internal standard	72	2	HMI H2	2263621	0.63	2269722	99.73	60	120	
Ge Internal standard	72	3	HMI He	735318	1.91	739017	99.50	60	120	
In Internal Standard	115	3	HMI He	2531525	0.80	2543041	99.55	60	120	
Ir (IS)	193	3	HMI He	5502457	0.75	5570851	98.77	60	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	icb-7561103
Data File Name	018_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:36:17-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	0.028	ppb	176.8	3	0.5	
Na	23	3	15.042	ppb	69.6	31346	25	
Mg	24	3	0.271	ppb	192.4	147	25	
Al	27	3	-0.092	ppb	-1004.0	63	15	
K	39	3	-10.944	ppb	-320.4	20509	50	
V	51	3	-0.038	ppb	-155.3	135	1	
Cr	52	3	-0.204	ppb	-79.6	1574	1	
Mn	55	3	-0.326	ppb	-41.8	398	0.5	
Co	59	3	-0.009	ppb	-63.2	27	0.5	
Ni	60	3	-0.016	ppb	-483.3	185	1	
Cu	63	3	-0.059	ppb	-72.2	461	1	
Zn	66	3	-0.109	ppb	-53.5	138	5	
As	75	3	0.043	ppb	778.5	42	1	
Se	78	2	0.044	ppb	129.5	4	1	
(Se)	78	3	-0.690	ppb	-214.3	8	1	
Sr	88	3	0.031	ppb	120.9	32	0.5	
Mo	95	3	-0.032	ppb	-164.4	40	0.5	
Ag	107	3	0.003	ppb	158.4	27	1	
Cd	111	3	-0.006	ppb	0.0	0	0.5	
Sn	120	3	0.121	ppb	31.3	746	1	
Sb	121	3	-0.033	ppb	-69.8	42	0.6	
Ba	137	3	-0.091	ppb	-13.0	27	0.5	
Tl	205	3	-0.034	ppb	-17.1	272	0.1	
(Pb)	206	3	-0.005	ppb	-862.7	170	1	
(Pb)	207	3	-0.002	ppb	-150.2	375	1	
Pb	208	3	-0.002	ppb	-675.8	926	0.5	
Th	232	3	1.005	ppb	26.3	9222	1	>RL
U	238	3	-0.006	ppb	-173.0	1566	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4380120	0.59	4299393	101.88	60	120	
Sc (IS)	45	3	HMI He	665612	2.76	674661	98.66	60	120	
Ge Internal standard	72	2	HMI H2	2284912	2.39	2269722	100.67	60	120	
Ge Internal standard	72	3	HMI He	740469	1.80	739017	100.20	60	120	
In Internal Standard	115	3	HMI He	2552632	0.32	2543041	100.38	60	120	
Ir (IS)	193	3	HMI He	5602371	1.66	5570851	100.57	60	120	

CRI Report

Sample Table

Sample Name	cri-7561108
Data File Name	019LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:38:10-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	1.044	ppb	26.964	62	1	104.4	80	120	
Na	23	3	45	70.686	ppb	9.099	38099	50	141.4	80	120	>+/-30%
Mg	24	3	45	53.666	ppb	4.979	3738	50	107.3	80	120	
Al	27	3	45	45.794	ppb	13.432	1161	50	91.6	80	120	
K	39	3	45	101.508	ppb	41.397	25947	100	101.5	80	120	
Ca	40	2	45	60.038	ppb	5.411	46075	50	120.1	80	120	>+/-30%
V	51	3	72	5.207	ppb	5.540	3332	5	104.1	80	120	
Cr	52	3	72	2.128	ppb	8.814	3365	2	106.4	80	120	
Mn	55	3	72	1.005	ppb	7.912	936	1	100.5	80	120	
Fe	56	2	72	56.232	ppb	2.946	93906	50	112.5	80	120	
Co	59	3	72	1.080	ppb	8.449	1414	1	108.0	80	120	
Ni	60	3	72	2.117	ppb	4.753	938	2	105.8	80	120	
Cu	63	3	72	2.245	ppb	6.603	2651	2	112.3	80	120	
Zn	66	3	72	10.411	ppb	6.511	1864	10	104.1	80	120	
As	75	3	72	5.468	ppb	12.163	653	5	109.4	80	120	
Se	78	2	72	5.169	ppb	5.072	303	5	103.4	80	120	
Sr	88	3	72	1.062	ppb	10.453	575	1	106.2	80	120	
Mo	95	3	115	2.025	ppb	14.709	1119	2	101.3	80	120	
Ag	107	3	115	1.057	ppb	3.684	1851	1	105.7	80	120	
Cd	111	3	115	1.092	ppb	10.937	277	1	109.2	80	120	
Sn	120	3	115	10.145	ppb	1.491	8173	10	101.4	80	120	
Sb	121	3	115	2.085	ppb	7.794	1633	2	104.2	80	120	
Ba	137	3	115	0.879	ppb	8.926	257	1	87.9	80	120	
Tl	205	3	193	0.944	ppb	6.081	3922	1	94.4	80	120	
(Pb)	206	3	193	1.022	ppb	11.253	1449	1	102.2	80	120	
(Pb)	207	3	193	1.064	ppb	5.406	1548	1	106.4	80	120	
Pb	208	3	193	1.014	ppb	5.057	6029	1	101.4	80	120	
Th	232	3	193	2.252	ppb	5.036	15569	2	112.6	80	120	
U	238	3	193	1.044	ppb	3.116	7127	1	104.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4227925	1.96	4299393	98.34	60	120	
Sc (IS)	45	3	HMI He	658863	0.22	674661	97.66	60	120	
Ge Internal standard	72	2	HMI H2	2230693	1.47	2269722	98.28	60	120	
Ge Internal standard	72	3	HMI He	721882	1.22	739017	97.68	60	120	
In Internal Standard	115	3	HMI He	2545578	3.79	2543041	100.10	60	120	
Ir (IS)	193	3	HMI He	5652161	1.82	5570851	101.46	60	120	

CRI Report

Sample Table

Sample Name	cri-
Data File Name	020LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:44:44-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.029	ppb	171.604	3	1	2.9	80	120	>+/-30%
Na	23	3	45	171.155	ppb	4.958	50835	50	342.3	80	120	>+/-30%
Mg	24	3	45	1.437	ppb	34.513	224	50	2.9	80	120	>+/-30%
Al	27	3	45	1.015	ppb	140.994	90	50	2.0	80	120	>+/-30%
K	39	3	45	-4.031	ppb	-948.016	20626	100	-4.0	80	120	>+/-30%
Ca	40	2	45	283.193	ppb	4.472	176577	50	566.4	80	120	>+/-30%
V	51	3	72	0.021	ppb	52.370	170	5	0.4	80	120	>+/-30%
Cr	52	3	72	-0.009	ppb	-310.650	1716	2	-0.5	80	120	>+/-30%
Mn	55	3	72	-0.252	ppb	-39.703	425	1	-25.2	80	120	>+/-30%
Fe	56	2	72	0.578	ppb	28.552	11440	50	1.2	80	120	>+/-30%
Co	59	3	72	-0.008	ppb	-101.192	28	1	-0.8	80	120	>+/-30%
Ni	60	3	72	0.027	ppb	314.086	198	2	1.4	80	120	>+/-30%
Cu	63	3	72	0.007	ppb	95.996	521	2	0.4	80	120	>+/-30%
Zn	66	3	72	0.060	ppb	229.663	165	10	0.6	80	120	>+/-30%
As	75	3	72	0.119	ppb	43.105	50	5	2.4	80	120	>+/-30%
Se	78	2	72	0.011	ppb	296.744	2	5	0.2	80	120	>+/-30%
Sr	88	3	72	0.046	ppb	69.947	40	1	4.6	80	120	>+/-30%
Mo	95	3	115	0.032	ppb	129.047	72	2	1.6	80	120	>+/-30%
Ag	107	3	115	0.007	ppb	26.892	33	1	0.7	80	120	>+/-30%
Cd	111	3	115	0.007	ppb	164.710	3	1	0.7	80	120	>+/-30%
Sn	120	3	115	0.114	ppb	106.036	725	10	1.1	80	120	>+/-30%
Sb	121	3	115	0.038	ppb	112.624	93	2	1.9	80	120	>+/-30%
Ba	137	3	115	0.025	ppb	461.191	53	1	2.5	80	120	>+/-30%
Tl	205	3	193	-0.031	ppb	-29.348	282	1	-3.1	80	120	>+/-30%
(Pb)	206	3	193	-0.014	ppb	-158.332	157	1	-1.4	80	120	>+/-30%
(Pb)	207	3	193	-0.013	ppb	-376.320	358	1	-1.3	80	120	>+/-30%
Pb	208	3	193	-0.022	ppb	-52.123	818	1	-2.2	80	120	>+/-30%
Th	232	3	193	0.164	ppb	13.610	4980	2	8.2	80	120	>+/-30%
U	238	3	193	-0.018	ppb	-46.373	1479	1	-1.8	80	120	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4231520	2.69	4299393	98.42	60	120	
Sc (IS)	45	3	HMI He	659128	1.81	674661	97.70	60	120	
Ge Internal standard	72	2	HMI H2	2237659	2.65	2269722	98.59	60	120	
Ge Internal standard	72	3	HMI He	733850	1.74	739017	99.30	60	120	
In Internal Standard	115	3	HMI He	2493045	1.51	2543041	98.03	60	120	
Ir (IS)	193	3	HMI He	5532328	0.67	5570851	99.31	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	021ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:47:29-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	28105.0	2	0.5	
Na	23	3	45	97863.796	ppb	3.1	12633652	100000	
Mg	24	3	45	94667.107	ppb	2.7	6477249	100000	
Al	27	3	45	96810.636	ppb	1.7	2356862	100000	
K	39	3	45	94015.793	ppb	3.0	4841285	100000	
Ca	40	2	45	97119.608	ppb	0.6	58569301	100000	
V	51	3	72	0.015	ppb	393.8	175	1	
Cr	52	3	72	1.341	ppb	6.0	2946	1	>RL or LOD
Mn	55	3	72	0.101	ppb	74.2	605	0.95	
Fe	56	2	72	99788.063	ppb	0.3	151781458	100000	
Co	59	3	72	0.191	ppb	14.6	302	0.5	
Ni	60	3	72	0.454	ppb	24.3	371	1	
Cu	63	3	72	0.219	ppb	5.1	766	1	
Zn	66	3	72	1.019	ppb	11.9	343	1	>RL or LOD
As	75	3	72	0.085	ppb	200.3	48	1	
Se	78	2	72	0.067	ppb	77.3	5	1	
(Se)	78	3	72	1.035	ppb	106.2	22	1	>RL or LOD
Sr	88	3	72	0.641	ppb	2.1	378	1	
Mo	95	3	115	2001.042	ppb	0.7	1045482	2000	>RL or LOD
Ag	107	3	115	0.018	ppb	33.0	53	1	
Cd	111	3	115	0.200	ppb	25.1	52	1	
Sn	120	3	115	0.707	ppb	11.9	1169	1	
Sb	121	3	115	0.206	ppb	18.3	220	1	
Ba	137	3	115	1.651	ppb	10.1	436	0.95	>RL or LOD
Tl	205	3	193	-0.010	ppb	-41.3	355	1	
(Pb)	206	3	193	0.208	ppb	30.9	423	1	
(Pb)	207	3	193	0.175	ppb	30.8	556	1	
Pb	208	3	193	0.216	ppb	12.1	1969	1	
Th	232	3	193	0.123	ppb	27.3	4737	1	
U	238	3	193	0.003	ppb	387.5	1578	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4360968	1.88	4299393	101.43	60	120	
Sc (IS)	45	3	HMI He	670345	2.65	674661	99.36	60	120	
Ge Internal standard	72	2	HMI H2	2288061	0.73	2269722	100.81	60	120	
Ge Internal standard	72	3	HMI He	774064	2.98	739017	104.74	60	120	
In Internal Standard	115	3	HMI He	2526032	1.01	2543041	99.33	60	120	
Ir (IS)	193	3	HMI He	5487402	1.40	5570851	98.50	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7558071
Data File Name	022ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:50:32-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	97.081	ppb	2.266	5663	100	97.1	80	120	
Na	23	3	45	104958.361	ppb	2.574	13566033	100	104958.4	80	120	>+\-20%
Mg	24	3	45	100274.831	ppb	1.822	6871226	100	100274.8	80	120	>+\-20%
Al	27	3	45	98358.248	ppb	2.764	2396950	100	98358.2	80	120	>+\-20%
K	39	3	45	101887.144	ppb	2.805	5251361	100	101887.1	80	120	>+\-20%
Ca	40	2	45	104046.848	ppb	2.440	62807369	100	104046.8	80	120	>+\-20%
V	51	3	72	99.027	ppb	2.392	64537	100	99.0	80	120	
Cr	52	3	72	98.470	ppb	2.150	84131	100	98.5	80	120	
Mn	55	3	72	98.569	ppb	1.398	43834	100	98.6	80	120	
Fe	56	2	72	99814.936	ppb	2.024	153630495	100	99814.9	80	120	>+\-20%
Co	59	3	72	96.963	ppb	1.684	131670	100	97.0	80	120	
Ni	60	3	72	96.271	ppb	0.916	36650	100	96.3	80	120	
Cu	63	3	72	97.497	ppb	1.493	99761	100	97.5	80	120	
Zn	66	3	72	92.741	ppb	1.657	16400	100	92.7	80	120	
As	75	3	72	98.736	ppb	1.912	11919	100	98.7	80	120	
Se	78	2	72	100.565	ppb	1.109	6087	100	100.6	80	120	
(Se)	78	3	72	95.163	ppb	2.917	725	100	95.2	80	120	
Sr	88	3	72	194.595	ppb	1.787	109362	100	194.6	80	120	>+\-20%
Mo	95	3	115	2123.747	ppb	2.337	1091593	100	2123.7	80	120	>+\-20%
Ag	107	3	115	99.753	ppb	1.965	168751	100	99.8	80	120	
Cd	111	3	115	98.504	ppb	2.979	24241	100	98.5	80	120	
Sn	120	3	115	104.353	ppb	1.361	76158	100	104.4	80	120	
Sb	121	3	115	104.793	ppb	2.284	77060	100	104.8	80	120	
Ba	137	3	115	107.329	ppb	1.923	24901	100	107.3	80	120	
Tl	205	3	193	98.772	ppb	2.861	355670	100	98.8	80	120	
(Pb)	206	3	193	99.551	ppb	3.367	119729	100	99.6	80	120	
(Pb)	207	3	193	98.166	ppb	3.523	104246	100	98.2	80	120	
Pb	208	3	193	99.099	ppb	3.258	480296	100	99.1	80	120	
Th	232	3	193	102.217	ppb	4.133	499071	100	102.2	80	120	
U	238	3	193	101.902	ppb	3.061	520850	100	101.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4365904	1.41	4299393	101.55	60	120	
Sc (IS)	45	3	HMI He	671029	1.75	674661	99.46	60	120	
Ge Internal standard	72	2	HMI H2	2315568	0.74	2269722	102.02	60	120	
Ge Internal standard	72	3	HMI He	768956	1.24	739017	104.05	60	120	
In Internal Standard	115	3	HMI He	2485874	2.19	2543041	97.75	60	120	
Ir (IS)	193	3	HMI He	5451233	2.56	5570851	97.85	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	023SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:52:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.194	ppb	0.194	108.65	13	2000	
Na	23	3	45	45.591	ppb	45.591	13.82	36687	400000	
Mg	24	3	45	7.693	ppb	7.693	3.58	677	400000	
Al	27	3	45	7.903	ppb	7.903	48.52	267	400000	
K	39	3	45	9.973	ppb	9.973	438.47	22401	400000	
Ca	40	2	45	14.861	ppb	14.861	6.94	20529	400000	
V	51	3	72	0.177	ppb	0.177	7.17	287	2000	
Cr	52	3	72	-0.135	ppb	-0.135	-142.71	1734	5000	
Mn	55	3	72	-0.004	ppb	-0.004	-2758.58	568	10000	
Fe	56	2	72	10.819	ppb	10.819	9.55	27823	10000	
Co	59	3	72	0.144	ppb	0.144	7.36	242	2000	
Ni	60	3	72	0.140	ppb	0.140	124.51	257	5000	
Cu	63	3	72	0.140	ppb	0.140	16.49	698	5000	
Zn	66	3	72	0.492	ppb	0.492	21.71	255	5000	
As	75	3	72	0.169	ppb	0.169	19.37	60	2000	
Se	78	2	72	0.284	ppb	0.284	13.94	19	2000	
(Se)	78	3	72	0.530	ppb	0.530	68.69	18	2000	
Sr	88	3	72	0.222	ppb	0.222	34.44	143	4000	
Mo	95	3	115	1.682	ppb	1.682	22.66	971	2000	
Ag	107	3	115	0.014	ppb	0.014	33.13	47	100	
Cd	111	3	115	0.173	ppb	0.173	16.23	47	2000	
Sn	120	3	115	0.297	ppb	0.297	35.30	901	2000	
Sb	121	3	115	0.202	ppb	0.202	10.19	225	1000	
Ba	137	3	115	0.097	ppb	0.097	26.68	73	5000	
Tl	205	3	193	0.125	ppb	0.125	14.51	853	2000	
(Pb)	206	3	193	0.184	ppb	0.184	18.98	400	100	
(Pb)	207	3	193	0.168	ppb	0.168	23.79	555	100	
Pb	208	3	193	0.179	ppb	0.179	17.40	1812	5000	
Th	232	3	193	0.816	ppb	0.816	21.27	8219	2000	
U	238	3	193	0.027	ppb	0.027	148.25	1719	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4408231	0.63	4299393	102.53	60	120	
Sc (IS)	45	3	HMI He	692276	0.96	674661	102.61	60	120	
Ge Internal standard	72	2	HMI H2	2334506	0.66	2269722	102.85	60	120	
Ge Internal standard	72	3	HMI He	788283	1.80	739017	106.67	60	120	
In Internal Standard	115	3	HMI He	2621740	0.88	2543041	103.09	60	120	
Ir (IS)	193	3	HMI He	5554135	0.27	5570851	99.70	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	024_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:54:15-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1971.582	ppb	0.387	125135	2000	98.6	90	110	
Al	27	3	45	26.855	ppb	3.038	767	50000	0.1	90	110	LRS Main CR1 Failed
V	51	3	72	2155.586	ppb	2.310	1445100	2000	107.8	90	110	
Cr	52	3	72	5071.464	ppb	0.830	4373974	5000	101.4	90	110	
Mn	55	3	72	10134.989	ppb	2.318	4588500	10000	101.3	90	110	
Co	59	3	72	2093.220	ppb	1.325	2930048	2000	104.7	90	110	
Ni	60	3	72	5073.851	ppb	1.635	1981006	5000	101.5	90	110	
Cu	63	3	72	5339.528	ppb	1.192	5603368	5000	106.8	90	110	
Zn	66	3	72	5215.089	ppb	2.374	941539	5000	104.3	90	110	
As	75	3	72	2125.538	ppb	1.395	263767	2000	106.3	90	110	
Se	78	2	72	2107.855	ppb	3.246	135844	2000	105.4	90	110	
(Se)	78	3	72	2035.268	ppb	3.065	15688	2000	101.8	90	110	
Sr	88	3	72	5078.517	ppb	2.449	2942307	2000	253.9	90	110	LRS Main CR1 Failed
Mo	95	3	115	2031.537	ppb	2.148	1130242	2000	101.6	90	110	
Cd	111	3	115	2048.869	ppb	2.948	545733	2000	102.4	90	110	
Sn	120	3	115	2104.666	ppb	3.181	1648869	2000	105.2	90	110	
Sb	121	3	115	1008.108	ppb	2.847	801754	1000	100.8	90	110	
Ba	137	3	115	5281.127	ppb	3.599	1323319	5000	105.6	90	110	
Tl	205	3	193	1024.810	ppb	2.442	4020897	1000	102.5	90	110	
(Pb)	206	3	193	5022.957	ppb	3.204	6578955	5000	100.5	90	110	
(Pb)	207	3	193	5005.387	ppb	3.198	5777305	5000	100.1	90	110	
Pb	208	3	193	5106.599	ppb	3.195	26942141	5000	102.1	90	110	
Th	232	3	193	1023.394	ppb	3.102	5409866	1000	102.3	90	110	
U	238	3	193	2095.942	ppb	4.170	11648711	2000	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4673393	1.70	4299393	108.70	60	120	
Sc (IS)	45	3	HMI He	714082	1.30	674661	105.84	60	120	
Ge Internal standard	72	2	HMI H2	2467602	2.57	2269722	108.72	60	120	
Ge Internal standard	72	3	HMI He	792809	0.50	739017	107.28	60	120	
In Internal Standard	115	3	HMI He	2690548	1.97	2543041	105.80	60	120	
Ir (IS)	193	3	HMI He	5944412	2.01	5570851	106.71	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	025SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:55:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.169	ppb	0.169	28.13	12	2000	
Na	23	3	45	12.604	ppb	12.604	49.24	30574	400000	
Mg	24	3	45	0.951	ppb	0.951	44.82	190	400000	
Al	27	3	45	1.475	ppb	1.475	102.51	100	400000	
K	39	3	45	9.248	ppb	9.248	514.86	21174	400000	
Ca	40	2	45	2.052	ppb	2.052	7.58	12485	400000	
V	51	3	72	0.210	ppb	0.210	42.67	288	2000	
Cr	52	3	72	0.819	ppb	0.819	8.52	2381	5000	
Mn	55	3	72	1.555	ppb	1.555	5.08	1184	10000	
Fe	56	2	72	1.268	ppb	1.268	11.55	12705	10000	
Co	59	3	72	0.276	ppb	0.276	0.69	396	2000	
Ni	60	3	72	0.646	ppb	0.646	30.82	423	5000	
Cu	63	3	72	1.621	ppb	1.621	4.92	2092	5000	
Zn	66	3	72	0.774	ppb	0.774	19.48	285	5000	
As	75	3	72	0.161	ppb	0.161	56.11	55	2000	
Se	78	2	72	0.179	ppb	0.179	18.94	12	2000	
(Se)	78	3	72	0.703	ppb	0.703	114.01	18	2000	
Sr	88	3	72	0.651	ppb	0.651	10.41	365	4000	
Mo	95	3	115	4.175	ppb	4.175	14.66	2244	2000	
Ag	107	3	115	0.009	ppb	0.009	51.03	37	100	
Cd	111	3	115	0.239	ppb	0.239	42.75	62	2000	
Sn	120	3	115	3.292	ppb	3.292	2.70	3080	2000	
Sb	121	3	115	1.150	ppb	1.150	10.68	928	1000	
Ba	137	3	115	0.608	ppb	0.608	32.41	192	5000	
Tl	205	3	193	0.185	ppb	0.185	10.77	1071	2000	
(Pb)	206	3	193	0.898	ppb	0.898	1.81	1273	100	
(Pb)	207	3	193	0.999	ppb	0.999	10.32	1449	100	
Pb	208	3	193	0.930	ppb	0.930	4.30	5506	5000	
Th	232	3	193	7.018	ppb	7.018	20.62	38789	2000	
U	238	3	193	1.084	ppb	1.084	4.77	7204	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4326205	0.87	4299393	100.62	60	120	
Sc (IS)	45	3	HMI He	655309	0.84	674661	97.13	60	120	
Ge Internal standard	72	2	HMI H2	2279641	1.07	2269722	100.44	60	120	
Ge Internal standard	72	3	HMI He	735077	0.92	739017	99.47	60	120	
In Internal Standard	115	3	HMI He	2533975	0.29	2543041	99.64	60	120	
Ir (IS)	193	3	HMI He	5547157	0.38	5570851	99.57	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	026_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:57:50-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.938	ppb	7.991	3072	50	105.9	90	110	
Na	23	3	45	51517.439	ppb	1.535	6558092	51000	101.0	90	110	
Mg	24	3	45	10870.019	ppb	1.768	732056	11000	98.8	90	110	
Al	27	3	45	1015.272	ppb	1.236	24382	1000	101.5	90	110	
K	39	3	45	10734.818	ppb	1.493	562409	11000	97.6	90	110	
Ca	40	2	45	11069.066	ppb	1.500	6619534	11000	100.6	90	110	
V	51	3	72	51.583	ppb	1.331	32714	50	103.2	90	110	
Cr	52	3	72	51.736	ppb	1.963	43743	50	103.5	90	110	
Mn	55	3	72	50.918	ppb	1.141	22242	50	101.8	90	110	
Fe	56	2	72	1060.173	ppb	0.411	1622634	1000	106.0	90	110	
Co	59	3	72	50.211	ppb	1.353	66209	50	100.4	90	110	
Ni	60	3	72	50.640	ppb	1.134	18807	50	101.3	90	110	
Cu	63	3	72	52.020	ppb	1.806	51913	50	104.0	90	110	
Zn	66	3	72	51.254	ppb	3.473	8868	50	102.5	90	110	
As	75	3	72	53.579	ppb	3.359	6297	50	107.2	90	110	
Se	78	2	72	52.975	ppb	2.705	3168	50	105.9	90	110	
(Se)	78	3	72	47.038	ppb	15.599	355	50	94.1	90	110	
Sr	88	3	72	102.568	ppb	1.539	55965	100	102.6	90	110	
Mo	95	3	115	51.468	ppb	2.775	27155	50	102.9	90	110	
Ag	107	3	115	50.861	ppb	1.798	88147	50	101.7	90	110	
Cd	111	3	115	50.328	ppb	2.001	12690	50	100.7	90	110	
Sn	120	3	115	52.408	ppb	3.507	39495	50	104.8	90	110	
Sb	121	3	115	51.187	ppb	2.789	38588	50	102.4	90	110	
Ba	137	3	115	53.537	ppb	1.080	12748	50	107.1	90	110	
Tl	205	3	193	50.926	ppb	3.319	185014	50	101.9	90	110	
(Pb)	206	3	193	51.533	ppb	2.871	62554	50	103.1	90	110	
(Pb)	207	3	193	50.926	ppb	2.819	54694	50	101.9	90	110	
Pb	208	3	193	51.150	ppb	2.157	250361	50	102.3	90	110	
Th	232	3	193	53.265	ppb	2.552	264176	50	106.5	90	110	
U	238	3	193	51.719	ppb	2.483	267243	50	103.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4317912	0.56	4299393	100.43	60	120	
Sc (IS)	45	3	HMI He	659353	1.20	674661	97.73	60	120	
Ge Internal standard	72	2	HMI H2	2287207	0.60	2269722	100.77	60	120	
Ge Internal standard	72	3	HMI He	746443	0.73	739017	101.00	60	120	
In Internal Standard	115	3	HMI He	2546136	1.51	2543041	100.12	60	120	
Ir (IS)	193	3	HMI He	5494165	2.26	5570851	98.62	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	027_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:59:43-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.198	ppb	47.4	13	0.5	
Na	23	3	45	17.950	ppb	12.8	31945	25	
Mg	24	3	45	1.525	ppb	44.0	234	25	
Al	27	3	45	21.955	ppb	5.3	601	15	>RL
K	39	3	45	-15.733	ppb	-154.7	20365	50	
V	51	3	72	-0.029	ppb	-240.5	143	1	
Cr	52	3	72	-0.131	ppb	-84.9	1673	1	
Mn	55	3	72	-0.186	ppb	-49.0	468	0.5	
Co	59	3	72	0.007	ppb	305.8	48	0.5	
Ni	60	3	72	0.031	ppb	144.7	207	1	
Cu	63	3	72	0.202	ppb	22.6	735	1	
Zn	66	3	72	2.294	ppb	8.2	556	5	
As	75	3	72	0.132	ppb	75.6	53	1	
Se	78	2	72	0.045	ppb	129.8	4	1	
(Se)	78	3	72	-0.512	ppb	-129.6	10	1	
Sr	88	3	72	0.051	ppb	47.7	43	0.5	
Mo	95	3	115	0.295	ppb	47.9	212	0.5	
Ag	107	3	115	0.010	ppb	17.6	38	1	
Cd	111	3	115	0.007	ppb	333.8	3	0.5	
Sn	120	3	115	0.320	ppb	43.5	885	1	
Sb	121	3	115	0.106	ppb	35.3	145	0.6	
Ba	137	3	115	0.009	ppb	195.6	50	0.5	
Tl	205	3	193	-0.018	ppb	-43.4	338	0.1	
(Pb)	206	3	193	0.045	ppb	42.0	235	1	
(Pb)	207	3	193	0.103	ppb	35.0	496	1	
Pb	208	3	193	0.078	ppb	7.6	1344	0.5	
Th	232	3	193	0.804	ppb	20.7	8360	1	
U	238	3	193	0.074	ppb	24.5	2014	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4258075	2.88	4299393	99.04	60	120	
Sc (IS)	45	3	HMI He	669858	0.59	674661	99.29	60	120	
Ge Internal standard	72	2	HMI H2	2263413	2.36	2269722	99.72	60	120	
Ge Internal standard	72	3	HMI He	758865	2.04	739017	102.69	60	120	
In Internal Standard	115	3	HMI He	2528620	2.09	2543041	99.43	60	120	
Ir (IS)	193	3	HMI He	5690599	0.42	5570851	102.15	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	028LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:01:35-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.007	ppb	22.409	60	1	100.7	70	130	
Na	23	3	45	68.604	ppb	1.945	37782	50	137.2	70	130	>+/-30%
Mg	24	3	45	52.117	ppb	8.700	3627	50	104.2	70	130	
Al	27	3	45	50.446	ppb	5.147	1271	50	100.9	70	130	
K	39	3	45	91.682	ppb	23.111	25409	100	91.7	70	130	
V	51	3	72	5.071	ppb	5.739	3340	5	101.4	70	130	
Cr	52	3	72	2.277	ppb	12.321	3579	2	113.8	70	130	
Mn	55	3	72	0.869	ppb	13.300	906	1	86.9	70	130	
Co	59	3	72	1.011	ppb	3.023	1363	1	101.1	70	130	
Ni	60	3	72	2.108	ppb	10.583	963	2	105.4	70	130	
Cu	63	3	72	2.181	ppb	1.586	2664	2	109.0	70	130	
Zn	66	3	72	10.258	ppb	3.781	1891	10	102.6	70	130	
As	75	3	72	5.031	ppb	2.647	621	5	100.6	70	130	
Se	78	2	72	4.759	ppb	9.577	281	5	95.2	70	130	
(Se)	78	3	72	5.531	ppb	14.354	53	5	110.6	70	130	
Sr	88	3	72	0.969	ppb	10.761	540	1	96.9	70	130	
Mo	95	3	115	2.239	ppb	6.591	1218	2	112.0	70	130	
Ag	107	3	115	0.975	ppb	4.251	1686	1	97.5	70	130	
Cd	111	3	115	0.999	ppb	24.592	250	1	99.9	70	130	
Sn	120	3	115	9.917	ppb	3.376	7895	10	99.2	70	130	
Sb	121	3	115	2.288	ppb	4.774	1763	2	114.4	70	130	
Ba	137	3	115	0.844	ppb	18.286	245	1	84.4	70	130	
Tl	205	3	193	1.032	ppb	4.852	4182	1	103.2	70	130	
(Pb)	206	3	193	1.091	ppb	2.055	1513	1	109.1	70	130	
(Pb)	207	3	193	1.123	ppb	9.308	1586	1	112.3	70	130	
Pb	208	3	193	1.102	ppb	2.678	6369	1	110.2	70	130	
Th	232	3	193	2.280	ppb	5.516	15459	2	114.0	70	130	
U	238	3	193	1.093	ppb	2.543	7269	1	109.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4316646	0.26	4299393	100.40	60	120	
Sc (IS)	45	3	HMI He	657923	1.07	674661	97.52	60	120	
Ge Internal standard	72	2	HMI H2	2252572	0.87	2269722	99.24	60	120	
Ge Internal standard	72	3	HMI He	742425	2.20	739017	100.46	60	120	
In Internal Standard	115	3	HMI He	2509988	1.33	2543041	98.70	60	120	
Ir (IS)	193	3	HMI He	5563658	3.15	5570851	99.87	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599805/1-A
Data File Name	029_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:03:27-07:00
Sample Type	Blank
Dilution	1
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	46102.139	2	0.5
Na	23	3	45	42.282	ppb	11.48147687	34500	25
Mg	24	3	45	3.419	ppb	22.76217442	357	25
Al	27	3	45	8.838	ppb	16.14894954	277	15
K	39	3	45	1.961	ppb	2030.971452	20930	50
V	51	3	72	0.019	ppb	282.3229087	170	1
Cr	52	3	72	0.085	ppb	139.5241774	1796	1
Mn	55	3	72	0.039	ppb	306.878723	548	0.5
Co	59	3	72	0.021	ppb	40.74585301	65	0.5
Ni	60	3	72	0.115	ppb	120.5988782	232	1
Cu	63	3	72	0.300	ppb	13.17594005	808	1
Zn	66	3	72	1.241	ppb	29.41405764	363	5
As	75	3	72	0.173	ppb	70.95076869	57	1
(Se)	78	3	72	1.163	ppb	28.64734847	22	1
Sr	88	3	72	0.075	ppb	56.37116969	55	0.5
Mo	95	3	115	0.177	ppb	32.03123657	148	0.5
Ag	107	3	115	0.010	ppb	66.25139142	38	1
Cd	111	3	115	0.007	ppb	164.4000715	3	0.5
Sn	120	3	115	0.653	ppb	18.34268155	1123	1
Sb	121	3	115	0.124	ppb	7.392817043	158	0.6
Ba	137	3	115	0.145	ppb	28.53476839	82	0.5
Tl	205	3	193	-0.025	ppb	-30.43420227	307	0.1
(Pb)	206	3	193	0.069	ppb	24.14457034	263	1
(Pb)	207	3	193	0.061	ppb	38.18318889	446	1
Pb	208	3	193	0.062	ppb	13.33955655	1253	0.5
Th	232	3	193	0.179	ppb	50.30338717	5149	1
U	238	3	193	0.035	ppb	10.74468256	1789	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254470	0.37	4299393	98.96	60	120	
Sc (IS)	45	3	HMI He	658841	0.40	674661	97.66	60	120	
Ge Internal standard	72	2	HMI H2	2233069	1.08	2269722	98.39	60	120	
Ge Internal standard	72	3	HMI He	735955	2.32	739017	99.59	60	120	
In Internal Standard	115	3	HMI He	2513647	2.32	2543041	98.84	60	120	
Ir (IS)	193	3	HMI He	5637165	0.53	5570851	101.19	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599805/2-A
Data File Name	030_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:05:19-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.499	40.499	ppb	4.274	2376	40	101.2	80	120	
Na	23	3	45	910.416	910.416	ppb	0.670	144528	40	2276.0	80	120	>+/-20%
Mg	24	3	45	802.102	802.102	ppb	1.188	54124	40	2005.3	80	120	>+/-20%
Al	27	3	45	826.016	826.016	ppb	4.550	19837	40	2065.0	80	120	>+/-20%
K	39	3	45	784.020	784.020	ppb	4.343	60370	40	1960.0	80	120	>+/-20%
Ca	40	2	45	854.978	854.978	ppb	2.351	520822	40	2137.4	80	120	>+/-20%
V	51	3	72	41.981	41.981	ppb	1.937	26470	40	105.0	80	120	
Cr	52	3	72	41.922	41.922	ppb	1.800	35538	40	104.8	80	120	
Mn	55	3	72	42.699	42.699	ppb	2.850	18607	40	106.7	80	120	
Fe	56	2	72	878.072	878.072	ppb	1.316	1332324	40	2195.2	80	120	>+/-20%
(Fe)	56	3	72	831.451	831.451	ppb	2.250	575749	40	2078.6	80	120	>+/-20%
Co	59	3	72	41.799	41.799	ppb	3.593	54739	40	104.5	80	120	
Ni	60	3	72	41.244	41.244	ppb	2.076	15246	40	103.1	80	120	
Cu	63	3	72	41.898	41.898	ppb	3.353	41623	40	104.7	80	120	
Zn	66	3	72	43.382	43.382	ppb	5.865	7477	40	108.5	80	120	
As	75	3	72	42.291	42.291	ppb	1.079	4943	40	105.7	80	120	
Se	78	2	72	42.191	42.191	ppb	1.702	2498	40	105.5	80	120	
(Se)	78	3	72	37.016	37.016	ppb	6.123	280	40	92.5	80	120	
Sr	88	3	72	81.766	81.766	ppb	3.023	44306	40	204.4	80	120	>+/-20%
Mo	95	3	115	41.572	41.572	ppb	1.983	21611	40	103.9	80	120	
Ag	107	3	115	42.089	42.089	ppb	1.488	71849	40	105.2	80	120	
Cd	111	3	115	41.552	41.552	ppb	1.752	10319	40	103.9	80	120	
Sn	120	3	115	42.101	42.101	ppb	0.505	31381	40	105.3	80	120	
Sb	121	3	115	42.327	42.327	ppb	1.330	31441	40	105.8	80	120	
Ba	137	3	115	42.624	42.624	ppb	2.683	10007	40	106.6	80	120	
Tl	205	3	193	40.545	40.545	ppb	1.815	150055	40	101.4	80	120	
(Pb)	206	3	193	41.079	41.079	ppb	3.261	50793	40	102.7	80	120	
(Pb)	207	3	193	40.599	40.599	ppb	1.181	44472	40	101.5	80	120	
Pb	208	3	193	40.689	40.689	ppb	2.373	202918	40	101.7	80	120	
Th	232	3	193	41.365	41.365	ppb	2.780	209779	40	103.4	80	120	
U	238	3	193	40.968	40.968	ppb	2.671	215816	40	102.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4313234	3.74	4299393	100.32	60	120	
Sc (IS)	45	3	HMI He	659184	1.25	674661	97.71	60	120	
Ge Internal standard	72	2	HMI H2	2264636	1.54	2269722	99.78	60	120	
Ge Internal standard	72	3	HMI He	741367	1.14	739017	100.32	60	120	
In Internal Standard	115	3	HMI He	2507383	1.10	2543041	98.60	60	120	
Ir (IS)	193	3	HMI He	5592633	2.07	5570851	100.39	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCSD 280-599805/3-A
Data File Name	031_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:07:10-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.960	37.960	ppb	4.705	2221	40	94.9	80	120	
Na	23	3	45	900.384	900.384	ppb	2.131	141902	40	2251.0	80	120	>+/-20%
Mg	24	3	45	819.935	819.935	ppb	2.020	54797	40	2049.8	80	120	>+/-20%
Al	27	3	45	825.149	825.149	ppb	2.604	19637	40	2062.9	80	120	>+/-20%
K	39	3	45	784.790	784.790	ppb	4.028	59864	40	1962.0	80	120	>+/-20%
Ca	40	2	45	860.471	860.471	ppb	1.109	518001	40	2151.2	80	120	>+/-20%
V	51	3	72	42.064	42.064	ppb	3.904	26310	40	105.2	80	120	
Cr	52	3	72	41.788	41.788	ppb	1.335	35155	40	104.5	80	120	
Mn	55	3	72	41.310	41.310	ppb	3.077	17879	40	103.3	80	120	
Fe	56	2	72	881.570	881.570	ppb	3.248	1318172	40	2203.9	80	120	>+/-20%
(Fe)	56	3	72	828.998	828.998	ppb	1.729	569633	40	2072.5	80	120	>+/-20%
Co	59	3	72	42.162	42.162	ppb	2.270	54789	40	105.4	80	120	
Ni	60	3	72	41.872	41.872	ppb	2.685	15356	40	104.7	80	120	
Cu	63	3	72	42.379	42.379	ppb	2.770	41767	40	105.9	80	120	
Zn	66	3	72	44.671	44.671	ppb	2.743	7640	40	111.7	80	120	
As	75	3	72	44.127	44.127	ppb	1.851	5118	40	110.3	80	120	
Se	78	2	72	42.616	42.616	ppb	1.902	2486	40	106.5	80	120	
(Se)	78	3	72	40.579	40.579	ppb	9.060	303	40	101.4	80	120	
Sr	88	3	72	83.615	83.615	ppb	1.145	44965	40	209.0	80	120	>+/-20%
Mo	95	3	115	41.116	41.116	ppb	0.901	21690	40	102.8	80	120	
Ag	107	3	115	42.011	42.011	ppb	0.885	72754	40	105.0	80	120	
Cd	111	3	115	41.580	41.580	ppb	1.409	10477	40	103.9	80	120	
Sn	120	3	115	41.571	41.571	ppb	1.095	31445	40	103.9	80	120	
Sb	121	3	115	41.547	41.547	ppb	0.801	31314	40	103.9	80	120	
Ba	137	3	115	42.187	42.187	ppb	2.141	10046	40	105.5	80	120	
Tl	205	3	193	40.938	40.938	ppb	1.291	151748	40	102.3	80	120	
(Pb)	206	3	193	41.325	41.325	ppb	1.669	51186	40	103.3	80	120	
(Pb)	207	3	193	41.016	41.016	ppb	1.332	44992	40	102.5	80	120	
Pb	208	3	193	40.995	40.995	ppb	1.228	204777	40	102.5	80	120	
Th	232	3	193	42.521	42.521	ppb	0.605	215926	40	106.3	80	120	
U	238	3	193	42.052	42.052	ppb	0.431	221878	40	105.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4260757	0.40	4299393	99.10	60	120	
Sc (IS)	45	3	HMI He	653013	0.71	674661	96.79	60	120	
Ge Internal standard	72	2	HMI H2	2231627	0.53	2269722	98.32	60	120	
Ge Internal standard	72	3	HMI He	735688	1.96	739017	99.55	60	120	
In Internal Standard	115	3	HMI He	2543779	0.99	2543041	100.03	60	120	
Ir (IS)	193	3	HMI He	5600734	1.35	5570851	100.54	60	120	

Sample Report

Sample Table

Sample Name	280-171403-F-1-A
Data File Name	032SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:09:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.208	ppb	0.208	25.43	13	2000	
Na	23	3	45	925360.236	ppb	925360.236	2.60	123090767	400000	
Mg	24	3	45	192480.602	ppb	192480.602	3.71	13593664	400000	
Al	27	3	45	1878.918	ppb	1878.918	4.41	47266	400000	
K	39	3	45	151315.652	ppb	151315.652	2.41	8031641	400000	
Ca	40	2	45	210585.502	ppb	210585.502	1.19	124706036	400000	
V	51	3	72	10.460	ppb	10.460	2.61	7065	2000	
Cr	52	3	72	11.973	ppb	11.973	2.89	11986	5000	
Mn	55	3	72	1009.711	ppb	1009.711	0.29	450291	10000	
Fe	56	2	72	2965.300	ppb	2965.300	1.79	4583255	10000	
Co	59	3	72	8.354	ppb	8.354	1.01	11547	2000	
Ni	60	3	72	51.538	ppb	51.538	0.42	19999	5000	
Cu	63	3	72	21.038	ppb	21.038	2.72	22267	5000	
Zn	66	3	72	60.792	ppb	60.792	1.81	10964	5000	
As	75	3	72	10.931	ppb	10.931	12.19	1373	2000	
Se	78	2	72	0.538	ppb	0.538	11.30	34	2000	
(Se)	78	3	72	1.658	ppb	1.658	24.48	27	2000	
Sr	88	3	72	1353.238	ppb	1353.238	2.49	771663	4000	
Mo	95	3	115	6.914	ppb	6.914	2.22	3632	2000	
Ag	107	3	115	0.141	ppb	0.141	7.58	262	100	
Cd	111	3	115	0.269	ppb	0.269	15.67	68	2000	
Sn	120	3	115	1.018	ppb	1.018	14.74	1384	2000	
Sb	121	3	115	1.710	ppb	1.710	0.48	1329	1000	
Ba	137	3	115	119.973	ppb	119.973	0.57	28002	5000	
Tl	205	3	193	0.017	ppb	0.017	45.78	446	2000	
(Pb)	206	3	193	7.599	ppb	7.599	3.78	9239	100	
(Pb)	207	3	193	7.553	ppb	7.553	1.79	8309	100	
Pb	208	3	193	7.489	ppb	7.489	2.20	36909	5000	
Th	232	3	193	0.947	ppb	0.947	11.27	8642	2000	
U	238	3	193	2.836	ppb	2.836	0.98	15906	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4282473	1.20	4299393	99.61	60	120	
Sc (IS)	45	3	HMI He	692144	3.21	674661	102.59	60	120	
Ge Internal standard	72	2	HMI H2	2319616	0.96	2269722	102.20	60	120	
Ge Internal standard	72	3	HMI He	780094	1.21	739017	105.56	60	120	
In Internal Standard	115	3	HMI He	2500878	0.29	2543041	98.34	60	120	
Ir (IS)	193	3	HMI He	5414933	0.46	5570851	97.20	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-A
Data File Name	033SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	10234.67	2	2000	
Na	23	3	45	44290.489	ppb	44290.489	2.30	5774629	400000	
Mg	24	3	45	39496.207	ppb	39496.207	1.98	2721519	400000	
Al	27	3	45	111.149	ppb	111.149	20.22	2793	400000	
K	39	3	45	2335.136	ppb	2335.136	3.24	141890	400000	
Ca	40	2	45	85361.833	ppb	85361.833	2.52	51858648	400000	
V	51	3	72	0.495	ppb	0.495	4.51	495	2000	
Cr	52	3	72	4.516	ppb	4.516	2.77	5682	5000	
Mn	55	3	72	135.972	ppb	135.972	1.97	61331	10000	
Fe	56	2	72	142.453	ppb	142.453	2.33	233983	10000	
Co	59	3	72	1.539	ppb	1.539	3.22	2167	2000	
Ni	60	3	72	4.560	ppb	4.560	10.56	1958	5000	
Cu	63	3	72	0.618	ppb	0.618	1.65	1189	5000	
Zn	66	3	72	2.942	ppb	2.942	6.45	690	5000	
As	75	3	72	0.621	ppb	0.621	33.55	115	2000	
Se	78	2	72	1.670	ppb	1.670	11.69	104	2000	
(Se)	78	3	72	2.300	ppb	2.300	58.91	32	2000	
Sr	88	3	72	217.409	ppb	217.409	3.38	124350	4000	
Mo	95	3	115	9.510	ppb	9.510	4.94	5088	2000	
Ag	107	3	115	0.011	ppb	0.011	29.60	42	100	
Cd	111	3	115	0.046	ppb	0.046	65.43	13	2000	
Sn	120	3	115	0.455	ppb	0.455	25.94	996	2000	
Sb	121	3	115	0.475	ppb	0.475	17.30	426	1000	
Ba	137	3	115	76.453	ppb	76.453	1.30	18269	5000	
Tl	205	3	193	0.024	ppb	0.024	67.58	486	2000	
(Pb)	206	3	193	0.127	ppb	0.127	24.45	333	100	
(Pb)	207	3	193	0.121	ppb	0.121	40.52	510	100	
Pb	208	3	193	0.134	ppb	0.134	11.49	1608	5000	
Th	232	3	193	0.160	ppb	0.160	32.36	5030	2000	
U	238	3	193	4.853	ppb	4.853	1.52	27073	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4394465	2.77	4299393	102.21	60	120	
Sc (IS)	45	3	HMI He	674859	1.23	674661	100.03	60	120	
Ge Internal standard	72	2	HMI H2	2354009	1.75	2269722	103.71	60	120	
Ge Internal standard	72	3	HMI He	782919	2.49	739017	105.94	60	120	
In Internal Standard	115	3	HMI He	2557893	0.27	2543041	100.58	60	120	
Ir (IS)	193	3	HMI He	5612587	1.24	5570851	100.75	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-B MS
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:12:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	44.414	ppb	44.414	2.57	2532	2000	
Na	23	3	45	43603.026	ppb	43603.026	0.65	5615288	400000	
Mg	24	3	45	38825.361	ppb	38825.361	1.16	2642187	400000	
Al	27	3	45	940.188	ppb	940.188	0.76	22828	400000	
K	39	3	45	2996.825	ppb	2996.825	1.15	173890	400000	
Ca	40	2	45	83033.987	ppb	83033.987	2.63	49059249	400000	
V	51	3	72	41.511	ppb	41.511	1.68	27176	2000	
Cr	52	3	72	45.099	ppb	45.099	1.95	39550	5000	
Mn	55	3	72	172.234	ppb	172.234	0.49	76248	10000	
Fe	56	2	72	984.534	ppb	984.534	2.60	1525423	10000	
Co	59	3	72	41.567	ppb	41.567	0.76	56528	2000	
Ni	60	3	72	43.818	ppb	43.818	1.86	16805	5000	
Cu	63	3	72	41.864	ppb	41.864	2.51	43179	5000	
Zn	66	3	72	43.893	ppb	43.893	1.50	7857	5000	
As	75	3	72	42.822	ppb	42.822	1.68	5197	2000	
Se	78	2	72	44.090	ppb	44.090	3.73	2668	2000	
(Se)	78	3	72	42.563	ppb	42.563	20.47	332	2000	
Sr	88	3	72	293.789	ppb	293.789	1.14	165266	4000	
Mo	95	3	115	51.765	ppb	51.765	1.78	27120	2000	
Ag	107	3	115	42.105	ppb	42.105	2.53	72458	100	
Cd	111	3	115	41.552	ppb	41.552	2.71	10404	2000	
Sn	120	3	115	42.372	ppb	42.372	2.81	31837	2000	
Sb	121	3	115	42.455	ppb	42.455	1.27	31797	1000	
Ba	137	3	115	117.533	ppb	117.533	0.82	27732	5000	
Tl	205	3	193	41.100	ppb	41.100	1.87	152294	2000	
(Pb)	206	3	193	41.613	ppb	41.613	1.53	51527	100	
(Pb)	207	3	193	41.182	ppb	41.182	2.07	45158	100	
Pb	208	3	193	41.363	ppb	41.363	1.84	206535	5000	
Th	232	3	193	42.257	ppb	42.257	2.05	214499	2000	
U	238	3	193	47.373	ppb	47.373	1.63	249653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4273343	2.10	4299393	99.39	60	120	
Sc (IS)	45	3	HMI He	666439	0.78	674661	98.78	60	120	
Ge Internal standard	72	2	HMI H2	2314449	1.06	2269722	101.97	60	120	
Ge Internal standard	72	3	HMI He	769746	1.76	739017	104.16	60	120	
In Internal Standard	115	3	HMI He	2528300	1.68	2543041	99.42	60	120	
Ir (IS)	193	3	HMI He	5599061	1.26	5570851	100.51	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-C MSD
Data File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:14:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.630	ppb	43.630	1.16	2509	2000	
Na	23	3	45	44561.129	ppb	44561.129	0.59	5718044	400000	
Mg	24	3	45	39389.361	ppb	39389.361	0.40	2671301	400000	
Al	27	3	45	972.223	ppb	972.223	1.86	23520	400000	
K	39	3	45	3091.185	ppb	3091.185	1.45	178076	400000	
Ca	40	2	45	84602.674	ppb	84602.674	2.44	50763018	400000	
V	51	3	72	42.942	ppb	42.942	2.16	28011	2000	
Cr	52	3	72	45.214	ppb	45.214	3.45	39503	5000	
Mn	55	3	72	176.440	ppb	176.440	2.32	77816	10000	
Fe	56	2	72	1025.223	ppb	1025.223	1.26	1612445	10000	
Co	59	3	72	41.632	ppb	41.632	2.37	56415	2000	
Ni	60	3	72	44.854	ppb	44.854	2.31	17137	5000	
Cu	63	3	72	41.681	ppb	41.681	2.68	42847	5000	
Zn	66	3	72	44.854	ppb	44.854	3.70	7997	5000	
As	75	3	72	44.397	ppb	44.397	2.41	5370	2000	
Se	78	2	72	42.930	ppb	42.930	0.28	2638	2000	
(Se)	78	3	72	36.747	ppb	36.747	34.38	287	2000	
Sr	88	3	72	301.813	ppb	301.813	3.30	169158	4000	
Mo	95	3	115	52.059	ppb	52.059	2.22	27391	2000	
Ag	107	3	115	42.094	ppb	42.094	0.51	72760	100	
Cd	111	3	115	41.670	ppb	41.670	0.68	10479	2000	
Sn	120	3	115	43.125	ppb	43.125	1.25	32532	2000	
Sb	121	3	115	43.080	ppb	43.080	2.11	32400	1000	
Ba	137	3	115	117.245	ppb	117.245	1.20	27780	5000	
Tl	205	3	193	42.338	ppb	42.338	1.58	153912	2000	
(Pb)	206	3	193	42.027	ppb	42.027	1.45	51060	100	
(Pb)	207	3	193	42.172	ppb	42.172	0.88	45367	100	
Pb	208	3	193	42.190	ppb	42.190	0.79	206694	5000	
Th	232	3	193	44.223	ppb	44.223	0.83	220068	2000	
U	238	3	193	48.705	ppb	48.705	0.83	251802	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4339649	1.71	4299393	100.94	60	120	
Sc (IS)	45	3	HMI He	664097	0.23	674661	98.43	60	120	
Ge Internal standard	72	2	HMI H2	2350007	1.36	2269722	103.54	60	120	
Ge Internal standard	72	3	HMI He	767161	1.96	739017	103.81	60	120	
In Internal Standard	115	3	HMI He	2538811	0.74	2543041	99.83	60	120	
Ir (IS)	193	3	HMI He	5493125	0.75	5570851	98.60	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-A
Data File Name	036SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	347.04	3	2000	
Na	23	3	45	40766.849	ppb	40766.849	0.77	5217094	400000	
Mg	24	3	45	37736.295	ppb	37736.295	0.35	2551259	400000	
Al	27	3	45	11.578	ppb	11.578	40.05	344	400000	
K	39	3	45	2486.871	ppb	2486.871	0.22	146902	400000	
Ca	40	2	45	82527.424	ppb	82527.424	2.83	49145274	400000	
V	51	3	72	0.270	ppb	0.270	30.06	338	2000	
Cr	52	3	72	0.045	ppb	0.045	132.82	1833	5000	
Mn	55	3	72	6.915	ppb	6.915	1.19	3570	10000	
Fe	56	2	72	186.230	ppb	186.230	2.01	303690	10000	
Co	59	3	72	0.119	ppb	0.119	9.97	200	2000	
Ni	60	3	72	1.404	ppb	1.404	9.18	725	5000	
Cu	63	3	72	0.233	ppb	0.233	13.75	771	5000	
Zn	66	3	72	108.937	ppb	108.937	1.54	19115	5000	
As	75	3	72	0.576	ppb	0.576	37.74	107	2000	
Se	78	2	72	1.456	ppb	1.456	14.90	91	2000	
(Se)	78	3	72	2.400	ppb	2.400	69.87	32	2000	
Sr	88	3	72	211.925	ppb	211.925	1.94	118367	4000	
Mo	95	3	115	17.743	ppb	17.743	1.64	9399	2000	
Ag	107	3	115	0.016	ppb	0.016	64.51	50	100	
Cd	111	3	115	0.000	ppb	0.000	5043.65	2	2000	
Sn	120	3	115	0.184	ppb	0.184	14.92	791	2000	
Sb	121	3	115	0.497	ppb	0.497	17.91	441	1000	
Ba	137	3	115	48.161	ppb	48.161	2.24	11471	5000	
Tl	205	3	193	-0.013	ppb	-0.013	-135.53	348	2000	
(Pb)	206	3	193	-0.014	ppb	-0.014	-61.73	158	100	
(Pb)	207	3	193	-0.021	ppb	-0.021	-370.64	352	100	
Pb	208	3	193	-0.007	ppb	-0.007	-383.43	896	5000	
Th	232	3	193	0.613	ppb	0.613	4.91	7240	2000	
U	238	3	193	0.037	ppb	0.037	12.72	1781	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306753	1.42	4299393	100.17	60	120	
Sc (IS)	45	3	HMI He	662020	0.98	674661	98.13	60	120	
Ge Internal standard	72	2	HMI H2	2363247	0.84	2269722	104.12	60	120	
Ge Internal standard	72	3	HMI He	764251	1.11	739017	103.41	60	120	
In Internal Standard	115	3	HMI He	2546156	1.58	2543041	100.12	60	120	
Ir (IS)	193	3	HMI He	5571556	0.80	5570851	100.01	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-B MS
Data File Name	037SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:18:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.365	ppb	40.365	1.15	2331	2000	
Na	23	3	45	41479.569	ppb	41479.569	0.62	5397957	400000	
Mg	24	3	45	37897.002	ppb	37897.002	3.15	2605202	400000	
Al	27	3	45	821.798	ppb	821.798	3.38	20161	400000	
K	39	3	45	3285.479	ppb	3285.479	1.68	190519	400000	
Ca	40	2	45	84676.364	ppb	84676.364	0.21	50862890	400000	
V	51	3	72	41.561	ppb	41.561	2.83	27574	2000	
Cr	52	3	72	40.158	ppb	40.158	3.41	35888	5000	
Mn	55	3	72	46.920	ppb	46.920	1.33	21463	10000	
Fe	56	2	72	1006.742	ppb	1006.742	2.45	1601118	10000	
Co	59	3	72	39.862	ppb	39.862	1.53	54941	2000	
Ni	60	3	72	41.244	ppb	41.244	3.61	16038	5000	
Cu	63	3	72	40.332	ppb	40.332	2.14	42185	5000	
Zn	66	3	72	150.791	ppb	150.791	2.86	26940	5000	
As	75	3	72	42.919	ppb	42.919	3.23	5277	2000	
Se	78	2	72	41.762	ppb	41.762	1.90	2595	2000	
(Se)	78	3	72	39.341	ppb	39.341	17.60	312	2000	
Sr	88	3	72	288.249	ppb	288.249	1.98	164322	4000	
Mo	95	3	115	59.822	ppb	59.822	2.15	31501	2000	
Ag	107	3	115	42.042	ppb	42.042	1.48	72744	100	
Cd	111	3	115	41.874	ppb	41.874	0.39	10542	2000	
Sn	120	3	115	42.446	ppb	42.446	1.91	32063	2000	
Sb	121	3	115	43.191	ppb	43.191	2.40	32520	1000	
Ba	137	3	115	90.999	ppb	90.999	3.50	21595	5000	
Tl	205	3	193	41.882	ppb	41.882	2.14	152252	2000	
(Pb)	206	3	193	42.093	ppb	42.093	1.14	51141	100	
(Pb)	207	3	193	41.791	ppb	41.791	2.01	44957	100	
Pb	208	3	193	41.996	ppb	41.996	1.38	205738	5000	
Th	232	3	193	43.580	ppb	43.580	0.88	216941	2000	
U	238	3	193	43.293	ppb	43.293	1.69	223982	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4343372	1.30	4299393	101.02	60	120	
Sc (IS)	45	3	HMI He	673252	0.93	674661	99.79	60	120	
Ge Internal standard	72	2	HMI H2	2376303	1.31	2269722	104.70	60	120	
Ge Internal standard	72	3	HMI He	780185	2.23	739017	105.57	60	120	
In Internal Standard	115	3	HMI He	2541690	1.12	2543041	99.95	60	120	
Ir (IS)	193	3	HMI He	5493663	1.64	5570851	98.61	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-C MSD
Data File Name	038SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:20:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.906	ppb	39.906	1.75	2282	2000	
Na	23	3	45	42583.721	ppb	42583.721	1.49	5503061	400000	
Mg	24	3	45	39176.142	ppb	39176.142	0.99	2675066	400000	
Al	27	3	45	855.111	ppb	855.111	1.68	20836	400000	
K	39	3	45	3419.960	ppb	3419.960	0.66	196115	400000	
Ca	40	2	45	88347.807	ppb	88347.807	0.81	51880052	400000	
V	51	3	72	42.083	ppb	42.083	1.73	27904	2000	
Cr	52	3	72	41.208	ppb	41.208	2.65	36757	5000	
Mn	55	3	72	48.423	ppb	48.423	2.07	22115	10000	
Fe	56	2	72	1016.758	ppb	1016.758	0.86	1598204	10000	
Co	59	3	72	40.681	ppb	40.681	1.30	56035	2000	
Ni	60	3	72	41.984	ppb	41.984	4.27	16315	5000	
Cu	63	3	72	41.702	ppb	41.702	1.64	43573	5000	
Zn	66	3	72	151.950	ppb	151.950	2.67	27133	5000	
As	75	3	72	43.937	ppb	43.937	6.43	5398	2000	
Se	78	2	72	42.949	ppb	42.949	4.65	2635	2000	
(Se)	78	3	72	37.088	ppb	37.088	3.96	295	2000	
Sr	88	3	72	298.519	ppb	298.519	2.29	170075	4000	
Mo	95	3	115	61.454	ppb	61.454	2.54	32760	2000	
Ag	107	3	115	42.277	ppb	42.277	3.99	74036	100	
Cd	111	3	115	42.327	ppb	42.327	3.53	10786	2000	
Sn	120	3	115	42.894	ppb	42.894	5.08	32781	2000	
Sb	121	3	115	42.996	ppb	42.996	2.88	32774	1000	
Ba	137	3	115	92.119	ppb	92.119	2.03	22134	5000	
Tl	205	3	193	41.670	ppb	41.670	0.86	154564	2000	
(Pb)	206	3	193	41.926	ppb	41.926	2.02	51969	100	
(Pb)	207	3	193	41.957	ppb	41.957	2.60	46044	100	
Pb	208	3	193	41.793	ppb	41.793	0.84	208897	5000	
Th	232	3	193	43.559	ppb	43.559	0.42	221223	2000	
U	238	3	193	42.718	ppb	42.718	0.75	225511	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4246015	0.99	4299393	98.76	60	120	
Sc (IS)	45	3	HMI He	668643	0.25	674661	99.11	60	120	
Ge Internal standard	72	2	HMI H2	2348046	1.93	2269722	103.45	60	120	
Ge Internal standard	72	3	HMI He	779711	2.12	739017	105.51	60	120	
In Internal Standard	115	3	HMI He	2574239	3.07	2543041	101.23	60	120	
Ir (IS)	193	3	HMI He	5604391	0.93	5570851	100.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	039_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:21:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.596	ppb	3.128	2984	50	103.2	90	110	
Na	23	3	45	50534.375	ppb	1.667	6567010	51000	99.1	90	110	
Mg	24	3	45	11089.363	ppb	1.364	762201	11000	100.8	90	110	
Al	27	3	45	991.113	ppb	1.042	24295	1000	99.1	90	110	
K	39	3	45	10576.923	ppb	1.048	565912	11000	96.2	90	110	
Ca	40	2	45	10958.192	ppb	1.092	6640596	11000	99.6	90	110	
V	51	3	72	51.475	ppb	2.175	33270	50	103.0	90	110	
Cr	52	3	72	50.871	ppb	0.734	43864	50	101.7	90	110	
Mn	55	3	72	51.056	ppb	2.292	22722	50	102.1	90	110	
Fe	56	2	72	1055.859	ppb	0.891	1626178	1000	105.6	90	110	
Co	59	3	72	50.172	ppb	0.356	67419	50	100.3	90	110	
Ni	60	3	72	50.463	ppb	1.959	19097	50	100.9	90	110	
Cu	63	3	72	51.178	ppb	0.685	52057	50	102.4	90	110	
Zn	66	3	72	52.369	ppb	0.769	9230	50	104.7	90	110	
As	75	3	72	52.972	ppb	5.143	6343	50	105.9	90	110	
Se	78	2	72	53.182	ppb	2.546	3200	50	106.4	90	110	
(Se)	78	3	72	53.598	ppb	6.935	410	50	107.2	90	110	
Sr	88	3	72	102.609	ppb	1.493	57056	100	102.6	90	110	
Mo	95	3	115	50.368	ppb	0.336	26756	50	100.7	90	110	
Ag	107	3	115	50.598	ppb	0.701	88284	50	101.2	90	110	
Cd	111	3	115	51.473	ppb	2.462	13065	50	102.9	90	110	
Sn	120	3	115	51.647	ppb	2.120	39196	50	103.3	90	110	
Sb	121	3	115	52.119	ppb	2.713	39554	50	104.2	90	110	
Ba	137	3	115	52.775	ppb	1.741	12653	50	105.5	90	110	
Tl	205	3	193	50.220	ppb	0.520	188064	50	100.4	90	110	
(Pb)	206	3	193	50.069	ppb	1.388	62645	50	100.1	90	110	
(Pb)	207	3	193	50.164	ppb	0.536	55532	50	100.3	90	110	
Pb	208	3	193	50.101	ppb	0.727	252736	50	100.2	90	110	
Th	232	3	193	51.376	ppb	1.082	262765	50	102.8	90	110	
U	238	3	193	51.176	ppb	0.981	272539	50	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4375442	0.80	4299393	101.77	60	120	
Sc (IS)	45	3	HMI He	672968	0.29	674661	99.75	60	120	
Ge Internal standard	72	2	HMI H2	2301486	0.16	2269722	101.40	60	120	
Ge Internal standard	72	3	HMI He	760634	0.35	739017	102.93	60	120	
In Internal Standard	115	3	HMI He	2563049	1.29	2543041	100.79	60	120	
Ir (IS)	193	3	HMI He	5660238	0.35	5570851	101.60	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	040_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:23:56-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.029	ppb	0.0	0	0.5	
Na	23	3	45	34.537	ppb	9.4	33767	25	>RL
Mg	24	3	45	2.099	ppb	21.0	270	25	
Al	27	3	45	26.608	ppb	13.5	707	15	>RL
K	39	3	45	-20.057	ppb	-172.8	19964	50	
V	51	3	72	0.020	ppb	45.1	178	1	
Cr	52	3	72	-0.371	ppb	-16.7	1504	1	
Mn	55	3	72	-0.532	ppb	-13.1	325	0.5	
Co	59	3	72	-0.011	ppb	-95.0	25	0.5	
Ni	60	3	72	-0.033	ppb	-226.6	187	1	
Cu	63	3	72	-0.061	ppb	-76.3	480	1	
Zn	66	3	72	2.586	ppb	16.4	620	5	
As	75	3	72	0.066	ppb	289.1	47	1	
Se	78	2	72	0.044	ppb	2.7	4	1	
(Se)	78	3	72	-0.321	ppb	-308.4	12	1	
Sr	88	3	72	0.046	ppb	64.9	42	0.5	
Mo	95	3	115	0.000	ppb	13824.6	58	0.5	
Ag	107	3	115	0.004	ppb	173.1	30	1	
Cd	111	3	115	0.026	ppb	42.7	8	0.5	
Sn	120	3	115	-0.076	ppb	-108.7	613	1	
Sb	121	3	115	0.082	ppb	65.8	132	0.6	
Ba	137	3	115	-0.005	ppb	-1214.0	48	0.5	
Tl	205	3	193	-0.046	ppb	-42.4	230	0.1	
(Pb)	206	3	193	0.001	ppb	772.1	178	1	
(Pb)	207	3	193	0.004	ppb	137.1	383	1	
Pb	208	3	193	-0.002	ppb	-242.1	930	0.5	
Th	232	3	193	0.660	ppb	20.5	7537	1	
U	238	3	193	0.001	ppb	1016.1	1604	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4293589	1.80	4299393	99.86	60	120	
Sc (IS)	45	3	HMI He	663701	0.20	674661	98.38	60	120	
Ge Internal standard	72	2	HMI H2	2286423	1.76	2269722	100.74	60	120	
Ge Internal standard	72	3	HMI He	773625	1.92	739017	104.68	60	120	
In Internal Standard	115	3	HMI He	2611158	0.76	2543041	102.68	60	120	
Ir (IS)	193	3	HMI He	5626746	2.42	5570851	101.00	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	041LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:25:49-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.759	ppb	80.885	45	1	75.9	70	130	
Na	23	3	45	70.012	ppb	7.073	38538	50	140.0	70	130	>+/-30%
Mg	24	3	45	53.195	ppb	6.025	3758	50	106.4	70	130	
Al	27	3	45	48.409	ppb	14.467	1241	50	96.8	70	130	
K	39	3	45	81.952	ppb	36.977	25305	100	82.0	70	130	
V	51	3	72	5.168	ppb	2.466	3427	5	103.4	70	130	
Cr	52	3	72	1.752	ppb	16.382	3177	2	87.6	70	130	
Mn	55	3	72	0.704	ppb	21.885	841	1	70.4	70	130	
Co	59	3	72	1.106	ppb	3.082	1498	1	110.6	70	130	
Ni	60	3	72	1.883	ppb	8.847	885	2	94.2	70	130	
Cu	63	3	72	2.102	ppb	4.623	2604	2	105.1	70	130	
Zn	66	3	72	9.902	ppb	6.368	1844	10	99.0	70	130	
As	75	3	72	5.198	ppb	15.809	645	5	104.0	70	130	
Se	78	2	72	5.138	ppb	4.075	303	5	102.8	70	130	
(Se)	78	3	72	5.707	ppb	31.444	55	5	114.1	70	130	
Sr	88	3	72	1.032	ppb	13.524	578	1	103.2	70	130	
Mo	95	3	115	1.905	ppb	3.470	1053	2	95.3	70	130	
Ag	107	3	115	1.085	ppb	0.176	1889	1	108.5	70	130	
Cd	111	3	115	1.119	ppb	16.402	282	1	111.9	70	130	
Sn	120	3	115	9.677	ppb	2.849	7773	10	96.8	70	130	
Sb	121	3	115	2.170	ppb	4.988	1688	2	108.5	70	130	
Ba	137	3	115	0.829	ppb	2.970	243	1	82.9	70	130	
Tl	205	3	193	0.992	ppb	3.432	4069	1	99.2	70	130	
(Pb)	206	3	193	1.045	ppb	5.947	1466	1	104.5	70	130	
(Pb)	207	3	193	0.974	ppb	7.004	1436	1	97.4	70	130	
Pb	208	3	193	1.034	ppb	8.995	6074	1	103.4	70	130	
Th	232	3	193	2.220	ppb	1.389	15278	2	111.0	70	130	
U	238	3	193	1.069	ppb	3.781	7192	1	106.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4221241	1.65	4299393	98.18	60	120	
Sc (IS)	45	3	HMI He	667915	0.49	674661	99.00	60	120	
Ge Internal standard	72	2	HMI H2	2243265	2.90	2269722	98.83	60	120	
Ge Internal standard	72	3	HMI He	747482	2.40	739017	101.15	60	120	
In Internal Standard	115	3	HMI He	2529059	2.16	2543041	99.45	60	120	
Ir (IS)	193	3	HMI He	5601511	1.26	5570851	100.55	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599874/1-A
Data File Name	042_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:27:40-07:00
Sample Type	Blank
Dilution	1
Comment	599874 6020a
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.059	ppb	148.2485962	5	0.5
Na	23	3	45	59.518	ppb	13.19102701	36754	25
Mg	24	3	45	4.449	ppb	16.15730791	427	25
Al	27	3	45	5.476	ppb	41.67816558	197	15
K	39	3	45	-11.056	ppb	-199.8008493	20308	50
V	51	3	72	0.159	ppb	42.52696739	255	1
Cr	52	3	72	0.056	ppb	175.4068516	1764	1
Mn	55	3	72	0.195	ppb	56.83769553	611	0.5
Co	59	3	72	-0.004	ppb	-120.9512837	33	0.5
Ni	60	3	72	0.028	ppb	216.1019057	198	1
Cu	63	3	72	11.185	ppb	1.703404865	11354	1
Zn	66	3	72	7.383	ppb	4.615083644	1386	5
As	75	3	72	-0.026	ppb	-197.8416671	33	1
(Se)	78	3	72	1.649	ppb	41.67367146	25	1
Sr	88	3	72	0.078	ppb	39.15339188	57	0.5
Mo	95	3	115	0.033	ppb	168.8665666	73	0.5
Ag	107	3	115	0.004	ppb	185.848018	28	1
Cd	111	3	115	0.000	ppb	3399.909777	2	0.5
Sn	120	3	115	0.335	ppb	32.79095172	895	1
Sb	121	3	115	0.126	ppb	26.17871033	160	0.6
Ba	137	3	115	0.257	ppb	43.80625992	108	0.5
Tl	205	3	193	-0.049	ppb	-16.9391628	218	0.1
(Pb)	206	3	193	0.339	ppb	11.26230285	601	1
(Pb)	207	3	193	0.268	ppb	7.166903024	676	1
Pb	208	3	193	0.310	ppb	4.555124521	2506	0.5
Th	232	3	193	0.132	ppb	56.29479737	4932	1
U	238	3	193	0.000	ppb	-18183.3914	1613	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4251401	1.36	4299393	98.88	60	120	
Sc (IS)	45	3	HMI He	660089	0.26	674661	97.84	60	120	
Ge Internal standard	72	2	HMI H2	2252180	1.63	2269722	99.23	60	120	
Ge Internal standard	72	3	HMI He	732278	0.51	739017	99.09	60	120	
In Internal Standard	115	3	HMI He	2520760	1.13	2543041	99.12	60	120	
Ir (IS)	193	3	HMI He	5663261	1.70	5570851	101.66	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599874/2-A
Data File Name	043_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:29:33-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599874 6020a
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.763	39.763	ppb	2.394	2311	40	99.4	80	120	
Na	23	3	45	989.522	989.522	ppb	1.839	153064	40	2473.8	80	120	>+/-20%
Mg	24	3	45	832.754	832.754	ppb	1.757	55641	40	2081.9	80	120	>+/-20%
Al	27	3	45	835.143	835.143	ppb	1.564	19874	40	2087.9	80	120	>+/-20%
K	39	3	45	861.290	861.290	ppb	2.462	63664	40	2153.2	80	120	>+/-20%
Ca	40	2	45	871.251	871.251	ppb	0.949	529944	40	2178.1	80	120	>+/-20%
V	51	3	72	41.793	41.793	ppb	4.697	26729	40	104.5	80	120	
Cr	52	3	72	42.042	42.042	ppb	5.242	36137	40	105.1	80	120	
Mn	55	3	72	40.613	40.613	ppb	4.552	17983	40	101.5	80	120	
Fe	56	2	72	889.769	889.769	ppb	1.344	1343595	40	2224.4	80	120	>+/-20%
(Fe)	56	3	72	833.009	833.009	ppb	5.414	584944	40	2082.5	80	120	>+/-20%
Co	59	3	72	41.664	41.664	ppb	5.388	55336	40	104.2	80	120	
Ni	60	3	72	41.214	41.214	ppb	5.510	15449	40	103.0	80	120	
Cu	63	3	72	42.215	42.215	ppb	5.148	42532	40	105.5	80	120	
Zn	66	3	72	42.194	42.194	ppb	1.508	7390	40	105.5	80	120	
As	75	3	72	43.159	43.159	ppb	7.259	5112	40	107.9	80	120	
Se	78	2	72	42.696	42.696	ppb	3.119	2516	40	106.7	80	120	
(Se)	78	3	72	37.825	37.825	ppb	16.603	290	40	94.6	80	120	
Sr	88	3	72	83.037	83.037	ppb	4.237	45655	40	207.6	80	120	>+/-20%
Mo	95	3	115	41.989	41.989	ppb	1.895	21959	40	105.0	80	120	
Ag	107	3	115	41.583	41.583	ppb	2.706	71401	40	104.0	80	120	
Cd	111	3	115	41.885	41.885	ppb	3.074	10466	40	104.7	80	120	
Sn	120	3	115	42.158	42.158	ppb	0.638	31610	40	105.4	80	120	
Sb	121	3	115	42.599	42.599	ppb	1.324	31834	40	106.5	80	120	
Ba	137	3	115	43.944	43.944	ppb	4.982	10372	40	109.9	80	120	
Tl	205	3	193	41.321	41.321	ppb	1.118	154537	40	103.3	80	120	
(Pb)	206	3	193	40.989	40.989	ppb	3.474	51216	40	102.5	80	120	
(Pb)	207	3	193	40.861	40.861	ppb	2.943	45223	40	102.2	80	120	
Pb	208	3	193	41.259	41.259	ppb	2.613	207903	40	103.1	80	120	
Th	232	3	193	41.380	41.380	ppb	1.762	212080	40	103.5	80	120	
U	238	3	193	41.587	41.587	ppb	1.837	221367	40	104.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306238	0.65	4299393	100.16	60	120	
Sc (IS)	45	3	HMI He	652908	0.98	674661	96.78	60	120	
Ge Internal standard	72	2	HMI H2	2253760	0.92	2269722	99.30	60	120	
Ge Internal standard	72	3	HMI He	752921	4.56	739017	101.88	60	120	
In Internal Standard	115	3	HMI He	2522245	0.76	2543041	99.18	60	120	
Ir (IS)	193	3	HMI He	5650667	1.37	5570851	101.43	60	120	

Sample Report

Sample Table

Sample Name	280-171347-C-2-C@10
Data File Name	044SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:31:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	167.24	3	2000	
Na	23	3	45	11408.429	ppb	11408.429	1.70	1442337	400000	
Mg	24	3	45	3570.845	ppb	3570.845	0.62	235185	400000	
Al	27	3	45	14.927	ppb	14.927	19.60	414	400000	
K	39	3	45	625.404	ppb	625.404	5.20	51221	400000	
Ca	40	2	45	9480.363	ppb	9480.363	0.93	5432360	400000	
V	51	3	72	0.245	ppb	0.245	5.38	313	2000	
Cr	52	3	72	3.746	ppb	3.746	46.21	4784	5000	
Mn	55	3	72	0.699	ppb	0.699	10.26	835	10000	
Fe	56	2	72	30.579	ppb	30.579	1.85	55771	10000	
Co	59	3	72	0.075	ppb	0.075	27.87	137	2000	
Ni	60	3	72	1.575	ppb	1.575	9.79	768	5000	
Cu	63	3	72	0.405	ppb	0.405	22.30	920	5000	
Zn	66	3	72	3.214	ppb	3.214	8.11	701	5000	
As	75	3	72	0.140	ppb	0.140	151.12	53	2000	
Se	78	2	72	0.565	ppb	0.565	65.68	34	2000	
(Se)	78	3	72	0.681	ppb	0.681	295.29	18	2000	
Sr	88	3	72	99.877	ppb	99.877	1.19	54277	4000	
Mo	95	3	115	0.302	ppb	0.302	26.25	208	2000	
Ag	107	3	115	0.011	ppb	0.011	133.99	40	100	
Cd	111	3	115	0.014	ppb	0.014	146.72	5	2000	
Sn	120	3	115	0.577	ppb	0.577	18.50	1048	2000	
Sb	121	3	115	0.165	ppb	0.165	20.17	185	1000	
Ba	137	3	115	2.968	ppb	2.968	1.33	728	5000	
Tl	205	3	193	-0.013	ppb	-0.013	-70.53	347	2000	
(Pb)	206	3	193	0.012	ppb	0.012	190.39	188	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-406.91	365	100	
Pb	208	3	193	0.017	ppb	0.017	35.54	1006	5000	
Th	232	3	193	0.561	ppb	0.561	21.33	6927	2000	
U	238	3	193	1.302	ppb	1.302	2.63	8305	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4136373	1.54	4299393	96.21	60	120	
Sc (IS)	45	3	HMI He	644653	0.65	674661	95.55	60	120	
Ge Internal standard	72	2	HMI H2	2226322	2.24	2269722	98.09	60	120	
Ge Internal standard	72	3	HMI He	743412	1.02	739017	100.59	60	120	
In Internal Standard	115	3	HMI He	2464012	1.60	2543041	96.89	60	120	
Ir (IS)	193	3	HMI He	5526952	0.69	5570851	99.21	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599789/1-C
Data File Name	045_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:33:18-07:00
Sample Type	Blank
Dilution	1
Comment	599867 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.001	ppb	7634.686066	2	0.5
Na	23	3	45	122.638	ppb	3.377984956	44541	25
Mg	24	3	45	4.879	ppb	18.4260718	454	25
Al	27	3	45	7.200	ppb	9.312530346	237	15
K	39	3	45	-9.333	ppb	-362.4605737	20285	50
V	51	3	72	0.127	ppb	37.3846604	233	1
Cr	52	3	72	0.192	ppb	82.29896974	1854	1
Mn	55	3	72	0.557	ppb	13.4069177	755	0.5
Co	59	3	72	0.001	ppb	1623.799792	38	0.5
Ni	60	3	72	0.355	ppb	18.01620776	313	1
Cu	63	3	72	0.143	ppb	26.01395575	645	1
Zn	66	3	72	2.015	ppb	27.60277709	486	5
As	75	3	72	0.095	ppb	121.0980309	47	1
(Se)	78	3	72	0.749	ppb	200.8606507	18	1
Sr	88	3	72	0.126	ppb	17.8291913	82	0.5
Mo	95	3	115	0.057	ppb	55.01805762	87	0.5
Ag	107	3	115	0.009	ppb	173.5692882	37	1
Cd	111	3	115	-0.006	ppb	0	0	0.5
Sn	120	3	115	0.391	ppb	15.79696082	946	1
Sb	121	3	115	0.152	ppb	57.03148441	182	0.6
Ba	137	3	115	0.273	ppb	9.64389902	113	0.5
Tl	205	3	193	-0.054	ppb	-31.28807131	202	0.1
(Pb)	206	3	193	-0.007	ppb	-257.7891884	168	1
(Pb)	207	3	193	-0.040	ppb	-44.91106989	335	1
Pb	208	3	193	-0.005	ppb	-306.6805596	913	0.5
Th	232	3	193	0.090	ppb	49.93185235	4694	1
U	238	3	193	0.002	ppb	807.150969	1613	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4238869	0.64	4299393	98.59	60	120	
Sc (IS)	45	3	HMI He	656868	1.06	674661	97.36	60	120	
Ge Internal standard	72	2	HMI H2	2223957	1.96	2269722	97.98	60	120	
Ge Internal standard	72	3	HMI He	724966	0.83	739017	98.10	60	120	
In Internal Standard	115	3	HMI He	2551431	0.54	2543041	100.33	60	120	
Ir (IS)	193	3	HMI He	5625014	0.70	5570851	100.97	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599789/2-C
Data File Name	046_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:35:12-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599867 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.469	37.469	ppb	11.595	2149	40	93.7	80	120	
Na	23	3	45	870.660	870.660	ppb	1.650	136397	40	2176.6	80	120	>+/-20%
Mg	24	3	45	782.147	782.147	ppb	1.962	51605	40	1955.4	80	120	>+/-20%
Al	27	3	45	792.382	792.382	ppb	2.987	18618	40	1981.0	80	120	>+/-20%
K	39	3	45	767.268	767.268	ppb	4.019	58222	40	1918.2	80	120	>+/-20%
Ca	40	2	45	858.559	858.559	ppb	1.622	510971	40	2146.4	80	120	>+/-20%
V	51	3	72	40.958	40.958	ppb	0.470	25390	40	102.4	80	120	
Cr	52	3	72	40.209	40.209	ppb	1.619	33570	40	100.5	80	120	
Mn	55	3	72	40.275	40.275	ppb	2.634	17282	40	100.7	80	120	
Fe	56	2	72	846.933	846.933	ppb	3.160	1294570	40	2117.3	80	120	>+/-20%
(Fe)	56	3	72	823.193	823.193	ppb	1.930	560370	40	2058.0	80	120	>+/-20%
Co	59	3	72	40.351	40.351	ppb	2.642	51948	40	100.9	80	120	
Ni	60	3	72	40.680	40.680	ppb	1.963	14784	40	101.7	80	120	
Cu	63	3	72	40.899	40.899	ppb	1.734	39954	40	102.2	80	120	
Zn	66	3	72	41.184	41.184	ppb	1.210	6987	40	103.0	80	120	
As	75	3	72	42.033	42.033	ppb	2.580	4830	40	105.1	80	120	
Se	78	2	72	40.423	40.423	ppb	5.193	2410	40	101.1	80	120	
(Se)	78	3	72	43.596	43.596	ppb	27.935	322	40	109.0	80	120	
Sr	88	3	72	81.043	81.043	ppb	1.228	43172	40	202.6	80	120	>+/-20%
Mo	95	3	115	40.923	40.923	ppb	2.631	21078	40	102.3	80	120	
Ag	107	3	115	40.462	40.462	ppb	1.724	68427	40	101.2	80	120	
Cd	111	3	115	40.135	40.135	ppb	2.606	9874	40	100.3	80	120	
Sn	120	3	115	40.221	40.221	ppb	2.691	29728	40	100.6	80	120	
Sb	121	3	115	40.593	40.593	ppb	1.594	29882	40	101.5	80	120	
Ba	137	3	115	42.125	42.125	ppb	3.898	9795	40	105.3	80	120	
Tl	205	3	193	39.915	39.915	ppb	1.011	147859	40	99.8	80	120	
(Pb)	206	3	193	39.609	39.609	ppb	0.879	49039	40	99.0	80	120	
(Pb)	207	3	193	39.610	39.610	ppb	1.988	43429	40	99.0	80	120	
Pb	208	3	193	39.374	39.374	ppb	1.107	196573	40	98.4	80	120	
Th	232	3	193	39.817	39.817	ppb	0.776	202289	40	99.5	80	120	
U	238	3	193	39.885	39.885	ppb	2.006	210364	40	99.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4211939	1.92	4299393	97.97	60	120	
Sc (IS)	45	3	HMI He	644613	0.63	674661	95.55	60	120	
Ge Internal standard	72	2	HMI H2	2281337	2.15	2269722	100.51	60	120	
Ge Internal standard	72	3	HMI He	728683	0.51	739017	98.60	60	120	
In Internal Standard	115	3	HMI He	2484280	1.25	2543041	97.69	60	120	
Ir (IS)	193	3	HMI He	5596397	0.97	5570851	100.46	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-1-C@50
Data File Name	047SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:37:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	165.97	3	2000	
Na	23	3	45	11033.176	ppb	11033.176	2.37	1365433	400000	
Mg	24	3	45	3577.051	ppb	3577.051	0.88	230489	400000	
Al	27	3	45	16.607	ppb	16.607	25.78	444	400000	
K	39	3	45	647.684	ppb	647.684	7.44	51178	400000	
Ca	40	2	45	9395.866	ppb	9395.866	1.89	5260506	400000	
V	51	3	72	0.237	ppb	0.237	27.91	302	2000	
Cr	52	3	72	2.964	ppb	2.964	4.26	4055	5000	
Mn	55	3	72	0.653	ppb	0.653	19.30	798	10000	
Fe	56	2	72	29.833	ppb	29.833	2.91	54206	10000	
Co	59	3	72	0.068	ppb	0.068	1.59	125	2000	
Ni	60	3	72	1.527	ppb	1.527	6.85	735	5000	
Cu	63	3	72	0.351	ppb	0.351	15.65	848	5000	
Zn	66	3	72	3.133	ppb	3.133	4.32	673	5000	
As	75	3	72	0.239	ppb	0.239	13.02	63	2000	
Se	78	2	72	0.358	ppb	0.358	28.38	22	2000	
(Se)	78	3	72	0.724	ppb	0.724	108.37	18	2000	
Sr	88	3	72	100.877	ppb	100.877	2.19	53672	4000	
Mo	95	3	115	0.313	ppb	0.313	34.90	215	2000	
Ag	107	3	115	0.018	ppb	0.018	12.06	52	100	
Cd	111	3	115	0.048	ppb	0.048	131.67	13	2000	
Sn	120	3	115	0.488	ppb	0.488	30.28	990	2000	
Sb	121	3	115	0.169	ppb	0.169	16.85	188	1000	
Ba	137	3	115	2.454	ppb	2.454	10.98	613	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-55.65	328	2000	
(Pb)	206	3	193	0.012	ppb	0.012	236.56	183	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-292.96	337	100	
Pb	208	3	193	0.007	ppb	0.007	422.49	935	5000	
Th	232	3	193	0.629	ppb	0.629	20.99	7080	2000	
U	238	3	193	1.323	ppb	1.323	2.76	8205	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4041569	1.04	4299393	94.00	60	120	
Sc (IS)	45	3	HMI He	630713	1.16	674661	93.49	60	120	
Ge Internal standard	72	2	HMI H2	2207349	0.74	2269722	97.25	60	120	
Ge Internal standard	72	3	HMI He	727933	1.11	739017	98.50	60	120	
In Internal Standard	115	3	HMI He	2475741	2.71	2543041	97.35	60	120	
Ir (IS)	193	3	HMI He	5389937	0.72	5570851	96.75	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-2-C@50
Data File Name	048SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:38:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	144.76	5	2000	
Na	23	3	45	21953.942	ppb	21953.942	2.09	2693166	400000	
Mg	24	3	45	6848.049	ppb	6848.049	2.62	441694	400000	
Al	27	3	45	3.525	ppb	3.525	31.83	143	400000	
K	39	3	45	309.327	ppb	309.327	13.98	34895	400000	
Ca	40	2	45	10901.041	ppb	10901.041	2.58	6163397	400000	
V	51	3	72	0.166	ppb	0.166	31.77	248	2000	
Cr	52	3	72	0.282	ppb	0.282	25.52	1859	5000	
Mn	55	3	72	-0.045	ppb	-0.045	-289.72	488	10000	
Fe	56	2	72	2.309	ppb	2.309	16.59	13413	10000	
Co	59	3	72	0.011	ppb	0.011	108.92	50	2000	
Ni	60	3	72	0.129	ppb	0.129	56.58	225	5000	
Cu	63	3	72	0.134	ppb	0.134	69.90	615	5000	
Zn	66	3	72	3.877	ppb	3.877	2.96	766	5000	
As	75	3	72	0.231	ppb	0.231	54.65	60	2000	
Se	78	2	72	50.722	ppb	50.722	1.46	2839	2000	
(Se)	78	3	72	46.638	ppb	46.638	10.10	330	2000	
Sr	88	3	72	205.907	ppb	205.907	1.83	105378	4000	
Mo	95	3	115	0.110	ppb	0.110	20.53	112	2000	
Ag	107	3	115	0.017	ppb	0.017	62.12	50	100	
Cd	111	3	115	0.000	ppb	0.000	4638.60	2	2000	
Sn	120	3	115	0.529	ppb	0.529	6.46	1021	2000	
Sb	121	3	115	0.110	ppb	0.110	45.85	145	1000	
Ba	137	3	115	0.309	ppb	0.309	48.35	118	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-3.29	322	2000	
(Pb)	206	3	193	-0.011	ppb	-0.011	-208.23	158	100	
(Pb)	207	3	193	0.000	ppb	0.000	-19037.94	366	100	
Pb	208	3	193	-0.001	ppb	-0.001	-938.21	905	5000	
Th	232	3	193	0.109	ppb	0.109	21.15	4642	2000	
U	238	3	193	3.757	ppb	3.757	3.86	20705	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4082490	1.39	4299393	94.96	60	120	
Sc (IS)	45	3	HMI He	631660	1.88	674661	93.63	60	120	
Ge Internal standard	72	2	HMI H2	2141378	1.76	2269722	94.35	60	120	
Ge Internal standard	72	3	HMI He	700267	1.19	739017	94.76	60	120	
In Internal Standard	115	3	HMI He	2485552	2.74	2543041	97.74	60	120	
Ir (IS)	193	3	HMI He	5451855	0.83	5570851	97.86	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-4-E@50
Data File Name	049SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:40:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	165.39	3	2000	
Na	23	3	45	21560.161	ppb	21560.161	1.26	2660599	400000	
Mg	24	3	45	6710.697	ppb	6710.697	2.44	435334	400000	
Al	27	3	45	2.774	ppb	2.774	35.83	127	400000	
K	39	3	45	293.717	ppb	293.717	9.20	34363	400000	
Ca	40	2	45	11042.973	ppb	11042.973	0.71	6287598	400000	
V	51	3	72	0.262	ppb	0.262	16.58	300	2000	
Cr	52	3	72	0.447	ppb	0.447	10.29	1954	5000	
Mn	55	3	72	-0.106	ppb	-0.106	-161.23	456	10000	
Fe	56	2	72	2.319	ppb	2.319	10.46	13133	10000	
Co	59	3	72	0.023	ppb	0.023	94.24	63	2000	
Ni	60	3	72	0.273	ppb	0.273	18.12	270	5000	
Cu	63	3	72	0.098	ppb	0.098	64.14	573	5000	
Zn	66	3	72	3.935	ppb	3.935	12.02	763	5000	
As	75	3	72	0.070	ppb	0.070	205.60	42	2000	
Se	78	2	72	48.961	ppb	48.961	3.02	2680	2000	
(Se)	78	3	72	49.374	ppb	49.374	7.85	343	2000	
Sr	88	3	72	204.833	ppb	204.833	2.08	103184	4000	
Mo	95	3	115	0.027	ppb	0.027	202.72	70	2000	
Ag	107	3	115	0.013	ppb	0.013	103.47	43	100	
Cd	111	3	115	0.014	ppb	0.014	3.48	5	2000	
Sn	120	3	115	0.598	ppb	0.598	13.36	1075	2000	
Sb	121	3	115	0.102	ppb	0.102	16.40	140	1000	
Ba	137	3	115	0.297	ppb	0.297	38.07	117	5000	
Tl	205	3	193	-0.023	ppb	-0.023	-54.11	302	2000	
(Pb)	206	3	193	0.005	ppb	0.005	622.79	175	100	
(Pb)	207	3	193	0.003	ppb	0.003	1213.44	366	100	
Pb	208	3	193	0.005	ppb	0.005	332.46	926	5000	
Th	232	3	193	0.060	ppb	0.060	14.66	4360	2000	
U	238	3	193	3.776	ppb	3.776	3.63	20607	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110902	0.81	4299393	95.62	60	120	
Sc (IS)	45	3	HMI He	635258	1.56	674661	94.16	60	120	
Ge Internal standard	72	2	HMI H2	2095151	2.95	2269722	92.31	60	120	
Ge Internal standard	72	3	HMI He	689317	1.43	739017	93.27	60	120	
In Internal Standard	115	3	HMI He	2492835	2.39	2543041	98.03	60	120	
Ir (IS)	193	3	HMI He	5400225	1.66	5570851	96.94	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-8-E@50
Data File Name	050SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:42:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	23236.418	ppb	23236.418	0.90	2826907	400000	
Mg	24	3	45	5772.952	ppb	5772.952	0.55	369545	400000	
Al	27	3	45	3.712	ppb	3.712	25.66	147	400000	
K	39	3	45	249.742	ppb	249.742	14.98	31775	400000	
Ca	40	2	45	7096.571	ppb	7096.571	2.47	4061324	400000	
V	51	3	72	0.231	ppb	0.231	12.58	283	2000	
Cr	52	3	72	0.396	ppb	0.396	35.37	1923	5000	
Mn	55	3	72	3.971	ppb	3.971	6.26	2069	10000	
Fe	56	2	72	2.784	ppb	2.784	11.05	13854	10000	
Co	59	3	72	0.002	ppb	0.002	330.82	38	2000	
Ni	60	3	72	0.261	ppb	0.261	58.22	267	5000	
Cu	63	3	72	0.196	ppb	0.196	30.83	665	5000	
Zn	66	3	72	3.471	ppb	3.471	11.31	693	5000	
As	75	3	72	0.203	ppb	0.203	144.55	57	2000	
Se	78	2	72	5.307	ppb	5.307	4.32	293	2000	
(Se)	78	3	72	7.808	ppb	7.808	10.76	65	2000	
Sr	88	3	72	147.632	ppb	147.632	1.33	74677	4000	
Mo	95	3	115	0.070	ppb	0.070	35.98	88	2000	
Ag	107	3	115	0.011	ppb	0.011	83.83	38	100	
Cd	111	3	115	0.008	ppb	0.008	160.01	3	2000	
Sn	120	3	115	0.373	ppb	0.373	14.90	881	2000	
Sb	121	3	115	0.082	ppb	0.082	39.02	122	1000	
Ba	137	3	115	0.421	ppb	0.421	34.50	140	5000	
Tl	205	3	193	-0.032	ppb	-0.032	-35.89	270	2000	
(Pb)	206	3	193	-0.006	ppb	-0.006	-226.01	162	100	
(Pb)	207	3	193	-0.013	ppb	-0.013	-129.16	348	100	
Pb	208	3	193	-0.017	ppb	-0.017	-78.60	818	5000	
Th	232	3	193	0.101	ppb	0.101	6.61	4542	2000	
U	238	3	193	2.577	ppb	2.577	2.13	14501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4129678	2.39	4299393	96.05	60	120	
Sc (IS)	45	3	HMI He	626668	1.07	674661	92.89	60	120	
Ge Internal standard	72	2	HMI H2	2106223	1.98	2269722	92.80	60	120	
Ge Internal standard	72	3	HMI He	692083	1.33	739017	93.65	60	120	
In Internal Standard	115	3	HMI He	2409412	1.51	2543041	94.75	60	120	
Ir (IS)	193	3	HMI He	5381394	0.92	5570851	96.60	60	120	

Sample Report

Sample Table

Sample Name	280-171348-A-3-B@50
Data File Name	051SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:44:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.089	ppb	0.089	56.67	7	2000	
Na	23	3	45	52251.702	ppb	52251.702	3.31	6410018	400000	
Mg	24	3	45	5977.984	ppb	5977.984	3.28	387991	400000	
Al	27	3	45	5.967	ppb	5.967	29.88	200	400000	
K	39	3	45	313.680	ppb	313.680	13.77	35323	400000	
Ca	40	2	45	4591.208	ppb	4591.208	2.39	2641322	400000	
V	51	3	72	0.252	ppb	0.252	67.00	297	2000	
Cr	52	3	72	0.265	ppb	0.265	44.93	1833	5000	
Mn	55	3	72	1.522	ppb	1.522	7.92	1106	10000	
Fe	56	2	72	2.615	ppb	2.615	13.95	13657	10000	
Co	59	3	72	0.125	ppb	0.125	8.51	190	2000	
Ni	60	3	72	0.272	ppb	0.272	30.94	272	5000	
Cu	63	3	72	0.092	ppb	0.092	38.13	571	5000	
Zn	66	3	72	3.643	ppb	3.643	14.82	723	5000	
As	75	3	72	0.112	ppb	0.112	96.85	47	2000	
Se	78	2	72	0.376	ppb	0.376	44.08	22	2000	
(Se)	78	3	72	1.093	ppb	1.093	177.37	20	2000	
Sr	88	3	72	168.886	ppb	168.886	1.15	85773	4000	
Mo	95	3	115	0.153	ppb	0.153	24.52	132	2000	
Ag	107	3	115	0.014	ppb	0.014	32.67	45	100	
Cd	111	3	115	0.014	ppb	0.014	147.21	5	2000	
Sn	120	3	115	0.345	ppb	0.345	45.21	871	2000	
Sb	121	3	115	0.078	ppb	0.078	28.13	120	1000	
Ba	137	3	115	0.259	ppb	0.259	33.76	105	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-19.26	272	2000	
(Pb)	206	3	193	-0.016	ppb	-0.016	-74.75	150	100	
(Pb)	207	3	193	0.001	ppb	0.001	3431.52	363	100	
Pb	208	3	193	-0.005	ppb	-0.005	-186.68	876	5000	
Th	232	3	193	0.066	ppb	0.066	45.87	4369	2000	
U	238	3	193	0.229	ppb	0.229	5.86	2681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144313	1.14	4299393	96.39	60	120	
Sc (IS)	45	3	HMI He	635687	2.35	674661	94.22	60	120	
Ge Internal standard	72	2	HMI H2	2112417	1.85	2269722	93.07	60	120	
Ge Internal standard	72	3	HMI He	694831	0.58	739017	94.02	60	120	
In Internal Standard	115	3	HMI He	2442775	2.74	2543041	96.06	60	120	
Ir (IS)	193	3	HMI He	5372456	1.09	5570851	96.44	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	052_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:46:26-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.207	ppb	5.331	2841	50	98.4	90	110	
Na	23	3	45	50382.683	ppb	0.331	6376831	51000	98.8	90	110	
Mg	24	3	45	10703.795	ppb	1.288	716453	11000	97.3	90	110	
Al	27	3	45	997.843	ppb	3.072	23817	1000	99.8	90	110	
K	39	3	45	10630.228	ppb	1.381	553820	11000	96.6	90	110	
Ca	40	2	45	11065.806	ppb	1.663	6556545	11000	100.6	90	110	
V	51	3	72	51.151	ppb	2.412	32460	50	102.3	90	110	
Cr	52	3	72	50.511	ppb	1.673	42776	50	101.0	90	110	
Mn	55	3	72	50.834	ppb	2.649	22215	50	101.7	90	110	
Fe	56	2	72	1037.531	ppb	2.349	1614189	1000	103.8	90	110	
Co	59	3	72	50.414	ppb	1.452	66519	50	100.8	90	110	
Ni	60	3	72	50.552	ppb	1.433	18785	50	101.1	90	110	
Cu	63	3	72	50.171	ppb	0.594	50129	50	100.3	90	110	
Zn	66	3	72	51.670	ppb	2.437	8943	50	103.3	90	110	
As	75	3	72	52.950	ppb	4.155	6225	50	105.9	90	110	
Se	78	2	72	50.125	ppb	3.013	3046	50	100.2	90	110	
(Se)	78	3	72	45.454	ppb	10.456	343	50	90.9	90	110	
Sr	88	3	72	101.475	ppb	1.478	55403	100	101.5	90	110	
Mo	95	3	115	50.837	ppb	1.629	26701	50	101.7	90	110	
Ag	107	3	115	50.672	ppb	2.774	87414	50	101.3	90	110	
Cd	111	3	115	50.098	ppb	1.384	12576	50	100.2	90	110	
Sn	120	3	115	50.994	ppb	2.651	38277	50	102.0	90	110	
Sb	121	3	115	51.643	ppb	2.215	38759	50	103.3	90	110	
Ba	137	3	115	51.935	ppb	3.224	12310	50	103.9	90	110	
Tl	205	3	193	49.974	ppb	0.493	185129	50	99.9	90	110	
(Pb)	206	3	193	49.888	ppb	2.189	61747	50	99.8	90	110	
(Pb)	207	3	193	50.053	ppb	1.366	54814	50	100.1	90	110	
Pb	208	3	193	49.860	ppb	0.585	248823	50	99.7	90	110	
Th	232	3	193	50.452	ppb	0.842	255346	50	100.9	90	110	
U	238	3	193	50.743	ppb	0.832	267346	50	101.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4277892	0.70	4299393	99.50	60	120	
Sc (IS)	45	3	HMI He	655414	1.08	674661	97.15	60	120	
Ge Internal standard	72	2	HMI H2	2324656	0.36	2269722	102.42	60	120	
Ge Internal standard	72	3	HMI He	746964	1.42	739017	101.08	60	120	
In Internal Standard	115	3	HMI He	2534552	1.54	2543041	99.67	60	120	
Ir (IS)	193	3	HMI He	5599456	0.44	5570851	100.51	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	053_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:48:17-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	170.7	3	0.5	
Na	23	3	45	14.645	ppb	7.5	30741	25	
Mg	24	3	45	1.615	ppb	66.6	234	25	
Al	27	3	45	26.635	ppb	17.0	697	15	>RL
K	39	3	45	-8.610	ppb	-386.6	20225	50	
V	51	3	72	0.026	ppb	119.6	173	1	
Cr	52	3	72	-0.354	ppb	-41.6	1444	1	
Mn	55	3	72	-0.437	ppb	-19.3	348	0.5	
Co	59	3	72	-0.014	ppb	-26.3	20	0.5	
Ni	60	3	72	-0.007	ppb	-224.5	187	1	
Cu	63	3	72	-0.065	ppb	-108.5	451	1	
Zn	66	3	72	3.260	ppb	18.7	701	5	
As	75	3	72	0.191	ppb	82.8	58	1	
Se	78	2	72	0.056	ppb	91.0	5	1	
(Se)	78	3	72	0.010	ppb	8560.7	13	1	
Sr	88	3	72	0.031	ppb	44.2	32	0.5	
Mo	95	3	115	-0.025	ppb	-209.7	43	0.5	
Ag	107	3	115	0.014	ppb	21.6	47	1	
Cd	111	3	115	-0.006	ppb	0.0	0	0.5	
Sn	120	3	115	-0.163	ppb	-52.8	530	1	
Sb	121	3	115	0.063	ppb	92.2	113	0.6	
Ba	137	3	115	-0.097	ppb	-75.2	25	0.5	
Tl	205	3	193	-0.051	ppb	-15.6	208	0.1	
(Pb)	206	3	193	-0.036	ppb	-53.9	132	1	
(Pb)	207	3	193	-0.013	ppb	-290.9	363	1	
Pb	208	3	193	-0.031	ppb	-13.6	785	0.5	
Th	232	3	193	0.560	ppb	24.2	7012	1	
U	238	3	193	-0.012	ppb	-79.1	1533	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4223709	1.52	4299393	98.24	60	120	
Sc (IS)	45	3	HMI He	653324	0.93	674661	96.84	60	120	
Ge Internal standard	72	2	HMI H2	2252434	2.93	2269722	99.24	60	120	
Ge Internal standard	72	3	HMI He	735330	1.07	739017	99.50	60	120	
In Internal Standard	115	3	HMI He	2531060	1.19	2543041	99.53	60	120	
Ir (IS)	193	3	HMI He	5606195	1.20	5570851	100.63	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	054LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:50:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.891	ppb	5.307	52	1	89.1	70	130	
Na	23	3	45	62.147	ppb	4.457	35901	50	124.3	70	130	
Mg	24	3	45	50.129	ppb	1.418	3394	50	100.3	70	130	
Al	27	3	45	50.032	ppb	1.055	1225	50	100.1	70	130	
K	39	3	45	78.028	ppb	41.264	24021	100	78.0	70	130	
V	51	3	72	5.245	ppb	3.741	3389	5	104.9	70	130	
Cr	52	3	72	1.824	ppb	4.269	3159	2	91.2	70	130	
Mn	55	3	72	0.417	ppb	43.535	701	1	41.7	70	130	>+/-30%
Co	59	3	72	1.056	ppb	0.535	1398	1	105.6	70	130	
Ni	60	3	72	1.891	ppb	5.692	866	2	94.6	70	130	
Cu	63	3	72	2.046	ppb	5.782	2486	2	102.3	70	130	
Zn	66	3	72	10.454	ppb	6.089	1889	10	104.5	70	130	
As	75	3	72	5.128	ppb	8.828	621	5	102.6	70	130	
Se	78	2	72	5.392	ppb	5.866	313	5	107.8	70	130	
(Se)	78	3	72	6.374	ppb	13.610	58	5	127.5	70	130	
Sr	88	3	72	1.051	ppb	4.163	575	1	105.1	70	130	
Mo	95	3	115	1.877	ppb	9.999	1028	2	93.8	70	130	
Ag	107	3	115	1.069	ppb	11.467	1843	1	106.9	70	130	
Cd	111	3	115	1.037	ppb	17.708	260	1	103.7	70	130	
Sn	120	3	115	9.965	ppb	2.799	7920	10	99.6	70	130	
Sb	121	3	115	2.080	ppb	5.509	1608	2	104.0	70	130	
Ba	137	3	115	1.013	ppb	15.599	285	1	101.3	70	130	
Tl	205	3	193	0.969	ppb	2.389	3897	1	96.9	70	130	
(Pb)	206	3	193	1.125	ppb	2.782	1533	1	112.5	70	130	
(Pb)	207	3	193	1.004	ppb	12.753	1438	1	100.4	70	130	
Pb	208	3	193	1.021	ppb	6.386	5889	1	102.1	70	130	
Th	232	3	193	2.203	ppb	4.151	14878	2	110.2	70	130	
U	238	3	193	1.061	ppb	3.937	7004	1	106.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4172885	1.67	4299393	97.06	60	120	
Sc (IS)	45	3	HMI He	638952	0.97	674661	94.71	60	120	
Ge Internal standard	72	2	HMI H2	2214765	1.25	2269722	97.58	60	120	
Ge Internal standard	72	3	HMI He	729096	0.61	739017	98.66	60	120	
In Internal Standard	115	3	HMI He	2508564	2.87	2543041	98.64	60	120	
Ir (IS)	193	3	HMI He	5484916	1.95	5570851	98.46	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C@50
Data File Name	055SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:52:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	164.59	3	2000	
Na	23	3	45	7740.398	ppb	7740.398	2.83	951683	400000	
Mg	24	3	45	2568.054	ppb	2568.054	0.63	163004	400000	
Al	27	3	45	5.098	ppb	5.098	15.38	177	400000	
K	39	3	45	1432.612	ppb	1432.612	3.79	87704	400000	
Ca	40	2	45	563.803	ppb	563.803	1.09	318618	400000	
V	51	3	72	0.260	ppb	0.260	18.62	300	2000	
Cr	52	3	72	0.225	ppb	0.225	27.95	1791	5000	
Mn	55	3	72	3.721	ppb	3.721	10.78	1967	10000	
Fe	56	2	72	5.044	ppb	5.044	3.30	17058	10000	
Co	59	3	72	0.031	ppb	0.031	27.36	73	2000	
Ni	60	3	72	0.311	ppb	0.311	50.53	283	5000	
Cu	63	3	72	0.197	ppb	0.197	41.48	665	5000	
Zn	66	3	72	3.778	ppb	3.778	10.52	740	5000	
As	75	3	72	0.207	ppb	0.207	33.64	57	2000	
Se	78	2	72	0.098	ppb	0.098	93.04	7	2000	
(Se)	78	3	72	0.627	ppb	0.627	184.83	17	2000	
Sr	88	3	72	3.264	ppb	3.264	5.23	1661	4000	
Mo	95	3	115	0.043	ppb	0.043	90.95	73	2000	
Ag	107	3	115	0.020	ppb	0.020	59.45	52	100	
Cd	111	3	115	0.001	ppb	0.001	1621.56	2	2000	
Sn	120	3	115	0.461	ppb	0.461	25.99	920	2000	
Sb	121	3	115	0.051	ppb	0.051	22.39	97	1000	
Ba	137	3	115	0.413	ppb	0.413	15.38	135	5000	
Tl	205	3	193	-0.027	ppb	-0.027	-4.65	288	2000	
(Pb)	206	3	193	0.002	ppb	0.002	477.21	172	100	
(Pb)	207	3	193	0.010	ppb	0.010	62.12	371	100	
Pb	208	3	193	0.003	ppb	0.003	506.85	911	5000	
Th	232	3	193	0.192	ppb	0.192	19.64	4970	2000	
U	238	3	193	0.004	ppb	0.004	487.00	1551	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3955456	2.10	4299393	92.00	60	120	
Sc (IS)	45	3	HMI He	621161	1.71	674661	92.07	60	120	
Ge Internal standard	72	2	HMI H2	2110768	1.08	2269722	93.00	60	120	
Ge Internal standard	72	3	HMI He	690510	0.75	739017	93.44	60	120	
In Internal Standard	115	3	HMI He	2349469	0.68	2543041	92.39	60	120	
Ir (IS)	193	3	HMI He	5372289	1.74	5570851	96.44	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-Csd@250
Data File Name	056SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:53:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.091	ppb	0.091	149.53	7	2000	
Na	23	3	45	11832.346	ppb	11832.346	2.77	1469858	400000	
Mg	24	3	45	22.815	ppb	22.815	8.27	1598	400000	
Al	27	3	45	2.345	ppb	2.345	60.27	117	400000	
K	39	3	45	55.064	ppb	55.064	82.22	22695	400000	
Ca	40	2	45	78.099	ppb	78.099	2.37	54353	400000	
V	51	3	72	0.246	ppb	0.246	24.98	292	2000	
Cr	52	3	72	0.146	ppb	0.146	120.23	1733	5000	
Mn	55	3	72	-0.448	ppb	-0.448	-7.24	323	10000	
Fe	56	2	72	11.328	ppb	11.328	3.32	26037	10000	
Co	59	3	72	0.020	ppb	0.020	55.66	60	2000	
Ni	60	3	72	0.091	ppb	0.091	181.33	208	5000	
Cu	63	3	72	0.095	ppb	0.095	85.77	571	5000	
Zn	66	3	72	3.352	ppb	3.352	6.76	673	5000	
As	75	3	72	0.253	ppb	0.253	86.07	62	2000	
Se	78	2	72	0.013	ppb	0.013	3.27	2	2000	
(Se)	78	3	72	0.370	ppb	0.370	399.44	15	2000	
Sr	88	3	72	10.368	ppb	10.368	4.10	5247	4000	
Mo	95	3	115	0.011	ppb	0.011	18.18	60	2000	
Ag	107	3	115	0.017	ppb	0.017	55.67	48	100	
Cd	111	3	115	0.007	ppb	0.007	161.35	3	2000	
Sn	120	3	115	0.497	ppb	0.497	100.11	975	2000	
Sb	121	3	115	0.039	ppb	0.039	50.82	92	1000	
Ba	137	3	115	10.928	ppb	10.928	2.79	2524	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-33.20	270	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1481.90	165	100	
(Pb)	207	3	193	-0.052	ppb	-0.052	-80.58	305	100	
Pb	208	3	193	-0.016	ppb	-0.016	-149.49	815	5000	
Th	232	3	193	0.117	ppb	0.117	42.30	4574	2000	
U	238	3	193	0.020	ppb	0.020	42.71	1614	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4055431	1.18	4299393	94.33	60	120	
Sc (IS)	45	3	HMI He	634026	1.35	674661	93.98	60	120	
Ge Internal standard	72	2	HMI H2	2123939	1.22	2269722	93.58	60	120	
Ge Internal standard	72	3	HMI He	690675	0.62	739017	93.46	60	120	
In Internal Standard	115	3	HMI He	2434405	1.74	2543041	95.73	60	120	
Ir (IS)	193	3	HMI He	5330182	2.23	5570851	95.68	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-D MS@50
Data File Name	057SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:55:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.090	ppb	0.090	56.81	7	2000	
Na	23	3	45	2348.168	ppb	2348.168	0.81	314542	400000	
Mg	24	3	45	13.547	ppb	13.547	17.04	1001	400000	
Al	27	3	45	4.350	ppb	4.350	48.84	163	400000	
K	39	3	45	16.638	ppb	16.638	155.35	20877	400000	
Ca	40	2	45	39.014	ppb	39.014	6.29	33122	400000	
V	51	3	72	0.251	ppb	0.251	18.39	298	2000	
Cr	52	3	72	0.404	ppb	0.404	37.13	1951	5000	
Mn	55	3	72	-0.413	ppb	-0.413	-24.70	342	10000	
Fe	56	2	72	4.368	ppb	4.368	6.19	16553	10000	
Co	59	3	72	0.012	ppb	0.012	35.62	52	2000	
Ni	60	3	72	0.111	ppb	0.111	68.90	218	5000	
Cu	63	3	72	0.413	ppb	0.413	33.03	873	5000	
Zn	66	3	72	3.734	ppb	3.734	3.00	743	5000	
As	75	3	72	0.215	ppb	0.215	52.88	58	2000	
Se	78	2	72	0.072	ppb	0.072	30.29	5	2000	
(Se)	78	3	72	-0.887	ppb	-0.887	-125.81	7	2000	
Sr	88	3	72	2.275	ppb	2.275	2.64	1178	4000	
Mo	95	3	115	0.027	ppb	0.027	108.91	68	2000	
Ag	107	3	115	0.004	ppb	0.004	42.67	28	100	
Cd	111	3	115	0.000	ppb	0.000	2937.52	2	2000	
Sn	120	3	115	1.252	ppb	1.252	15.35	1521	2000	
Sb	121	3	115	0.062	ppb	0.062	70.23	108	1000	
Ba	137	3	115	2.497	ppb	2.497	5.24	616	5000	
Tl	205	3	193	-0.033	ppb	-0.033	-23.35	267	2000	
(Pb)	206	3	193	0.020	ppb	0.020	39.61	193	100	
(Pb)	207	3	193	-0.020	ppb	-0.020	-192.35	343	100	
Pb	208	3	193	0.003	ppb	0.003	523.52	916	5000	
Th	232	3	193	0.046	ppb	0.046	23.85	4297	2000	
U	238	3	193	0.016	ppb	0.016	102.92	1618	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4142049	0.77	4299393	96.34	60	120	
Sc (IS)	45	3	HMI He	634610	0.91	674661	94.06	60	120	
Ge Internal standard	72	2	HMI H2	2169335	2.82	2269722	95.58	60	120	
Ge Internal standard	72	3	HMI He	699852	0.71	739017	94.70	60	120	
In Internal Standard	115	3	HMI He	2449486	2.46	2543041	96.32	60	120	
Ir (IS)	193	3	HMI He	5404909	0.56	5570851	97.02	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-E MSD@50
Data File Name	058SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:57:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.667	ppb	0.667	34.01	38	2000	
Na	23	3	45	12216.074	ppb	12216.074	2.59	1495147	400000	
Mg	24	3	45	38.632	ppb	38.632	8.70	2583	400000	
Al	27	3	45	23.767	ppb	23.767	10.43	601	400000	
K	39	3	45	60.652	ppb	60.652	79.50	22618	400000	
Ca	40	2	45	94.588	ppb	94.588	3.16	64372	400000	
V	51	3	72	1.127	ppb	1.127	6.45	806	2000	
Cr	52	3	72	1.211	ppb	1.211	10.37	2534	5000	
Mn	55	3	72	0.609	ppb	0.609	29.80	740	10000	
Fe	56	2	72	29.020	ppb	29.020	3.12	51272	10000	
Co	59	3	72	0.822	ppb	0.822	5.18	1038	2000	
Ni	60	3	72	1.011	ppb	1.011	11.82	521	5000	
Cu	63	3	72	0.916	ppb	0.916	12.51	1323	5000	
Zn	66	3	72	3.943	ppb	3.943	5.08	766	5000	
As	75	3	72	1.165	ppb	1.165	33.43	160	2000	
Se	78	2	72	0.826	ppb	0.826	8.07	47	2000	
(Se)	78	3	72	1.581	ppb	1.581	138.23	23	2000	
Sr	88	3	72	12.136	ppb	12.136	3.02	6142	4000	
Mo	95	3	115	0.909	ppb	0.909	12.71	511	2000	
Ag	107	3	115	0.885	ppb	0.885	4.95	1488	100	
Cd	111	3	115	0.939	ppb	0.939	4.04	228	2000	
Sn	120	3	115	1.115	ppb	1.115	6.63	1418	2000	
Sb	121	3	115	0.954	ppb	0.954	6.23	750	1000	
Ba	137	3	115	12.206	ppb	12.206	7.15	2812	5000	
Tl	205	3	193	0.810	ppb	0.810	4.29	3264	2000	
(Pb)	206	3	193	0.777	ppb	0.777	10.28	1091	100	
(Pb)	207	3	193	0.823	ppb	0.823	8.39	1223	100	
Pb	208	3	193	0.826	ppb	0.826	4.38	4848	5000	
Th	232	3	193	0.894	ppb	0.894	4.74	8344	2000	
U	238	3	193	0.867	ppb	0.867	6.88	5905	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4106760	2.26	4299393	95.52	60	120	
Sc (IS)	45	3	HMI He	625270	3.40	674661	92.68	60	120	
Ge Internal standard	72	2	HMI H2	2135011	1.72	2269722	94.06	60	120	
Ge Internal standard	72	3	HMI He	691159	2.11	739017	93.52	60	120	
In Internal Standard	115	3	HMI He	2435436	2.88	2543041	95.77	60	120	
Ir (IS)	193	3	HMI He	5387416	1.65	5570851	96.71	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C pds@50
Data File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:59:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.000	ppb	1.000	14.10	58	2000	
Na	23	3	45	11657.112	ppb	11657.112	1.62	1453536	400000	
Mg	24	3	45	37.560	ppb	37.560	7.74	2563	400000	
Al	27	3	45	42.320	ppb	42.320	6.20	1041	400000	
K	39	3	45	54.085	ppb	54.085	57.63	22745	400000	
Ca	40	2	45	92.758	ppb	92.758	3.89	63812	400000	
V	51	3	72	1.199	ppb	1.199	0.61	858	2000	
Cr	52	3	72	1.237	ppb	1.237	17.31	2582	5000	
Mn	55	3	72	0.506	ppb	0.506	36.59	708	10000	
Fe	56	2	72	29.363	ppb	29.363	1.16	52927	10000	
Co	59	3	72	0.972	ppb	0.972	11.12	1234	2000	
Ni	60	3	72	0.886	ppb	0.886	18.06	485	5000	
Cu	63	3	72	1.009	ppb	1.009	4.28	1423	5000	
Zn	66	3	72	5.071	ppb	5.071	5.97	955	5000	
As	75	3	72	1.007	ppb	1.007	15.41	145	2000	
Se	78	2	72	0.796	ppb	0.796	13.02	47	2000	
(Se)	78	3	72	0.845	ppb	0.845	105.10	18	2000	
Sr	88	3	72	12.153	ppb	12.153	1.22	6220	4000	
Mo	95	3	115	0.864	ppb	0.864	16.02	503	2000	
Ag	107	3	115	0.842	ppb	0.842	6.91	1456	100	
Cd	111	3	115	0.781	ppb	0.781	24.90	195	2000	
Sn	120	3	115	1.191	ppb	1.191	14.73	1511	2000	
Sb	121	3	115	0.919	ppb	0.919	5.37	746	1000	
Ba	137	3	115	11.669	ppb	11.669	4.19	2769	5000	
Tl	205	3	193	0.809	ppb	0.809	4.66	3280	2000	
(Pb)	206	3	193	0.857	ppb	0.857	4.04	1193	100	
(Pb)	207	3	193	0.752	ppb	0.752	3.67	1156	100	
Pb	208	3	193	0.833	ppb	0.833	1.49	4910	5000	
Th	232	3	193	0.876	ppb	0.876	2.05	8304	2000	
U	238	3	193	0.900	ppb	0.900	6.68	6097	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4137564	1.56	4299393	96.24	60	120	
Sc (IS)	45	3	HMI He	636058	0.55	674661	94.28	60	120	
Ge Internal standard	72	2	HMI H2	2182829	0.50	2269722	96.17	60	120	
Ge Internal standard	72	3	HMI He	698701	1.16	739017	94.54	60	120	
In Internal Standard	115	3	HMI He	2503993	1.19	2543041	98.46	60	120	
Ir (IS)	193	3	HMI He	5416284	1.17	5570851	97.23	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	060_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:01:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.214	ppb	3.180	2766	50	98.4	90	110	
Na	23	3	45	51272.799	ppb	2.471	6497423	51000	100.5	90	110	
Mg	24	3	45	11063.648	ppb	2.205	741608	11000	100.6	90	110	
Al	27	3	45	1000.829	ppb	2.621	23924	1000	100.1	90	110	
K	39	3	45	10563.488	ppb	2.789	551221	11000	96.0	90	110	
Ca	40	2	45	11024.016	ppb	1.749	6478519	11000	100.2	90	110	
V	51	3	72	51.379	ppb	1.352	32510	50	102.8	90	110	
Cr	52	3	72	50.250	ppb	3.488	42430	50	100.5	90	110	
Mn	55	3	72	50.454	ppb	4.379	21985	50	100.9	90	110	
Fe	56	2	72	1082.375	ppb	2.485	1598425	1000	108.2	90	110	
Co	59	3	72	50.469	ppb	3.400	66380	50	100.9	90	110	
Ni	60	3	72	49.393	ppb	2.002	18303	50	98.8	90	110	
Cu	63	3	72	51.223	ppb	2.300	51003	50	102.4	90	110	
Zn	66	3	72	51.757	ppb	4.293	8932	50	103.5	90	110	
As	75	3	72	52.611	ppb	3.105	6170	50	105.2	90	110	
Se	78	2	72	52.419	ppb	2.693	3024	50	104.8	90	110	
(Se)	78	3	72	52.974	ppb	12.867	396	50	105.9	90	110	
Sr	88	3	72	101.472	ppb	1.299	55238	100	101.5	90	110	
Mo	95	3	115	49.533	ppb	1.662	26092	50	99.1	90	110	
Ag	107	3	115	50.679	ppb	1.733	87682	50	101.4	90	110	
Cd	111	3	115	50.373	ppb	2.842	12678	50	100.7	90	110	
Sn	120	3	115	50.741	ppb	1.595	38201	50	101.5	90	110	
Sb	121	3	115	51.391	ppb	1.328	38682	50	102.8	90	110	
Ba	137	3	115	51.509	ppb	2.098	12245	50	103.0	90	110	
Tl	205	3	193	51.243	ppb	1.439	184725	50	102.5	90	110	
(Pb)	206	3	193	51.592	ppb	1.037	62138	50	103.2	90	110	
(Pb)	207	3	193	51.086	ppb	1.059	54436	50	102.2	90	110	
Pb	208	3	193	51.537	ppb	0.747	250258	50	103.1	90	110	
Th	232	3	193	51.870	ppb	1.456	255340	50	103.7	90	110	
U	238	3	193	52.387	ppb	0.633	268554	50	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4243987	2.02	4299393	98.71	60	120	
Sc (IS)	45	3	HMI He	656441	1.55	674661	97.30	60	120	
Ge Internal standard	72	2	HMI H2	2207568	1.49	2269722	97.26	60	120	
Ge Internal standard	72	3	HMI He	744757	1.57	739017	100.78	60	120	
In Internal Standard	115	3	HMI He	2541726	1.58	2543041	99.95	60	120	
Ir (IS)	193	3	HMI He	5449346	1.04	5570851	97.82	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	061_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:03:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	339.6	3	0.5	
Na	23	3	45	8.839	ppb	39.5	30584	25	
Mg	24	3	45	1.500	ppb	20.0	230	25	
Al	27	3	45	27.609	ppb	5.6	734	15	>RL
K	39	3	45	-14.794	ppb	-209.7	20285	50	
V	51	3	72	0.055	ppb	123.1	197	1	
Cr	52	3	72	-0.414	ppb	-27.9	1433	1	
Mn	55	3	72	-0.517	ppb	-20.1	323	0.5	
Co	59	3	72	0.003	ppb	189.0	43	0.5	
Ni	60	3	72	-0.006	ppb	-554.3	192	1	
Cu	63	3	72	-0.074	ppb	-39.2	455	1	
Zn	66	3	72	2.670	ppb	17.2	618	5	
As	75	3	72	-0.076	ppb	-282.0	28	1	
Se	78	2	72	0.044	ppb	131.6	4	1	
(Se)	78	3	72	0.420	ppb	414.0	17	1	
Sr	88	3	72	0.030	ppb	72.0	32	0.5	
Mo	95	3	115	0.019	ppb	241.6	67	0.5	
Ag	107	3	115	0.005	ppb	60.3	30	1	
Cd	111	3	115	0.013	ppb	147.1	5	0.5	
Sn	120	3	115	-0.196	ppb	-34.8	510	1	
Sb	121	3	115	0.040	ppb	53.8	97	0.6	
Ba	137	3	115	-0.049	ppb	-89.2	37	0.5	
Tl	205	3	193	-0.060	ppb	-10.1	178	0.1	
(Pb)	206	3	193	-0.022	ppb	-78.7	152	1	
(Pb)	207	3	193	-0.055	ppb	-94.2	322	1	
Pb	208	3	193	-0.030	ppb	-63.3	801	0.5	
Th	232	3	193	0.648	ppb	28.4	7559	1	
U	238	3	193	0.022	ppb	111.3	1736	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4348426	1.06	4299393	101.14	60	120	
Sc (IS)	45	3	HMI He	665807	1.74	674661	98.69	60	120	
Ge Internal standard	72	2	HMI H2	2289087	2.09	2269722	100.85	60	120	
Ge Internal standard	72	3	HMI He	754392	0.74	739017	102.08	60	120	
In Internal Standard	115	3	HMI He	2550338	1.03	2543041	100.29	60	120	
Ir (IS)	193	3	HMI He	5693145	2.13	5570851	102.20	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	062LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:05:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.086	ppb	45.327	63	1	108.6	70	130	
Na	23	3	45	57.053	ppb	3.945	35627	50	114.1	70	130	
Mg	24	3	45	49.871	ppb	6.076	3411	50	99.7	70	130	
Al	27	3	45	48.390	ppb	11.549	1198	50	96.8	70	130	
K	39	3	45	74.559	ppb	60.876	24075	100	74.6	70	130	
V	51	3	72	5.085	ppb	3.080	3329	5	101.7	70	130	
Cr	52	3	72	1.861	ppb	8.121	3225	2	93.0	70	130	
Mn	55	3	72	0.311	ppb	12.226	665	1	31.1	70	130	>+/-30%
Co	59	3	72	1.000	ppb	5.151	1341	1	100.0	70	130	
Ni	60	3	72	1.866	ppb	11.839	868	2	93.3	70	130	
Cu	63	3	72	2.035	ppb	5.659	2504	2	101.8	70	130	
Zn	66	3	72	10.854	ppb	5.705	1979	10	108.5	70	130	
As	75	3	72	4.979	ppb	10.421	611	5	99.6	70	130	
Se	78	2	72	5.348	ppb	8.983	315	5	107.0	70	130	
(Se)	78	3	72	7.231	ppb	52.223	65	5	144.6	70	130	>+/-30%
Sr	88	3	72	1.027	ppb	5.721	568	1	102.7	70	130	
Mo	95	3	115	1.806	ppb	11.093	1000	2	90.3	70	130	
Ag	107	3	115	1.041	ppb	8.240	1814	1	104.1	70	130	
Cd	111	3	115	0.889	ppb	21.863	225	1	88.9	70	130	
Sn	120	3	115	9.730	ppb	2.569	7822	10	97.3	70	130	
Sb	121	3	115	2.165	ppb	6.153	1684	2	108.2	70	130	
Ba	137	3	115	1.060	ppb	10.145	298	1	106.0	70	130	
Tl	205	3	193	0.959	ppb	0.668	3902	1	95.9	70	130	
(Pb)	206	3	193	1.002	ppb	10.230	1396	1	100.2	70	130	
(Pb)	207	3	193	0.956	ppb	6.802	1403	1	95.6	70	130	
Pb	208	3	193	0.997	ppb	4.505	5831	1	99.7	70	130	
Th	232	3	193	2.264	ppb	2.034	15323	2	113.2	70	130	
U	238	3	193	1.032	ppb	3.964	6922	1	103.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4162745	1.68	4299393	96.82	60	120	
Sc (IS)	45	3	HMI He	645351	0.85	674661	95.66	60	120	
Ge Internal standard	72	2	HMI H2	2240692	1.22	2269722	98.72	60	120	
Ge Internal standard	72	3	HMI He	737782	2.37	739017	99.83	60	120	
In Internal Standard	115	3	HMI He	2531603	3.37	2543041	99.55	60	120	
Ir (IS)	193	3	HMI He	5540107	2.28	5570851	99.45	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599677/1-A
Data File Name	063_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:07:03-07:00
Sample Type	Blank
Dilution	1
Comment	599677 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.030	ppb	169.176392	3	0.5
Na	23	3	45	25.675	ppb	3.876807943	31808	25
Mg	24	3	45	6.047	ppb	17.29224371	524	25
Al	27	3	45	5.786	ppb	18.50265177	200	15
K	39	3	45	-6.570	ppb	-439.8957384	20115	50
V	51	3	72	0.168	ppb	43.34130757	258	1
Cr	52	3	72	-0.097	ppb	-134.929472	1624	1
Mn	55	3	72	-0.506	ppb	-13.55300681	315	0.5
Co	59	3	72	-0.010	ppb	-67.2818475	25	0.5
Ni	60	3	72	-0.017	ppb	-586.2314234	180	1
Cu	63	3	72	0.165	ppb	27.39494917	666	1
Zn	66	3	72	1.839	ppb	5.752229335	456	5
As	75	3	72	-0.185	ppb	-62.51668898	15	1
(Se)	78	3	72	0.971	ppb	143.9686653	20	1
Sr	88	3	72	0.148	ppb	27.6445301	93	0.5
Mo	95	3	115	-0.018	ppb	-80.83233187	47	0.5
Ag	107	3	115	0.001	ppb	397.4932172	23	1
Cd	111	3	115	-0.006	ppb	0	0	0.5
Sn	120	3	115	0.138	ppb	84.21636212	743	1
Sb	121	3	115	0.026	ppb	90.84710384	85	0.6
Ba	137	3	115	0.247	ppb	8.404134304	105	0.5
Tl	205	3	193	-0.050	ppb	-3.418090361	208	0.1
(Pb)	206	3	193	0.011	ppb	133.6017347	185	1
(Pb)	207	3	193	0.001	ppb	4289.683828	370	1
Pb	208	3	193	-0.002	ppb	-217.0222648	906	0.5
Th	232	3	193	0.134	ppb	33.91876653	4784	1
U	238	3	193	0.002	ppb	1143.820779	1569	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4264019	0.25	4299393	99.18	60	120	
Sc (IS)	45	3	HMI He	646810	1.24	674661	95.87	60	120	
Ge Internal standard	72	2	HMI H2	2227602	1.15	2269722	98.14	60	120	
Ge Internal standard	72	3	HMI He	724399	1.06	739017	98.02	60	120	
In Internal Standard	115	3	HMI He	2500387	0.74	2543041	98.32	60	120	
Ir (IS)	193	3	HMI He	5476803	2.01	5570851	98.31	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599677/2-A
Data File Name	064_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:08:56-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599677 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.208	39.208	ppb	6.688	2241	40	98.0	80	120	
Na	23	3	45	1357.400	1357.400	ppb	2.408	198630	40	3393.5	80	120	>+/-20%
Mg	24	3	45	820.990	820.990	ppb	1.918	54693	40	2052.5	80	120	>+/-20%
Al	27	3	45	803.631	803.631	ppb	4.793	19062	40	2009.1	80	120	>+/-20%
K	39	3	45	825.167	825.167	ppb	4.708	61667	40	2062.9	80	120	>+/-20%
Ca	40	2	45	875.008	875.008	ppb	1.648	523474	40	2187.5	80	120	>+/-20%
V	51	3	72	41.139	41.139	ppb	3.253	25923	40	102.8	80	120	
Cr	52	3	72	40.645	40.645	ppb	0.940	34482	40	101.6	80	120	
Mn	55	3	72	40.308	40.308	ppb	0.481	17586	40	100.8	80	120	
Fe	56	2	72	850.887	850.887	ppb	1.672	1298125	40	2127.2	80	120	>+/-20%
(Fe)	56	3	72	820.390	820.390	ppb	2.248	567763	40	2051.0	80	120	>+/-20%
Co	59	3	72	40.530	40.530	ppb	0.835	53051	40	101.3	80	120	
Ni	60	3	72	40.783	40.783	ppb	2.847	15067	40	102.0	80	120	
Cu	63	3	72	40.921	40.921	ppb	1.169	40644	40	102.3	80	120	
Zn	66	3	72	41.925	41.925	ppb	2.647	7228	40	104.8	80	120	
As	75	3	72	41.399	41.399	ppb	6.957	4835	40	103.5	80	120	
Se	78	2	72	40.244	40.244	ppb	2.620	2395	40	100.6	80	120	
(Se)	78	3	72	37.750	37.750	ppb	14.144	285	40	94.4	80	120	
Sr	88	3	72	82.339	82.339	ppb	0.339	44596	40	205.8	80	120	>+/-20%
Mo	95	3	115	39.968	39.968	ppb	2.579	20964	40	99.9	80	120	
Ag	107	3	115	41.066	41.066	ppb	2.437	70713	40	102.7	80	120	
Cd	111	3	115	41.627	41.627	ppb	1.469	10431	40	104.1	80	120	
Sn	120	3	115	40.761	40.761	ppb	2.917	30667	40	101.9	80	120	
Sb	121	3	115	41.037	41.037	ppb	4.298	30742	40	102.6	80	120	
Ba	137	3	115	42.468	42.468	ppb	6.248	10049	40	106.2	80	120	
Tl	205	3	193	40.739	40.739	ppb	1.484	148889	40	101.8	80	120	
(Pb)	206	3	193	40.679	40.679	ppb	0.823	49676	40	101.7	80	120	
(Pb)	207	3	193	40.792	40.792	ppb	0.746	44115	40	102.0	80	120	
Pb	208	3	193	40.695	40.695	ppb	0.818	200398	40	101.7	80	120	
Th	232	3	193	41.882	41.882	ppb	0.926	209690	40	104.7	80	120	
U	238	3	193	41.144	41.144	ppb	0.688	214029	40	102.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4236745	2.44	4299393	98.54	60	120	
Sc (IS)	45	3	HMI He	650978	1.13	674661	96.49	60	120	
Ge Internal standard	72	2	HMI H2	2276423	1.26	2269722	100.30	60	120	
Ge Internal standard	72	3	HMI He	740853	0.91	739017	100.25	60	120	
In Internal Standard	115	3	HMI He	2530034	2.37	2543041	99.49	60	120	
Ir (IS)	193	3	HMI He	5520870	0.94	5570851	99.10	60	120	

Sample Report

Sample Table

Sample Name	280-171331-E-1-B
Data File Name	065SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	149.18	5	2000	
Na	23	3	45	37128.452	ppb	37128.452	1.48	4654232	400000	
Mg	24	3	45	16175.947	ppb	16175.947	1.87	1070616	400000	
Al	27	3	45	733.524	ppb	733.524	0.30	17335	400000	
K	39	3	45	2185.531	ppb	2185.531	1.35	128880	400000	
Ca	40	2	45	38528.497	ppb	38528.497	3.25	22523745	400000	
V	51	3	72	4.724	ppb	4.724	2.75	3175	2000	
Cr	52	3	72	0.929	ppb	0.929	9.41	2534	5000	
Mn	55	3	72	982.544	ppb	982.544	2.62	423770	10000	
Fe	56	2	72	1308.840	ppb	1308.840	3.27	2007903	10000	
Co	59	3	72	1.528	ppb	1.528	7.62	2074	2000	
Ni	60	3	72	3.419	ppb	3.419	7.23	1464	5000	
Cu	63	3	72	4.914	ppb	4.914	2.26	5437	5000	
Zn	66	3	72	36.620	ppb	36.620	3.98	6450	5000	
As	75	3	72	0.472	ppb	0.472	39.38	93	2000	
Se	78	2	72	0.067	ppb	0.067	59.34	5	2000	
(Se)	78	3	72	1.771	ppb	1.771	110.87	27	2000	
Sr	88	3	72	396.942	ppb	396.942	3.04	218852	4000	
Mo	95	3	115	0.840	ppb	0.840	15.35	493	2000	
Ag	107	3	115	0.007	ppb	0.007	90.27	33	100	
Cd	111	3	115	0.147	ppb	0.147	29.10	38	2000	
Sn	120	3	115	0.098	ppb	0.098	194.41	718	2000	
Sb	121	3	115	0.326	ppb	0.326	16.35	308	1000	
Ba	137	3	115	77.148	ppb	77.148	3.28	18137	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-54.45	325	2000	
(Pb)	206	3	193	2.143	ppb	2.143	1.80	2757	100	
(Pb)	207	3	193	1.928	ppb	1.928	3.64	2417	100	
Pb	208	3	193	1.978	ppb	1.978	1.55	10525	5000	
Th	232	3	193	1.042	ppb	1.042	7.08	9199	2000	
U	238	3	193	2.130	ppb	2.130	1.00	12458	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4227754	1.99	4299393	98.33	60	120	
Sc (IS)	45	3	HMI He	648140	0.88	674661	96.07	60	120	
Ge Internal standard	72	2	HMI H2	2296134	1.47	2269722	101.16	60	120	
Ge Internal standard	72	3	HMI He	754729	2.40	739017	102.13	60	120	
In Internal Standard	115	3	HMI He	2516778	1.02	2543041	98.97	60	120	
Ir (IS)	193	3	HMI He	5472669	1.33	5570851	98.24	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-1-B@10
Data File Name	066SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:12:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	146.88	5	2000	
Na	23	3	45	10681.552	ppb	10681.552	0.59	1337922	400000	
Mg	24	3	45	20595.779	ppb	20595.779	1.01	1341733	400000	
Al	27	3	45	6.781	ppb	6.781	23.78	220	400000	
K	39	3	45	1886.775	ppb	1886.775	3.31	112238	400000	
Ca	40	2	45	39775.440	ppb	39775.440	0.96	23116330	400000	
V	51	3	72	0.139	ppb	0.139	22.20	240	2000	
Cr	52	3	72	0.224	ppb	0.224	68.52	1879	5000	
Mn	55	3	72	27.937	ppb	27.937	4.33	12074	10000	
Fe	56	2	72	2.948	ppb	2.948	11.59	14445	10000	
Co	59	3	72	0.048	ppb	0.048	60.75	100	2000	
Ni	60	3	72	0.796	ppb	0.796	15.62	470	5000	
Cu	63	3	72	0.103	ppb	0.103	53.36	606	5000	
Zn	66	3	72	4.730	ppb	4.730	11.70	935	5000	
As	75	3	72	0.082	ppb	0.082	203.21	45	2000	
Se	78	2	72	0.025	ppb	0.025	164.21	3	2000	
(Se)	78	3	72	0.974	ppb	0.974	124.92	20	2000	
Sr	88	3	72	1044.879	ppb	1044.879	2.47	553018	4000	
Mo	95	3	115	0.080	ppb	0.080	62.13	97	2000	
Ag	107	3	115	0.008	ppb	0.008	62.81	35	100	
Cd	111	3	115	0.000	ppb	0.000	3233.83	2	2000	
Sn	120	3	115	0.821	ppb	0.821	14.11	1234	2000	
Sb	121	3	115	0.063	ppb	0.063	49.61	112	1000	
Ba	137	3	115	0.630	ppb	0.630	23.06	193	5000	
Tl	205	3	193	-0.037	ppb	-0.037	-6.45	253	2000	
(Pb)	206	3	193	0.018	ppb	0.018	145.72	192	100	
(Pb)	207	3	193	-0.024	ppb	-0.024	-369.56	340	100	
Pb	208	3	193	0.000	ppb	0.000	-7832.51	905	5000	
Th	232	3	193	0.115	ppb	0.115	51.31	4642	2000	
U	238	3	193	0.229	ppb	0.229	16.26	2706	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4201221	1.28	4299393	97.72	60	120	
Sc (IS)	45	3	HMI He	637869	0.90	674661	94.55	60	120	
Ge Internal standard	72	2	HMI H2	2159589	2.28	2269722	95.15	60	120	
Ge Internal standard	72	3	HMI He	724495	2.62	739017	98.03	60	120	
In Internal Standard	115	3	HMI He	2488446	0.29	2543041	97.85	60	120	
Ir (IS)	193	3	HMI He	5419414	0.84	5570851	97.28	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-2-B@10
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:14:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	10389.879	ppb	10389.879	0.67	1317942	400000	
Mg	24	3	45	20050.223	ppb	20050.223	2.08	1321847	400000	
Al	27	3	45	4.092	ppb	4.092	36.38	160	400000	
K	39	3	45	1835.844	ppb	1835.844	3.41	111081	400000	
Ca	40	2	45	39693.414	ppb	39693.414	1.12	22981123	400000	
V	51	3	72	0.203	ppb	0.203	2.99	285	2000	
Cr	52	3	72	0.068	ppb	0.068	264.08	1791	5000	
Mn	55	3	72	27.194	ppb	27.194	0.36	12006	10000	
Fe	56	2	72	2.887	ppb	2.887	9.99	14542	10000	
Co	59	3	72	0.043	ppb	0.043	16.36	95	2000	
Ni	60	3	72	0.779	ppb	0.779	15.79	473	5000	
Cu	63	3	72	0.150	ppb	0.150	54.83	665	5000	
Zn	66	3	72	4.579	ppb	4.579	6.51	926	5000	
As	75	3	72	0.129	ppb	0.129	49.57	52	2000	
Se	78	2	72	0.129	ppb	0.129	40.41	9	2000	
(Se)	78	3	72	0.686	ppb	0.686	152.39	18	2000	
Sr	88	3	72	1009.844	ppb	1009.844	1.07	545238	4000	
Mo	95	3	115	0.107	ppb	0.107	62.52	112	2000	
Ag	107	3	115	0.011	ppb	0.011	50.97	40	100	
Cd	111	3	115	0.013	ppb	0.013	149.03	5	2000	
Sn	120	3	115	1.151	ppb	1.151	16.74	1489	2000	
Sb	121	3	115	0.050	ppb	0.050	33.98	103	1000	
Ba	137	3	115	0.634	ppb	0.634	9.29	197	5000	
Tl	205	3	193	-0.033	ppb	-0.033	-27.25	270	2000	
(Pb)	206	3	193	0.019	ppb	0.019	189.72	193	100	
(Pb)	207	3	193	0.027	ppb	0.027	143.49	393	100	
Pb	208	3	193	0.017	ppb	0.017	43.48	990	5000	
Th	232	3	193	0.075	ppb	0.075	72.05	4447	2000	
U	238	3	193	0.252	ppb	0.252	16.21	2821	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4184901	1.33	4299393	97.34	60	120	
Sc (IS)	45	3	HMI He	645569	0.68	674661	95.69	60	120	
Ge Internal standard	72	2	HMI H2	2186589	1.73	2269722	96.34	60	120	
Ge Internal standard	72	3	HMI He	738808	0.82	739017	99.97	60	120	
In Internal Standard	115	3	HMI He	2519380	2.47	2543041	99.07	60	120	
Ir (IS)	193	3	HMI He	5422139	1.88	5570851	97.33	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-4-B
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	6028.567	ppb	6028.567	2.07	793642	400000	
Mg	24	3	45	462.919	ppb	462.919	1.97	31313	400000	
Al	27	3	45	5.760	ppb	5.760	33.18	204	400000	
K	39	3	45	1069.321	ppb	1069.321	5.45	74823	400000	
Ca	40	2	45	1004.436	ppb	1004.436	2.24	601784	400000	
V	51	3	72	0.087	ppb	0.087	51.31	218	2000	
Cr	52	3	72	-0.161	ppb	-0.161	-38.47	1644	5000	
Mn	55	3	72	0.407	ppb	0.407	40.90	721	10000	
Fe	56	2	72	20.939	ppb	20.939	2.56	42273	10000	
Co	59	3	72	0.011	ppb	0.011	105.29	55	2000	
Ni	60	3	72	28.643	ppb	28.643	0.94	10861	5000	
Cu	63	3	72	0.347	ppb	0.347	8.51	878	5000	
Zn	66	3	72	5.766	ppb	5.766	15.33	1149	5000	
As	75	3	72	0.051	ppb	0.051	153.86	43	2000	
Se	78	2	72	0.022	ppb	0.022	87.58	3	2000	
(Se)	78	3	72	-0.022	ppb	-0.022	-5035.50	13	2000	
Sr	88	3	72	22.715	ppb	22.715	6.30	12551	4000	
Mo	95	3	115	0.017	ppb	0.017	304.58	67	2000	
Ag	107	3	115	0.004	ppb	0.004	244.91	28	100	
Cd	111	3	115	0.000	ppb	0.000	17342.58	2	2000	
Sn	120	3	115	0.847	ppb	0.847	12.16	1301	2000	
Sb	121	3	115	0.199	ppb	0.199	21.43	220	1000	
Ba	137	3	115	0.592	ppb	0.592	8.62	192	5000	
Tl	205	3	193	-0.059	ppb	-0.059	-15.01	180	2000	
(Pb)	206	3	193	0.015	ppb	0.015	117.19	193	100	
(Pb)	207	3	193	0.021	ppb	0.021	248.27	396	100	
Pb	208	3	193	0.021	ppb	0.021	84.74	1033	5000	
Th	232	3	193	0.009	ppb	0.009	291.22	4239	2000	
U	238	3	193	0.006	ppb	0.006	80.66	1616	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254395	1.66	4299393	98.95	60	120	
Sc (IS)	45	3	HMI He	659715	0.68	674661	97.78	60	120	
Ge Internal standard	72	2	HMI H2	2266943	0.48	2269722	99.88	60	120	
Ge Internal standard	72	3	HMI He	756363	4.03	739017	102.35	60	120	
In Internal Standard	115	3	HMI He	2583747	1.18	2543041	101.60	60	120	
Ir (IS)	193	3	HMI He	5559296	1.29	5570851	99.79	60	120	

Sample Report

Sample Table

Sample Name	280-171142-e-5-b@50
Data File Name	069SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:18:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	6.79	5	2000	
Na	23	3	45	11496.917	ppb	11496.917	2.34	1464977	400000	
Mg	24	3	45	23962.833	ppb	23962.833	0.90	1590378	400000	
Al	27	3	45	4.759	ppb	4.759	36.98	177	400000	
K	39	3	45	2005.164	ppb	2005.164	0.77	120255	400000	
Ca	40	2	45	18672.503	ppb	18672.503	1.50	10830637	400000	
V	51	3	72	0.220	ppb	0.220	28.78	300	2000	
Cr	52	3	72	0.079	ppb	0.079	182.88	1828	5000	
Mn	55	3	72	32.491	ppb	32.491	2.40	14475	10000	
Fe	56	2	72	1.703	ppb	1.703	22.33	12902	10000	
Co	59	3	72	0.049	ppb	0.049	36.82	105	2000	
Ni	60	3	72	0.906	ppb	0.906	10.49	528	5000	
Cu	63	3	72	0.099	ppb	0.099	28.93	625	5000	
Zn	66	3	72	4.395	ppb	4.395	11.04	911	5000	
As	75	3	72	0.137	ppb	0.137	69.54	53	2000	
Se	78	2	72	0.058	ppb	0.058	30.37	5	2000	
(Se)	78	3	72	-0.251	ppb	-0.251	-641.48	12	2000	
Sr	88	3	72	675.828	ppb	675.828	2.67	370901	4000	
Mo	95	3	115	0.056	ppb	0.056	152.96	85	2000	
Ag	107	3	115	0.005	ppb	0.005	4.26	30	100	
Cd	111	3	115	0.007	ppb	0.007	165.64	3	2000	
Sn	120	3	115	0.755	ppb	0.755	5.22	1199	2000	
Sb	121	3	115	0.064	ppb	0.064	11.92	113	1000	
Ba	137	3	115	0.841	ppb	0.841	12.68	245	5000	
Tl	205	3	193	-0.043	ppb	-0.043	-18.79	232	2000	
(Pb)	206	3	193	-0.018	ppb	-0.018	-173.33	148	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-91.83	315	100	
Pb	208	3	193	-0.023	ppb	-0.023	-50.08	796	5000	
Th	232	3	193	0.058	ppb	0.058	88.03	4364	2000	
U	238	3	193	0.280	ppb	0.280	4.37	2962	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4190878	0.47	4299393	97.48	60	120	
Sc (IS)	45	3	HMI He	649862	0.56	674661	96.32	60	120	
Ge Internal standard	72	2	HMI H2	2202701	2.83	2269722	97.05	60	120	
Ge Internal standard	72	3	HMI He	751175	1.96	739017	101.65	60	120	
In Internal Standard	115	3	HMI He	2515228	1.20	2543041	98.91	60	120	
Ir (IS)	193	3	HMI He	5416929	0.72	5570851	97.24	60	120	

Sample Report

Sample Table

Sample Name	280-171242-E-1-B@50
Data File Name	070SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:20:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4875.11	2	2000	
Na	23	3	45	9103.967	ppb	9103.967	1.62	1157214	400000	
Mg	24	3	45	3355.878	ppb	3355.878	1.43	221149	400000	
Al	27	3	45	5.247	ppb	5.247	55.49	187	400000	
K	39	3	45	8672.720	ppb	8672.720	0.37	448399	400000	
Ca	40	2	45	9477.743	ppb	9477.743	1.34	5487836	400000	
V	51	3	72	1.143	ppb	1.143	12.59	876	2000	
Cr	52	3	72	0.284	ppb	0.284	41.52	1974	5000	
Mn	55	3	72	306.572	ppb	306.572	2.36	130545	10000	
Fe	56	2	72	998.421	ppb	998.421	2.21	1458668	10000	
Co	59	3	72	2.314	ppb	2.314	2.00	3075	2000	
Ni	60	3	72	0.748	ppb	0.748	14.58	465	5000	
Cu	63	3	72	0.093	ppb	0.093	50.22	613	5000	
Zn	66	3	72	3.231	ppb	3.231	10.37	703	5000	
As	75	3	72	1.205	ppb	1.205	35.45	177	2000	
Se	78	2	72	0.165	ppb	0.165	97.12	11	2000	
(Se)	78	3	72	1.370	ppb	1.370	57.89	23	2000	
Sr	88	3	72	56.532	ppb	56.532	3.53	30693	4000	
Mo	95	3	115	0.075	ppb	0.075	44.63	95	2000	
Ag	107	3	115	0.008	ppb	0.008	171.55	35	100	
Cd	111	3	115	0.014	ppb	0.014	145.96	5	2000	
Sn	120	3	115	0.307	ppb	0.307	18.24	873	2000	
Sb	121	3	115	0.098	ppb	0.098	64.99	138	1000	
Ba	137	3	115	12.234	ppb	12.234	5.79	2919	5000	
Tl	205	3	193	-0.042	ppb	-0.042	-24.24	235	2000	
(Pb)	206	3	193	0.022	ppb	0.022	151.65	197	100	
(Pb)	207	3	193	-0.093	ppb	-0.093	-23.34	268	100	
Pb	208	3	193	-0.014	ppb	-0.014	-144.18	843	5000	
Th	232	3	193	0.035	ppb	0.035	112.72	4275	2000	
U	238	3	193	0.026	ppb	0.026	48.39	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4179773	1.11	4299393	97.22	60	120	
Sc (IS)	45	3	HMI He	644961	0.35	674661	95.60	60	120	
Ge Internal standard	72	2	HMI H2	2182714	1.14	2269722	96.17	60	120	
Ge Internal standard	72	3	HMI He	742937	2.32	739017	100.53	60	120	
In Internal Standard	115	3	HMI He	2520080	1.62	2543041	99.10	60	120	
Ir (IS)	193	3	HMI He	5445641	1.95	5570851	97.75	60	120	

Sample Report

Sample Table

Sample Name	280-171166-D-1-A@50
Data File Name	071SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:22:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.088	ppb	0.088	151.26	7	2000	
Na	23	3	45	11471.926	ppb	11471.926	0.70	1448878	400000	
Mg	24	3	45	16.315	ppb	16.315	10.33	1198	400000	
Al	27	3	45	4.401	ppb	4.401	6.42	167	400000	
K	39	3	45	2000.975	ppb	2000.975	5.19	118943	400000	
Ca	40	2	45	11325.704	ppb	11325.704	1.77	6526626	400000	
V	51	3	72	0.316	ppb	0.316	18.00	348	2000	
Cr	52	3	72	0.684	ppb	0.684	37.80	2239	5000	
Mn	55	3	72	-0.486	ppb	-0.486	-30.63	323	10000	
Fe	56	2	72	2.722	ppb	2.722	10.78	14282	10000	
Co	59	3	72	0.016	ppb	0.016	81.05	58	2000	
Ni	60	3	72	0.130	ppb	0.130	142.13	233	5000	
Cu	63	3	72	0.154	ppb	0.154	54.52	655	5000	
Zn	66	3	72	2.888	ppb	2.888	7.65	630	5000	
As	75	3	72	0.110	ppb	0.110	106.96	48	2000	
Se	78	2	72	0.071	ppb	0.071	75.08	5	2000	
(Se)	78	3	72	0.505	ppb	0.505	290.73	17	2000	
Sr	88	3	72	313.416	ppb	313.416	1.90	165907	4000	
Mo	95	3	115	0.034	ppb	0.034	148.06	73	2000	
Ag	107	3	115	0.019	ppb	0.019	20.41	53	100	
Cd	111	3	115	0.007	ppb	0.007	167.13	3	2000	
Sn	120	3	115	0.739	ppb	0.739	14.13	1184	2000	
Sb	121	3	115	0.015	ppb	0.015	190.47	77	1000	
Ba	137	3	115	0.303	ppb	0.303	19.55	118	5000	
Tl	205	3	193	-0.046	ppb	-0.046	-6.33	223	2000	
(Pb)	206	3	193	-0.007	ppb	-0.007	-94.05	165	100	
(Pb)	207	3	193	-0.054	ppb	-0.054	-59.99	313	100	
Pb	208	3	193	-0.022	ppb	-0.022	-23.21	811	5000	
Th	232	3	193	0.040	ppb	0.040	96.91	4357	2000	
U	238	3	193	0.017	ppb	0.017	8.20	1658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4161179	1.01	4299393	96.79	60	120	
Sc (IS)	45	3	HMI He	644098	1.07	674661	95.47	60	120	
Ge Internal standard	72	2	HMI H2	2184225	0.70	2269722	96.23	60	120	
Ge Internal standard	72	3	HMI He	724395	1.70	739017	98.02	60	120	
In Internal Standard	115	3	HMI He	2507794	1.30	2543041	98.61	60	120	
Ir (IS)	193	3	HMI He	5513044	1.65	5570851	98.96	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	072_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:23:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.969	ppb	5.580	2886	50	99.9	90	110	
Na	23	3	45	50683.372	ppb	1.816	6538859	51000	99.4	90	110	
Mg	24	3	45	10811.921	ppb	0.985	737899	11000	98.3	90	110	
Al	27	3	45	998.462	ppb	1.899	24299	1000	99.8	90	110	
K	39	3	45	10660.695	ppb	2.073	566113	11000	96.9	90	110	
Ca	40	2	45	10940.094	ppb	1.852	6543906	11000	99.5	90	110	
V	51	3	72	51.825	ppb	0.613	33053	50	103.6	90	110	
Cr	52	3	72	51.276	ppb	1.106	43616	50	102.6	90	110	
Mn	55	3	72	50.774	ppb	2.465	22303	50	101.5	90	110	
Fe	56	2	72	1035.920	ppb	2.146	1602410	1000	103.6	90	110	
Co	59	3	72	50.732	ppb	1.533	67276	50	101.5	90	110	
Ni	60	3	72	51.330	ppb	0.648	19167	50	102.7	90	110	
Cu	63	3	72	51.750	ppb	0.490	51941	50	103.5	90	110	
Zn	66	3	72	52.230	ppb	5.774	9085	50	104.5	90	110	
As	75	3	72	52.372	ppb	3.431	6190	50	104.7	90	110	
Se	78	2	72	50.769	ppb	2.152	3068	50	101.5	90	110	
(Se)	78	3	72	55.018	ppb	12.100	415	50	110.0	90	110	>+\-10%
Sr	88	3	72	102.185	ppb	2.626	56071	100	102.2	90	110	
Mo	95	3	115	49.761	ppb	1.452	26983	50	99.5	90	110	
Ag	107	3	115	49.703	ppb	0.598	88527	50	99.4	90	110	
Cd	111	3	115	49.737	ppb	1.217	12888	50	99.5	90	110	
Sn	120	3	115	50.183	ppb	1.633	38899	50	100.4	90	110	
Sb	121	3	115	51.530	ppb	1.495	39926	50	103.1	90	110	
Ba	137	3	115	51.925	ppb	0.346	12706	50	103.8	90	110	
Tl	205	3	193	50.670	ppb	1.133	188456	50	101.3	90	110	
(Pb)	206	3	193	50.397	ppb	0.584	62630	50	100.8	90	110	
(Pb)	207	3	193	50.077	ppb	0.841	55062	50	100.2	90	110	
Pb	208	3	193	50.272	ppb	0.932	251882	50	100.5	90	110	
Th	232	3	193	50.602	ppb	0.526	257110	50	101.2	90	110	
U	238	3	193	51.148	ppb	0.229	270552	50	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4318856	0.59	4299393	100.45	60	120	
Sc (IS)	45	3	HMI He	668205	1.22	674661	99.04	60	120	
Ge Internal standard	72	2	HMI H2	2311093	1.22	2269722	101.82	60	120	
Ge Internal standard	72	3	HMI He	750634	0.19	739017	101.57	60	120	
In Internal Standard	115	3	HMI He	2616238	0.58	2543041	102.88	60	120	
Ir (IS)	193	3	HMI He	5621883	0.16	5570851	100.92	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	073_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:25:45-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.028	ppb	175.1	3	0.5	
Na	23	3	45	-1.396	ppb	-378.4	29935	25	
Mg	24	3	45	1.711	ppb	38.4	250	25	
Al	27	3	45	28.401	ppb	15.7	771	15	>RL
K	39	3	45	-24.096	ppb	-170.2	20245	50	
V	51	3	72	0.052	ppb	102.6	197	1	
Cr	52	3	72	-0.356	ppb	-23.1	1493	1	
Mn	55	3	72	-0.296	ppb	-43.6	421	0.5	
Co	59	3	72	0.000	ppb	17061.4	40	0.5	
Ni	60	3	72	0.033	ppb	107.5	208	1	
Cu	63	3	72	-0.050	ppb	-44.4	483	1	
Zn	66	3	72	2.697	ppb	13.4	628	5	
As	75	3	72	0.007	ppb	2101.4	38	1	
Se	78	2	72	0.010	ppb	325.4	2	1	
(Se)	78	3	72	0.616	ppb	280.1	18	1	
Sr	88	3	72	0.062	ppb	40.4	50	0.5	
Mo	95	3	115	-0.013	ppb	-146.8	52	0.5	
Ag	107	3	115	0.011	ppb	54.6	42	1	
Cd	111	3	115	0.032	ppb	59.9	10	0.5	
Sn	120	3	115	-0.224	ppb	-61.2	505	1	
Sb	121	3	115	0.012	ppb	133.1	78	0.6	
Ba	137	3	115	-0.020	ppb	-266.6	45	0.5	
Tl	205	3	193	-0.061	ppb	-18.7	175	0.1	
(Pb)	206	3	193	-0.017	ppb	-197.8	158	1	
(Pb)	207	3	193	-0.081	ppb	-21.1	295	1	
Pb	208	3	193	-0.041	ppb	-34.8	746	0.5	
Th	232	3	193	0.607	ppb	4.5	7405	1	
U	238	3	193	-0.001	ppb	-921.1	1626	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4309114	2.53	4299393	100.23	60	120	
Sc (IS)	45	3	HMI He	680970	1.84	674661	100.94	60	120	
Ge Internal standard	72	2	HMI H2	2320873	1.99	2269722	102.25	60	120	
Ge Internal standard	72	3	HMI He	761652	2.60	739017	103.06	60	120	
In Internal Standard	115	3	HMI He	2632514	0.34	2543041	103.52	60	120	
Ir (IS)	193	3	HMI He	5722490	2.81	5570851	102.72	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	074LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:27:37-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.986	ppb	4.940	58	1	98.6	70	130	
Na	23	3	45	48.111	ppb	1.362	34995	50	96.2	70	130	
Mg	24	3	45	50.787	ppb	8.565	3521	50	101.6	70	130	
Al	27	3	45	47.813	ppb	0.373	1201	50	95.6	70	130	
K	39	3	45	72.845	ppb	32.533	24332	100	72.8	70	130	
V	51	3	72	5.263	ppb	9.297	3450	5	105.3	70	130	
Cr	52	3	72	1.905	ppb	10.074	3270	2	95.2	70	130	
Mn	55	3	72	0.255	ppb	52.732	643	1	25.5	70	130	>+/-30%
Co	59	3	72	1.044	ppb	4.781	1403	1	104.4	70	130	
Ni	60	3	72	1.982	ppb	6.782	913	2	99.1	70	130	
Cu	63	3	72	1.937	ppb	3.078	2416	2	96.8	70	130	
Zn	66	3	72	10.421	ppb	7.404	1913	10	104.2	70	130	
As	75	3	72	5.451	ppb	7.313	668	5	109.0	70	130	
Se	78	2	72	5.111	ppb	2.682	304	5	102.2	70	130	
(Se)	78	3	72	3.225	ppb	74.465	37	5	64.5	70	130	>+/-30%
Sr	88	3	72	1.094	ppb	5.009	606	1	109.4	70	130	
Mo	95	3	115	1.970	ppb	1.903	1095	2	98.5	70	130	
Ag	107	3	115	1.029	ppb	6.400	1804	1	102.9	70	130	
Cd	111	3	115	1.130	ppb	2.545	287	1	113.0	70	130	
Sn	120	3	115	9.792	ppb	6.236	7912	10	97.9	70	130	
Sb	121	3	115	1.982	ppb	2.656	1559	2	99.1	70	130	
Ba	137	3	115	1.011	ppb	7.902	288	1	101.1	70	130	
Tl	205	3	193	0.957	ppb	6.652	3947	1	95.7	70	130	
(Pb)	206	3	193	1.028	ppb	3.032	1448	1	102.8	70	130	
(Pb)	207	3	193	0.989	ppb	6.252	1456	1	98.9	70	130	
Pb	208	3	193	1.019	ppb	2.921	6014	1	101.9	70	130	
Th	232	3	193	2.205	ppb	0.966	15235	2	110.3	70	130	
U	238	3	193	1.035	ppb	3.813	7029	1	103.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4218001	1.02	4299393	98.11	60	120	
Sc (IS)	45	3	HMI He	654269	0.67	674661	96.98	60	120	
Ge Internal standard	72	2	HMI H2	2265582	0.26	2269722	99.82	60	120	
Ge Internal standard	72	3	HMI He	740032	0.72	739017	100.14	60	120	
In Internal Standard	115	3	HMI He	2547211	2.02	2543041	100.16	60	120	
Ir (IS)	193	3	HMI He	5612504	0.84	5570851	100.75	60	120	

Sample Report

Sample Table

Sample Name	280-171210-h-1-b@2
Data File Name	075SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:29:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.095	ppb	0.095	149.53	7	2000	
Na	23	3	45	5496557.415	ppb	5496557.415	2.35	760578385	400000	>LDR
Mg	24	3	45	92616.246	ppb	92616.246	3.03	6808183	400000	
Al	27	3	45	96.457	ppb	96.457	4.84	2593	400000	
K	39	3	45	2669047.609	ppb	2669047.609	3.80	147015732	400000	>LDR
Ca	40	2	45	76872.803	ppb	76872.803	0.52	46845357	400000	
V	51	3	72	99.677	ppb	99.677	1.79	71582	2000	
Cr	52	3	72	54.231	ppb	54.231	0.29	51972	5000	
Mn	55	3	72	282.475	ppb	282.475	1.57	137259	10000	
Fe	56	2	72	1178.302	ppb	1178.302	2.70	1908318	10000	
Co	59	3	72	4.207	ppb	4.207	2.12	6337	2000	
Ni	60	3	72	26.010	ppb	26.010	0.77	11072	5000	
Cu	63	3	72	1.817	ppb	1.817	11.32	2629	5000	
Zn	66	3	72	16.267	ppb	16.267	4.54	3317	5000	
As	75	3	72	97.615	ppb	97.615	1.24	12986	2000	
Se	78	2	72	0.799	ppb	0.799	17.25	52	2000	
(Se)	78	3	72	1.594	ppb	1.594	97.29	28	2000	
Sr	88	3	72	1159.417	ppb	1159.417	1.40	718086	4000	
Mo	95	3	115	1.391	ppb	1.391	8.51	775	2000	
Ag	107	3	115	0.016	ppb	0.016	53.58	48	100	
Cd	111	3	115	0.122	ppb	0.122	35.79	32	2000	
Sn	120	3	115	2.155	ppb	2.155	4.98	2211	2000	
Sb	121	3	115	8.903	ppb	8.903	3.75	6642	1000	
Ba	137	3	115	1803.389	ppb	1803.389	1.93	419993	5000	
Tl	205	3	193	0.019	ppb	0.019	96.76	406	2000	
(Pb)	206	3	193	0.386	ppb	0.386	18.01	565	100	
(Pb)	207	3	193	0.435	ppb	0.435	8.54	736	100	
Pb	208	3	193	0.394	ppb	0.394	11.62	2507	5000	
Th	232	3	193	0.220	ppb	0.220	33.21	4612	2000	
U	238	3	193	0.131	ppb	0.131	5.97	1978	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4406095	1.15	4299393	102.48	60	120	
Sc (IS)	45	3	HMI He	720006	1.82	674661	106.72	60	120	
Ge Internal standard	72	2	HMI H2	2421815	0.08	2269722	106.70	60	120	
Ge Internal standard	72	3	HMI He	847515	3.09	739017	114.68	60	120	
In Internal Standard	115	3	HMI He	2500301	3.13	2543041	98.32	60	120	
Ir (IS)	193	3	HMI He	4857030	2.03	5570851	87.19	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-2-b@2
Data File Name	076SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:31:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.064	ppb	0.064	3.51	5	2000	
Na	23	3	45	6778076.690	ppb	6778076.690	2.95	945874728	400000	>LDR
Mg	24	3	45	100038.563	ppb	100038.563	2.42	7416417	400000	
Al	27	3	45	99.162	ppb	99.162	5.18	2686	400000	
K	39	3	45	3293159.932	ppb	3293159.932	0.58	183015649	400000	>LDR
Ca	40	2	45	64004.073	ppb	64004.073	4.68	40173715	400000	
V	51	3	72	38.522	ppb	38.522	2.98	27053	2000	
Cr	52	3	72	31.151	ppb	31.151	2.12	29894	5000	
Mn	55	3	72	131.653	ppb	131.653	0.56	62628	10000	
Fe	56	2	72	3111.752	ppb	3111.752	3.35	5189375	10000	
Co	59	3	72	3.061	ppb	3.061	2.96	4502	2000	
Ni	60	3	72	33.547	ppb	33.547	1.46	13843	5000	
Cu	63	3	72	0.459	ppb	0.459	7.88	1080	5000	
Zn	66	3	72	5.529	ppb	5.529	13.28	1214	5000	
As	75	3	72	39.068	ppb	39.068	3.81	5088	2000	
Se	78	2	72	0.671	ppb	0.671	16.35	45	2000	
(Se)	78	3	72	1.666	ppb	1.666	40.64	28	2000	
Sr	88	3	72	1459.010	ppb	1459.010	2.83	879754	4000	
Mo	95	3	115	0.933	ppb	0.933	6.33	536	2000	
Ag	107	3	115	0.016	ppb	0.016	46.74	48	100	
Cd	111	3	115	0.048	ppb	0.048	88.81	13	2000	
Sn	120	3	115	1.391	ppb	1.391	15.34	1649	2000	
Sb	121	3	115	2.015	ppb	2.015	0.73	1549	1000	
Ba	137	3	115	3434.605	ppb	3434.605	1.32	797239	5000	
Tl	205	3	193	0.089	ppb	0.089	10.26	603	2000	
(Pb)	206	3	193	0.195	ppb	0.195	37.92	345	100	
(Pb)	207	3	193	0.219	ppb	0.219	29.59	510	100	
Pb	208	3	193	0.180	ppb	0.180	19.64	1516	5000	
Th	232	3	193	0.179	ppb	0.179	10.84	4240	2000	
U	238	3	193	0.021	ppb	0.021	58.36	1413	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4540158	1.47	4299393	105.60	60	120	
Sc (IS)	45	3	HMI He	726259	2.37	674661	107.65	60	120	
Ge Internal standard	72	2	HMI H2	2503518	0.76	2269722	110.30	60	120	
Ge Internal standard	72	3	HMI He	825243	1.53	739017	111.67	60	120	
In Internal Standard	115	3	HMI He	2491108	0.46	2543041	97.96	60	120	
Ir (IS)	193	3	HMI He	4640581	0.68	5570851	83.30	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-3-b@2
Data File Name	077SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:33:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.094	ppb	0.094	56.09	7	2000	
Na	23	3	45	3588872.205	ppb	3588872.205	2.69	510946168	400000	>LDR
Mg	24	3	45	72456.950	ppb	72456.950	2.65	5479354	400000	
Al	27	3	45	105.832	ppb	105.832	8.18	2920	400000	
K	39	3	45	1175962.038	ppb	1175962.038	1.86	66666454	400000	
Ca	40	2	45	42591.763	ppb	42591.763	4.85	26345626	400000	
V	51	3	72	73.651	ppb	73.651	0.35	53166	2000	
Cr	52	3	72	33.140	ppb	33.140	2.00	32657	5000	
Mn	55	3	72	168.005	ppb	168.005	1.00	82229	10000	
Fe	56	2	72	227.294	ppb	227.294	3.41	386826	10000	
Co	59	3	72	6.687	ppb	6.687	1.04	10089	2000	
Ni	60	3	72	38.977	ppb	38.977	3.10	16547	5000	
Cu	63	3	72	0.167	ppb	0.167	23.59	785	5000	
Zn	66	3	72	5.106	ppb	5.106	4.78	1169	5000	
As	75	3	72	61.689	ppb	61.689	2.93	8255	2000	
Se	78	2	72	1.293	ppb	1.293	5.97	85	2000	
(Se)	78	3	72	0.766	ppb	0.766	202.40	22	2000	
Sr	88	3	72	1136.896	ppb	1136.896	1.51	706915	4000	
Mo	95	3	115	1.185	ppb	1.185	9.63	691	2000	
Ag	107	3	115	0.022	ppb	0.022	31.99	62	100	
Cd	111	3	115	0.013	ppb	0.013	0.89	5	2000	
Sn	120	3	115	2.047	ppb	2.047	4.29	2206	2000	
Sb	121	3	115	1.596	ppb	1.596	8.38	1288	1000	
Ba	137	3	115	1727.630	ppb	1727.630	0.70	416190	5000	
Tl	205	3	193	0.013	ppb	0.013	157.38	400	2000	
(Pb)	206	3	193	0.153	ppb	0.153	20.37	327	100	
(Pb)	207	3	193	0.129	ppb	0.129	57.10	463	100	
Pb	208	3	193	0.152	ppb	0.152	11.64	1514	5000	
Th	232	3	193	0.109	ppb	0.109	36.73	4262	2000	
U	238	3	193	0.050	ppb	0.050	42.32	1661	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474569	2.17	4299393	104.07	60	120	
Sc (IS)	45	3	HMI He	740768	1.80	674661	109.80	60	120	
Ge Internal standard	72	2	HMI H2	2484015	2.60	2269722	109.44	60	120	
Ge Internal standard	72	3	HMI He	850859	1.17	739017	115.13	60	120	
In Internal Standard	115	3	HMI He	2585226	0.59	2543041	101.66	60	120	
Ir (IS)	193	3	HMI He	5010844	0.87	5570851	89.95	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-4-b@2
Data File Name	078SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:35:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.146	ppb	0.146	61.73	10	2000	
Na	23	3	45	1386445.116	ppb	1386445.116	0.92	183675646	400000	
Mg	24	3	45	69246.685	ppb	69246.685	3.00	4871061	400000	
Al	27	3	45	122.713	ppb	122.713	3.18	3140	400000	
K	39	3	45	361951.963	ppb	361951.963	1.70	19102722	400000	
Ca	40	2	45	50708.809	ppb	50708.809	2.94	31984224	400000	
V	51	3	72	119.319	ppb	119.319	1.95	80860	2000	
Cr	52	3	72	71.999	ppb	71.999	2.36	64495	5000	
Mn	55	3	72	105.556	ppb	105.556	1.63	48781	10000	
Fe	56	2	72	1100.153	ppb	1100.153	3.98	1850660	10000	
Co	59	3	72	17.779	ppb	17.779	1.45	25149	2000	
Ni	60	3	72	79.611	ppb	79.611	1.87	31560	5000	
Cu	63	3	72	1.957	ppb	1.957	4.68	2632	5000	
Zn	66	3	72	21.686	ppb	21.686	0.95	4119	5000	
As	75	3	72	78.836	ppb	78.836	3.07	9907	2000	
Se	78	2	72	0.940	ppb	0.940	22.53	63	2000	
(Se)	78	3	72	1.782	ppb	1.782	19.56	28	2000	
Sr	88	3	72	1209.934	ppb	1209.934	1.54	707237	4000	
Mo	95	3	115	2.462	ppb	2.462	5.71	1338	2000	
Ag	107	3	115	0.005	ppb	0.005	104.86	30	100	
Cd	111	3	115	0.067	ppb	0.067	91.32	18	2000	
Sn	120	3	115	10.621	ppb	10.621	2.50	8428	2000	
Sb	121	3	115	4.650	ppb	4.650	1.76	3525	1000	
Ba	137	3	115	1364.679	ppb	1364.679	0.72	320004	5000	
Tl	205	3	193	-0.035	ppb	-0.035	-9.09	245	2000	
(Pb)	206	3	193	1.062	ppb	1.062	6.00	1359	100	
(Pb)	207	3	193	0.973	ppb	0.973	11.42	1311	100	
Pb	208	3	193	1.014	ppb	1.014	2.76	5464	5000	
Th	232	3	193	0.113	ppb	0.113	30.30	4374	2000	
U	238	3	193	0.073	ppb	0.073	6.08	1806	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4561326	1.49	4299393	106.09	60	120	
Sc (IS)	45	3	HMI He	689092	1.87	674661	102.14	60	120	
Ge Internal standard	72	2	HMI H2	2515812	2.40	2269722	110.84	60	120	
Ge Internal standard	72	3	HMI He	799859	0.78	739017	108.23	60	120	
In Internal Standard	115	3	HMI He	2516533	1.26	2543041	98.96	60	120	
Ir (IS)	193	3	HMI He	5119875	1.96	5570851	91.90	60	120	

Sample Report

Sample Table

Sample Name	280-171227-B-6-B
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:36:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.028	ppb	0.028	175.35	3	2000	
Na	23	3	45	1298.347	ppb	1298.347	3.13	204149	400000	
Mg	24	3	45	48.191	ppb	48.191	9.39	3551	400000	
Al	27	3	45	14.809	ppb	14.809	28.18	444	400000	
K	39	3	45	348.268	ppb	348.268	11.38	40472	400000	
Ca	40	2	45	186.791	ppb	186.791	0.82	128620	400000	
V	51	3	72	0.455	ppb	0.455	13.72	471	2000	
Cr	52	3	72	-0.204	ppb	-0.204	-29.26	1676	5000	
Mn	55	3	72	-0.213	ppb	-0.213	-28.55	475	10000	
Fe	56	2	72	14.998	ppb	14.998	3.67	35775	10000	
Co	59	3	72	0.005	ppb	0.005	322.35	48	2000	
Ni	60	3	72	-0.023	ppb	-0.023	-243.01	193	5000	
Cu	63	3	72	0.311	ppb	0.311	6.73	876	5000	
Zn	66	3	72	1.841	ppb	1.841	17.16	496	5000	
As	75	3	72	0.360	ppb	0.360	28.14	83	2000	
Se	78	2	72	0.040	ppb	0.040	76.57	4	2000	
(Se)	78	3	72	1.186	ppb	1.186	31.62	23	2000	
Sr	88	3	72	1.555	ppb	1.555	5.67	911	4000	
Mo	95	3	115	0.029	ppb	0.029	83.04	73	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-86.62	13	100	
Cd	111	3	115	0.013	ppb	0.013	148.91	5	2000	
Sn	120	3	115	0.056	ppb	0.056	50.38	711	2000	
Sb	121	3	115	0.195	ppb	0.195	38.90	218	1000	
Ba	137	3	115	0.848	ppb	0.848	15.60	255	5000	
Tl	205	3	193	-0.064	ppb	-0.064	-7.21	160	2000	
(Pb)	206	3	193	0.002	ppb	0.002	650.07	177	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-152.50	365	100	
Pb	208	3	193	-0.012	ppb	-0.012	-39.70	865	5000	
Th	232	3	193	0.024	ppb	0.024	293.48	4290	2000	
U	238	3	193	-0.005	ppb	-0.005	-539.64	1549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4524257	0.65	4299393	105.23	60	120	
Sc (IS)	45	3	HMI He	695110	2.46	674661	103.03	60	120	
Ge Internal standard	72	2	HMI H2	2433648	1.33	2269722	107.22	60	120	
Ge Internal standard	72	3	HMI He	788079	3.52	739017	106.64	60	120	
In Internal Standard	115	3	HMI He	2602419	0.82	2543041	102.33	60	120	
Ir (IS)	193	3	HMI He	5538207	1.93	5570851	99.41	60	120	

Sample Report

Sample Table

Sample Name	280-171160-c-8
Data File Name	080SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:38:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2808.444	ppb	2808.444	7.86	444987	400000	
Mg	24	3	45	54.491	ppb	54.491	2.07	4388	400000	
Al	27	3	45	-0.203	ppb	-0.203	-523.06	70	400000	
K	39	3	45	974.875	ppb	974.875	13.29	80897	400000	
Ca	40	2	45	112.714	ppb	112.714	1.80	89604	400000	
V	51	3	72	-0.087	ppb	-0.087	-23.40	123	2000	
Cr	52	3	72	-1.430	ppb	-1.430	-1.42	696	5000	
Mn	55	3	72	-0.582	ppb	-0.582	-12.56	343	10000	
Fe	56	2	72	-1.875	ppb	-1.875	-10.98	9526	10000	
Co	59	3	72	-0.012	ppb	-0.012	-88.93	27	2000	
Ni	60	3	72	-0.307	ppb	-0.307	-29.59	93	5000	
Cu	63	3	72	-0.120	ppb	-0.120	-78.41	475	5000	
Zn	66	3	72	-0.171	ppb	-0.171	-104.89	152	5000	
As	75	3	72	0.022	ppb	0.022	680.97	47	2000	
Se	78	2	72	-0.013	ppb	-0.013	-122.18	1	2000	
(Se)	78	3	72	1.247	ppb	1.247	160.07	27	2000	
Sr	88	3	72	0.778	ppb	0.778	12.30	516	4000	
Mo	95	3	115	-0.072	ppb	-0.072	-13.18	22	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-1048.99	23	100	
Cd	111	3	115	-0.001	ppb	-0.001	-1415.42	2	2000	
Sn	120	3	115	-0.064	ppb	-0.064	-165.56	703	2000	
Sb	121	3	115	-0.020	ppb	-0.020	-105.34	60	1000	
Ba	137	3	115	1.433	ppb	1.433	12.66	450	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-23.05	202	2000	
(Pb)	206	3	193	-0.039	ppb	-0.039	-65.71	138	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-41.23	353	100	
Pb	208	3	193	-0.044	ppb	-0.044	-17.31	776	5000	
Th	232	3	193	0.032	ppb	0.032	59.60	4754	2000	
U	238	3	193	-0.004	ppb	-0.004	-254.16	1704	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4927376	1.27	4299393	114.61	60	120	
Sc (IS)	45	3	HMI He	762306	1.62	674661	112.99	60	120	
Ge Internal standard	72	2	HMI H2	2735422	0.95	2269722	120.52	60	120	IS Failed
Ge Internal standard	72	3	HMI He	877664	2.03	739017	118.76	60	120	
In Internal Standard	115	3	HMI He	2949126	0.20	2543041	115.97	60	120	
Ir (IS)	193	3	HMI He	6072190	1.19	5570851	109.00	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	081_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:40:41-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.590	ppb	2.940	2652	50	95.2	90	110	
Na	23	3	45	50084.332	ppb	2.714	6489252	51000	98.2	90	110	
Mg	24	3	45	10629.372	ppb	2.174	728430	11000	96.6	90	110	
Al	27	3	45	995.079	ppb	2.134	24329	1000	99.5	90	110	
K	39	3	45	10892.592	ppb	2.830	580422	11000	99.0	90	110	
Ca	40	2	45	11201.670	ppb	3.568	6579074	11000	101.8	90	110	
V	51	3	72	52.328	ppb	3.056	33322	50	104.7	90	110	
Cr	52	3	72	50.030	ppb	1.942	42544	50	100.1	90	110	
Mn	55	3	72	50.478	ppb	3.603	22143	50	101.0	90	110	
Fe	56	2	72	1049.356	ppb	1.299	1585619	1000	104.9	90	110	
Co	59	3	72	50.091	ppb	3.377	66325	50	100.2	90	110	
Ni	60	3	72	49.570	ppb	4.881	18483	50	99.1	90	110	
Cu	63	3	72	50.303	ppb	2.781	50430	50	100.6	90	110	
Zn	66	3	72	51.884	ppb	3.815	9012	50	103.8	90	110	
As	75	3	72	52.684	ppb	1.815	6218	50	105.4	90	110	
Se	78	2	72	50.050	ppb	2.269	2954	50	100.1	90	110	
(Se)	78	3	72	50.521	ppb	1.899	381	50	101.0	90	110	
Sr	88	3	72	106.235	ppb	2.130	58217	100	106.2	90	110	
Mo	95	3	115	49.611	ppb	1.064	26359	50	99.2	90	110	
Ag	107	3	115	49.422	ppb	0.425	86247	50	98.8	90	110	
Cd	111	3	115	50.079	ppb	1.071	12715	50	100.2	90	110	
Sn	120	3	115	51.733	ppb	1.994	39271	50	103.5	90	110	
Sb	121	3	115	51.738	ppb	2.916	39278	50	103.5	90	110	
Ba	137	3	115	52.798	ppb	4.156	12658	50	105.6	90	110	
Tl	205	3	193	51.310	ppb	1.332	183568	50	102.6	90	110	
(Pb)	206	3	193	51.020	ppb	0.607	60987	50	102.0	90	110	
(Pb)	207	3	193	50.728	ppb	0.655	53650	50	101.5	90	110	
Pb	208	3	193	51.088	ppb	0.721	246209	50	102.2	90	110	
Th	232	3	193	51.449	ppb	0.266	251395	50	102.9	90	110	
U	238	3	193	51.841	ppb	1.301	263754	50	103.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4243000	2.51	4299393	98.69	60	120	
Sc (IS)	45	3	HMI He	671184	2.08	674661	99.48	60	120	
Ge Internal standard	72	2	HMI H2	2258396	2.82	2269722	99.50	60	120	
Ge Internal standard	72	3	HMI He	749852	2.31	739017	101.47	60	120	
In Internal Standard	115	3	HMI He	2563302	0.21	2543041	100.80	60	120	
Ir (IS)	193	3	HMI He	5407848	0.25	5570851	97.07	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	082_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:42:32-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	12818.5	2	0.5	
Na	23	3	45	298.930	ppb	4.5	67662	25	>RL
Mg	24	3	45	2.236	ppb	23.5	280	25	
Al	27	3	45	27.640	ppb	9.8	734	15	>RL
K	39	3	45	109.529	ppb	27.1	26605	50	>RL
V	51	3	72	0.282	ppb	15.2	345	1	
Cr	52	3	72	-0.350	ppb	-39.2	1501	1	
Mn	55	3	72	-0.702	ppb	-11.6	247	0.5	
Co	59	3	72	0.015	ppb	28.4	60	0.5	
Ni	60	3	72	-0.043	ppb	-64.8	180	1	
Cu	63	3	72	-0.089	ppb	-40.0	445	1	
Zn	66	3	72	2.899	ppb	5.0	665	5	
As	75	3	72	0.185	ppb	22.3	60	1	
Se	78	2	72	0.055	ppb	93.2	5	1	
(Se)	78	3	72	-0.067	ppb	-549.2	13	1	
Sr	88	3	72	0.041	ppb	13.7	38	0.5	
Mo	95	3	115	-0.016	ppb	-149.1	50	0.5	
Ag	107	3	115	0.006	ppb	22.7	33	1	
Cd	111	3	115	0.013	ppb	2.1	5	0.5	
Sn	120	3	115	-0.307	ppb	-24.1	440	1	
Sb	121	3	115	0.056	ppb	35.0	112	0.6	
Ba	137	3	115	-0.005	ppb	-661.7	48	0.5	
Tl	205	3	193	-0.062	ppb	-19.5	168	0.1	
(Pb)	206	3	193	-0.020	ppb	-80.5	150	1	
(Pb)	207	3	193	-0.050	ppb	-27.5	320	1	
Pb	208	3	193	-0.034	ppb	-25.9	760	0.5	
Th	232	3	193	0.713	ppb	20.4	7720	1	
U	238	3	193	-0.005	ppb	-122.6	1558	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4328727	2.35	4299393	100.68	60	120	
Sc (IS)	45	3	HMI He	665372	0.73	674661	98.62	60	120	
Ge Internal standard	72	2	HMI H2	2316260	2.07	2269722	102.05	60	120	
Ge Internal standard	72	3	HMI He	762883	1.37	739017	103.23	60	120	
In Internal Standard	115	3	HMI He	2619782	1.39	2543041	103.02	60	120	
Ir (IS)	193	3	HMI He	5560491	0.55	5570851	99.81	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	083LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:44:24-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.963	ppb	52.478	57	1	96.3	70	130	
Na	23	3	45	301.313	ppb	2.125	66599	50	602.6	70	130	>+/-30%
Mg	24	3	45	50.994	ppb	0.235	3521	50	102.0	70	130	
Al	27	3	45	54.907	ppb	6.356	1365	50	109.8	70	130	
K	39	3	45	204.355	ppb	22.833	30795	100	204.4	70	130	>+/-30%
V	51	3	72	5.608	ppb	8.755	3672	5	112.2	70	130	
Cr	52	3	72	1.709	ppb	6.537	3122	2	85.5	70	130	
Mn	55	3	72	0.432	ppb	51.123	720	1	43.2	70	130	>+/-30%
Co	59	3	72	1.023	ppb	12.063	1378	1	102.3	70	130	
Ni	60	3	72	1.910	ppb	7.038	888	2	95.5	70	130	
Cu	63	3	72	2.103	ppb	2.976	2586	2	105.2	70	130	
Zn	66	3	72	10.144	ppb	5.187	1869	10	101.4	70	130	
As	75	3	72	5.815	ppb	11.707	711	5	116.3	70	130	
Se	78	2	72	4.666	ppb	4.066	279	5	93.3	70	130	
(Se)	78	3	72	5.774	ppb	32.684	55	5	115.5	70	130	
Sr	88	3	72	1.076	ppb	12.499	598	1	107.6	70	130	
Mo	95	3	115	1.888	ppb	1.169	1055	2	94.4	70	130	
Ag	107	3	115	0.995	ppb	7.573	1751	1	99.5	70	130	
Cd	111	3	115	1.066	ppb	15.000	272	1	106.6	70	130	
Sn	120	3	115	9.709	ppb	5.483	7877	10	97.1	70	130	
Sb	121	3	115	2.178	ppb	5.083	1713	2	108.9	70	130	
Ba	137	3	115	1.078	ppb	11.154	305	1	107.8	70	130	
Tl	205	3	193	0.980	ppb	5.717	3930	1	98.0	70	130	
(Pb)	206	3	193	0.960	ppb	7.288	1329	1	96.0	70	130	
(Pb)	207	3	193	1.022	ppb	8.852	1454	1	102.2	70	130	
Pb	208	3	193	0.983	ppb	1.940	5689	1	98.3	70	130	
Th	232	3	193	2.217	ppb	1.122	14917	2	110.9	70	130	
U	238	3	193	1.044	ppb	6.793	6898	1	104.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4346462	1.65	4299393	101.09	60	120	
Sc (IS)	45	3	HMI He	651940	0.86	674661	96.63	60	120	
Ge Internal standard	72	2	HMI H2	2274809	1.38	2269722	100.22	60	120	
Ge Internal standard	72	3	HMI He	741844	2.03	739017	100.38	60	120	
In Internal Standard	115	3	HMI He	2554849	1.39	2543041	100.46	60	120	
Ir (IS)	193	3	HMI He	5474043	1.95	5570851	98.26	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-D
Data File Name	084SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:46:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4444.48	2	2000	
Na	23	3	45	19270.631	ppb	19270.631	1.48	2473263	400000	
Mg	24	3	45	11657.012	ppb	11657.012	1.02	785477	400000	
Al	27	3	45	26.523	ppb	26.523	21.62	701	400000	
K	39	3	45	5757.572	ppb	5757.572	0.65	311514	400000	
Ca	40	2	45	51179.003	ppb	51179.003	2.02	29928894	400000	
V	51	3	72	10.631	ppb	10.631	3.84	7063	2000	
Cr	52	3	72	8.156	ppb	8.156	2.63	8610	5000	
Mn	55	3	72	-0.004	ppb	-0.004	-4146.93	553	10000	
Fe	56	2	72	60.270	ppb	60.270	1.40	104468	10000	
Co	59	3	72	0.046	ppb	0.046	25.02	102	2000	
Ni	60	3	72	0.809	ppb	0.809	7.14	503	5000	
Cu	63	3	72	1.276	ppb	1.276	1.94	1834	5000	
Zn	66	3	72	2.090	ppb	2.090	10.61	528	5000	
As	75	3	72	4.262	ppb	4.262	8.21	550	2000	
Se	78	2	72	1.442	ppb	1.442	10.39	89	2000	
(Se)	78	3	72	1.254	ppb	1.254	108.20	23	2000	
Sr	88	3	72	249.498	ppb	249.498	2.50	139957	4000	
Mo	95	3	115	2.414	ppb	2.414	11.75	1331	2000	
Ag	107	3	115	0.003	ppb	0.003	265.94	27	100	
Cd	111	3	115	0.000	ppb	0.000	4525.08	2	2000	
Sn	120	3	115	0.158	ppb	0.158	21.19	775	2000	
Sb	121	3	115	0.258	ppb	0.258	4.52	262	1000	
Ba	137	3	115	34.204	ppb	34.204	2.20	8190	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-15.13	178	2000	
(Pb)	206	3	193	0.012	ppb	0.012	137.12	185	100	
(Pb)	207	3	193	-0.050	ppb	-0.050	-58.56	313	100	
Pb	208	3	193	-0.005	ppb	-0.005	-202.92	883	5000	
Th	232	3	193	0.171	ppb	0.171	23.94	4924	2000	
U	238	3	193	5.022	ppb	5.022	1.15	27061	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4228934	2.08	4299393	98.36	60	120	
Sc (IS)	45	3	HMI He	659736	0.65	674661	97.79	60	120	
Ge Internal standard	72	2	HMI H2	2332465	0.93	2269722	102.76	60	120	
Ge Internal standard	72	3	HMI He	767709	1.98	739017	103.88	60	120	
In Internal Standard	115	3	HMI He	2555160	1.30	2543041	100.48	60	120	
Ir (IS)	193	3	HMI He	5431889	0.79	5570851	97.51	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-Dsd@5
Data File Name	085SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:48:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.009	ppb	-0.009	-360.63	2	2000	
Na	23	3	45	465.155	ppb	465.155	133.03	139897	400000	
Mg	24	3	45	228.918	ppb	228.918	119.06	24497	400000	
Al	27	3	45	10.592	ppb	10.592	72.13	521	400000	
K	39	3	45	4.852	ppb	4.852	5172.42	33729	400000	
Ca	40	2	45	1418.131	ppb	1418.131	72.22	1320267	400000	
V	51	3	72	0.215	ppb	0.215	193.54	455	2000	
Cr	52	3	72	-1.148	ppb	-1.148	-41.33	1283	5000	
Mn	55	3	72	-0.702	ppb	-0.702	-57.91	373	10000	
Fe	56	2	72	-1.109	ppb	-1.109	-220.82	14546	10000	
Co	59	3	72	-0.016	ppb	-0.016	-38.51	27	2000	
Ni	60	3	72	-0.255	ppb	-0.255	-49.74	153	5000	
Cu	63	3	72	-0.202	ppb	-0.202	-39.35	508	5000	
Zn	66	3	72	-0.163	ppb	-0.163	-135.26	205	5000	
As	75	3	72	0.079	ppb	0.079	170.33	73	2000	
Se	78	2	72	0.014	ppb	0.014	331.83	3	2000	
(Se)	78	3	72	0.615	ppb	0.615	289.45	28	2000	
Sr	88	3	72	5.520	ppb	5.520	119.10	4611	4000	
Mo	95	3	115	0.258	ppb	0.258	38.47	307	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-10.53	18	100	
Cd	111	3	115	0.006	ppb	0.006	220.21	5	2000	
Sn	120	3	115	-0.592	ppb	-0.592	-13.58	343	2000	
Sb	121	3	115	-0.026	ppb	-0.026	-40.22	75	1000	
Ba	137	3	115	0.779	ppb	0.779	135.84	357	5000	
Tl	205	3	193	-0.075	ppb	-0.075	-4.13	193	2000	
(Pb)	206	3	193	-0.054	ppb	-0.054	-17.43	173	100	
(Pb)	207	3	193	-0.079	ppb	-0.079	-35.26	461	100	
Pb	208	3	193	-0.052	ppb	-0.052	-9.02	1079	5000	
Th	232	3	193	0.091	ppb	0.091	64.62	7420	2000	
U	238	3	193	0.116	ppb	0.116	106.70	3454	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6883233	7.31	4299393	160.10	60	120	IS Failed
Sc (IS)	45	3	HMI He	1070511	3.89	674661	158.67	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3730393	8.63	2269722	164.35	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1183786	5.29	739017	160.18	60	120	IS Failed
In Internal Standard	115	3	HMI He	4102503	7.60	2543041	161.32	60	120	IS Failed
Ir (IS)	193	3	HMI He	8896645	6.49	5570851	159.70	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171396-A-1-E MS
Data File Name	086SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:50:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.206	ppb	41.206	6.03	2291	2000	
Na	23	3	45	19611.474	ppb	19611.474	3.14	2549449	400000	
Mg	24	3	45	12404.866	ppb	12404.866	3.92	846786	400000	
Al	27	3	45	831.312	ppb	831.312	4.75	20248	400000	
K	39	3	45	6400.593	ppb	6400.593	2.66	348530	400000	
Ca	40	2	45	51057.061	ppb	51057.061	3.98	30038182	400000	
V	51	3	72	48.853	ppb	48.853	1.29	33196	2000	
Cr	52	3	72	46.198	ppb	46.198	2.81	42034	5000	
Mn	55	3	72	38.972	ppb	38.972	1.16	18366	10000	
Fe	56	2	72	902.807	ppb	902.807	0.94	1426632	10000	
Co	59	3	72	38.463	ppb	38.463	1.91	54327	2000	
Ni	60	3	72	37.487	ppb	37.487	0.14	14964	5000	
Cu	63	3	72	39.528	ppb	39.528	1.47	42389	5000	
Zn	66	3	72	41.358	ppb	41.358	1.91	7697	5000	
As	75	3	72	44.259	ppb	44.259	1.74	5577	2000	
Se	78	2	72	40.628	ppb	40.628	0.81	2506	2000	
(Se)	78	3	72	43.378	ppb	43.378	23.27	351	2000	
Sr	88	3	72	319.353	ppb	319.353	1.42	186590	4000	
Mo	95	3	115	42.944	ppb	42.944	2.44	23208	2000	
Ag	107	3	115	40.388	ppb	40.388	1.79	71674	100	
Cd	111	3	115	40.387	ppb	40.387	1.94	10427	2000	
Sn	120	3	115	42.250	ppb	42.250	1.34	32737	2000	
Sb	121	3	115	41.763	ppb	41.763	2.08	32251	1000	
Ba	137	3	115	73.658	ppb	73.658	2.43	17937	5000	
Tl	205	3	193	41.972	ppb	41.972	1.11	151433	2000	
(Pb)	206	3	193	41.678	ppb	41.678	1.63	50251	100	
(Pb)	207	3	193	41.368	ppb	41.368	1.54	44168	100	
Pb	208	3	193	41.473	ppb	41.473	1.35	201645	5000	
Th	232	3	193	42.983	ppb	42.983	1.32	212390	2000	
U	238	3	193	47.672	ppb	47.672	1.19	244613	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4256176	2.56	4299393	98.99	60	120	
Sc (IS)	45	3	HMI He	668750	2.45	674661	99.12	60	120	
Ge Internal standard	72	2	HMI H2	2358807	0.73	2269722	103.92	60	120	
Ge Internal standard	72	3	HMI He	799463	1.02	739017	108.18	60	120	
In Internal Standard	115	3	HMI He	2606966	1.49	2543041	102.51	60	120	
Ir (IS)	193	3	HMI He	5451305	0.30	5570851	97.85	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-F MSD
Data File Name	087SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:51:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.782	ppb	41.782	5.59	2372	2000	
Na	23	3	45	20286.395	ppb	20286.395	1.10	2613001	400000	
Mg	24	3	45	12377.346	ppb	12377.346	3.53	837495	400000	
Al	27	3	45	845.093	ppb	845.093	0.71	20405	400000	
K	39	3	45	6644.870	ppb	6644.870	0.36	357811	400000	
Ca	40	2	45	50446.659	ppb	50446.659	1.70	31223941	400000	
V	51	3	72	52.170	ppb	52.170	0.90	34165	2000	
Cr	52	3	72	48.099	ppb	48.099	1.97	42118	5000	
Mn	55	3	72	39.911	ppb	39.911	4.64	18118	10000	
Fe	56	2	72	896.513	ppb	896.513	0.99	1452972	10000	
Co	59	3	72	39.575	ppb	39.575	2.43	53884	2000	
Ni	60	3	72	39.646	ppb	39.646	2.86	15242	5000	
Cu	63	3	72	40.294	ppb	40.294	2.72	41635	5000	
Zn	66	3	72	42.368	ppb	42.368	2.14	7597	5000	
As	75	3	72	46.335	ppb	46.335	3.96	5625	2000	
Se	78	2	72	41.004	ppb	41.004	2.19	2594	2000	
(Se)	78	3	72	37.390	ppb	37.390	17.68	293	2000	
Sr	88	3	72	333.945	ppb	333.945	2.62	188075	4000	
Mo	95	3	115	43.372	ppb	43.372	2.53	23028	2000	
Ag	107	3	115	41.194	ppb	41.194	0.55	71833	100	
Cd	111	3	115	41.325	ppb	41.325	1.30	10484	2000	
Sn	120	3	115	41.915	ppb	41.915	1.83	31914	2000	
Sb	121	3	115	41.619	ppb	41.619	3.04	31577	1000	
Ba	137	3	115	77.419	ppb	77.419	2.16	18520	5000	
Tl	205	3	193	41.702	ppb	41.702	1.23	150486	2000	
(Pb)	206	3	193	42.024	ppb	42.024	1.36	50679	100	
(Pb)	207	3	193	41.340	ppb	41.340	0.75	44150	100	
Pb	208	3	193	41.805	ppb	41.805	0.17	203291	5000	
Th	232	3	193	43.421	ppb	43.421	1.46	214548	2000	
U	238	3	193	47.863	ppb	47.863	0.48	245635	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474816	0.88	4299393	104.08	60	120	
Sc (IS)	45	3	HMI He	662533	0.68	674661	98.20	60	120	
Ge Internal standard	72	2	HMI H2	2418943	1.39	2269722	106.57	60	120	
Ge Internal standard	72	3	HMI He	770894	2.55	739017	104.31	60	120	
In Internal Standard	115	3	HMI He	2561366	1.47	2543041	100.72	60	120	
Ir (IS)	193	3	HMI He	5452333	0.77	5570851	97.87	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-D pds
Data File Name	088SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:53:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	92.409	ppb	92.409	41.21	6808	2000	
Na	23	3	45	7673.819	ppb	7673.819	91.38	1229279	400000	
Mg	24	3	45	4388.199	ppb	4388.199	90.98	361595	400000	
Al	27	3	45	795.131	ppb	795.131	91.14	23388	400000	
K	39	3	45	2154.055	ppb	2154.055	98.90	160480	400000	
Ca	40	2	45	22824.610	ppb	22824.610	39.06	17653731	400000	
V	51	3	72	82.171	ppb	82.171	90.90	64026	2000	
Cr	52	3	72	80.020	ppb	80.020	93.48	82106	5000	
Mn	55	3	72	80.015	ppb	80.015	92.38	42633	10000	
Fe	56	2	72	35.047	ppb	35.047	42.14	86036	10000	
Co	59	3	72	77.401	ppb	77.401	91.68	125531	2000	
Ni	60	3	72	75.680	ppb	75.680	92.54	34458	5000	
Cu	63	3	72	79.789	ppb	79.789	91.40	97728	5000	
Zn	66	3	72	81.426	ppb	81.426	91.63	17249	5000	
As	75	3	72	80.423	ppb	80.423	91.58	11617	2000	
Se	78	2	72	94.215	ppb	94.215	42.39	7508	2000	
(Se)	78	3	72	83.689	ppb	83.689	90.94	766	2000	
Sr	88	3	72	180.630	ppb	180.630	91.03	121414	4000	
Mo	95	3	115	81.307	ppb	81.307	90.12	52301	2000	
Ag	107	3	115	20.187	ppb	20.187	90.68	42698	100	
Cd	111	3	115	79.963	ppb	79.963	91.45	24577	2000	
Sn	120	3	115	83.897	ppb	83.897	90.66	76785	2000	
Sb	121	3	115	82.425	ppb	82.425	90.64	75825	1000	
Ba	137	3	115	99.004	ppb	99.004	91.36	28722	5000	
Tl	205	3	193	83.698	ppb	83.698	90.77	365310	2000	
(Pb)	206	3	193	84.244	ppb	84.244	90.99	122856	100	
(Pb)	207	3	193	84.954	ppb	84.954	90.37	109538	100	
Pb	208	3	193	84.634	ppb	84.634	90.85	497656	5000	
Th	232	3	193	225.698	ppb	225.698	89.30	1333228	2000	
U	238	3	193	90.816	ppb	90.816	90.84	563482	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5761972	11.56	4299393	134.02	60	120	IS Failed
Sc (IS)	45	3	HMI He	931524	22.68	674661	138.07	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3171964	13.86	2269722	139.75	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1066156	23.25	739017	144.27	60	120	IS Failed
In Internal Standard	115	3	HMI He	3617820	24.08	2543041	142.26	60	120	IS Failed
Ir (IS)	193	3	HMI He	7680972	23.72	5570851	137.88	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171444-E-1-B
Data File Name	089SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:55:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	138078.544	ppb	138078.544	0.97	17418713	400000	
Mg	24	3	45	8036.585	ppb	8036.585	0.44	537807	400000	
Al	27	3	45	121.503	ppb	121.503	1.21	2957	400000	
K	39	3	45	1866.308	ppb	1866.308	0.92	114276	400000	
Ca	40	2	45	20277.776	ppb	20277.776	1.97	11898447	400000	
V	51	3	72	1.106	ppb	1.106	4.10	885	2000	
Cr	52	3	72	-0.088	ppb	-0.088	-270.52	1734	5000	
Mn	55	3	72	6.185	ppb	6.185	5.34	3275	10000	
Fe	56	2	72	179.148	ppb	179.148	2.30	290748	10000	
Co	59	3	72	0.126	ppb	0.126	13.61	212	2000	
Ni	60	3	72	0.826	ppb	0.826	12.73	511	5000	
Cu	63	3	72	0.471	ppb	0.471	10.13	1020	5000	
Zn	66	3	72	3.906	ppb	3.906	2.84	848	5000	
As	75	3	72	1.273	ppb	1.273	9.14	192	2000	
Se	78	2	72	0.650	ppb	0.650	13.89	41	2000	
(Se)	78	3	72	0.807	ppb	0.807	79.85	20	2000	
Sr	88	3	72	277.991	ppb	277.991	0.08	156469	4000	
Mo	95	3	115	9.105	ppb	9.105	4.47	4877	2000	
Ag	107	3	115	0.009	ppb	0.009	47.72	38	100	
Cd	111	3	115	0.040	ppb	0.040	76.46	12	2000	
Sn	120	3	115	0.300	ppb	0.300	6.26	881	2000	
Sb	121	3	115	1.343	ppb	1.343	20.36	1085	1000	
Ba	137	3	115	42.087	ppb	42.087	2.23	10086	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-77.52	323	2000	
(Pb)	206	3	193	0.269	ppb	0.269	20.52	491	100	
(Pb)	207	3	193	0.215	ppb	0.215	15.16	591	100	
Pb	208	3	193	0.224	ppb	0.224	3.07	1986	5000	
Th	232	3	193	3.659	ppb	3.659	23.71	21697	2000	
U	238	3	193	1.160	ppb	1.160	2.26	7419	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4239363	1.91	4299393	98.60	60	120	
Sc (IS)	45	3	HMI He	655167	0.65	674661	97.11	60	120	
Ge Internal standard	72	2	HMI H2	2348461	1.28	2269722	103.47	60	120	
Ge Internal standard	72	3	HMI He	770085	1.06	739017	104.20	60	120	
In Internal Standard	115	3	HMI He	2559868	0.67	2543041	100.66	60	120	
Ir (IS)	193	3	HMI He	5417551	0.87	5570851	97.25	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-Dsd@5
Data File Name	090SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:00:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	3871.008	ppb	3871.008	1.81	526031	400000	
Mg	24	3	45	2293.156	ppb	2293.156	2.01	156364	400000	
Al	27	3	45	7.714	ppb	7.714	21.90	254	400000	
K	39	3	45	1154.698	ppb	1154.698	2.18	80050	400000	
Ca	40	2	45	10016.417	ppb	10016.417	3.12	5794897	400000	
V	51	3	72	2.722	ppb	2.722	6.47	1974	2000	
Cr	52	3	72	1.304	ppb	1.304	19.98	2956	5000	
Mn	55	3	72	-0.258	ppb	-0.258	-49.71	453	10000	
Fe	56	2	72	11.279	ppb	11.279	7.87	28257	10000	
Co	59	3	72	0.058	ppb	0.058	25.59	122	2000	
Ni	60	3	72	0.153	ppb	0.153	79.71	262	5000	
Cu	63	3	72	0.260	ppb	0.260	37.38	821	5000	
Zn	66	3	72	1.645	ppb	1.645	23.82	460	5000	
As	75	3	72	1.256	ppb	1.256	11.92	193	2000	
Se	78	2	72	0.411	ppb	0.411	33.44	26	2000	
(Se)	78	3	72	1.422	ppb	1.422	138.46	25	2000	
Sr	88	3	72	48.709	ppb	48.709	3.39	27965	4000	
Mo	95	3	115	0.509	ppb	0.509	11.66	335	2000	
Ag	107	3	115	0.004	ppb	0.004	131.89	30	100	
Cd	111	3	115	0.013	ppb	0.013	148.87	5	2000	
Sn	120	3	115	0.317	ppb	0.317	35.18	916	2000	
Sb	121	3	115	0.096	ppb	0.096	21.32	143	1000	
Ba	137	3	115	6.585	ppb	6.585	2.36	1659	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-48.78	325	2000	
(Pb)	206	3	193	0.014	ppb	0.014	76.93	188	100	
(Pb)	207	3	193	0.027	ppb	0.027	162.05	395	100	
Pb	208	3	193	0.027	ppb	0.027	29.04	1040	5000	
Th	232	3	193	0.518	ppb	0.518	9.87	6603	2000	
U	238	3	193	1.003	ppb	1.003	2.21	6650	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4177659	1.60	4299393	97.17	60	120	
Sc (IS)	45	3	HMI He	667416	2.50	674661	98.93	60	120	
Ge Internal standard	72	2	HMI H2	2314034	4.07	2269722	101.95	60	120	
Ge Internal standard	72	3	HMI He	785414	1.59	739017	106.28	60	120	
In Internal Standard	115	3	HMI He	2623922	1.36	2543041	103.18	60	120	
Ir (IS)	193	3	HMI He	5438699	1.69	5570851	97.63	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-5-B
Data File Name	092SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:05:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	337.95	3	2000	
Na	23	3	45	33872.640	ppb	33872.640	1.81	4369127	400000	
Mg	24	3	45	14030.896	ppb	14030.896	2.72	954958	400000	
Al	27	3	45	442.577	ppb	442.577	0.45	10782	400000	
K	39	3	45	2353.530	ppb	2353.530	2.64	141084	400000	
Ca	40	2	45	52751.227	ppb	52751.227	2.00	31115044	400000	
V	51	3	72	1.416	ppb	1.416	13.12	1086	2000	
Cr	52	3	72	0.925	ppb	0.925	6.70	2584	5000	
Mn	55	3	72	57.046	ppb	57.046	3.30	25643	10000	
Fe	56	2	72	424.766	ppb	424.766	0.95	672113	10000	
Co	59	3	72	0.414	ppb	0.414	8.13	603	2000	
Ni	60	3	72	0.904	ppb	0.904	3.93	541	5000	
Cu	63	3	72	19.203	ppb	19.203	1.69	20120	5000	
Zn	66	3	72	31.881	ppb	31.881	3.43	5753	5000	
As	75	3	72	0.593	ppb	0.593	15.63	110	2000	
Se	78	2	72	0.284	ppb	0.284	54.50	19	2000	
(Se)	78	3	72	2.816	ppb	2.816	24.52	35	2000	
Sr	88	3	72	144.769	ppb	144.769	2.41	81524	4000	
Mo	95	3	115	21.342	ppb	21.342	2.83	11437	2000	
Ag	107	3	115	0.011	ppb	0.011	77.63	42	100	
Cd	111	3	115	0.555	ppb	0.555	10.99	143	2000	
Sn	120	3	115	-0.086	ppb	-0.086	-50.76	598	2000	
Sb	121	3	115	0.266	ppb	0.266	9.58	270	1000	
Ba	137	3	115	65.997	ppb	65.997	0.98	15902	5000	
Tl	205	3	193	-0.059	ppb	-0.059	-6.76	177	2000	
(Pb)	206	3	193	1.199	ppb	1.199	4.07	1608	100	
(Pb)	207	3	193	1.012	ppb	1.012	4.56	1434	100	
Pb	208	3	193	1.078	ppb	1.078	1.02	6114	5000	
Th	232	3	193	0.221	ppb	0.221	22.73	5162	2000	
U	238	3	193	48.651	ppb	48.651	1.79	248838	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4264523	1.66	4299393	99.19	60	120	
Sc (IS)	45	3	HMI He	666502	0.71	674661	98.79	60	120	
Ge Internal standard	72	2	HMI H2	2341599	2.58	2269722	103.17	60	120	
Ge Internal standard	72	3	HMI He	770538	2.23	739017	104.27	60	120	
In Internal Standard	115	3	HMI He	2578086	0.40	2543041	101.38	60	120	
Ir (IS)	193	3	HMI He	5435999	2.44	5570851	97.58	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	093_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:09:56-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.521	ppb	3.806	2894	50	101.0	90	110	
Na	23	3	45	49673.545	ppb	1.864	6535938	51000	97.4	90	110	
Mg	24	3	45	10436.857	ppb	2.036	726252	11000	94.9	90	110	
Al	27	3	45	1012.011	ppb	2.307	25114	1000	101.2	90	110	
K	39	3	45	10702.051	ppb	2.834	579433	11000	97.3	90	110	
Ca	40	2	45	11259.829	ppb	0.852	6826557	11000	102.4	90	110	
V	51	3	72	51.400	ppb	2.959	33163	50	102.8	90	110	
Cr	52	3	72	50.676	ppb	3.863	43623	50	101.4	90	110	
Mn	55	3	72	49.694	ppb	3.736	22095	50	99.4	90	110	
Fe	56	2	72	1044.246	ppb	1.007	1632779	1000	104.4	90	110	
Co	59	3	72	49.629	ppb	2.821	66576	50	99.3	90	110	
Ni	60	3	72	49.805	ppb	2.917	18818	50	99.6	90	110	
Cu	63	3	72	49.992	ppb	2.375	50779	50	100.0	90	110	
Zn	66	3	72	50.677	ppb	2.972	8922	50	101.4	90	110	
As	75	3	72	54.053	ppb	6.797	6458	50	108.1	90	110	
Se	78	2	72	49.659	ppb	2.638	3033	50	99.3	90	110	
(Se)	78	3	72	52.590	ppb	21.591	401	50	105.2	90	110	
Sr	88	3	72	105.367	ppb	1.750	58499	100	105.4	90	110	
Mo	95	3	115	47.253	ppb	1.678	26297	50	94.5	90	110	
Ag	107	3	115	47.906	ppb	0.791	87565	50	95.8	90	110	
Cd	111	3	115	47.797	ppb	1.001	12711	50	95.6	90	110	
Sn	120	3	115	49.550	ppb	0.509	39430	50	99.1	90	110	
Sb	121	3	115	50.014	ppb	1.119	39769	50	100.0	90	110	
Ba	137	3	115	51.120	ppb	1.096	12838	50	102.2	90	110	
Tl	205	3	193	50.680	ppb	1.629	184503	50	101.4	90	110	
(Pb)	206	3	193	51.020	ppb	1.317	62059	50	102.0	90	110	
(Pb)	207	3	193	50.476	ppb	1.630	54321	50	101.0	90	110	
Pb	208	3	193	50.820	ppb	1.032	249228	50	101.6	90	110	
Th	232	3	193	51.018	ppb	1.667	253702	50	102.0	90	110	
U	238	3	193	51.563	ppb	0.734	266970	50	103.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4377395	1.07	4299393	101.81	60	120	
Sc (IS)	45	3	HMI He	681432	1.31	674661	101.00	60	120	
Ge Internal standard	72	2	HMI H2	2336467	0.65	2269722	102.94	60	120	
Ge Internal standard	72	3	HMI He	759584	1.77	739017	102.78	60	120	
In Internal Standard	115	3	HMI He	2684977	1.23	2543041	105.58	60	120	
Ir (IS)	193	3	HMI He	5503329	0.99	5570851	98.79	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	094_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:14:15-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	-87718.4	2	0.5	
Na	23	3	45	71.706	ppb	72.7	45735	25	>RL
Mg	24	3	45	1.870	ppb	80.1	304	25	
Al	27	3	45	21.548	ppb	18.1	694	15	>RL
K	39	3	45	-40.416	ppb	-133.2	22471	50	
V	51	3	72	0.230	ppb	32.4	366	1	
Cr	52	3	72	-0.975	ppb	-22.1	1153	1	
Mn	55	3	72	-0.920	ppb	-7.2	178	0.5	
Co	59	3	72	-0.010	ppb	-82.0	30	0.5	
Ni	60	3	72	-0.199	ppb	-47.9	143	1	
Cu	63	3	72	-0.184	ppb	-35.3	410	1	
Zn	66	3	72	1.643	ppb	64.4	516	5	
As	75	3	72	0.088	ppb	223.9	58	1	
Se	78	2	72	0.070	ppb	91.4	6	1	
(Se)	78	3	72	-0.571	ppb	-99.6	12	1	
Sr	88	3	72	0.044	ppb	59.3	47	0.5	
Mo	95	3	115	0.558	ppb	60.8	433	0.5	>RL
Ag	107	3	115	-0.003	ppb	-129.0	20	1	
Cd	111	3	115	0.010	ppb	12.7	5	0.5	
Sn	120	3	115	-0.399	ppb	-23.1	431	1	
Sb	121	3	115	0.004	ppb	544.6	85	0.6	
Ba	137	3	115	0.017	ppb	403.1	63	0.5	
Tl	205	3	193	-0.062	ppb	-11.3	197	0.1	
(Pb)	206	3	193	-0.043	ppb	-16.0	143	1	
(Pb)	207	3	193	-0.042	ppb	-107.5	385	1	
Pb	208	3	193	-0.035	ppb	-38.5	886	0.5	
Th	232	3	193	1.090	ppb	73.7	11031	1	>RL
U	238	3	193	-0.015	ppb	-39.0	1768	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4592613	4.18	4299393	106.82	60	120	
Sc (IS)	45	3	HMI He	790794	5.75	674661	117.21	60	120	
Ge Internal standard	72	2	HMI H2	2472458	7.48	2269722	108.93	60	120	
Ge Internal standard	72	3	HMI He	906005	9.91	739017	122.60	60	120	IS Failed
In Internal Standard	115	3	HMI He	3093887	7.37	2543041	121.66	60	120	IS Failed
Ir (IS)	193	3	HMI He	6539953	7.65	5570851	117.40	60	120	

Sample Report

Sample Table

Sample Name	280-171417-h-3-c@50 PDS
Data File Name	095SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:18:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 20602
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	197.367	ppb	197.367	2.24	11075	2000	
Na	23	3	45	21062.633	ppb	21062.633	2.28	2729401	400000	
Mg	24	3	45	2034.774	ppb	2034.774	3.78	138672	400000	
Al	27	3	45	2016.867	ppb	2016.867	2.47	48920	400000	
K	39	3	45	2158.059	ppb	2158.059	1.54	131209	400000	
Ca	40	2	45	2226.527	ppb	2226.527	1.90	1341356	400000	
V	51	3	72	199.958	ppb	199.958	4.15	128859	2000	
Cr	52	3	72	197.358	ppb	197.358	3.87	165170	5000	
Mn	55	3	72	203.071	ppb	203.071	2.81	88835	10000	
Fe	56	2	72	28.604	ppb	28.604	2.48	55550	10000	
Co	59	3	72	195.515	ppb	195.515	2.59	262895	2000	
Ni	60	3	72	191.786	ppb	191.786	3.01	72106	5000	
Cu	63	3	72	199.758	ppb	199.758	2.62	201856	5000	
Zn	66	3	72	211.870	ppb	211.870	2.36	36894	5000	
As	75	3	72	197.013	ppb	197.013	3.83	23510	2000	
Se	78	2	72	197.504	ppb	197.504	1.39	12078	2000	
(Se)	78	3	72	197.536	ppb	197.536	2.16	1476	2000	
Sr	88	3	72	212.376	ppb	212.376	2.80	118194	4000	
Mo	95	3	115	199.100	ppb	199.100	2.77	104765	2000	
Ag	107	3	115	50.118	ppb	50.118	1.95	86772	100	
Cd	111	3	115	197.180	ppb	197.180	1.99	49660	2000	
Sn	120	3	115	202.445	ppb	202.445	1.68	150567	2000	
Sb	121	3	115	205.342	ppb	205.342	1.96	154455	1000	
Ba	137	3	115	218.353	ppb	218.353	3.03	51777	5000	
Tl	205	3	193	202.166	ppb	202.166	0.25	710879	2000	
(Pb)	206	3	193	205.437	ppb	205.437	1.12	241231	100	
(Pb)	207	3	193	203.118	ppb	203.118	0.59	210389	100	
Pb	208	3	193	204.175	ppb	204.175	0.83	965958	5000	
Th	232	3	193	227.550	ppb	227.550	2.21	1080823	2000	
U	238	3	193	215.739	ppb	215.739	2.48	1075726	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4320895	1.02	4299393	100.50	60	120	
Sc (IS)	45	3	HMI He	666946	1.23	674661	98.86	60	120	
Ge Internal standard	72	2	HMI H2	2340204	2.40	2269722	103.11	60	120	
Ge Internal standard	72	3	HMI He	761841	3.01	739017	103.09	60	120	
In Internal Standard	115	3	HMI He	2543566	1.74	2543041	100.02	60	120	
Ir (IS)	193	3	HMI He	5323503	0.18	5570851	95.56	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-D
Data File Name	096SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:22:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	171.20	3	2000	
Na	23	3	45	33373.950	ppb	33373.950	1.98	4133960	400000	
Mg	24	3	45	13381.916	ppb	13381.916	2.05	874620	400000	
Al	27	3	45	36.019	ppb	36.019	7.20	901	400000	
K	39	3	45	2199.526	ppb	2199.526	2.29	127936	400000	
Ca	40	2	45	49275.464	ppb	49275.464	1.86	29319071	400000	
V	51	3	72	0.913	ppb	0.913	5.13	733	2000	
Cr	52	3	72	0.198	ppb	0.198	17.09	1904	5000	
Mn	55	3	72	14.168	ppb	14.168	3.78	6542	10000	
Fe	56	2	72	30.350	ppb	30.350	2.77	58210	10000	
Co	59	3	72	0.070	ppb	0.070	33.77	130	2000	
Ni	60	3	72	0.564	ppb	0.564	20.42	396	5000	
Cu	63	3	72	6.493	ppb	6.493	3.66	6900	5000	
Zn	66	3	72	12.814	ppb	12.814	5.83	2322	5000	
As	75	3	72	0.454	ppb	0.454	33.39	90	2000	
Se	78	2	72	0.293	ppb	0.293	23.85	19	2000	
(Se)	78	3	72	0.922	ppb	0.922	82.64	20	2000	
Sr	88	3	72	137.329	ppb	137.329	3.24	74523	4000	
Mo	95	3	115	22.193	ppb	22.193	1.51	11329	2000	
Ag	107	3	115	0.000	ppb	0.000	1229.81	22	100	
Cd	111	3	115	0.268	ppb	0.268	38.12	67	2000	
Sn	120	3	115	0.440	ppb	0.440	19.84	946	2000	
Sb	121	3	115	0.276	ppb	0.276	18.48	265	1000	
Ba	137	3	115	57.813	ppb	57.813	0.68	13277	5000	
Tl	205	3	193	-0.052	ppb	-0.052	-30.02	192	2000	
(Pb)	206	3	193	0.101	ppb	0.101	45.20	280	100	
(Pb)	207	3	193	0.086	ppb	0.086	68.90	438	100	
Pb	208	3	193	0.080	ppb	0.080	2.44	1243	5000	
Th	232	3	193	0.561	ppb	0.561	22.23	6542	2000	
U	238	3	193	47.576	ppb	47.576	2.13	233677	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4301636	0.11	4299393	100.05	60	120	
Sc (IS)	45	3	HMI He	639997	0.53	674661	94.86	60	120	
Ge Internal standard	72	2	HMI H2	2337493	2.13	2269722	102.99	60	120	
Ge Internal standard	72	3	HMI He	742759	2.70	739017	100.51	60	120	
In Internal Standard	115	3	HMI He	2456197	0.26	2543041	96.59	60	120	
Ir (IS)	193	3	HMI He	5218714	1.10	5570851	93.68	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-E MS
Data File Name	097SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.170	ppb	39.170	5.12	2187	2000	
Na	23	3	45	34413.261	ppb	34413.261	0.40	4286343	400000	
Mg	24	3	45	14402.576	ppb	14402.576	2.25	946598	400000	
Al	27	3	45	861.064	ppb	861.064	3.60	20191	400000	
K	39	3	45	3043.035	ppb	3043.035	1.60	170198	400000	
Ca	40	2	45	50824.002	ppb	50824.002	1.13	29138536	400000	
V	51	3	72	41.322	ppb	41.322	2.55	25883	2000	
Cr	52	3	72	40.406	ppb	40.406	1.35	34083	5000	
Mn	55	3	72	54.943	ppb	54.943	1.69	23632	10000	
Fe	56	2	72	896.029	ppb	896.029	0.93	1350230	10000	
Co	59	3	72	39.947	ppb	39.947	1.10	51974	2000	
Ni	60	3	72	39.432	ppb	39.432	0.74	14489	5000	
Cu	63	3	72	45.612	ppb	45.612	2.48	44967	5000	
Zn	66	3	72	53.073	ppb	53.073	4.96	9052	5000	
As	75	3	72	41.198	ppb	41.198	4.55	4783	2000	
Se	78	2	72	40.576	ppb	40.576	5.11	2385	2000	
(Se)	78	3	72	38.871	ppb	38.871	11.97	292	2000	
Sr	88	3	72	224.164	ppb	224.164	0.87	120651	4000	
Mo	95	3	115	62.704	ppb	62.704	1.18	32336	2000	
Ag	107	3	115	40.297	ppb	40.297	0.44	68292	100	
Cd	111	3	115	40.130	ppb	40.130	1.23	9894	2000	
Sn	120	3	115	41.598	ppb	41.598	0.87	30788	2000	
Sb	121	3	115	41.340	ppb	41.340	1.51	30490	1000	
Ba	137	3	115	99.803	ppb	99.803	1.51	23194	5000	
Tl	205	3	193	41.233	ppb	41.233	1.23	143568	2000	
(Pb)	206	3	193	41.186	ppb	41.186	1.86	47928	100	
(Pb)	207	3	193	40.911	ppb	40.911	0.52	42161	100	
Pb	208	3	193	40.931	ppb	40.931	0.68	192071	5000	
Th	232	3	193	42.543	ppb	42.543	2.04	202900	2000	
U	238	3	193	89.095	ppb	89.095	0.62	439889	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4145053	1.40	4299393	96.41	60	120	
Sc (IS)	45	3	HMI He	643638	1.12	674661	95.40	60	120	
Ge Internal standard	72	2	HMI H2	2249123	1.42	2269722	99.09	60	120	
Ge Internal standard	72	3	HMI He	736413	0.97	739017	99.65	60	120	
In Internal Standard	115	3	HMI He	2489132	0.43	2543041	97.88	60	120	
Ir (IS)	193	3	HMI He	5260881	1.13	5570851	94.44	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-F MSD
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:28:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.768	ppb	37.768	4.21	2086	2000	
Na	23	3	45	34530.388	ppb	34530.388	1.84	4376561	400000	
Mg	24	3	45	14554.102	ppb	14554.102	2.79	973945	400000	
Al	27	3	45	859.342	ppb	859.342	5.92	20492	400000	
K	39	3	45	3083.869	ppb	3083.869	3.57	175231	400000	
Ca	40	2	45	52047.874	ppb	52047.874	1.74	29690185	400000	
V	51	3	72	41.428	ppb	41.428	1.42	26699	2000	
Cr	52	3	72	40.331	ppb	40.331	1.10	34995	5000	
Mn	55	3	72	54.884	ppb	54.884	2.34	24287	10000	
Fe	56	2	72	873.859	ppb	873.859	2.84	1298787	10000	
Co	59	3	72	39.512	ppb	39.512	0.97	52877	2000	
Ni	60	3	72	40.096	ppb	40.096	2.42	15146	5000	
Cu	63	3	72	45.420	ppb	45.420	0.99	46069	5000	
Zn	66	3	72	52.071	ppb	52.071	2.73	9142	5000	
As	75	3	72	40.232	ppb	40.232	2.19	4808	2000	
Se	78	2	72	40.905	ppb	40.905	2.41	2372	2000	
(Se)	78	3	72	31.663	ppb	31.663	20.87	247	2000	
Sr	88	3	72	225.343	ppb	225.343	0.47	124766	4000	
Mo	95	3	115	63.504	ppb	63.504	1.68	33122	2000	
Ag	107	3	115	40.779	ppb	40.779	2.51	69899	100	
Cd	111	3	115	40.922	ppb	40.922	1.65	10204	2000	
Sn	120	3	115	41.467	ppb	41.467	2.42	31044	2000	
Sb	121	3	115	42.099	ppb	42.099	1.78	31401	1000	
Ba	137	3	115	102.383	ppb	102.383	2.46	24063	5000	
Tl	205	3	193	41.007	ppb	41.007	2.17	146692	2000	
(Pb)	206	3	193	41.137	ppb	41.137	3.09	49177	100	
(Pb)	207	3	193	40.642	ppb	40.642	1.62	43028	100	
Pb	208	3	193	40.799	ppb	40.799	2.55	196689	5000	
Th	232	3	193	42.294	ppb	42.294	1.40	207280	2000	
U	238	3	193	90.071	ppb	90.071	2.85	456862	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4124860	1.74	4299393	95.94	60	120	
Sc (IS)	45	3	HMI He	655253	3.50	674661	97.12	60	120	
Ge Internal standard	72	2	HMI H2	2217995	0.80	2269722	97.72	60	120	
Ge Internal standard	72	3	HMI He	757499	2.50	739017	102.50	60	120	
In Internal Standard	115	3	HMI He	2517373	0.67	2543041	98.99	60	120	
Ir (IS)	193	3	HMI He	5405124	1.02	5570851	97.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	099_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:30:17-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.275	ppb	5.189	2844	50	98.5	90	110	
Na	23	3	45	50084.598	ppb	4.065	6609484	51000	98.2	90	110	
Mg	24	3	45	10918.513	ppb	5.042	762008	11000	99.3	90	110	
Al	27	3	45	1007.668	ppb	2.652	25084	1000	100.8	90	110	
K	39	3	45	10581.992	ppb	2.748	575015	11000	96.2	90	110	
Ca	40	2	45	11032.541	ppb	1.508	6711698	11000	100.3	90	110	
V	51	3	72	51.583	ppb	2.935	32785	50	103.2	90	110	
Cr	52	3	72	51.237	ppb	3.032	43431	50	102.5	90	110	
Mn	55	3	72	51.100	ppb	2.849	22369	50	102.2	90	110	
Fe	56	2	72	1080.083	ppb	3.628	1642736	1000	108.0	90	110	
Co	59	3	72	50.454	ppb	2.064	66680	50	100.9	90	110	
Ni	60	3	72	49.669	ppb	2.050	18490	50	99.3	90	110	
Cu	63	3	72	50.614	ppb	2.432	50637	50	101.2	90	110	
Zn	66	3	72	51.688	ppb	2.317	8962	50	103.4	90	110	
As	75	3	72	54.377	ppb	2.916	6403	50	108.8	90	110	
Se	78	2	72	51.457	ppb	0.890	3059	50	102.9	90	110	
(Se)	78	3	72	47.996	ppb	14.306	363	50	96.0	90	110	
Sr	88	3	72	103.753	ppb	1.572	56745	100	103.8	90	110	
Mo	95	3	115	49.395	ppb	2.541	26493	50	98.8	90	110	
Ag	107	3	115	49.127	ppb	1.584	86550	50	98.3	90	110	
Cd	111	3	115	49.943	ppb	1.077	12801	50	99.9	90	110	
Sn	120	3	115	50.255	ppb	1.357	38533	50	100.5	90	110	
Sb	121	3	115	50.692	ppb	2.022	38850	50	101.4	90	110	
Ba	137	3	115	51.255	ppb	0.610	12408	50	102.5	90	110	
Tl	205	3	193	51.246	ppb	2.411	183778	50	102.5	90	110	
(Pb)	206	3	193	51.274	ppb	2.396	61439	50	102.5	90	110	
(Pb)	207	3	193	50.683	ppb	3.124	53727	50	101.4	90	110	
Pb	208	3	193	50.892	ppb	2.274	245864	50	101.8	90	110	
Th	232	3	193	51.973	ppb	2.562	254530	50	103.9	90	110	
U	238	3	193	52.014	ppb	3.142	265247	50	104.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4392384	1.43	4299393	102.16	60	120	
Sc (IS)	45	3	HMI He	683695	2.29	674661	101.34	60	120	
Ge Internal standard	72	2	HMI H2	2274266	2.86	2269722	100.20	60	120	
Ge Internal standard	72	3	HMI He	748301	2.24	739017	101.26	60	120	
In Internal Standard	115	3	HMI He	2588142	1.61	2543041	101.77	60	120	
Ir (IS)	193	3	HMI He	5422485	1.86	5570851	97.34	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	100_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:32:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.001	ppb	9908.4	2	0.5	
Na	23	3	45	49.750	ppb	11.0	35992	25	>RL
Mg	24	3	45	1.539	ppb	42.7	234	25	
Al	27	3	45	7.973	ppb	7.8	260	15	
K	39	3	45	2.531	ppb	942.2	21271	50	
V	51	3	72	0.437	ppb	6.9	431	1	
Cr	52	3	72	-0.258	ppb	-0.8	1531	1	
Mn	55	3	72	-0.760	ppb	-16.7	215	0.5	
Co	59	3	72	-0.006	ppb	-101.0	30	0.5	
Ni	60	3	72	-0.024	ppb	-449.2	182	1	
Cu	63	3	72	-0.069	ppb	-53.1	451	1	
Zn	66	3	72	1.029	ppb	6.1	330	5	
As	75	3	72	0.085	ppb	101.5	47	1	
Se	78	2	72	0.056	ppb	91.8	5	1	
(Se)	78	3	72	0.223	ppb	18.6	15	1	
Sr	88	3	72	0.034	ppb	40.7	33	0.5	
Mo	95	3	115	0.032	ppb	133.4	75	0.5	
Ag	107	3	115	0.006	ppb	24.8	33	1	
Cd	111	3	115	0.007	ppb	171.4	3	0.5	
Sn	120	3	115	-0.012	ppb	-551.8	658	1	
Sb	121	3	115	0.061	ppb	48.3	115	0.6	
Ba	137	3	115	-0.017	ppb	-212.6	45	0.5	
Tl	205	3	193	-0.053	ppb	-15.7	198	0.1	
(Pb)	206	3	193	-0.018	ppb	-118.9	152	1	
(Pb)	207	3	193	0.005	ppb	833.1	378	1	
Pb	208	3	193	-0.018	ppb	-123.9	836	0.5	
Th	232	3	193	0.348	ppb	16.0	5890	1	
U	238	3	193	0.019	ppb	22.8	1676	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4286711	0.36	4299393	99.71	60	120	
Sc (IS)	45	3	HMI He	668961	2.22	674661	99.16	60	120	
Ge Internal standard	72	2	HMI H2	2269342	0.19	2269722	99.98	60	120	
Ge Internal standard	72	3	HMI He	740348	2.00	739017	100.18	60	120	
In Internal Standard	115	3	HMI He	2594639	0.47	2543041	102.03	60	120	
Ir (IS)	193	3	HMI He	5542533	2.65	5570851	99.49	60	120	

Sample Report

Sample Table

Sample Name	280-171306-E-5-F
Data File Name	101SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:34:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	-34473.89	2	2000	
Na	23	3	45	141.699	ppb	141.699	1.11	47788	400000	
Mg	24	3	45	6.808	ppb	6.808	15.90	594	400000	
Al	27	3	45	5.929	ppb	5.929	37.25	210	400000	
K	39	3	45	36.138	ppb	36.138	134.00	22992	400000	
Ca	40	2	45	42.450	ppb	42.450	3.12	37073	400000	
V	51	3	72	0.580	ppb	0.580	8.68	531	2000	
Cr	52	3	72	0.254	ppb	0.254	18.82	1979	5000	
Mn	55	3	72	-0.338	ppb	-0.338	-19.23	400	10000	
Fe	56	2	72	8.317	ppb	8.317	4.33	23737	10000	
Co	59	3	72	-0.001	ppb	-0.001	-1224.80	38	2000	
Ni	60	3	72	0.066	ppb	0.066	154.23	218	5000	
Cu	63	3	72	0.073	ppb	0.073	33.69	601	5000	
Zn	66	3	72	1.933	ppb	1.933	10.81	491	5000	
As	75	3	72	0.120	ppb	0.120	81.23	52	2000	
Se	78	2	72	0.033	ppb	0.033	154.11	3	2000	
(Se)	78	3	72	-0.267	ppb	-0.267	-393.29	12	2000	
Sr	88	3	72	0.281	ppb	0.281	8.64	170	4000	
Mo	95	3	115	0.088	ppb	0.088	44.14	105	2000	
Ag	107	3	115	0.003	ppb	0.003	50.02	28	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	0.031	ppb	0.031	292.12	690	2000	
Sb	121	3	115	0.070	ppb	0.070	60.74	122	1000	
Ba	137	3	115	0.237	ppb	0.237	24.30	107	5000	
Tl	205	3	193	-0.069	ppb	-0.069	-11.81	143	2000	
(Pb)	206	3	193	-0.013	ppb	-0.013	-166.89	158	100	
(Pb)	207	3	193	-0.015	ppb	-0.015	-111.26	356	100	
Pb	208	3	193	-0.027	ppb	-0.027	-20.60	790	5000	
Th	232	3	193	0.154	ppb	0.154	33.55	4930	2000	
U	238	3	193	0.011	ppb	0.011	96.99	1631	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4375667	1.57	4299393	101.77	60	120	
Sc (IS)	45	3	HMI He	668563	0.61	674661	99.10	60	120	
Ge Internal standard	72	2	HMI H2	2314345	1.44	2269722	101.97	60	120	
Ge Internal standard	72	3	HMI He	754125	0.42	739017	102.04	60	120	
In Internal Standard	115	3	HMI He	2594557	1.36	2543041	102.03	60	120	
Ir (IS)	193	3	HMI He	5530596	0.33	5570851	99.28	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-1-C
Data File Name	102SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:36:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	172.95	3	2000	
Na	23	3	45	988057.580	ppb	988057.580	2.97	136891710	400000	
Mg	24	3	45	304012.097	ppb	304012.097	3.28	22368853	400000	
Al	27	3	45	8.116	ppb	8.116	12.61	284	400000	
K	39	3	45	14689.855	ppb	14689.855	3.00	832768	400000	
Ca	40	2	45	530885.188	ppb	530885.188	1.30	326818580	400000	
V	51	3	72	0.458	ppb	0.458	14.92	476	2000	
Cr	52	3	72	0.517	ppb	0.517	12.48	2307	5000	
Mn	55	3	72	20.166	ppb	20.166	2.97	9700	10000	
Fe	56	2	72	10.021	ppb	10.021	5.55	26723	10000	
Co	59	3	72	0.090	ppb	0.090	30.21	167	2000	
Ni	60	3	72	1.515	ppb	1.515	12.91	795	5000	
Cu	63	3	72	1.156	ppb	1.156	7.97	1769	5000	
Zn	66	3	72	3.323	ppb	3.323	15.11	768	5000	
As	75	3	72	0.446	ppb	0.446	45.17	95	2000	
Se	78	2	72	2293.420	ppb	2293.420	1.56	140624	2000	
(Se)	78	3	72	2170.427	ppb	2170.427	3.64	16724	2000	
Sr	88	3	72	9245.883	ppb	9245.883	1.26	5357098	4000	
Mo	95	3	115	1.001	ppb	1.001	5.50	596	2000	
Ag	107	3	115	0.004	ppb	0.004	128.13	30	100	
Cd	111	3	115	0.045	ppb	0.045	88.04	13	2000	
Sn	120	3	115	0.224	ppb	0.224	29.91	838	2000	
Sb	121	3	115	0.143	ppb	0.143	13.81	178	1000	
Ba	137	3	115	11.499	ppb	11.499	6.16	2836	5000	
Tl	205	3	193	-0.047	ppb	-0.047	-15.64	218	2000	
(Pb)	206	3	193	0.020	ppb	0.020	60.10	193	100	
(Pb)	207	3	193	0.027	ppb	0.027	87.30	391	100	
Pb	208	3	193	0.011	ppb	0.011	88.82	958	5000	
Th	232	3	193	0.122	ppb	0.122	17.80	4657	2000	
U	238	3	193	188.095	ppb	188.095	0.87	951421	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4452800	1.88	4299393	103.57	60	120	
Sc (IS)	45	3	HMI He	720836	2.28	674661	106.84	60	120	
Ge Internal standard	72	2	HMI H2	2346835	1.64	2269722	103.40	60	120	
Ge Internal standard	72	3	HMI He	792905	2.05	739017	107.29	60	120	
In Internal Standard	115	3	HMI He	2602174	1.48	2543041	102.33	60	120	
Ir (IS)	193	3	HMI He	5399341	0.88	5570851	96.92	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-2-C
Data File Name	103SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:38:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.028	ppb	0.028	348.42	3	2000	
Na	23	3	45	955309.974	ppb	955309.974	3.03	137079715	400000	
Mg	24	3	45	298467.482	ppb	298467.482	2.66	22746998	400000	
Al	27	3	45	7.343	ppb	7.343	32.91	274	400000	
K	39	3	45	14516.505	ppb	14516.505	3.18	852554	400000	
Ca	40	2	45	523832.421	ppb	523832.421	2.25	331451527	400000	
V	51	3	72	0.527	ppb	0.527	22.52	531	2000	
Cr	52	3	72	0.444	ppb	0.444	10.35	2284	5000	
Mn	55	3	72	22.403	ppb	22.403	0.79	10901	10000	
Fe	56	2	72	10.891	ppb	10.891	5.36	28739	10000	
Co	59	3	72	0.075	ppb	0.075	14.26	148	2000	
Ni	60	3	72	1.647	ppb	1.647	4.13	861	5000	
Cu	63	3	72	1.217	ppb	1.217	3.31	1864	5000	
Zn	66	3	72	5.615	ppb	5.615	8.74	1201	5000	
As	75	3	72	0.460	ppb	0.460	33.75	98	2000	
Se	78	2	72	2231.289	ppb	2231.289	2.45	140013	2000	
(Se)	78	3	72	2199.023	ppb	2199.023	4.37	17239	2000	
Sr	88	3	72	9343.178	ppb	9343.178	4.22	5505598	4000	
Mo	95	3	115	1.071	ppb	1.071	7.20	651	2000	
Ag	107	3	115	0.006	ppb	0.006	124.07	33	100	
Cd	111	3	115	0.000	ppb	0.000	-3581.08	2	2000	
Sn	120	3	115	0.210	ppb	0.210	57.69	848	2000	
Sb	121	3	115	0.138	ppb	0.138	48.78	178	1000	
Ba	137	3	115	11.953	ppb	11.953	6.41	3024	5000	
Tl	205	3	193	-0.054	ppb	-0.054	-10.92	190	2000	
(Pb)	206	3	193	0.032	ppb	0.032	42.85	205	100	
(Pb)	207	3	193	0.027	ppb	0.027	312.08	386	100	
Pb	208	3	193	0.021	ppb	0.021	130.57	991	5000	
Th	232	3	193	0.072	ppb	0.072	38.90	4370	2000	
U	238	3	193	186.707	ppb	186.707	3.92	933645	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4576841	2.19	4299393	106.45	60	120	
Sc (IS)	45	3	HMI He	746681	2.67	674661	110.67	60	120	
Ge Internal standard	72	2	HMI H2	2401954	1.67	2269722	105.83	60	120	
Ge Internal standard	72	3	HMI He	806637	1.53	739017	109.15	60	120	
In Internal Standard	115	3	HMI He	2669425	2.57	2543041	104.97	60	120	
Ir (IS)	193	3	HMI He	5339753	1.52	5570851	95.85	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-4-E
Data File Name	104SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:40:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-3229.34	2	2000	
Na	23	3	45	1027755.110	ppb	1027755.110	3.74	146879863	400000	
Mg	24	3	45	254215.900	ppb	254215.900	2.64	19301228	400000	
Al	27	3	45	6.709	ppb	6.709	37.84	254	400000	
K	39	3	45	12047.245	ppb	12047.245	2.56	709126	400000	
Ca	40	2	45	339579.833	ppb	339579.833	1.00	220446909	400000	
V	51	3	72	0.565	ppb	0.565	4.52	568	2000	
Cr	52	3	72	-0.007	ppb	-0.007	-884.33	1923	5000	
Mn	55	3	72	189.061	ppb	189.061	0.49	89237	10000	
Fe	56	2	72	4.859	ppb	4.859	11.22	19827	10000	
Co	59	3	72	0.207	ppb	0.207	18.83	343	2000	
Ni	60	3	72	3.879	ppb	3.879	2.44	1779	5000	
Cu	63	3	72	2.095	ppb	2.095	10.11	2851	5000	
Zn	66	3	72	3.075	ppb	3.075	18.66	748	5000	
As	75	3	72	0.578	ppb	0.578	32.17	115	2000	
Se	78	2	72	240.854	ppb	240.854	1.06	15684	2000	
(Se)	78	3	72	234.719	ppb	234.719	6.71	1886	2000	
Sr	88	3	72	6806.285	ppb	6806.285	2.16	4083929	4000	
Mo	95	3	115	2.735	ppb	2.735	5.06	1574	2000	
Ag	107	3	115	0.006	ppb	0.006	114.45	33	100	
Cd	111	3	115	0.038	ppb	0.038	59.10	12	2000	
Sn	120	3	115	0.078	ppb	0.078	219.33	748	2000	
Sb	121	3	115	0.152	ppb	0.152	37.08	190	1000	
Ba	137	3	115	11.225	ppb	11.225	2.28	2852	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-33.42	177	2000	
(Pb)	206	3	193	0.047	ppb	0.047	63.50	223	100	
(Pb)	207	3	193	-0.004	ppb	-0.004	-1926.16	355	100	
Pb	208	3	193	0.025	ppb	0.025	19.80	1013	5000	
Th	232	3	193	0.088	ppb	0.088	19.26	4447	2000	
U	238	3	193	121.889	ppb	121.889	2.23	610271	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4695270	2.75	4299393	109.21	60	120	
Sc (IS)	45	3	HMI He	743865	3.31	674661	110.26	60	120	
Ge Internal standard	72	2	HMI H2	2491984	1.66	2269722	109.79	60	120	
Ge Internal standard	72	3	HMI He	821218	1.73	739017	111.12	60	120	
In Internal Standard	115	3	HMI He	2678996	2.09	2543041	105.35	60	120	
Ir (IS)	193	3	HMI He	5340601	1.28	5570851	95.87	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-8-E
Data File Name	105SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:42:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-3486.04	2	2000	
Na	23	3	45	2266124.120	ppb	2266124.120	1.69	326162167	400000	>LDR
Mg	24	3	45	260506.013	ppb	260506.013	1.31	19914875	400000	
Al	27	3	45	17.504	ppb	17.504	6.03	551	400000	
K	39	3	45	14569.078	ppb	14569.078	1.05	858251	400000	
Ca	40	2	45	216107.006	ppb	216107.006	1.38	138237569	400000	
V	51	3	72	0.428	ppb	0.428	18.33	475	2000	
Cr	52	3	72	0.164	ppb	0.164	79.23	2082	5000	
Mn	55	3	72	83.067	ppb	83.067	2.48	39702	10000	
Fe	56	2	72	7.605	ppb	7.605	6.65	23727	10000	
Co	59	3	72	5.621	ppb	5.621	5.55	8222	2000	
Ni	60	3	72	12.102	ppb	12.102	2.53	5127	5000	
Cu	63	3	72	0.432	ppb	0.432	9.67	1050	5000	
Zn	66	3	72	4.721	ppb	4.721	11.28	1060	5000	
As	75	3	72	0.565	ppb	0.565	51.93	113	2000	
Se	78	2	72	10.286	ppb	10.286	2.71	653	2000	
(Se)	78	3	72	11.883	ppb	11.883	15.86	110	2000	
Sr	88	3	72	7567.904	ppb	7567.904	1.76	4560802	4000	
Mo	95	3	115	5.281	ppb	5.281	3.67	3004	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-62.44	18	100	
Cd	111	3	115	0.025	ppb	0.025	115.31	8	2000	
Sn	120	3	115	0.236	ppb	0.236	17.14	878	2000	
Sb	121	3	115	0.986	ppb	0.986	5.49	856	1000	
Ba	137	3	115	12.388	ppb	12.388	2.04	3162	5000	
Tl	205	3	193	-0.036	ppb	-0.036	-9.99	247	2000	
(Pb)	206	3	193	0.081	ppb	0.081	43.13	257	100	
(Pb)	207	3	193	0.055	ppb	0.055	128.01	406	100	
Pb	208	3	193	0.060	ppb	0.060	64.08	1148	5000	
Th	232	3	193	0.061	ppb	0.061	54.98	4215	2000	
U	238	3	193	10.145	ppb	10.145	2.55	50954	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4626077	1.26	4299393	107.60	60	120	
Sc (IS)	45	3	HMI He	748712	1.34	674661	110.98	60	120	
Ge Internal standard	72	2	HMI H2	2424952	0.14	2269722	106.84	60	120	
Ge Internal standard	72	3	HMI He	824815	2.28	739017	111.61	60	120	
In Internal Standard	115	3	HMI He	2695629	0.47	2543041	106.00	60	120	
Ir (IS)	193	3	HMI He	5214723	1.59	5570851	93.61	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-9-E
Data File Name	106SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:44:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.050	ppb	0.050	156.49	5	2000	
Na	23	3	45	650.487	ppb	650.487	4.40	125345	400000	
Mg	24	3	45	28.989	ppb	28.989	12.58	2336	400000	
Al	27	3	45	8.546	ppb	8.546	39.54	304	400000	
K	39	3	45	70.511	ppb	70.511	60.62	27388	400000	
Ca	40	2	45	82.189	ppb	82.189	4.46	66158	400000	
V	51	3	72	0.571	ppb	0.571	16.61	560	2000	
Cr	52	3	72	0.083	ppb	0.083	187.83	1959	5000	
Mn	55	3	72	-0.486	ppb	-0.486	-18.56	358	10000	
Fe	56	2	72	15.279	ppb	15.279	5.08	37234	10000	
Co	59	3	72	0.013	ppb	0.013	56.15	60	2000	
Ni	60	3	72	0.240	ppb	0.240	42.26	302	5000	
Cu	63	3	72	0.041	ppb	0.041	56.04	606	5000	
Zn	66	3	72	6.039	ppb	6.039	8.27	1274	5000	
As	75	3	72	0.028	ppb	0.028	446.73	43	2000	
Se	78	2	72	0.345	ppb	0.345	24.82	24	2000	
(Se)	78	3	72	1.118	ppb	1.118	142.04	23	2000	
Sr	88	3	72	0.915	ppb	0.915	12.74	553	4000	
Mo	95	3	115	0.061	ppb	0.061	21.08	95	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-107.85	18	100	
Cd	111	3	115	0.000	ppb	0.000	-3026.53	2	2000	
Sn	120	3	115	0.283	ppb	0.283	29.85	925	2000	
Sb	121	3	115	0.108	ppb	0.108	31.34	158	1000	
Ba	137	3	115	0.165	ppb	0.165	3.87	93	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-9.04	132	2000	
(Pb)	206	3	193	0.001	ppb	0.001	1506.28	175	100	
(Pb)	207	3	193	0.048	ppb	0.048	16.52	423	100	
Pb	208	3	193	-0.002	ppb	-0.002	-715.27	915	5000	
Th	232	3	193	0.086	ppb	0.086	62.64	4590	2000	
U	238	3	193	0.012	ppb	0.012	20.10	1636	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4739561	2.93	4299393	110.24	60	120	
Sc (IS)	45	3	HMI He	740700	1.64	674661	109.79	60	120	
Ge Internal standard	72	2	HMI H2	2501523	2.56	2269722	110.21	60	120	
Ge Internal standard	72	3	HMI He	803479	0.81	739017	108.72	60	120	
In Internal Standard	115	3	HMI He	2721357	1.87	2543041	107.01	60	120	
Ir (IS)	193	3	HMI He	5523929	2.15	5570851	99.16	60	120	

Sample Report

Sample Table

Sample Name	280-171331-F-1-C
Data File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:46:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	35593.582	ppb	35593.582	1.24	4697191	400000	
Mg	24	3	45	15598.221	ppb	15598.221	2.16	1086876	400000	
Al	27	3	45	3.736	ppb	3.736	39.03	160	400000	
K	39	3	45	2133.031	ppb	2133.031	1.96	132877	400000	
Ca	40	2	45	38771.551	ppb	38771.551	2.05	23996216	400000	
V	51	3	72	1.872	ppb	1.872	4.50	1429	2000	
Cr	52	3	72	0.201	ppb	0.201	80.25	2041	5000	
Mn	55	3	72	906.564	ppb	906.564	2.13	412283	10000	
Fe	56	2	72	7.689	ppb	7.689	11.95	24322	10000	
Co	59	3	72	0.686	ppb	0.686	13.78	1005	2000	
Ni	60	3	72	1.778	ppb	1.778	13.33	901	5000	
Cu	63	3	72	0.811	ppb	0.811	11.30	1411	5000	
Zn	66	3	72	12.526	ppb	12.526	1.55	2437	5000	
As	75	3	72	0.485	ppb	0.485	6.42	100	2000	
Se	78	2	72	0.256	ppb	0.256	46.83	18	2000	
(Se)	78	3	72	1.802	ppb	1.802	19.75	28	2000	
Sr	88	3	72	392.649	ppb	392.649	1.82	228263	4000	
Mo	95	3	115	3.402	ppb	3.402	9.85	1898	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-412.67	20	100	
Cd	111	3	115	0.103	ppb	0.103	57.29	28	2000	
Sn	120	3	115	0.069	ppb	0.069	136.68	725	2000	
Sb	121	3	115	0.452	ppb	0.452	5.85	418	1000	
Ba	137	3	115	63.207	ppb	63.207	1.23	15448	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-9.82	182	2000	
(Pb)	206	3	193	0.210	ppb	0.210	20.61	418	100	
(Pb)	207	3	193	0.204	ppb	0.204	27.24	576	100	
Pb	208	3	193	0.211	ppb	0.211	10.15	1911	5000	
Th	232	3	193	0.052	ppb	0.052	37.83	4315	2000	
U	238	3	193	1.888	ppb	1.888	3.70	11048	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474580	0.96	4299393	104.07	60	120	
Sc (IS)	45	3	HMI He	682175	2.06	674661	101.11	60	120	
Ge Internal standard	72	2	HMI H2	2469390	2.86	2269722	108.80	60	120	
Ge Internal standard	72	3	HMI He	795536	1.47	739017	107.65	60	120	
In Internal Standard	115	3	HMI He	2614760	0.55	2543041	102.82	60	120	
Ir (IS)	193	3	HMI He	5389041	1.13	5570851	96.74	60	120	

Sample Report

Sample Table

Sample Name	280-171348-A-3-B
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:48:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	333059.305	ppb	333059.305	1.17	44915891	400000	
Mg	24	3	45	111072.521	ppb	111072.521	0.80	7951729	400000	
Al	27	3	45	14.197	ppb	14.197	18.98	430	400000	
K	39	3	45	63861.246	ppb	63861.246	0.98	3448153	400000	
Ca	40	2	45	23652.147	ppb	23652.147	0.79	14712893	400000	
V	51	3	72	1.895	ppb	1.895	3.87	1476	2000	
Cr	52	3	72	2.487	ppb	2.487	3.26	4105	5000	
Mn	55	3	72	184.202	ppb	184.202	1.18	86042	10000	
Fe	56	2	72	167.089	ppb	167.089	0.85	277978	10000	
Co	59	3	72	0.607	ppb	0.607	6.05	913	2000	
Ni	60	3	72	6.689	ppb	6.689	2.70	2886	5000	
Cu	63	3	72	4.191	ppb	4.191	1.31	5077	5000	
Zn	66	3	72	22.041	ppb	22.041	5.98	4250	5000	
As	75	3	72	0.364	ppb	0.364	23.91	87	2000	
Se	78	2	72	0.550	ppb	0.550	24.04	36	2000	
(Se)	78	3	72	0.669	ppb	0.669	92.98	20	2000	
Sr	88	3	72	117.202	ppb	117.202	0.53	69611	4000	
Mo	95	3	115	0.315	ppb	0.315	33.73	230	2000	
Ag	107	3	115	0.056	ppb	0.056	21.29	123	100	
Cd	111	3	115	0.019	ppb	0.019	115.28	7	2000	
Sn	120	3	115	0.133	ppb	0.133	86.44	776	2000	
Sb	121	3	115	0.266	ppb	0.266	18.29	275	1000	
Ba	137	3	115	13.827	ppb	13.827	2.10	3432	5000	
Tl	205	3	193	-0.073	ppb	-0.073	-17.30	125	2000	
(Pb)	206	3	193	0.142	ppb	0.142	21.56	342	100	
(Pb)	207	3	193	0.146	ppb	0.146	46.89	520	100	
Pb	208	3	193	0.132	ppb	0.132	23.84	1546	5000	
Th	232	3	193	0.099	ppb	0.099	20.42	4584	2000	
U	238	3	193	0.032	ppb	0.032	50.50	1713	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4495771	2.20	4299393	104.57	60	120	
Sc (IS)	45	3	HMI He	701126	1.87	674661	103.92	60	120	
Ge Internal standard	72	2	HMI H2	2400547	1.32	2269722	105.76	60	120	
Ge Internal standard	72	3	HMI He	812491	0.75	739017	109.94	60	120	
In Internal Standard	115	3	HMI He	2625227	1.10	2543041	103.23	60	120	
Ir (IS)	193	3	HMI He	5443192	2.05	5570851	97.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	109_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:49:59-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.188	ppb	4.721	2907	50	100.4	90	110	
Na	23	3	45	49439.022	ppb	1.193	6640508	51000	96.9	90	110	
Mg	24	3	45	10544.169	ppb	2.669	748824	11000	95.9	90	110	
Al	27	3	45	1025.100	ppb	1.357	25967	1000	102.5	90	110	
K	39	3	45	10585.028	ppb	2.182	585208	11000	96.2	90	110	
Ca	40	2	45	11265.328	ppb	1.464	6882921	11000	102.4	90	110	
V	51	3	72	51.187	ppb	3.128	33686	50	102.4	90	110	
Cr	52	3	72	49.195	ppb	3.092	43252	50	98.4	90	110	
Mn	55	3	72	50.117	ppb	2.782	22724	50	100.2	90	110	
Fe	56	2	72	1062.245	ppb	0.774	1659958	1000	106.2	90	110	
Co	59	3	72	49.146	ppb	2.492	67254	50	98.3	90	110	
Ni	60	3	72	48.258	ppb	2.595	18607	50	96.5	90	110	
Cu	63	3	72	49.027	ppb	2.191	50811	50	98.1	90	110	
Zn	66	3	72	50.707	ppb	3.525	9107	50	101.4	90	110	
As	75	3	72	51.914	ppb	4.188	6330	50	103.8	90	110	
Se	78	2	72	51.030	ppb	4.434	3115	50	102.1	90	110	
(Se)	78	3	72	51.326	ppb	7.742	400	50	102.7	90	110	
Sr	88	3	72	103.630	ppb	3.506	58672	100	103.6	90	110	
Mo	95	3	115	48.590	ppb	1.944	26681	50	97.2	90	110	
Ag	107	3	115	48.042	ppb	0.741	86649	50	96.1	90	110	
Cd	111	3	115	49.026	ppb	0.717	12865	50	98.1	90	110	
Sn	120	3	115	50.560	ppb	2.099	39679	50	101.1	90	110	
Sb	121	3	115	49.946	ppb	2.925	39183	50	99.9	90	110	
Ba	137	3	115	51.801	ppb	2.264	12835	50	103.6	90	110	
Tl	205	3	193	51.949	ppb	1.700	184621	50	103.9	90	110	
(Pb)	206	3	193	51.787	ppb	0.691	61496	50	103.6	90	110	
(Pb)	207	3	193	51.405	ppb	1.234	54003	50	102.8	90	110	
Pb	208	3	193	51.709	ppb	1.203	247552	50	103.4	90	110	
Th	232	3	193	52.066	ppb	0.689	252697	50	104.1	90	110	
U	238	3	193	52.298	ppb	1.675	264316	50	104.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4411685	0.82	4299393	102.61	60	120	
Sc (IS)	45	3	HMI He	695597	2.16	674661	103.10	60	120	
Ge Internal standard	72	2	HMI H2	2335302	0.42	2269722	102.89	60	120	
Ge Internal standard	72	3	HMI He	774984	3.05	739017	104.87	60	120	
In Internal Standard	115	3	HMI He	2649309	0.98	2543041	104.18	60	120	
Ir (IS)	193	3	HMI He	5372755	1.16	5570851	96.44	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	110_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:51:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.001	ppb	4764.9	2	0.5	
Na	23	3	45	188.773	ppb	5.0	53993	25	>RL
Mg	24	3	45	8.654	ppb	16.4	721	25	
Al	27	3	45	5.358	ppb	11.6	197	15	
K	39	3	45	36.478	ppb	94.9	23069	50	
V	51	3	72	0.632	ppb	12.1	566	1	
Cr	52	3	72	-0.361	ppb	-16.7	1483	1	
Mn	55	3	72	-0.766	ppb	-1.8	217	0.5	
Co	59	3	72	-0.004	ppb	-304.8	33	0.5	
Ni	60	3	72	-0.196	ppb	-19.5	122	1	
Cu	63	3	72	-0.097	ppb	-64.3	435	1	
Zn	66	3	72	1.113	ppb	31.6	353	5	
As	75	3	72	-0.009	ppb	-949.7	37	1	
Se	78	2	72	0.168	ppb	82.9	11	1	
(Se)	78	3	72	1.077	ppb	95.8	22	1	>RL
Sr	88	3	72	0.171	ppb	30.3	110	0.5	
Mo	95	3	115	0.030	ppb	254.3	73	0.5	
Ag	107	3	115	0.001	ppb	1304.9	23	1	
Cd	111	3	115	0.007	ppb	170.5	3	0.5	
Sn	120	3	115	-0.138	ppb	-32.4	560	1	
Sb	121	3	115	0.084	ppb	51.8	132	0.6	
Ba	137	3	115	0.012	ppb	108.0	52	0.5	
Tl	205	3	193	-0.069	ppb	-9.2	142	0.1	
(Pb)	206	3	193	-0.020	ppb	-57.6	150	1	
(Pb)	207	3	193	-0.033	ppb	-94.4	337	1	
Pb	208	3	193	-0.026	ppb	-58.8	798	0.5	
Th	232	3	193	0.353	ppb	21.2	5913	1	
U	238	3	193	0.020	ppb	28.2	1679	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4339735	2.52	4299393	100.94	60	120	
Sc (IS)	45	3	HMI He	670715	2.21	674661	99.42	60	120	
Ge Internal standard	72	2	HMI H2	2294819	2.05	2269722	101.11	60	120	
Ge Internal standard	72	3	HMI He	757755	2.25	739017	102.54	60	120	
In Internal Standard	115	3	HMI He	2580049	0.23	2543041	101.46	60	120	
Ir (IS)	193	3	HMI He	5533834	0.80	5570851	99.34	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-1-E
Data File Name	111SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:53:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	329.31	3	2000	
Na	23	3	45	539600.695	ppb	539600.695	2.05	67504773	400000	
Mg	24	3	45	507.688	ppb	507.688	1.33	33851	400000	
Al	27	3	45	13.492	ppb	13.492	11.06	384	400000	
K	39	3	45	2666.078	ppb	2666.078	1.49	153272	400000	
Ca	40	2	45	2309.966	ppb	2309.966	3.25	1385970	400000	
V	51	3	72	0.646	ppb	0.646	22.72	575	2000	
Cr	52	3	72	-0.028	ppb	-0.028	-119.04	1754	5000	
Mn	55	3	72	5.852	ppb	5.852	1.28	3075	10000	
Fe	56	2	72	185.593	ppb	185.593	0.81	293914	10000	
Co	59	3	72	0.025	ppb	0.025	98.60	73	2000	
Ni	60	3	72	0.359	ppb	0.359	14.79	328	5000	
Cu	63	3	72	0.114	ppb	0.114	18.24	645	5000	
Zn	66	3	72	8.001	ppb	8.001	12.62	1538	5000	
As	75	3	72	0.175	ppb	0.175	72.85	58	2000	
Se	78	2	72	0.144	ppb	0.144	23.11	10	2000	
(Se)	78	3	72	2.887	ppb	2.887	60.29	35	2000	
Sr	88	3	72	485.047	ppb	485.047	2.45	268202	4000	
Mo	95	3	115	0.393	ppb	0.393	22.97	258	2000	
Ag	107	3	115	0.004	ppb	0.004	181.40	28	100	
Cd	111	3	115	0.007	ppb	0.007	164.92	3	2000	
Sn	120	3	115	0.057	ppb	0.057	269.08	683	2000	
Sb	121	3	115	0.090	ppb	0.090	41.56	132	1000	
Ba	137	3	115	536.312	ppb	536.312	0.75	124717	5000	
Tl	205	3	193	-0.075	ppb	-0.075	-9.99	117	2000	
(Pb)	206	3	193	0.005	ppb	0.005	183.47	175	100	
(Pb)	207	3	193	0.060	ppb	0.060	60.48	423	100	
Pb	208	3	193	0.034	ppb	0.034	30.11	1058	5000	
Th	232	3	193	0.148	ppb	0.148	16.11	4750	2000	
U	238	3	193	0.026	ppb	0.026	147.84	1659	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4304844	0.92	4299393	100.13	60	120	
Sc (IS)	45	3	HMI He	650601	1.41	674661	96.43	60	120	
Ge Internal standard	72	2	HMI H2	2294612	1.03	2269722	101.10	60	120	
Ge Internal standard	72	3	HMI He	756672	1.30	739017	102.39	60	120	
In Internal Standard	115	3	HMI He	2494997	0.38	2543041	98.11	60	120	
Ir (IS)	193	3	HMI He	5363184	0.87	5570851	96.27	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-2-C
Data File Name	112SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:55:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	16242.23	2	2000	
Na	23	3	45	466330.460	ppb	466330.460	4.22	60257508	400000	
Mg	24	3	45	552.729	ppb	552.729	1.91	38069	400000	
Al	27	3	45	10.359	ppb	10.359	18.03	320	400000	
K	39	3	45	1855.740	ppb	1855.740	4.22	116682	400000	
Ca	40	2	45	2634.094	ppb	2634.094	2.77	1568024	400000	
V	51	3	72	0.664	ppb	0.664	24.03	595	2000	
Cr	52	3	72	0.445	ppb	0.445	32.11	2176	5000	
Mn	55	3	72	9.396	ppb	9.396	3.65	4678	10000	
Fe	56	2	72	550.686	ppb	550.686	2.96	861626	10000	
Co	59	3	72	0.011	ppb	0.011	93.76	55	2000	
Ni	60	3	72	-0.055	ppb	-0.055	-197.32	177	5000	
Cu	63	3	72	-0.019	ppb	-0.019	-197.48	520	5000	
Zn	66	3	72	6.732	ppb	6.732	7.66	1339	5000	
As	75	3	72	0.487	ppb	0.487	54.77	97	2000	
Se	78	2	72	0.097	ppb	0.097	67.15	7	2000	
(Se)	78	3	72	1.020	ppb	1.020	144.63	22	2000	
Sr	88	3	72	416.376	ppb	416.376	2.23	233835	4000	
Mo	95	3	115	0.989	ppb	0.989	9.60	581	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-74.30	8	100	
Cd	111	3	115	0.007	ppb	0.007	167.74	3	2000	
Sn	120	3	115	-0.088	ppb	-0.088	-68.03	593	2000	
Sb	121	3	115	0.076	ppb	0.076	56.40	125	1000	
Ba	137	3	115	572.362	ppb	572.362	3.03	136574	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-7.44	130	2000	
(Pb)	206	3	193	0.006	ppb	0.006	491.75	177	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-153.88	355	100	
Pb	208	3	193	-0.005	ppb	-0.005	-362.70	876	5000	
Th	232	3	193	0.075	ppb	0.075	43.08	4420	2000	
U	238	3	193	0.042	ppb	0.042	71.51	1744	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4275070	1.20	4299393	99.43	60	120	
Sc (IS)	45	3	HMI He	672327	2.48	674661	99.65	60	120	
Ge Internal standard	72	2	HMI H2	2325072	3.05	2269722	102.44	60	120	
Ge Internal standard	72	3	HMI He	768632	2.34	739017	104.01	60	120	
In Internal Standard	115	3	HMI He	2561198	2.11	2543041	100.71	60	120	
Ir (IS)	193	3	HMI He	5382911	0.83	5570851	96.63	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C
Data File Name	113SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:57:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	166.21	3	2000	
Na	23	3	45	524134.241	ppb	524134.241	1.98	66621357	400000	
Mg	24	3	45	465.248	ppb	465.248	3.05	31523	400000	
Al	27	3	45	14.784	ppb	14.784	5.88	420	400000	
K	39	3	45	2209.616	ppb	2209.616	3.56	132624	400000	
Ca	40	2	45	2276.820	ppb	2276.820	2.06	1340705	400000	
V	51	3	72	0.706	ppb	0.706	10.85	616	2000	
Cr	52	3	72	0.247	ppb	0.247	49.25	1989	5000	
Mn	55	3	72	5.621	ppb	5.621	2.64	2989	10000	
Fe	56	2	72	408.144	ppb	408.144	2.33	641163	10000	
Co	59	3	72	0.048	ppb	0.048	44.57	103	2000	
Ni	60	3	72	0.039	ppb	0.039	129.01	210	5000	
Cu	63	3	72	0.378	ppb	0.378	24.06	913	5000	
Zn	66	3	72	8.370	ppb	8.370	4.61	1609	5000	
As	75	3	72	0.215	ppb	0.215	40.84	63	2000	
Se	78	2	72	0.131	ppb	0.131	16.43	9	2000	
(Se)	78	3	72	0.839	ppb	0.839	210.57	20	2000	
Sr	88	3	72	458.482	ppb	458.482	1.86	254681	4000	
Mo	95	3	115	0.436	ppb	0.436	17.63	285	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-57.46	12	100	
Cd	111	3	115	0.000	ppb	0.000	4986.28	2	2000	
Sn	120	3	115	-0.011	ppb	-0.011	-883.94	643	2000	
Sb	121	3	115	0.087	ppb	0.087	16.88	132	1000	
Ba	137	3	115	518.486	ppb	518.486	0.89	122407	5000	
Tl	205	3	193	-0.076	ppb	-0.076	-5.14	112	2000	
(Pb)	206	3	193	0.096	ppb	0.096	37.19	280	100	
(Pb)	207	3	193	0.066	ppb	0.066	43.78	426	100	
Pb	208	3	193	0.053	ppb	0.053	22.14	1143	5000	
Th	232	3	193	0.078	ppb	0.078	89.21	4382	2000	
U	238	3	193	-0.009	ppb	-0.009	-163.82	1469	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4224310	0.85	4299393	98.25	60	120	
Sc (IS)	45	3	HMI He	661031	1.52	674661	97.98	60	120	
Ge Internal standard	72	2	HMI H2	2323469	1.85	2269722	102.37	60	120	
Ge Internal standard	72	3	HMI He	760114	0.88	739017	102.85	60	120	
In Internal Standard	115	3	HMI He	2532837	0.50	2543041	99.60	60	120	
Ir (IS)	193	3	HMI He	5325857	1.78	5570851	95.60	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-Csd@5
Data File Name	114SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:59:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	109125.965	ppb	109125.965	2.86	13966683	400000	
Mg	24	3	45	111.410	ppb	111.410	3.22	7687	400000	
Al	27	3	45	11.210	ppb	11.210	17.14	337	400000	
K	39	3	45	480.746	ppb	480.746	8.79	45429	400000	
Ca	40	2	45	498.460	ppb	498.460	1.13	305865	400000	
V	51	3	72	0.846	ppb	0.846	14.44	701	2000	
Cr	52	3	72	0.151	ppb	0.151	72.84	1898	5000	
Mn	55	3	72	0.453	ppb	0.453	26.06	741	10000	
Fe	56	2	72	88.411	ppb	88.411	1.67	145963	10000	
Co	59	3	72	0.013	ppb	0.013	20.83	57	2000	
Ni	60	3	72	-0.159	ppb	-0.159	-61.80	135	5000	
Cu	63	3	72	0.065	ppb	0.065	27.59	595	5000	
Zn	66	3	72	3.274	ppb	3.274	11.20	723	5000	
As	75	3	72	0.093	ppb	0.093	276.33	48	2000	
Se	78	2	72	0.144	ppb	0.144	23.85	10	2000	
(Se)	78	3	72	0.407	ppb	0.407	191.82	17	2000	
Sr	88	3	72	95.386	ppb	95.386	1.93	52670	4000	
Mo	95	3	115	0.114	ppb	0.114	42.65	117	2000	
Ag	107	3	115	0.001	ppb	0.001	186.76	23	100	
Cd	111	3	115	0.013	ppb	0.013	147.50	5	2000	
Sn	120	3	115	0.296	ppb	0.296	108.27	875	2000	
Sb	121	3	115	0.091	ppb	0.091	7.70	135	1000	
Ba	137	3	115	109.015	ppb	109.015	0.16	25897	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-17.42	143	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-24.59	145	100	
(Pb)	207	3	193	0.027	ppb	0.027	247.75	395	100	
Pb	208	3	193	-0.008	ppb	-0.008	-196.75	871	5000	
Th	232	3	193	0.039	ppb	0.039	62.67	4304	2000	
U	238	3	193	-0.001	ppb	-0.001	-5209.60	1549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4276679	0.87	4299393	99.47	60	120	
Sc (IS)	45	3	HMI He	664666	2.26	674661	98.52	60	120	
Ge Internal standard	72	2	HMI H2	2298948	1.44	2269722	101.29	60	120	
Ge Internal standard	72	3	HMI He	755486	1.67	739017	102.23	60	120	
In Internal Standard	115	3	HMI He	2544955	0.57	2543041	100.08	60	120	
Ir (IS)	193	3	HMI He	5457017	1.23	5570851	97.96	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-D MS
Data File Name	115SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:01:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.113	ppb	39.113	3.28	2172	2000	
Na	23	3	45	535085.573	ppb	535085.573	0.68	67755543	400000	
Mg	24	3	45	1258.417	ppb	1258.417	1.73	84737	400000	
Al	27	3	45	828.598	ppb	828.598	1.31	19884	400000	
K	39	3	45	3032.843	ppb	3032.843	0.63	173612	400000	
Ca	40	2	45	3137.362	ppb	3137.362	2.23	1859087	400000	
V	51	3	72	39.917	ppb	39.917	3.15	26130	2000	
Cr	52	3	72	39.115	ppb	39.115	3.83	34525	5000	
Mn	55	3	72	44.193	ppb	44.193	4.30	19964	10000	
Fe	56	2	72	1235.705	ppb	1235.705	2.34	1923199	10000	
Co	59	3	72	38.576	ppb	38.576	4.37	52426	2000	
Ni	60	3	72	37.998	ppb	37.998	3.03	14594	5000	
Cu	63	3	72	39.105	ppb	39.105	2.88	40360	5000	
Zn	66	3	72	46.035	ppb	46.035	1.03	8232	5000	
As	75	3	72	40.077	ppb	40.077	3.74	4863	2000	
Se	78	2	72	40.567	ppb	40.567	2.50	2470	2000	
(Se)	78	3	72	37.811	ppb	37.811	5.97	297	2000	
Sr	88	3	72	541.255	ppb	541.255	2.67	304355	4000	
Mo	95	3	115	40.331	ppb	40.331	3.53	21261	2000	
Ag	107	3	115	38.472	ppb	38.472	2.77	66594	100	
Cd	111	3	115	39.509	ppb	39.509	2.05	9950	2000	
Sn	120	3	115	41.171	ppb	41.171	1.73	31136	2000	
Sb	121	3	115	41.843	ppb	41.843	1.91	31521	1000	
Ba	137	3	115	570.920	ppb	570.920	1.77	135300	5000	
Tl	205	3	193	41.156	ppb	41.156	0.44	144857	2000	
(Pb)	206	3	193	41.738	ppb	41.738	1.41	49084	100	
(Pb)	207	3	193	41.315	ppb	41.315	1.72	43026	100	
Pb	208	3	193	41.381	ppb	41.381	1.08	196247	5000	
Th	232	3	193	42.672	ppb	42.672	0.39	205709	2000	
U	238	3	193	41.875	ppb	41.875	1.17	209768	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4260618	0.98	4299393	99.10	60	120	
Sc (IS)	45	3	HMI He	658428	0.32	674661	97.59	60	120	
Ge Internal standard	72	2	HMI H2	2328197	1.24	2269722	102.58	60	120	
Ge Internal standard	72	3	HMI He	769751	2.78	739017	104.16	60	120	
In Internal Standard	115	3	HMI He	2543210	1.89	2543041	100.01	60	120	
Ir (IS)	193	3	HMI He	5317505	1.19	5570851	95.45	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-E MSD
Data File Name	116SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:03:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.286	ppb	40.286	4.92	2281	2000	
Na	23	3	45	535935.065	ppb	535935.065	1.92	68606049	400000	
Mg	24	3	45	1246.977	ppb	1246.977	2.24	84888	400000	
Al	27	3	45	858.091	ppb	858.091	3.16	20816	400000	
K	39	3	45	3075.288	ppb	3075.288	1.94	177684	400000	
Ca	40	2	45	3210.659	ppb	3210.659	0.94	1907939	400000	
V	51	3	72	39.860	ppb	39.860	2.02	26590	2000	
Cr	52	3	72	38.484	ppb	38.484	1.21	34651	5000	
Mn	55	3	72	44.626	ppb	44.626	3.67	20543	10000	
Fe	56	2	72	1228.194	ppb	1228.194	1.03	1929304	10000	
Co	59	3	72	38.038	ppb	38.038	1.44	52695	2000	
Ni	60	3	72	37.565	ppb	37.565	2.39	14704	5000	
Cu	63	3	72	38.562	ppb	38.562	2.08	40564	5000	
Zn	66	3	72	47.817	ppb	47.817	0.51	8702	5000	
As	75	3	72	39.604	ppb	39.604	0.93	4898	2000	
Se	78	2	72	40.152	ppb	40.152	2.41	2466	2000	
(Se)	78	3	72	38.817	ppb	38.817	7.58	310	2000	
Sr	88	3	72	539.025	ppb	539.025	1.81	308854	4000	
Mo	95	3	115	41.625	ppb	41.625	1.78	21994	2000	
Ag	107	3	115	38.831	ppb	38.831	2.16	67363	100	
Cd	111	3	115	40.312	ppb	40.312	1.85	10177	2000	
Sn	120	3	115	42.391	ppb	42.391	2.53	32104	2000	
Sb	121	3	115	41.839	ppb	41.839	2.30	31583	1000	
Ba	137	3	115	581.461	ppb	581.461	1.66	138095	5000	
Tl	205	3	193	40.800	ppb	40.800	1.70	146955	2000	
(Pb)	206	3	193	41.139	ppb	41.139	1.13	49515	100	
(Pb)	207	3	193	40.670	ppb	40.670	2.03	43349	100	
Pb	208	3	193	40.971	ppb	40.971	0.60	198862	5000	
Th	232	3	193	42.256	ppb	42.256	0.22	208501	2000	
U	238	3	193	41.749	ppb	41.749	0.62	214037	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4272913	0.78	4299393	99.38	60	120	
Sc (IS)	45	3	HMI He	665669	0.39	674661	98.67	60	120	
Ge Internal standard	72	2	HMI H2	2349811	1.44	2269722	103.53	60	120	
Ge Internal standard	72	3	HMI He	784049	0.65	739017	106.09	60	120	
In Internal Standard	115	3	HMI He	2548812	2.49	2543041	100.23	60	120	
Ir (IS)	193	3	HMI He	5441746	0.93	5570851	97.68	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C pds
Data File Name	117SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:05:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	206.727	ppb	206.727	1.99	11307	2000	
Na	23	3	45	529470.594	ppb	529470.594	1.48	67328778	400000	
Mg	24	3	45	525.166	ppb	525.166	1.53	35587	400000	
Al	27	3	45	2150.840	ppb	2150.840	0.50	51729	400000	
K	39	3	45	2285.784	ppb	2285.784	1.53	136552	400000	
Ca	40	2	45	2311.509	ppb	2311.509	1.36	1384255	400000	
V	51	3	72	203.644	ppb	203.644	1.36	130891	2000	
Cr	52	3	72	201.291	ppb	201.291	1.25	167970	5000	
Mn	55	3	72	212.794	ppb	212.794	3.31	92770	10000	
Fe	56	2	72	428.784	ppb	428.784	0.47	674820	10000	
Co	59	3	72	200.217	ppb	200.217	0.93	268435	2000	
Ni	60	3	72	193.351	ppb	193.351	2.68	72471	5000	
Cu	63	3	72	203.013	ppb	203.013	1.04	204545	5000	
Zn	66	3	72	219.561	ppb	219.561	3.11	38107	5000	
As	75	3	72	204.516	ppb	204.516	0.86	24339	2000	
Se	78	2	72	203.126	ppb	203.126	0.80	12364	2000	
(Se)	78	3	72	211.351	ppb	211.351	2.00	1573	2000	
Sr	88	3	72	672.948	ppb	672.948	1.16	373404	4000	
Mo	95	3	115	207.573	ppb	207.573	1.58	108109	2000	
Ag	107	3	115	50.763	ppb	50.763	0.80	86988	100	
Cd	111	3	115	204.669	ppb	204.669	1.41	51018	2000	
Sn	120	3	115	214.380	ppb	214.380	1.04	157766	2000	
Sb	121	3	115	217.477	ppb	217.477	1.98	161890	1000	
Ba	137	3	115	756.019	ppb	756.019	2.03	177336	5000	
Tl	205	3	193	208.757	ppb	208.757	1.32	737955	2000	
(Pb)	206	3	193	212.733	ppb	212.733	2.04	251115	100	
(Pb)	207	3	193	208.529	ppb	208.529	0.42	217156	100	
Pb	208	3	193	211.123	ppb	211.123	1.18	1004135	5000	
Th	232	3	193	358.309	ppb	358.309	2.10	1708537	2000	
U	238	3	193	228.927	ppb	228.927	0.92	1147576	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4296786	2.37	4299393	99.94	60	120	
Sc (IS)	45	3	HMI He	661257	0.81	674661	98.01	60	120	
Ge Internal standard	72	2	HMI H2	2329074	1.20	2269722	102.61	60	120	
Ge Internal standard	72	3	HMI He	759321	1.78	739017	102.75	60	120	
In Internal Standard	115	3	HMI He	2517218	1.26	2543041	98.98	60	120	
Ir (IS)	193	3	HMI He	5352287	0.95	5570851	96.08	60	120	

Sample Report

Sample Table

Sample Name	280-171461-A-1-C
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:06:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	173.58	3	2000	
Na	23	3	45	2617.763	ppb	2617.763	1.12	370066	400000	
Mg	24	3	45	10749.263	ppb	10749.263	3.02	741995	400000	
Al	27	3	45	4.480	ppb	4.480	33.48	177	400000	
K	39	3	45	1274.699	ppb	1274.699	0.89	87310	400000	
Ca	40	2	45	25257.920	ppb	25257.920	1.59	15202834	400000	
V	51	3	72	0.491	ppb	0.491	19.56	486	2000	
Cr	52	3	72	0.041	ppb	0.041	538.44	1851	5000	
Mn	55	3	72	-0.242	ppb	-0.242	-23.11	453	10000	
Fe	56	2	72	33.701	ppb	33.701	1.05	64802	10000	
Co	59	3	72	0.010	ppb	0.010	25.23	53	2000	
Ni	60	3	72	0.017	ppb	0.017	645.45	205	5000	
Cu	63	3	72	0.386	ppb	0.386	25.64	936	5000	
Zn	66	3	72	9.262	ppb	9.262	14.87	1793	5000	
As	75	3	72	0.209	ppb	0.209	86.82	63	2000	
Se	78	2	72	0.405	ppb	0.405	5.54	27	2000	
(Se)	78	3	72	0.753	ppb	0.753	216.98	20	2000	
Sr	88	3	72	295.537	ppb	295.537	3.37	167283	4000	
Mo	95	3	115	5.889	ppb	5.889	5.74	3254	2000	
Ag	107	3	115	0.002	ppb	0.002	184.87	27	100	
Cd	111	3	115	0.013	ppb	0.013	0.84	5	2000	
Sn	120	3	115	0.353	ppb	0.353	44.98	945	2000	
Sb	121	3	115	0.234	ppb	0.234	20.02	250	1000	
Ba	137	3	115	29.431	ppb	29.431	1.55	7245	5000	
Tl	205	3	193	-0.054	ppb	-0.054	-24.49	195	2000	
(Pb)	206	3	193	0.976	ppb	0.976	2.77	1363	100	
(Pb)	207	3	193	0.942	ppb	0.942	4.80	1383	100	
Pb	208	3	193	0.966	ppb	0.966	3.23	5663	5000	
Th	232	3	193	0.829	ppb	0.829	20.56	8232	2000	
U	238	3	193	1.181	ppb	1.181	1.52	7674	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4350378	1.15	4299393	101.19	60	120	
Sc (IS)	45	3	HMI He	676009	1.18	674661	100.20	60	120	
Ge Internal standard	72	2	HMI H2	2388633	1.51	2269722	105.24	60	120	
Ge Internal standard	72	3	HMI He	775085	3.72	739017	104.88	60	120	
In Internal Standard	115	3	HMI He	2623909	0.56	2543041	103.18	60	120	
Ir (IS)	193	3	HMI He	5524514	1.83	5570851	99.17	60	120	

Sample Report

Sample Table

Sample Name	280-171491-A-1-B
Data File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:08:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	43960.558	ppb	43960.558	1.80	5706031	400000	
Mg	24	3	45	64119.019	ppb	64119.019	2.13	4398111	400000	
Al	27	3	45	35.290	ppb	35.290	6.54	928	400000	
K	39	3	45	8200.425	ppb	8200.425	1.96	442714	400000	
Ca	40	2	45	382037.994	ppb	382037.994	2.20	230838609	400000	
V	51	3	72	0.432	ppb	0.432	10.75	441	2000	
Cr	52	3	72	1.300	ppb	1.300	18.10	2861	5000	
Mn	55	3	72	143.274	ppb	143.274	3.82	62778	10000	
Fe	56	2	72	329.647	ppb	329.647	2.01	512330	10000	
Co	59	3	72	0.331	ppb	0.331	2.04	485	2000	
Ni	60	3	72	0.859	ppb	0.859	15.43	518	5000	
Cu	63	3	72	1.337	ppb	1.337	3.59	1881	5000	
Zn	66	3	72	29.693	ppb	29.693	5.14	5303	5000	
As	75	3	72	0.213	ppb	0.213	79.47	63	2000	
Se	78	2	72	0.224	ppb	0.224	57.63	15	2000	
(Se)	78	3	72	2.637	ppb	2.637	78.14	33	2000	
Sr	88	3	72	1999.519	ppb	1999.519	3.08	1111868	4000	
Mo	95	3	115	0.414	ppb	0.414	17.24	285	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-200.94	17	100	
Cd	111	3	115	0.032	ppb	0.032	60.60	10	2000	
Sn	120	3	115	0.158	ppb	0.158	59.08	800	2000	
Sb	121	3	115	0.140	ppb	0.140	30.58	178	1000	
Ba	137	3	115	2.669	ppb	2.669	4.56	706	5000	
Tl	205	3	193	0.003	ppb	0.003	224.87	401	2000	
(Pb)	206	3	193	0.131	ppb	0.131	12.30	330	100	
(Pb)	207	3	193	0.125	ppb	0.125	33.49	501	100	
Pb	208	3	193	0.127	ppb	0.127	3.83	1534	5000	
Th	232	3	193	0.269	ppb	0.269	9.98	5442	2000	
U	238	3	193	0.488	ppb	0.488	9.23	4054	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4370614	1.33	4299393	101.66	60	120	
Sc (IS)	45	3	HMI He	671824	1.49	674661	99.58	60	120	
Ge Internal standard	72	2	HMI H2	2289087	1.29	2269722	100.85	60	120	
Ge Internal standard	72	3	HMI He	761236	2.86	739017	103.01	60	120	
In Internal Standard	115	3	HMI He	2638975	1.34	2543041	103.77	60	120	
Ir (IS)	193	3	HMI He	5474915	2.35	5570851	98.28	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	120_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:10:47-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.501	ppb	7.463	2836	50	99.0	90	110	
Na	23	3	45	50970.793	ppb	0.868	6572318	51000	99.9	90	110	
Mg	24	3	45	10933.038	ppb	1.415	745624	11000	99.4	90	110	
Al	27	3	45	1027.395	ppb	1.237	24987	1000	102.7	90	110	
K	39	3	45	10888.972	ppb	2.210	577451	11000	99.0	90	110	
Ca	40	2	45	11072.301	ppb	2.564	6718849	11000	100.7	90	110	
V	51	3	72	50.695	ppb	2.821	33200	50	101.4	90	110	
Cr	52	3	72	49.713	ppb	4.357	43466	50	99.4	90	110	
Mn	55	3	72	50.250	ppb	4.715	22667	50	100.5	90	110	
Fe	56	2	72	1037.359	ppb	3.463	1629754	1000	103.7	90	110	
Co	59	3	72	48.913	ppb	3.651	66589	50	97.8	90	110	
Ni	60	3	72	47.842	ppb	3.064	18355	50	95.7	90	110	
Cu	63	3	72	48.873	ppb	2.940	50393	50	97.7	90	110	
Zn	66	3	72	51.724	ppb	1.302	9244	50	103.4	90	110	
As	75	3	72	53.312	ppb	3.204	6468	50	106.6	90	110	
Se	78	2	72	51.370	ppb	0.811	3152	50	102.7	90	110	
(Se)	78	3	72	49.739	ppb	5.585	386	50	99.5	90	110	
Sr	88	3	72	103.969	ppb	2.877	58576	100	104.0	90	110	
Mo	95	3	115	50.239	ppb	3.445	27224	50	100.5	90	110	
Ag	107	3	115	49.455	ppb	1.859	88036	50	98.9	90	110	
Cd	111	3	115	50.691	ppb	3.058	13128	50	101.4	90	110	
Sn	120	3	115	51.917	ppb	1.689	40200	50	103.8	90	110	
Sb	121	3	115	51.954	ppb	1.113	40234	50	103.9	90	110	
Ba	137	3	115	53.043	ppb	2.079	12972	50	106.1	90	110	
Tl	205	3	193	52.099	ppb	2.922	189055	50	104.2	90	110	
(Pb)	206	3	193	52.073	ppb	2.302	63139	50	104.1	90	110	
(Pb)	207	3	193	51.942	ppb	2.054	55721	50	103.9	90	110	
Pb	208	3	193	52.005	ppb	1.678	254246	50	104.0	90	110	
Th	232	3	193	52.410	ppb	2.243	259719	50	104.8	90	110	
U	238	3	193	52.420	ppb	2.903	270507	50	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4381461	0.76	4299393	101.91	60	120	
Sc (IS)	45	3	HMI He	667778	0.65	674661	98.98	60	120	
Ge Internal standard	72	2	HMI H2	2347354	0.84	2269722	103.42	60	120	
Ge Internal standard	72	3	HMI He	771010	2.33	739017	104.33	60	120	
In Internal Standard	115	3	HMI He	2615133	1.28	2543041	102.83	60	120	
Ir (IS)	193	3	HMI He	5487449	1.99	5570851	98.50	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	121_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:12:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	57125.0	2	0.5	
Na	23	3	45	158.930	ppb	7.3	50289	25	>RL
Mg	24	3	45	3.499	ppb	28.1	370	25	
Al	27	3	45	7.243	ppb	40.1	244	15	
K	39	3	45	35.254	ppb	104.8	23056	50	
V	51	3	72	0.306	ppb	40.7	358	1	
Cr	52	3	72	-0.296	ppb	-29.4	1534	1	
Mn	55	3	72	-0.781	ppb	-6.4	210	0.5	
Co	59	3	72	-0.007	ppb	-151.1	30	0.5	
Ni	60	3	72	-0.138	ppb	-39.7	143	1	
Cu	63	3	72	-0.036	ppb	-144.6	495	1	
Zn	66	3	72	1.219	ppb	25.8	370	5	
As	75	3	72	0.007	ppb	1024.8	38	1	
Se	78	2	72	0.154	ppb	71.3	11	1	
(Se)	78	3	72	1.293	ppb	75.3	23	1	>RL
Sr	88	3	72	0.197	ppb	29.5	125	0.5	
Mo	95	3	115	0.006	ppb	955.4	62	0.5	
Ag	107	3	115	0.005	ppb	87.4	32	1	
Cd	111	3	115	0.000	ppb	12525.4	2	0.5	
Sn	120	3	115	-0.108	ppb	-83.6	593	1	
Sb	121	3	115	0.076	ppb	26.5	128	0.6	
Ba	137	3	115	-0.033	ppb	-140.5	42	0.5	
Tl	205	3	193	-0.076	ppb	-4.4	120	0.1	
(Pb)	206	3	193	-0.023	ppb	-170.9	148	1	
(Pb)	207	3	193	0.013	ppb	410.7	393	1	
Pb	208	3	193	-0.009	ppb	-109.7	900	0.5	
Th	232	3	193	0.409	ppb	32.8	6290	1	
U	238	3	193	0.025	ppb	40.2	1736	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4363640	1.29	4299393	101.49	60	120	
Sc (IS)	45	3	HMI He	672638	1.75	674661	99.70	60	120	
Ge Internal standard	72	2	HMI H2	2328497	2.52	2269722	102.59	60	120	
Ge Internal standard	72	3	HMI He	757706	2.22	739017	102.53	60	120	
In Internal Standard	115	3	HMI He	2626800	1.44	2543041	103.29	60	120	
Ir (IS)	193	3	HMI He	5634202	2.09	5570851	101.14	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	122LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:14:31-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.700	ppb	36.848	42	1	70.0	70	130	>+/-30%
Na	23	3	45	188.974	ppb	5.659	53263	50	377.9	70	130	>+/-30%
Mg	24	3	45	49.999	ppb	7.149	3504	50	100.0	70	130	
Al	27	3	45	50.895	ppb	1.488	1288	50	101.8	70	130	
K	39	3	45	128.700	ppb	30.142	27404	100	128.7	70	130	
V	51	3	72	5.150	ppb	2.797	3425	5	103.0	70	130	
Cr	52	3	72	1.704	ppb	2.706	3150	2	85.2	70	130	
Mn	55	3	72	0.340	ppb	45.925	688	1	34.0	70	130	>+/-30%
Co	59	3	72	0.993	ppb	5.725	1354	1	99.3	70	130	
Ni	60	3	72	2.068	ppb	7.018	956	2	103.4	70	130	
Cu	63	3	72	1.966	ppb	5.708	2477	2	98.3	70	130	
Zn	66	3	72	10.839	ppb	0.694	2009	10	108.4	70	130	
As	75	3	72	4.980	ppb	11.513	621	5	99.6	70	130	
Se	78	2	72	5.488	ppb	3.281	326	5	109.8	70	130	
(Se)	78	3	72	3.406	ppb	47.418	38	5	68.1	70	130	>+/-30%
Sr	88	3	72	1.131	ppb	12.025	635	1	113.1	70	130	
Mo	95	3	115	1.827	ppb	6.674	1048	2	91.4	70	130	
Ag	107	3	115	0.964	ppb	5.375	1739	1	96.4	70	130	
Cd	111	3	115	1.048	ppb	7.404	273	1	104.8	70	130	
Sn	120	3	115	9.805	ppb	3.217	8147	10	98.0	70	130	
Sb	121	3	115	2.105	ppb	4.872	1698	2	105.3	70	130	
Ba	137	3	115	1.006	ppb	2.812	295	1	100.6	70	130	
Tl	205	3	193	1.001	ppb	3.098	4050	1	100.1	70	130	
(Pb)	206	3	193	0.975	ppb	2.314	1363	1	97.5	70	130	
(Pb)	207	3	193	0.972	ppb	12.245	1416	1	97.2	70	130	
Pb	208	3	193	1.022	ppb	2.436	5943	1	102.2	70	130	
Th	232	3	193	2.079	ppb	5.019	14399	2	104.0	70	130	
U	238	3	193	1.053	ppb	1.917	7024	1	105.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4268825	0.82	4299393	99.29	60	120	
Sc (IS)	45	3	HMI He	661178	0.65	674661	98.00	60	120	
Ge Internal standard	72	2	HMI H2	2262975	1.08	2269722	99.70	60	120	
Ge Internal standard	72	3	HMI He	749815	0.86	739017	101.46	60	120	
In Internal Standard	115	3	HMI He	2617989	0.67	2543041	102.95	60	120	
Ir (IS)	193	3	HMI He	5531755	0.96	5570851	99.30	60	120	

Sample Report

Sample Table

Sample Name	280-171347-C-2-C
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	105846.345	ppb	105846.345	0.43	13439920	400000	
Mg	24	3	45	35361.185	ppb	35361.185	1.99	2379899	400000	
Al	27	3	45	137.908	ppb	137.908	1.85	3367	400000	
K	39	3	45	6374.008	ppb	6374.008	1.20	342290	400000	
Ca	40	2	45	94434.718	ppb	94434.718	0.55	55230872	400000	
V	51	3	72	1.235	ppb	1.235	41.90	978	2000	
Cr	52	3	72	25.383	ppb	25.383	1.96	23288	5000	
Mn	55	3	72	10.871	ppb	10.871	4.17	5388	10000	
Fe	56	2	72	284.417	ppb	284.417	1.20	448383	10000	
Co	59	3	72	0.570	ppb	0.570	2.75	823	2000	
Ni	60	3	72	14.543	ppb	14.543	3.36	5768	5000	
Cu	63	3	72	3.174	ppb	3.174	3.28	3812	5000	
Zn	66	3	72	4.322	ppb	4.322	9.13	930	5000	
As	75	3	72	0.217	ppb	0.217	75.76	65	2000	
Se	78	2	72	3.318	ppb	3.318	8.87	202	2000	
(Se)	78	3	72	4.971	ppb	4.971	73.17	52	2000	
Sr	88	3	72	992.330	ppb	992.330	1.33	563911	4000	
Mo	95	3	115	1.884	ppb	1.884	5.44	1076	2000	
Ag	107	3	115	0.008	ppb	0.008	79.67	37	100	
Cd	111	3	115	0.026	ppb	0.026	114.74	8	2000	
Sn	120	3	115	0.891	ppb	0.891	13.82	1349	2000	
Sb	121	3	115	0.136	ppb	0.136	28.44	173	1000	
Ba	137	3	115	24.670	ppb	24.670	2.79	6052	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-2.22	132	2000	
(Pb)	206	3	193	0.125	ppb	0.125	20.76	323	100	
(Pb)	207	3	193	0.109	ppb	0.109	53.93	483	100	
Pb	208	3	193	0.113	ppb	0.113	17.25	1461	5000	
Th	232	3	193	0.229	ppb	0.229	19.69	5235	2000	
U	238	3	193	12.617	ppb	12.617	3.77	66069	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4229202	1.17	4299393	98.37	60	120	
Sc (IS)	45	3	HMI He	659094	0.66	674661	97.69	60	120	
Ge Internal standard	72	2	HMI H2	2313838	0.56	2269722	101.94	60	120	
Ge Internal standard	72	3	HMI He	777567	0.25	739017	105.22	60	120	
In Internal Standard	115	3	HMI He	2611670	0.80	2543041	102.70	60	120	
Ir (IS)	193	3	HMI He	5468631	1.69	5570851	98.17	60	120	

Sample Report

Sample Table

Sample Name	280-171261-G-1-A
Data File Name	124SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:18:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4307.56	2	2000	
Na	23	3	45	62359.002	ppb	62359.002	3.47	8123612	400000	
Mg	24	3	45	45938.827	ppb	45938.827	2.53	3167692	400000	
Al	27	3	45	270.979	ppb	270.979	2.36	6715	400000	
K	39	3	45	4330.810	ppb	4330.810	3.09	245082	400000	
Ca	40	2	45	135654.126	ppb	135654.126	1.18	79447764	400000	
V	51	3	72	2.265	ppb	2.265	2.97	1629	2000	
Cr	52	3	72	1.583	ppb	1.583	19.29	3112	5000	
Mn	55	3	72	5.247	ppb	5.247	3.76	2846	10000	
Fe	56	2	72	293.190	ppb	293.190	2.45	460779	10000	
Co	59	3	72	0.157	ppb	0.157	26.24	252	2000	
Ni	60	3	72	0.721	ppb	0.721	13.51	468	5000	
Cu	63	3	72	1.369	ppb	1.369	10.30	1921	5000	
Zn	66	3	72	3.892	ppb	3.892	2.03	840	5000	
As	75	3	72	3.592	ppb	3.592	3.42	468	2000	
Se	78	2	72	0.308	ppb	0.308	41.96	20	2000	
(Se)	78	3	72	1.058	ppb	1.058	100.10	22	2000	
Sr	88	3	72	556.514	ppb	556.514	1.61	311103	4000	
Mo	95	3	115	0.943	ppb	0.943	7.95	560	2000	
Ag	107	3	115	0.156	ppb	0.156	13.61	297	100	
Cd	111	3	115	0.098	ppb	0.098	101.88	27	2000	
Sn	120	3	115	0.390	ppb	0.390	27.62	955	2000	
Sb	121	3	115	0.244	ppb	0.244	2.95	253	1000	
Ba	137	3	115	382.620	ppb	382.620	1.18	91944	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-12.37	130	2000	
(Pb)	206	3	193	0.313	ppb	0.313	7.09	551	100	
(Pb)	207	3	193	0.345	ppb	0.345	15.87	738	100	
Pb	208	3	193	0.313	ppb	0.313	6.02	2444	5000	
Th	232	3	193	0.201	ppb	0.201	27.78	5120	2000	
U	238	3	193	5.733	ppb	5.733	3.01	31010	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4235908	2.50	4299393	98.52	60	120	
Sc (IS)	45	3	HMI He	675474	2.45	674661	100.12	60	120	
Ge Internal standard	72	2	HMI H2	2308821	1.43	2269722	101.72	60	120	
Ge Internal standard	72	3	HMI He	764994	1.46	739017	103.52	60	120	
In Internal Standard	115	3	HMI He	2577933	0.86	2543041	101.37	60	120	
Ir (IS)	193	3	HMI He	5493531	1.92	5570851	98.61	60	120	

Sample Report

Sample Table

Sample Name	280-171261-G-2-A
Data File Name	125SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:20:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	167.81	3	2000	
Na	23	3	45	62847.870	ppb	62847.870	3.07	8150812	400000	
Mg	24	3	45	46476.108	ppb	46476.108	2.09	3190744	400000	
Al	27	3	45	237.572	ppb	237.572	4.10	5867	400000	
K	39	3	45	4386.664	ppb	4386.664	2.74	246896	400000	
Ca	40	2	45	137412.577	ppb	137412.577	1.86	82418222	400000	
V	51	3	72	2.065	ppb	2.065	7.06	1526	2000	
Cr	52	3	72	1.395	ppb	1.395	14.51	3009	5000	
Mn	55	3	72	4.441	ppb	4.441	3.46	2537	10000	
Fe	56	2	72	258.454	ppb	258.454	2.09	410886	10000	
Co	59	3	72	0.147	ppb	0.147	12.54	243	2000	
Ni	60	3	72	0.629	ppb	0.629	11.77	441	5000	
Cu	63	3	72	1.285	ppb	1.285	1.68	1869	5000	
Zn	66	3	72	4.177	ppb	4.177	11.40	905	5000	
As	75	3	72	3.114	ppb	3.114	17.09	418	2000	
Se	78	2	72	0.338	ppb	0.338	32.73	22	2000	
(Se)	78	3	72	0.130	ppb	0.130	539.30	15	2000	
Sr	88	3	72	558.352	ppb	558.352	2.15	317618	4000	
Mo	95	3	115	0.955	ppb	0.955	11.49	570	2000	
Ag	107	3	115	0.195	ppb	0.195	9.06	366	100	
Cd	111	3	115	0.363	ppb	0.363	20.85	95	2000	
Sn	120	3	115	-0.143	ppb	-0.143	-21.06	558	2000	
Sb	121	3	115	0.227	ppb	0.227	37.85	242	1000	
Ba	137	3	115	385.764	ppb	385.764	0.44	93223	5000	
Tl	205	3	193	-0.064	ppb	-0.064	-9.99	158	2000	
(Pb)	206	3	193	0.301	ppb	0.301	8.84	535	100	
(Pb)	207	3	193	0.316	ppb	0.316	3.17	705	100	
Pb	208	3	193	0.285	ppb	0.285	1.39	2302	5000	
Th	232	3	193	0.165	ppb	0.165	4.73	4934	2000	
U	238	3	193	5.773	ppb	5.773	3.13	31112	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337310	0.34	4299393	100.88	60	120	
Sc (IS)	45	3	HMI He	672438	1.72	674661	99.67	60	120	
Ge Internal standard	72	2	HMI H2	2327886	1.14	2269722	102.56	60	120	
Ge Internal standard	72	3	HMI He	778531	1.96	739017	105.35	60	120	
In Internal Standard	115	3	HMI He	2592274	0.58	2543041	101.94	60	120	
Ir (IS)	193	3	HMI He	5475298	1.81	5570851	98.28	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-1-B
Data File Name	126SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:22:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.003	ppb	0.003	1691.62	2	2000	
Na	23	3	45	11822171.708	ppb	11822171.708	1.14	1651482838	400000	>LDR
Mg	24	3	45	192597.528	ppb	192597.528	1.50	14291558	400000	
Al	27	3	45	48.460	ppb	48.460	7.22	1351	400000	
K	39	3	45	6693097.446	ppb	6693097.446	0.58	372187381	400000	>LDR
Ca	40	2	45	16757.576	ppb	16757.576	1.30	10111381	400000	
V	51	3	72	91.978	ppb	91.978	1.07	62877	2000	
Cr	52	3	72	115.309	ppb	115.309	0.14	102997	5000	
Mn	55	3	72	113.201	ppb	113.201	1.30	52697	10000	
Fe	56	2	72	454.490	ppb	454.490	1.24	719438	10000	
Co	59	3	72	13.670	ppb	13.670	0.36	19504	2000	
Ni	60	3	72	44.285	ppb	44.285	0.69	17791	5000	
Cu	63	3	72	0.182	ppb	0.182	10.57	760	5000	
Zn	66	3	72	4.632	ppb	4.632	6.73	1021	5000	
As	75	3	72	46.415	ppb	46.415	5.16	5897	2000	
Se	78	2	72	2.000	ppb	2.000	7.03	124	2000	
(Se)	78	3	72	4.296	ppb	4.296	59.21	48	2000	
Sr	88	3	72	1760.400	ppb	1760.400	1.29	1037326	4000	
Mo	95	3	115	2.647	ppb	2.647	9.49	1376	2000	
Ag	107	3	115	0.005	ppb	0.005	97.97	28	100	
Cd	111	3	115	0.050	ppb	0.050	107.00	13	2000	
Sn	120	3	115	2.195	ppb	2.195	5.00	2164	2000	
Sb	121	3	115	4.304	ppb	4.304	1.75	3135	1000	
Ba	137	3	115	1607.924	ppb	1607.924	0.55	361778	5000	
Tl	205	3	193	-0.042	ppb	-0.042	-28.37	183	2000	
(Pb)	206	3	193	0.151	ppb	0.151	25.96	273	100	
(Pb)	207	3	193	0.155	ppb	0.155	27.96	411	100	
Pb	208	3	193	0.142	ppb	0.142	9.04	1239	5000	
Th	232	3	193	0.136	ppb	0.136	32.52	3694	2000	
U	238	3	193	0.052	ppb	0.052	79.23	1408	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4358726	0.78	4299393	101.38	60	120	
Sc (IS)	45	3	HMI He	726678	0.24	674661	107.71	60	120	
Ge Internal standard	72	2	HMI H2	2344805	1.13	2269722	103.31	60	120	
Ge Internal standard	72	3	HMI He	806326	0.88	739017	109.11	60	120	
In Internal Standard	115	3	HMI He	2414628	1.04	2543041	94.95	60	120	
Ir (IS)	193	3	HMI He	4223647	1.02	5570851	75.82	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-2-B
Data File Name	127SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:23:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.003	ppb	0.003	1927.24	2	2000	
Na	23	3	45	8485386.028	ppb	8485386.028	3.06	1228718008	400000	>LDR
Mg	24	3	45	107264.039	ppb	107264.039	1.25	8251521	400000	
Al	27	3	45	54.338	ppb	54.338	3.44	1562	400000	
K	39	3	45	3913472.210	ppb	3913472.210	2.43	225600047	400000	>LDR
Ca	40	2	45	103258.470	ppb	103258.470	2.61	64499491	400000	
V	51	3	72	166.087	ppb	166.087	2.55	116752	2000	
Cr	52	3	72	149.857	ppb	149.857	2.08	137232	5000	
Mn	55	3	72	151.157	ppb	151.157	2.88	72239	10000	
Fe	56	2	72	2976.683	ppb	2976.683	2.34	4773009	10000	
Co	59	3	72	8.400	ppb	8.400	4.62	12353	2000	
Ni	60	3	72	37.847	ppb	37.847	3.91	15681	5000	
Cu	63	3	72	0.092	ppb	0.092	104.95	681	5000	
Zn	66	3	72	39.601	ppb	39.601	3.11	7663	5000	
As	75	3	72	92.328	ppb	92.328	2.16	12038	2000	
Se	78	2	72	1.642	ppb	1.642	3.14	105	2000	
(Se)	78	3	72	1.247	ppb	1.247	90.27	25	2000	
Sr	88	3	72	2080.261	ppb	2080.261	3.08	1261928	4000	
Mo	95	3	115	2.566	ppb	2.566	4.59	1391	2000	
Ag	107	3	115	0.028	ppb	0.028	49.78	70	100	
Cd	111	3	115	0.014	ppb	0.014	148.00	5	2000	
Sn	120	3	115	2.732	ppb	2.732	3.28	2649	2000	
Sb	121	3	115	1.399	ppb	1.399	8.55	1106	1000	
Ba	137	3	115	2946.831	ppb	2946.831	1.24	691013	5000	
Tl	205	3	193	0.000	ppb	0.000	1609.40	322	2000	
(Pb)	206	3	193	0.159	ppb	0.159	19.55	300	100	
(Pb)	207	3	193	0.170	ppb	0.170	34.70	451	100	
Pb	208	3	193	0.167	ppb	0.167	18.32	1421	5000	
Th	232	3	193	0.130	ppb	0.130	4.09	3922	2000	
U	238	3	193	0.093	ppb	0.093	24.04	1678	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4516907	0.19	4299393	105.06	60	120	
Sc (IS)	45	3	HMI He	753379	0.95	674661	111.67	60	120	
Ge Internal standard	72	2	HMI H2	2406890	1.14	2269722	106.04	60	120	
Ge Internal standard	72	3	HMI He	830475	2.62	739017	112.38	60	120	
In Internal Standard	115	3	HMI He	2516945	1.53	2543041	98.97	60	120	
Ir (IS)	193	3	HMI He	4510939	2.68	5570851	80.97	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-3-B
Data File Name	128SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:25:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2449940.249	ppb	2449940.249	0.75	382143981	400000	>LDR
Mg	24	3	45	228901.529	ppb	228901.529	0.43	18965750	400000	
Al	27	3	45	48.081	ppb	48.081	9.28	1498	400000	
K	39	3	45	814109.188	ppb	814109.188	1.35	50565130	400000	
Ca	40	2	45	649958.598	ppb	649958.598	3.30	434250162	400000	
V	51	3	72	2.734	ppb	2.734	1.93	2207	2000	
Cr	52	3	72	5.273	ppb	5.273	4.57	7063	5000	
Mn	55	3	72	1353.318	ppb	1353.318	1.67	675939	10000	
Fe	56	2	72	683.860	ppb	683.860	3.70	1167707	10000	
Co	59	3	72	4.487	ppb	4.487	2.86	6968	2000	
Ni	60	3	72	54.053	ppb	54.053	3.54	23483	5000	
Cu	63	3	72	61.866	ppb	61.866	1.76	72176	5000	
Zn	66	3	72	26.781	ppb	26.781	3.50	5513	5000	
As	75	3	72	5.634	ppb	5.634	12.53	813	2000	
Se	78	2	72	1.078	ppb	1.078	24.20	73	2000	
(Se)	78	3	72	1.464	ppb	1.464	57.80	28	2000	
Sr	88	3	72	6362.768	ppb	6362.768	2.31	4063707	4000	
Mo	95	3	115	2.407	ppb	2.407	8.38	1389	2000	
Ag	107	3	115	0.006	ppb	0.006	146.49	33	100	
Cd	111	3	115	0.259	ppb	0.259	39.55	70	2000	
Sn	120	3	115	0.400	ppb	0.400	15.29	998	2000	
Sb	121	3	115	1.332	ppb	1.332	4.18	1121	1000	
Ba	137	3	115	1146.017	ppb	1146.017	2.91	284911	5000	
Tl	205	3	193	-0.039	ppb	-0.039	-54.26	230	2000	
(Pb)	206	3	193	0.480	ppb	0.480	2.59	693	100	
(Pb)	207	3	193	0.417	ppb	0.417	19.23	750	100	
Pb	208	3	193	0.455	ppb	0.455	1.13	2885	5000	
Th	232	3	193	0.080	ppb	0.080	48.25	4167	2000	
U	238	3	193	0.415	ppb	0.415	3.79	3399	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4835105	3.07	4299393	112.46	60	120	
Sc (IS)	45	3	HMI He	811392	1.17	674661	120.27	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2544335	3.36	2269722	112.10	60	120	
Ge Internal standard	72	3	HMI He	874137	1.78	739017	118.28	60	120	
In Internal Standard	115	3	HMI He	2669391	3.01	2543041	104.97	60	120	
Ir (IS)	193	3	HMI He	5051684	1.74	5570851	90.68	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-5-B
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:27:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	-15927.80	2	2000	
Na	23	3	45	6656269.011	ppb	6656269.011	0.89	996149715	400000	>LDR
Mg	24	3	45	133208.190	ppb	133208.190	0.89	10589801	400000	
Al	27	3	45	227.437	ppb	227.437	9.99	6505	400000	
K	39	3	45	2823998.915	ppb	2823998.915	1.99	168233648	400000	>LDR
Ca	40	2	45	93075.625	ppb	93075.625	2.52	63628802	400000	
V	51	3	72	41.882	ppb	41.882	2.79	30929	2000	
Cr	52	3	72	22.853	ppb	22.853	1.38	23618	5000	
Mn	55	3	72	171.261	ppb	171.261	1.21	85526	10000	
Fe	56	2	72	13016.136	ppb	13016.136	0.34	22212835	10000	
Co	59	3	72	7.498	ppb	7.498	0.77	11539	2000	
Ni	60	3	72	51.945	ppb	51.945	2.48	22430	5000	
Cu	63	3	72	0.213	ppb	0.213	15.58	853	5000	
Zn	66	3	72	6.612	ppb	6.612	3.46	1491	5000	
As	75	3	72	97.664	ppb	97.664	2.57	13313	2000	
Se	78	2	72	1.499	ppb	1.499	7.62	102	2000	
(Se)	78	3	72	1.699	ppb	1.699	37.53	30	2000	
Sr	88	3	72	2237.337	ppb	2237.337	1.88	1419524	4000	
Mo	95	3	115	1.296	ppb	1.296	6.01	783	2000	
Ag	107	3	115	0.005	ppb	0.005	175.19	32	100	
Cd	111	3	115	0.012	ppb	0.012	150.03	5	2000	
Sn	120	3	115	1.549	ppb	1.549	6.64	1908	2000	
Sb	121	3	115	3.974	ppb	3.974	6.36	3235	1000	
Ba	137	3	115	3526.356	ppb	3526.356	1.87	885268	5000	
Tl	205	3	193	-0.046	ppb	-0.046	-11.65	192	2000	
(Pb)	206	3	193	0.338	ppb	0.338	5.54	500	100	
(Pb)	207	3	193	0.311	ppb	0.311	11.67	601	100	
Pb	208	3	193	0.326	ppb	0.326	8.01	2154	5000	
Th	232	3	193	0.190	ppb	0.190	16.52	4352	2000	
U	238	3	193	0.059	ppb	0.059	33.75	1601	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4944210	1.47	4299393	115.00	60	120	
Sc (IS)	45	3	HMI He	778544	1.13	674661	115.40	60	120	
Ge Internal standard	72	2	HMI H2	2565925	0.87	2269722	113.05	60	120	
Ge Internal standard	72	3	HMI He	868248	1.26	739017	117.49	60	120	
In Internal Standard	115	3	HMI He	2695189	2.73	2543041	105.98	60	120	
Ir (IS)	193	3	HMI He	4711460	2.51	5570851	84.57	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-6-B
Data File Name	130SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:29:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	166.51	3	2000	
Na	23	3	45	7599393.029	ppb	7599393.029	0.67	1122801575	400000	>LDR
Mg	24	3	45	23260.841	ppb	23260.841	1.38	1825679	400000	
Al	27	3	45	31.805	ppb	31.805	20.51	964	400000	
K	39	3	45	2924820.325	ppb	2924820.325	1.28	172034342	400000	>LDR
Ca	40	2	45	17631.355	ppb	17631.355	0.88	11654282	400000	
V	51	3	72	43.023	ppb	43.023	1.64	31737	2000	
Cr	52	3	72	44.955	ppb	44.955	0.55	44440	5000	
Mn	55	3	72	74.230	ppb	74.230	3.24	37382	10000	
Fe	56	2	72	470.450	ppb	470.450	1.93	808459	10000	
Co	59	3	72	6.527	ppb	6.527	5.41	10039	2000	
Ni	60	3	72	58.697	ppb	58.697	3.26	25289	5000	
Cu	63	3	72	0.864	ppb	0.864	8.86	1601	5000	
Zn	66	3	72	4.522	ppb	4.522	13.75	1078	5000	
As	75	3	72	56.382	ppb	56.382	3.65	7697	2000	
Se	78	2	72	1.269	ppb	1.269	8.21	86	2000	
(Se)	78	3	72	2.703	ppb	2.703	69.84	38	2000	
Sr	88	3	72	391.074	ppb	391.074	1.13	247917	4000	
Mo	95	3	115	3.200	ppb	3.200	7.61	1798	2000	
Ag	107	3	115	0.000	ppb	0.000	367.02	23	100	
Cd	111	3	115	0.051	ppb	0.051	35.56	15	2000	
Sn	120	3	115	0.845	ppb	0.845	10.94	1323	2000	
Sb	121	3	115	8.349	ppb	8.349	3.50	6560	1000	
Ba	137	3	115	1335.543	ppb	1335.543	1.96	327233	5000	
Tl	205	3	193	-0.055	ppb	-0.055	-34.21	158	2000	
(Pb)	206	3	193	0.461	ppb	0.461	3.67	608	100	
(Pb)	207	3	193	0.390	ppb	0.390	25.70	653	100	
Pb	208	3	193	0.410	ppb	0.410	7.86	2431	5000	
Th	232	3	193	0.125	ppb	0.125	38.81	3955	2000	
U	238	3	193	0.263	ppb	0.263	18.74	2424	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4775354	0.31	4299393	111.07	60	120	
Sc (IS)	45	3	HMI He	768571	0.40	674661	113.92	60	120	
Ge Internal standard	72	2	HMI H2	2547137	1.24	2269722	112.22	60	120	
Ge Internal standard	72	3	HMI He	867451	1.46	739017	117.38	60	120	
In Internal Standard	115	3	HMI He	2630036	1.95	2543041	103.42	60	120	
Ir (IS)	193	3	HMI He	4572857	2.07	5570851	82.09	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	131_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:31:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.912	ppb	2.834	3224	50	101.8	90	110	
Na	23	3	45	53142.667	ppb	1.970	8474975	51000	104.2	90	110	
Mg	24	3	45	10666.853	ppb	3.754	899756	11000	97.0	90	110	
Al	27	3	45	1013.424	ppb	2.815	30490	1000	101.3	90	110	
K	39	3	45	12955.774	ppb	3.797	844932	11000	117.8	90	110	>+\-10%
Ca	40	2	45	11219.978	ppb	1.711	7937338	11000	102.0	90	110	
V	51	3	72	52.659	ppb	2.261	39449	50	105.3	90	110	
Cr	52	3	72	50.502	ppb	1.224	50498	50	101.0	90	110	
Mn	55	3	72	51.678	ppb	0.427	26657	50	103.4	90	110	
Fe	56	2	72	1068.296	ppb	0.894	1888922	1000	106.8	90	110	
Co	59	3	72	48.919	ppb	1.320	76209	50	97.8	90	110	
Ni	60	3	72	47.918	ppb	1.964	21035	50	95.8	90	110	
Cu	63	3	72	48.168	ppb	2.434	56835	50	96.3	90	110	
Zn	66	3	72	50.746	ppb	2.723	10374	50	101.5	90	110	
As	75	3	72	53.133	ppb	3.317	7377	50	106.3	90	110	
Se	78	2	72	50.991	ppb	1.308	3522	50	102.0	90	110	
(Se)	78	3	72	57.451	ppb	11.307	508	50	114.9	90	110	>+\-10%
Sr	88	3	72	105.811	ppb	2.046	68204	100	105.8	90	110	
Mo	95	3	115	48.768	ppb	0.947	29469	50	97.5	90	110	
Ag	107	3	115	47.465	ppb	1.914	94182	50	94.9	90	110	
Cd	111	3	115	48.234	ppb	0.705	13927	50	96.5	90	110	
Sn	120	3	115	51.179	ppb	2.144	44183	50	102.4	90	110	
Sb	121	3	115	50.983	ppb	2.121	44017	50	102.0	90	110	
Ba	137	3	115	52.037	ppb	1.088	14187	50	104.1	90	110	
Tl	205	3	193	52.451	ppb	3.119	186063	50	104.9	90	110	
(Pb)	206	3	193	53.948	ppb	1.619	63947	50	107.9	90	110	
(Pb)	207	3	193	52.720	ppb	3.904	55266	50	105.4	90	110	
Pb	208	3	193	53.453	ppb	2.953	255397	50	106.9	90	110	
Th	232	3	193	52.620	ppb	2.657	254871	50	105.2	90	110	
U	238	3	193	52.558	ppb	3.088	265131	50	105.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5107853	1.27	4299393	118.80	60	120	
Sc (IS)	45	3	HMI He	826074	0.99	674661	122.44	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2642566	0.83	2269722	116.43	60	120	
Ge Internal standard	72	3	HMI He	881811	0.60	739017	119.32	60	120	
In Internal Standard	115	3	HMI He	2915014	1.33	2543041	114.63	60	120	
Ir (IS)	193	3	HMI He	5364475	2.05	5570851	96.30	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	132_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:33:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.002	ppb	-2359.6	2	0.5	
Na	23	3	45	2041.483	ppb	2.0	337207	25	>RL
Mg	24	3	45	8.644	ppb	12.2	831	25	
Al	27	3	45	7.377	ppb	14.9	284	15	
K	39	3	45	1272.104	ppb	5.2	99587	50	>RL
V	51	3	72	0.354	ppb	4.6	428	1	
Cr	52	3	72	-0.335	ppb	-75.4	1653	1	
Mn	55	3	72	-0.661	ppb	-8.5	288	0.5	
Co	59	3	72	-0.010	ppb	-86.1	28	0.5	
Ni	60	3	72	-0.214	ppb	-20.3	127	1	
Cu	63	3	72	0.000	ppb	22723.7	585	1	
Zn	66	3	72	1.010	ppb	19.3	368	5	
As	75	3	72	0.194	ppb	14.7	67	1	
Se	78	2	72	0.107	ppb	87.7	9	1	
(Se)	78	3	72	2.044	ppb	34.4	32	1	>RL
Sr	88	3	72	0.191	ppb	29.5	133	0.5	
Mo	95	3	115	0.007	ppb	271.0	67	0.5	
Ag	107	3	115	0.000	ppb	-332.8	23	1	
Cd	111	3	115	0.006	ppb	371.8	3	0.5	
Sn	120	3	115	-0.158	ppb	-27.3	595	1	
Sb	121	3	115	0.075	ppb	39.6	137	0.6	
Ba	137	3	115	0.253	ppb	38.1	120	0.5	
Tl	205	3	193	-0.077	ppb	-13.0	110	0.1	
(Pb)	206	3	193	-0.012	ppb	-212.1	155	1	
(Pb)	207	3	193	-0.010	ppb	-473.1	350	1	
Pb	208	3	193	-0.015	ppb	-81.4	823	0.5	
Th	232	3	193	0.320	ppb	33.6	5567	1	
U	238	3	193	0.001	ppb	676.6	1529	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4826081	1.50	4299393	112.25	60	120	
Sc (IS)	45	3	HMI He	772228	0.47	674661	114.46	60	120	
Ge Internal standard	72	2	HMI H2	2543666	2.35	2269722	112.07	60	120	
Ge Internal standard	72	3	HMI He	834012	1.53	739017	112.85	60	120	
In Internal Standard	115	3	HMI He	2819871	0.79	2543041	110.89	60	120	
Ir (IS)	193	3	HMI He	5361894	1.51	5570851	96.25	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	133LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:35:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.064	ppb	26.486	68	1	106.4	70	130	
Na	23	3	45	1645.649	ppb	3.867	269532	50	3291.3	70	130	>+/-30%
Mg	24	3	45	55.210	ppb	5.111	4362	50	110.4	70	130	
Al	27	3	45	46.626	ppb	5.280	1341	50	93.3	70	130	
K	39	3	45	1071.775	ppb	5.797	84927	100	1071.8	70	130	>+/-30%
V	51	3	72	5.399	ppb	2.041	3900	5	108.0	70	130	
Cr	52	3	72	1.784	ppb	2.786	3500	2	89.2	70	130	
Mn	55	3	72	0.360	ppb	49.044	758	1	36.0	70	130	>+/-30%
Co	59	3	72	0.956	ppb	5.342	1421	1	95.6	70	130	
Ni	60	3	72	1.596	ppb	10.334	851	2	79.8	70	130	
Cu	63	3	72	1.837	ppb	6.046	2557	2	91.9	70	130	
Zn	66	3	72	10.251	ppb	4.116	2077	10	102.5	70	130	
As	75	3	72	4.625	ppb	4.252	631	5	92.5	70	130	
Se	78	2	72	4.946	ppb	4.293	325	5	98.9	70	130	
(Se)	78	3	72	5.288	ppb	39.111	57	5	105.8	70	130	
Sr	88	3	72	1.274	ppb	1.089	776	1	127.4	70	130	
Mo	95	3	115	1.836	ppb	8.185	1129	2	91.8	70	130	
Ag	107	3	115	0.959	ppb	6.477	1856	1	95.9	70	130	
Cd	111	3	115	0.977	ppb	10.323	273	1	97.7	70	130	
Sn	120	3	115	9.434	ppb	1.284	8437	10	94.3	70	130	
Sb	121	3	115	2.092	ppb	5.048	1811	2	104.6	70	130	
Ba	137	3	115	1.159	ppb	1.396	356	1	115.9	70	130	
Tl	205	3	193	0.923	ppb	3.848	3735	1	92.3	70	130	
(Pb)	206	3	193	1.056	ppb	2.637	1451	1	105.6	70	130	
(Pb)	207	3	193	1.080	ppb	6.479	1521	1	108.0	70	130	
Pb	208	3	193	1.052	ppb	2.866	6044	1	105.2	70	130	
Th	232	3	193	2.051	ppb	4.311	14151	2	102.6	70	130	
U	238	3	193	1.045	ppb	10.413	6922	1	104.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4722415	2.42	4299393	109.84	60	120	
Sc (IS)	45	3	HMI He	747933	2.89	674661	110.86	60	120	
Ge Internal standard	72	2	HMI H2	2506666	2.54	2269722	110.44	60	120	
Ge Internal standard	72	3	HMI He	816264	0.53	739017	110.45	60	120	
In Internal Standard	115	3	HMI He	2808424	1.03	2543041	110.44	60	120	
Ir (IS)	193	3	HMI He	5491906	2.36	5570851	98.58	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-7-B
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:37:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.088	ppb	0.088	59.44	7	2000	
Na	23	3	45	2881167.517	ppb	2881167.517	0.78	408079405	400000	>LDR
Mg	24	3	45	73290.209	ppb	73290.209	1.39	5513592	400000	
Al	27	3	45	474.922	ppb	474.922	2.20	12782	400000	
K	39	3	45	793248.063	ppb	793248.063	1.62	44737968	400000	
Ca	40	2	45	37324.159	ppb	37324.159	1.02	23945742	400000	
V	51	3	72	247.762	ppb	247.762	2.78	170903	2000	
Cr	52	3	72	218.989	ppb	218.989	3.36	195969	5000	
Mn	55	3	72	107.229	ppb	107.229	1.98	50495	10000	
Fe	56	2	72	6591.728	ppb	6591.728	1.72	10793616	10000	
Co	59	3	72	46.578	ppb	46.578	2.47	67068	2000	
Ni	60	3	72	196.360	ppb	196.360	0.73	79038	5000	
Cu	63	3	72	2.721	ppb	2.721	9.67	3504	5000	
Zn	66	3	72	105.809	ppb	105.809	2.23	19811	5000	
As	75	3	72	144.194	ppb	144.194	0.97	18438	2000	
Se	78	2	72	2.370	ppb	2.370	11.56	154	2000	
(Se)	78	3	72	4.018	ppb	4.018	21.11	47	2000	
Sr	88	3	72	1579.461	ppb	1579.461	3.56	940646	4000	
Mo	95	3	115	8.638	ppb	8.638	4.18	4747	2000	
Ag	107	3	115	0.011	ppb	0.011	38.66	42	100	
Cd	111	3	115	0.237	ppb	0.237	23.10	63	2000	
Sn	120	3	115	29.671	ppb	29.671	1.48	23349	2000	
Sb	121	3	115	6.915	ppb	6.915	2.79	5433	1000	
Ba	137	3	115	2498.010	ppb	2498.010	2.09	610749	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-6.28	132	2000	
(Pb)	206	3	193	2.270	ppb	2.270	5.57	2679	100	
(Pb)	207	3	193	2.348	ppb	2.348	7.06	2637	100	
Pb	208	3	193	2.274	ppb	2.274	4.28	11018	5000	
Th	232	3	193	0.161	ppb	0.161	32.74	4525	2000	
U	238	3	193	0.130	ppb	0.130	3.04	2047	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4637171	1.60	4299393	107.86	60	120	
Sc (IS)	45	3	HMI He	736760	1.03	674661	109.20	60	120	
Ge Internal standard	72	2	HMI H2	2461017	1.12	2269722	108.43	60	120	
Ge Internal standard	72	3	HMI He	815306	2.20	739017	110.32	60	120	
In Internal Standard	115	3	HMI He	2624318	1.09	2543041	103.20	60	120	
Ir (IS)	193	3	HMI He	5040274	1.04	5570851	90.48	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-8-B
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:38:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2005731.573	ppb	2005731.573	1.86	297102826	400000	>LDR
Mg	24	3	45	67499.168	ppb	67499.168	1.80	5310901	400000	
Al	27	3	45	159.243	ppb	159.243	4.27	4532	400000	
K	39	3	45	480406.660	ppb	480406.660	2.41	28345428	400000	
Ca	40	2	45	58005.155	ppb	58005.155	1.26	38125608	400000	
V	51	3	72	111.475	ppb	111.475	1.88	78598	2000	
Cr	52	3	72	106.194	ppb	106.194	1.00	98039	5000	
Mn	55	3	72	152.949	ppb	152.949	2.57	73254	10000	
Fe	56	2	72	6959.229	ppb	6959.229	2.05	11519290	10000	
Co	59	3	72	30.646	ppb	30.646	1.93	45072	2000	
Ni	60	3	72	137.317	ppb	137.317	2.95	56470	5000	
Cu	63	3	72	1.198	ppb	1.198	6.74	1903	5000	
Zn	66	3	72	31.990	ppb	31.990	1.46	6237	5000	
As	75	3	72	92.951	ppb	92.951	2.12	12144	2000	
Se	78	2	72	1.270	ppb	1.270	11.52	84	2000	
(Se)	78	3	72	1.233	ppb	1.233	52.43	25	2000	
Sr	88	3	72	1375.091	ppb	1375.091	3.88	835997	4000	
Mo	95	3	115	4.014	ppb	4.014	4.31	2256	2000	
Ag	107	3	115	0.007	ppb	0.007	41.52	35	100	
Cd	111	3	115	0.032	ppb	0.032	59.53	10	2000	
Sn	120	3	115	19.619	ppb	19.619	1.20	15793	2000	
Sb	121	3	115	3.017	ppb	3.017	0.97	2429	1000	
Ba	137	3	115	1692.172	ppb	1692.172	0.98	417162	5000	
Tl	205	3	193	-0.077	ppb	-0.077	-4.25	107	2000	
(Pb)	206	3	193	1.274	ppb	1.274	2.80	1613	100	
(Pb)	207	3	193	1.228	ppb	1.228	6.14	1578	100	
Pb	208	3	193	1.298	ppb	1.298	2.10	6811	5000	
Th	232	3	193	0.110	ppb	0.110	32.64	4397	2000	
U	238	3	193	0.084	ppb	0.084	24.68	1876	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4752436	1.14	4299393	110.54	60	120	
Sc (IS)	45	3	HMI He	770684	2.14	674661	114.23	60	120	
Ge Internal standard	72	2	HMI H2	2487728	0.43	2269722	109.60	60	120	
Ge Internal standard	72	3	HMI He	832148	1.41	739017	112.60	60	120	
In Internal Standard	115	3	HMI He	2645651	0.54	2543041	104.03	60	120	
Ir (IS)	193	3	HMI He	5162305	1.92	5570851	92.67	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-4-B
Data File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:40:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.026	ppb	0.026	181.75	3	2000	
Na	23	3	45	70594.701	ppb	70594.701	1.77	10312985	400000	
Mg	24	3	45	32119.437	ppb	32119.437	3.47	2484071	400000	
Al	27	3	45	10.392	ppb	10.392	20.54	360	400000	
K	39	3	45	8869.611	ppb	8869.611	2.22	538006	400000	
Ca	40	2	45	171654.003	ppb	171654.003	0.52	114023806	400000	
V	51	3	72	1.594	ppb	1.594	1.52	1313	2000	
Cr	52	3	72	0.289	ppb	0.289	27.29	2241	5000	
Mn	55	3	72	470.769	ppb	470.769	2.61	226523	10000	
Fe	56	2	72	38242.025	ppb	38242.025	0.98	64080616	10000	
Co	59	3	72	3.030	ppb	3.030	1.35	4542	2000	
Ni	60	3	72	6.296	ppb	6.296	3.56	2824	5000	
Cu	63	3	72	0.126	ppb	0.126	45.79	730	5000	
Zn	66	3	72	79.967	ppb	79.967	2.65	15481	5000	
As	75	3	72	6.709	ppb	6.709	2.40	925	2000	
Se	78	2	72	0.503	ppb	0.503	8.60	35	2000	
(Se)	78	3	72	1.604	ppb	1.604	57.07	28	2000	
Sr	88	3	72	1122.124	ppb	1122.124	2.16	689353	4000	
Mo	95	3	115	0.980	ppb	0.980	10.17	621	2000	
Ag	107	3	115	0.001	ppb	0.001	350.15	25	100	
Cd	111	3	115	0.011	ppb	0.011	270.29	5	2000	
Sn	120	3	115	0.221	ppb	0.221	45.14	888	2000	
Sb	121	3	115	0.238	ppb	0.238	9.40	267	1000	
Ba	137	3	115	535.832	ppb	535.832	2.21	137916	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-11.82	105	2000	
(Pb)	206	3	193	0.204	ppb	0.204	15.14	425	100	
(Pb)	207	3	193	0.140	ppb	0.140	12.38	526	100	
Pb	208	3	193	0.181	ppb	0.181	6.84	1824	5000	
Th	232	3	193	0.036	ppb	0.036	47.26	4380	2000	
U	238	3	193	1.529	ppb	1.529	5.71	9549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4803679	0.49	4299393	111.73	60	120	
Sc (IS)	45	3	HMI He	757716	2.58	674661	112.31	60	120	
Ge Internal standard	72	2	HMI H2	2520530	0.83	2269722	111.05	60	120	
Ge Internal standard	72	3	HMI He	840865	2.60	739017	113.78	60	120	
In Internal Standard	115	3	HMI He	2762290	2.15	2543041	108.62	60	120	
Ir (IS)	193	3	HMI He	5570110	1.44	5570851	99.99	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-4-Bsd@5
Data File Name	137SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:42:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	15552.193	ppb	15552.193	4.12	2016223	400000	
Mg	24	3	45	6560.900	ppb	6560.900	1.24	445431	400000	
Al	27	3	45	4.590	ppb	4.590	35.98	177	400000	
K	39	3	45	2085.576	ppb	2085.576	2.64	127081	400000	
Ca	40	2	45	33862.361	ppb	33862.361	3.46	20805911	400000	
V	51	3	72	0.722	ppb	0.722	13.93	633	2000	
Cr	52	3	72	0.025	ppb	0.025	316.56	1824	5000	
Mn	55	3	72	93.408	ppb	93.408	4.41	41481	10000	
Fe	56	2	72	7581.739	ppb	7581.739	1.54	12037615	10000	
Co	59	3	72	0.623	ppb	0.623	9.43	885	2000	
Ni	60	3	72	1.151	ppb	1.151	15.03	633	5000	
Cu	63	3	72	0.042	ppb	0.042	171.02	581	5000	
Zn	66	3	72	17.107	ppb	17.107	1.94	3152	5000	
As	75	3	72	1.461	ppb	1.461	20.62	213	2000	
Se	78	2	72	0.202	ppb	0.202	42.08	14	2000	
(Se)	78	3	72	0.612	ppb	0.612	236.40	18	2000	
Sr	88	3	72	223.435	ppb	223.435	1.96	125349	4000	
Mo	95	3	115	0.201	ppb	0.201	17.36	165	2000	
Ag	107	3	115	0.003	ppb	0.003	248.73	27	100	
Cd	111	3	115	0.013	ppb	0.013	2.35	5	2000	
Sn	120	3	115	0.118	ppb	0.118	72.47	751	2000	
Sb	121	3	115	0.144	ppb	0.144	58.28	177	1000	
Ba	137	3	115	106.722	ppb	106.722	3.04	25716	5000	
Tl	205	3	193	-0.073	ppb	-0.073	-15.46	125	2000	
(Pb)	206	3	193	0.021	ppb	0.021	87.29	193	100	
(Pb)	207	3	193	0.030	ppb	0.030	240.34	391	100	
Pb	208	3	193	0.020	ppb	0.020	49.61	993	5000	
Th	232	3	193	0.042	ppb	0.042	149.38	4240	2000	
U	238	3	193	0.318	ppb	0.318	3.23	3117	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4442253	1.47	4299393	103.32	60	120	
Sc (IS)	45	3	HMI He	664647	0.54	674661	98.52	60	120	
Ge Internal standard	72	2	HMI H2	2386372	0.28	2269722	105.14	60	120	
Ge Internal standard	72	3	HMI He	767712	1.73	739017	103.88	60	120	
In Internal Standard	115	3	HMI He	2581895	1.59	2543041	101.53	60	120	
Ir (IS)	193	3	HMI He	5357736	1.05	5570851	96.17	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-6-B
Data File Name	138SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:44:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-6058.17	2	2000	
Na	23	3	45	58190.089	ppb	58190.089	1.33	7552366	400000	
Mg	24	3	45	28116.979	ppb	28116.979	2.86	1930820	400000	
Al	27	3	45	6.700	ppb	6.700	32.85	230	400000	
K	39	3	45	6634.948	ppb	6634.948	1.23	362688	400000	
Ca	40	2	45	148595.606	ppb	148595.606	1.04	93775103	400000	
V	51	3	72	0.791	ppb	0.791	12.83	698	2000	
Cr	52	3	72	-0.033	ppb	-0.033	-608.63	1831	5000	
Mn	55	3	72	717.453	ppb	717.453	2.38	324773	10000	
Fe	56	2	72	22186.932	ppb	22186.932	0.51	35823219	10000	
Co	59	3	72	2.851	ppb	2.851	3.78	4025	2000	
Ni	60	3	72	5.148	ppb	5.148	5.53	2209	5000	
Cu	63	3	72	0.302	ppb	0.302	12.70	871	5000	
Zn	66	3	72	40.359	ppb	40.359	7.02	7437	5000	
As	75	3	72	4.321	ppb	4.321	5.07	575	2000	
Se	78	2	72	0.555	ppb	0.555	21.65	37	2000	
(Se)	78	3	72	1.159	ppb	1.159	127.18	23	2000	
Sr	88	3	72	909.080	ppb	909.080	1.43	525883	4000	
Mo	95	3	115	0.817	ppb	0.817	10.57	500	2000	
Ag	107	3	115	0.003	ppb	0.003	392.14	28	100	
Cd	111	3	115	0.006	ppb	0.006	174.22	3	2000	
Sn	120	3	115	0.116	ppb	0.116	63.25	760	2000	
Sb	121	3	115	0.300	ppb	0.300	23.18	300	1000	
Ba	137	3	115	429.906	ppb	429.906	2.59	104641	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-12.98	105	2000	
(Pb)	206	3	193	0.075	ppb	0.075	21.14	268	100	
(Pb)	207	3	193	0.084	ppb	0.084	69.20	466	100	
Pb	208	3	193	0.075	ppb	0.075	22.19	1308	5000	
Th	232	3	193	0.037	ppb	0.037	71.42	4402	2000	
U	238	3	193	1.718	ppb	1.718	1.70	10571	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4563826	1.81	4299393	106.15	60	120	
Sc (IS)	45	3	HMI He	672564	1.01	674661	99.69	60	120	
Ge Internal standard	72	2	HMI H2	2428239	0.54	2269722	106.98	60	120	
Ge Internal standard	72	3	HMI He	791660	1.89	739017	107.12	60	120	
In Internal Standard	115	3	HMI He	2612033	1.82	2543041	102.71	60	120	
Ir (IS)	193	3	HMI He	5588630	1.32	5570851	100.32	60	120	

Sample Report

Sample Table

Sample Name	280-171329-A-10-B
Data File Name	139SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:46:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	8159.92	2	2000	
Na	23	3	45	1290.216	ppb	1290.216	1.53	194781	400000	
Mg	24	3	45	36.762	ppb	36.762	11.15	2630	400000	
Al	27	3	45	29.102	ppb	29.102	9.00	771	400000	
K	39	3	45	440.917	ppb	440.917	5.24	43558	400000	
Ca	40	2	45	140.750	ppb	140.750	3.42	95543	400000	
V	51	3	72	0.398	ppb	0.398	15.89	410	2000	
Cr	52	3	72	0.744	ppb	0.744	19.91	2351	5000	
Mn	55	3	72	0.333	ppb	0.333	29.71	680	10000	
Fe	56	2	72	52.725	ppb	52.725	3.36	89896	10000	
Co	59	3	72	0.001	ppb	0.001	736.26	40	2000	
Ni	60	3	72	0.193	ppb	0.193	55.77	262	5000	
Cu	63	3	72	0.334	ppb	0.334	17.06	850	5000	
Zn	66	3	72	2.149	ppb	2.149	6.33	521	5000	
As	75	3	72	0.257	ppb	0.257	94.18	67	2000	
Se	78	2	72	0.112	ppb	0.112	77.81	8	2000	
(Se)	78	3	72	0.918	ppb	0.918	262.41	20	2000	
Sr	88	3	72	0.481	ppb	0.481	9.99	277	4000	
Mo	95	3	115	0.000	ppb	0.000	11534.94	58	2000	
Ag	107	3	115	0.000	ppb	0.000	-3563.82	22	100	
Cd	111	3	115	0.026	ppb	0.026	115.58	8	2000	
Sn	120	3	115	1.257	ppb	1.257	2.48	1626	2000	
Sb	121	3	115	0.130	ppb	0.130	4.89	168	1000	
Ba	137	3	115	1.670	ppb	1.670	14.59	455	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-13.25	125	2000	
(Pb)	206	3	193	0.435	ppb	0.435	5.91	713	100	
(Pb)	207	3	193	0.444	ppb	0.444	11.07	860	100	
Pb	208	3	193	0.436	ppb	0.436	5.83	3104	5000	
Th	232	3	193	0.015	ppb	0.015	261.46	4295	2000	
U	238	3	193	-0.013	ppb	-0.013	-135.48	1524	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4329950	0.62	4299393	100.71	60	120	
Sc (IS)	45	3	HMI He	666505	0.67	674661	98.79	60	120	
Ge Internal standard	72	2	HMI H2	2260738	1.86	2269722	99.60	60	120	
Ge Internal standard	72	3	HMI He	744251	1.90	739017	100.71	60	120	
In Internal Standard	115	3	HMI He	2609624	2.22	2543041	102.62	60	120	
Ir (IS)	193	3	HMI He	5599539	1.83	5570851	100.51	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	140_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:48:20-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.002	ppb	7.747	2707	50	96.0	90	110	
Na	23	3	45	51439.877	ppb	0.404	6573599	51000	100.9	90	110	
Mg	24	3	45	10791.809	ppb	1.015	729467	11000	98.1	90	110	
Al	27	3	45	1008.938	ppb	1.738	24322	1000	100.9	90	110	
K	39	3	45	11149.614	ppb	0.268	585553	11000	101.4	90	110	
Ca	40	2	45	11251.228	ppb	2.735	6720069	11000	102.3	90	110	
V	51	3	72	51.986	ppb	2.290	33420	50	104.0	90	110	
Cr	52	3	72	49.755	ppb	2.708	42714	50	99.5	90	110	
Mn	55	3	72	50.209	ppb	3.142	22237	50	100.4	90	110	
Fe	56	2	72	1085.760	ppb	3.004	1646258	1000	108.6	90	110	
Co	59	3	72	49.349	ppb	2.054	65965	50	98.7	90	110	
Ni	60	3	72	49.432	ppb	2.897	18612	50	98.9	90	110	
Cu	63	3	72	49.307	ppb	1.448	49911	50	98.6	90	110	
Zn	66	3	72	51.159	ppb	4.193	8973	50	102.3	90	110	
As	75	3	72	52.279	ppb	3.054	6228	50	104.6	90	110	
Se	78	2	72	50.260	ppb	3.840	2978	50	100.5	90	110	
(Se)	78	3	72	49.104	ppb	7.660	375	50	98.2	90	110	
Sr	88	3	72	105.901	ppb	2.553	58575	100	105.9	90	110	
Mo	95	3	115	49.882	ppb	1.709	27194	50	99.8	90	110	
Ag	107	3	115	49.175	ppb	0.769	88058	50	98.3	90	110	
Cd	111	3	115	49.971	ppb	2.142	13018	50	99.9	90	110	
Sn	120	3	115	51.605	ppb	1.674	40204	50	103.2	90	110	
Sb	121	3	115	51.447	ppb	1.199	40079	50	102.9	90	110	
Ba	137	3	115	51.725	ppb	0.959	12726	50	103.5	90	110	
Tl	205	3	193	51.176	ppb	2.628	185570	50	102.4	90	110	
(Pb)	206	3	193	51.214	ppb	2.156	62052	50	102.4	90	110	
(Pb)	207	3	193	51.262	ppb	1.458	54953	50	102.5	90	110	
Pb	208	3	193	51.100	ppb	1.625	249634	50	102.2	90	110	
Th	232	3	193	51.461	ppb	2.402	254873	50	102.9	90	110	
U	238	3	193	51.626	ppb	1.625	266260	50	103.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4313502	1.34	4299393	100.33	60	120	
Sc (IS)	45	3	HMI He	661825	0.12	674661	98.10	60	120	
Ge Internal standard	72	2	HMI H2	2266585	1.21	2269722	99.86	60	120	
Ge Internal standard	72	3	HMI He	756722	0.98	739017	102.40	60	120	
In Internal Standard	115	3	HMI He	2630397	0.77	2543041	103.44	60	120	
Ir (IS)	193	3	HMI He	5482778	1.66	5570851	98.42	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	141_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:50:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	168.7	3	0.5	
Na	23	3	45	512.649	ppb	2.6	94339	25	>RL
Mg	24	3	45	4.439	ppb	18.3	427	25	
Al	27	3	45	7.002	ppb	4.3	234	15	
K	39	3	45	281.112	ppb	9.8	35096	50	>RL
V	51	3	72	0.280	ppb	11.9	330	1	
Cr	52	3	72	-0.322	ppb	-7.9	1463	1	
Mn	55	3	72	-0.665	ppb	-9.5	252	0.5	
Co	59	3	72	-0.006	ppb	-4.7	30	0.5	
Ni	60	3	72	-0.110	ppb	-52.0	148	1	
Cu	63	3	72	-0.113	ppb	-8.9	403	1	
Zn	66	3	72	1.210	ppb	18.6	356	5	
As	75	3	72	0.250	ppb	62.2	65	1	
Se	78	2	72	0.087	ppb	117.4	7	1	
(Se)	78	3	72	0.246	ppb	492.3	15	1	
Sr	88	3	72	0.119	ppb	5.8	78	0.5	
Mo	95	3	115	-0.005	ppb	-791.0	55	0.5	
Ag	107	3	115	0.005	ppb	29.8	32	1	
Cd	111	3	115	-0.006	ppb	0.0	0	0.5	
Sn	120	3	115	-0.118	ppb	-53.2	578	1	
Sb	121	3	115	0.074	ppb	23.7	125	0.6	
Ba	137	3	115	0.107	ppb	20.1	75	0.5	
Tl	205	3	193	-0.071	ppb	-11.1	133	0.1	
(Pb)	206	3	193	-0.047	ppb	-42.6	115	1	
(Pb)	207	3	193	-0.020	ppb	-131.9	345	1	
Pb	208	3	193	-0.029	ppb	-72.4	768	0.5	
Th	232	3	193	0.351	ppb	24.8	5813	1	
U	238	3	193	0.013	ppb	119.6	1614	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4359938	2.07	4299393	101.41	60	120	
Sc (IS)	45	3	HMI He	660738	0.66	674661	97.94	60	120	
Ge Internal standard	72	2	HMI H2	2282190	3.60	2269722	100.55	60	120	
Ge Internal standard	72	3	HMI He	731917	1.25	739017	99.04	60	120	
In Internal Standard	115	3	HMI He	2595610	0.27	2543041	102.07	60	120	
Ir (IS)	193	3	HMI He	5447338	1.61	5570851	97.78	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	142LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:52:03-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.874	ppb	21.697	52	1	87.4	70	130	
Na	23	3	45	518.491	ppb	1.078	96042	50	1037.0	70	130	>+/-30%
Mg	24	3	45	51.997	ppb	8.770	3674	50	104.0	70	130	
Al	27	3	45	49.597	ppb	9.198	1268	50	99.2	70	130	
K	39	3	45	351.757	ppb	6.607	39060	100	351.8	70	130	>+/-30%
V	51	3	72	5.163	ppb	3.221	3462	5	103.3	70	130	
Cr	52	3	72	1.785	ppb	9.105	3242	2	89.2	70	130	
Mn	55	3	72	0.389	ppb	50.499	716	1	38.9	70	130	>+/-30%
Co	59	3	72	1.014	ppb	8.867	1391	1	101.4	70	130	
Ni	60	3	72	2.087	ppb	7.028	971	2	104.4	70	130	
Cu	63	3	72	1.998	ppb	5.088	2529	2	99.9	70	130	
Zn	66	3	72	10.786	ppb	5.560	2019	10	107.9	70	130	
As	75	3	72	5.281	ppb	12.330	661	5	105.6	70	130	
Se	78	2	72	5.313	ppb	9.844	323	5	106.3	70	130	
(Se)	78	3	72	5.395	ppb	14.298	53	5	107.9	70	130	
Sr	88	3	72	1.209	ppb	6.224	683	1	120.9	70	130	
Mo	95	3	115	1.846	ppb	11.914	1066	2	92.3	70	130	
Ag	107	3	115	0.999	ppb	6.063	1818	1	99.9	70	130	
Cd	111	3	115	1.179	ppb	4.215	310	1	117.9	70	130	
Sn	120	3	115	9.941	ppb	3.466	8315	10	99.4	70	130	
Sb	121	3	115	2.094	ppb	5.463	1703	2	104.7	70	130	
Ba	137	3	115	0.948	ppb	29.969	283	1	94.8	70	130	
Tl	205	3	193	0.935	ppb	7.213	3862	1	93.5	70	130	
(Pb)	206	3	193	1.031	ppb	4.765	1453	1	103.1	70	130	
(Pb)	207	3	193	1.080	ppb	9.784	1554	1	108.0	70	130	
Pb	208	3	193	1.042	ppb	8.524	6128	1	104.2	70	130	
Th	232	3	193	2.068	ppb	5.419	14556	2	103.4	70	130	
U	238	3	193	1.048	ppb	6.432	7104	1	104.8	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4389819	0.81	4299393	102.10	60	120	
Sc (IS)	45	3	HMI He	667396	1.25	674661	98.92	60	120	
Ge Internal standard	72	2	HMI H2	2317459	2.52	2269722	102.10	60	120	
Ge Internal standard	72	3	HMI He	756354	2.48	739017	102.35	60	120	
In Internal Standard	115	3	HMI He	2639356	1.98	2543041	103.79	60	120	
Ir (IS)	193	3	HMI He	5619864	3.36	5570851	100.88	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-G
Data File Name	143SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:53:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4356.41	2	2000	
Na	23	3	45	424.766	ppb	424.766	5.05	84021	400000	
Mg	24	3	45	4.280	ppb	4.280	7.11	420	400000	
Al	27	3	45	8.575	ppb	8.575	20.72	274	400000	
K	39	3	45	229.935	ppb	229.935	25.13	32815	400000	
Ca	40	2	45	34.825	ppb	34.825	3.62	31581	400000	
V	51	3	72	0.293	ppb	0.293	29.37	348	2000	
Cr	52	3	72	0.052	ppb	0.052	320.47	1813	5000	
Mn	55	3	72	-0.148	ppb	-0.148	-56.72	481	10000	
Fe	56	2	72	13.358	ppb	13.358	6.49	30738	10000	
Co	59	3	72	0.003	ppb	0.003	366.27	43	2000	
Ni	60	3	72	0.448	ppb	0.448	39.31	360	5000	
Cu	63	3	72	0.022	ppb	0.022	255.16	550	5000	
Zn	66	3	72	2.250	ppb	2.250	27.69	546	5000	
As	75	3	72	0.148	ppb	0.148	99.99	55	2000	
Se	78	2	72	0.079	ppb	0.079	43.33	6	2000	
(Se)	78	3	72	0.406	ppb	0.406	250.59	17	2000	
Sr	88	3	72	0.117	ppb	0.117	32.73	80	4000	
Mo	95	3	115	-0.001	ppb	-0.001	-3548.35	57	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-56.16	8	100	
Cd	111	3	115	0.006	ppb	0.006	172.51	3	2000	
Sn	120	3	115	0.235	ppb	0.235	78.04	846	2000	
Sb	121	3	115	0.044	ppb	0.044	27.09	102	1000	
Ba	137	3	115	0.321	ppb	0.321	35.26	127	5000	
Tl	205	3	193	-0.078	ppb	-0.078	-3.25	112	2000	
(Pb)	206	3	193	0.005	ppb	0.005	273.30	183	100	
(Pb)	207	3	193	-0.010	ppb	-0.010	-56.35	368	100	
Pb	208	3	193	-0.002	ppb	-0.002	-341.03	930	5000	
Th	232	3	193	0.090	ppb	0.090	9.09	4699	2000	
U	238	3	193	-0.027	ppb	-0.027	-44.57	1459	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4257925	0.99	4299393	99.04	60	120	
Sc (IS)	45	3	HMI He	667711	2.08	674661	98.97	60	120	
Ge Internal standard	72	2	HMI H2	2259734	1.60	2269722	99.56	60	120	
Ge Internal standard	72	3	HMI He	753879	1.10	739017	102.01	60	120	
In Internal Standard	115	3	HMI He	2595295	2.67	2543041	102.05	60	120	
Ir (IS)	193	3	HMI He	5631681	1.29	5570851	101.09	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-Gsd@5
Data File Name	144SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:55:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	422.384	ppb	422.384	2.34	81484	400000	
Mg	24	3	45	11.696	ppb	11.696	4.90	901	400000	
Al	27	3	45	4.054	ppb	4.054	27.29	160	400000	
K	39	3	45	241.239	ppb	241.239	13.66	32527	400000	
Ca	40	2	45	32.178	ppb	32.178	4.31	29771	400000	
V	51	3	72	0.385	ppb	0.385	23.86	385	2000	
Cr	52	3	72	-0.024	ppb	-0.024	-678.17	1656	5000	
Mn	55	3	72	-0.526	ppb	-0.526	-19.17	302	10000	
Fe	56	2	72	4.233	ppb	4.233	2.43	16650	10000	
Co	59	3	72	0.005	ppb	0.005	200.82	43	2000	
Ni	60	3	72	0.213	ppb	0.213	50.06	258	5000	
Cu	63	3	72	0.028	ppb	0.028	239.83	526	5000	
Zn	66	3	72	3.134	ppb	3.134	11.00	660	5000	
As	75	3	72	0.324	ppb	0.324	47.83	72	2000	
Se	78	2	72	0.012	ppb	0.012	292.22	2	2000	
(Se)	78	3	72	-0.178	ppb	-0.178	-235.29	12	2000	
Sr	88	3	72	0.212	ppb	0.212	12.32	125	4000	
Mo	95	3	115	0.000	ppb	0.000	-4704.01	58	2000	
Ag	107	3	115	0.001	ppb	0.001	349.65	25	100	
Cd	111	3	115	0.006	ppb	0.006	174.73	3	2000	
Sn	120	3	115	0.124	ppb	0.124	98.77	770	2000	
Sb	121	3	115	0.118	ppb	0.118	6.50	160	1000	
Ba	137	3	115	0.137	ppb	0.137	5.53	83	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-14.39	135	2000	
(Pb)	206	3	193	-0.017	ppb	-0.017	-123.56	153	100	
(Pb)	207	3	193	-0.010	ppb	-0.010	-472.59	361	100	
Pb	208	3	193	-0.029	ppb	-0.029	-44.32	781	5000	
Th	232	3	193	0.079	ppb	0.079	71.80	4559	2000	
U	238	3	193	-0.003	ppb	-0.003	-927.41	1556	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4222883	1.88	4299393	98.22	60	120	
Sc (IS)	45	3	HMI He	649697	1.33	674661	96.30	60	120	
Ge Internal standard	72	2	HMI H2	2207534	1.67	2269722	97.26	60	120	
Ge Internal standard	72	3	HMI He	713046	0.37	739017	96.49	60	120	
In Internal Standard	115	3	HMI He	2625204	1.34	2543041	103.23	60	120	
Ir (IS)	193	3	HMI He	5530560	1.15	5570851	99.28	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-H MS
Data File Name	145SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:57:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.653	ppb	38.653	1.31	2187	2000	
Na	23	3	45	1256.861	ppb	1256.861	0.77	190333	400000	
Mg	24	3	45	802.005	ppb	802.005	1.69	54660	400000	
Al	27	3	45	852.617	ppb	852.617	0.58	20689	400000	
K	39	3	45	1022.448	ppb	1022.448	1.80	73143	400000	
Ca	40	2	45	887.000	ppb	887.000	2.02	543636	400000	
V	51	3	72	42.329	ppb	42.329	1.21	27138	2000	
Cr	52	3	72	41.500	ppb	41.500	2.67	35776	5000	
Mn	55	3	72	41.420	ppb	41.420	2.34	18368	10000	
Fe	56	2	72	891.647	ppb	891.647	2.55	1371701	10000	
Co	59	3	72	41.135	ppb	41.135	2.61	54769	2000	
Ni	60	3	72	40.211	ppb	40.211	1.82	15117	5000	
Cu	63	3	72	41.283	ppb	41.283	1.51	41710	5000	
Zn	66	3	72	43.008	ppb	43.008	4.74	7537	5000	
As	75	3	72	42.712	ppb	42.712	5.78	5075	2000	
Se	78	2	72	42.315	ppb	42.315	1.54	2540	2000	
(Se)	78	3	72	41.579	ppb	41.579	10.22	318	2000	
Sr	88	3	72	84.416	ppb	84.416	2.71	46504	4000	
Mo	95	3	115	39.259	ppb	39.259	1.33	21815	2000	
Ag	107	3	115	39.355	ppb	39.355	1.99	71787	100	
Cd	111	3	115	39.632	ppb	39.632	6.08	10519	2000	
Sn	120	3	115	41.152	ppb	41.152	0.58	32792	2000	
Sb	121	3	115	41.287	ppb	41.287	1.01	32776	1000	
Ba	137	3	115	42.522	ppb	42.522	2.69	10666	5000	
Tl	205	3	193	41.593	ppb	41.593	3.48	154741	2000	
(Pb)	206	3	193	41.745	ppb	41.745	2.88	51902	100	
(Pb)	207	3	193	41.344	ppb	41.344	4.48	45509	100	
Pb	208	3	193	41.604	ppb	41.604	3.41	208575	5000	
Th	232	3	193	41.334	ppb	41.334	3.82	210750	2000	
U	238	3	193	41.321	ppb	41.321	2.85	218857	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4341184	1.19	4299393	100.97	60	120	
Sc (IS)	45	3	HMI He	665858	0.29	674661	98.70	60	120	
Ge Internal standard	72	2	HMI H2	2295903	1.27	2269722	101.15	60	120	
Ge Internal standard	72	3	HMI He	753854	2.29	739017	102.01	60	120	
In Internal Standard	115	3	HMI He	2679249	0.55	2543041	105.36	60	120	
Ir (IS)	193	3	HMI He	5623867	2.37	5570851	100.95	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-I MSD
Data File Name	146SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:59:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.331	ppb	38.331	2.52	2164	2000	
Na	23	3	45	1312.260	ppb	1312.260	1.37	196634	400000	
Mg	24	3	45	795.674	ppb	795.674	2.08	54010	400000	
Al	27	3	45	852.183	ppb	852.183	3.66	20593	400000	
K	39	3	45	1053.496	ppb	1053.496	2.19	74428	400000	
Ca	40	2	45	892.868	ppb	892.868	2.46	546650	400000	
V	51	3	72	40.432	ppb	40.432	3.21	26390	2000	
Cr	52	3	72	40.096	ppb	40.096	2.28	35254	5000	
Mn	55	3	72	40.234	ppb	40.234	2.17	18180	10000	
Fe	56	2	72	882.548	ppb	882.548	2.72	1347547	10000	
Co	59	3	72	39.404	ppb	39.404	1.76	53419	2000	
Ni	60	3	72	38.681	ppb	38.681	0.93	14814	5000	
Cu	63	3	72	39.272	ppb	39.272	2.11	40417	5000	
Zn	66	3	72	41.408	ppb	41.408	1.74	7397	5000	
As	75	3	72	42.674	ppb	42.674	4.27	5167	2000	
Se	78	2	72	41.983	ppb	41.983	1.56	2502	2000	
(Se)	78	3	72	40.594	ppb	40.594	4.19	317	2000	
Sr	88	3	72	82.074	ppb	82.074	2.48	46033	4000	
Mo	95	3	115	40.319	ppb	40.319	2.07	21928	2000	
Ag	107	3	115	39.353	ppb	39.353	0.80	70273	100	
Cd	111	3	115	41.629	ppb	41.629	1.99	10814	2000	
Sn	120	3	115	41.151	ppb	41.151	0.91	32101	2000	
Sb	121	3	115	42.166	ppb	42.166	1.42	32766	1000	
Ba	137	3	115	42.509	ppb	42.509	2.12	10437	5000	
Tl	205	3	193	40.884	ppb	40.884	2.78	153296	2000	
(Pb)	206	3	193	40.760	ppb	40.760	2.40	51079	100	
(Pb)	207	3	193	40.561	ppb	40.561	2.76	45014	100	
Pb	208	3	193	40.798	ppb	40.798	1.87	206170	5000	
Th	232	3	193	41.327	ppb	41.327	1.77	212400	2000	
U	238	3	193	41.061	ppb	41.061	3.39	219156	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337965	2.19	4299393	100.90	60	120	
Sc (IS)	45	3	HMI He	663222	0.87	674661	98.30	60	120	
Ge Internal standard	72	2	HMI H2	2279284	1.70	2269722	100.42	60	120	
Ge Internal standard	72	3	HMI He	767442	2.17	739017	103.85	60	120	
In Internal Standard	115	3	HMI He	2622723	0.23	2543041	103.13	60	120	
Ir (IS)	193	3	HMI He	5666535	1.70	5570851	101.72	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-G pds
Data File Name	147SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:01:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	188.383	ppb	188.383	0.70	10874	2000	
Na	23	3	45	436.277	ppb	436.277	4.97	85076	400000	
Mg	24	3	45	67.388	ppb	67.388	1.94	4699	400000	
Al	27	3	45	2016.661	ppb	2016.661	1.17	48726	400000	
K	39	3	45	237.779	ppb	237.779	13.79	33072	400000	
Ca	40	2	45	106.180	ppb	106.180	1.79	75340	400000	
V	51	3	72	196.079	ppb	196.079	4.29	127401	2000	
Cr	52	3	72	193.100	ppb	193.100	3.70	162975	5000	
Mn	55	3	72	200.031	ppb	200.031	3.10	88230	10000	
Fe	56	2	72	29.531	ppb	29.531	0.57	57724	10000	
Co	59	3	72	193.296	ppb	193.296	4.17	261970	2000	
Ni	60	3	72	190.452	ppb	190.452	4.11	72183	5000	
Cu	63	3	72	195.769	ppb	195.769	3.74	199425	5000	
Zn	66	3	72	208.003	ppb	208.003	3.33	36518	5000	
As	75	3	72	195.857	ppb	195.857	4.18	23563	2000	
Se	78	2	72	195.414	ppb	195.414	1.53	12103	2000	
(Se)	78	3	72	198.869	ppb	198.869	5.84	1496	2000	
Sr	88	3	72	200.497	ppb	200.497	3.94	112481	4000	
Mo	95	3	115	198.340	ppb	198.340	0.32	105552	2000	
Ag	107	3	115	49.768	ppb	49.768	2.28	87125	100	
Cd	111	3	115	199.387	ppb	199.387	0.91	50780	2000	
Sn	120	3	115	206.186	ppb	206.186	1.31	155047	2000	
Sb	121	3	115	208.616	ppb	208.616	1.43	158675	1000	
Ba	137	3	115	209.164	ppb	209.164	2.44	50160	5000	
Tl	205	3	193	197.999	ppb	197.999	2.17	740642	2000	
(Pb)	206	3	193	199.171	ppb	199.171	1.61	248807	100	
(Pb)	207	3	193	199.995	ppb	199.995	2.49	220362	100	
Pb	208	3	193	199.193	ppb	199.193	1.68	1002551	5000	
Th	232	3	193	412.061	ppb	412.061	1.82	2078912	2000	
U	238	3	193	208.494	ppb	208.494	4.71	1105720	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4359155	0.43	4299393	101.39	60	120	
Sc (IS)	45	3	HMI He	664224	0.91	674661	98.45	60	120	
Ge Internal standard	72	2	HMI H2	2369741	0.83	2269722	104.41	60	120	
Ge Internal standard	72	3	HMI He	768181	3.32	739017	103.95	60	120	
In Internal Standard	115	3	HMI He	2571683	0.72	2543041	101.13	60	120	
Ir (IS)	193	3	HMI He	5664002	1.28	5570851	101.67	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-A
Data File Name	148SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:03:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	5165.04	2	2000	
Na	23	3	45	38788.784	ppb	38788.784	2.57	5080500	400000	
Mg	24	3	45	30490.126	ppb	30490.126	1.68	2109471	400000	
Al	27	3	45	38.349	ppb	38.349	1.02	1011	400000	
K	39	3	45	3792.390	ppb	3792.390	1.94	217990	400000	
Ca	40	2	45	67344.926	ppb	67344.926	1.18	40542877	400000	
V	51	3	72	1.995	ppb	1.995	5.96	1466	2000	
Cr	52	3	72	0.187	ppb	0.187	40.71	1968	5000	
Mn	55	3	72	621.855	ppb	621.855	0.76	274333	10000	
Fe	56	2	72	123.523	ppb	123.523	1.80	201029	10000	
Co	59	3	72	2.555	ppb	2.555	4.22	3519	2000	
Ni	60	3	72	7.495	ppb	7.495	6.51	3044	5000	
Cu	63	3	72	0.645	ppb	0.645	21.20	1199	5000	
Zn	66	3	72	4.689	ppb	4.689	6.33	986	5000	
As	75	3	72	0.759	ppb	0.759	26.85	130	2000	
Se	78	2	72	0.143	ppb	0.143	24.35	10	2000	
(Se)	78	3	72	0.583	ppb	0.583	64.29	18	2000	
Sr	88	3	72	620.306	ppb	620.306	1.27	349563	4000	
Mo	95	3	115	1.988	ppb	1.988	3.09	1141	2000	
Ag	107	3	115	0.026	ppb	0.026	31.26	70	100	
Cd	111	3	115	0.064	ppb	0.064	62.86	18	2000	
Sn	120	3	115	0.426	ppb	0.426	5.94	1003	2000	
Sb	121	3	115	0.498	ppb	0.498	3.12	456	1000	
Ba	137	3	115	144.021	ppb	144.021	1.50	35375	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-9.42	283	2000	
(Pb)	206	3	193	0.181	ppb	0.181	17.80	400	100	
(Pb)	207	3	193	0.123	ppb	0.123	68.27	511	100	
Pb	208	3	193	0.160	ppb	0.160	16.07	1738	5000	
Th	232	3	193	1.044	ppb	1.044	26.58	9431	2000	
U	238	3	193	0.415	ppb	0.415	5.31	3775	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4353007	0.71	4299393	101.25	60	120	
Sc (IS)	45	3	HMI He	677540	1.70	674661	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2315406	1.50	2269722	102.01	60	120	
Ge Internal standard	72	3	HMI He	771086	0.49	739017	104.34	60	120	
In Internal Standard	115	3	HMI He	2632589	0.39	2543041	103.52	60	120	
Ir (IS)	193	3	HMI He	5611560	0.83	5570851	100.73	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-B MS
Data File Name	149SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:05:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.335	ppb	40.335	4.14	2271	2000	
Na	23	3	45	40333.089	ppb	40333.089	1.21	5177055	400000	
Mg	24	3	45	31195.763	ppb	31195.763	2.24	2115124	400000	
Al	27	3	45	902.034	ppb	902.034	4.23	21822	400000	
K	39	3	45	4693.371	ppb	4693.371	1.79	259427	400000	
Ca	40	2	45	69019.349	ppb	69019.349	2.20	40840141	400000	
V	51	3	72	43.607	ppb	43.607	2.74	28553	2000	
Cr	52	3	72	40.437	ppb	40.437	0.27	35661	5000	
Mn	55	3	72	661.018	ppb	661.018	1.83	291117	10000	
Fe	56	2	72	995.432	ppb	995.432	0.58	1545679	10000	
Co	59	3	72	42.341	ppb	42.341	1.70	57594	2000	
Ni	60	3	72	45.710	ppb	45.710	0.55	17527	5000	
Cu	63	3	72	40.300	ppb	40.300	1.15	41603	5000	
Zn	66	3	72	46.961	ppb	46.961	3.58	8393	5000	
As	75	3	72	42.996	ppb	42.996	1.60	5218	2000	
Se	78	2	72	42.950	ppb	42.950	4.29	2604	2000	
(Se)	78	3	72	37.364	ppb	37.364	15.09	293	2000	
Sr	88	3	72	709.730	ppb	709.730	1.55	399329	4000	
Mo	95	3	115	43.760	ppb	43.760	1.57	23282	2000	
Ag	107	3	115	41.028	ppb	41.028	2.17	71676	100	
Cd	111	3	115	41.822	ppb	41.822	2.07	10629	2000	
Sn	120	3	115	43.637	ppb	43.637	1.21	33266	2000	
Sb	121	3	115	43.309	ppb	43.309	2.88	32919	1000	
Ba	137	3	115	188.925	ppb	188.925	1.69	45216	5000	
Tl	205	3	193	42.219	ppb	42.219	2.34	155125	2000	
(Pb)	206	3	193	42.297	ppb	42.297	2.10	51933	100	
(Pb)	207	3	193	42.550	ppb	42.550	3.40	46251	100	
Pb	208	3	193	42.359	ppb	42.359	2.48	209720	5000	
Th	232	3	193	42.660	ppb	42.660	1.87	214714	2000	
U	238	3	193	43.080	ppb	43.080	2.01	225286	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4279544	2.19	4299393	99.54	60	120	
Sc (IS)	45	3	HMI He	663964	0.47	674661	98.41	60	120	
Ge Internal standard	72	2	HMI H2	2319339	1.08	2269722	102.19	60	120	
Ge Internal standard	72	3	HMI He	769878	0.79	739017	104.18	60	120	
In Internal Standard	115	3	HMI He	2566646	2.30	2543041	100.93	60	120	
Ir (IS)	193	3	HMI He	5552761	1.46	5570851	99.68	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-C MSD
Data File Name	150SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:07:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.257	ppb	40.257	5.12	2324	2000	
Na	23	3	45	41708.472	ppb	41708.472	1.49	5334347	400000	
Mg	24	3	45	33027.649	ppb	33027.649	0.73	2231880	400000	
Al	27	3	45	873.975	ppb	873.975	1.50	21074	400000	
K	39	3	45	4844.149	ppb	4844.149	3.27	266154	400000	
Ca	40	2	45	70135.601	ppb	70135.601	0.75	42076683	400000	
V	51	3	72	43.489	ppb	43.489	2.40	28608	2000	
Cr	52	3	72	40.303	ppb	40.303	1.47	35723	5000	
Mn	55	3	72	679.665	ppb	679.665	1.38	300757	10000	
Fe	56	2	72	972.392	ppb	972.392	1.05	1530666	10000	
Co	59	3	72	42.249	ppb	42.249	1.98	57744	2000	
Ni	60	3	72	45.259	ppb	45.259	0.80	17442	5000	
Cu	63	3	72	39.638	ppb	39.638	2.31	41125	5000	
Zn	66	3	72	44.335	ppb	44.335	2.58	7972	5000	
As	75	3	72	43.792	ppb	43.792	2.78	5340	2000	
Se	78	2	72	41.715	ppb	41.715	4.08	2564	2000	
(Se)	78	3	72	40.231	ppb	40.231	7.25	317	2000	
Sr	88	3	72	725.345	ppb	725.345	1.78	410087	4000	
Mo	95	3	115	43.368	ppb	43.368	1.97	23118	2000	
Ag	107	3	115	40.681	ppb	40.681	2.73	71202	100	
Cd	111	3	115	41.333	ppb	41.333	2.28	10526	2000	
Sn	120	3	115	42.988	ppb	42.988	2.19	32841	2000	
Sb	121	3	115	43.765	ppb	43.765	1.69	33335	1000	
Ba	137	3	115	195.493	ppb	195.493	2.65	46873	5000	
Tl	205	3	193	41.769	ppb	41.769	0.66	155843	2000	
(Pb)	206	3	193	41.402	ppb	41.402	1.83	51617	100	
(Pb)	207	3	193	41.612	ppb	41.612	0.82	45945	100	
Pb	208	3	193	41.589	ppb	41.589	1.17	209096	5000	
Th	232	3	193	42.230	ppb	42.230	1.38	215848	2000	
U	238	3	193	42.037	ppb	42.037	1.10	223242	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337922	1.65	4299393	100.90	60	120	
Sc (IS)	45	3	HMI He	661729	0.82	674661	98.08	60	120	
Ge Internal standard	72	2	HMI H2	2350791	0.96	2269722	103.57	60	120	
Ge Internal standard	72	3	HMI He	773663	1.21	739017	104.69	60	120	
In Internal Standard	115	3	HMI He	2571319	1.30	2543041	101.11	60	120	
Ir (IS)	193	3	HMI He	5637297	0.87	5570851	101.19	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-2-A
Data File Name	151SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:09:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	14394.10	2	2000	
Na	23	3	45	39616.162	ppb	39616.162	1.81	5089777	400000	
Mg	24	3	45	30711.531	ppb	30711.531	2.51	2083952	400000	
Al	27	3	45	20.644	ppb	20.644	21.98	564	400000	
K	39	3	45	3865.002	ppb	3865.002	2.19	217519	400000	
Ca	40	2	45	66632.686	ppb	66632.686	1.61	40494304	400000	
V	51	3	72	1.792	ppb	1.792	7.62	1328	2000	
Cr	52	3	72	-0.024	ppb	-0.024	-389.39	1783	5000	
Mn	55	3	72	624.370	ppb	624.370	3.18	274076	10000	
Fe	56	2	72	115.131	ppb	115.131	0.53	193273	10000	
Co	59	3	72	2.554	ppb	2.554	2.45	3500	2000	
Ni	60	3	72	6.069	ppb	6.069	9.81	2487	5000	
Cu	63	3	72	0.585	ppb	0.585	26.62	1129	5000	
Zn	66	3	72	4.467	ppb	4.467	2.50	943	5000	
As	75	3	72	0.546	ppb	0.546	46.81	103	2000	
Se	78	2	72	0.190	ppb	0.190	102.05	13	2000	
(Se)	78	3	72	0.363	ppb	0.363	450.44	17	2000	
Sr	88	3	72	624.356	ppb	624.356	3.48	350083	4000	
Mo	95	3	115	1.994	ppb	1.994	3.23	1123	2000	
Ag	107	3	115	0.012	ppb	0.012	47.25	43	100	
Cd	111	3	115	0.026	ppb	0.026	85.02	8	2000	
Sn	120	3	115	0.403	ppb	0.403	47.65	966	2000	
Sb	121	3	115	0.437	ppb	0.437	3.57	401	1000	
Ba	137	3	115	145.008	ppb	145.008	2.52	34940	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-2.52	182	2000	
(Pb)	206	3	193	0.215	ppb	0.215	17.75	431	100	
(Pb)	207	3	193	0.178	ppb	0.178	38.89	556	100	
Pb	208	3	193	0.199	ppb	0.199	9.14	1879	5000	
Th	232	3	193	0.390	ppb	0.390	20.24	6022	2000	
U	238	3	193	0.406	ppb	0.406	5.65	3634	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4394390	1.17	4299393	102.21	60	120	
Sc (IS)	45	3	HMI He	664548	0.81	674661	98.50	60	120	
Ge Internal standard	72	2	HMI H2	2378552	1.36	2269722	104.79	60	120	
Ge Internal standard	72	3	HMI He	767778	3.29	739017	103.89	60	120	
In Internal Standard	115	3	HMI He	2582875	1.11	2543041	101.57	60	120	
Ir (IS)	193	3	HMI He	5468547	1.25	5570851	98.16	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-3-A
Data File Name	152SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:10:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	5615.67	2	2000	
Na	23	3	45	617.137	ppb	617.137	1.71	107458	400000	
Mg	24	3	45	18.021	ppb	18.021	7.92	1341	400000	
Al	27	3	45	8.687	ppb	8.687	3.58	274	400000	
K	39	3	45	233.957	ppb	233.957	15.48	32671	400000	
Ca	40	2	45	79.669	ppb	79.669	0.58	58550	400000	
V	51	3	72	0.252	ppb	0.252	4.84	313	2000	
Cr	52	3	72	0.133	ppb	0.133	96.11	1828	5000	
Mn	55	3	72	-0.108	ppb	-0.108	-106.08	485	10000	
Fe	56	2	72	18.742	ppb	18.742	3.97	38529	10000	
Co	59	3	72	0.016	ppb	0.016	28.23	58	2000	
Ni	60	3	72	0.364	ppb	0.364	49.22	320	5000	
Cu	63	3	72	0.379	ppb	0.379	10.05	881	5000	
Zn	66	3	72	1.677	ppb	1.677	15.67	435	5000	
As	75	3	72	0.162	ppb	0.162	139.76	55	2000	
Se	78	2	72	0.160	ppb	0.160	33.67	11	2000	
(Se)	78	3	72	1.408	ppb	1.408	114.10	23	2000	
Sr	88	3	72	0.482	ppb	0.482	1.42	273	4000	
Mo	95	3	115	0.031	ppb	0.031	110.20	75	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-69.87	15	100	
Cd	111	3	115	0.000	ppb	0.000	-15686.83	2	2000	
Sn	120	3	115	0.080	ppb	0.080	62.83	733	2000	
Sb	121	3	115	0.097	ppb	0.097	43.15	143	1000	
Ba	137	3	115	0.344	ppb	0.344	39.72	133	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-7.49	123	2000	
(Pb)	206	3	193	0.008	ppb	0.008	341.88	183	100	
(Pb)	207	3	193	0.011	ppb	0.011	136.55	385	100	
Pb	208	3	193	0.004	ppb	0.004	389.05	943	5000	
Th	232	3	193	0.082	ppb	0.082	58.67	4579	2000	
U	238	3	193	0.020	ppb	0.020	47.70	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4299425	0.83	4299393	100.00	60	120	
Sc (IS)	45	3	HMI He	659804	0.61	674661	97.80	60	120	
Ge Internal standard	72	2	HMI H2	2242215	1.38	2269722	98.79	60	120	
Ge Internal standard	72	3	HMI He	732910	0.66	739017	99.17	60	120	
In Internal Standard	115	3	HMI He	2615070	1.41	2543041	102.83	60	120	
Ir (IS)	193	3	HMI He	5536343	0.16	5570851	99.38	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	153_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:12:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.286	ppb	0.871	2754	50	96.6	90	110	
Na	23	3	45	50712.482	ppb	1.643	6542294	51000	99.4	90	110	
Mg	24	3	45	10835.036	ppb	3.549	739532	11000	98.5	90	110	
Al	27	3	45	990.925	ppb	1.460	24118	1000	99.1	90	110	
K	39	3	45	10901.705	ppb	1.381	578389	11000	99.1	90	110	
Ca	40	2	45	11188.522	ppb	1.109	6750742	11000	101.7	90	110	
V	51	3	72	50.309	ppb	2.456	32787	50	100.6	90	110	
Cr	52	3	72	49.436	ppb	1.956	43030	50	98.9	90	110	
Mn	55	3	72	49.155	ppb	0.939	22082	50	98.3	90	110	
Fe	56	2	72	1053.823	ppb	1.724	1624533	1000	105.4	90	110	
Co	59	3	72	49.350	ppb	2.094	66862	50	98.7	90	110	
Ni	60	3	72	48.214	ppb	3.539	18403	50	96.4	90	110	
Cu	63	3	72	48.302	ppb	2.824	49566	50	96.6	90	110	
Zn	66	3	72	49.030	ppb	2.159	8727	50	98.1	90	110	
As	75	3	72	50.454	ppb	2.867	6093	50	100.9	90	110	
Se	78	2	72	50.034	ppb	3.942	3012	50	100.1	90	110	
(Se)	78	3	72	49.540	ppb	4.015	383	50	99.1	90	110	
Sr	88	3	72	102.393	ppb	1.580	57409	100	102.4	90	110	
Mo	95	3	115	49.728	ppb	2.108	26783	50	99.5	90	110	
Ag	107	3	115	49.428	ppb	1.459	87446	50	98.9	90	110	
Cd	111	3	115	50.880	ppb	2.169	13095	50	101.8	90	110	
Sn	120	3	115	51.588	ppb	2.258	39699	50	103.2	90	110	
Sb	121	3	115	51.100	ppb	1.360	39328	50	102.2	90	110	
Ba	137	3	115	51.623	ppb	2.628	12548	50	103.2	90	110	
Tl	205	3	193	51.160	ppb	0.717	186253	50	102.3	90	110	
(Pb)	206	3	193	51.226	ppb	0.722	62310	50	102.5	90	110	
(Pb)	207	3	193	51.097	ppb	0.875	54988	50	102.2	90	110	
Pb	208	3	193	51.234	ppb	1.183	251248	50	102.5	90	110	
Th	232	3	193	51.756	ppb	1.478	257316	50	103.5	90	110	
U	238	3	193	51.823	ppb	0.681	268307	50	103.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4356516	0.46	4299393	101.33	60	120	
Sc (IS)	45	3	HMI He	668128	1.33	674661	99.03	60	120	
Ge Internal standard	72	2	HMI H2	2303781	1.58	2269722	101.50	60	120	
Ge Internal standard	72	3	HMI He	767076	1.58	739017	103.80	60	120	
In Internal Standard	115	3	HMI He	2598934	1.37	2543041	102.20	60	120	
Ir (IS)	193	3	HMI He	5503126	0.66	5570851	98.78	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	154_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:14:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	20861.1	2	0.5	
Na	23	3	45	258.755	ppb	1.0	61974	25	>RL
Mg	24	3	45	2.074	ppb	15.9	267	25	
Al	27	3	45	6.604	ppb	10.2	224	15	
K	39	3	45	138.391	ppb	23.4	27832	50	>RL
V	51	3	72	0.176	ppb	28.8	275	1	
Cr	52	3	72	-0.436	ppb	-20.4	1421	1	
Mn	55	3	72	-0.741	ppb	-9.5	228	0.5	
Co	59	3	72	-0.006	ppb	-92.7	32	0.5	
Ni	60	3	72	-0.094	ppb	-43.6	160	1	
Cu	63	3	72	-0.054	ppb	-68.2	476	1	
Zn	66	3	72	1.147	ppb	11.7	358	5	
As	75	3	72	0.188	ppb	36.3	60	1	
Se	78	2	72	0.137	ppb	51.9	9	1	
(Se)	78	3	72	1.096	ppb	161.0	22	1	>RL
Sr	88	3	72	0.066	ppb	40.8	52	0.5	
Mo	95	3	115	0.017	ppb	287.5	67	0.5	
Ag	107	3	115	-0.004	ppb	-68.4	15	1	
Cd	111	3	115	0.000	ppb	22415.2	2	0.5	
Sn	120	3	115	-0.042	ppb	-178.5	635	1	
Sb	121	3	115	0.042	ppb	80.3	100	0.6	
Ba	137	3	115	0.093	ppb	58.3	72	0.5	
Tl	205	3	193	-0.073	ppb	-10.1	128	0.1	
(Pb)	206	3	193	-0.028	ppb	-150.3	142	1	
(Pb)	207	3	193	-0.031	ppb	-93.2	343	1	
Pb	208	3	193	-0.031	ppb	-37.6	785	0.5	
Th	232	3	193	0.370	ppb	22.6	6068	1	
U	238	3	193	-0.002	ppb	-938.5	1583	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4331592	1.33	4299393	100.75	60	120	
Sc (IS)	45	3	HMI He	659443	0.36	674661	97.74	60	120	
Ge Internal standard	72	2	HMI H2	2242192	2.35	2269722	98.79	60	120	
Ge Internal standard	72	3	HMI He	758388	1.70	739017	102.62	60	120	
In Internal Standard	115	3	HMI He	2593981	0.88	2543041	102.00	60	120	
Ir (IS)	193	3	HMI He	5603363	1.23	5570851	100.58	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	155LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:16:32-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.756	ppb	39.634	45	1	75.6	70	130	
Na	23	3	45	288.080	ppb	9.109	66304	50	576.2	70	130	>+/-30%
Mg	24	3	45	51.244	ppb	6.521	3611	50	102.5	70	130	
Al	27	3	45	43.219	ppb	4.278	1111	50	86.4	70	130	
K	39	3	45	247.324	ppb	24.339	33617	100	247.3	70	130	>+/-30%
V	51	3	72	5.113	ppb	3.911	3410	5	102.3	70	130	
Cr	52	3	72	1.705	ppb	5.640	3160	2	85.2	70	130	
Mn	55	3	72	0.422	ppb	30.584	726	1	42.2	70	130	>+/-30%
Co	59	3	72	1.088	ppb	11.452	1481	1	108.8	70	130	
Ni	60	3	72	1.795	ppb	6.263	858	2	89.8	70	130	
Cu	63	3	72	2.078	ppb	7.474	2594	2	103.9	70	130	
Zn	66	3	72	10.130	ppb	4.059	1894	10	101.3	70	130	
As	75	3	72	5.424	ppb	12.051	675	5	108.5	70	130	
Se	78	2	72	5.148	ppb	13.371	313	5	103.0	70	130	
(Se)	78	3	72	5.656	ppb	31.564	55	5	113.1	70	130	
Sr	88	3	72	1.238	ppb	11.635	695	1	123.8	70	130	
Mo	95	3	115	2.053	ppb	10.198	1159	2	102.6	70	130	
Ag	107	3	115	1.022	ppb	9.868	1829	1	102.2	70	130	
Cd	111	3	115	0.934	ppb	12.660	242	1	93.4	70	130	
Sn	120	3	115	9.834	ppb	2.810	8103	10	98.3	70	130	
Sb	121	3	115	2.264	ppb	5.780	1806	2	113.2	70	130	
Ba	137	3	115	1.064	ppb	8.241	307	1	106.4	70	130	
Tl	205	3	193	0.949	ppb	3.150	3919	1	94.9	70	130	
(Pb)	206	3	193	0.954	ppb	4.938	1358	1	95.4	70	130	
(Pb)	207	3	193	1.029	ppb	11.274	1501	1	102.9	70	130	
Pb	208	3	193	0.993	ppb	4.173	5893	1	99.3	70	130	
Th	232	3	193	2.103	ppb	0.971	14741	2	105.2	70	130	
U	238	3	193	1.072	ppb	2.271	7235	1	107.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4343565	2.94	4299393	101.03	60	120	
Sc (IS)	45	3	HMI He	666123	2.38	674661	98.73	60	120	
Ge Internal standard	72	2	HMI H2	2319778	1.21	2269722	102.21	60	120	
Ge Internal standard	72	3	HMI He	752149	2.33	739017	101.78	60	120	
In Internal Standard	115	3	HMI He	2597046	1.32	2543041	102.12	60	120	
Ir (IS)	193	3	HMI He	5618406	0.32	5570851	100.85	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	156SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:18:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-2463.61	2	2000	
Na	23	3	45	609.889	ppb	609.889	2.96	118729	400000	
Mg	24	3	45	17.262	ppb	17.262	15.49	1438	400000	
Al	27	3	45	-0.107	ppb	-0.107	-1054.24	70	400000	
K	39	3	45	246.098	ppb	246.098	11.85	37090	400000	
Ca	40	2	45	16.508	ppb	16.508	11.39	23086	400000	
V	51	3	72	-0.096	ppb	-0.096	-18.54	112	2000	
Cr	52	3	72	-1.127	ppb	-1.127	-6.42	945	5000	
Mn	55	3	72	-0.750	ppb	-0.750	-4.77	248	10000	
Fe	56	2	72	-1.442	ppb	-1.442	-4.02	9690	10000	
Co	59	3	72	0.002	ppb	0.002	683.43	47	2000	
Ni	60	3	72	-0.289	ppb	-0.289	-32.65	97	5000	
Cu	63	3	72	-0.210	ppb	-0.210	-7.43	355	5000	
Zn	66	3	72	0.063	ppb	0.063	249.57	190	5000	
As	75	3	72	-0.064	ppb	-0.064	-207.39	33	2000	
Se	78	2	72	0.047	ppb	0.047	72.72	5	2000	
(Se)	78	3	72	0.989	ppb	0.989	217.59	23	2000	
Sr	88	3	72	0.297	ppb	0.297	32.95	200	4000	
Mo	95	3	115	-0.048	ppb	-0.048	-31.57	35	2000	
Ag	107	3	115	0.005	ppb	0.005	113.54	33	100	
Cd	111	3	115	0.006	ppb	0.006	372.32	3	2000	
Sn	120	3	115	-0.536	ppb	-0.536	-6.65	285	2000	
Sb	121	3	115	0.021	ppb	0.021	87.66	92	1000	
Ba	137	3	115	0.100	ppb	0.100	85.55	80	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-7.35	158	2000	
(Pb)	206	3	193	-0.035	ppb	-0.035	-64.09	142	100	
(Pb)	207	3	193	-0.035	ppb	-0.035	-61.10	360	100	
Pb	208	3	193	-0.036	ppb	-0.036	-17.97	805	5000	
Th	232	3	193	0.043	ppb	0.043	74.43	4714	2000	
U	238	3	193	0.014	ppb	0.014	68.96	1771	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4727222	0.74	4299393	109.95	60	120	
Sc (IS)	45	3	HMI He	735229	0.36	674661	108.98	60	120	
Ge Internal standard	72	2	HMI H2	2569605	0.96	2269722	113.21	60	120	
Ge Internal standard	72	3	HMI He	840367	1.20	739017	113.71	60	120	
In Internal Standard	115	3	HMI He	2823430	0.61	2543041	111.03	60	120	
Ir (IS)	193	3	HMI He	5950422	0.44	5570851	106.81	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	157SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:20:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.027	ppb	0.027	179.92	3	2000	
Na	23	3	45	390.651	ppb	390.651	0.89	87257	400000	
Mg	24	3	45	8.885	ppb	8.885	14.72	804	400000	
Al	27	3	45	1.032	ppb	1.032	156.20	100	400000	
K	39	3	45	174.575	ppb	174.575	12.96	32888	400000	
Ca	40	2	45	7.757	ppb	7.757	7.61	17004	400000	
V	51	3	72	-0.114	ppb	-0.114	-23.88	98	2000	
Cr	52	3	72	-1.175	ppb	-1.175	-4.37	891	5000	
Mn	55	3	72	-0.891	ppb	-0.891	-6.79	178	10000	
Fe	56	2	72	-1.834	ppb	-1.834	-8.37	8762	10000	
Co	59	3	72	-0.004	ppb	-0.004	-160.08	37	2000	
Ni	60	3	72	-0.286	ppb	-0.286	-6.87	97	5000	
Cu	63	3	72	-0.227	ppb	-0.227	-15.49	333	5000	
Zn	66	3	72	0.010	ppb	0.010	2399.37	178	5000	
As	75	3	72	0.029	ppb	0.029	361.97	45	2000	
Se	78	2	72	0.029	ppb	0.029	64.74	3	2000	
(Se)	78	3	72	1.225	ppb	1.225	45.82	25	2000	
Sr	88	3	72	0.154	ppb	0.154	34.92	110	4000	
Mo	95	3	115	-0.044	ppb	-0.044	-99.48	37	2000	
Ag	107	3	115	0.006	ppb	0.006	195.94	35	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.540	ppb	-0.540	-15.41	278	2000	
Sb	121	3	115	-0.022	ppb	-0.022	-127.79	55	1000	
Ba	137	3	115	0.014	ppb	0.014	425.59	57	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-19.28	143	2000	
(Pb)	206	3	193	-0.038	ppb	-0.038	-85.44	138	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-72.67	363	100	
Pb	208	3	193	-0.038	ppb	-0.038	-41.10	800	5000	
Th	232	3	193	0.051	ppb	0.051	64.70	4792	2000	
U	238	3	193	-0.009	ppb	-0.009	-95.59	1656	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4626742	0.90	4299393	107.61	60	120	
Sc (IS)	45	3	HMI He	731183	0.85	674661	108.38	60	120	
Ge Internal standard	72	2	HMI H2	2496171	2.32	2269722	109.98	60	120	
Ge Internal standard	72	3	HMI He	831720	2.36	739017	112.54	60	120	
In Internal Standard	115	3	HMI He	2790786	0.40	2543041	109.74	60	120	
Ir (IS)	193	3	HMI He	5997846	2.37	5570851	107.66	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	158SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:22:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.054	ppb	0.054	0.31	5	2000	
Na	23	3	45	305.254	ppb	305.254	3.70	74741	400000	
Mg	24	3	45	6.120	ppb	6.120	19.10	594	400000	
Al	27	3	45	-0.580	ppb	-0.580	-39.06	57	400000	
K	39	3	45	145.488	ppb	145.488	18.04	31046	400000	
Ca	40	2	45	4.406	ppb	4.406	32.43	14873	400000	
V	51	3	72	-0.109	ppb	-0.109	-16.86	100	2000	
Cr	52	3	72	-1.118	ppb	-1.118	-8.36	928	5000	
Mn	55	3	72	-0.914	ppb	-0.914	-7.72	165	10000	
Fe	56	2	72	-2.011	ppb	-2.011	-7.34	8535	10000	
Co	59	3	72	0.002	ppb	0.002	401.57	45	2000	
Ni	60	3	72	-0.316	ppb	-0.316	-12.49	83	5000	
Cu	63	3	72	-0.221	ppb	-0.221	-24.82	335	5000	
Zn	66	3	72	-0.053	ppb	-0.053	-336.63	163	5000	
As	75	3	72	-0.082	ppb	-0.082	-249.85	30	2000	
Se	78	2	72	0.008	ppb	0.008	377.84	2	2000	
(Se)	78	3	72	0.845	ppb	0.845	223.58	22	2000	
Sr	88	3	72	0.142	ppb	0.142	24.04	102	4000	
Mo	95	3	115	-0.056	ppb	-0.056	-26.50	30	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-124.99	22	100	
Cd	111	3	115	0.012	ppb	0.012	268.65	5	2000	
Sn	120	3	115	-0.485	ppb	-0.485	-10.64	323	2000	
Sb	121	3	115	-0.016	ppb	-0.016	-79.42	60	1000	
Ba	137	3	115	0.078	ppb	0.078	158.16	73	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-15.05	133	2000	
(Pb)	206	3	193	-0.034	ppb	-0.034	-36.21	142	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-60.05	330	100	
Pb	208	3	193	-0.043	ppb	-0.043	-15.25	763	5000	
Th	232	3	193	0.070	ppb	0.070	36.59	4842	2000	
U	238	3	193	0.007	ppb	0.007	126.94	1728	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4631506	1.30	4299393	107.72	60	120	
Sc (IS)	45	3	HMI He	726228	0.37	674661	107.64	60	120	
Ge Internal standard	72	2	HMI H2	2516551	1.87	2269722	110.87	60	120	
Ge Internal standard	72	3	HMI He	819515	1.29	739017	110.89	60	120	
In Internal Standard	115	3	HMI He	2789782	0.51	2543041	109.70	60	120	
Ir (IS)	193	3	HMI He	5927994	0.73	5570851	106.41	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	159SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-2953.40	2	2000	
Na	23	3	45	291.268	ppb	291.268	2.87	70894	400000	
Mg	24	3	45	4.853	ppb	4.853	1.70	487	400000	
Al	27	3	45	0.787	ppb	0.787	175.90	90	400000	
K	39	3	45	150.699	ppb	150.699	19.55	30517	400000	
Ca	40	2	45	4.814	ppb	4.814	7.34	15100	400000	
V	51	3	72	-0.136	ppb	-0.136	-19.66	80	2000	
Cr	52	3	72	-1.162	ppb	-1.162	-4.95	876	5000	
Mn	55	3	72	-0.881	ppb	-0.881	-5.02	178	10000	
Fe	56	2	72	-2.297	ppb	-2.297	-13.83	8241	10000	
Co	59	3	72	-0.012	ppb	-0.012	-53.99	25	2000	
Ni	60	3	72	-0.281	ppb	-0.281	-43.26	97	5000	
Cu	63	3	72	-0.203	ppb	-0.203	-16.12	350	5000	
Zn	66	3	72	-0.089	ppb	-0.089	-197.06	155	5000	
As	75	3	72	-0.080	ppb	-0.080	-132.59	30	2000	
Se	78	2	72	0.086	ppb	0.086	38.05	7	2000	
(Se)	78	3	72	1.728	ppb	1.728	71.63	28	2000	
Sr	88	3	72	0.111	ppb	0.111	50.84	82	4000	
Mo	95	3	115	-0.049	ppb	-0.049	-53.56	33	2000	
Ag	107	3	115	0.001	ppb	0.001	379.39	25	100	
Cd	111	3	115	0.036	ppb	0.036	105.39	12	2000	
Sn	120	3	115	-0.533	ppb	-0.533	-7.63	282	2000	
Sb	121	3	115	-0.035	ppb	-0.035	-37.64	43	1000	
Ba	137	3	115	-0.048	ppb	-0.048	-239.21	40	5000	
Tl	205	3	193	-0.080	ppb	-0.080	-5.65	108	2000	
(Pb)	206	3	193	-0.020	ppb	-0.020	-118.92	160	100	
(Pb)	207	3	193	-0.072	ppb	-0.072	-64.22	315	100	
Pb	208	3	193	-0.046	ppb	-0.046	-40.86	746	5000	
Th	232	3	193	0.011	ppb	0.011	299.92	4509	2000	
U	238	3	193	0.000	ppb	0.000	-1806.37	1678	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4620670	0.63	4299393	107.47	60	120	
Sc (IS)	45	3	HMI He	707482	2.24	674661	104.86	60	120	
Ge Internal standard	72	2	HMI H2	2572996	1.28	2269722	113.36	60	120	
Ge Internal standard	72	3	HMI He	808388	2.25	739017	109.39	60	120	
In Internal Standard	115	3	HMI He	2760866	1.02	2543041	108.57	60	120	
Ir (IS)	193	3	HMI He	5903236	1.11	5570851	105.97	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	160SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:25:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-5992.28	2	2000	
Na	23	3	45	262.494	ppb	262.494	4.90	66995	400000	
Mg	24	3	45	3.049	ppb	3.049	32.20	357	400000	
Al	27	3	45	1.429	ppb	1.429	137.43	107	400000	
K	39	3	45	139.912	ppb	139.912	19.28	29932	400000	
Ca	40	2	45	3.352	ppb	3.352	29.47	14061	400000	
V	51	3	72	-0.123	ppb	-0.123	-20.67	90	2000	
Cr	52	3	72	-1.011	ppb	-1.011	-5.77	1025	5000	
Mn	55	3	72	-0.836	ppb	-0.836	-6.93	202	10000	
Fe	56	2	72	-2.226	ppb	-2.226	-17.05	8194	10000	
Co	59	3	72	-0.005	ppb	-0.005	-61.18	35	2000	
Ni	60	3	72	-0.295	ppb	-0.295	-14.59	92	5000	
Cu	63	3	72	-0.240	ppb	-0.240	-5.31	315	5000	
Zn	66	3	72	-0.064	ppb	-0.064	-72.52	162	5000	
As	75	3	72	-0.032	ppb	-0.032	-413.67	37	2000	
Se	78	2	72	0.028	ppb	0.028	64.06	3	2000	
(Se)	78	3	72	1.263	ppb	1.263	147.03	25	2000	
Sr	88	3	72	0.128	ppb	0.128	20.31	93	4000	
Mo	95	3	115	-0.029	ppb	-0.029	-131.98	45	2000	
Ag	107	3	115	0.000	ppb	0.000	-1101.11	23	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.529	ppb	-0.529	-1.06	287	2000	
Sb	121	3	115	-0.023	ppb	-0.023	-160.84	53	1000	
Ba	137	3	115	0.047	ppb	0.047	174.68	65	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-13.02	137	2000	
(Pb)	206	3	193	-0.044	ppb	-0.044	-20.13	127	100	
(Pb)	207	3	193	-0.046	ppb	-0.046	-109.63	342	100	
Pb	208	3	193	-0.042	ppb	-0.042	-21.14	760	5000	
Th	232	3	193	0.076	ppb	0.076	26.77	4799	2000	
U	238	3	193	0.007	ppb	0.007	301.24	1703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4589641	2.39	4299393	106.75	60	120	
Sc (IS)	45	3	HMI He	707419	1.06	674661	104.86	60	120	
Ge Internal standard	72	2	HMI H2	2522433	1.24	2269722	111.13	60	120	
Ge Internal standard	72	3	HMI He	820128	1.14	739017	110.98	60	120	
In Internal Standard	115	3	HMI He	2782313	1.41	2543041	109.41	60	120	
Ir (IS)	193	3	HMI He	5841498	1.02	5570851	104.86	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	161SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	240.498	ppb	240.498	0.91	63733	400000	
Mg	24	3	45	4.293	ppb	4.293	20.05	444	400000	
Al	27	3	45	0.398	ppb	0.398	256.16	80	400000	
K	39	3	45	119.482	ppb	119.482	28.89	28702	400000	
Ca	40	2	45	3.303	ppb	3.303	28.84	13624	400000	
V	51	3	72	-0.117	ppb	-0.117	-26.32	95	2000	
Cr	52	3	72	-1.154	ppb	-1.154	-11.77	898	5000	
Mn	55	3	72	-0.891	ppb	-0.891	-6.33	177	10000	
Fe	56	2	72	-2.214	ppb	-2.214	-8.99	8101	10000	
Co	59	3	72	-0.011	ppb	-0.011	-44.42	27	2000	
Ni	60	3	72	-0.272	ppb	-0.272	-16.61	102	5000	
Cu	63	3	72	-0.237	ppb	-0.237	-6.32	318	5000	
Zn	66	3	72	0.066	ppb	0.066	213.53	187	5000	
As	75	3	72	-0.057	ppb	-0.057	-151.69	33	2000	
Se	78	2	72	-0.002	ppb	-0.002	-837.35	1	2000	
(Se)	78	3	72	0.641	ppb	0.641	8.14	20	2000	
Sr	88	3	72	0.111	ppb	0.111	5.82	83	4000	
Mo	95	3	115	-0.061	ppb	-0.061	-17.12	27	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-345.09	18	100	
Cd	111	3	115	0.006	ppb	0.006	186.16	3	2000	
Sn	120	3	115	-0.539	ppb	-0.539	-4.12	280	2000	
Sb	121	3	115	0.004	ppb	0.004	97.95	77	1000	
Ba	137	3	115	0.007	ppb	0.007	737.73	55	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-10.86	138	2000	
(Pb)	206	3	193	-0.038	ppb	-0.038	-79.26	133	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-131.59	350	100	
Pb	208	3	193	-0.041	ppb	-0.041	-32.62	753	5000	
Th	232	3	193	0.043	ppb	0.043	92.63	4572	2000	
U	238	3	193	-0.012	ppb	-0.012	-72.88	1579	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4454914	1.11	4299393	103.62	60	120	
Sc (IS)	45	3	HMI He	704499	2.25	674661	104.42	60	120	
Ge Internal standard	72	2	HMI H2	2486298	0.41	2269722	109.54	60	120	
Ge Internal standard	72	3	HMI He	822501	2.06	739017	111.30	60	120	
In Internal Standard	115	3	HMI He	2793845	1.30	2543041	109.86	60	120	
Ir (IS)	193	3	HMI He	5768349	0.62	5570851	103.55	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	162SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:29:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	240.606	ppb	240.606	3.43	65355	400000	
Mg	24	3	45	2.860	ppb	2.860	6.61	350	400000	
Al	27	3	45	1.090	ppb	1.090	41.17	100	400000	
K	39	3	45	107.042	ppb	107.042	37.44	28742	400000	
Ca	40	2	45	2.759	ppb	2.759	38.79	13777	400000	
V	51	3	72	-0.134	ppb	-0.134	-25.70	83	2000	
Cr	52	3	72	-1.111	ppb	-1.111	-3.40	945	5000	
Mn	55	3	72	-0.905	ppb	-0.905	-9.75	172	10000	
Fe	56	2	72	-2.084	ppb	-2.084	-5.32	8344	10000	
Co	59	3	72	-0.008	ppb	-0.008	-120.95	32	2000	
Ni	60	3	72	-0.293	ppb	-0.293	-9.92	93	5000	
Cu	63	3	72	-0.178	ppb	-0.178	-33.52	385	5000	
Zn	66	3	72	0.030	ppb	0.030	834.40	182	5000	
As	75	3	72	-0.060	ppb	-0.060	-207.74	33	2000	
Se	78	2	72	0.029	ppb	0.029	124.73	3	2000	
(Se)	78	3	72	1.224	ppb	1.224	145.82	25	2000	
Sr	88	3	72	0.075	ppb	0.075	30.19	62	4000	
Mo	95	3	115	-0.053	ppb	-0.053	-33.65	32	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-94.04	15	100	
Cd	111	3	115	0.006	ppb	0.006	186.83	3	2000	
Sn	120	3	115	-0.516	ppb	-0.516	-11.77	300	2000	
Sb	121	3	115	-0.032	ppb	-0.032	-45.79	47	1000	
Ba	137	3	115	0.026	ppb	0.026	224.61	60	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-4.47	142	2000	
(Pb)	206	3	193	-0.042	ppb	-0.042	-12.35	130	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-91.46	325	100	
Pb	208	3	193	-0.043	ppb	-0.043	-21.21	755	5000	
Th	232	3	193	0.017	ppb	0.017	35.63	4507	2000	
U	238	3	193	0.003	ppb	0.003	855.37	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4621410	2.50	4299393	107.49	60	120	
Sc (IS)	45	3	HMI He	722351	1.79	674661	107.07	60	120	
Ge Internal standard	72	2	HMI H2	2494821	0.47	2269722	109.92	60	120	
Ge Internal standard	72	3	HMI He	827577	2.84	739017	111.98	60	120	
In Internal Standard	115	3	HMI He	2809625	0.54	2543041	110.48	60	120	
Ir (IS)	193	3	HMI He	5855251	1.66	5570851	105.11	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	163SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:31:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	212.229	ppb	212.229	3.14	60593	400000	
Mg	24	3	45	4.023	ppb	4.023	21.24	430	400000	
Al	27	3	45	1.147	ppb	1.147	92.84	100	400000	
K	39	3	45	100.975	ppb	100.975	47.91	27993	400000	
Ca	40	2	45	2.875	ppb	2.875	15.62	13580	400000	
V	51	3	72	-0.097	ppb	-0.097	-44.02	110	2000	
Cr	52	3	72	-1.146	ppb	-1.146	-11.73	918	5000	
Mn	55	3	72	-0.896	ppb	-0.896	-3.60	177	10000	
Fe	56	2	72	-2.110	ppb	-2.110	-9.52	8294	10000	
Co	59	3	72	-0.017	ppb	-0.017	-12.01	18	2000	
Ni	60	3	72	-0.327	ppb	-0.327	-16.88	80	5000	
Cu	63	3	72	-0.223	ppb	-0.223	-3.74	338	5000	
Zn	66	3	72	0.115	ppb	0.115	106.99	198	5000	
As	75	3	72	-0.100	ppb	-0.100	-96.46	28	2000	
Se	78	2	72	0.019	ppb	0.019	382.08	3	2000	
(Se)	78	3	72	0.195	ppb	0.195	176.26	17	2000	
Sr	88	3	72	0.104	ppb	0.104	55.03	80	4000	
Mo	95	3	115	-0.050	ppb	-0.050	-64.38	33	2000	
Ag	107	3	115	0.001	ppb	0.001	17.46	25	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.469	ppb	-0.469	-3.78	337	2000	
Sb	121	3	115	-0.018	ppb	-0.018	-124.30	58	1000	
Ba	137	3	115	0.008	ppb	0.008	1010.77	55	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-3.26	145	2000	
(Pb)	206	3	193	-0.044	ppb	-0.044	-11.57	128	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-66.69	358	100	
Pb	208	3	193	-0.041	ppb	-0.041	-17.47	775	5000	
Th	232	3	193	0.055	ppb	0.055	9.83	4749	2000	
U	238	3	193	0.000	ppb	0.000	-7274.77	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4527154	1.78	4299393	105.30	60	120	
Sc (IS)	45	3	HMI He	712747	2.69	674661	105.65	60	120	
Ge Internal standard	72	2	HMI H2	2493876	1.31	2269722	109.88	60	120	
Ge Internal standard	72	3	HMI He	833250	1.10	739017	112.75	60	120	
In Internal Standard	115	3	HMI He	2792356	0.76	2543041	109.80	60	120	
Ir (IS)	193	3	HMI He	5909928	0.86	5570851	106.09	60	120	

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	164CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-24T17:33:31-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	50571	0.01
Mg	24	45	3	HMI He	194	20.06
Al	27	45	3	HMI He	87	27.69
K	39	45	3	HMI He	26294	0.02
Ca	40	45	2	HMI H2	14375	0.00
V	51	72	3	HMI He	243	3.99
Cr	52	72	3	HMI He	1368	0.55
Mn	55	72	3	HMI He	170	18.24
Fe	56	72	2	HMI H2	9523	0.02
Co	59	72	3	HMI He	25	0.00
Ni	60	72	3	HMI He	120	10.42
Cu	63	72	3	HMI He	348	2.90
Zn	66	72	3	HMI He	233	5.22
As	75	72	3	HMI He	50	87.21
Se	78	72	2	HMI H2	3	4296.16
(Se)	78	72	3	HMI He	33	103.98
Sr	88	72	3	HMI He	43	40.71
Mo	95	115	3	HMI He	37	77.45
Ag	107	115	3	HMI He	18	227.24
Cd	111	115	3	HMI He	3	5196.15
Sn	120	115	3	HMI He	526	0.93
Sb	121	115	3	HMI He	125	13.96
Ba	137	115	3	HMI He	68	16.36
Tl	205	193	3	HMI He	113	5.95
(Pb)	206	193	3	HMI He	153	20.44
(Pb)	207	193	3	HMI He	325	3.42
Pb	208	193	3	HMI He	726	1.53
Th	232	193	3	HMI He	4297	0.11
U	238	193	3	HMI He	1564	0.41

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4331237	1.40
Sc (IS)	45	3	HMI He	654817	1.95
Ge Internal standard	72	2	HMI H2	2307933	0.86
Ge Internal standard	72	3	HMI He	744678	1.89
In Internal Standard	115	3	HMI He	2599142	2.51
Ir (IS)	193	3	HMI He	5525410	1.45

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	165CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T17:35:24-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	12223424	0.00
Mg	24	45	3	HMI He	1260623	0.00
Al	27	45	3	HMI He	217	4.43
K	39	45	3	HMI He	1016525	0.00
V	51	72	3	HMI He	350	3.08
Cr	52	72	3	HMI He	1904	0.13
Mn	55	72	3	HMI He	297	4.19
Co	59	72	3	HMI He	48	44.57
Ni	60	72	3	HMI He	253	1.19
Cu	63	72	3	HMI He	2049	0.10
Zn	66	72	3	HMI He	506	0.92
As	75	72	3	HMI He	57	91.29
Se	78	72	2	HMI H2	3	1623.80
(Se)	78	72	3	HMI He	23	140.40
Sr	88	72	3	HMI He	695	0.37
Mo	95	115	3	HMI He	82	51.05
Ag	107	115	3	HMI He	45	85.59
Cd	111	115	3	HMI He	3	2598.08
Sn	120	115	3	HMI He	961	0.44
Sb	121	115	3	HMI He	117	18.50
Ba	137	115	3	HMI He	217	15.16
Tl	205	193	3	HMI He	162	4.42
(Pb)	206	193	3	HMI He	320	1.29
(Pb)	207	193	3	HMI He	496	3.25
Pb	208	193	3	HMI He	1549	0.34
Th	232	193	3	HMI He	4534	0.07
U	238	193	3	HMI He	1601	0.13

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4247421	0.77	4331237	98.06	60	120	
Sc (IS)	45	3	HMI He	641618	0.35	654817	97.98	60	120	
Ge Internal standard	72	2	HMI H2	2145853	1.89	2307933	92.98	60	120	
Ge Internal standard	72	3	HMI He	684275	0.82	744678	91.89	60	120	
In Internal Standard	115	3	HMI He	2522836	0.98	2599142	97.06	60	120	
Ir (IS)	193	3	HMI He	5351857	1.39	5525410	96.86	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	166CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T17:37:15-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5447	0.05
Na	23	45	3	HMI He	310369	0.00
Mg	24	45	3	HMI He	130142	0.00
Al	27	45	3	HMI He	46895	0.00
K	39	45	3	HMI He	126495	0.00
V	51	72	3	HMI He	64227	0.00
Cr	52	72	3	HMI He	82120	0.00
Mn	55	72	3	HMI He	43845	0.00
Co	59	72	3	HMI He	130840	0.00
Ni	60	72	3	HMI He	36378	0.00
Cu	63	72	3	HMI He	98256	0.00
Zn	66	72	3	HMI He	17604	0.01
As	75	72	3	HMI He	12146	0.01
Se	78	72	2	HMI H2	6155	0.02
(Se)	78	72	3	HMI He	713	0.74
Sr	88	72	3	HMI He	113302	0.00
Mo	95	115	3	HMI He	52326	0.00
Ag	107	115	3	HMI He	173369	0.00
Cd	111	115	3	HMI He	25505	0.01
Sn	120	115	3	HMI He	77996	0.00
Sb	121	115	3	HMI He	78424	0.00
Ba	137	115	3	HMI He	25328	0.00
Tl	205	193	3	HMI He	366769	0.00
(Pb)	206	193	3	HMI He	123410	0.00
(Pb)	207	193	3	HMI He	109676	0.00
Pb	208	193	3	HMI He	497287	0.00
Th	232	193	3	HMI He	500853	0.00
U	238	193	3	HMI He	522201	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254523	2.02	4331237	98.23	60	120	
Sc (IS)	45	3	HMI He	655480	1.40	654817	100.10	60	120	
Ge Internal standard	72	2	HMI H2	2357907	1.44	2307933	102.17	60	120	
Ge Internal standard	72	3	HMI He	758777	1.61	744678	101.89	60	120	
In Internal Standard	115	3	HMI He	2598609	0.92	2599142	99.98	60	120	
Ir (IS)	193	3	HMI He	5543190	2.16	5525410	100.32	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	167_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:39:06-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.020	ppb	2.576	2117	40	97.6	90	110	
Na	23	3	45	13215.453	ppb	1.404	1705190	12800	103.2	90	110	
Mg	24	3	45	4810.536	ppb	1.487	311924	4800	100.2	90	110	
Al	27	3	45	796.776	ppb	0.457	18858	800	99.6	90	110	
K	39	3	45	4684.714	ppb	3.345	265111	4800	97.6	90	110	
Ca	40	2	45	5015.889	ppb	2.334	2952165	4800	104.5	90	110	
V	51	3	72	41.156	ppb	0.677	26131	40	102.9	90	110	
Cr	52	3	72	41.637	ppb	1.644	34414	40	104.1	90	110	
Mn	55	3	72	41.543	ppb	1.752	18008	40	103.9	90	110	
Fe	56	2	72	837.740	ppb	3.883	1275516	800	104.7	90	110	
Co	59	3	72	41.240	ppb	1.680	53066	40	103.1	90	110	
Ni	60	3	72	41.206	ppb	1.395	14811	40	103.0	90	110	
Cu	63	3	72	41.575	ppb	1.756	40364	40	103.9	90	110	
Zn	66	3	72	80.102	ppb	2.421	13913	80	100.1	90	110	
As	75	3	72	40.078	ppb	4.548	4817	40	100.2	90	110	
Se	78	2	72	42.683	ppb	2.677	2524	40	106.7	90	110	
(Se)	78	3	72	47.147	ppb	14.364	348	40	117.9	90	110	>+\-10%
Sr	88	3	72	123.112	ppb	2.554	68590	120	102.6	90	110	
Mo	95	3	115	40.907	ppb	3.075	21687	40	102.3	90	110	
Ag	107	3	115	79.687	ppb	1.017	139836	80	99.6	90	110	
Cd	111	3	115	39.290	ppb	2.908	10145	40	98.2	90	110	
Sn	120	3	115	39.165	ppb	2.093	31241	40	97.9	90	110	
Sb	121	3	115	40.527	ppb	1.830	32245	40	101.3	90	110	
Ba	137	3	115	39.912	ppb	2.007	10274	40	99.8	90	110	
Tl	205	3	193	41.619	ppb	1.832	150116	40	104.0	90	110	
(Pb)	206	3	193	41.351	ppb	3.026	50243	40	103.4	90	110	
(Pb)	207	3	193	40.611	ppb	1.105	43981	40	101.5	90	110	
Pb	208	3	193	41.171	ppb	2.364	201668	40	102.9	90	110	
Th	232	3	193	82.907	ppb	2.175	408850	80	103.6	90	110	
U	238	3	193	41.753	ppb	1.724	215238	40	104.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4266680	0.53	4331237	98.51	60	120	
Sc (IS)	45	3	HMI He	659800	0.86	654817	100.76	60	120	
Ge Internal standard	72	2	HMI H2	2264290	3.00	2307933	98.11	60	120	
Ge Internal standard	72	3	HMI He	745953	0.88	744678	100.17	60	120	
In Internal Standard	115	3	HMI He	2630174	0.69	2599142	101.19	60	120	
Ir (IS)	193	3	HMI He	5448198	1.90	5525410	98.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	168_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:40:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.993	ppb	5.894	2807	50	106.0	90	110	
Na	23	3	45	50389.599	ppb	3.307	6336967	51000	98.8	90	110	
Mg	24	3	45	10946.255	ppb	2.033	707179	11000	99.5	90	110	
Al	27	3	45	979.152	ppb	2.921	23075	1000	97.9	90	110	
K	39	3	45	10496.343	ppb	1.893	559305	11000	95.4	90	110	
Ca	40	2	45	11282.939	ppb	3.457	6518493	11000	102.6	90	110	
V	51	3	72	49.953	ppb	2.122	31316	50	99.9	90	110	
Cr	52	3	72	51.912	ppb	2.260	42101	50	103.8	90	110	
Mn	55	3	72	50.049	ppb	0.777	21424	50	100.1	90	110	
Fe	56	2	72	1089.570	ppb	3.022	1616077	1000	109.0	90	110	
Co	59	3	72	50.716	ppb	0.630	64549	50	101.4	90	110	
Ni	60	3	72	50.762	ppb	2.030	18018	50	101.5	90	110	
Cu	63	3	72	51.581	ppb	1.075	49450	50	103.2	90	110	
Zn	66	3	72	52.111	ppb	3.002	9032	50	104.2	90	110	
As	75	3	72	52.363	ppb	1.164	6210	50	104.7	90	110	
Se	78	2	72	52.472	ppb	2.957	3026	50	104.9	90	110	
(Se)	78	3	72	47.253	ppb	18.270	345	50	94.5	90	110	
Sr	88	3	72	101.339	ppb	1.804	55850	100	101.3	90	110	
Mo	95	3	115	51.256	ppb	1.174	26451	50	102.5	90	110	
Ag	107	3	115	50.373	ppb	2.698	86059	50	100.7	90	110	
Cd	111	3	115	50.848	ppb	2.254	12780	50	101.7	90	110	
Sn	120	3	115	50.480	ppb	1.596	39061	50	101.0	90	110	
Sb	121	3	115	50.355	ppb	2.264	38974	50	100.7	90	110	
Ba	137	3	115	49.234	ppb	3.084	12321	50	98.5	90	110	
Tl	205	3	193	50.307	ppb	0.203	182863	50	100.6	90	110	
(Pb)	206	3	193	50.212	ppb	1.598	61466	50	100.4	90	110	
(Pb)	207	3	193	49.643	ppb	0.913	54110	50	99.3	90	110	
Pb	208	3	193	50.076	ppb	1.203	247085	50	100.2	90	110	
Th	232	3	193	50.993	ppb	1.188	255104	50	102.0	90	110	
U	238	3	193	50.879	ppb	1.685	264007	50	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4200791	2.94	4331237	96.99	60	120	
Sc (IS)	45	3	HMI He	657621	0.72	654817	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2208099	0.64	2307933	95.67	60	120	
Ge Internal standard	72	3	HMI He	737827	1.30	744678	99.08	60	120	
In Internal Standard	115	3	HMI He	2560943	1.31	2599142	98.53	60	120	
Ir (IS)	193	3	HMI He	5490126	0.40	5525410	99.36	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	169_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:42:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-14.013	ppb	-51.7	48917	25	
Mg	24	3	45	-0.205	ppb	-207.7	180	25	
Al	27	3	45	8.120	ppb	13.6	277	15	
K	39	3	45	-26.189	ppb	-139.9	25034	50	
V	51	3	72	-0.002	ppb	-2325.4	238	1	
Cr	52	3	72	0.248	ppb	54.8	1539	1	
Mn	55	3	72	0.048	ppb	54.7	188	0.5	
Co	59	3	72	0.011	ppb	41.3	38	0.5	
Ni	60	3	72	0.152	ppb	72.3	172	1	
Cu	63	3	72	0.090	ppb	41.7	428	1	
Zn	66	3	72	1.063	ppb	27.0	408	5	
As	75	3	72	-0.038	ppb	-110.1	45	1	
Se	78	2	72	-0.021	ppb	-188.0	1	1	
(Se)	78	3	72	-2.227	ppb	-20.1	18	1	
Sr	88	3	72	0.019	ppb	163.5	53	0.5	
Mo	95	3	115	0.075	ppb	45.4	75	0.5	
Ag	107	3	115	0.007	ppb	42.0	30	1	
Cd	111	3	115	0.007	ppb	290.7	5	0.5	
Sn	120	3	115	0.249	ppb	31.1	713	1	
Sb	121	3	115	-0.037	ppb	-49.7	95	0.6	
Ba	137	3	115	0.015	ppb	720.3	72	0.5	
Tl	205	3	193	0.011	ppb	29.2	152	0.1	
(Pb)	206	3	193	-0.013	ppb	-118.3	137	1	
(Pb)	207	3	193	-0.009	ppb	-119.0	313	1	
Pb	208	3	193	0.019	ppb	77.2	815	0.5	
Th	232	3	193	0.688	ppb	21.8	7667	1	
U	238	3	193	0.011	ppb	247.4	1613	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4172434	1.15	4331237	96.33	60	120	
Sc (IS)	45	3	HMI He	656088	0.70	654817	100.19	60	120	
Ge Internal standard	72	2	HMI H2	2212516	0.72	2307933	95.87	60	120	
Ge Internal standard	72	3	HMI He	733051	0.40	744678	98.44	60	120	
In Internal Standard	115	3	HMI He	2576504	1.35	2599142	99.13	60	120	
Ir (IS)	193	3	HMI He	5499565	1.32	5525410	99.53	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	170LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:44:42-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.477	ppb	33.945	80	1	147.7	70	130	>+/-30%
Na	23	3	45	19.433	ppb	53.793	53658	50	38.9	70	130	>+/-30%
Mg	24	3	45	50.118	ppb	3.843	3461	50	100.2	70	130	
Al	27	3	45	49.966	ppb	12.286	1271	50	99.9	70	130	
K	39	3	45	70.512	ppb	67.215	30240	100	70.5	70	130	
V	51	3	72	4.701	ppb	2.750	3245	5	94.0	70	130	
Cr	52	3	72	2.180	ppb	4.754	3144	2	109.0	70	130	
Mn	55	3	72	1.110	ppb	9.096	656	1	111.0	70	130	
Co	59	3	72	0.978	ppb	4.755	1301	1	97.8	70	130	
Ni	60	3	72	2.036	ppb	7.441	858	2	101.8	70	130	
Cu	63	3	72	2.136	ppb	6.623	2437	2	106.8	70	130	
Zn	66	3	72	9.698	ppb	4.307	1916	10	97.0	70	130	
As	75	3	72	5.171	ppb	7.371	675	5	103.4	70	130	
Se	78	2	72	5.132	ppb	6.043	304	5	102.6	70	130	
(Se)	78	3	72	3.565	ppb	94.919	58	5	71.3	70	130	
Sr	88	3	72	1.023	ppb	2.874	621	1	102.3	70	130	
Mo	95	3	115	2.070	ppb	6.495	1118	2	103.5	70	130	
Ag	107	3	115	1.005	ppb	7.225	1759	1	100.5	70	130	
Cd	111	3	115	1.030	ppb	32.996	265	1	103.0	70	130	
Sn	120	3	115	9.864	ppb	4.668	8163	10	98.6	70	130	
Sb	121	3	115	1.893	ppb	4.221	1608	2	94.7	70	130	
Ba	137	3	115	0.863	ppb	1.989	287	1	86.3	70	130	
Tl	205	3	193	0.984	ppb	1.939	3735	1	98.4	70	130	
(Pb)	206	3	193	1.048	ppb	3.969	1451	1	104.8	70	130	
(Pb)	207	3	193	0.974	ppb	5.194	1396	1	97.4	70	130	
Pb	208	3	193	1.038	ppb	5.198	5904	1	103.8	70	130	
Th	232	3	193	2.173	ppb	3.410	15152	2	108.6	70	130	
U	238	3	193	1.006	ppb	7.006	6830	1	100.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4235565	2.38	4331237	97.79	60	120	
Sc (IS)	45	3	HMI He	663342	1.45	654817	101.30	60	120	
Ge Internal standard	72	2	HMI H2	2251246	1.47	2307933	97.54	60	120	
Ge Internal standard	72	3	HMI He	756410	1.36	744678	101.58	60	120	
In Internal Standard	115	3	HMI He	2598447	2.20	2599142	99.97	60	120	
Ir (IS)	193	3	HMI He	5562917	1.78	5525410	100.68	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	171ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:46:35-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	96509.183	ppb	2.0	12233041	100000	
Mg	24	3	45	94421.282	ppb	1.8	6170386	100000	
Al	27	3	45	95504.741	ppb	2.9	2268540	100000	
K	39	3	45	91758.487	ppb	2.8	4739301	100000	
Ca	40	2	45	98279.187	ppb	1.7	56883114	100000	
V	51	3	72	-0.104	ppb	-29.7	192	1	
Cr	52	3	72	1.279	ppb	7.2	2561	1	>RL or LOD
Mn	55	3	72	0.326	ppb	29.4	333	0.95	
Fe	56	2	72	95960.571	ppb	0.8	145691765	100000	
Co	59	3	72	0.238	ppb	17.7	356	0.5	
Ni	60	3	72	0.460	ppb	36.6	305	1	
Cu	63	3	72	0.209	ppb	38.8	590	1	
Zn	66	3	72	0.386	ppb	66.8	322	1	
As	75	3	72	0.139	ppb	90.7	72	1	
Se	78	2	72	0.102	ppb	68.7	9	1	
(Se)	78	3	72	-2.000	ppb	-53.3	22	1	
Sr	88	3	72	0.636	ppb	13.6	426	1	
Mo	95	3	115	2004.752	ppb	1.7	1016538	2000	>RL or LOD
Ag	107	3	115	0.010	ppb	58.3	35	1	
Cd	111	3	115	0.243	ppb	18.7	63	1	
Sn	120	3	115	0.729	ppb	9.4	1058	1	
Sb	121	3	115	0.086	ppb	69.2	187	1	
Ba	137	3	115	1.449	ppb	18.1	421	0.95	>RL or LOD
Tl	205	3	193	0.017	ppb	11.2	173	1	
(Pb)	206	3	193	0.171	ppb	46.3	356	1	
(Pb)	207	3	193	0.149	ppb	32.6	478	1	
Pb	208	3	193	0.167	ppb	26.3	1524	1	
Th	232	3	193	0.184	ppb	29.5	5115	1	
U	238	3	193	0.028	ppb	68.9	1679	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4215136	1.19	4331237	97.32	60	120	
Sc (IS)	45	3	HMI He	665437	1.82	654817	101.62	60	120	
Ge Internal standard	72	2	HMI H2	2272536	0.78	2307933	98.47	60	120	
Ge Internal standard	72	3	HMI He	800741	1.69	744678	107.53	60	120	
In Internal Standard	115	3	HMI He	2519617	0.93	2599142	96.94	60	120	
Ir (IS)	193	3	HMI He	5426249	1.98	5525410	98.21	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7558071
Data File Name	172ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:48:25-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	99.812	ppb	2.784	5375	100	99.8	80	120	
Na	23	3	45	104034.171	ppb	2.196	13018504	100	104034.2	80	120	>+\-20%
Mg	24	3	45	101426.866	ppb	1.612	6545526	100	101426.9	80	120	>+\-20%
Al	27	3	45	97186.527	ppb	1.747	2279974	100	97186.5	80	120	>+\-20%
K	39	3	45	99189.671	ppb	1.228	5058072	100	99189.7	80	120	>+\-20%
Ca	40	2	45	106249.706	ppb	1.063	61518212	100	106249.7	80	120	>+\-20%
V	51	3	72	94.120	ppb	3.080	62697	100	94.1	80	120	
Cr	52	3	72	94.669	ppb	3.485	80687	100	94.7	80	120	
Mn	55	3	72	94.265	ppb	1.818	42881	100	94.3	80	120	
Fe	56	2	72	98415.070	ppb	4.025	151917794	100	98415.1	80	120	>+\-20%
Co	59	3	72	92.466	ppb	1.885	125508	100	92.5	80	120	
Ni	60	3	72	90.705	ppb	3.264	34230	100	90.7	80	120	
Cu	63	3	72	93.455	ppb	1.762	95262	100	93.5	80	120	
Zn	66	3	72	89.972	ppb	2.635	16455	100	90.0	80	120	
As	75	3	72	92.185	ppb	1.915	11619	100	92.2	80	120	
Se	78	2	72	98.797	ppb	2.521	5961	100	98.8	80	120	
(Se)	78	3	72	95.008	ppb	4.143	705	100	95.0	80	120	
Sr	88	3	72	189.580	ppb	3.255	111381	100	189.6	80	120	>+\-20%
Mo	95	3	115	2118.880	ppb	3.075	1068785	100	2118.9	80	120	
Ag	107	3	115	99.575	ppb	2.478	166529	100	99.6	80	120	
Cd	111	3	115	99.068	ppb	2.818	24372	100	99.1	80	120	
Sn	120	3	115	103.468	ppb	1.423	77844	100	103.5	80	120	
Sb	121	3	115	102.475	ppb	2.753	77519	100	102.5	80	120	
Ba	137	3	115	105.799	ppb	3.757	25844	100	105.8	80	120	
Tl	205	3	193	100.114	ppb	1.636	361077	100	100.1	80	120	
(Pb)	206	3	193	98.980	ppb	2.514	120104	100	99.0	80	120	
(Pb)	207	3	193	97.171	ppb	1.678	104819	100	97.2	80	120	
Pb	208	3	193	98.816	ppb	1.922	483232	100	98.8	80	120	
Th	232	3	193	102.258	ppb	2.086	503482	100	102.3	80	120	
U	238	3	193	102.270	ppb	2.442	525114	100	102.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4216424	1.28	4331237	97.35	60	120	
Sc (IS)	45	3	HMI He	657131	1.78	654817	100.35	60	120	
Ge Internal standard	72	2	HMI H2	2311762	2.11	2307933	100.17	60	120	
Ge Internal standard	72	3	HMI He	787129	2.59	744678	105.70	60	120	
In Internal Standard	115	3	HMI He	2507478	2.16	2599142	96.47	60	120	
Ir (IS)	193	3	HMI He	5450039	1.67	5525410	98.64	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	173SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:50:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.119	ppb	0.119	43.51	7	2000	
Na	23	3	45	-48.055	ppb	-48.055	-29.66	46339	400000	
Mg	24	3	45	5.871	ppb	5.871	16.55	594	400000	
Al	27	3	45	5.359	ppb	5.359	24.00	220	400000	
K	39	3	45	-36.892	ppb	-36.892	-89.36	25382	400000	
Ca	40	2	45	13.203	ppb	13.203	2.56	23072	400000	
V	51	3	72	-0.064	ppb	-0.064	-33.23	215	2000	
Cr	52	3	72	0.113	ppb	0.113	126.08	1538	5000	
Mn	55	3	72	0.092	ppb	0.092	124.50	222	10000	
Fe	56	2	72	10.517	ppb	10.517	3.34	26161	10000	
Co	59	3	72	0.189	ppb	0.189	9.15	283	2000	
Ni	60	3	72	0.253	ppb	0.253	58.26	222	5000	
Cu	63	3	72	0.262	ppb	0.262	9.84	635	5000	
Zn	66	3	72	0.253	ppb	0.253	77.69	292	5000	
As	75	3	72	0.121	ppb	0.121	68.39	68	2000	
Se	78	2	72	0.076	ppb	0.076	133.75	7	2000	
(Se)	78	3	72	-1.967	ppb	-1.967	-109.52	22	2000	
Sr	88	3	72	0.184	ppb	0.184	50.10	153	4000	
Mo	95	3	115	1.726	ppb	1.726	14.53	968	2000	
Ag	107	3	115	0.011	ppb	0.011	54.97	38	100	
Cd	111	3	115	0.227	ppb	0.227	40.48	63	2000	
Sn	120	3	115	0.321	ppb	0.321	15.08	798	2000	
Sb	121	3	115	0.144	ppb	0.144	35.45	245	1000	
Ba	137	3	115	0.075	ppb	0.075	90.38	90	5000	
Tl	205	3	193	0.165	ppb	0.165	20.23	728	2000	
(Pb)	206	3	193	0.147	ppb	0.147	30.61	340	100	
(Pb)	207	3	193	0.172	ppb	0.172	20.14	521	100	
Pb	208	3	193	0.173	ppb	0.173	9.09	1613	5000	
Th	232	3	193	0.684	ppb	0.684	17.45	7825	2000	
U	238	3	193	0.036	ppb	0.036	32.83	1784	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4495588	0.50	4331237	103.79	60	120	
Sc (IS)	45	3	HMI He	680987	3.37	654817	104.00	60	120	
Ge Internal standard	72	2	HMI H2	2346420	2.26	2307933	101.67	60	120	
Ge Internal standard	72	3	HMI He	787054	2.74	744678	105.69	60	120	
In Internal Standard	115	3	HMI He	2676028	0.94	2599142	102.96	60	120	
Ir (IS)	193	3	HMI He	5624942	1.30	5525410	101.80	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	174_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:52:07-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.033	ppb	3.964	2681	50	98.1	90	110	
Na	23	3	45	49598.718	ppb	2.435	6508476	51000	97.3	90	110	
Mg	24	3	45	10857.247	ppb	2.925	731670	11000	98.7	90	110	
Al	27	3	45	985.065	ppb	2.474	24222	1000	98.5	90	110	
K	39	3	45	10344.986	ppb	2.918	575420	11000	94.0	90	110	
Ca	40	2	45	11449.871	ppb	0.861	6703730	11000	104.1	90	110	
V	51	3	72	49.738	ppb	2.137	32887	50	99.5	90	110	
Cr	52	3	72	50.120	ppb	1.268	42921	50	100.2	90	110	
Mn	55	3	72	49.110	ppb	3.253	22170	50	98.2	90	110	
Fe	56	2	72	1071.753	ppb	1.167	1643995	1000	107.2	90	110	
Co	59	3	72	49.491	ppb	2.313	66420	50	99.0	90	110	
Ni	60	3	72	49.515	ppb	5.294	18533	50	99.0	90	110	
Cu	63	3	72	49.605	ppb	1.926	50167	50	99.2	90	110	
Zn	66	3	72	48.542	ppb	5.130	8888	50	97.1	90	110	
As	75	3	72	47.955	ppb	4.886	6000	50	95.9	90	110	
Se	78	2	72	51.719	ppb	3.374	3084	50	103.4	90	110	
(Se)	78	3	72	43.724	ppb	19.185	340	50	87.4	90	110	>+\-10%
Sr	88	3	72	98.394	ppb	2.701	57188	100	98.4	90	110	
Mo	95	3	115	50.578	ppb	2.685	26998	50	101.2	90	110	
Ag	107	3	115	49.442	ppb	2.048	87395	50	98.9	90	110	
Cd	111	3	115	49.427	ppb	1.627	12853	50	98.9	90	110	
Sn	120	3	115	49.720	ppb	1.392	39806	50	99.4	90	110	
Sb	121	3	115	50.407	ppb	1.973	40366	50	100.8	90	110	
Ba	137	3	115	50.071	ppb	1.165	12967	50	100.1	90	110	
Tl	205	3	193	50.466	ppb	2.922	186299	50	100.9	90	110	
(Pb)	206	3	193	50.281	ppb	1.967	62516	50	100.6	90	110	
(Pb)	207	3	193	49.341	ppb	2.267	54625	50	98.7	90	110	
Pb	208	3	193	50.025	ppb	1.631	250714	50	100.0	90	110	
Th	232	3	193	50.334	ppb	2.131	255810	50	100.7	90	110	
U	238	3	193	50.196	ppb	1.089	264590	50	100.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4255371	0.84	4331237	98.25	60	120	
Sc (IS)	45	3	HMI He	686198	2.17	654817	104.79	60	120	
Ge Internal standard	72	2	HMI H2	2283228	0.85	2307933	98.93	60	120	
Ge Internal standard	72	3	HMI He	778147	1.24	744678	104.49	60	120	
In Internal Standard	115	3	HMI He	2649455	1.19	2599142	101.94	60	120	
Ir (IS)	193	3	HMI He	5576992	1.27	5525410	100.93	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	175_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:53:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	-34.297	ppb	-17.7	47005	25	
Mg	24	3	45	0.419	ppb	66.9	224	25	
Al	27	3	45	9.211	ppb	18.4	307	15	
K	39	3	45	-27.979	ppb	-90.9	25268	50	
V	51	3	72	-0.124	ppb	-21.7	167	1	
Cr	52	3	72	0.057	ppb	81.5	1423	1	
Mn	55	3	72	-0.004	ppb	-70.6	170	0.5	
Co	59	3	72	0.005	ppb	32.1	32	0.5	
Ni	60	3	72	0.187	ppb	25.3	188	1	
Cu	63	3	72	0.087	ppb	37.6	435	1	
Zn	66	3	72	1.259	ppb	4.1	451	5	
As	75	3	72	-0.061	ppb	-54.2	43	1	
Se	78	2	72	-0.010	ppb	-343.8	2	1	
(Se)	78	3	72	-3.518	ppb	-22.1	10	1	
Sr	88	3	72	-0.013	ppb	-27.8	37	0.5	
Mo	95	3	115	0.175	ppb	10.6	127	0.5	
Ag	107	3	115	0.005	ppb	35.9	27	1	
Cd	111	3	115	-0.006	ppb	-181.1	2	0.5	
Sn	120	3	115	0.209	ppb	27.7	680	1	
Sb	121	3	115	-0.028	ppb	-204.0	102	0.6	
Ba	137	3	115	-0.104	ppb	-72.1	42	0.5	
Tl	205	3	193	0.006	ppb	244.6	135	0.1	
(Pb)	206	3	193	0.017	ppb	117.9	175	1	
(Pb)	207	3	193	0.016	ppb	173.9	345	1	
Pb	208	3	193	0.018	ppb	7.1	823	0.5	
Th	232	3	193	0.544	ppb	29.8	7030	1	
U	238	3	193	0.022	ppb	38.9	1688	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4289125	1.14	4331237	99.03	60	120	
Sc (IS)	45	3	HMI He	664781	1.60	654817	101.52	60	120	
Ge Internal standard	72	2	HMI H2	2249954	2.35	2307933	97.49	60	120	
Ge Internal standard	72	3	HMI He	750249	2.61	744678	100.75	60	120	
In Internal Standard	115	3	HMI He	2566578	1.25	2599142	98.75	60	120	
Ir (IS)	193	3	HMI He	5562057	1.17	5525410	100.66	60	120	

Blank Report

Sample Table

Sample Name	mb 280-599676/1-a
Data File Name	176_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:55:53-07:00
Sample Type	Blank
Dilution	1
Comment	599676 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.092	ppb	1.865605156	5	0.5
Na	23	3	45	-6.390	ppb	-69.92202571	50045	25
Mg	24	3	45	2.421	ppb	26.71062705	350	25
Al	27	3	45	4.087	ppb	40.6739366	184	15
K	39	3	45	-8.596	ppb	-406.818999	26000	50
V	51	3	72	-0.043	ppb	-101.6192803	217	1
Cr	52	3	72	0.371	ppb	18.58410689	1661	1
Mn	55	3	72	1.453	ppb	12.51815055	793	0.5
Co	59	3	72	0.005	ppb	125.1757634	32	0.5
Ni	60	3	72	0.304	ppb	31.15022131	228	1
Cu	63	3	72	0.159	ppb	15.71346062	501	1
Zn	66	3	72	0.670	ppb	58.77275165	347	5
As	75	3	72	-0.155	ppb	-99.84960347	32	1
(Se)	78	3	72	-2.298	ppb	-95.74714883	18	1
Sr	88	3	72	0.207	ppb	23.7866084	158	0.5
Mo	95	3	115	0.121	ppb	41.74221887	100	0.5
Ag	107	3	115	0.009	ppb	75.73266691	33	1
Cd	111	3	115	0.013	ppb	86.58646003	7	0.5
Sn	120	3	115	0.533	ppb	8.603001215	941	1
Sb	121	3	115	-0.027	ppb	-117.2345088	103	0.6
Ba	137	3	115	0.091	ppb	52.71556876	92	0.5
Tl	205	3	193	-0.004	ppb	-164.9786306	102	0.1
(Pb)	206	3	193	-0.008	ppb	-170.6521432	145	1
(Pb)	207	3	193	-0.008	ppb	-346.8414132	320	1
Pb	208	3	193	0.012	ppb	155.7497534	793	0.5
Th	232	3	193	0.109	ppb	28.95673483	4887	1
U	238	3	193	-0.010	ppb	-63.42471981	1526	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4332793	1.01	4331237	100.04	60	120	
Sc (IS)	45	3	HMI He	658473	1.68	654817	100.56	60	120	
Ge Internal standard	72	2	HMI H2	2251061	1.01	2307933	97.54	60	120	
Ge Internal standard	72	3	HMI He	743962	2.91	744678	99.90	60	120	
In Internal Standard	115	3	HMI He	2605105	0.77	2599142	100.23	60	120	
Ir (IS)	193	3	HMI He	5581282	1.22	5525410	101.01	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599676/2-a
Data File Name	177_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:57:47-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599676 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.857	40.857	ppb	6.714	2226	40	102.1	80	120	
Na	23	3	45	814.839	814.839	ppb	1.800	150839	40	2037.1	80	120	>+/-20%
Mg	24	3	45	823.883	823.883	ppb	0.408	52845	40	2059.7	80	120	>+/-20%
Al	27	3	45	832.924	832.924	ppb	1.056	19436	40	2082.3	80	120	>+/-20%
K	39	3	45	776.553	776.553	ppb	3.888	65149	40	1941.4	80	120	>+/-20%
Ca	40	2	45	883.937	883.937	ppb	2.198	528479	40	2209.8	80	120	>+/-20%
V	51	3	72	40.272	40.272	ppb	2.655	25896	40	100.7	80	120	
Cr	52	3	72	40.867	40.867	ppb	3.928	34220	40	102.2	80	120	
Mn	55	3	72	58.530	58.530	ppb	1.533	25621	40	146.3	80	120	>+/-20%
Fe	56	2	72	861.307	861.307	ppb	6.165	1312343	40	2153.3	80	120	>+/-20%
(Fe)	56	3	72	826.357	826.357	ppb	1.645	560812	40	2065.9	80	120	>+/-20%
Co	59	3	72	40.831	40.831	ppb	3.732	53189	40	102.1	80	120	
Ni	60	3	72	40.989	40.989	ppb	1.923	14917	40	102.5	80	120	
Cu	63	3	72	40.784	40.784	ppb	3.238	40096	40	102.0	80	120	
Zn	66	3	72	44.504	44.504	ppb	0.621	7935	40	111.3	80	120	
As	75	3	72	40.341	40.341	ppb	2.775	4912	40	100.9	80	120	
Se	78	2	72	41.580	41.580	ppb	3.186	2461	40	103.9	80	120	
(Se)	78	3	72	39.808	39.808	ppb	1.614	303	40	99.5	80	120	
Sr	88	3	72	81.685	81.685	ppb	1.770	46102	40	204.2	80	120	>+/-20%
Mo	95	3	115	41.863	41.863	ppb	1.670	21698	40	104.7	80	120	
Ag	107	3	115	40.821	40.821	ppb	1.465	70045	40	102.1	80	120	
Cd	111	3	115	41.212	41.212	ppb	3.644	10401	40	103.0	80	120	
Sn	120	3	115	40.617	40.617	ppb	2.572	31655	40	101.5	80	120	
Sb	121	3	115	40.992	40.992	ppb	1.123	31889	40	102.5	80	120	
Ba	137	3	115	40.558	40.558	ppb	1.547	10207	40	101.4	80	120	
Tl	205	3	193	40.665	40.665	ppb	1.800	150361	40	101.7	80	120	
(Pb)	206	3	193	39.838	39.838	ppb	3.420	49622	40	99.6	80	120	
(Pb)	207	3	193	39.924	39.924	ppb	1.914	44322	40	99.8	80	120	
Pb	208	3	193	39.836	39.836	ppb	2.321	200051	40	99.6	80	120	
Th	232	3	193	40.483	40.483	ppb	2.745	206863	40	101.2	80	120	
U	238	3	193	40.565	40.565	ppb	3.044	214380	40	101.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4239052	2.18	4331237	97.87	60	120	
Sc (IS)	45	3	HMI He	650649	0.47	654817	99.36	60	120	
Ge Internal standard	72	2	HMI H2	2266551	2.08	2307933	98.21	60	120	
Ge Internal standard	72	3	HMI He	755472	2.04	744678	101.45	60	120	
In Internal Standard	115	3	HMI He	2571804	1.73	2599142	98.95	60	120	
Ir (IS)	193	3	HMI He	5584914	1.81	5525410	101.08	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-a
Data File Name	178SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:59:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	19784.976	ppb	19784.976	1.77	2483879	400000	
Mg	24	3	45	12517.063	ppb	12517.063	1.29	797319	400000	
Al	27	3	45	8.979	ppb	8.979	28.09	294	400000	
K	39	3	45	5752.439	ppb	5752.439	1.01	313997	400000	
Ca	40	2	45	52110.635	ppb	52110.635	1.69	29952147	400000	
V	51	3	72	9.767	ppb	9.767	1.08	6638	2000	
Cr	52	3	72	9.273	ppb	9.273	1.22	9072	5000	
Mn	55	3	72	1.562	ppb	1.562	7.27	875	10000	
Fe	56	2	72	20.547	ppb	20.547	2.77	41153	10000	
Co	59	3	72	0.045	ppb	0.045	42.05	87	2000	
Ni	60	3	72	0.868	ppb	0.868	15.72	446	5000	
Cu	63	3	72	0.782	ppb	0.782	12.27	1144	5000	
Zn	66	3	72	4.442	ppb	4.442	4.25	1031	5000	
As	75	3	72	3.634	ppb	3.634	15.99	501	2000	
Se	78	2	72	1.408	ppb	1.408	10.15	87	2000	
(Se)	78	3	72	1.216	ppb	1.216	87.54	43	2000	
Sr	88	3	72	244.982	ppb	244.982	0.19	141817	4000	
Mo	95	3	115	2.801	ppb	2.801	7.52	1454	2000	
Ag	107	3	115	0.011	ppb	0.011	16.28	37	100	
Cd	111	3	115	0.007	ppb	0.007	281.71	5	2000	
Sn	120	3	115	0.840	ppb	0.840	4.11	1141	2000	
Sb	121	3	115	0.280	ppb	0.280	19.30	333	1000	
Ba	137	3	115	32.958	ppb	32.958	2.95	8135	5000	
Tl	205	3	193	0.010	ppb	0.010	39.85	145	2000	
(Pb)	206	3	193	0.023	ppb	0.023	277.53	177	100	
(Pb)	207	3	193	0.070	ppb	0.070	44.35	390	100	
Pb	208	3	193	0.055	ppb	0.055	38.10	970	5000	
Th	232	3	193	0.646	ppb	0.646	18.25	7285	2000	
U	238	3	193	5.242	ppb	5.242	4.61	27984	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4185309	1.58	4331237	96.63	60	120	
Sc (IS)	45	3	HMI He	648350	0.21	654817	99.01	60	120	
Ge Internal standard	72	2	HMI H2	2305372	1.21	2307933	99.89	60	120	
Ge Internal standard	72	3	HMI He	775237	0.60	744678	104.10	60	120	
In Internal Standard	115	3	HMI He	2518552	0.83	2599142	96.90	60	120	
Ir (IS)	193	3	HMI He	5374249	0.80	5525410	97.26	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-aSD@5
Data File Name	179SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:01:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.093	ppb	0.093	173.21	5	2000	
Na	23	3	45	4011.238	ppb	4011.238	1.66	542344	400000	
Mg	24	3	45	2496.210	ppb	2496.210	2.28	158807	400000	
Al	27	3	45	-0.093	ppb	-0.093	-539.74	83	400000	
K	39	3	45	1151.583	ppb	1151.583	4.05	83507	400000	
Ca	40	2	45	10408.799	ppb	10408.799	0.79	6151491	400000	
V	51	3	72	2.061	ppb	2.061	7.87	1593	2000	
Cr	52	3	72	2.073	ppb	2.073	5.33	3115	5000	
Mn	55	3	72	0.334	ppb	0.334	20.67	325	10000	
Fe	56	2	72	4.865	ppb	4.865	7.45	16947	10000	
Co	59	3	72	0.013	ppb	0.013	58.60	43	2000	
Ni	60	3	72	0.241	ppb	0.241	43.55	213	5000	
Cu	63	3	72	0.252	ppb	0.252	6.53	611	5000	
Zn	66	3	72	1.338	ppb	1.338	43.15	478	5000	
As	75	3	72	0.715	ppb	0.715	14.23	140	2000	
Se	78	2	72	0.346	ppb	0.346	32.64	23	2000	
(Se)	78	3	72	-2.614	ppb	-2.614	-62.97	17	2000	
Sr	88	3	72	50.298	ppb	50.298	2.22	28985	4000	
Mo	95	3	115	0.582	ppb	0.582	11.45	337	2000	
Ag	107	3	115	0.014	ppb	0.014	9.95	42	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.471	ppb	0.471	19.04	880	2000	
Sb	121	3	115	0.024	ppb	0.024	76.77	142	1000	
Ba	137	3	115	6.600	ppb	6.600	8.49	1713	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-437.23	108	2000	
(Pb)	206	3	193	-0.004	ppb	-0.004	-67.09	147	100	
(Pb)	207	3	193	-0.003	ppb	-0.003	-794.84	317	100	
Pb	208	3	193	0.009	ppb	0.009	101.32	760	5000	
Th	232	3	193	0.120	ppb	0.120	11.90	4807	2000	
U	238	3	193	1.043	ppb	1.043	4.75	6867	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4294876	1.88	4331237	99.16	60	120	
Sc (IS)	45	3	HMI He	647013	0.88	654817	98.81	60	120	
Ge Internal standard	72	2	HMI H2	2298764	2.83	2307933	99.60	60	120	
Ge Internal standard	72	3	HMI He	770932	1.43	744678	103.53	60	120	
In Internal Standard	115	3	HMI He	2565663	1.28	2599142	98.71	60	120	
Ir (IS)	193	3	HMI He	5434278	1.35	5525410	98.35	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-b ms
Data File Name	180SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:03:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.250	ppb	42.250	1.09	2279	2000	
Na	23	3	45	20741.799	ppb	20741.799	2.52	2607897	400000	
Mg	24	3	45	13500.433	ppb	13500.433	1.51	862307	400000	
Al	27	3	45	827.696	ppb	827.696	3.34	19296	400000	
K	39	3	45	6553.218	ppb	6553.218	1.50	354978	400000	
Ca	40	2	45	52791.876	ppb	52791.876	1.24	30805575	400000	
V	51	3	72	49.854	ppb	49.854	3.28	33089	2000	
Cr	52	3	72	48.297	ppb	48.297	2.51	41574	5000	
Mn	55	3	72	39.546	ppb	39.546	3.89	17956	10000	
Fe	56	2	72	861.787	ppb	861.787	2.42	1350164	10000	
Co	59	3	72	39.811	ppb	39.811	3.49	53647	2000	
Ni	60	3	72	40.228	ppb	40.228	2.07	15146	5000	
Cu	63	3	72	40.533	ppb	40.533	2.31	41222	5000	
Zn	66	3	72	40.413	ppb	40.413	3.07	7472	5000	
As	75	3	72	45.072	ppb	45.072	1.09	5668	2000	
Se	78	2	72	42.450	ppb	42.450	1.12	2582	2000	
(Se)	78	3	72	47.841	ppb	47.841	0.59	370	2000	
Sr	88	3	72	320.770	ppb	320.770	2.67	187079	4000	
Mo	95	3	115	45.100	ppb	45.100	1.97	23200	2000	
Ag	107	3	115	42.088	ppb	42.088	1.60	71678	100	
Cd	111	3	115	41.662	ppb	41.662	1.26	10439	2000	
Sn	120	3	115	42.283	ppb	42.283	1.07	32690	2000	
Sb	121	3	115	41.964	ppb	41.964	1.08	32395	1000	
Ba	137	3	115	74.862	ppb	74.862	0.33	18642	5000	
Tl	205	3	193	41.063	ppb	41.063	1.40	151680	2000	
(Pb)	206	3	193	40.702	ppb	40.702	0.53	50656	100	
(Pb)	207	3	193	40.001	ppb	40.001	0.74	44365	100	
Pb	208	3	193	40.580	ppb	40.580	0.15	203595	5000	
Th	232	3	193	41.577	ppb	41.577	1.41	212143	2000	
U	238	3	193	46.173	ppb	46.173	1.43	243595	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4248504	0.71	4331237	98.09	60	120	
Sc (IS)	45	3	HMI He	650074	1.35	654817	99.28	60	120	
Ge Internal standard	72	2	HMI H2	2328993	1.45	2307933	100.91	60	120	
Ge Internal standard	72	3	HMI He	781421	2.42	744678	104.93	60	120	
In Internal Standard	115	3	HMI He	2552321	0.70	2599142	98.20	60	120	
Ir (IS)	193	3	HMI He	5578366	0.37	5525410	100.96	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-c msd
Data File Name	181SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:05:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.174	ppb	42.174	2.51	2291	2000	
Na	23	3	45	19738.245	ppb	19738.245	0.78	2588120	400000	
Mg	24	3	45	12520.788	ppb	12520.788	0.51	832953	400000	
Al	27	3	45	813.608	ppb	813.608	1.76	19760	400000	
K	39	3	45	6189.627	ppb	6189.627	1.21	350803	400000	
Ca	40	2	45	50938.528	ppb	50938.528	2.13	30137755	400000	
V	51	3	72	50.627	ppb	50.627	1.17	34220	2000	
Cr	52	3	72	48.601	ppb	48.601	1.51	42594	5000	
Mn	55	3	72	39.584	ppb	39.584	2.08	18308	10000	
Fe	56	2	72	850.098	ppb	850.098	0.75	1339014	10000	
Co	59	3	72	39.677	ppb	39.677	0.91	54451	2000	
Ni	60	3	72	40.672	ppb	40.672	5.34	15586	5000	
Cu	63	3	72	40.210	ppb	40.210	0.30	41648	5000	
Zn	66	3	72	40.818	ppb	40.818	0.53	7683	5000	
As	75	3	72	43.578	ppb	43.578	2.82	5580	2000	
Se	78	2	72	42.914	ppb	42.914	1.53	2624	2000	
(Se)	78	3	72	45.962	ppb	45.962	5.27	363	2000	
Sr	88	3	72	313.383	ppb	313.383	1.33	186131	4000	
Mo	95	3	115	43.942	ppb	43.942	2.46	23492	2000	
Ag	107	3	115	41.610	ppb	41.610	2.43	73646	100	
Cd	111	3	115	41.789	ppb	41.789	4.20	10879	2000	
Sn	120	3	115	41.201	ppb	41.201	4.10	33111	2000	
Sb	121	3	115	41.186	ppb	41.186	3.19	33041	1000	
Ba	137	3	115	71.258	ppb	71.258	2.52	18444	5000	
Tl	205	3	193	40.889	ppb	40.889	0.95	154250	2000	
(Pb)	206	3	193	40.465	ppb	40.465	0.90	51433	100	
(Pb)	207	3	193	40.669	ppb	40.669	0.93	46061	100	
Pb	208	3	193	40.591	ppb	40.591	1.20	207971	5000	
Th	232	3	193	41.700	ppb	41.700	1.54	217274	2000	
U	238	3	193	45.830	ppb	45.830	1.35	246926	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4307848	0.83	4331237	99.46	60	120	
Sc (IS)	45	3	HMI He	677144	0.48	654817	103.41	60	120	
Ge Internal standard	72	2	HMI H2	2340953	0.71	2307933	101.43	60	120	
Ge Internal standard	72	3	HMI He	795516	1.08	744678	106.83	60	120	
In Internal Standard	115	3	HMI He	2653178	1.97	2599142	102.08	60	120	
Ir (IS)	193	3	HMI He	5697362	1.26	5525410	103.11	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-a PDS
Data File Name	182SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:07:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	211.281	ppb	211.281	4.08	11257	2000	
Na	23	3	45	30046.058	ppb	30046.058	4.48	3772175	400000	
Mg	24	3	45	14349.484	ppb	14349.484	2.23	920590	400000	
Al	27	3	45	2063.282	ppb	2063.282	2.11	48197	400000	
K	39	3	45	7619.681	ppb	7619.681	3.33	410336	400000	
Ca	40	2	45	53584.506	ppb	53584.506	1.05	31056458	400000	
V	51	3	72	206.313	ppb	206.313	2.01	137214	2000	
Cr	52	3	72	206.418	ppb	206.418	2.22	174338	5000	
Mn	55	3	72	196.732	ppb	196.732	2.26	89334	10000	
Fe	56	2	72	40.407	ppb	40.407	3.56	72300	10000	
Co	59	3	72	194.286	ppb	194.286	1.27	263784	2000	
Ni	60	3	72	195.277	ppb	195.277	1.01	73604	5000	
Cu	63	3	72	198.154	ppb	198.154	1.85	201663	5000	
Zn	66	3	72	207.892	ppb	207.892	2.45	37714	5000	
As	75	3	72	196.583	ppb	196.583	0.69	24730	2000	
Se	78	2	72	206.940	ppb	206.940	5.63	12540	2000	
(Se)	78	3	72	207.799	ppb	207.799	6.39	1499	2000	
Sr	88	3	72	433.336	ppb	433.336	0.13	254748	4000	
Mo	95	3	115	210.913	ppb	210.913	2.48	109755	2000	
Ag	107	3	115	53.096	ppb	53.096	2.16	91576	100	
Cd	111	3	115	205.274	ppb	205.274	0.81	52088	2000	
Sn	120	3	115	207.713	ppb	207.713	0.77	160615	2000	
Sb	121	3	115	204.131	ppb	204.131	1.69	159125	1000	
Ba	137	3	115	234.435	ppb	234.435	2.45	58977	5000	
Tl	205	3	193	204.955	ppb	204.955	0.85	754697	2000	
(Pb)	206	3	193	206.316	ppb	206.316	0.69	255519	100	
(Pb)	207	3	193	202.003	ppb	202.003	1.67	222131	100	
Pb	208	3	193	204.085	ppb	204.085	0.99	1018340	5000	
Th	232	3	193	216.642	ppb	216.642	4.07	1084499	2000	
U	238	3	193	223.183	ppb	223.183	2.14	1168279	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4220211	2.19	4331237	97.44	60	120	
Sc (IS)	45	3	HMI He	653266	2.55	654817	99.76	60	120	
Ge Internal standard	72	2	HMI H2	2325245	4.21	2307933	100.75	60	120	
Ge Internal standard	72	3	HMI He	787388	1.75	744678	105.74	60	120	
In Internal Standard	115	3	HMI He	2585349	1.52	2599142	99.47	60	120	
Ir (IS)	193	3	HMI He	5564530	1.28	5525410	100.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	183_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:09:00-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.765	ppb	4.242	2809	50	101.5	90	110	
Na	23	3	45	50252.170	ppb	2.351	6510504	51000	98.5	90	110	
Mg	24	3	45	10917.252	ppb	3.648	726437	11000	99.2	90	110	
Al	27	3	45	995.921	ppb	5.025	24165	1000	99.6	90	110	
K	39	3	45	10464.611	ppb	3.083	574403	11000	95.1	90	110	
Ca	40	2	45	10965.828	ppb	0.879	6617715	11000	99.7	90	110	
V	51	3	72	51.028	ppb	3.355	33492	50	102.1	90	110	
Cr	52	3	72	50.476	ppb	2.461	42913	50	101.0	90	110	
Mn	55	3	72	49.145	ppb	3.019	22033	50	98.3	90	110	
Fe	56	2	72	1064.004	ppb	0.234	1633187	1000	106.4	90	110	
Co	59	3	72	50.371	ppb	2.695	67127	50	100.7	90	110	
Ni	60	3	72	50.331	ppb	3.890	18703	50	100.7	90	110	
Cu	63	3	72	49.541	ppb	2.889	49744	50	99.1	90	110	
Zn	66	3	72	47.872	ppb	1.142	8712	50	95.7	90	110	
As	75	3	72	51.415	ppb	2.909	6390	50	102.8	90	110	
Se	78	2	72	52.337	ppb	1.258	3123	50	104.7	90	110	
(Se)	78	3	72	47.864	ppb	11.775	366	50	95.7	90	110	
Sr	88	3	72	99.252	ppb	4.342	57265	100	99.3	90	110	
Mo	95	3	115	51.032	ppb	2.401	26878	50	102.1	90	110	
Ag	107	3	115	50.724	ppb	0.219	88460	50	101.4	90	110	
Cd	111	3	115	51.518	ppb	2.603	13215	50	103.0	90	110	
Sn	120	3	115	50.482	ppb	1.956	39861	50	101.0	90	110	
Sb	121	3	115	50.889	ppb	1.546	40200	50	101.8	90	110	
Ba	137	3	115	50.169	ppb	3.418	12813	50	100.3	90	110	
Tl	205	3	193	50.455	ppb	1.869	186316	50	100.9	90	110	
(Pb)	206	3	193	50.827	ppb	1.495	63207	50	101.7	90	110	
(Pb)	207	3	193	50.196	ppb	2.564	55572	50	100.4	90	110	
Pb	208	3	193	50.408	ppb	1.474	252676	50	100.8	90	110	
Th	232	3	193	52.108	ppb	1.343	264742	50	104.2	90	110	
U	238	3	193	50.965	ppb	2.226	268640	50	101.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4386128	1.60	4331237	101.27	60	120	
Sc (IS)	45	3	HMI He	677635	2.71	654817	103.48	60	120	
Ge Internal standard	72	2	HMI H2	2284531	1.19	2307933	98.99	60	120	
Ge Internal standard	72	3	HMI He	772887	2.65	744678	103.79	60	120	
In Internal Standard	115	3	HMI He	2613609	0.95	2599142	100.56	60	120	
Ir (IS)	193	3	HMI He	5578151	1.52	5525410	100.95	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	184_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:10:52-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-31.335	ppb	-16.4	46780	25	
Mg	24	3	45	0.151	ppb	652.2	204	25	
Al	27	3	45	10.967	ppb	18.9	344	15	
K	39	3	45	-27.871	ppb	-141.3	24964	50	
V	51	3	72	-0.060	ppb	-91.1	208	1	
Cr	52	3	72	0.196	ppb	20.6	1548	1	
Mn	55	3	72	0.013	ppb	598.1	178	0.5	
Co	59	3	72	0.014	ppb	39.8	43	0.5	
Ni	60	3	72	0.134	ppb	49.5	170	1	
Cu	63	3	72	0.087	ppb	34.0	438	1	
Zn	66	3	72	1.394	ppb	6.5	478	5	
As	75	3	72	-0.033	ppb	-499.0	47	1	
Se	78	2	72	0.035	ppb	197.5	5	1	
(Se)	78	3	72	-2.784	ppb	-53.8	15	1	
Sr	88	3	72	-0.013	ppb	-153.4	37	0.5	
Mo	95	3	115	0.121	ppb	35.8	100	0.5	
Ag	107	3	115	-0.002	ppb	-274.4	15	1	
Cd	111	3	115	-0.007	ppb	-169.4	2	0.5	
Sn	120	3	115	0.268	ppb	31.4	736	1	
Sb	121	3	115	0.062	ppb	40.7	173	0.6	
Ba	137	3	115	-0.061	ppb	-72.5	53	0.5	
Tl	205	3	193	0.013	ppb	44.9	163	0.1	
(Pb)	206	3	193	-0.006	ppb	-293.7	147	1	
(Pb)	207	3	193	-0.002	ppb	-897.5	325	1	
Pb	208	3	193	0.016	ppb	38.9	813	0.5	
Th	232	3	193	0.758	ppb	24.3	8084	1	
U	238	3	193	0.025	ppb	56.3	1704	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4284544	2.12	4331237	98.92	60	120	
Sc (IS)	45	3	HMI He	656332	0.58	654817	100.23	60	120	
Ge Internal standard	72	2	HMI H2	2242630	4.22	2307933	97.17	60	120	
Ge Internal standard	72	3	HMI He	756545	3.57	744678	101.59	60	120	
In Internal Standard	115	3	HMI He	2605985	1.17	2599142	100.26	60	120	
Ir (IS)	193	3	HMI He	5558424	2.21	5525410	100.60	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-3-a
Data File Name	185SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:12:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.093	ppb	0.093	101.12	5	2000	
Na	23	3	45	72897.641	ppb	72897.641	0.71	9487085	400000	
Mg	24	3	45	33932.763	ppb	33932.763	1.98	2273469	400000	
Al	27	3	45	2.869	ppb	2.869	37.25	160	400000	
K	39	3	45	8203.379	ppb	8203.379	1.61	459381	400000	
Ca	40	2	45	177048.324	ppb	177048.324	1.98	104960876	400000	
V	51	3	72	0.413	ppb	0.413	14.72	525	2000	
Cr	52	3	72	0.771	ppb	0.771	11.68	2066	5000	
Mn	55	3	72	476.392	ppb	476.392	1.39	213438	10000	
Fe	56	2	72	35670.407	ppb	35670.407	2.63	55668734	10000	
Co	59	3	72	3.782	ppb	3.782	2.17	5098	2000	
Ni	60	3	72	7.377	ppb	7.377	2.90	2867	5000	
Cu	63	3	72	0.273	ppb	0.273	28.84	638	5000	
Zn	66	3	72	64.546	ppb	64.546	2.88	11736	5000	
As	75	3	72	5.676	ppb	5.676	10.92	756	2000	
Se	78	2	72	0.383	ppb	0.383	18.84	26	2000	
(Se)	78	3	72	-1.670	ppb	-1.670	-99.25	23	2000	
Sr	88	3	72	1113.096	ppb	1113.096	1.48	646232	4000	
Mo	95	3	115	0.997	ppb	0.997	28.86	563	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-329.63	17	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.699	ppb	0.699	10.71	1080	2000	
Sb	121	3	115	0.190	ppb	0.190	5.28	277	1000	
Ba	137	3	115	505.977	ppb	505.977	0.92	129255	5000	
Tl	205	3	193	0.003	ppb	0.003	267.53	127	2000	
(Pb)	206	3	193	0.000	ppb	0.000	3153.38	157	100	
(Pb)	207	3	193	0.005	ppb	0.005	493.08	337	100	
Pb	208	3	193	0.014	ppb	0.014	48.83	811	5000	
Th	232	3	193	0.204	ppb	0.204	23.29	5395	2000	
U	238	3	193	1.538	ppb	1.538	5.08	9711	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4318405	2.18	4331237	99.70	60	120	
Sc (IS)	45	3	HMI He	682197	2.23	654817	104.18	60	120	
Ge Internal standard	72	2	HMI H2	2336951	2.84	2307933	101.26	60	120	
Ge Internal standard	72	3	HMI He	777685	0.21	744678	104.43	60	120	
In Internal Standard	115	3	HMI He	2626596	1.42	2599142	101.06	60	120	
Ir (IS)	193	3	HMI He	5619374	1.53	5525410	101.70	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-b
Data File Name	186SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:14:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	173.21	3	2000	
Na	23	3	45	63170.028	ppb	63170.028	1.94	7925097	400000	
Mg	24	3	45	30843.258	ppb	30843.258	3.51	1990437	400000	
Al	27	3	45	3.694	ppb	3.694	18.92	174	400000	
K	39	3	45	6487.507	ppb	6487.507	0.60	355540	400000	
Ca	40	2	45	165186.512	ppb	165186.512	1.97	96453349	400000	
V	51	3	72	0.206	ppb	0.206	48.63	381	2000	
Cr	52	3	72	0.417	ppb	0.417	39.82	1741	5000	
Mn	55	3	72	758.626	ppb	758.626	3.67	333396	10000	
Fe	56	2	72	9379.854	ppb	9379.854	1.27	14573546	10000	
Co	59	3	72	3.119	ppb	3.119	5.63	4129	2000	
Ni	60	3	72	6.061	ppb	6.061	4.16	2334	5000	
Cu	63	3	72	0.289	ppb	0.289	8.64	643	5000	
Zn	66	3	72	31.055	ppb	31.055	1.13	5668	5000	
As	75	3	72	2.324	ppb	2.324	19.94	335	2000	
Se	78	2	72	0.428	ppb	0.428	15.00	29	2000	
(Se)	78	3	72	-1.351	ppb	-1.351	-97.25	25	2000	
Sr	88	3	72	937.297	ppb	937.297	3.91	533903	4000	
Mo	95	3	115	0.913	ppb	0.913	18.95	510	2000	
Ag	107	3	115	0.000	ppb	0.000	3268.71	18	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.452	ppb	0.452	11.66	870	2000	
Sb	121	3	115	0.270	ppb	0.270	12.09	333	1000	
Ba	137	3	115	323.108	ppb	323.108	1.52	81039	5000	
Tl	205	3	193	0.002	ppb	0.002	177.86	120	2000	
(Pb)	206	3	193	0.223	ppb	0.223	24.30	426	100	
(Pb)	207	3	193	0.201	ppb	0.201	23.63	545	100	
Pb	208	3	193	0.242	ppb	0.242	1.07	1924	5000	
Th	232	3	193	0.088	ppb	0.088	34.20	4732	2000	
U	238	3	193	1.883	ppb	1.883	2.08	11345	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4253107	2.08	4331237	98.20	60	120	
Sc (IS)	45	3	HMI He	657123	1.43	654817	100.35	60	120	
Ge Internal standard	72	2	HMI H2	2324437	1.02	2307933	100.72	60	120	
Ge Internal standard	72	3	HMI He	763636	3.20	744678	102.55	60	120	
In Internal Standard	115	3	HMI He	2577899	0.92	2599142	99.18	60	120	
Ir (IS)	193	3	HMI He	5527370	1.52	5525410	100.04	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-c ms
Data File Name	187SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:16:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.955	ppb	40.955	3.72	2209	2000	
Na	23	3	45	61044.609	ppb	61044.609	1.11	7729910	400000	
Mg	24	3	45	30602.542	ppb	30602.542	2.35	1992954	400000	
Al	27	3	45	837.171	ppb	837.171	3.69	19904	400000	
K	39	3	45	7039.263	ppb	7039.263	1.13	386958	400000	
Ca	40	2	45	155395.901	ppb	155395.901	2.15	91017197	400000	
V	51	3	72	42.302	ppb	42.302	0.85	27734	2000	
Cr	52	3	72	41.620	ppb	41.620	0.87	35531	5000	
Mn	55	3	72	778.225	ppb	778.225	0.82	345294	10000	
Fe	56	2	72	9865.957	ppb	9865.957	2.36	15012068	10000	
Co	59	3	72	43.643	ppb	43.643	1.12	58000	2000	
Ni	60	3	72	46.445	ppb	46.445	1.93	17226	5000	
Cu	63	3	72	40.780	ppb	40.780	1.46	40898	5000	
Zn	66	3	72	68.776	ppb	68.776	2.59	12371	5000	
As	75	3	72	42.483	ppb	42.483	2.12	5270	2000	
Se	78	2	72	42.057	ppb	42.057	2.20	2501	2000	
(Se)	78	3	72	33.178	ppb	33.178	28.42	263	2000	
Sr	88	3	72	981.421	ppb	981.421	1.12	564449	4000	
Mo	95	3	115	43.850	ppb	43.850	1.23	22414	2000	
Ag	107	3	115	42.069	ppb	42.069	1.98	71185	100	
Cd	111	3	115	42.396	ppb	42.396	1.86	10554	2000	
Sn	120	3	115	42.003	ppb	42.003	2.89	32273	2000	
Sb	121	3	115	42.746	ppb	42.746	2.62	32782	1000	
Ba	137	3	115	357.717	ppb	357.717	0.69	88263	5000	
Tl	205	3	193	41.348	ppb	41.348	2.05	150892	2000	
(Pb)	206	3	193	41.002	ppb	41.002	1.61	50413	100	
(Pb)	207	3	193	41.060	ppb	41.060	2.61	44982	100	
Pb	208	3	193	41.132	ppb	41.132	1.46	203867	5000	
Th	232	3	193	42.230	ppb	42.230	1.59	212838	2000	
U	238	3	193	43.640	ppb	43.640	0.81	227558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4266669	2.00	4331237	98.51	60	120	
Sc (IS)	45	3	HMI He	663016	0.88	654817	101.25	60	120	
Ge Internal standard	72	2	HMI H2	2276919	1.67	2307933	98.66	60	120	
Ge Internal standard	72	3	HMI He	770377	0.60	744678	103.45	60	120	
In Internal Standard	115	3	HMI He	2536299	1.66	2599142	97.58	60	120	
Ir (IS)	193	3	HMI He	5511514	0.78	5525410	99.75	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-d msd
Data File Name	188SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:18:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.521	ppb	41.521	3.25	2266	2000	
Na	23	3	45	64115.458	ppb	64115.458	0.59	8108115	400000	
Mg	24	3	45	32166.767	ppb	32166.767	1.17	2092701	400000	
Al	27	3	45	831.764	ppb	831.764	2.53	19760	400000	
K	39	3	45	7408.659	ppb	7408.659	0.37	405459	400000	
Ca	40	2	45	164466.189	ppb	164466.189	1.12	95505812	400000	
V	51	3	72	41.509	ppb	41.509	1.51	27592	2000	
Cr	52	3	72	41.159	ppb	41.159	2.51	35629	5000	
Mn	55	3	72	802.458	ppb	802.458	1.33	360913	10000	
Fe	56	2	72	10154.173	ppb	10154.173	2.06	15735094	10000	
Co	59	3	72	43.459	ppb	43.459	0.82	58552	2000	
Ni	60	3	72	46.264	ppb	46.264	1.11	17394	5000	
Cu	63	3	72	40.451	ppb	40.451	1.05	41131	5000	
Zn	66	3	72	70.676	ppb	70.676	3.47	12880	5000	
As	75	3	72	42.381	ppb	42.381	3.40	5332	2000	
Se	78	2	72	41.889	ppb	41.889	1.54	2538	2000	
(Se)	78	3	72	36.925	ppb	36.925	7.79	293	2000	
Sr	88	3	72	1009.482	ppb	1009.482	0.95	588568	4000	
Mo	95	3	115	44.102	ppb	44.102	1.77	22409	2000	
Ag	107	3	115	42.401	ppb	42.401	1.31	71331	100	
Cd	111	3	115	42.881	ppb	42.881	0.97	10614	2000	
Sn	120	3	115	42.544	ppb	42.544	1.49	32493	2000	
Sb	121	3	115	42.592	ppb	42.592	1.35	32483	1000	
Ba	137	3	115	376.820	ppb	376.820	1.39	92417	5000	
Tl	205	3	193	41.594	ppb	41.594	0.37	151956	2000	
(Pb)	206	3	193	40.755	ppb	40.755	1.19	50167	100	
(Pb)	207	3	193	40.817	ppb	40.817	1.34	44763	100	
Pb	208	3	193	40.987	ppb	40.987	0.82	203370	5000	
Th	232	3	193	42.530	ppb	42.530	1.59	214518	2000	
U	238	3	193	43.756	ppb	43.756	1.32	228373	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4229159	1.53	4331237	97.64	60	120	
Sc (IS)	45	3	HMI He	662343	0.99	654817	101.15	60	120	
Ge Internal standard	72	2	HMI H2	2318982	2.11	2307933	100.48	60	120	
Ge Internal standard	72	3	HMI He	781069	1.84	744678	104.89	60	120	
In Internal Standard	115	3	HMI He	2521424	1.69	2599142	97.01	60	120	
Ir (IS)	193	3	HMI He	5517070	0.85	5525410	99.85	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	189_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:20:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	54.435	ppb	6.420	2952	50	108.9	90	110	
Na	23	3	45	50512.928	ppb	2.933	6465244	51000	99.0	90	110	
Mg	24	3	45	10854.739	ppb	2.542	713711	11000	98.7	90	110	
Al	27	3	45	1013.754	ppb	3.023	24312	1000	101.4	90	110	
K	39	3	45	10579.483	ppb	4.071	573388	11000	96.2	90	110	
Ca	40	2	45	11018.995	ppb	2.548	6460609	11000	100.2	90	110	
V	51	3	72	51.281	ppb	1.315	32984	50	102.6	90	110	
Cr	52	3	72	51.156	ppb	2.374	42594	50	102.3	90	110	
Mn	55	3	72	50.385	ppb	2.021	22128	50	100.8	90	110	
Fe	56	2	72	1063.468	ppb	1.499	1608989	1000	106.3	90	110	
Co	59	3	72	50.451	ppb	1.421	65881	50	100.9	90	110	
Ni	60	3	72	51.180	ppb	1.662	18638	50	102.4	90	110	
Cu	63	3	72	50.526	ppb	0.628	49711	50	101.1	90	110	
Zn	66	3	72	50.608	ppb	2.807	9008	50	101.2	90	110	
As	75	3	72	50.595	ppb	1.556	6158	50	101.2	90	110	
Se	78	2	72	51.159	ppb	0.680	3009	50	102.3	90	110	
(Se)	78	3	72	47.055	ppb	17.292	353	50	94.1	90	110	
Sr	88	3	72	100.616	ppb	1.344	56902	100	100.6	90	110	
Mo	95	3	115	50.723	ppb	3.067	26559	50	101.4	90	110	
Ag	107	3	115	49.953	ppb	2.187	86607	50	99.9	90	110	
Cd	111	3	115	50.962	ppb	3.221	12998	50	101.9	90	110	
Sn	120	3	115	49.998	ppb	0.374	39258	50	100.0	90	110	
Sb	121	3	115	50.290	ppb	1.452	39500	50	100.6	90	110	
Ba	137	3	115	49.855	ppb	1.445	12661	50	99.7	90	110	
Tl	205	3	193	50.663	ppb	0.331	184904	50	101.3	90	110	
(Pb)	206	3	193	50.415	ppb	2.492	61962	50	100.8	90	110	
(Pb)	207	3	193	50.307	ppb	1.846	55054	50	100.6	90	110	
Pb	208	3	193	50.124	ppb	1.101	248324	50	100.2	90	110	
Th	232	3	193	50.822	ppb	0.767	255302	50	101.6	90	110	
U	238	3	193	50.291	ppb	2.212	262023	50	100.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4261336	0.33	4331237	98.39	60	120	
Sc (IS)	45	3	HMI He	669489	2.35	654817	102.24	60	120	
Ge Internal standard	72	2	HMI H2	2251926	0.69	2307933	97.57	60	120	
Ge Internal standard	72	3	HMI He	757053	0.68	744678	101.66	60	120	
In Internal Standard	115	3	HMI He	2598372	0.24	2599142	99.97	60	120	
Ir (IS)	193	3	HMI He	5512518	0.73	5525410	99.77	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	190_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:22:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.094	ppb	100.6	5	0.5	
Na	23	3	45	-23.691	ppb	-5.1	47654	25	
Mg	24	3	45	0.107	ppb	235.5	200	25	
Al	27	3	45	9.999	ppb	18.3	320	15	
K	39	3	45	-10.213	ppb	-258.5	25816	50	
V	51	3	72	-0.084	ppb	-42.8	185	1	
Cr	52	3	72	0.229	ppb	83.1	1501	1	
Mn	55	3	72	0.167	ppb	49.2	235	0.5	
Co	59	3	72	0.011	ppb	124.1	38	0.5	
Ni	60	3	72	0.214	ppb	79.6	190	1	
Cu	63	3	72	0.041	ppb	97.6	376	1	
Zn	66	3	72	1.401	ppb	12.7	458	5	
As	75	3	72	-0.178	ppb	-60.7	28	1	
Se	78	2	72	0.014	ppb	522.0	3	1	
(Se)	78	3	72	-2.187	ppb	-53.4	18	1	
Sr	88	3	72	0.036	ppb	36.6	62	0.5	
Mo	95	3	115	0.019	ppb	3.1	45	0.5	
Ag	107	3	115	0.004	ppb	135.4	25	1	
Cd	111	3	115	0.014	ppb	220.8	7	0.5	
Sn	120	3	115	0.296	ppb	33.0	731	1	
Sb	121	3	115	0.014	ppb	187.5	132	0.6	
Ba	137	3	115	-0.039	ppb	-267.5	57	0.5	
Tl	205	3	193	0.003	ppb	321.0	120	0.1	
(Pb)	206	3	193	0.006	ppb	676.2	157	1	
(Pb)	207	3	193	0.037	ppb	51.5	356	1	
Pb	208	3	193	0.030	ppb	66.7	856	0.5	
Th	232	3	193	0.687	ppb	17.7	7517	1	
U	238	3	193	0.016	ppb	57.5	1611	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4265231	1.68	4331237	98.48	60	120	
Sc (IS)	45	3	HMI He	655225	1.10	654817	100.06	60	120	
Ge Internal standard	72	2	HMI H2	2196000	2.39	2307933	95.15	60	120	
Ge Internal standard	72	3	HMI He	722111	1.23	744678	96.97	60	120	
In Internal Standard	115	3	HMI He	2516814	0.66	2599142	96.83	60	120	
Ir (IS)	193	3	HMI He	5398457	0.97	5525410	97.70	60	120	

Blank Report

Sample Table

Sample Name	mb 280-599925/1-b
Data File Name	191_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:24:02-07:00
Sample Type	Blank
Dilution	1
Comment	600009 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	26.715	ppb	10.20573254	53678	25
Mg	24	3	45	1.888	ppb	44.95688483	314	25
Al	27	3	45	28.091	ppb	14.10525346	741	15
K	39	3	45	-0.355	ppb	-11933.41767	26177	50
V	51	3	72	-0.050	ppb	-131.0658281	208	1
Cr	52	3	72	0.412	ppb	37.51630686	1664	1
Mn	55	3	72	1.855	ppb	5.871183762	950	0.5
Co	59	3	72	0.015	ppb	54.66515839	43	0.5
Ni	60	3	72	0.124	ppb	64.03668073	162	1
Cu	63	3	72	25.633	ppb	3.930785221	24550	1
Zn	66	3	72	13.698	ppb	4.620444481	2526	5
As	75	3	72	-0.038	ppb	-203.360732	45	1
(Se)	78	3	72	-0.965	ppb	-160.6647405	27	1
Sr	88	3	72	0.154	ppb	60.9807496	127	0.5
Mo	95	3	115	-0.008	ppb	-292.4164883	32	0.5
Ag	107	3	115	0.012	ppb	123.5783979	38	1
Cd	111	3	115	-0.006	ppb	-176.264593	2	0.5
Sn	120	3	115	0.991	ppb	18.80124198	1263	1
Sb	121	3	115	-0.006	ppb	-88.08048478	117	0.6
Ba	137	3	115	0.642	ppb	15.39860015	225	0.5
Tl	205	3	193	0.002	ppb	438.2434732	122	0.1
(Pb)	206	3	193	0.188	ppb	27.1610572	383	1
(Pb)	207	3	193	0.111	ppb	35.07696966	445	1
Pb	208	3	193	0.171	ppb	25.84899239	1571	0.5
Th	232	3	193	0.151	ppb	26.09517765	5034	1
U	238	3	193	0.000	ppb	-7683.928796	1563	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254609	1.68	4331237	98.23	60	120	
Sc (IS)	45	3	HMI He	652294	0.92	654817	99.61	60	120	
Ge Internal standard	72	2	HMI H2	2194236	1.63	2307933	95.07	60	120	
Ge Internal standard	72	3	HMI He	732061	1.16	744678	98.31	60	120	
In Internal Standard	115	3	HMI He	2535138	1.79	2599142	97.54	60	120	
Ir (IS)	193	3	HMI He	5518731	1.83	5525410	99.88	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599925/2-b
Data File Name	192_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:25:56-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600009 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.228	40.228	ppb	3.274	2189	40	100.6	80	120	
Na	23	3	45	792.780	792.780	ppb	1.554	151365	40	1981.9	80	120	>+/-20%
Mg	24	3	45	766.882	766.882	ppb	1.235	50283	40	1917.2	80	120	>+/-20%
Al	27	3	45	806.610	806.610	ppb	2.374	19239	40	2016.5	80	120	>+/-20%
K	39	3	45	756.306	756.306	ppb	5.604	65541	40	1890.8	80	120	>+/-20%
Ca	40	2	45	862.142	862.142	ppb	2.881	526312	40	2155.4	80	120	>+/-20%
V	51	3	72	40.585	40.585	ppb	1.430	26694	40	101.5	80	120	
Cr	52	3	72	40.947	40.947	ppb	2.692	35082	40	102.4	80	120	
Mn	55	3	72	40.823	40.823	ppb	0.821	18333	40	102.1	80	120	
Fe	56	2	72	862.332	862.332	ppb	1.310	1293323	40	2155.8	80	120	>+/-20%
(Fe)	56	3	72	804.096	804.096	ppb	0.874	558318	40	2010.2	80	120	>+/-20%
Co	59	3	72	40.283	40.283	ppb	2.219	53700	40	100.7	80	120	
Ni	60	3	72	39.699	39.699	ppb	2.336	14782	40	99.2	80	120	
Cu	63	3	72	41.013	41.013	ppb	1.034	41253	40	102.5	80	120	
Zn	66	3	72	39.815	39.815	ppb	3.157	7285	40	99.5	80	120	
As	75	3	72	38.283	38.283	ppb	2.850	4768	40	95.7	80	120	
Se	78	2	72	42.565	42.565	ppb	4.440	2480	40	106.4	80	120	
(Se)	78	3	72	38.072	38.072	ppb	18.893	298	40	95.2	80	120	
Sr	88	3	72	78.455	78.455	ppb	0.464	45294	40	196.1	80	120	>+/-20%
Mo	95	3	115	41.735	41.735	ppb	2.351	21426	40	104.3	80	120	
Ag	107	3	115	41.802	41.802	ppb	2.322	71045	40	104.5	80	120	
Cd	111	3	115	42.322	42.322	ppb	2.897	10581	40	105.8	80	120	
Sn	120	3	115	40.390	40.390	ppb	1.965	31188	40	101.0	80	120	
Sb	121	3	115	40.797	40.797	ppb	3.178	31431	40	102.0	80	120	
Ba	137	3	115	41.086	41.086	ppb	3.178	10239	40	102.7	80	120	
Tl	205	3	193	40.640	40.640	ppb	1.613	149634	40	101.6	80	120	
(Pb)	206	3	193	40.815	40.815	ppb	2.697	50629	40	102.0	80	120	
(Pb)	207	3	193	40.440	40.440	ppb	1.084	44703	40	101.1	80	120	
Pb	208	3	193	40.656	40.656	ppb	2.082	203303	40	101.6	80	120	
Th	232	3	193	40.464	40.464	ppb	0.128	205919	40	101.2	80	120	
U	238	3	193	40.843	40.843	ppb	1.598	214950	40	102.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4327268	2.79	4331237	99.91	60	120	
Sc (IS)	45	3	HMI He	664914	0.55	654817	101.54	60	120	
Ge Internal standard	72	2	HMI H2	2229828	3.42	2307933	96.62	60	120	
Ge Internal standard	72	3	HMI He	772626	0.75	744678	103.75	60	120	
In Internal Standard	115	3	HMI He	2547625	1.85	2599142	98.02	60	120	
Ir (IS)	193	3	HMI He	5560336	0.44	5525410	100.63	60	120	

Sample Report

Sample Table

Sample Name	280-171306-e-4-g
Data File Name	193SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	173.21	3	2000	
Na	23	3	45	217744.128	ppb	217744.128	0.28	27442547	400000	
Mg	24	3	45	17404.997	ppb	17404.997	1.54	1133629	400000	
Al	27	3	45	5.173	ppb	5.173	37.06	210	400000	
K	39	3	45	2865.004	ppb	2865.004	2.24	173288	400000	
Ca	40	2	45	34342.525	ppb	34342.525	3.45	20392291	400000	
V	51	3	72	0.147	ppb	0.147	61.07	352	2000	
Cr	52	3	72	1.108	ppb	1.108	26.07	2349	5000	
Mn	55	3	72	16.812	ppb	16.812	2.33	7725	10000	
Fe	56	2	72	10.672	ppb	10.672	2.11	26224	10000	
Co	59	3	72	0.270	ppb	0.270	16.21	388	2000	
Ni	60	3	72	1.720	ppb	1.720	8.43	766	5000	
Cu	63	3	72	0.429	ppb	0.429	11.63	798	5000	
Zn	66	3	72	2.681	ppb	2.681	4.34	723	5000	
As	75	3	72	0.555	ppb	0.555	23.65	122	2000	
Se	78	2	72	0.811	ppb	0.811	0.36	52	2000	
(Se)	78	3	72	0.432	ppb	0.432	643.60	38	2000	
Sr	88	3	72	807.499	ppb	807.499	2.09	470066	4000	
Mo	95	3	115	8.790	ppb	8.790	3.82	4594	2000	
Ag	107	3	115	0.012	ppb	0.012	33.84	38	100	
Cd	111	3	115	0.027	ppb	0.027	3.53	10	2000	
Sn	120	3	115	0.266	ppb	0.266	12.67	726	2000	
Sb	121	3	115	1.904	ppb	1.904	6.02	1601	1000	
Ba	137	3	115	37.559	ppb	37.559	3.63	9474	5000	
Tl	205	3	193	0.018	ppb	0.018	42.37	177	2000	
(Pb)	206	3	193	0.001	ppb	0.001	1636.79	153	100	
(Pb)	207	3	193	0.005	ppb	0.005	250.14	328	100	
Pb	208	3	193	0.016	ppb	0.016	28.98	798	5000	
Th	232	3	193	0.437	ppb	0.437	24.48	6413	2000	
U	238	3	193	1.366	ppb	1.366	3.66	8597	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4325057	3.59	4331237	99.86	60	120	
Sc (IS)	45	3	HMI He	663029	0.46	654817	101.25	60	120	
Ge Internal standard	72	2	HMI H2	2329835	0.35	2307933	100.95	60	120	
Ge Internal standard	72	3	HMI He	779931	1.90	744678	104.73	60	120	
In Internal Standard	115	3	HMI He	2577495	2.34	2599142	99.17	60	120	
Ir (IS)	193	3	HMI He	5486745	1.22	5525410	99.30	60	120	

Sample Report

Sample Table

Sample Name	280-171444-f-1-d
Data File Name	194SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:29:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	139559.670	ppb	139559.670	1.25	17477325	400000	
Mg	24	3	45	8027.823	ppb	8027.823	1.31	519145	400000	
Al	27	3	45	7.367	ppb	7.367	16.42	260	400000	
K	39	3	45	1765.448	ppb	1765.448	1.45	116166	400000	
Ca	40	2	45	19823.050	ppb	19823.050	0.83	11629106	400000	
V	51	3	72	0.300	ppb	0.300	35.29	445	2000	
Cr	52	3	72	0.447	ppb	0.447	17.29	1769	5000	
Mn	55	3	72	3.512	ppb	3.512	10.70	1721	10000	
Fe	56	2	72	7.360	ppb	7.360	2.53	21485	10000	
Co	59	3	72	0.059	ppb	0.059	29.47	103	2000	
Ni	60	3	72	0.827	ppb	0.827	6.97	426	5000	
Cu	63	3	72	0.449	ppb	0.449	20.41	801	5000	
Zn	66	3	72	2.608	ppb	2.608	11.40	696	5000	
As	75	3	72	0.955	ppb	0.955	40.06	168	2000	
Se	78	2	72	0.622	ppb	0.622	33.99	41	2000	
(Se)	78	3	72	-2.573	ppb	-2.573	-45.39	17	2000	
Sr	88	3	72	269.539	ppb	269.539	1.98	154057	4000	
Mo	95	3	115	9.121	ppb	9.121	1.91	4748	2000	
Ag	107	3	115	0.001	ppb	0.001	245.70	20	100	
Cd	111	3	115	0.000	ppb	0.000	6363.33	3	2000	
Sn	120	3	115	0.352	ppb	0.352	14.75	790	2000	
Sb	121	3	115	1.092	ppb	1.092	9.12	968	1000	
Ba	137	3	115	38.241	ppb	38.241	1.57	9612	5000	
Tl	205	3	193	0.000	ppb	0.000	-650.85	112	2000	
(Pb)	206	3	193	0.029	ppb	0.029	19.07	188	100	
(Pb)	207	3	193	0.028	ppb	0.028	103.92	353	100	
Pb	208	3	193	0.040	ppb	0.040	39.57	918	5000	
Th	232	3	193	0.064	ppb	0.064	35.57	4590	2000	
U	238	3	193	1.076	ppb	1.076	0.70	7115	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267731	1.05	4331237	98.53	60	120	
Sc (IS)	45	3	HMI He	658182	1.14	654817	100.51	60	120	
Ge Internal standard	72	2	HMI H2	2375900	1.67	2307933	102.94	60	120	
Ge Internal standard	72	3	HMI He	765622	2.29	744678	102.81	60	120	
In Internal Standard	115	3	HMI He	2567499	0.59	2599142	98.78	60	120	
Ir (IS)	193	3	HMI He	5497427	0.79	5525410	99.49	60	120	

Sample Report

Sample Table

Sample Name	280-171468-h-1-e
Data File Name	195SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:31:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	622099.999	ppb	622099.999	2.28	75280710	400000	
Mg	24	3	45	535.588	ppb	535.588	1.64	33714	400000	
Al	27	3	45	10.535	ppb	10.535	24.01	324	400000	
K	39	3	45	1601.937	ppb	1601.937	1.85	104410	400000	
Ca	40	2	45	2955.248	ppb	2955.248	0.34	1741800	400000	
V	51	3	72	-0.005	ppb	-0.005	-582.10	238	2000	
Cr	52	3	72	1.176	ppb	1.176	3.37	2281	5000	
Mn	55	3	72	9.500	ppb	9.500	4.41	4207	10000	
Fe	56	2	72	713.788	ppb	713.788	3.23	1086028	10000	
Co	59	3	72	0.024	ppb	0.024	87.07	55	2000	
Ni	60	3	72	0.291	ppb	0.291	52.54	222	5000	
Cu	63	3	72	0.503	ppb	0.503	11.74	825	5000	
Zn	66	3	72	9.301	ppb	9.301	5.82	1806	5000	
As	75	3	72	-0.097	ppb	-0.097	-97.09	38	2000	
Se	78	2	72	0.035	ppb	0.035	149.56	5	2000	
(Se)	78	3	72	-0.519	ppb	-0.519	-625.35	30	2000	
Sr	88	3	72	631.117	ppb	631.117	1.53	348063	4000	
Mo	95	3	115	0.619	ppb	0.619	15.41	333	2000	
Ag	107	3	115	0.000	ppb	0.000	-993.82	17	100	
Cd	111	3	115	-0.006	ppb	-0.006	-193.54	2	2000	
Sn	120	3	115	0.261	ppb	0.261	32.26	675	2000	
Sb	121	3	115	0.041	ppb	0.041	52.30	145	1000	
Ba	137	3	115	351.089	ppb	351.089	0.97	82235	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-302.63	102	2000	
(Pb)	206	3	193	0.007	ppb	0.007	419.41	152	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-343.91	297	100	
Pb	208	3	193	0.033	ppb	0.033	36.02	830	5000	
Th	232	3	193	0.038	ppb	0.038	106.63	4190	2000	
U	238	3	193	0.027	ppb	0.027	124.37	1594	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4258086	0.27	4331237	98.31	60	120	
Sc (IS)	45	3	HMI He	637271	1.21	654817	97.32	60	120	
Ge Internal standard	72	2	HMI H2	2259181	2.43	2307933	97.89	60	120	
Ge Internal standard	72	3	HMI He	738786	1.91	744678	99.21	60	120	
In Internal Standard	115	3	HMI He	2407858	2.35	2599142	92.64	60	120	
Ir (IS)	193	3	HMI He	5163296	1.38	5525410	93.45	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-b
Data File Name	196SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:33:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	87541.274	ppb	87541.274	0.56	11086521	400000	
Mg	24	3	45	10581.985	ppb	10581.985	1.67	690793	400000	
Al	27	3	45	26.524	ppb	26.524	16.28	717	400000	
K	39	3	45	17899.353	ppb	17899.353	0.61	944889	400000	
Ca	40	2	45	29736.337	ppb	29736.337	1.64	17493999	400000	
V	51	3	72	0.084	ppb	0.084	65.74	313	2000	
Cr	52	3	72	0.818	ppb	0.818	13.93	2134	5000	
Mn	55	3	72	23.082	ppb	23.082	3.78	10659	10000	
Fe	56	2	72	48.379	ppb	48.379	2.73	83661	10000	
Co	59	3	72	0.221	ppb	0.221	1.40	327	2000	
Ni	60	3	72	1.405	ppb	1.405	11.96	656	5000	
Cu	63	3	72	5.698	ppb	5.698	4.43	6167	5000	
Zn	66	3	72	60.077	ppb	60.077	1.97	11094	5000	
As	75	3	72	0.306	ppb	0.306	22.63	92	2000	
Se	78	2	72	0.546	ppb	0.546	34.17	35	2000	
(Se)	78	3	72	-2.203	ppb	-2.203	-52.85	20	2000	
Sr	88	3	72	248.642	ppb	248.642	1.51	146425	4000	
Mo	95	3	115	0.717	ppb	0.717	19.89	410	2000	
Ag	107	3	115	0.000	ppb	0.000	2506.30	18	100	
Cd	111	3	115	-0.006	ppb	-0.006	-185.19	2	2000	
Sn	120	3	115	0.830	ppb	0.830	5.60	1163	2000	
Sb	121	3	115	0.725	ppb	0.725	13.01	690	1000	
Ba	137	3	115	18.338	ppb	18.338	0.99	4675	5000	
Tl	205	3	193	0.002	ppb	0.002	546.04	120	2000	
(Pb)	206	3	193	0.454	ppb	0.454	10.73	708	100	
(Pb)	207	3	193	0.402	ppb	0.402	16.35	760	100	
Pb	208	3	193	0.440	ppb	0.440	8.56	2889	5000	
Th	232	3	193	0.030	ppb	0.030	101.91	4422	2000	
U	238	3	193	0.059	ppb	0.059	7.75	1864	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4282044	1.54	4331237	98.86	60	120	
Sc (IS)	45	3	HMI He	664409	0.68	654817	101.46	60	120	
Ge Internal standard	72	2	HMI H2	2295523	0.81	2307933	99.46	60	120	
Ge Internal standard	72	3	HMI He	788771	1.88	744678	105.92	60	120	
In Internal Standard	115	3	HMI He	2584188	2.32	2599142	99.42	60	120	
Ir (IS)	193	3	HMI He	5502063	2.28	5525410	99.58	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-bSD@5
Data File Name	197SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:35:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	17494.704	ppb	17494.704	4.20	2232186	400000	
Mg	24	3	45	2068.911	ppb	2068.911	1.69	133746	400000	
Al	27	3	45	3.548	ppb	3.548	36.25	170	400000	
K	39	3	45	3499.961	ppb	3499.961	1.16	203996	400000	
Ca	40	2	45	5946.624	ppb	5946.624	0.61	3401182	400000	
V	51	3	72	-0.011	ppb	-0.011	-161.21	240	2000	
Cr	52	3	72	0.422	ppb	0.422	42.48	1726	5000	
Mn	55	3	72	4.915	ppb	4.915	7.11	2309	10000	
Fe	56	2	72	9.460	ppb	9.460	3.12	23276	10000	
Co	59	3	72	0.048	ppb	0.048	28.01	88	2000	
Ni	60	3	72	0.386	ppb	0.386	5.08	262	5000	
Cu	63	3	72	1.204	ppb	1.204	4.00	1528	5000	
Zn	66	3	72	12.770	ppb	12.770	7.83	2444	5000	
As	75	3	72	-0.062	ppb	-0.062	-224.81	43	2000	
Se	78	2	72	0.173	ppb	0.173	28.80	13	2000	
(Se)	78	3	72	-2.067	ppb	-2.067	-34.75	20	2000	
Sr	88	3	72	51.289	ppb	51.289	2.59	28976	4000	
Mo	95	3	115	0.164	ppb	0.164	33.27	120	2000	
Ag	107	3	115	0.005	ppb	0.005	69.51	27	100	
Cd	111	3	115	0.000	ppb	0.000	3173.10	3	2000	
Sn	120	3	115	0.255	ppb	0.255	32.51	713	2000	
Sb	121	3	115	0.105	ppb	0.105	59.49	203	1000	
Ba	137	3	115	4.151	ppb	4.151	5.71	1101	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-92.24	92	2000	
(Pb)	206	3	193	0.064	ppb	0.064	47.78	230	100	
(Pb)	207	3	193	0.093	ppb	0.093	54.45	423	100	
Pb	208	3	193	0.084	ppb	0.084	14.61	1131	5000	
Th	232	3	193	-0.001	ppb	-0.001	-1308.18	4249	2000	
U	238	3	193	0.022	ppb	0.022	94.45	1663	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4149409	2.19	4331237	95.80	60	120	
Sc (IS)	45	3	HMI He	657206	0.30	654817	100.36	60	120	
Ge Internal standard	72	2	HMI H2	2228248	1.23	2307933	96.55	60	120	
Ge Internal standard	72	3	HMI He	756076	3.27	744678	101.53	60	120	
In Internal Standard	115	3	HMI He	2560112	1.48	2599142	98.50	60	120	
Ir (IS)	193	3	HMI He	5473864	1.31	5525410	99.07	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-c ms
Data File Name	198SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:37:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.924	ppb	40.924	1.31	2139	2000	
Na	23	3	45	86642.699	ppb	86642.699	1.73	10861446	400000	
Mg	24	3	45	11071.578	ppb	11071.578	1.92	715297	400000	
Al	27	3	45	806.096	ppb	806.096	1.46	19015	400000	
K	39	3	45	18243.170	ppb	18243.170	1.59	952764	400000	
Ca	40	2	45	30192.266	ppb	30192.266	1.70	17451028	400000	
V	51	3	72	39.855	ppb	39.855	1.33	26267	2000	
Cr	52	3	72	40.262	ppb	40.262	3.29	34559	5000	
Mn	55	3	72	63.624	ppb	63.624	1.39	28528	10000	
Fe	56	2	72	869.313	ppb	869.313	1.01	1341895	10000	
Co	59	3	72	39.894	ppb	39.894	0.80	53262	2000	
Ni	60	3	72	40.232	ppb	40.232	3.18	15006	5000	
Cu	63	3	72	45.937	ppb	45.937	2.94	46221	5000	
Zn	66	3	72	97.123	ppb	97.123	1.58	17449	5000	
As	75	3	72	39.738	ppb	39.738	5.35	4952	2000	
Se	78	2	72	41.824	ppb	41.824	4.71	2505	2000	
(Se)	78	3	72	43.099	ppb	43.099	11.70	333	2000	
Sr	88	3	72	323.443	ppb	323.443	1.37	186877	4000	
Mo	95	3	115	40.991	ppb	40.991	3.62	20909	2000	
Ag	107	3	115	41.045	ppb	41.045	2.80	69312	100	
Cd	111	3	115	40.580	ppb	40.580	3.61	10080	2000	
Sn	120	3	115	41.972	ppb	41.972	2.77	32181	2000	
Sb	121	3	115	42.039	ppb	42.039	0.94	32183	1000	
Ba	137	3	115	58.855	ppb	58.855	1.22	14547	5000	
Tl	205	3	193	41.149	ppb	41.149	2.02	147961	2000	
(Pb)	206	3	193	41.214	ppb	41.214	1.54	49945	100	
(Pb)	207	3	193	40.986	ppb	40.986	3.01	44235	100	
Pb	208	3	193	41.107	ppb	41.107	1.90	200756	5000	
Th	232	3	193	40.921	ppb	40.921	2.45	203315	2000	
U	238	3	193	41.056	ppb	41.056	2.73	211010	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4206628	0.92	4331237	97.12	60	120	
Sc (IS)	45	3	HMI He	657629	0.88	654817	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2294254	2.18	2307933	99.41	60	120	
Ge Internal standard	72	3	HMI He	773984	2.61	744678	103.94	60	120	
In Internal Standard	115	3	HMI He	2531024	1.09	2599142	97.38	60	120	
Ir (IS)	193	3	HMI He	5431757	2.32	5525410	98.31	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-d msd
Data File Name	199SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:39:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.062	ppb	43.062	3.53	2234	2000	
Na	23	3	45	87472.307	ppb	87472.307	0.73	10962649	400000	
Mg	24	3	45	12581.279	ppb	12581.279	1.01	812732	400000	
Al	27	3	45	803.907	ppb	803.907	2.96	18959	400000	
K	39	3	45	18773.054	ppb	18773.054	1.97	979404	400000	
Ca	40	2	45	30946.806	ppb	30946.806	0.92	17622148	400000	
V	51	3	72	40.165	ppb	40.165	2.97	26270	2000	
Cr	52	3	72	40.886	ppb	40.886	2.66	34831	5000	
Mn	55	3	72	65.144	ppb	65.144	3.43	28984	10000	
Fe	56	2	72	888.157	ppb	888.157	2.30	1329035	10000	
Co	59	3	72	39.958	ppb	39.958	1.63	52965	2000	
Ni	60	3	72	40.564	ppb	40.564	3.17	15017	5000	
Cu	63	3	72	45.765	ppb	45.765	1.23	45734	5000	
Zn	66	3	72	99.813	ppb	99.813	2.80	17798	5000	
As	75	3	72	38.067	ppb	38.067	2.15	4715	2000	
Se	78	2	72	42.501	ppb	42.501	4.65	2470	2000	
(Se)	78	3	72	41.168	ppb	41.168	12.49	318	2000	
Sr	88	3	72	332.281	ppb	332.281	2.15	190618	4000	
Mo	95	3	115	41.528	ppb	41.528	2.25	21254	2000	
Ag	107	3	115	40.817	ppb	40.817	1.40	69151	100	
Cd	111	3	115	39.758	ppb	39.758	3.96	9912	2000	
Sn	120	3	115	40.700	ppb	40.700	1.15	31321	2000	
Sb	121	3	115	41.381	ppb	41.381	0.98	31784	1000	
Ba	137	3	115	58.777	ppb	58.777	0.65	14574	5000	
Tl	205	3	193	41.443	ppb	41.443	2.08	147909	2000	
(Pb)	206	3	193	41.532	ppb	41.532	0.11	49947	100	
(Pb)	207	3	193	41.756	ppb	41.756	1.33	44733	100	
Pb	208	3	193	41.944	ppb	41.944	0.46	203321	5000	
Th	232	3	193	41.871	ppb	41.871	1.22	206406	2000	
U	238	3	193	41.662	ppb	41.662	0.77	212529	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144130	0.82	4331237	95.68	60	120	
Sc (IS)	45	3	HMI He	657519	0.98	654817	100.41	60	120	
Ge Internal standard	72	2	HMI H2	2224719	0.42	2307933	96.39	60	120	
Ge Internal standard	72	3	HMI He	768486	2.08	744678	103.20	60	120	
In Internal Standard	115	3	HMI He	2539037	0.92	2599142	97.69	60	120	
Ir (IS)	193	3	HMI He	5390606	1.49	5525410	97.56	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-bPDS
Data File Name	200SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:41:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	200.063	ppb	200.063	2.87	10534	2000	
Na	23	3	45	94130.069	ppb	94130.069	2.90	11918398	400000	
Mg	24	3	45	12192.842	ppb	12192.842	2.82	795960	400000	
Al	27	3	45	2011.874	ppb	2011.874	2.70	47825	400000	
K	39	3	45	19039.573	ppb	19039.573	2.83	1003443	400000	
Ca	40	2	45	30894.679	ppb	30894.679	0.25	17600673	400000	
V	51	3	72	197.407	ppb	197.407	2.96	130629	2000	
Cr	52	3	72	198.265	ppb	198.265	4.11	166622	5000	
Mn	55	3	72	218.253	ppb	218.253	3.61	98563	10000	
Fe	56	2	72	62.918	ppb	62.918	2.84	105830	10000	
Co	59	3	72	197.357	ppb	197.357	2.63	266560	2000	
Ni	60	3	72	194.069	ppb	194.069	3.82	72756	5000	
Cu	63	3	72	205.254	ppb	205.254	3.22	207784	5000	
Zn	66	3	72	257.806	ppb	257.806	3.56	46468	5000	
As	75	3	72	190.185	ppb	190.185	3.23	23800	2000	
Se	78	2	72	202.714	ppb	202.714	1.93	12132	2000	
(Se)	78	3	72	208.402	ppb	208.402	5.26	1496	2000	
Sr	88	3	72	439.388	ppb	439.388	3.34	256910	4000	
Mo	95	3	115	208.816	ppb	208.816	0.68	108177	2000	
Ag	107	3	115	52.404	ppb	52.404	1.50	89979	100	
Cd	111	3	115	200.100	ppb	200.100	1.88	50531	2000	
Sn	120	3	115	208.608	ppb	208.608	1.56	160559	2000	
Sb	121	3	115	207.837	ppb	207.837	1.40	161284	1000	
Ba	137	3	115	220.682	ppb	220.682	1.18	55278	5000	
Tl	205	3	193	203.441	ppb	203.441	2.82	737072	2000	
(Pb)	206	3	193	204.260	ppb	204.260	2.23	248892	100	
(Pb)	207	3	193	199.941	ppb	199.941	2.66	216342	100	
Pb	208	3	193	203.525	ppb	203.525	2.73	999199	5000	
Th	232	3	193	144.675	ppb	144.675	6.52	714875	2000	
U	238	3	193	214.999	ppb	214.999	1.84	1107630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4146169	1.41	4331237	95.73	60	120	
Sc (IS)	45	3	HMI He	664698	1.93	654817	101.51	60	120	
Ge Internal standard	72	2	HMI H2	2293181	0.90	2307933	99.36	60	120	
Ge Internal standard	72	3	HMI He	783519	2.29	744678	105.22	60	120	
In Internal Standard	115	3	HMI He	2573558	1.33	2599142	99.02	60	120	
Ir (IS)	193	3	HMI He	5476803	2.32	5525410	99.12	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	201_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:42:51-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.031	ppb	3.126	2797	50	104.1	90	110	
Na	23	3	45	51744.869	ppb	0.742	6593580	51000	101.5	90	110	
Mg	24	3	45	11050.413	ppb	3.142	723478	11000	100.5	90	110	
Al	27	3	45	1010.793	ppb	2.420	24138	1000	101.1	90	110	
K	39	3	45	10658.266	ppb	0.447	575107	11000	96.9	90	110	
Ca	40	2	45	11233.073	ppb	1.960	6604818	11000	102.1	90	110	
V	51	3	72	51.260	ppb	0.993	33163	50	102.5	90	110	
Cr	52	3	72	51.310	ppb	0.735	42968	50	102.6	90	110	
Mn	55	3	72	49.656	ppb	1.090	21940	50	99.3	90	110	
Fe	56	2	72	1071.823	ppb	3.577	1618914	1000	107.2	90	110	
Co	59	3	72	50.881	ppb	0.943	66830	50	101.8	90	110	
Ni	60	3	72	49.673	ppb	0.411	18200	50	99.3	90	110	
Cu	63	3	72	50.897	ppb	1.738	50365	50	101.8	90	110	
Zn	66	3	72	51.622	ppb	1.837	9239	50	103.2	90	110	
As	75	3	72	51.428	ppb	1.799	6295	50	102.9	90	110	
Se	78	2	72	52.429	ppb	6.556	3078	50	104.9	90	110	
(Se)	78	3	72	55.594	ppb	15.103	413	50	111.2	90	110	>+\-10%
Sr	88	3	72	101.286	ppb	0.532	57616	100	101.3	90	110	
Mo	95	3	115	50.951	ppb	2.622	27057	50	101.9	90	110	
Ag	107	3	115	49.756	ppb	2.365	87493	50	99.5	90	110	
Cd	111	3	115	51.291	ppb	3.806	13267	50	102.6	90	110	
Sn	120	3	115	49.364	ppb	2.038	39320	50	98.7	90	110	
Sb	121	3	115	49.495	ppb	1.836	39432	50	99.0	90	110	
Ba	137	3	115	49.761	ppb	3.093	12817	50	99.5	90	110	
Tl	205	3	193	50.273	ppb	1.797	184404	50	100.5	90	110	
(Pb)	206	3	193	50.115	ppb	2.253	61915	50	100.2	90	110	
(Pb)	207	3	193	50.024	ppb	0.316	55028	50	100.0	90	110	
Pb	208	3	193	49.906	ppb	1.757	248511	50	99.8	90	110	
Th	232	3	193	51.873	ppb	1.587	261813	50	103.7	90	110	
U	238	3	193	50.489	ppb	1.529	264396	50	101.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4274169	1.35	4331237	98.68	60	120	
Sc (IS)	45	3	HMI He	666364	0.28	654817	101.76	60	120	
Ge Internal standard	72	2	HMI H2	2249458	2.65	2307933	97.47	60	120	
Ge Internal standard	72	3	HMI He	761447	0.33	744678	102.25	60	120	
In Internal Standard	115	3	HMI He	2635888	1.58	2599142	101.41	60	120	
Ir (IS)	193	3	HMI He	5541063	1.44	5525410	100.28	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	202_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:44:43-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	12.382	ppb	46.2	52000	25	
Mg	24	3	45	0.167	ppb	462.9	204	25	
Al	27	3	45	8.895	ppb	25.8	294	15	
K	39	3	45	-8.657	ppb	-436.7	25803	50	
V	51	3	72	-0.137	ppb	-42.9	158	1	
Cr	52	3	72	0.179	ppb	154.5	1516	1	
Mn	55	3	72	0.159	ppb	15.3	240	0.5	
Co	59	3	72	0.021	ppb	77.9	52	0.5	
Ni	60	3	72	0.152	ppb	56.8	175	1	
Cu	63	3	72	0.084	ppb	23.0	431	1	
Zn	66	3	72	1.550	ppb	30.1	500	5	
As	75	3	72	-0.144	ppb	-44.1	33	1	
Se	78	2	72	0.058	ppb	58.8	6	1	
(Se)	78	3	72	-2.284	ppb	-100.0	18	1	
Sr	88	3	72	0.003	ppb	587.2	45	0.5	
Mo	95	3	115	0.060	ppb	27.4	67	0.5	
Ag	107	3	115	0.014	ppb	22.4	42	1	
Cd	111	3	115	0.000	ppb	3228.3	3	0.5	
Sn	120	3	115	0.197	ppb	49.9	665	1	
Sb	121	3	115	-0.003	ppb	-1104.3	120	0.6	
Ba	137	3	115	-0.055	ppb	-183.3	53	0.5	
Tl	205	3	193	0.007	ppb	141.0	138	0.1	
(Pb)	206	3	193	-0.012	ppb	-100.8	137	1	
(Pb)	207	3	193	0.011	ppb	26.5	333	1	
Pb	208	3	193	0.024	ppb	44.8	838	0.5	
Th	232	3	193	0.752	ppb	17.6	7930	1	
U	238	3	193	0.023	ppb	100.4	1664	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4288825	1.35	4331237	99.02	60	120	
Sc (IS)	45	3	HMI He	653577	1.55	654817	99.81	60	120	
Ge Internal standard	72	2	HMI H2	2247174	0.69	2307933	97.37	60	120	
Ge Internal standard	72	3	HMI He	748020	0.29	744678	100.45	60	120	
In Internal Standard	115	3	HMI He	2545338	1.23	2599142	97.93	60	120	
Ir (IS)	193	3	HMI He	5465285	0.09	5525410	98.91	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-1-d
Data File Name	203SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:46:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	111903.822	ppb	111903.822	2.73	14102675	400000	
Mg	24	3	45	45253.730	ppb	45253.730	3.81	2941509	400000	
Al	27	3	45	7.585	ppb	7.585	24.96	267	400000	
K	39	3	45	6116.674	ppb	6116.674	2.60	339147	400000	
Ca	40	2	45	76092.391	ppb	76092.391	3.04	43740747	400000	
V	51	3	72	1.028	ppb	1.028	5.68	901	2000	
Cr	52	3	72	0.470	ppb	0.470	23.29	1764	5000	
Mn	55	3	72	45.096	ppb	45.096	2.22	19771	10000	
Fe	56	2	72	33.801	ppb	33.801	5.44	59869	10000	
Co	59	3	72	0.278	ppb	0.278	16.44	388	2000	
Ni	60	3	72	1.441	ppb	1.441	10.73	641	5000	
Cu	63	3	72	1.893	ppb	1.893	3.29	2197	5000	
Zn	66	3	72	11.963	ppb	11.963	2.81	2304	5000	
As	75	3	72	0.711	ppb	0.711	29.01	137	2000	
Se	78	2	72	1.930	ppb	1.930	27.88	115	2000	
(Se)	78	3	72	0.642	ppb	0.642	233.63	38	2000	
Sr	88	3	72	1119.752	ppb	1119.752	0.72	631104	4000	
Mo	95	3	115	2.783	ppb	2.783	3.27	1454	2000	
Ag	107	3	115	0.009	ppb	0.009	82.79	33	100	
Cd	111	3	115	-0.006	ppb	-0.006	-180.05	2	2000	
Sn	120	3	115	0.265	ppb	0.265	5.94	713	2000	
Sb	121	3	115	0.265	ppb	0.265	13.14	323	1000	
Ba	137	3	115	49.810	ppb	49.810	2.42	12330	5000	
Tl	205	3	193	0.004	ppb	0.004	101.35	125	2000	
(Pb)	206	3	193	0.107	ppb	0.107	32.20	280	100	
(Pb)	207	3	193	0.090	ppb	0.090	54.85	415	100	
Pb	208	3	193	0.122	ppb	0.122	24.81	1304	5000	
Th	232	3	193	0.191	ppb	0.191	25.79	5142	2000	
U	238	3	193	10.788	ppb	10.788	2.43	56481	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4186221	1.32	4331237	96.65	60	120	
Sc (IS)	45	3	HMI He	662062	2.00	654817	101.11	60	120	
Ge Internal standard	72	2	HMI H2	2243760	2.96	2307933	97.22	60	120	
Ge Internal standard	72	3	HMI He	755003	1.32	744678	101.39	60	120	
In Internal Standard	115	3	HMI He	2532916	1.27	2599142	97.45	60	120	
Ir (IS)	193	3	HMI He	5420944	0.63	5525410	98.11	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-2-d
Data File Name	204SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:48:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	113287.330	ppb	113287.330	1.85	13888730	400000	
Mg	24	3	45	43665.268	ppb	43665.268	2.88	2761480	400000	
Al	27	3	45	7.466	ppb	7.466	46.78	257	400000	
K	39	3	45	6765.704	ppb	6765.704	1.44	362185	400000	
Ca	40	2	45	73753.595	ppb	73753.595	1.45	42329186	400000	
V	51	3	72	0.889	ppb	0.889	8.36	805	2000	
Cr	52	3	72	0.361	ppb	0.361	27.21	1661	5000	
Mn	55	3	72	41.120	ppb	41.120	1.69	17876	10000	
Fe	56	2	72	39.825	ppb	39.825	1.37	68708	10000	
Co	59	3	72	0.298	ppb	0.298	9.20	410	2000	
Ni	60	3	72	1.380	ppb	1.380	6.17	615	5000	
Cu	63	3	72	1.852	ppb	1.852	5.96	2137	5000	
Zn	66	3	72	15.499	ppb	15.499	6.34	2886	5000	
As	75	3	72	0.532	ppb	0.532	50.60	113	2000	
Se	78	2	72	1.880	ppb	1.880	16.43	112	2000	
(Se)	78	3	72	-1.030	ppb	-1.030	-52.26	27	2000	
Sr	88	3	72	1057.310	ppb	1057.310	1.46	590225	4000	
Mo	95	3	115	2.738	ppb	2.738	10.55	1384	2000	
Ag	107	3	115	0.002	ppb	0.002	16.32	20	100	
Cd	111	3	115	0.015	ppb	0.015	218.29	7	2000	
Sn	120	3	115	0.289	ppb	0.289	18.86	706	2000	
Sb	121	3	115	0.324	ppb	0.324	3.84	356	1000	
Ba	137	3	115	46.715	ppb	46.715	1.27	11174	5000	
Tl	205	3	193	0.004	ppb	0.004	82.98	122	2000	
(Pb)	206	3	193	0.107	ppb	0.107	12.95	270	100	
(Pb)	207	3	193	0.099	ppb	0.099	18.47	410	100	
Pb	208	3	193	0.121	ppb	0.121	7.84	1254	5000	
Th	232	3	193	0.069	ppb	0.069	64.32	4389	2000	
U	238	3	193	10.091	ppb	10.091	2.85	51088	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4178410	1.30	4331237	96.47	60	120	
Sc (IS)	45	3	HMI He	643847	0.26	654817	98.32	60	120	
Ge Internal standard	72	2	HMI H2	2235652	2.44	2307933	96.87	60	120	
Ge Internal standard	72	3	HMI He	747961	2.86	744678	100.44	60	120	
In Internal Standard	115	3	HMI He	2446239	2.34	2599142	94.12	60	120	
Ir (IS)	193	3	HMI He	5232419	2.22	5525410	94.70	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-3-d
Data File Name	205SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:50:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	101507.837	ppb	101507.837	1.16	12634777	400000	
Mg	24	3	45	44004.538	ppb	44004.538	0.57	2824593	400000	
Al	27	3	45	7.600	ppb	7.600	10.41	264	400000	
K	39	3	45	5629.953	ppb	5629.953	1.50	310270	400000	
Ca	40	2	45	51988.866	ppb	51988.866	2.87	30073412	400000	
V	51	3	72	0.982	ppb	0.982	11.52	826	2000	
Cr	52	3	72	0.561	ppb	0.561	3.84	1741	5000	
Mn	55	3	72	25.069	ppb	25.069	1.08	10487	10000	
Fe	56	2	72	14.312	ppb	14.312	5.70	29959	10000	
Co	59	3	72	0.356	ppb	0.356	8.17	463	2000	
Ni	60	3	72	1.509	ppb	1.509	6.47	631	5000	
Cu	63	3	72	1.611	ppb	1.611	5.01	1823	5000	
Zn	66	3	72	9.077	ppb	9.077	5.06	1711	5000	
As	75	3	72	3.272	ppb	3.272	12.84	421	2000	
Se	78	2	72	0.504	ppb	0.504	28.48	31	2000	
(Se)	78	3	72	-2.421	ppb	-2.421	-80.85	17	2000	
Sr	88	3	72	1023.157	ppb	1023.157	1.41	546435	4000	
Mo	95	3	115	4.175	ppb	4.175	5.56	2176	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-815.90	17	100	
Cd	111	3	115	-0.006	ppb	-0.006	-184.46	2	2000	
Sn	120	3	115	0.179	ppb	0.179	31.13	651	2000	
Sb	121	3	115	0.163	ppb	0.163	32.77	247	1000	
Ba	137	3	115	23.804	ppb	23.804	4.45	5960	5000	
Tl	205	3	193	-0.004	ppb	-0.004	-199.50	98	2000	
(Pb)	206	3	193	0.016	ppb	0.016	208.16	170	100	
(Pb)	207	3	193	-0.004	ppb	-0.004	-789.07	315	100	
Pb	208	3	193	0.033	ppb	0.033	47.79	876	5000	
Th	232	3	193	-0.003	ppb	-0.003	-366.40	4215	2000	
U	238	3	193	7.464	ppb	7.464	0.88	39680	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4213151	2.69	4331237	97.27	60	120	
Sc (IS)	45	3	HMI He	653492	1.42	654817	99.80	60	120	
Ge Internal standard	72	2	HMI H2	2190868	3.69	2307933	94.93	60	120	
Ge Internal standard	72	3	HMI He	715393	0.21	744678	96.07	60	120	
In Internal Standard	115	3	HMI He	2547946	2.00	2599142	98.03	60	120	
Ir (IS)	193	3	HMI He	5438628	1.44	5525410	98.43	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-4-d
Data File Name	206SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:52:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	115204.762	ppb	115204.762	3.57	14445256	400000	
Mg	24	3	45	42896.203	ppb	42896.203	3.49	2775204	400000	
Al	27	3	45	2.833	ppb	2.833	84.56	153	400000	
K	39	3	45	2406.396	ppb	2406.396	4.75	148807	400000	
Ca	40	2	45	101183.396	ppb	101183.396	1.68	58402338	400000	
V	51	3	72	-0.006	ppb	-0.006	-973.90	250	2000	
Cr	52	3	72	0.540	ppb	0.540	21.62	1863	5000	
Mn	55	3	72	0.709	ppb	0.709	20.71	491	10000	
Fe	56	2	72	4.712	ppb	4.712	1.79	16984	10000	
Co	59	3	72	0.267	ppb	0.267	2.34	381	2000	
Ni	60	3	72	1.365	ppb	1.365	16.53	628	5000	
Cu	63	3	72	1.658	ppb	1.658	6.75	2014	5000	
Zn	66	3	72	414.227	ppb	414.227	4.72	73498	5000	
As	75	3	72	0.120	ppb	0.120	122.52	67	2000	
Se	78	2	72	0.427	ppb	0.427	14.05	29	2000	
(Se)	78	3	72	-1.886	ppb	-1.886	-89.29	22	2000	
Sr	88	3	72	794.111	ppb	794.111	4.54	457947	4000	
Mo	95	3	115	2.581	ppb	2.581	6.42	1359	2000	
Ag	107	3	115	0.001	ppb	0.001	399.79	20	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.231	ppb	0.231	35.05	691	2000	
Sb	121	3	115	0.012	ppb	0.012	134.33	132	1000	
Ba	137	3	115	27.997	ppb	27.997	4.84	7005	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-318.26	103	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-79.92	120	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-210.24	292	100	
Pb	208	3	193	-0.001	ppb	-0.001	-1478.67	706	5000	
Th	232	3	193	0.004	ppb	0.004	1062.08	4240	2000	
U	238	3	193	26.282	ppb	26.282	4.46	135464	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4203495	1.97	4331237	97.05	60	120	
Sc (IS)	45	3	HMI He	658932	2.52	654817	100.63	60	120	
Ge Internal standard	72	2	HMI H2	2334737	2.17	2307933	101.16	60	120	
Ge Internal standard	72	3	HMI He	773252	3.47	744678	103.84	60	120	
In Internal Standard	115	3	HMI He	2551421	3.39	2599142	98.16	60	120	
Ir (IS)	193	3	HMI He	5428483	3.20	5525410	98.25	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	207_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:54:06-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.457	ppb	7.413	2637	50	98.9	90	110	
Na	23	3	45	50309.823	ppb	2.428	6060315	51000	98.6	90	110	
Mg	24	3	45	11239.942	ppb	2.649	696044	11000	102.2	90	110	
Al	27	3	45	1014.570	ppb	4.650	22932	1000	101.5	90	110	
K	39	3	45	10657.850	ppb	0.899	543622	11000	96.9	90	110	
Ca	40	2	45	10910.149	ppb	0.640	6439051	11000	99.2	90	110	
V	51	3	72	51.011	ppb	3.241	31301	50	102.0	90	110	
Cr	52	3	72	50.760	ppb	2.193	40348	50	101.5	90	110	
Mn	55	3	72	50.122	ppb	4.436	21007	50	100.2	90	110	
Fe	56	2	72	1074.796	ppb	1.806	1598800	1000	107.5	90	110	
Co	59	3	72	50.238	ppb	1.915	62588	50	100.5	90	110	
Ni	60	3	72	50.269	ppb	1.245	17469	50	100.5	90	110	
Cu	63	3	72	50.322	ppb	2.804	47227	50	100.6	90	110	
Zn	66	3	72	48.805	ppb	4.226	8300	50	97.6	90	110	
As	75	3	72	50.666	ppb	6.871	5875	50	101.3	90	110	
Se	78	2	72	51.778	ppb	3.104	2995	50	103.6	90	110	
(Se)	78	3	72	52.093	ppb	4.414	370	50	104.2	90	110	
Sr	88	3	72	100.900	ppb	1.696	54443	100	100.9	90	110	
Mo	95	3	115	52.833	ppb	2.197	25872	50	105.7	90	110	
Ag	107	3	115	50.738	ppb	1.066	82259	50	101.5	90	110	
Cd	111	3	115	51.967	ppb	4.311	12390	50	103.9	90	110	
Sn	120	3	115	51.447	ppb	1.440	37763	50	102.9	90	110	
Sb	121	3	115	51.399	ppb	1.237	37750	50	102.8	90	110	
Ba	137	3	115	50.342	ppb	3.264	11960	50	100.7	90	110	
Tl	205	3	193	50.380	ppb	2.464	174234	50	100.8	90	110	
(Pb)	206	3	193	50.183	ppb	2.083	58449	50	100.4	90	110	
(Pb)	207	3	193	49.547	ppb	0.450	51392	50	99.1	90	110	
Pb	208	3	193	50.039	ppb	2.614	234892	50	100.1	90	110	
Th	232	3	193	50.071	ppb	1.619	238401	50	100.1	90	110	
U	238	3	193	50.135	ppb	2.125	247543	50	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4289350	0.65	4331237	99.03	60	120	
Sc (IS)	45	3	HMI He	630001	3.75	654817	96.21	60	120	
Ge Internal standard	72	2	HMI H2	2214362	1.26	2307933	95.95	60	120	
Ge Internal standard	72	3	HMI He	722541	4.61	744678	97.03	60	120	
In Internal Standard	115	3	HMI He	2429277	2.93	2599142	93.46	60	120	
Ir (IS)	193	3	HMI He	5224485	4.01	5525410	94.55	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	208_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:55:58-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	26.649	ppb	44.0	52148	25	>RL
Mg	24	3	45	1.116	ppb	53.8	257	25	
Al	27	3	45	9.545	ppb	13.1	300	15	
K	39	3	45	-8.989	ppb	-272.7	25034	50	
V	51	3	72	-0.116	ppb	-31.3	163	1	
Cr	52	3	72	0.128	ppb	53.3	1408	1	
Mn	55	3	72	-0.012	ppb	-488.3	158	0.5	
Co	59	3	72	0.015	ppb	101.3	42	0.5	
Ni	60	3	72	0.059	ppb	117.1	135	1	
Cu	63	3	72	0.084	ppb	17.5	411	1	
Zn	66	3	72	1.592	ppb	29.5	483	5	
As	75	3	72	0.030	ppb	318.1	52	1	
Se	78	2	72	0.036	ppb	147.3	5	1	
(Se)	78	3	72	-0.589	ppb	-69.9	28	1	
Sr	88	3	72	0.057	ppb	39.1	72	0.5	
Mo	95	3	115	0.031	ppb	110.0	50	0.5	
Ag	107	3	115	0.006	ppb	111.5	27	1	
Cd	111	3	115	0.008	ppb	456.1	5	0.5	
Sn	120	3	115	0.181	ppb	41.3	630	1	
Sb	121	3	115	0.003	ppb	1256.9	120	0.6	
Ba	137	3	115	-0.096	ppb	-31.3	42	0.5	
Tl	205	3	193	0.004	ppb	105.9	123	0.1	
(Pb)	206	3	193	0.005	ppb	529.3	152	1	
(Pb)	207	3	193	-0.008	ppb	-793.1	302	1	
Pb	208	3	193	0.019	ppb	43.3	780	0.5	
Th	232	3	193	0.768	ppb	26.8	7692	1	
U	238	3	193	0.015	ppb	66.4	1561	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4270821	1.36	4331237	98.61	60	120	
Sc (IS)	45	3	HMI He	634005	2.12	654817	96.82	60	120	
Ge Internal standard	72	2	HMI H2	2240958	1.98	2307933	97.10	60	120	
Ge Internal standard	72	3	HMI He	713518	1.37	744678	95.82	60	120	
In Internal Standard	115	3	HMI He	2452635	1.04	2599142	94.36	60	120	
Ir (IS)	193	3	HMI He	5256794	2.05	5525410	95.14	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600128/1-a
Data File Name	209_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:57:52-07:00
Sample Type	Blank
Dilution	1
Comment	600128 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.031	ppb	173.2050808	2	0.5
Na	23	3	45	-2.980	ppb	-11.47599794	52151	25
Mg	24	3	45	1.791	ppb	36.58049844	320	25
Al	27	3	45	3.582	ppb	38.15571217	177	15
K	39	3	45	-28.412	ppb	-135.5448544	25833	50
V	51	3	72	-0.042	ppb	-69.54978389	225	1
Cr	52	3	72	0.167	ppb	92.39130346	1553	1
Mn	55	3	72	0.341	ppb	11.38492166	328	0.5
Co	59	3	72	0.008	ppb	56.53423441	37	0.5
Ni	60	3	72	0.033	ppb	157.9823286	137	1
Cu	63	3	72	0.101	ppb	46.25517196	461	1
Zn	66	3	72	0.809	ppb	29.25544647	385	5
As	75	3	72	-0.071	ppb	-26.59675389	43	1
(Se)	78	3	72	-2.616	ppb	-41.06886094	17	1
Sr	88	3	72	0.064	ppb	41.19742108	82	0.5
Mo	95	3	115	0.045	ppb	115.3685285	60	0.5
Ag	107	3	115	0.000	ppb	6565.334385	18	1
Cd	111	3	115	-0.007	ppb	-172.9802902	2	0.5
Sn	120	3	115	0.304	ppb	40.087764	763	1
Sb	121	3	115	-0.032	ppb	-115.7276607	100	0.6
Ba	137	3	115	0.111	ppb	38.54854784	97	0.5
Tl	205	3	193	0.005	ppb	158.4021292	133	0.1
(Pb)	206	3	193	0.471	ppb	1.794045308	741	1
(Pb)	207	3	193	0.481	ppb	8.808279273	861	1
Pb	208	3	193	0.489	ppb	3.323989379	3189	0.5
Th	232	3	193	0.158	ppb	35.30339283	5144	1
U	238	3	193	0.004	ppb	289.180314	1608	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4222389	1.04	4331237	97.49	60	120	
Sc (IS)	45	3	HMI He	680318	0.72	654817	103.89	60	120	
Ge Internal standard	72	2	HMI H2	2201306	0.86	2307933	95.38	60	120	
Ge Internal standard	72	3	HMI He	771338	1.38	744678	103.58	60	120	
In Internal Standard	115	3	HMI He	2603157	1.06	2599142	100.15	60	120	
Ir (IS)	193	3	HMI He	5598321	1.14	5525410	101.32	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600128/2-a
Data File Name	210_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:59:46-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600128 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	38.217	38.217	ppb	4.076	2036	40	95.5	80	120	
Na	23	3	45	802.105	802.105	ppb	2.223	153399	40	2005.3	80	120	>+/-20%
Mg	24	3	45	747.380	747.380	ppb	1.342	49285	40	1868.5	80	120	>+/-20%
Al	27	3	45	788.194	788.194	ppb	2.892	18908	40	1970.5	80	120	>+/-20%
K	39	3	45	746.322	746.322	ppb	2.117	65394	40	1865.8	80	120	>+/-20%
Ca	40	2	45	856.460	856.460	ppb	1.068	507710	40	2141.2	80	120	>+/-20%
V	51	3	72	40.442	40.442	ppb	4.614	26091	40	101.1	80	120	
Cr	52	3	72	41.659	41.659	ppb	2.746	34981	40	104.1	80	120	
Mn	55	3	72	41.377	41.377	ppb	2.353	18226	40	103.4	80	120	
Fe	56	2	72	831.497	831.497	ppb	1.528	1248448	40	2078.7	80	120	>+/-20%
(Fe)	56	3	72	817.282	817.282	ppb	1.547	556668	40	2043.2	80	120	>+/-20%
Co	59	3	72	41.169	41.169	ppb	2.573	53836	40	102.9	80	120	
Ni	60	3	72	40.331	40.331	ppb	1.984	14732	40	100.8	80	120	
Cu	63	3	72	42.245	42.245	ppb	2.569	41667	40	105.6	80	120	
Zn	66	3	72	40.552	40.552	ppb	4.056	7277	40	101.4	80	120	
As	75	3	72	39.944	39.944	ppb	2.938	4880	40	99.9	80	120	
Se	78	2	72	41.193	41.193	ppb	2.850	2400	40	103.0	80	120	
(Se)	78	3	72	40.956	40.956	ppb	17.326	312	40	102.4	80	120	
Sr	88	3	72	80.451	80.451	ppb	2.302	45560	40	201.1	80	120	>+/-20%
Mo	95	3	115	40.021	40.021	ppb	1.487	21061	40	100.1	80	120	
Ag	107	3	115	40.255	40.255	ppb	0.631	70117	40	100.6	80	120	
Cd	111	3	115	38.650	38.650	ppb	0.995	9905	40	96.6	80	120	
Sn	120	3	115	38.957	38.957	ppb	1.818	30847	40	97.4	80	120	
Sb	121	3	115	39.251	39.251	ppb	2.245	30994	40	98.1	80	120	
Ba	137	3	115	39.591	39.591	ppb	1.784	10114	40	99.0	80	120	
Tl	205	3	193	40.485	40.485	ppb	1.931	148563	40	101.2	80	120	
(Pb)	206	3	193	39.851	39.851	ppb	2.187	49268	40	99.6	80	120	
(Pb)	207	3	193	39.404	39.404	ppb	2.364	43416	40	98.5	80	120	
Pb	208	3	193	40.066	40.066	ppb	1.769	199690	40	100.2	80	120	
Th	232	3	193	40.292	40.292	ppb	0.380	204389	40	100.7	80	120	
U	238	3	193	40.329	40.329	ppb	1.316	211550	40	100.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4199675	1.57	4331237	96.96	60	120	
Sc (IS)	45	3	HMI He	668713	0.96	654817	102.12	60	120	
Ge Internal standard	72	2	HMI H2	2231224	1.92	2307933	96.68	60	120	
Ge Internal standard	72	3	HMI He	758144	2.60	744678	101.81	60	120	
In Internal Standard	115	3	HMI He	2610379	1.55	2599142	100.43	60	120	
Ir (IS)	193	3	HMI He	5542127	1.60	5525410	100.30	60	120	

Sample Report

Sample Table

Sample Name	280-171552-e-1-b
Data File Name	211SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:01:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.127	ppb	0.127	86.61	7	2000	
Na	23	3	45	4140981.388	ppb	4140981.388	1.73	538135944	400000	>LDR
Mg	24	3	45	474305.492	ppb	474305.492	4.19	31895139	400000	
Al	27	3	45	224.722	ppb	224.722	4.41	5583	400000	
K	39	3	45	281370.939	ppb	281370.939	2.31	14903088	400000	
Ca	40	2	45	130872.642	ppb	130872.642	1.24	76677106	400000	
V	51	3	72	108.072	ppb	108.072	4.46	69980	2000	
Cr	52	3	72	476.428	ppb	476.428	4.04	389311	5000	
Mn	55	3	72	420.891	ppb	420.891	3.31	185605	10000	
Fe	56	2	72	10057.553	ppb	10057.553	3.60	15314852	10000	
Co	59	3	72	49.000	ppb	49.000	5.42	64661	2000	
Ni	60	3	72	797.679	ppb	797.679	4.33	291830	5000	
Cu	63	3	72	2208.296	ppb	2208.296	3.53	2181157	5000	
Zn	66	3	72	796.166	ppb	796.166	3.59	139747	5000	
As	75	3	72	158.456	ppb	158.456	4.85	19381	2000	
Se	78	2	72	1.717	ppb	1.717	5.75	105	2000	
(Se)	78	3	72	-1.136	ppb	-1.136	-28.81	27	2000	
Sr	88	3	72	4217.596	ppb	4217.596	4.04	2409240	4000	
Mo	95	3	115	35.340	ppb	35.340	0.90	17461	2000	
Ag	107	3	115	0.507	ppb	0.507	3.33	846	100	
Cd	111	3	115	2.820	ppb	2.820	4.04	681	2000	
Sn	120	3	115	28.135	ppb	28.135	3.39	21046	2000	
Sb	121	3	115	11.151	ppb	11.151	0.69	8352	1000	
Ba	137	3	115	1451.730	ppb	1451.730	0.48	345896	5000	
Tl	205	3	193	0.059	ppb	0.059	12.47	298	2000	
(Pb)	206	3	193	227.023	ppb	227.023	2.61	252065	100	
(Pb)	207	3	193	216.674	ppb	216.674	2.60	213634	100	
Pb	208	3	193	221.709	ppb	221.709	3.04	991803	5000	
Th	232	3	193	0.709	ppb	0.709	24.80	7039	2000	
U	238	3	193	0.197	ppb	0.197	25.34	2332	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267216	1.80	4331237	98.52	60	120	
Sc (IS)	45	3	HMI He	684994	2.21	654817	104.61	60	120	
Ge Internal standard	72	2	HMI H2	2279607	2.87	2307933	98.77	60	120	
Ge Internal standard	72	3	HMI He	766014	3.88	744678	102.87	60	120	
In Internal Standard	115	3	HMI He	2450453	1.13	2599142	94.28	60	120	
Ir (IS)	193	3	HMI He	4991942	3.33	5525410	90.35	60	120	

Sample Report

Sample Table

Sample Name	280-171552-e-2-b
Data File Name	212SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:03:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.128	ppb	0.128	115.22	7	2000	
Na	23	3	45	2400852.040	ppb	2400852.040	1.49	300708261	400000	>LDR
Mg	24	3	45	745168.491	ppb	745168.491	2.42	48307992	400000	
Al	27	3	45	63.672	ppb	63.672	1.30	1588	400000	
K	39	3	45	252539.409	ppb	252539.409	1.11	12897680	400000	
Ca	40	2	45	558746.893	ppb	558746.893	2.14	323670079	400000	
V	51	3	72	8.274	ppb	8.274	3.81	5432	2000	
Cr	52	3	72	23.279	ppb	23.279	4.70	19769	5000	
Mn	55	3	72	1708.866	ppb	1708.866	1.22	731917	10000	
Fe	56	2	72	14485.844	ppb	14485.844	2.43	21639867	10000	
Co	59	3	72	38.143	ppb	38.143	2.58	48938	2000	
Ni	60	3	72	618.551	ppb	618.551	2.83	219940	5000	
Cu	63	3	72	229.598	ppb	229.598	3.01	220595	5000	
Zn	66	3	72	168.501	ppb	168.501	2.42	28929	5000	
As	75	3	72	11.960	ppb	11.960	10.79	1466	2000	
Se	78	2	72	1.262	ppb	1.262	15.31	76	2000	
(Se)	78	3	72	2.972	ppb	2.972	18.51	53	2000	
Sr	88	3	72	8516.103	ppb	8516.103	3.74	4725578	4000	
Mo	95	3	115	16.763	ppb	16.763	4.81	8098	2000	
Ag	107	3	115	0.037	ppb	0.037	39.01	77	100	
Cd	111	3	115	0.057	ppb	0.057	37.80	17	2000	
Sn	120	3	115	1.498	ppb	1.498	7.60	1551	2000	
Sb	121	3	115	1.836	ppb	1.836	4.88	1438	1000	
Ba	137	3	115	2293.034	ppb	2293.034	2.09	533166	5000	
Tl	205	3	193	0.012	ppb	0.012	76.93	138	2000	
(Pb)	206	3	193	12.030	ppb	12.030	3.37	13174	100	
(Pb)	207	3	193	11.764	ppb	11.764	4.73	11611	100	
Pb	208	3	193	11.834	ppb	11.834	1.35	52348	5000	
Th	232	3	193	0.135	ppb	0.135	8.68	4384	2000	
U	238	3	193	0.038	ppb	0.038	74.23	1558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4219675	1.47	4331237	97.42	60	120	
Sc (IS)	45	3	HMI He	660276	4.23	654817	100.83	60	120	
Ge Internal standard	72	2	HMI H2	2236229	2.88	2307933	96.89	60	120	
Ge Internal standard	72	3	HMI He	744015	4.73	744678	99.91	60	120	
In Internal Standard	115	3	HMI He	2393224	5.16	2599142	92.08	60	120	
Ir (IS)	193	3	HMI He	4877498	4.47	5525410	88.27	60	120	

Sample Report

Sample Table

Sample Name	280-171574-e-1-a
Data File Name	213SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:05:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	4811186.135	ppb	4811186.135	1.58	636284175	400000	>LDR
Mg	24	3	45	1436170.306	ppb	1436170.306	1.40	98308820	400000	
Al	27	3	45	4.624	ppb	4.624	19.81	207	400000	
K	39	3	45	38480.324	ppb	38480.324	0.98	2097885	400000	
Ca	40	2	45	410702.964	ppb	410702.964	0.60	254986719	400000	
V	51	3	72	1.319	ppb	1.319	13.56	1076	2000	
Cr	52	3	72	0.703	ppb	0.703	5.84	1938	5000	
Mn	55	3	72	218.311	ppb	218.311	2.07	94379	10000	
Fe	56	2	72	15.255	ppb	15.255	2.22	33150	10000	
Co	59	3	72	11.371	ppb	11.371	1.20	14721	2000	
Ni	60	3	72	107.606	ppb	107.606	2.20	38666	5000	
Cu	63	3	72	24.092	ppb	24.092	2.00	23652	5000	
Zn	66	3	72	24.158	ppb	24.158	1.50	4384	5000	
As	75	3	72	0.648	ppb	0.648	20.33	128	2000	
Se	78	2	72	1061.298	ppb	1061.298	1.92	64126	2000	
(Se)	78	3	72	1162.175	ppb	1162.175	1.76	7833	2000	
Sr	88	3	72	7921.228	ppb	7921.228	2.03	4432284	4000	
Mo	95	3	115	17.502	ppb	17.502	1.49	8553	2000	
Ag	107	3	115	0.027	ppb	0.027	17.31	60	100	
Cd	111	3	115	1.083	ppb	1.083	19.75	260	2000	
Sn	120	3	115	0.492	ppb	0.492	5.06	845	2000	
Sb	121	3	115	0.554	ppb	0.554	4.26	520	1000	
Ba	137	3	115	14.361	ppb	14.361	4.38	3445	5000	
Tl	205	3	193	2.344	ppb	2.344	1.19	7293	2000	
(Pb)	206	3	193	0.108	ppb	0.108	34.56	242	100	
(Pb)	207	3	193	0.111	ppb	0.111	37.05	375	100	
Pb	208	3	193	0.137	ppb	0.137	11.57	1183	5000	
Th	232	3	193	0.089	ppb	0.089	14.35	3982	2000	
U	238	3	193	270.933	ppb	270.933	1.03	1182897	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4522089	1.53	4331237	104.41	60	120	
Sc (IS)	45	3	HMI He	696701	4.83	654817	106.40	60	120	
Ge Internal standard	72	2	HMI H2	2315441	0.48	2307933	100.33	60	120	
Ge Internal standard	72	3	HMI He	749696	5.37	744678	100.67	60	120	
In Internal Standard	115	3	HMI He	2419583	4.32	2599142	93.09	60	120	
Ir (IS)	193	3	HMI He	4642386	4.90	5525410	84.02	60	120	

Sample Report

Sample Table

Sample Name	280-171574-e-2-a
Data File Name	214SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:07:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	4753428.067	ppb	4753428.067	2.13	689164467	400000	>LDR
Mg	24	3	45	1384683.533	ppb	1384683.533	1.69	103926742	400000	
Al	27	3	45	8.165	ppb	8.165	14.97	324	400000	
K	39	3	45	38525.084	ppb	38525.084	0.55	2303727	400000	
Ca	40	2	45	419020.717	ppb	419020.717	2.01	246837931	400000	
V	51	3	72	1.320	ppb	1.320	13.06	1164	2000	
Cr	52	3	72	0.738	ppb	0.738	15.45	2119	5000	
Mn	55	3	72	214.404	ppb	214.404	2.02	99949	10000	
Fe	56	2	72	22.981	ppb	22.981	4.84	43508	10000	
Co	59	3	72	11.055	ppb	11.055	3.00	15436	2000	
Ni	60	3	72	106.302	ppb	106.302	1.47	41201	5000	
Cu	63	3	72	23.887	ppb	23.887	2.43	25301	5000	
Zn	66	3	72	25.091	ppb	25.091	4.14	4897	5000	
As	75	3	72	0.702	ppb	0.702	24.82	145	2000	
Se	78	2	72	1056.279	ppb	1056.279	2.78	61573	2000	
(Se)	78	3	72	1149.789	ppb	1149.789	1.64	8358	2000	
Sr	88	3	72	7929.443	ppb	7929.443	0.91	4785238	4000	
Mo	95	3	115	16.542	ppb	16.542	2.56	8473	2000	
Ag	107	3	115	0.027	ppb	0.027	6.37	63	100	
Cd	111	3	115	1.032	ppb	1.032	13.70	260	2000	
Sn	120	3	115	0.818	ppb	0.818	7.65	1131	2000	
Sb	121	3	115	0.480	ppb	0.480	13.91	488	1000	
Ba	137	3	115	14.354	ppb	14.354	2.18	3604	5000	
Tl	205	3	193	2.347	ppb	2.347	2.06	7334	2000	
(Pb)	206	3	193	0.259	ppb	0.259	12.65	398	100	
(Pb)	207	3	193	0.264	ppb	0.264	3.93	516	100	
Pb	208	3	193	0.274	ppb	0.274	11.98	1756	5000	
Th	232	3	193	0.096	ppb	0.096	39.74	4025	2000	
U	238	3	193	281.038	ppb	281.038	1.03	1231998	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4291754	2.98	4331237	99.09	60	120	
Sc (IS)	45	3	HMI He	764238	1.43	654817	116.71	60	120	
Ge Internal standard	72	2	HMI H2	2233461	0.65	2307933	96.77	60	120	
Ge Internal standard	72	3	HMI He	808435	0.91	744678	108.56	60	120	
In Internal Standard	115	3	HMI He	2534690	0.07	2599142	97.52	60	120	
Ir (IS)	193	3	HMI He	4660870	1.05	5525410	84.35	60	120	

Sample Report

Sample Table

Sample Name	280-171588-c-1-a
Data File Name	215SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:09:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	86.63	3	2000	
Na	23	3	45	1592958.830	ppb	1592958.830	0.83	232068452	400000	
Mg	24	3	45	2135328.766	ppb	2135328.766	1.36	160985063	400000	>LDR
Al	27	3	45	104.312	ppb	104.312	56.60	2995	400000	
K	39	3	45	31137.733	ppb	31137.733	3.29	1876009	400000	
Ca	40	2	45	464713.331	ppb	464713.331	1.51	298959249	400000	
V	51	3	72	0.751	ppb	0.751	8.28	791	2000	
Cr	52	3	72	0.556	ppb	0.556	18.56	2004	5000	
Mn	55	3	72	3500.104	ppb	3500.104	0.93	1661107	10000	
Fe	56	2	72	98.998	ppb	98.998	11.01	170462	10000	
Co	59	3	72	19.438	ppb	19.438	2.99	27645	2000	
Ni	60	3	72	96.128	ppb	96.128	1.00	38008	5000	
Cu	63	3	72	7.645	ppb	7.645	2.66	8517	5000	
Zn	66	3	72	20.443	ppb	20.443	2.61	4115	5000	
As	75	3	72	0.424	ppb	0.424	81.05	112	2000	
Se	78	2	72	105.471	ppb	105.471	0.10	6692	2000	
(Se)	78	3	72	110.207	ppb	110.207	10.89	850	2000	
Sr	88	3	72	7630.917	ppb	7630.917	1.92	4695663	4000	
Mo	95	3	115	3.639	ppb	3.639	3.56	1963	2000	
Ag	107	3	115	0.192	ppb	0.192	3.20	355	100	
Cd	111	3	115	2.800	ppb	2.800	6.04	726	2000	
Sn	120	3	115	0.156	ppb	0.156	35.85	655	2000	
Sb	121	3	115	0.383	ppb	0.383	3.00	430	1000	
Ba	137	3	115	12.876	ppb	12.876	2.84	3360	5000	
Tl	205	3	193	5.790	ppb	5.790	2.86	19198	2000	
(Pb)	206	3	193	0.237	ppb	0.237	26.28	401	100	
(Pb)	207	3	193	0.247	ppb	0.247	10.97	536	100	
Pb	208	3	193	0.253	ppb	0.253	11.36	1784	5000	
Th	232	3	193	0.112	ppb	0.112	17.43	4374	2000	
U	238	3	193	148.672	ppb	148.672	2.96	697570	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4685163	0.72	4331237	108.17	60	120	
Sc (IS)	45	3	HMI He	767770	3.10	654817	117.25	60	120	
Ge Internal standard	72	2	HMI H2	2430476	2.70	2307933	105.31	60	120	
Ge Internal standard	72	3	HMI He	824549	3.60	744678	110.73	60	120	
In Internal Standard	115	3	HMI He	2629857	0.98	2599142	101.18	60	120	
Ir (IS)	193	3	HMI He	4984056	1.22	5525410	90.20	60	120	

Sample Report

Sample Table

Sample Name	280-171630-b-1-b
Data File Name	216SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:10:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.232	ppb	0.232	66.34	12	2000	
Na	23	3	45	301740.141	ppb	301740.141	2.46	40453035	400000	
Mg	24	3	45	157388.656	ppb	157388.656	2.95	10906143	400000	
Al	27	3	45	4346.546	ppb	4346.546	3.74	109563	400000	
K	39	3	45	8029.498	ppb	8029.498	3.67	465652	400000	
Ca	40	2	45	461370.799	ppb	461370.799	0.42	258943364	400000	
V	51	3	72	10.874	ppb	10.874	3.17	7567	2000	
Cr	52	3	72	6.855	ppb	6.855	2.40	7272	5000	
Mn	55	3	72	68.338	ppb	68.338	2.22	31513	10000	
Fe	56	2	72	3717.475	ppb	3717.475	3.36	5448212	10000	
Co	59	3	72	5.265	ppb	5.265	3.19	7257	2000	
Ni	60	3	72	9.130	ppb	9.130	3.36	3604	5000	
Cu	63	3	72	2.841	ppb	2.841	4.94	3292	5000	
Zn	66	3	72	14.769	ppb	14.769	4.78	2942	5000	
As	75	3	72	4.505	ppb	4.505	12.33	626	2000	
Se	78	2	72	251.396	ppb	251.396	3.15	14382	2000	
(Se)	78	3	72	280.567	ppb	280.567	6.23	2036	2000	
Sr	88	3	72	5751.257	ppb	5751.257	0.82	3419924	4000	
Mo	95	3	115	5.962	ppb	5.962	4.83	3142	2000	
Ag	107	3	115	0.020	ppb	0.020	78.22	53	100	
Cd	111	3	115	0.079	ppb	0.079	57.64	23	2000	
Sn	120	3	115	0.933	ppb	0.933	13.18	1244	2000	
Sb	121	3	115	1.364	ppb	1.364	7.09	1188	1000	
Ba	137	3	115	86.817	ppb	86.817	1.93	21914	5000	
Tl	205	3	193	0.052	ppb	0.052	13.85	282	2000	
(Pb)	206	3	193	4.652	ppb	4.652	4.83	5470	100	
(Pb)	207	3	193	4.309	ppb	4.309	3.14	4679	100	
Pb	208	3	193	4.625	ppb	4.625	6.00	22007	5000	
Th	232	3	193	1.366	ppb	1.366	1.51	10301	2000	
U	238	3	193	45.303	ppb	45.303	2.12	220521	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4087866	3.55	4331237	94.38	60	120	
Sc (IS)	45	3	HMI He	705912	3.18	654817	107.80	60	120	
Ge Internal standard	72	2	HMI H2	2192067	3.80	2307933	94.98	60	120	
Ge Internal standard	72	3	HMI He	796591	1.25	744678	106.97	60	120	
In Internal Standard	115	3	HMI He	2588445	0.02	2599142	99.59	60	120	
Ir (IS)	193	3	HMI He	5146843	1.12	5525410	93.15	60	120	

Sample Report

Sample Table

Sample Name	280-171608-b-2-a
Data File Name	217SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:12:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	823504.201	ppb	823504.201	2.47	113078267	400000	
Mg	24	3	45	64692.572	ppb	64692.572	3.42	4595839	400000	
Al	27	3	45	150.564	ppb	150.564	6.94	3988	400000	
K	39	3	45	29289.433	ppb	29289.433	3.10	1664642	400000	
Ca	40	2	45	160220.637	ppb	160220.637	1.93	98139332	400000	
V	51	3	72	0.189	ppb	0.189	12.64	381	2000	
Cr	52	3	72	0.288	ppb	0.288	38.08	1683	5000	
Mn	55	3	72	14.428	ppb	14.428	2.30	6700	10000	
Fe	56	2	72	169.942	ppb	169.942	0.41	278730	10000	
Co	59	3	72	0.309	ppb	0.309	11.12	445	2000	
Ni	60	3	72	1.519	ppb	1.519	6.09	696	5000	
Cu	63	3	72	0.711	ppb	0.711	8.78	1088	5000	
Zn	66	3	72	192.952	ppb	192.952	0.92	34935	5000	
As	75	3	72	10.722	ppb	10.722	5.02	1396	2000	
Se	78	2	72	0.140	ppb	0.140	96.35	11	2000	
(Se)	78	3	72	-1.246	ppb	-1.246	-138.41	27	2000	
Sr	88	3	72	9592.238	ppb	9592.238	1.82	5621945	4000	
Mo	95	3	115	0.788	ppb	0.788	3.59	455	2000	
Ag	107	3	115	0.000	ppb	0.000	-1926.01	18	100	
Cd	111	3	115	0.276	ppb	0.276	45.23	75	2000	
Sn	120	3	115	0.104	ppb	0.104	54.56	615	2000	
Sb	121	3	115	0.066	ppb	0.066	69.88	178	1000	
Ba	137	3	115	18.677	ppb	18.677	5.93	4852	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-272.91	102	2000	
(Pb)	206	3	193	0.289	ppb	0.289	3.75	481	100	
(Pb)	207	3	193	0.271	ppb	0.271	5.90	588	100	
Pb	208	3	193	0.312	ppb	0.312	7.61	2152	5000	
Th	232	3	193	0.075	ppb	0.075	25.50	4422	2000	
U	238	3	193	1.487	ppb	1.487	4.59	8795	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4462134	2.38	4331237	103.02	60	120	
Sc (IS)	45	3	HMI He	723770	3.34	654817	110.53	60	120	
Ge Internal standard	72	2	HMI H2	2369210	1.74	2307933	102.66	60	120	
Ge Internal standard	72	3	HMI He	785273	1.55	744678	105.45	60	120	
In Internal Standard	115	3	HMI He	2634383	0.76	2599142	101.36	60	120	
Ir (IS)	193	3	HMI He	5234558	1.44	5525410	94.74	60	120	

Sample Report

Sample Table

Sample Name	280-171608-b-3-a
Data File Name	218SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:14:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	15617.205	ppb	15617.205	1.33	1963880	400000	
Mg	24	3	45	52714.571	ppb	52714.571	2.25	3344944	400000	
Al	27	3	45	78.635	ppb	78.635	5.18	1899	400000	
K	39	3	45	8322.203	ppb	8322.203	1.53	440998	400000	
Ca	40	2	45	80467.830	ppb	80467.830	1.39	49207849	400000	
V	51	3	72	0.520	ppb	0.520	3.41	570	2000	
Cr	52	3	72	0.486	ppb	0.486	5.57	1751	5000	
Mn	55	3	72	50.989	ppb	50.989	2.41	22011	10000	
Fe	56	2	72	75.540	ppb	75.540	2.22	126562	10000	
Co	59	3	72	1.185	ppb	1.185	1.79	1546	2000	
Ni	60	3	72	2.990	ppb	2.990	8.84	1183	5000	
Cu	63	3	72	10.684	ppb	10.684	1.76	10607	5000	
Zn	66	3	72	333.457	ppb	333.457	0.90	57046	5000	
As	75	3	72	0.208	ppb	0.208	92.93	75	2000	
Se	78	2	72	13.820	ppb	13.820	3.77	839	2000	
(Se)	78	3	72	12.738	ppb	12.738	17.51	118	2000	
Sr	88	3	72	692.691	ppb	692.691	1.46	384814	4000	
Mo	95	3	115	19.884	ppb	19.884	3.18	9994	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-188.35	13	100	
Cd	111	3	115	1.788	ppb	1.788	4.15	440	2000	
Sn	120	3	115	0.086	ppb	0.086	63.01	568	2000	
Sb	121	3	115	9.795	ppb	9.795	2.39	7465	1000	
Ba	137	3	115	20.780	ppb	20.780	6.04	5093	5000	
Tl	205	3	193	0.066	ppb	0.066	19.86	330	2000	
(Pb)	206	3	193	1.405	ppb	1.405	2.45	1749	100	
(Pb)	207	3	193	1.272	ppb	1.272	2.65	1593	100	
Pb	208	3	193	1.377	ppb	1.377	1.43	7016	5000	
Th	232	3	193	0.015	ppb	0.015	320.45	4062	2000	
U	238	3	193	1.607	ppb	1.607	0.51	9214	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4453401	1.49	4331237	102.82	60	120	
Sc (IS)	45	3	HMI He	645918	0.72	654817	98.64	60	120	
Ge Internal standard	72	2	HMI H2	2319316	2.74	2307933	100.49	60	120	
Ge Internal standard	72	3	HMI He	744183	1.15	744678	99.93	60	120	
In Internal Standard	115	3	HMI He	2488524	0.49	2599142	95.74	60	120	
Ir (IS)	193	3	HMI He	5139650	0.93	5525410	93.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	219_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:16:34-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.122	ppb	2.533	2577	50	98.2	90	110	
Na	23	3	45	49927.989	ppb	2.202	5958752	51000	97.9	90	110	
Mg	24	3	45	10797.576	ppb	0.516	661774	11000	98.2	90	110	
Al	27	3	45	991.456	ppb	1.045	22160	1000	99.1	90	110	
K	39	3	45	10588.154	ppb	0.633	535056	11000	96.3	90	110	
Ca	40	2	45	11105.092	ppb	1.820	6520374	11000	101.0	90	110	
V	51	3	72	51.474	ppb	0.861	30341	50	102.9	90	110	
Cr	52	3	72	51.409	ppb	2.286	39237	50	102.8	90	110	
Mn	55	3	72	50.866	ppb	2.647	20480	50	101.7	90	110	
Fe	56	2	72	1077.548	ppb	2.231	1595235	1000	107.8	90	110	
Co	59	3	72	51.068	ppb	1.478	61115	50	102.1	90	110	
Ni	60	3	72	50.612	ppb	1.863	16902	50	101.2	90	110	
Cu	63	3	72	50.966	ppb	2.306	45977	50	101.9	90	110	
Zn	66	3	72	51.317	ppb	3.252	8372	50	102.6	90	110	
As	75	3	72	52.240	ppb	2.420	5828	50	104.5	90	110	
Se	78	2	72	52.723	ppb	2.289	3034	50	105.4	90	110	
(Se)	78	3	72	53.964	ppb	10.613	366	50	107.9	90	110	
Sr	88	3	72	105.317	ppb	0.884	54597	100	105.3	90	110	
Mo	95	3	115	49.639	ppb	0.853	24286	50	99.3	90	110	
Ag	107	3	115	48.715	ppb	0.668	78918	50	97.4	90	110	
Cd	111	3	115	49.216	ppb	2.634	11724	50	98.4	90	110	
Sn	120	3	115	51.362	ppb	1.925	37678	50	102.7	90	110	
Sb	121	3	115	50.505	ppb	2.099	37060	50	101.0	90	110	
Ba	137	3	115	48.563	ppb	4.003	11528	50	97.1	90	110	
Tl	205	3	193	51.301	ppb	1.061	167324	50	102.6	90	110	
(Pb)	206	3	193	51.555	ppb	1.341	56620	50	103.1	90	110	
(Pb)	207	3	193	49.992	ppb	1.695	48897	50	100.0	90	110	
Pb	208	3	193	51.059	ppb	1.569	226039	50	102.1	90	110	
Th	232	3	193	51.159	ppb	2.440	229540	50	102.3	90	110	
U	238	3	193	51.069	ppb	2.534	237692	50	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267302	0.22	4331237	98.52	60	120	
Sc (IS)	45	3	HMI He	623779	3.61	654817	95.26	60	120	
Ge Internal standard	72	2	HMI H2	2203508	0.79	2307933	95.48	60	120	
Ge Internal standard	72	3	HMI He	693876	2.95	744678	93.18	60	120	
In Internal Standard	115	3	HMI He	2427430	3.28	2599142	93.39	60	120	
Ir (IS)	193	3	HMI He	4928040	5.80	5525410	89.19	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	220_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:18:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	510.261	ppb	2.1	109102	25	>RL
Mg	24	3	45	49.346	ppb	0.2	3224	25	>RL
Al	27	3	45	10.482	ppb	40.7	317	15	
K	39	3	45	29.922	ppb	139.5	26629	50	
V	51	3	72	0.185	ppb	55.4	343	1	
Cr	52	3	72	0.068	ppb	283.4	1354	1	
Mn	55	3	72	0.145	ppb	25.5	222	0.5	
Co	59	3	72	0.024	ppb	51.3	53	0.5	
Ni	60	3	72	0.075	ppb	83.6	140	1	
Cu	63	3	72	0.199	ppb	27.0	515	1	
Zn	66	3	72	0.584	ppb	40.4	317	5	
As	75	3	72	0.094	ppb	145.0	58	1	
Se	78	2	72	0.039	ppb	57.2	5	1	
(Se)	78	3	72	-2.412	ppb	-66.6	17	1	
Sr	88	3	72	0.366	ppb	11.2	235	0.5	
Mo	95	3	115	0.024	ppb	53.5	47	0.5	
Ag	107	3	115	0.005	ppb	65.0	25	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.386	ppb	18.2	778	1	
Sb	121	3	115	-0.033	ppb	-64.4	93	0.6	
Ba	137	3	115	-0.019	ppb	-311.2	60	0.5	
Tl	205	3	193	0.006	ppb	118.6	125	0.1	
(Pb)	206	3	193	-0.009	ppb	-128.6	130	1	
(Pb)	207	3	193	0.034	ppb	19.3	330	1	
Pb	208	3	193	0.017	ppb	27.8	741	0.5	
Th	232	3	193	0.636	ppb	21.3	6789	1	
U	238	3	193	0.004	ppb	92.5	1448	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4101192	0.81	4331237	94.69	60	120	
Sc (IS)	45	3	HMI He	626940	1.40	654817	95.74	60	120	
Ge Internal standard	72	2	HMI H2	2164571	2.17	2307933	93.79	60	120	
Ge Internal standard	72	3	HMI He	709044	1.64	744678	95.21	60	120	
In Internal Standard	115	3	HMI He	2452275	2.57	2599142	94.35	60	120	
Ir (IS)	193	3	HMI He	5042149	2.05	5525410	91.25	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-11-a
Data File Name	221SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:20:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	24265.722	ppb	24265.722	1.54	3068935	400000	
Mg	24	3	45	12809.933	ppb	12809.933	1.69	824846	400000	
Al	27	3	45	38.626	ppb	38.626	5.58	991	400000	
K	39	3	45	6558.264	ppb	6558.264	1.06	358227	400000	
Ca	40	2	45	51149.750	ppb	51149.750	2.26	29120006	400000	
V	51	3	72	9.627	ppb	9.627	0.16	6553	2000	
Cr	52	3	72	2.649	ppb	2.649	12.18	3617	5000	
Mn	55	3	72	1.413	ppb	1.413	7.63	810	10000	
Fe	56	2	72	60.111	ppb	60.111	1.93	102498	10000	
Co	59	3	72	0.075	ppb	0.075	25.95	127	2000	
Ni	60	3	72	0.525	ppb	0.525	2.16	320	5000	
Cu	63	3	72	0.554	ppb	0.554	5.28	918	5000	
Zn	66	3	72	1.443	ppb	1.443	23.29	500	5000	
As	75	3	72	3.554	ppb	3.554	8.96	491	2000	
Se	78	2	72	2.540	ppb	2.540	17.69	156	2000	
(Se)	78	3	72	1.938	ppb	1.938	44.78	48	2000	
Sr	88	3	72	231.312	ppb	231.312	0.86	134037	4000	
Mo	95	3	115	4.977	ppb	4.977	3.57	2621	2000	
Ag	107	3	115	0.031	ppb	0.031	31.29	72	100	
Cd	111	3	115	0.001	ppb	0.001	3304.40	3	2000	
Sn	120	3	115	0.344	ppb	0.344	13.67	788	2000	
Sb	121	3	115	0.123	ppb	0.123	50.68	218	1000	
Ba	137	3	115	57.915	ppb	57.915	1.44	14606	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-597.91	103	2000	
(Pb)	206	3	193	0.115	ppb	0.115	9.50	278	100	
(Pb)	207	3	193	0.130	ppb	0.130	31.11	440	100	
Pb	208	3	193	0.128	ppb	0.128	4.37	1283	5000	
Th	232	3	193	0.176	ppb	0.176	21.53	4877	2000	
U	238	3	193	20.001	ppb	20.001	0.97	99432	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4146362	2.66	4331237	95.73	60	120	
Sc (IS)	45	3	HMI He	655560	2.04	654817	100.11	60	120	
Ge Internal standard	72	2	HMI H2	2315014	1.31	2307933	100.31	60	120	
Ge Internal standard	72	3	HMI He	776047	2.87	744678	104.21	60	120	
In Internal Standard	115	3	HMI He	2582784	3.68	2599142	99.37	60	120	
Ir (IS)	193	3	HMI He	5212680	1.78	5525410	94.34	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-a
Data File Name	222SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:22:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	28863.609	ppb	28863.609	1.53	3532088	400000	
Mg	24	3	45	12594.863	ppb	12594.863	1.01	787285	400000	
Al	27	3	45	12.015	ppb	12.015	13.63	357	400000	
K	39	3	45	5588.999	ppb	5588.999	2.52	299972	400000	
Ca	40	2	45	52996.853	ppb	52996.853	0.85	30208848	400000	
V	51	3	72	9.497	ppb	9.497	2.50	6255	2000	
Cr	52	3	72	2.945	ppb	2.945	5.76	3730	5000	
Mn	55	3	72	8.138	ppb	8.138	2.19	3685	10000	
Fe	56	2	72	481.997	ppb	481.997	1.87	745835	10000	
Co	59	3	72	0.165	ppb	0.165	25.57	238	2000	
Ni	60	3	72	4.246	ppb	4.246	4.59	1643	5000	
Cu	63	3	72	0.625	ppb	0.625	5.52	956	5000	
Zn	66	3	72	2.295	ppb	2.295	13.68	630	5000	
As	75	3	72	5.783	ppb	5.783	14.66	741	2000	
Se	78	2	72	3.137	ppb	3.137	5.32	190	2000	
(Se)	78	3	72	-0.059	ppb	-0.059	-4065.89	33	2000	
Sr	88	3	72	242.256	ppb	242.256	0.23	135717	4000	
Mo	95	3	115	4.752	ppb	4.752	6.40	2406	2000	
Ag	107	3	115	0.448	ppb	0.448	5.84	760	100	
Cd	111	3	115	-0.006	ppb	-0.006	-210.33	2	2000	
Sn	120	3	115	1.280	ppb	1.280	8.72	1449	2000	
Sb	121	3	115	0.165	ppb	0.165	41.86	242	1000	
Ba	137	3	115	70.273	ppb	70.273	5.41	17006	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-269.44	98	2000	
(Pb)	206	3	193	0.064	ppb	0.064	19.21	215	100	
(Pb)	207	3	193	0.094	ppb	0.094	54.43	396	100	
Pb	208	3	193	0.093	ppb	0.093	13.20	1098	5000	
Th	232	3	193	0.092	ppb	0.092	26.32	4397	2000	
U	238	3	193	38.028	ppb	38.028	1.16	183993	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4150246	2.04	4331237	95.82	60	120	
Sc (IS)	45	3	HMI He	636156	2.40	654817	97.15	60	120	
Ge Internal standard	72	2	HMI H2	2287691	2.32	2307933	99.12	60	120	
Ge Internal standard	72	3	HMI He	750216	1.84	744678	100.74	60	120	
In Internal Standard	115	3	HMI He	2483402	4.29	2599142	95.55	60	120	
Ir (IS)	193	3	HMI He	5109910	2.97	5525410	92.48	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-aSD@5
Data File Name	223SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	6264.703	ppb	6264.703	2.73	831465	400000	
Mg	24	3	45	2562.866	ppb	2562.866	1.20	165519	400000	
Al	27	3	45	0.854	ppb	0.854	226.46	107	400000	
K	39	3	45	1127.059	ppb	1127.059	3.95	83548	400000	
Ca	40	2	45	10670.422	ppb	10670.422	2.39	6431259	400000	
V	51	3	72	2.349	ppb	2.349	6.47	1801	2000	
Cr	52	3	72	0.795	ppb	0.795	16.35	2092	5000	
Mn	55	3	72	1.771	ppb	1.771	6.21	975	10000	
Fe	56	2	72	99.150	ppb	99.150	1.78	164300	10000	
Co	59	3	72	0.041	ppb	0.041	25.62	82	2000	
Ni	60	3	72	0.987	ppb	0.987	30.23	495	5000	
Cu	63	3	72	0.188	ppb	0.188	19.47	555	5000	
Zn	66	3	72	1.263	ppb	1.263	43.69	470	5000	
As	75	3	72	0.875	ppb	0.875	4.47	162	2000	
Se	78	2	72	0.786	ppb	0.786	11.85	51	2000	
(Se)	78	3	72	-0.023	ppb	-0.023	-10873.16	35	2000	
Sr	88	3	72	49.853	ppb	49.853	2.92	29083	4000	
Mo	95	3	115	0.959	ppb	0.959	12.34	528	2000	
Ag	107	3	115	0.076	ppb	0.076	24.11	148	100	
Cd	111	3	115	0.007	ppb	0.007	499.24	5	2000	
Sn	120	3	115	0.479	ppb	0.479	6.91	881	2000	
Sb	121	3	115	-0.025	ppb	-0.025	-66.19	103	1000	
Ba	137	3	115	14.296	ppb	14.296	1.92	3615	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-368.58	103	2000	
(Pb)	206	3	193	0.003	ppb	0.003	765.67	150	100	
(Pb)	207	3	193	0.054	ppb	0.054	38.96	366	100	
Pb	208	3	193	0.023	ppb	0.023	15.17	805	5000	
Th	232	3	193	0.032	ppb	0.032	83.02	4250	2000	
U	238	3	193	7.728	ppb	7.728	3.90	39792	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4381193	1.90	4331237	101.15	60	120	
Sc (IS)	45	3	HMI He	656790	0.68	654817	100.30	60	120	
Ge Internal standard	72	2	HMI H2	2335602	1.92	2307933	101.20	60	120	
Ge Internal standard	72	3	HMI He	780430	1.07	744678	104.80	60	120	
In Internal Standard	115	3	HMI He	2552747	1.28	2599142	98.21	60	120	
Ir (IS)	193	3	HMI He	5276832	1.90	5525410	95.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-b ms
Data File Name	224SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:25:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.849	ppb	41.849	1.61	2212	2000	
Na	23	3	45	29196.657	ppb	29196.657	1.21	3729225	400000	
Mg	24	3	45	13327.197	ppb	13327.197	5.41	868863	400000	
Al	27	3	45	800.514	ppb	800.514	1.43	19065	400000	
K	39	3	45	6314.583	ppb	6314.583	1.07	350380	400000	
Ca	40	2	45	54729.626	ppb	54729.626	0.75	31816854	400000	
V	51	3	72	49.356	ppb	49.356	3.17	32824	2000	
Cr	52	3	72	41.968	ppb	41.968	3.60	36378	5000	
Mn	55	3	72	46.725	ppb	46.725	4.21	21221	10000	
Fe	56	2	72	1270.276	ppb	1270.276	2.76	2002129	10000	
Co	59	3	72	39.075	ppb	39.075	3.87	52742	2000	
Ni	60	3	72	42.208	ppb	42.208	2.09	15915	5000	
Cu	63	3	72	39.293	ppb	39.293	2.14	40050	5000	
Zn	66	3	72	39.053	ppb	39.053	4.59	7240	5000	
As	75	3	72	44.278	ppb	44.278	6.06	5573	2000	
Se	78	2	72	44.251	ppb	44.251	2.23	2714	2000	
(Se)	78	3	72	39.317	ppb	39.317	15.67	310	2000	
Sr	88	3	72	322.265	ppb	322.265	3.88	188255	4000	
Mo	95	3	115	44.778	ppb	44.778	2.05	23610	2000	
Ag	107	3	115	40.107	ppb	40.107	2.00	70016	100	
Cd	111	3	115	39.027	ppb	39.027	3.11	10022	2000	
Sn	120	3	115	40.000	ppb	40.000	2.59	31727	2000	
Sb	121	3	115	40.229	ppb	40.229	0.89	31842	1000	
Ba	137	3	115	109.434	ppb	109.434	1.66	27902	5000	
Tl	205	3	193	41.991	ppb	41.991	2.28	147420	2000	
(Pb)	206	3	193	41.446	ppb	41.446	1.68	49029	100	
(Pb)	207	3	193	41.004	ppb	41.004	2.10	43217	100	
Pb	208	3	193	41.516	ppb	41.516	1.88	197968	5000	
Th	232	3	193	42.418	ppb	42.418	2.36	205635	2000	
U	238	3	193	80.593	ppb	80.593	3.12	402946	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4232861	2.00	4331237	97.73	60	120	
Sc (IS)	45	3	HMI He	664050	1.89	654817	101.41	60	120	
Ge Internal standard	72	2	HMI H2	2348888	2.30	2307933	101.77	60	120	
Ge Internal standard	72	3	HMI He	783045	3.42	744678	105.15	60	120	
In Internal Standard	115	3	HMI He	2616461	1.04	2599142	100.67	60	120	
Ir (IS)	193	3	HMI He	5303740	2.24	5525410	95.99	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-c msd
Data File Name	225SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.946	ppb	39.946	3.73	2069	2000	
Na	23	3	45	29852.328	ppb	29852.328	0.58	3661811	400000	
Mg	24	3	45	13588.083	ppb	13588.083	1.61	851403	400000	
Al	27	3	45	819.435	ppb	819.435	2.63	18748	400000	
K	39	3	45	6400.703	ppb	6400.703	0.39	340822	400000	
Ca	40	2	45	54023.628	ppb	54023.628	3.83	31035850	400000	
V	51	3	72	49.813	ppb	49.813	1.94	31984	2000	
Cr	52	3	72	42.899	ppb	42.899	1.04	35880	5000	
Mn	55	3	72	48.196	ppb	48.196	2.02	21134	10000	
Fe	56	2	72	1283.591	ppb	1283.591	1.92	1975293	10000	
Co	59	3	72	39.317	ppb	39.317	0.87	51257	2000	
Ni	60	3	72	41.897	ppb	41.897	1.68	15251	5000	
Cu	63	3	72	39.901	ppb	39.901	0.99	39259	5000	
Zn	66	3	72	41.128	ppb	41.128	1.30	7352	5000	
As	75	3	72	44.436	ppb	44.436	4.75	5403	2000	
Se	78	2	72	42.766	ppb	42.766	1.65	2562	2000	
(Se)	78	3	72	40.974	ppb	40.974	13.67	312	2000	
Sr	88	3	72	323.511	ppb	323.511	0.50	182533	4000	
Mo	95	3	115	45.094	ppb	45.094	1.47	22631	2000	
Ag	107	3	115	40.592	ppb	40.592	2.06	67420	100	
Cd	111	3	115	40.802	ppb	40.802	1.76	9972	2000	
Sn	120	3	115	40.827	ppb	40.827	1.25	30807	2000	
Sb	121	3	115	41.563	ppb	41.563	1.28	31294	1000	
Ba	137	3	115	109.806	ppb	109.806	2.33	26634	5000	
Tl	205	3	193	42.099	ppb	42.099	1.39	144919	2000	
(Pb)	206	3	193	41.317	ppb	41.317	1.47	47921	100	
(Pb)	207	3	193	40.748	ppb	40.748	1.43	42112	100	
Pb	208	3	193	41.451	ppb	41.451	0.60	193806	5000	
Th	232	3	193	42.383	ppb	42.383	0.57	201477	2000	
U	238	3	193	79.916	ppb	79.916	0.73	391853	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4184611	2.19	4331237	96.61	60	120	
Sc (IS)	45	3	HMI He	637828	0.79	654817	97.41	60	120	
Ge Internal standard	72	2	HMI H2	2292985	1.66	2307933	99.35	60	120	
Ge Internal standard	72	3	HMI He	755698	1.76	744678	101.48	60	120	
In Internal Standard	115	3	HMI He	2489601	2.09	2599142	95.79	60	120	
Ir (IS)	193	3	HMI He	5199094	1.21	5525410	94.09	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-a PDS
Data File Name	226SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:29:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	201.391	ppb	201.391	1.40	10499	2000	
Na	23	3	45	37225.202	ppb	37225.202	1.08	4653232	400000	
Mg	24	3	45	14201.721	ppb	14201.721	1.67	909344	400000	
Al	27	3	45	2069.226	ppb	2069.226	1.35	48240	400000	
K	39	3	45	7442.427	ppb	7442.427	1.67	400653	400000	
Ca	40	2	45	53777.251	ppb	53777.251	3.84	30715510	400000	
V	51	3	72	208.682	ppb	208.682	2.27	134534	2000	
Cr	52	3	72	203.750	ppb	203.750	4.10	166760	5000	
Mn	55	3	72	206.570	ppb	206.570	3.14	90890	10000	
Fe	56	2	72	484.467	ppb	484.467	1.53	746537	10000	
Co	59	3	72	197.980	ppb	197.980	2.74	260494	2000	
Ni	60	3	72	197.233	ppb	197.233	3.49	72030	5000	
Cu	63	3	72	198.905	ppb	198.905	3.99	196137	5000	
Zn	66	3	72	201.485	ppb	201.485	2.91	35436	5000	
As	75	3	72	202.190	ppb	202.190	3.43	24643	2000	
Se	78	2	72	203.951	ppb	203.951	0.10	12125	2000	
(Se)	78	3	72	216.487	ppb	216.487	9.14	1511	2000	
Sr	88	3	72	441.448	ppb	441.448	3.57	251435	4000	
Mo	95	3	115	209.631	ppb	209.631	1.01	107643	2000	
Ag	107	3	115	52.034	ppb	52.034	1.91	88557	100	
Cd	111	3	115	201.236	ppb	201.236	1.81	50372	2000	
Sn	120	3	115	208.680	ppb	208.680	1.47	159210	2000	
Sb	121	3	115	206.881	ppb	206.881	2.38	159115	1000	
Ba	137	3	115	275.562	ppb	275.562	1.42	68396	5000	
Tl	205	3	193	211.095	ppb	211.095	1.27	726647	2000	
(Pb)	206	3	193	212.119	ppb	212.119	1.65	245545	100	
(Pb)	207	3	193	207.452	ppb	207.452	0.67	213283	100	
Pb	208	3	193	211.071	ppb	211.071	0.47	984598	5000	
Th	232	3	193	282.998	ppb	282.998	1.35	1322999	2000	
U	238	3	193	262.744	ppb	262.744	1.44	1285682	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4160181	1.85	4331237	96.05	60	120	
Sc (IS)	45	3	HMI He	651743	0.59	654817	99.53	60	120	
Ge Internal standard	72	2	HMI H2	2277634	0.67	2307933	98.69	60	120	
Ge Internal standard	72	3	HMI He	763467	3.54	744678	102.52	60	120	
In Internal Standard	115	3	HMI He	2551075	1.75	2599142	98.15	60	120	
Ir (IS)	193	3	HMI He	5201878	1.08	5525410	94.14	60	120	

Sample Report

Sample Table

Sample Name	280-171086-f-1-b
Data File Name	227SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:31:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	114575.159	ppb	114575.159	2.92	14770137	400000	
Mg	24	3	45	12903.456	ppb	12903.456	3.04	858277	400000	
Al	27	3	45	33.638	ppb	33.638	9.91	904	400000	
K	39	3	45	4618.865	ppb	4618.865	3.55	268629	400000	
Ca	40	2	45	30199.323	ppb	30199.323	1.94	17925986	400000	
V	51	3	72	0.692	ppb	0.692	18.81	720	2000	
Cr	52	3	72	0.478	ppb	0.478	4.58	1856	5000	
Mn	55	3	72	3.812	ppb	3.812	9.96	1916	10000	
Fe	56	2	72	58.756	ppb	58.756	3.31	101524	10000	
Co	59	3	72	0.071	ppb	0.071	19.15	123	2000	
Ni	60	3	72	0.143	ppb	0.143	68.15	182	5000	
Cu	63	3	72	0.377	ppb	0.377	20.14	755	5000	
Zn	66	3	72	0.599	ppb	0.599	54.42	356	5000	
As	75	3	72	0.359	ppb	0.359	67.50	98	2000	
Se	78	2	72	5.606	ppb	5.606	4.31	345	2000	
(Se)	78	3	72	2.986	ppb	2.986	62.94	57	2000	
Sr	88	3	72	602.065	ppb	602.065	2.87	355644	4000	
Mo	95	3	115	23.289	ppb	23.289	1.86	12343	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-158.56	17	100	
Cd	111	3	115	0.006	ppb	0.006	2.87	5	2000	
Sn	120	3	115	0.491	ppb	0.491	9.46	916	2000	
Sb	121	3	115	0.102	ppb	0.102	24.68	207	1000	
Ba	137	3	115	74.367	ppb	74.367	2.76	19049	5000	
Tl	205	3	193	0.024	ppb	0.024	9.90	193	2000	
(Pb)	206	3	193	0.099	ppb	0.099	50.61	267	100	
(Pb)	207	3	193	0.092	ppb	0.092	15.28	411	100	
Pb	208	3	193	0.110	ppb	0.110	7.05	1233	5000	
Th	232	3	193	1.999	ppb	1.999	20.65	13743	2000	
U	238	3	193	16.797	ppb	16.797	1.24	85919	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4320047	0.48	4331237	99.74	60	120	
Sc (IS)	45	3	HMI He	677336	2.22	654817	103.44	60	120	
Ge Internal standard	72	2	HMI H2	2341830	2.86	2307933	101.47	60	120	
Ge Internal standard	72	3	HMI He	791562	2.38	744678	106.30	60	120	
In Internal Standard	115	3	HMI He	2625827	0.94	2599142	101.03	60	120	
Ir (IS)	193	3	HMI He	5348129	0.55	5525410	96.79	60	120	

Sample Report

Sample Table

Sample Name	280-171476-n-1-b
Data File Name	228SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:33:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.095	ppb	0.095	173.21	5	2000	
Na	23	3	45	1172793.588	ppb	1172793.588	2.70	157069002	400000	
Mg	24	3	45	92349.337	ppb	92349.337	1.69	6401532	400000	
Al	27	3	45	156.928	ppb	156.928	3.79	4048	400000	
K	39	3	45	287038.827	ppb	287038.827	1.91	15667303	400000	
Ca	40	2	45	106723.228	ppb	106723.228	2.47	65711809	400000	
V	51	3	72	21.450	ppb	21.450	2.05	14774	2000	
Cr	52	3	72	90.503	ppb	90.503	2.73	78722	5000	
Mn	55	3	72	354.367	ppb	354.367	2.73	163822	10000	
Fe	56	2	72	5258.175	ppb	5258.175	3.52	8306378	10000	
Co	59	3	72	24.247	ppb	24.247	2.35	33569	2000	
Ni	60	3	72	131.224	ppb	131.224	1.06	50451	5000	
Cu	63	3	72	3.187	ppb	3.187	6.32	3674	5000	
Zn	66	3	72	42.150	ppb	42.150	1.71	7997	5000	
As	75	3	72	100.160	ppb	100.160	4.06	12863	2000	
Se	78	2	72	1.197	ppb	1.197	11.33	77	2000	
(Se)	78	3	72	-2.244	ppb	-2.244	-29.20	20	2000	
Sr	88	3	72	1023.767	ppb	1023.767	2.84	613111	4000	
Mo	95	3	115	5.962	ppb	5.962	8.41	3179	2000	
Ag	107	3	115	0.012	ppb	0.012	62.07	40	100	
Cd	111	3	115	0.058	ppb	0.058	51.09	18	2000	
Sn	120	3	115	8.354	ppb	8.354	6.29	7055	2000	
Sb	121	3	115	4.651	ppb	4.651	7.79	3799	1000	
Ba	137	3	115	922.918	ppb	922.918	2.99	235150	5000	
Tl	205	3	193	0.006	ppb	0.006	208.33	130	2000	
(Pb)	206	3	193	2.626	ppb	2.626	6.08	3240	100	
(Pb)	207	3	193	2.538	ppb	2.538	1.92	2962	100	
Pb	208	3	193	2.549	ppb	2.549	1.82	12791	5000	
Th	232	3	193	0.277	ppb	0.277	22.92	5427	2000	
U	238	3	193	0.202	ppb	0.202	4.75	2506	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4484558	1.87	4331237	103.54	60	120	
Sc (IS)	45	3	HMI He	705831	1.54	654817	107.79	60	120	
Ge Internal standard	72	2	HMI H2	2362763	2.64	2307933	102.38	60	120	
Ge Internal standard	72	3	HMI He	802455	1.71	744678	107.76	60	120	
In Internal Standard	115	3	HMI He	2621062	2.01	2599142	100.84	60	120	
Ir (IS)	193	3	HMI He	5293930	1.10	5525410	95.81	60	120	

Sample Report

Sample Table

Sample Name	280-171476-n-2-b
Data File Name	229SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:35:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	1512078.938	ppb	1512078.938	2.19	186130999	400000	
Mg	24	3	45	87138.032	ppb	87138.032	1.40	5552045	400000	
Al	27	3	45	311.486	ppb	311.486	5.94	7299	400000	
K	39	3	45	357065.220	ppb	357065.220	2.06	17907724	400000	
Ca	40	2	45	117691.520	ppb	117691.520	1.27	67196337	400000	
V	51	3	72	68.232	ppb	68.232	2.87	43397	2000	
Cr	52	3	72	208.057	ppb	208.057	0.76	167427	5000	
Mn	55	3	72	364.777	ppb	364.777	2.20	157656	10000	
Fe	56	2	72	3269.811	ppb	3269.811	2.78	4829651	10000	
Co	59	3	72	35.016	ppb	35.016	3.53	45306	2000	
Ni	60	3	72	203.765	ppb	203.765	1.41	73164	5000	
Cu	63	3	72	7.053	ppb	7.053	2.62	7177	5000	
Zn	66	3	72	90.623	ppb	90.623	2.49	15796	5000	
As	75	3	72	144.693	ppb	144.693	1.57	17354	2000	
Se	78	2	72	2.306	ppb	2.306	8.71	135	2000	
(Se)	78	3	72	0.699	ppb	0.699	486.79	38	2000	
Sr	88	3	72	1184.255	ppb	1184.255	1.99	663086	4000	
Mo	95	3	115	14.188	ppb	14.188	3.07	7127	2000	
Ag	107	3	115	0.022	ppb	0.022	40.87	53	100	
Cd	111	3	115	0.124	ppb	0.124	42.90	33	2000	
Sn	120	3	115	24.516	ppb	24.516	4.42	18655	2000	
Sb	121	3	115	27.600	ppb	27.600	1.43	20778	1000	
Ba	137	3	115	1031.315	ppb	1031.315	1.39	249105	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-250.11	93	2000	
(Pb)	206	3	193	5.968	ppb	5.968	1.40	6738	100	
(Pb)	207	3	193	5.619	ppb	5.619	3.92	5805	100	
Pb	208	3	193	5.851	ppb	5.851	0.80	26723	5000	
Th	232	3	193	0.191	ppb	0.191	6.61	4719	2000	
U	238	3	193	0.202	ppb	0.202	9.52	2354	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4158196	1.35	4331237	96.00	60	120	
Sc (IS)	45	3	HMI He	648754	1.49	654817	99.07	60	120	
Ge Internal standard	72	2	HMI H2	2207015	0.41	2307933	95.63	60	120	
Ge Internal standard	72	3	HMI He	750110	0.93	744678	100.73	60	120	
In Internal Standard	115	3	HMI He	2484212	1.25	2599142	95.58	60	120	
Ir (IS)	193	3	HMI He	4971952	0.76	5525410	89.98	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	230_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:37:09-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	53.136	ppb	3.646	2722	50	106.3	90	110	
Na	23	3	45	51052.529	ppb	1.364	6274599	51000	100.1	90	110	
Mg	24	3	45	10917.666	ppb	1.484	689362	11000	99.3	90	110	
Al	27	3	45	1008.365	ppb	3.623	23222	1000	100.8	90	110	
K	39	3	45	10868.825	ppb	1.276	565109	11000	98.8	90	110	
Ca	40	2	45	11350.578	ppb	0.988	6452837	11000	103.2	90	110	
V	51	3	72	52.690	ppb	2.676	32194	50	105.4	90	110	
Cr	52	3	72	51.619	ppb	2.105	40826	50	103.2	90	110	
Mn	55	3	72	51.453	ppb	2.826	21468	50	102.9	90	110	
Fe	56	2	72	1101.594	ppb	0.566	1597111	1000	110.2	90	110	>+\-10%
Co	59	3	72	50.757	ppb	2.614	62976	50	101.5	90	110	
Ni	60	3	72	49.586	ppb	3.555	17160	50	99.2	90	110	
Cu	63	3	72	51.150	ppb	2.202	47812	50	102.3	90	110	
Zn	66	3	72	50.703	ppb	2.784	8577	50	101.4	90	110	
As	75	3	72	52.120	ppb	4.275	6025	50	104.2	90	110	
Se	78	2	72	51.287	ppb	0.891	2891	50	102.6	90	110	
(Se)	78	3	72	51.133	ppb	9.288	361	50	102.3	90	110	
Sr	88	3	72	104.088	ppb	2.487	55930	100	104.1	90	110	
Mo	95	3	115	50.251	ppb	2.315	25496	50	100.5	90	110	
Ag	107	3	115	48.792	ppb	1.184	81979	50	97.6	90	110	
Cd	111	3	115	49.397	ppb	4.572	12208	50	98.8	90	110	
Sn	120	3	115	51.679	ppb	2.452	39303	50	103.4	90	110	
Sb	121	3	115	50.764	ppb	2.329	38635	50	101.5	90	110	
Ba	137	3	115	50.376	ppb	2.935	12396	50	100.8	90	110	
Tl	205	3	193	51.153	ppb	3.006	175600	50	102.3	90	110	
(Pb)	206	3	193	50.546	ppb	2.592	58438	50	101.1	90	110	
(Pb)	207	3	193	50.406	ppb	2.254	51888	50	100.8	90	110	
Pb	208	3	193	50.595	ppb	2.328	235778	50	101.2	90	110	
Th	232	3	193	50.646	ppb	2.571	239332	50	101.3	90	110	
U	238	3	193	51.275	ppb	3.055	251268	50	102.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4131984	0.68	4331237	95.40	60	120	
Sc (IS)	45	3	HMI He	642697	0.66	654817	98.15	60	120	
Ge Internal standard	72	2	HMI H2	2158170	0.65	2307933	93.51	60	120	
Ge Internal standard	72	3	HMI He	719384	0.95	744678	96.60	60	120	
In Internal Standard	115	3	HMI He	2518154	0.95	2599142	96.88	60	120	
Ir (IS)	193	3	HMI He	5186297	1.38	5525410	93.86	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	231_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:39:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.032	ppb	173.2	2	0.5	
Na	23	3	45	352.487	ppb	3.6	90105	25	>RL
Mg	24	3	45	18.588	ppb	15.6	1328	25	
Al	27	3	45	7.033	ppb	26.8	240	15	
K	39	3	45	38.005	ppb	67.0	26976	50	
V	51	3	72	0.141	ppb	33.8	310	1	
Cr	52	3	72	0.043	ppb	143.7	1309	1	
Mn	55	3	72	0.089	ppb	42.3	195	0.5	
Co	59	3	72	0.021	ppb	49.8	48	0.5	
Ni	60	3	72	0.073	ppb	43.8	137	1	
Cu	63	3	72	0.099	ppb	11.6	415	1	
Zn	66	3	72	0.514	ppb	36.4	300	5	
As	75	3	72	0.043	ppb	974.7	52	1	
Se	78	2	72	0.050	ppb	107.0	5	1	
(Se)	78	3	72	-1.013	ppb	-74.6	25	1	
Sr	88	3	72	0.197	ppb	33.1	143	0.5	
Mo	95	3	115	0.054	ppb	60.2	60	0.5	
Ag	107	3	115	0.005	ppb	65.4	25	1	
Cd	111	3	115	0.001	ppb	1108.1	3	0.5	
Sn	120	3	115	0.343	ppb	20.6	738	1	
Sb	121	3	115	0.064	ppb	60.5	163	0.6	
Ba	137	3	115	0.027	ppb	422.5	70	0.5	
Tl	205	3	193	0.008	ppb	76.9	130	0.1	
(Pb)	206	3	193	0.000	ppb	-6745.3	140	1	
(Pb)	207	3	193	-0.016	ppb	-62.2	282	1	
Pb	208	3	193	0.017	ppb	31.8	741	0.5	
Th	232	3	193	0.696	ppb	23.0	7097	1	
U	238	3	193	0.035	ppb	48.4	1601	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4105741	0.27	4331237	94.79	60	120	
Sc (IS)	45	3	HMI He	625413	1.87	654817	95.51	60	120	
Ge Internal standard	72	2	HMI H2	2168920	0.60	2307933	93.98	60	120	
Ge Internal standard	72	3	HMI He	695721	1.16	744678	93.43	60	120	
In Internal Standard	115	3	HMI He	2420347	1.39	2599142	93.12	60	120	
Ir (IS)	193	3	HMI He	5069536	3.20	5525410	91.75	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-1-a
Data File Name	232SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:40:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	41400.882	ppb	41400.882	8.73	4864683	400000	
Mg	24	3	45	10094.033	ppb	10094.033	10.08	607677	400000	
Al	27	3	45	186.678	ppb	186.678	18.79	4148	400000	
K	39	3	45	2395.082	ppb	2395.082	11.00	138028	400000	
Ca	40	2	45	43176.967	ppb	43176.967	1.00	23140999	400000	
V	51	3	72	1.164	ppb	1.164	13.04	940	2000	
Cr	52	3	72	0.773	ppb	0.773	15.29	1914	5000	
Mn	55	3	72	31.213	ppb	31.213	6.94	13085	10000	
Fe	56	2	72	207.746	ppb	207.746	0.53	301791	10000	
Co	59	3	72	0.243	ppb	0.243	21.11	325	2000	
Ni	60	3	72	0.552	ppb	0.552	29.11	305	5000	
Cu	63	3	72	3.019	ppb	3.019	14.15	3132	5000	
Zn	66	3	72	18.507	ppb	18.507	11.48	3267	5000	
As	75	3	72	0.468	ppb	0.468	35.51	102	2000	
Se	78	2	72	0.246	ppb	0.246	39.30	16	2000	
(Se)	78	3	72	-2.132	ppb	-2.132	-52.98	18	2000	
Sr	88	3	72	125.065	ppb	125.065	8.38	67126	4000	
Mo	95	3	115	5.437	ppb	5.437	11.60	2642	2000	
Ag	107	3	115	0.003	ppb	0.003	263.12	22	100	
Cd	111	3	115	0.072	ppb	0.072	47.70	20	2000	
Sn	120	3	115	0.202	ppb	0.202	1.79	630	2000	
Sb	121	3	115	0.220	ppb	0.220	13.07	273	1000	
Ba	137	3	115	66.678	ppb	66.678	10.17	15525	5000	
Tl	205	3	193	0.011	ppb	0.011	116.00	138	2000	
(Pb)	206	3	193	0.502	ppb	0.502	8.99	703	100	
(Pb)	207	3	193	0.468	ppb	0.468	6.69	761	100	
Pb	208	3	193	0.503	ppb	0.503	6.21	2932	5000	
Th	232	3	193	0.274	ppb	0.274	11.41	5160	2000	
U	238	3	193	24.761	ppb	24.761	5.39	118547	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3902078	2.07	4331237	90.09	60	120	
Sc (IS)	45	3	HMI He	615946	7.88	654817	94.06	60	120	
Ge Internal standard	72	2	HMI H2	2111817	0.26	2307933	91.50	60	120	
Ge Internal standard	72	3	HMI He	721247	6.70	744678	96.85	60	120	
In Internal Standard	115	3	HMI He	2396003	6.54	2599142	92.18	60	120	
Ir (IS)	193	3	HMI He	5044611	5.84	5525410	91.30	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-5-b
Data File Name	233SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:42:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	28971.514	ppb	28971.514	1.17	3547556	400000	
Mg	24	3	45	14485.385	ppb	14485.385	0.24	905715	400000	
Al	27	3	45	580.807	ppb	580.807	2.24	13283	400000	
K	39	3	45	2254.435	ppb	2254.435	1.79	136346	400000	
Ca	40	2	45	53256.024	ppb	53256.024	1.97	29778411	400000	
V	51	3	72	1.144	ppb	1.144	13.45	961	2000	
Cr	52	3	72	1.144	ppb	1.144	7.12	2269	5000	
Mn	55	3	72	68.854	ppb	68.854	4.79	29592	10000	
Fe	56	2	72	298.211	ppb	298.211	1.19	456096	10000	
Co	59	3	72	0.541	ppb	0.541	2.78	718	2000	
Ni	60	3	72	1.461	ppb	1.461	13.34	638	5000	
Cu	63	3	72	14.013	ppb	14.013	5.90	13767	5000	
Zn	66	3	72	37.238	ppb	37.238	6.35	6562	5000	
As	75	3	72	0.309	ppb	0.309	44.53	87	2000	
Se	78	2	72	0.286	ppb	0.286	34.49	19	2000	
(Se)	78	3	72	-1.783	ppb	-1.783	-59.19	22	2000	
Sr	88	3	72	148.082	ppb	148.082	2.64	82127	4000	
Mo	95	3	115	7.527	ppb	7.527	0.78	3822	2000	
Ag	107	3	115	0.007	ppb	0.007	3.70	30	100	
Cd	111	3	115	0.353	ppb	0.353	24.61	90	2000	
Sn	120	3	115	0.208	ppb	0.208	20.34	661	2000	
Sb	121	3	115	0.186	ppb	0.186	23.68	260	1000	
Ba	137	3	115	65.250	ppb	65.250	0.68	15922	5000	
Tl	205	3	193	0.014	ppb	0.014	25.24	157	2000	
(Pb)	206	3	193	1.732	ppb	1.732	5.33	2154	100	
(Pb)	207	3	193	1.632	ppb	1.632	9.08	1988	100	
Pb	208	3	193	1.723	ppb	1.723	4.21	8744	5000	
Th	232	3	193	0.137	ppb	0.137	10.50	4695	2000	
U	238	3	193	35.644	ppb	35.644	1.68	176174	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4071193	1.22	4331237	94.00	60	120	
Sc (IS)	45	3	HMI He	636447	0.18	654817	97.19	60	120	
Ge Internal standard	72	2	HMI H2	2243068	0.45	2307933	97.19	60	120	
Ge Internal standard	72	3	HMI He	742917	2.81	744678	99.76	60	120	
In Internal Standard	115	3	HMI He	2499776	1.56	2599142	96.18	60	120	
Ir (IS)	193	3	HMI He	5216778	1.29	5525410	94.41	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-b
Data File Name	234SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:44:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	29691.030	ppb	29691.030	1.45	3651001	400000	
Mg	24	3	45	13612.402	ppb	13612.402	1.88	855059	400000	
Al	27	3	45	39.689	ppb	39.689	11.28	991	400000	
K	39	3	45	2275.564	ppb	2275.564	2.35	138010	400000	
Ca	40	2	45	52982.087	ppb	52982.087	3.29	29118168	400000	
V	51	3	72	0.601	ppb	0.601	12.37	620	2000	
Cr	52	3	72	0.638	ppb	0.638	19.27	1866	5000	
Mn	55	3	72	14.117	ppb	14.117	3.09	6202	10000	
Fe	56	2	72	30.678	ppb	30.678	1.44	54193	10000	
Co	59	3	72	0.092	ppb	0.092	21.99	143	2000	
Ni	60	3	72	0.465	ppb	0.465	40.59	285	5000	
Cu	63	3	72	3.176	ppb	3.176	4.48	3390	5000	
Zn	66	3	72	12.724	ppb	12.724	6.44	2394	5000	
As	75	3	72	0.265	ppb	0.265	28.60	82	2000	
Se	78	2	72	0.327	ppb	0.327	5.03	21	2000	
(Se)	78	3	72	-2.994	ppb	-2.994	-54.07	13	2000	
Sr	88	3	72	151.179	ppb	151.179	1.90	83818	4000	
Mo	95	3	115	9.473	ppb	9.473	5.05	4785	2000	
Ag	107	3	115	0.001	ppb	0.001	697.99	20	100	
Cd	111	3	115	0.191	ppb	0.191	19.22	50	2000	
Sn	120	3	115	0.185	ppb	0.185	67.61	643	2000	
Sb	121	3	115	0.233	ppb	0.233	9.66	295	1000	
Ba	137	3	115	60.411	ppb	60.411	2.29	14703	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-131.35	103	2000	
(Pb)	206	3	193	0.047	ppb	0.047	20.47	200	100	
(Pb)	207	3	193	0.036	ppb	0.036	66.03	343	100	
Pb	208	3	193	0.070	ppb	0.070	3.54	1013	5000	
Th	232	3	193	0.058	ppb	0.058	37.99	4320	2000	
U	238	3	193	38.146	ppb	38.146	2.69	188223	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4003201	2.47	4331237	92.43	60	120	
Sc (IS)	45	3	HMI He	639428	1.37	654817	97.65	60	120	
Ge Internal standard	72	2	HMI H2	2201283	1.77	2307933	95.38	60	120	
Ge Internal standard	72	3	HMI He	742505	1.94	744678	99.71	60	120	
In Internal Standard	115	3	HMI He	2492401	0.81	2599142	95.89	60	120	
Ir (IS)	193	3	HMI He	5211748	1.87	5525410	94.32	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-c ms
Data File Name	235SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:46:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.827	ppb	39.827	7.21	2091	2000	
Na	23	3	45	30947.530	ppb	30947.530	1.88	3830176	400000	
Mg	24	3	45	14805.208	ppb	14805.208	0.79	936510	400000	
Al	27	3	45	809.444	ppb	809.444	2.96	18694	400000	
K	39	3	45	3084.231	ppb	3084.231	1.56	179184	400000	
Ca	40	2	45	54155.732	ppb	54155.732	2.21	31390533	400000	
V	51	3	72	40.375	ppb	40.375	1.97	25941	2000	
Cr	52	3	72	40.052	ppb	40.052	1.98	33547	5000	
Mn	55	3	72	54.797	ppb	54.797	1.92	23977	10000	
Fe	56	2	72	840.641	ppb	840.641	1.67	1304892	10000	
Co	59	3	72	39.314	ppb	39.314	3.57	51170	2000	
Ni	60	3	72	38.591	ppb	38.591	2.90	14039	5000	
Cu	63	3	72	42.870	ppb	42.870	2.95	42093	5000	
Zn	66	3	72	50.768	ppb	50.768	0.47	9010	5000	
As	75	3	72	39.549	ppb	39.549	1.36	4810	2000	
Se	78	2	72	41.503	ppb	41.503	4.04	2501	2000	
(Se)	78	3	72	44.444	ppb	44.444	24.61	333	2000	
Sr	88	3	72	231.946	ppb	231.946	2.16	130709	4000	
Mo	95	3	115	49.392	ppb	49.392	1.24	25486	2000	
Ag	107	3	115	39.275	ppb	39.275	1.15	67103	100	
Cd	111	3	115	40.379	ppb	40.379	4.03	10147	2000	
Sn	120	3	115	39.117	ppb	39.117	0.15	30379	2000	
Sb	121	3	115	40.069	ppb	40.069	0.25	31037	1000	
Ba	137	3	115	98.905	ppb	98.905	0.40	24686	5000	
Tl	205	3	193	41.599	ppb	41.599	1.87	144724	2000	
(Pb)	206	3	193	41.244	ppb	41.244	0.64	48345	100	
(Pb)	207	3	193	40.774	ppb	40.774	1.73	42587	100	
Pb	208	3	193	41.209	ppb	41.209	0.72	194719	5000	
Th	232	3	193	41.545	ppb	41.545	0.82	199663	2000	
U	238	3	193	81.042	ppb	81.042	1.18	401568	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4220383	1.04	4331237	97.44	60	120	
Sc (IS)	45	3	HMI He	643870	0.41	654817	98.33	60	120	
Ge Internal standard	72	2	HMI H2	2306641	0.35	2307933	99.94	60	120	
Ge Internal standard	72	3	HMI He	754872	2.33	744678	101.37	60	120	
In Internal Standard	115	3	HMI He	2560448	0.77	2599142	98.51	60	120	
Ir (IS)	193	3	HMI He	5254070	0.26	5525410	95.09	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-d msd
Data File Name	236SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:48:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.987	ppb	39.987	4.40	2011	2000	
Na	23	3	45	30709.615	ppb	30709.615	1.03	3629866	400000	
Mg	24	3	45	14804.263	ppb	14804.263	2.70	894122	400000	
Al	27	3	45	795.052	ppb	795.052	1.07	17535	400000	
K	39	3	45	3045.967	ppb	3045.967	2.46	169250	400000	
Ca	40	2	45	52482.601	ppb	52482.601	1.01	29156652	400000	
V	51	3	72	40.529	ppb	40.529	0.80	24371	2000	
Cr	52	3	72	41.039	ppb	41.039	2.49	32124	5000	
Mn	55	3	72	54.910	ppb	54.910	2.82	22479	10000	
Fe	56	2	72	831.490	ppb	831.490	1.90	1222517	10000	
Co	59	3	72	38.937	ppb	38.937	2.06	47427	2000	
Ni	60	3	72	38.206	ppb	38.206	0.39	13010	5000	
Cu	63	3	72	42.845	ppb	42.845	2.57	39365	5000	
Zn	66	3	72	51.840	ppb	51.840	2.64	8602	5000	
As	75	3	72	39.584	ppb	39.584	2.07	4504	2000	
Se	78	2	72	41.102	ppb	41.102	2.26	2346	2000	
(Se)	78	3	72	42.867	ppb	42.867	10.25	303	2000	
Sr	88	3	72	233.415	ppb	233.415	1.66	123074	4000	
Mo	95	3	115	48.143	ppb	48.143	0.55	23894	2000	
Ag	107	3	115	38.512	ppb	38.512	1.21	63272	100	
Cd	111	3	115	39.174	ppb	39.174	1.44	9467	2000	
Sn	120	3	115	38.498	ppb	38.498	2.00	28752	2000	
Sb	121	3	115	39.550	ppb	39.550	2.48	29451	1000	
Ba	137	3	115	98.301	ppb	98.301	0.84	23596	5000	
Tl	205	3	193	41.446	ppb	41.446	0.35	137835	2000	
(Pb)	206	3	193	40.796	ppb	40.796	0.67	45713	100	
(Pb)	207	3	193	40.528	ppb	40.528	2.03	40468	100	
Pb	208	3	193	41.117	ppb	41.117	0.60	185720	5000	
Th	232	3	193	41.980	ppb	41.980	0.49	192816	2000	
U	238	3	193	79.916	ppb	79.916	1.20	378552	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4044649	0.35	4331237	93.38	60	120	
Sc (IS)	45	3	HMI He	614838	1.94	654817	93.89	60	120	
Ge Internal standard	72	2	HMI H2	2185124	1.82	2307933	94.68	60	120	
Ge Internal standard	72	3	HMI He	706251	2.33	744678	94.84	60	120	
In Internal Standard	115	3	HMI He	2462492	3.01	2599142	94.74	60	120	
Ir (IS)	193	3	HMI He	5022279	0.54	5525410	90.89	60	120	

Sample Report

Sample Table

Sample Name	160-48478-a-3-b
Data File Name	237SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:50:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	11788.628	ppb	11788.628	0.15	1390819	400000	
Mg	24	3	45	25220.925	ppb	25220.925	1.84	1489152	400000	
Al	27	3	45	2.680	ppb	2.680	39.62	137	400000	
K	39	3	45	3018.918	ppb	3018.918	0.50	164242	400000	
Ca	40	2	45	19651.156	ppb	19651.156	2.01	10944214	400000	
V	51	3	72	0.229	ppb	0.229	11.98	356	2000	
Cr	52	3	72	0.266	ppb	0.266	14.17	1453	5000	
Mn	55	3	72	78.246	ppb	78.246	1.58	31031	10000	
Fe	56	2	72	646.519	ppb	646.519	2.33	936384	10000	
Co	59	3	72	0.049	ppb	0.049	52.82	82	2000	
Ni	60	3	72	0.124	ppb	0.124	38.56	152	5000	
Cu	63	3	72	0.211	ppb	0.211	25.19	508	5000	
Zn	66	3	72	1.734	ppb	1.734	19.99	486	5000	
As	75	3	72	0.141	ppb	0.141	245.45	62	2000	
Se	78	2	72	0.170	ppb	0.170	36.90	12	2000	
(Se)	78	3	72	-2.855	ppb	-2.855	-14.86	13	2000	
Sr	88	3	72	363.702	ppb	363.702	0.34	186170	4000	
Mo	95	3	115	4.298	ppb	4.298	6.13	2099	2000	
Ag	107	3	115	0.001	ppb	0.001	639.70	18	100	
Cd	111	3	115	0.001	ppb	0.001	1029.59	3	2000	
Sn	120	3	115	0.866	ppb	0.866	8.99	1100	2000	
Sb	121	3	115	0.063	ppb	0.063	68.87	160	1000	
Ba	137	3	115	12.599	ppb	12.599	6.80	2987	5000	
Tl	205	3	193	0.003	ppb	0.003	144.11	113	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1468.73	137	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-52.16	260	100	
Pb	208	3	193	0.013	ppb	0.013	116.40	716	5000	
Th	232	3	193	0.678	ppb	0.678	23.56	6924	2000	
U	238	3	193	0.046	ppb	0.046	79.20	1634	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4051923	1.08	4331237	93.55	60	120	
Sc (IS)	45	3	HMI He	601074	1.36	654817	91.79	60	120	
Ge Internal standard	72	2	HMI H2	2147732	0.70	2307933	93.06	60	120	
Ge Internal standard	72	3	HMI He	685598	2.40	744678	92.07	60	120	
In Internal Standard	115	3	HMI He	2387248	0.92	2599142	91.85	60	120	
Ir (IS)	193	3	HMI He	4997677	1.10	5525410	90.45	60	120	

Sample Report

Sample Table

Sample Name	160-48478-a-7-b
Data File Name	238SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:52:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	10856.301	ppb	10856.301	1.30	1339950	400000	
Mg	24	3	45	22241.514	ppb	22241.514	0.27	1369918	400000	
Al	27	3	45	5.552	ppb	5.552	32.76	207	400000	
K	39	3	45	2703.766	ppb	2703.766	1.78	156092	400000	
Ca	40	2	45	17380.417	ppb	17380.417	2.20	10040652	400000	
V	51	3	72	0.077	ppb	0.077	47.86	278	2000	
Cr	52	3	72	0.203	ppb	0.203	94.77	1456	5000	
Mn	55	3	72	70.641	ppb	70.641	0.19	29029	10000	
Fe	56	2	72	574.958	ppb	574.958	2.00	876253	10000	
Co	59	3	72	0.063	ppb	0.063	33.60	102	2000	
Ni	60	3	72	0.251	ppb	0.251	6.48	200	5000	
Cu	63	3	72	0.306	ppb	0.306	27.99	613	5000	
Zn	66	3	72	2.719	ppb	2.719	9.06	665	5000	
As	75	3	72	0.076	ppb	0.076	180.61	57	2000	
Se	78	2	72	-0.033	ppb	-0.033	-59.04	1	2000	
(Se)	78	3	72	-1.352	ppb	-1.352	-201.99	23	2000	
Sr	88	3	72	328.483	ppb	328.483	1.39	174139	4000	
Mo	95	3	115	3.664	ppb	3.664	9.55	1888	2000	
Ag	107	3	115	0.002	ppb	0.002	188.07	22	100	
Cd	111	3	115	0.007	ppb	0.007	278.99	5	2000	
Sn	120	3	115	0.982	ppb	0.982	8.58	1244	2000	
Sb	121	3	115	0.017	ppb	0.017	59.15	133	1000	
Ba	137	3	115	10.910	ppb	10.910	7.50	2731	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-150.41	97	2000	
(Pb)	206	3	193	-0.001	ppb	-0.001	-1721.33	142	100	
(Pb)	207	3	193	0.015	ppb	0.015	190.02	320	100	
Pb	208	3	193	0.011	ppb	0.011	41.50	731	5000	
Th	232	3	193	0.097	ppb	0.097	63.22	4465	2000	
U	238	3	193	0.037	ppb	0.037	63.53	1644	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4203141	2.31	4331237	97.04	60	120	
Sc (IS)	45	3	HMI He	626996	1.25	654817	95.75	60	120	
Ge Internal standard	72	2	HMI H2	2256828	1.31	2307933	97.79	60	120	
Ge Internal standard	72	3	HMI He	709897	1.63	744678	95.33	60	120	
In Internal Standard	115	3	HMI He	2512065	0.06	2599142	96.65	60	120	
Ir (IS)	193	3	HMI He	5169749	2.26	5525410	93.56	60	120	

Sample Report

Sample Table

Sample Name	160-48480-a-1-b
Data File Name	239SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:54:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	33271.297	ppb	33271.297	0.78	4079540	400000	
Mg	24	3	45	16743.593	ppb	16743.593	3.97	1050061	400000	
Al	27	3	45	114.273	ppb	114.273	3.37	2690	400000	
K	39	3	45	3246.236	ppb	3246.236	0.81	185661	400000	
Ca	40	2	45	65472.827	ppb	65472.827	1.00	37448735	400000	
V	51	3	72	0.890	ppb	0.890	6.49	816	2000	
Cr	52	3	72	0.949	ppb	0.949	17.63	2159	5000	
Mn	55	3	72	31.704	ppb	31.704	2.86	14005	10000	
Fe	56	2	72	119.727	ppb	119.727	2.87	191078	10000	
Co	59	3	72	0.183	ppb	0.183	14.54	265	2000	
Ni	60	3	72	0.550	ppb	0.550	10.21	322	5000	
Cu	63	3	72	5.491	ppb	5.491	5.16	5723	5000	
Zn	66	3	72	15.380	ppb	15.380	4.16	2906	5000	
As	75	3	72	0.073	ppb	0.073	107.44	60	2000	
Se	78	2	72	0.496	ppb	0.496	19.81	32	2000	
(Se)	78	3	72	-2.811	ppb	-2.811	-1.34	15	2000	
Sr	88	3	72	190.371	ppb	190.371	1.61	107750	4000	
Mo	95	3	115	18.086	ppb	18.086	2.15	9015	2000	
Ag	107	3	115	0.005	ppb	0.005	170.98	25	100	
Cd	111	3	115	0.207	ppb	0.207	30.99	53	2000	
Sn	120	3	115	0.109	ppb	0.109	69.84	580	2000	
Sb	121	3	115	0.154	ppb	0.154	25.84	233	1000	
Ba	137	3	115	79.963	ppb	79.963	0.70	19248	5000	
Tl	205	3	193	0.011	ppb	0.011	30.48	147	2000	
(Pb)	206	3	193	0.277	ppb	0.277	11.71	470	100	
(Pb)	207	3	193	0.255	ppb	0.255	28.92	573	100	
Pb	208	3	193	0.269	ppb	0.269	8.92	1959	5000	
Th	232	3	193	0.083	ppb	0.083	62.13	4475	2000	
U	238	3	193	85.373	ppb	85.373	1.60	423022	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4164612	0.28	4331237	96.15	60	120	
Sc (IS)	45	3	HMI He	638446	0.44	654817	97.50	60	120	
Ge Internal standard	72	2	HMI H2	2272444	1.61	2307933	98.46	60	120	
Ge Internal standard	72	3	HMI He	758038	1.70	744678	101.79	60	120	
In Internal Standard	115	3	HMI He	2467595	1.36	2599142	94.94	60	120	
Ir (IS)	193	3	HMI He	5255169	0.54	5525410	95.11	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	240_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:55:55-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.009	ppb	6.016	2656	50	102.0	90	110	
Na	23	3	45	50448.291	ppb	0.560	6249165	51000	98.9	90	110	
Mg	24	3	45	10932.314	ppb	2.450	695643	11000	99.4	90	110	
Al	27	3	45	1039.483	ppb	1.164	24125	1000	103.9	90	110	
K	39	3	45	10582.114	ppb	0.536	555163	11000	96.2	90	110	
Ca	40	2	45	11046.880	ppb	1.418	6393868	11000	100.4	90	110	
V	51	3	72	50.098	ppb	3.360	31762	50	100.2	90	110	
Cr	52	3	72	49.963	ppb	1.287	41043	50	99.9	90	110	
Mn	55	3	72	50.653	ppb	2.086	21928	50	101.3	90	110	
Fe	56	2	72	1047.999	ppb	2.253	1577936	1000	104.8	90	110	
Co	59	3	72	49.933	ppb	2.687	64268	50	99.9	90	110	
Ni	60	3	72	50.290	ppb	2.941	18054	50	100.6	90	110	
Cu	63	3	72	49.359	ppb	4.012	47862	50	98.7	90	110	
Zn	66	3	72	49.515	ppb	3.007	8693	50	99.0	90	110	
As	75	3	72	49.684	ppb	5.483	5958	50	99.4	90	110	
Se	78	2	72	50.891	ppb	0.960	2978	50	101.8	90	110	
(Se)	78	3	72	55.262	ppb	14.529	403	50	110.5	90	110	>+\-10%
Sr	88	3	72	100.842	ppb	2.499	56214	100	100.8	90	110	
Mo	95	3	115	50.731	ppb	1.076	25755	50	101.5	90	110	
Ag	107	3	115	49.492	ppb	1.500	83195	50	99.0	90	110	
Cd	111	3	115	50.647	ppb	2.461	12525	50	101.3	90	110	
Sn	120	3	115	52.935	ppb	1.599	40271	50	105.9	90	110	
Sb	121	3	115	51.755	ppb	0.667	39410	50	103.5	90	110	
Ba	137	3	115	50.318	ppb	2.166	12390	50	100.6	90	110	
Tl	205	3	193	51.288	ppb	2.279	181221	50	102.6	90	110	
(Pb)	206	3	193	51.277	ppb	2.963	61011	50	102.6	90	110	
(Pb)	207	3	193	50.658	ppb	1.409	53677	50	101.3	90	110	
Pb	208	3	193	50.977	ppb	2.595	244491	50	102.0	90	110	
Th	232	3	193	51.104	ppb	2.647	248510	50	102.2	90	110	
U	238	3	193	51.068	ppb	2.795	257576	50	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4206832	1.67	4331237	97.13	60	120	
Sc (IS)	45	3	HMI He	647679	0.80	654817	98.91	60	120	
Ge Internal standard	72	2	HMI H2	2240750	0.12	2307933	97.09	60	120	
Ge Internal standard	72	3	HMI He	746428	2.28	744678	100.24	60	120	
In Internal Standard	115	3	HMI He	2519281	0.48	2599142	96.93	60	120	
Ir (IS)	193	3	HMI He	5338355	1.93	5525410	96.61	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	241_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:57:46-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	77.171	ppb	7.9	59866	25	>RL
Mg	24	3	45	10.553	ppb	13.6	868	25	
Al	27	3	45	10.069	ppb	32.8	320	15	
K	39	3	45	-41.844	ppb	-86.6	24068	50	
V	51	3	72	0.020	ppb	428.3	260	1	
Cr	52	3	72	-0.016	ppb	-846.6	1371	1	
Mn	55	3	72	0.070	ppb	39.1	203	0.5	
Co	59	3	72	0.002	ppb	343.8	28	0.5	
Ni	60	3	72	-0.010	ppb	-386.8	118	1	
Cu	63	3	72	0.087	ppb	54.2	438	1	
Zn	66	3	72	0.581	ppb	45.7	337	5	
As	75	3	72	-0.174	ppb	-46.2	30	1	
Se	78	2	72	0.036	ppb	56.2	5	1	
(Se)	78	3	72	-0.603	ppb	-307.2	30	1	
Sr	88	3	72	0.085	ppb	6.8	92	0.5	
Mo	95	3	115	0.014	ppb	224.4	43	0.5	
Ag	107	3	115	0.002	ppb	159.6	22	1	
Cd	111	3	115	0.013	ppb	84.8	7	0.5	
Sn	120	3	115	0.401	ppb	11.0	828	1	
Sb	121	3	115	-0.041	ppb	-53.0	92	0.6	
Ba	137	3	115	-0.031	ppb	-256.4	60	0.5	
Tl	205	3	193	0.003	ppb	232.0	123	0.1	
(Pb)	206	3	193	0.003	ppb	1360.2	153	1	
(Pb)	207	3	193	0.010	ppb	263.7	328	1	
Pb	208	3	193	0.016	ppb	89.8	790	0.5	
Th	232	3	193	0.633	ppb	24.6	7270	1	
U	238	3	193	-0.005	ppb	-287.6	1508	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4157316	1.41	4331237	95.98	60	120	
Sc (IS)	45	3	HMI He	651638	0.72	654817	99.51	60	120	
Ge Internal standard	72	2	HMI H2	2226910	2.20	2307933	96.49	60	120	
Ge Internal standard	72	3	HMI He	753866	2.51	744678	101.23	60	120	
In Internal Standard	115	3	HMI He	2570662	0.69	2599142	98.90	60	120	
Ir (IS)	193	3	HMI He	5406414	0.45	5525410	97.85	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600021/1-a
Data File Name	242_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:59:39-07:00
Sample Type	Blank
Dilution	1
Comment	600021 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.035	ppb	173.2050808	2	0.5
Na	23	3	45	118.603	ppb	9.623698447	59213	25
Mg	24	3	45	10.370	ppb	14.10587033	781	25
Al	27	3	45	2.595	ppb	23.06982309	133	15
K	39	3	45	8.533	ppb	297.3157401	24249	50
V	51	3	72	0.108	ppb	25.65324779	282	1
Cr	52	3	72	0.227	ppb	124.6104501	1394	1
Mn	55	3	72	0.191	ppb	27.83901299	228	0.5
Co	59	3	72	0.005	ppb	201.620893	28	0.5
Ni	60	3	72	0.013	ppb	881.2884367	113	1
Cu	63	3	72	0.113	ppb	64.85439516	413	1
Zn	66	3	72	0.222	ppb	91.61897885	245	5
As	75	3	72	-0.065	ppb	-100.8357485	38	1
(Se)	78	3	72	-0.815	ppb	-322.4774045	25	1
Sr	88	3	72	0.098	ppb	10.79122947	88	0.5
Mo	95	3	115	0.011	ppb	427.0432677	38	0.5
Ag	107	3	115	0.005	ppb	115.9848641	25	1
Cd	111	3	115	-0.013	ppb	0	0	0.5
Sn	120	3	115	0.462	ppb	32.46086657	800	1
Sb	121	3	115	0.003	ppb	1466.746581	115	0.6
Ba	137	3	115	-0.023	ppb	-243.151707	57	0.5
Tl	205	3	193	-0.001	ppb	-1923.272973	100	0.1
(Pb)	206	3	193	-0.009	ppb	-81.55720486	128	1
(Pb)	207	3	193	-0.014	ppb	-245.8264281	278	1
Pb	208	3	193	0.000	ppb	-11345.77307	653	0.5
Th	232	3	193	0.241	ppb	33.89146992	4940	1
U	238	3	193	0.014	ppb	153.4317329	1474	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3763864	1.77	4331237	86.90	60	120	
Sc (IS)	45	3	HMI He	593833	1.41	654817	90.69	60	120	
Ge Internal standard	72	2	HMI H2	1987094	0.96	2307933	86.10	60	120	
Ge Internal standard	72	3	HMI He	672399	3.10	744678	90.29	60	120	
In Internal Standard	115	3	HMI He	2348409	0.57	2599142	90.35	60	120	
Ir (IS)	193	3	HMI He	4971605	1.05	5525410	89.98	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600021/2-a
Data File Name	243_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:01:33-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600021 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.657	37.657	ppb	5.844	1916	40	94.1	80	120	
Na	23	3	45	870.603	870.603	ppb	0.604	150006	40	2176.5	80	120	>+/-20%
Mg	24	3	45	752.766	752.766	ppb	1.516	45937	40	1881.9	80	120	>+/-20%
Al	27	3	45	804.673	804.673	ppb	1.278	17863	40	2011.7	80	120	>+/-20%
K	39	3	45	748.157	748.157	ppb	5.784	60621	40	1870.4	80	120	>+/-20%
Ca	40	2	45	853.517	853.517	ppb	1.076	492086	40	2133.8	80	120	>+/-20%
V	51	3	72	40.776	40.776	ppb	1.595	24897	40	101.9	80	120	
Cr	52	3	72	39.851	39.851	ppb	2.191	31730	40	99.6	80	120	
Mn	55	3	72	40.703	40.703	ppb	1.625	16969	40	101.8	80	120	
Fe	56	2	72	854.355	854.355	ppb	4.674	1250226	40	2135.9	80	120	>+/-20%
(Fe)	56	3	72	809.111	809.111	ppb	1.446	521522	40	2022.8	80	120	>+/-20%
Co	59	3	72	39.963	39.963	ppb	2.813	49452	40	99.9	80	120	
Ni	60	3	72	39.736	39.736	ppb	0.664	13737	40	99.3	80	120	
Cu	63	3	72	41.395	41.395	ppb	2.323	38650	40	103.5	80	120	
Zn	66	3	72	40.222	40.222	ppb	4.357	6830	40	100.6	80	120	
As	75	3	72	39.313	39.313	ppb	4.428	4544	40	98.3	80	120	
Se	78	2	72	41.602	41.602	ppb	3.439	2364	40	104.0	80	120	
(Se)	78	3	72	43.490	43.490	ppb	6.274	312	40	108.7	80	120	
Sr	88	3	72	80.854	80.854	ppb	0.525	43332	40	202.1	80	120	>+/-20%
Mo	95	3	115	40.082	40.082	ppb	1.637	19441	40	100.2	80	120	
Ag	107	3	115	40.890	40.890	ppb	1.667	65654	40	102.2	80	120	
Cd	111	3	115	40.633	40.633	ppb	1.350	9597	40	101.6	80	120	
Sn	120	3	115	39.654	39.654	ppb	2.200	28934	40	99.1	80	120	
Sb	121	3	115	40.582	40.582	ppb	2.529	29540	40	101.5	80	120	
Ba	137	3	115	41.567	41.567	ppb	3.918	9787	40	103.9	80	120	
Tl	205	3	193	40.402	40.402	ppb	0.990	141361	40	101.0	80	120	
(Pb)	206	3	193	39.669	39.669	ppb	2.208	46776	40	99.2	80	120	
(Pb)	207	3	193	39.725	39.725	ppb	2.084	41735	40	99.3	80	120	
Pb	208	3	193	39.946	39.946	ppb	1.337	189847	40	99.9	80	120	
Th	232	3	193	40.697	40.697	ppb	1.527	196781	40	101.7	80	120	
U	238	3	193	40.028	40.028	ppb	0.656	200229	40	100.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4083735	1.99	4331237	94.29	60	120	
Sc (IS)	45	3	HMI He	618814	1.26	654817	94.50	60	120	
Ge Internal standard	72	2	HMI H2	2176359	2.90	2307933	94.30	60	120	
Ge Internal standard	72	3	HMI He	717239	0.35	744678	96.32	60	120	
In Internal Standard	115	3	HMI He	2405964	0.65	2599142	92.57	60	120	
Ir (IS)	193	3	HMI He	5283917	1.11	5525410	95.63	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-1-a
Data File Name	244SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:03:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	246243.838	ppb	246243.838	0.54	29199352	400000	
Mg	24	3	45	114818.892	ppb	114818.892	1.39	7037122	400000	
Al	27	3	45	2.735	ppb	2.735	24.50	143	400000	
K	39	3	45	15626.648	ppb	15626.648	1.25	777857	400000	
Ca	40	2	45	115010.353	ppb	115010.353	0.79	61589365	400000	
V	51	3	72	43.406	ppb	43.406	0.11	27368	2000	
Cr	52	3	72	0.348	ppb	0.348	33.41	1636	5000	
Mn	55	3	72	9.658	ppb	9.658	2.38	4289	10000	
Fe	56	2	72	9.126	ppb	9.126	5.69	22133	10000	
Co	59	3	72	1.495	ppb	1.495	5.21	1936	2000	
Ni	60	3	72	3.857	ppb	3.857	6.58	1486	5000	
Cu	63	3	72	0.754	ppb	0.754	14.19	1068	5000	
Zn	66	3	72	1.333	ppb	1.333	22.62	458	5000	
As	75	3	72	9.336	ppb	9.336	4.26	1153	2000	
Se	78	2	72	1.076	ppb	1.076	17.39	63	2000	
(Se)	78	3	72	-1.253	ppb	-1.253	-104.34	25	2000	
Sr	88	3	72	4497.659	ppb	4497.659	2.54	2487321	4000	
Mo	95	3	115	1.483	ppb	1.483	11.88	765	2000	
Ag	107	3	115	0.004	ppb	0.004	336.36	23	100	
Cd	111	3	115	0.015	ppb	0.015	81.80	7	2000	
Sn	120	3	115	0.321	ppb	0.321	26.15	730	2000	
Sb	121	3	115	0.089	ppb	0.089	18.88	183	1000	
Ba	137	3	115	35.656	ppb	35.656	1.31	8545	5000	
Tl	205	3	193	0.012	ppb	0.012	35.01	145	2000	
(Pb)	206	3	193	0.021	ppb	0.021	143.27	167	100	
(Pb)	207	3	193	0.000	ppb	0.000	8561.36	302	100	
Pb	208	3	193	0.034	ppb	0.034	24.92	828	5000	
Th	232	3	193	0.603	ppb	0.603	11.81	6755	2000	
U	238	3	193	34.271	ppb	34.271	0.88	166462	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899986	1.87	4331237	90.04	60	120	
Sc (IS)	45	3	HMI He	623963	0.32	654817	95.29	60	120	
Ge Internal standard	72	2	HMI H2	2165644	1.90	2307933	93.83	60	120	
Ge Internal standard	72	3	HMI He	741075	2.03	744678	99.52	60	120	
In Internal Standard	115	3	HMI He	2446675	0.18	2599142	94.13	60	120	
Ir (IS)	193	3	HMI He	5124535	0.70	5525410	92.74	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-2-a
Data File Name	245SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:05:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	243955.206	ppb	243955.206	1.82	29537236	400000	
Mg	24	3	45	112778.710	ppb	112778.710	1.13	7057228	400000	
Al	27	3	45	10.518	ppb	10.518	40.80	324	400000	
K	39	3	45	15684.403	ppb	15684.403	1.23	796991	400000	
Ca	40	2	45	112168.475	ppb	112168.475	1.17	59408431	400000	
V	51	3	72	42.573	ppb	42.573	2.10	27518	2000	
Cr	52	3	72	0.523	ppb	0.523	29.55	1816	5000	
Mn	55	3	72	10.301	ppb	10.301	3.61	4678	10000	
Fe	56	2	72	10.556	ppb	10.556	1.02	23908	10000	
Co	59	3	72	1.493	ppb	1.493	4.68	1979	2000	
Ni	60	3	72	3.726	ppb	3.726	3.32	1474	5000	
Cu	63	3	72	0.706	ppb	0.706	12.66	1048	5000	
Zn	66	3	72	1.249	ppb	1.249	20.95	455	5000	
As	75	3	72	8.852	ppb	8.852	0.68	1123	2000	
Se	78	2	72	0.947	ppb	0.947	8.38	55	2000	
(Se)	78	3	72	-1.127	ppb	-1.127	-313.85	27	2000	
Sr	88	3	72	4510.075	ppb	4510.075	0.91	2556111	4000	
Mo	95	3	115	1.480	ppb	1.480	17.97	781	2000	
Ag	107	3	115	0.008	ppb	0.008	123.20	30	100	
Cd	111	3	115	0.007	ppb	0.007	5.45	5	2000	
Sn	120	3	115	0.384	ppb	0.384	20.27	795	2000	
Sb	121	3	115	0.050	ppb	0.050	112.86	158	1000	
Ba	137	3	115	34.879	ppb	34.879	0.88	8567	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-318.21	100	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1248.80	143	100	
(Pb)	207	3	193	0.012	ppb	0.012	433.00	320	100	
Pb	208	3	193	0.032	ppb	0.032	33.23	836	5000	
Th	232	3	193	0.129	ppb	0.129	12.93	4660	2000	
U	238	3	193	33.483	ppb	33.483	2.82	165630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3857005	0.50	4331237	89.05	60	120	
Sc (IS)	45	3	HMI He	637059	0.63	654817	97.29	60	120	
Ge Internal standard	72	2	HMI H2	2138771	0.78	2307933	92.67	60	120	
Ge Internal standard	72	3	HMI He	759329	2.72	744678	101.97	60	120	
In Internal Standard	115	3	HMI He	2506875	1.97	2599142	96.45	60	120	
Ir (IS)	193	3	HMI He	5218869	1.35	5525410	94.45	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-3-a
Data File Name	246SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:07:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	189.757	ppb	189.757	6.61	70961	400000	
Mg	24	3	45	18.590	ppb	18.590	9.73	1328	400000	
Al	27	3	45	13.316	ppb	13.316	69.09	384	400000	
K	39	3	45	-15.001	ppb	-15.001	-267.58	24446	400000	
Ca	40	2	45	25.476	ppb	25.476	2.91	27030	400000	
V	51	3	72	0.182	ppb	0.182	44.38	342	2000	
Cr	52	3	72	0.515	ppb	0.515	50.35	1689	5000	
Mn	55	3	72	0.283	ppb	0.283	40.19	277	10000	
Fe	56	2	72	6.922	ppb	6.922	9.23	18381	10000	
Co	59	3	72	0.004	ppb	0.004	153.86	28	2000	
Ni	60	3	72	0.098	ppb	0.098	100.78	147	5000	
Cu	63	3	72	0.192	ppb	0.192	60.40	505	5000	
Zn	66	3	72	0.615	ppb	0.615	23.94	322	5000	
As	75	3	72	0.006	ppb	0.006	3920.35	48	2000	
Se	78	2	72	0.041	ppb	0.041	134.93	5	2000	
(Se)	78	3	72	-2.439	ppb	-2.439	-68.66	17	2000	
Sr	88	3	72	0.488	ppb	0.488	4.95	300	4000	
Mo	95	3	115	0.054	ppb	0.054	80.72	62	2000	
Ag	107	3	115	0.010	ppb	0.010	98.23	33	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.341	ppb	0.341	7.71	756	2000	
Sb	121	3	115	-0.006	ppb	-0.006	-262.31	115	1000	
Ba	137	3	115	0.088	ppb	0.088	64.88	87	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-24.37	78	2000	
(Pb)	206	3	193	0.009	ppb	0.009	131.87	155	100	
(Pb)	207	3	193	0.005	ppb	0.005	791.37	312	100	
Pb	208	3	193	0.019	ppb	0.019	85.59	771	5000	
Th	232	3	193	0.042	ppb	0.042	120.73	4247	2000	
U	238	3	193	0.011	ppb	0.011	59.29	1531	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3965467	1.96	4331237	91.56	60	120	
Sc (IS)	45	3	HMI He	626901	2.05	654817	95.74	60	120	
Ge Internal standard	72	2	HMI H2	2101183	1.38	2307933	91.04	60	120	
Ge Internal standard	72	3	HMI He	708777	4.08	744678	95.18	60	120	
In Internal Standard	115	3	HMI He	2484976	1.45	2599142	95.61	60	120	
Ir (IS)	193	3	HMI He	5208761	1.83	5525410	94.27	60	120	

Sample Report

Sample Table

Sample Name	280-171425-n-1-b
Data File Name	247SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:09:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	1936599.495	ppb	1936599.495	0.54	238475574	400000	
Mg	24	3	45	265035.409	ppb	265035.409	1.27	16891716	400000	
Al	27	3	45	70.729	ppb	70.729	6.28	1725	400000	
K	39	3	45	644439.331	ppb	644439.331	0.50	32311784	400000	
Ca	40	2	45	63780.721	ppb	63780.721	2.31	38832844	400000	
V	51	3	72	40.297	ppb	40.297	2.30	25312	2000	
Cr	52	3	72	65.704	ppb	65.704	0.93	52937	5000	
Mn	55	3	72	306.066	ppb	306.066	1.70	130160	10000	
Fe	56	2	72	6331.070	ppb	6331.070	0.73	10117904	10000	
Co	59	3	72	16.764	ppb	16.764	1.63	21352	2000	
Ni	60	3	72	334.649	ppb	334.649	1.27	118133	5000	
Cu	63	3	72	11.337	ppb	11.337	1.99	11139	5000	
Zn	66	3	72	167.963	ppb	167.963	1.87	28604	5000	
As	75	3	72	92.644	ppb	92.644	2.46	10947	2000	
Se	78	2	72	1.646	ppb	1.646	10.64	105	2000	
(Se)	78	3	72	1.294	ppb	1.294	125.08	42	2000	
Sr	88	3	72	1137.751	ppb	1137.751	0.98	626707	4000	
Mo	95	3	115	11.190	ppb	11.190	2.95	5523	2000	
Ag	107	3	115	0.025	ppb	0.025	54.79	58	100	
Cd	111	3	115	0.300	ppb	0.300	43.02	75	2000	
Sn	120	3	115	6.216	ppb	6.216	4.71	5010	2000	
Sb	121	3	115	8.668	ppb	8.668	2.67	6483	1000	
Ba	137	3	115	1026.741	ppb	1026.741	0.50	243364	5000	
Tl	205	3	193	0.000	ppb	0.000	3590.69	103	2000	
(Pb)	206	3	193	15.725	ppb	15.725	2.68	17612	100	
(Pb)	207	3	193	14.184	ppb	14.184	3.21	14281	100	
Pb	208	3	193	14.862	ppb	14.862	1.14	67199	5000	
Th	232	3	193	0.131	ppb	0.131	12.41	4470	2000	
U	238	3	193	0.719	ppb	0.719	2.77	4792	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4433401	1.78	4331237	102.36	60	120	
Sc (IS)	45	3	HMI He	648921	1.02	654817	99.10	60	120	
Ge Internal standard	72	2	HMI H2	2389855	2.23	2307933	103.55	60	120	
Ge Internal standard	72	3	HMI He	737888	1.00	744678	99.09	60	120	
In Internal Standard	115	3	HMI He	2437620	0.93	2599142	93.79	60	120	
Ir (IS)	193	3	HMI He	4996626	1.01	5525410	90.43	60	120	

Sample Report

Sample Table

Sample Name	280-171425-n-2-b
Data File Name	248SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:10:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.309	ppb	0.309	33.84	15	2000	
Na	23	3	45	1880818.828	ppb	1880818.828	0.46	222359847	400000	
Mg	24	3	45	135156.560	ppb	135156.560	0.50	8270418	400000	
Al	27	3	45	151.419	ppb	151.419	8.37	3451	400000	
K	39	3	45	489519.345	ppb	489519.345	0.83	23569278	400000	
Ca	40	2	45	119182.562	ppb	119182.562	3.02	67967731	400000	
V	51	3	72	107.427	ppb	107.427	4.13	66066	2000	
Cr	52	3	72	127.786	ppb	127.786	3.67	100146	5000	
Mn	55	3	72	553.817	ppb	553.817	3.41	231856	10000	
Fe	56	2	72	12584.432	ppb	12584.432	2.89	18754831	10000	
Co	59	3	72	38.772	ppb	38.772	3.91	48607	2000	
Ni	60	3	72	216.647	ppb	216.647	3.57	75365	5000	
Cu	63	3	72	2.054	ppb	2.054	8.57	2264	5000	
Zn	66	3	72	1102.816	ppb	1102.816	4.33	183692	5000	
As	75	3	72	115.167	ppb	115.167	3.89	13393	2000	
Se	78	2	72	2.393	ppb	2.393	14.76	142	2000	
(Se)	78	3	72	2.607	ppb	2.607	95.82	50	2000	
Sr	88	3	72	1308.442	ppb	1308.442	3.72	709853	4000	
Mo	95	3	115	7.522	ppb	7.522	0.98	3595	2000	
Ag	107	3	115	0.005	ppb	0.005	57.49	25	100	
Cd	111	3	115	0.030	ppb	0.030	71.82	10	2000	
Sn	120	3	115	6.585	ppb	6.585	6.97	5097	2000	
Sb	121	3	115	2.639	ppb	2.639	1.84	1984	1000	
Ba	137	3	115	1448.563	ppb	1448.563	0.85	331441	5000	
Tl	205	3	193	0.004	ppb	0.004	67.28	113	2000	
(Pb)	206	3	193	0.473	ppb	0.473	13.40	646	100	
(Pb)	207	3	193	0.526	ppb	0.526	17.02	791	100	
Pb	208	3	193	0.535	ppb	0.535	3.67	2969	5000	
Th	232	3	193	0.084	ppb	0.084	56.28	4144	2000	
U	238	3	193	0.141	ppb	0.141	7.26	2022	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4155085	2.67	4331237	95.93	60	120	
Sc (IS)	45	3	HMI He	622997	1.02	654817	95.14	60	120	
Ge Internal standard	72	2	HMI H2	2230485	1.65	2307933	96.64	60	120	
Ge Internal standard	72	3	HMI He	727349	3.52	744678	97.67	60	120	
In Internal Standard	115	3	HMI He	2353267	0.52	2599142	90.54	60	120	
Ir (IS)	193	3	HMI He	4862682	1.64	5525410	88.01	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-3-d
Data File Name	249SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:12:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	6823.706	ppb	6823.706	3.07	851951	400000	
Mg	24	3	45	24866.824	ppb	24866.824	1.20	1516668	400000	
Al	27	3	45	18.721	ppb	18.721	0.78	497	400000	
K	39	3	45	1766.227	ppb	1766.227	1.83	109631	400000	
Ca	40	2	45	64488.146	ppb	64488.146	2.05	35795586	400000	
V	51	3	72	0.145	ppb	0.145	23.95	322	2000	
Cr	52	3	72	0.360	ppb	0.360	11.51	1588	5000	
Mn	55	3	72	4.906	ppb	4.906	4.55	2184	10000	
Fe	56	2	72	485.445	ppb	485.445	3.72	708592	10000	
Co	59	3	72	0.032	ppb	0.032	32.93	63	2000	
Ni	60	3	72	0.579	ppb	0.579	17.31	313	5000	
Cu	63	3	72	2.109	ppb	2.109	5.60	2282	5000	
Zn	66	3	72	4.603	ppb	4.603	6.43	978	5000	
As	75	3	72	0.117	ppb	0.117	213.35	62	2000	
Se	78	2	72	0.170	ppb	0.170	64.01	12	2000	
(Se)	78	3	72	0.190	ppb	0.190	1268.84	33	2000	
Sr	88	3	72	349.189	ppb	349.189	0.84	186541	4000	
Mo	95	3	115	0.337	ppb	0.337	29.08	200	2000	
Ag	107	3	115	0.003	ppb	0.003	127.92	22	100	
Cd	111	3	115	0.022	ppb	0.022	55.21	8	2000	
Sn	120	3	115	0.957	ppb	0.957	2.15	1191	2000	
Sb	121	3	115	0.126	ppb	0.126	13.20	210	1000	
Ba	137	3	115	84.172	ppb	84.172	2.18	20039	5000	
Tl	205	3	193	0.001	ppb	0.001	463.68	107	2000	
(Pb)	206	3	193	0.125	ppb	0.125	35.70	282	100	
(Pb)	207	3	193	0.074	ppb	0.074	95.44	371	100	
Pb	208	3	193	0.113	ppb	0.113	50.72	1179	5000	
Th	232	3	193	0.010	ppb	0.010	386.94	3979	2000	
U	238	3	193	3.495	ppb	3.495	3.40	18049	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4041912	1.09	4331237	93.32	60	120	
Sc (IS)	45	3	HMI He	620933	1.19	654817	94.83	60	120	
Ge Internal standard	72	2	HMI H2	2158101	1.16	2307933	93.51	60	120	
Ge Internal standard	72	3	HMI He	715460	0.69	744678	96.08	60	120	
In Internal Standard	115	3	HMI He	2440968	0.45	2599142	93.91	60	120	
Ir (IS)	193	3	HMI He	5060969	0.93	5525410	91.59	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	250_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:14:40-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.966	ppb	0.972	2574	50	101.9	90	110	
Na	23	3	45	49723.783	ppb	0.521	6016724	51000	97.5	90	110	
Mg	24	3	45	10746.572	ppb	2.845	667836	11000	97.7	90	110	
Al	27	3	45	1034.391	ppb	1.721	23446	1000	103.4	90	110	
K	39	3	45	10681.384	ppb	0.722	547080	11000	97.1	90	110	
Ca	40	2	45	11259.786	ppb	1.141	6380061	11000	102.4	90	110	
V	51	3	72	51.420	ppb	1.567	31153	50	102.8	90	110	
Cr	52	3	72	50.902	ppb	1.623	39932	50	101.8	90	110	
Mn	55	3	72	51.619	ppb	4.509	21351	50	103.2	90	110	
Fe	56	2	72	1085.240	ppb	3.601	1580928	1000	108.5	90	110	
Co	59	3	72	50.391	ppb	0.444	61989	50	100.8	90	110	
Ni	60	3	72	49.768	ppb	1.872	17075	50	99.5	90	110	
Cu	63	3	72	49.430	ppb	1.271	45816	50	98.9	90	110	
Zn	66	3	72	51.773	ppb	3.770	8675	50	103.5	90	110	
As	75	3	72	50.551	ppb	4.409	5797	50	101.1	90	110	
Se	78	2	72	51.512	ppb	1.061	2918	50	103.0	90	110	
(Se)	78	3	72	53.225	ppb	22.914	371	50	106.4	90	110	
Sr	88	3	72	104.589	ppb	1.561	55714	100	104.6	90	110	
Mo	95	3	115	49.496	ppb	1.075	24899	50	99.0	90	110	
Ag	107	3	115	49.643	ppb	0.964	82688	50	99.3	90	110	
Cd	111	3	115	49.994	ppb	0.273	12251	50	100.0	90	110	
Sn	120	3	115	51.266	ppb	2.361	38658	50	102.5	90	110	
Sb	121	3	115	51.460	ppb	3.188	38822	50	102.9	90	110	
Ba	137	3	115	49.623	ppb	2.729	12106	50	99.2	90	110	
Tl	205	3	193	52.018	ppb	1.449	176543	50	104.0	90	110	
(Pb)	206	3	193	51.196	ppb	1.940	58514	50	102.4	90	110	
(Pb)	207	3	193	50.868	ppb	0.894	51763	50	101.7	90	110	
Pb	208	3	193	51.165	ppb	1.064	235716	50	102.3	90	110	
Th	232	3	193	51.484	ppb	1.784	240445	50	103.0	90	110	
U	238	3	193	51.157	ppb	1.426	247850	50	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4118251	0.07	4331237	95.08	60	120	
Sc (IS)	45	3	HMI He	632590	0.65	654817	96.61	60	120	
Ge Internal standard	72	2	HMI H2	2168954	2.01	2307933	93.98	60	120	
Ge Internal standard	72	3	HMI He	713122	0.77	744678	95.76	60	120	
In Internal Standard	115	3	HMI He	2496395	1.05	2599142	96.05	60	120	
Ir (IS)	193	3	HMI He	5126471	0.87	5525410	92.78	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	251_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:16:33-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.035	ppb	173.2	2	0.5	
Na	23	3	45	274.055	ppb	8.6	78243	25	>RL
Mg	24	3	45	10.815	ppb	13.4	821	25	
Al	27	3	45	5.806	ppb	86.6	207	15	
K	39	3	45	40.114	ppb	154.7	26171	50	
V	51	3	72	0.014	ppb	120.9	235	1	
Cr	52	3	72	0.076	ppb	55.3	1329	1	
Mn	55	3	72	0.098	ppb	61.7	198	0.5	
Co	59	3	72	0.006	ppb	264.5	30	0.5	
Ni	60	3	72	-0.020	ppb	-262.0	105	1	
Cu	63	3	72	0.100	ppb	25.3	415	1	
Zn	66	3	72	0.598	ppb	49.0	312	5	
As	75	3	72	-0.031	ppb	-354.4	43	1	
Se	78	2	72	0.003	ppb	2702.8	3	1	
(Se)	78	3	72	-0.168	ppb	-1683.9	30	1	
Sr	88	3	72	0.102	ppb	26.4	93	0.5	
Mo	95	3	115	0.038	ppb	82.2	53	0.5	
Ag	107	3	115	0.003	ppb	175.7	22	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.277	ppb	25.8	698	1	
Sb	121	3	115	-0.033	ppb	-59.1	93	0.6	
Ba	137	3	115	-0.019	ppb	-377.7	60	0.5	
Tl	205	3	193	0.008	ppb	33.2	130	0.1	
(Pb)	206	3	193	-0.031	ppb	-125.4	105	1	
(Pb)	207	3	193	-0.020	ppb	-62.8	277	1	
Pb	208	3	193	0.007	ppb	185.7	696	0.5	
Th	232	3	193	0.603	ppb	26.0	6655	1	
U	238	3	193	0.014	ppb	157.2	1496	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3976207	4.96	4331237	91.80	60	120	
Sc (IS)	45	3	HMI He	605841	2.44	654817	92.52	60	120	
Ge Internal standard	72	2	HMI H2	2119752	3.71	2307933	91.85	60	120	
Ge Internal standard	72	3	HMI He	693586	2.63	744678	93.14	60	120	
In Internal Standard	115	3	HMI He	2446897	2.34	2599142	94.14	60	120	
Ir (IS)	193	3	HMI He	5045531	1.81	5525410	91.32	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-d
Data File Name	252SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:18:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	85966.136	ppb	85966.136	0.45	10139108	400000	
Mg	24	3	45	26708.715	ppb	26708.715	1.03	1623218	400000	
Al	27	3	45	9.882	ppb	9.882	24.89	300	400000	
K	39	3	45	3516.165	ppb	3516.165	0.76	192806	400000	
Ca	40	2	45	130303.670	ppb	130303.670	0.75	72746836	400000	
V	51	3	72	0.127	ppb	0.127	42.36	312	2000	
Cr	52	3	72	6.681	ppb	6.681	2.84	6408	5000	
Mn	55	3	72	343.916	ppb	343.916	1.39	141992	10000	
Fe	56	2	72	322.217	ppb	322.217	0.85	479471	10000	
Co	59	3	72	0.982	ppb	0.982	15.56	1241	2000	
Ni	60	3	72	63.384	ppb	63.384	0.68	21825	5000	
Cu	63	3	72	0.499	ppb	0.499	9.26	798	5000	
Zn	66	3	72	3.443	ppb	3.443	2.57	790	5000	
As	75	3	72	0.131	ppb	0.131	109.14	63	2000	
Se	78	2	72	0.646	ppb	0.646	20.33	39	2000	
(Se)	78	3	72	-1.399	ppb	-1.399	-135.87	23	2000	
Sr	88	3	72	296.425	ppb	296.425	1.54	158565	4000	
Mo	95	3	115	0.475	ppb	0.475	12.78	263	2000	
Ag	107	3	115	0.010	ppb	0.010	193.39	33	100	
Cd	111	3	115	0.044	ppb	0.044	103.47	13	2000	
Sn	120	3	115	0.828	ppb	0.828	9.40	1076	2000	
Sb	121	3	115	0.042	ppb	0.042	87.54	145	1000	
Ba	137	3	115	93.106	ppb	93.106	2.36	21750	5000	
Tl	205	3	193	0.076	ppb	0.076	40.34	363	2000	
(Pb)	206	3	193	0.048	ppb	0.048	20.18	197	100	
(Pb)	207	3	193	0.031	ppb	0.031	72.59	332	100	
Pb	208	3	193	0.068	ppb	0.068	10.13	983	5000	
Th	232	3	193	0.186	ppb	0.186	29.84	4822	2000	
U	238	3	193	287.260	ppb	287.260	3.11	1378217	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4065474	1.73	4331237	93.86	60	120	
Sc (IS)	45	3	HMI He	618700	1.19	654817	94.48	60	120	
Ge Internal standard	72	2	HMI H2	2185551	1.30	2307933	94.70	60	120	
Ge Internal standard	72	3	HMI He	716580	2.51	744678	96.23	60	120	
In Internal Standard	115	3	HMI He	2396217	2.18	2599142	92.19	60	120	
Ir (IS)	193	3	HMI He	5102299	2.76	5525410	92.34	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-e ms
Data File Name	253SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:20:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.387	ppb	41.387	2.40	2066	2000	
Na	23	3	45	86316.771	ppb	86316.771	1.02	10226201	400000	
Mg	24	3	45	27174.100	ppb	27174.100	2.66	1658854	400000	
Al	27	3	45	800.787	ppb	800.787	0.76	17853	400000	
K	39	3	45	4263.086	ppb	4263.086	0.34	229530	400000	
Ca	40	2	45	132265.684	ppb	132265.684	2.86	73732598	400000	
V	51	3	72	39.927	ppb	39.927	1.77	24554	2000	
Cr	52	3	72	46.170	ppb	46.170	1.52	36809	5000	
Mn	55	3	72	382.923	ppb	382.923	0.71	159372	10000	
Fe	56	2	72	1143.491	ppb	1143.491	0.83	1694521	10000	
Co	59	3	72	40.713	ppb	40.713	1.13	50732	2000	
Ni	60	3	72	100.216	ppb	100.216	2.37	34711	5000	
Cu	63	3	72	39.823	ppb	39.823	0.68	37454	5000	
Zn	66	3	72	42.187	ppb	42.187	3.23	7203	5000	
As	75	3	72	41.234	ppb	41.234	2.17	4797	2000	
Se	78	2	72	42.961	ppb	42.961	5.21	2476	2000	
(Se)	78	3	72	46.775	ppb	46.775	9.38	335	2000	
Sr	88	3	72	379.126	ppb	379.126	0.77	204455	4000	
Mo	95	3	115	39.851	ppb	39.851	2.21	19770	2000	
Ag	107	3	115	39.711	ppb	39.711	1.88	65210	100	
Cd	111	3	115	39.405	ppb	39.405	3.45	9520	2000	
Sn	120	3	115	39.778	ppb	39.778	2.79	29683	2000	
Sb	121	3	115	40.644	ppb	40.644	0.80	30258	1000	
Ba	137	3	115	132.319	ppb	132.319	3.41	31717	5000	
Tl	205	3	193	41.205	ppb	41.205	1.28	140248	2000	
(Pb)	206	3	193	41.245	ppb	41.245	1.79	47295	100	
(Pb)	207	3	193	40.314	ppb	40.314	0.85	41200	100	
Pb	208	3	193	40.833	ppb	40.833	0.53	188768	5000	
Th	232	3	193	42.115	ppb	42.115	0.59	197960	2000	
U	238	3	193	321.423	ppb	321.423	1.22	1553767	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4060678	1.74	4331237	93.75	60	120	
Sc (IS)	45	3	HMI He	621504	0.63	654817	94.91	60	120	
Ge Internal standard	72	2	HMI H2	2206415	0.55	2307933	95.60	60	120	
Ge Internal standard	72	3	HMI He	722266	0.56	744678	96.99	60	120	
In Internal Standard	115	3	HMI He	2460940	0.69	2599142	94.68	60	120	
Ir (IS)	193	3	HMI He	5140295	1.17	5525410	93.03	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-f msd
Data File Name	254SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:22:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.528	ppb	41.528	0.90	2071	2000	
Na	23	3	45	84591.810	ppb	84591.810	1.96	10172848	400000	
Mg	24	3	45	26752.434	ppb	26752.434	4.61	1658015	400000	
Al	27	3	45	799.290	ppb	799.290	4.54	18090	400000	
K	39	3	45	4182.270	ppb	4182.270	1.63	229028	400000	
Ca	40	2	45	129777.639	ppb	129777.639	2.55	70601699	400000	
V	51	3	72	41.706	ppb	41.706	1.00	25335	2000	
Cr	52	3	72	47.895	ppb	47.895	1.31	37674	5000	
Mn	55	3	72	391.160	ppb	391.160	1.43	160832	10000	
Fe	56	2	72	1136.867	ppb	1136.867	2.37	1634854	10000	
Co	59	3	72	40.771	ppb	40.771	0.66	50197	2000	
Ni	60	3	72	102.319	ppb	102.319	2.34	35005	5000	
Cu	63	3	72	40.971	ppb	40.971	0.91	38062	5000	
Zn	66	3	72	42.555	ppb	42.555	4.74	7180	5000	
As	75	3	72	41.228	ppb	41.228	5.26	4738	2000	
Se	78	2	72	41.088	ppb	41.088	4.41	2298	2000	
(Se)	78	3	72	43.704	ppb	43.704	8.45	312	2000	
Sr	88	3	72	380.254	ppb	380.254	1.16	202610	4000	
Mo	95	3	115	40.714	ppb	40.714	0.84	20128	2000	
Ag	107	3	115	40.058	ppb	40.058	0.34	65555	100	
Cd	111	3	115	40.483	ppb	40.483	2.72	9747	2000	
Sn	120	3	115	40.482	ppb	40.482	1.46	30097	2000	
Sb	121	3	115	41.036	ppb	41.036	1.12	30443	1000	
Ba	137	3	115	130.627	ppb	130.627	2.24	31210	5000	
Tl	205	3	193	41.840	ppb	41.840	1.17	142045	2000	
(Pb)	206	3	193	41.806	ppb	41.806	2.04	47813	100	
(Pb)	207	3	193	41.263	ppb	41.263	2.24	42047	100	
Pb	208	3	193	41.539	ppb	41.539	1.23	191525	5000	
Th	232	3	193	42.857	ppb	42.857	2.21	200845	2000	
U	238	3	193	334.183	ppb	334.183	2.20	1611152	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3962977	1.88	4331237	91.50	60	120	
Sc (IS)	45	3	HMI He	630788	0.74	654817	96.33	60	120	
Ge Internal standard	72	2	HMI H2	2141516	1.38	2307933	92.79	60	120	
Ge Internal standard	72	3	HMI He	713694	2.19	744678	95.84	60	120	
In Internal Standard	115	3	HMI He	2452423	0.54	2599142	94.36	60	120	
Ir (IS)	193	3	HMI He	5127702	1.87	5525410	92.80	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-9-b
Data File Name	255SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:23:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	84777.259	ppb	84777.259	1.48	9559439	400000	
Mg	24	3	45	26622.152	ppb	26622.152	1.36	1546811	400000	
Al	27	3	45	6.556	ppb	6.556	35.37	217	400000	
K	39	3	45	3451.229	ppb	3451.229	2.66	181361	400000	
Ca	40	2	45	130780.254	ppb	130780.254	0.92	72099299	400000	
V	51	3	72	0.148	ppb	0.148	29.99	308	2000	
Cr	52	3	72	5.702	ppb	5.702	2.46	5395	5000	
Mn	55	3	72	343.506	ppb	343.506	0.28	135129	10000	
Fe	56	2	72	300.615	ppb	300.615	2.32	449945	10000	
Co	59	3	72	0.975	ppb	0.975	10.53	1171	2000	
Ni	60	3	72	63.109	ppb	63.109	0.70	20698	5000	
Cu	63	3	72	0.477	ppb	0.477	11.84	740	5000	
Zn	66	3	72	2.234	ppb	2.234	7.42	563	5000	
As	75	3	72	0.113	ppb	0.113	85.75	58	2000	
Se	78	2	72	0.564	ppb	0.564	45.13	35	2000	
(Se)	78	3	72	-0.388	ppb	-0.388	-239.64	28	2000	
Sr	88	3	72	295.642	ppb	295.642	0.47	150685	4000	
Mo	95	3	115	0.564	ppb	0.564	16.82	297	2000	
Ag	107	3	115	0.011	ppb	0.011	72.75	33	100	
Cd	111	3	115	0.075	ppb	0.075	28.58	20	2000	
Sn	120	3	115	0.369	ppb	0.369	23.41	726	2000	
Sb	121	3	115	0.014	ppb	0.014	197.57	122	1000	
Ba	137	3	115	90.165	ppb	90.165	2.05	20429	5000	
Tl	205	3	193	0.068	ppb	0.068	21.33	322	2000	
(Pb)	206	3	193	0.005	ppb	0.005	269.08	142	100	
(Pb)	207	3	193	0.031	ppb	0.031	180.48	318	100	
Pb	208	3	193	0.040	ppb	0.040	45.59	821	5000	
Th	232	3	193	0.485	ppb	0.485	11.33	5952	2000	
U	238	3	193	282.853	ppb	282.853	3.03	1306965	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4014821	1.00	4331237	92.69	60	120	
Sc (IS)	45	3	HMI He	591508	0.64	654817	90.33	60	120	
Ge Internal standard	72	2	HMI H2	2196069	1.82	2307933	95.15	60	120	
Ge Internal standard	72	3	HMI He	682605	0.29	744678	91.66	60	120	
In Internal Standard	115	3	HMI He	2323763	0.71	2599142	89.40	60	120	
Ir (IS)	193	3	HMI He	4914061	1.66	5525410	88.94	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-12-b
Data File Name	256SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:25:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	9638.142	ppb	9638.142	0.79	1137078	400000	
Mg	24	3	45	37801.728	ppb	37801.728	1.96	2215391	400000	
Al	27	3	45	16.512	ppb	16.512	22.77	430	400000	
K	39	3	45	3555.350	ppb	3555.350	1.41	187743	400000	
Ca	40	2	45	85146.265	ppb	85146.265	0.28	44953458	400000	
V	51	3	72	0.151	ppb	0.151	42.85	317	2000	
Cr	52	3	72	0.295	ppb	0.295	33.05	1498	5000	
Mn	55	3	72	9.911	ppb	9.911	2.79	4134	10000	
Fe	56	2	72	7.672	ppb	7.672	4.15	19062	10000	
Co	59	3	72	0.408	ppb	0.408	3.29	513	2000	
Ni	60	3	72	2.721	ppb	2.721	4.71	1018	5000	
Cu	63	3	72	0.160	ppb	0.160	62.72	470	5000	
Zn	66	3	72	17.255	ppb	17.255	5.26	2971	5000	
As	75	3	72	0.177	ppb	0.177	59.37	67	2000	
Se	78	2	72	0.265	ppb	0.265	41.40	17	2000	
(Se)	78	3	72	-1.010	ppb	-1.010	-160.43	25	2000	
Sr	88	3	72	460.604	ppb	460.604	1.38	239518	4000	
Mo	95	3	115	1.545	ppb	1.545	4.56	768	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-90.64	13	100	
Cd	111	3	115	0.044	ppb	0.044	55.53	13	2000	
Sn	120	3	115	0.406	ppb	0.406	25.88	765	2000	
Sb	121	3	115	0.196	ppb	0.196	25.77	253	1000	
Ba	137	3	115	161.099	ppb	161.099	1.10	37094	5000	
Tl	205	3	193	0.218	ppb	0.218	3.87	810	2000	
(Pb)	206	3	193	-0.006	ppb	-0.006	-255.64	130	100	
(Pb)	207	3	193	-0.013	ppb	-0.013	-188.28	277	100	
Pb	208	3	193	0.008	ppb	0.008	50.66	683	5000	
Th	232	3	193	0.053	ppb	0.053	51.00	4054	2000	
U	238	3	193	4.990	ppb	4.990	1.85	24442	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3844355	0.34	4331237	88.76	60	120	
Sc (IS)	45	3	HMI He	596612	0.40	654817	91.11	60	120	
Ge Internal standard	72	2	HMI H2	2060735	1.49	2307933	89.29	60	120	
Ge Internal standard	72	3	HMI He	696538	0.79	744678	93.54	60	120	
In Internal Standard	115	3	HMI He	2364743	1.59	2599142	90.98	60	120	
Ir (IS)	193	3	HMI He	4915220	0.76	5525410	88.96	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-2-b
Data File Name	257SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:27:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	26745.707	ppb	26745.707	1.86	3118483	400000	
Mg	24	3	45	13095.722	ppb	13095.722	2.09	778813	400000	
Al	27	3	45	22.839	ppb	22.839	3.78	574	400000	
K	39	3	45	7786.858	ppb	7786.858	2.00	388245	400000	
Ca	40	2	45	51825.534	ppb	51825.534	2.19	27728589	400000	
V	51	3	72	10.160	ppb	10.160	2.86	6320	2000	
Cr	52	3	72	3.052	ppb	3.052	5.90	3612	5000	
Mn	55	3	72	0.694	ppb	0.694	13.35	446	10000	
Fe	56	2	72	25.183	ppb	25.183	2.20	45724	10000	
Co	59	3	72	0.053	ppb	0.053	18.63	88	2000	
Ni	60	3	72	0.501	ppb	0.501	10.68	285	5000	
Cu	63	3	72	0.664	ppb	0.664	17.44	941	5000	
Zn	66	3	72	1.285	ppb	1.285	18.77	431	5000	
As	75	3	72	3.592	ppb	3.592	4.50	455	2000	
Se	78	2	72	2.534	ppb	2.534	12.52	147	2000	
(Se)	78	3	72	2.826	ppb	2.826	137.48	50	2000	
Sr	88	3	72	249.141	ppb	249.141	0.81	132174	4000	
Mo	95	3	115	4.642	ppb	4.642	4.99	2274	2000	
Ag	107	3	115	0.006	ppb	0.006	162.25	27	100	
Cd	111	3	115	0.001	ppb	0.001	2942.44	3	2000	
Sn	120	3	115	0.247	ppb	0.247	14.58	663	2000	
Sb	121	3	115	0.226	ppb	0.226	9.93	278	1000	
Ba	137	3	115	29.790	ppb	29.790	5.77	7003	5000	
Tl	205	3	193	0.003	ppb	0.003	112.70	115	2000	
(Pb)	206	3	193	0.028	ppb	0.028	145.61	172	100	
(Pb)	207	3	193	0.001	ppb	0.001	7987.30	298	100	
Pb	208	3	193	0.037	ppb	0.037	71.09	833	5000	
Th	232	3	193	0.053	ppb	0.053	33.72	4177	2000	
U	238	3	193	60.807	ppb	60.807	1.24	290856	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3895844	1.09	4331237	89.95	60	120	
Sc (IS)	45	3	HMI He	605454	1.64	654817	92.46	60	120	
Ge Internal standard	72	2	HMI H2	2182391	1.30	2307933	94.56	60	120	
Ge Internal standard	72	3	HMI He	710485	0.60	744678	95.41	60	120	
In Internal Standard	115	3	HMI He	2398784	2.54	2599142	92.29	60	120	
Ir (IS)	193	3	HMI He	5066106	1.20	5525410	91.69	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-4-b
Data File Name	258SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:29:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	52163.877	ppb	52163.877	1.51	6026467	400000	
Mg	24	3	45	8620.330	ppb	8620.330	0.61	511739	400000	
Al	27	3	45	6.046	ppb	6.046	43.09	210	400000	
K	39	3	45	5839.411	ppb	5839.411	0.39	296648	400000	
Ca	40	2	45	61434.109	ppb	61434.109	0.54	33268367	400000	
V	51	3	72	12.436	ppb	12.436	3.17	7678	2000	
Cr	52	3	72	4.063	ppb	4.063	1.86	4374	5000	
Mn	55	3	72	0.266	ppb	0.266	24.37	272	10000	
Fe	56	2	72	10.017	ppb	10.017	0.93	23326	10000	
Co	59	3	72	0.021	ppb	0.021	51.24	50	2000	
Ni	60	3	72	0.340	ppb	0.340	11.14	230	5000	
Cu	63	3	72	0.496	ppb	0.496	11.78	786	5000	
Zn	66	3	72	0.710	ppb	0.710	24.01	338	5000	
As	75	3	72	8.611	ppb	8.611	0.81	1023	2000	
Se	78	2	72	2.503	ppb	2.503	5.54	143	2000	
(Se)	78	3	72	1.545	ppb	1.545	265.30	42	2000	
Sr	88	3	72	215.011	ppb	215.011	2.41	114006	4000	
Mo	95	3	115	5.286	ppb	5.286	6.01	2547	2000	
Ag	107	3	115	0.020	ppb	0.020	25.29	48	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.168	ppb	0.168	84.25	596	2000	
Sb	121	3	115	0.168	ppb	0.168	23.07	233	1000	
Ba	137	3	115	58.373	ppb	58.373	3.10	13475	5000	
Tl	205	3	193	0.000	ppb	0.000	3751.49	103	2000	
(Pb)	206	3	193	-0.004	ppb	-0.004	-373.22	135	100	
(Pb)	207	3	193	0.014	ppb	0.014	395.33	308	100	
Pb	208	3	193	0.023	ppb	0.023	35.44	763	5000	
Th	232	3	193	0.050	ppb	0.050	46.55	4119	2000	
U	238	3	193	1476.126	ppb	1476.126	0.88	6949837	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3942903	1.03	4331237	91.03	60	120	
Sc (IS)	45	3	HMI He	604164	0.84	654817	92.26	60	120	
Ge Internal standard	72	2	HMI H2	2156187	0.23	2307933	93.43	60	120	
Ge Internal standard	72	3	HMI He	710192	1.33	744678	95.37	60	120	
In Internal Standard	115	3	HMI He	2363737	1.08	2599142	90.94	60	120	
Ir (IS)	193	3	HMI He	5009876	0.42	5525410	90.67	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-5-b
Data File Name	259SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:31:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	115.252	ppb	115.252	0.57	58964	400000	
Mg	24	3	45	2.367	ppb	2.367	52.50	314	400000	
Al	27	3	45	3.818	ppb	3.818	66.75	160	400000	
K	39	3	45	4.194	ppb	4.194	774.72	24095	400000	
Ca	40	2	45	19.429	ppb	19.429	9.19	23019	400000	
V	51	3	72	0.071	ppb	0.071	103.14	262	2000	
Cr	52	3	72	0.511	ppb	0.511	17.26	1611	5000	
Mn	55	3	72	0.056	ppb	0.056	237.96	177	10000	
Fe	56	2	72	2.111	ppb	2.111	3.72	11416	10000	
Co	59	3	72	-0.001	ppb	-0.001	-1452.06	22	2000	
Ni	60	3	72	0.054	ppb	0.054	120.06	127	5000	
Cu	63	3	72	0.087	ppb	0.087	36.96	393	5000	
Zn	66	3	72	0.083	ppb	0.083	117.24	225	5000	
As	75	3	72	-0.069	ppb	-0.069	-247.60	38	2000	
Se	78	2	72	0.030	ppb	0.030	213.55	4	2000	
(Se)	78	3	72	-0.913	ppb	-0.913	-320.57	25	2000	
Sr	88	3	72	0.064	ppb	0.064	39.95	72	4000	
Mo	95	3	115	0.000	ppb	0.000	9219.61	33	2000	
Ag	107	3	115	0.002	ppb	0.002	140.16	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-214.26	2	2000	
Sn	120	3	115	0.112	ppb	0.112	35.60	561	2000	
Sb	121	3	115	-0.003	ppb	-0.003	-1686.04	112	1000	
Ba	137	3	115	0.053	ppb	0.053	92.76	75	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-53.71	70	2000	
(Pb)	206	3	193	-0.049	ppb	-0.049	-41.21	85	100	
(Pb)	207	3	193	-0.036	ppb	-0.036	-60.55	262	100	
Pb	208	3	193	-0.014	ppb	-0.014	-59.79	600	5000	
Th	232	3	193	0.009	ppb	0.009	251.02	3970	2000	
U	238	3	193	0.323	ppb	0.323	9.24	2969	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3845632	1.92	4331237	88.79	60	120	
Sc (IS)	45	3	HMI He	595057	1.16	654817	90.87	60	120	
Ge Internal standard	72	2	HMI H2	2061981	1.36	2307933	89.34	60	120	
Ge Internal standard	72	3	HMI He	676997	0.85	744678	90.91	60	120	
In Internal Standard	115	3	HMI He	2377708	2.70	2599142	91.48	60	120	
Ir (IS)	193	3	HMI He	5055938	0.38	5525410	91.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-7-b
Data File Name	260SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:33:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.067	ppb	0.067	173.21	3	2000	
Na	23	3	45	24575.795	ppb	24575.795	1.01	2805917	400000	
Mg	24	3	45	14715.205	ppb	14715.205	1.84	855690	400000	
Al	27	3	45	11.943	ppb	11.943	45.20	330	400000	
K	39	3	45	6777.397	ppb	6777.397	1.00	333526	400000	
Ca	40	2	45	49658.413	ppb	49658.413	1.38	26755084	400000	
V	51	3	72	12.698	ppb	12.698	4.43	7667	2000	
Cr	52	3	72	3.526	ppb	3.526	4.77	3882	5000	
Mn	55	3	72	2.089	ppb	2.089	17.06	995	10000	
Fe	56	2	72	337.130	ppb	337.130	2.38	490225	10000	
Co	59	3	72	0.034	ppb	0.034	95.16	63	2000	
Ni	60	3	72	0.254	ppb	0.254	50.58	197	5000	
Cu	63	3	72	2.994	ppb	2.994	1.87	3011	5000	
Zn	66	3	72	10.360	ppb	10.360	2.08	1866	5000	
As	75	3	72	6.074	ppb	6.074	3.98	720	2000	
Se	78	2	72	3.214	ppb	3.214	7.64	182	2000	
(Se)	78	3	72	2.476	ppb	2.476	129.98	47	2000	
Sr	88	3	72	273.109	ppb	273.109	1.88	141694	4000	
Mo	95	3	115	4.874	ppb	4.874	3.17	2367	2000	
Ag	107	3	115	0.002	ppb	0.002	152.22	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-215.06	2	2000	
Sn	120	3	115	0.135	ppb	0.135	16.18	578	2000	
Sb	121	3	115	0.117	ppb	0.117	48.65	198	1000	
Ba	137	3	115	53.422	ppb	53.422	1.00	12423	5000	
Tl	205	3	193	-0.005	ppb	-0.005	-197.61	85	2000	
(Pb)	206	3	193	0.047	ppb	0.047	25.71	190	100	
(Pb)	207	3	193	0.053	ppb	0.053	85.77	343	100	
Pb	208	3	193	0.079	ppb	0.079	16.45	1001	5000	
Th	232	3	193	0.013	ppb	0.013	31.45	3907	2000	
U	238	3	193	6.381	ppb	6.381	2.14	31090	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3923236	2.30	4331237	90.58	60	120	
Sc (IS)	45	3	HMI He	591956	0.73	654817	90.40	60	120	
Ge Internal standard	72	2	HMI H2	2138091	1.97	2307933	92.64	60	120	
Ge Internal standard	72	3	HMI He	694913	1.28	744678	93.32	60	120	
In Internal Standard	115	3	HMI He	2380132	1.01	2599142	91.57	60	120	
Ir (IS)	193	3	HMI He	4952511	0.96	5525410	89.63	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	261_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:35:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.770	ppb	1.990	2452	50	99.5	90	110	
Na	23	3	45	50766.804	ppb	1.796	5880810	51000	99.5	90	110	
Mg	24	3	45	11091.724	ppb	0.965	660050	11000	100.8	90	110	
Al	27	3	45	1021.695	ppb	0.920	22176	1000	102.2	90	110	
K	39	3	45	10631.355	ppb	1.111	521494	11000	96.6	90	110	
Ca	40	2	45	10955.334	ppb	0.491	5974749	11000	99.6	90	110	
V	51	3	72	51.749	ppb	0.436	29802	50	103.5	90	110	
Cr	52	3	72	51.549	ppb	1.506	38422	50	103.1	90	110	
Mn	55	3	72	50.933	ppb	1.762	20029	50	101.9	90	110	
Fe	56	2	72	1069.559	ppb	1.574	1475912	1000	107.0	90	110	
Co	59	3	72	51.575	ppb	0.828	60306	50	103.2	90	110	
Ni	60	3	72	51.022	ppb	2.106	16638	50	102.0	90	110	
Cu	63	3	72	50.586	ppb	0.459	44563	50	101.2	90	110	
Zn	66	3	72	51.556	ppb	1.426	8213	50	103.1	90	110	
As	75	3	72	51.716	ppb	1.808	5635	50	103.4	90	110	
Se	78	2	72	51.600	ppb	3.236	2768	50	103.2	90	110	
(Se)	78	3	72	52.073	ppb	18.941	347	50	104.1	90	110	
Sr	88	3	72	104.314	ppb	0.454	52822	100	104.3	90	110	
Mo	95	3	115	50.207	ppb	1.528	24472	50	100.4	90	110	
Ag	107	3	115	49.092	ppb	1.220	79231	50	98.2	90	110	
Cd	111	3	115	50.106	ppb	1.006	11898	50	100.2	90	110	
Sn	120	3	115	51.516	ppb	0.149	37641	50	103.0	90	110	
Sb	121	3	115	49.506	ppb	0.630	36199	50	99.0	90	110	
Ba	137	3	115	48.991	ppb	2.037	11584	50	98.0	90	110	
Tl	205	3	193	50.759	ppb	0.932	169734	50	101.5	90	110	
(Pb)	206	3	193	50.801	ppb	1.661	57205	50	101.6	90	110	
(Pb)	207	3	193	50.029	ppb	1.039	50162	50	100.1	90	110	
Pb	208	3	193	50.443	ppb	0.964	228977	50	100.9	90	110	
Th	232	3	193	50.678	ppb	1.741	233244	50	101.4	90	110	
U	238	3	193	50.707	ppb	0.905	242066	50	101.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3963632	1.17	4331237	91.51	60	120	
Sc (IS)	45	3	HMI He	605690	0.17	654817	92.50	60	120	
Ge Internal standard	72	2	HMI H2	2054138	1.81	2307933	89.00	60	120	
Ge Internal standard	72	3	HMI He	677840	0.31	744678	91.02	60	120	
In Internal Standard	115	3	HMI He	2418859	0.95	2599142	93.06	60	120	
Ir (IS)	193	3	HMI He	5050979	1.36	5525410	91.41	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	262_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:36:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	82.307	ppb	7.7	56113	25	>RL
Mg	24	3	45	1.662	ppb	55.6	277	25	
Al	27	3	45	11.452	ppb	22.6	327	15	
K	39	3	45	-3.814	ppb	-1031.5	24108	50	
V	51	3	72	-0.069	ppb	-47.5	185	1	
Cr	52	3	72	-0.073	ppb	-112.1	1211	1	
Mn	55	3	72	0.132	ppb	55.4	210	0.5	
Co	59	3	72	0.013	ppb	77.5	38	0.5	
Ni	60	3	72	0.027	ppb	71.2	120	1	
Cu	63	3	72	0.074	ppb	99.0	388	1	
Zn	66	3	72	0.331	ppb	49.6	268	5	
As	75	3	72	-0.151	ppb	-28.3	30	1	
Se	78	2	72	0.042	ppb	103.3	5	1	
(Se)	78	3	72	-1.504	ppb	-135.6	22	1	
Sr	88	3	72	0.026	ppb	172.2	53	0.5	
Mo	95	3	115	0.043	ppb	65.6	55	0.5	
Ag	107	3	115	0.007	ppb	141.8	28	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.341	ppb	20.4	736	1	
Sb	121	3	115	-0.002	ppb	-427.5	115	0.6	
Ba	137	3	115	0.076	ppb	29.3	82	0.5	
Tl	205	3	193	0.000	ppb	1509.2	105	0.1	
(Pb)	206	3	193	-0.001	ppb	-940.3	140	1	
(Pb)	207	3	193	0.003	ppb	267.0	302	1	
Pb	208	3	193	0.025	ppb	18.4	780	0.5	
Th	232	3	193	0.599	ppb	25.9	6662	1	
U	238	3	193	0.027	ppb	41.4	1564	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3969673	0.73	4331237	91.65	60	120	
Sc (IS)	45	3	HMI He	604403	0.30	654817	92.30	60	120	
Ge Internal standard	72	2	HMI H2	2094436	1.55	2307933	90.75	60	120	
Ge Internal standard	72	3	HMI He	688883	1.09	744678	92.51	60	120	
In Internal Standard	115	3	HMI He	2421975	1.33	2599142	93.18	60	120	
Ir (IS)	193	3	HMI He	5069930	0.54	5525410	91.76	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-a
Data File Name	263SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:38:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	24506.881	ppb	24506.881	0.71	2870740	400000	
Mg	24	3	45	14746.065	ppb	14746.065	1.01	879829	400000	
Al	27	3	45	4.141	ppb	4.141	61.64	170	400000	
K	39	3	45	6631.883	ppb	6631.883	1.05	335358	400000	
Ca	40	2	45	50919.232	ppb	50919.232	1.98	27691974	400000	
V	51	3	72	12.340	ppb	12.340	4.32	7735	2000	
Cr	52	3	72	3.030	ppb	3.030	3.55	3647	5000	
Mn	55	3	72	1.679	ppb	1.679	16.63	861	10000	
Fe	56	2	72	69.101	ppb	69.101	2.36	110514	10000	
Co	59	3	72	0.036	ppb	0.036	57.21	68	2000	
Ni	60	3	72	0.262	ppb	0.262	6.15	207	5000	
Cu	63	3	72	0.991	ppb	0.991	6.30	1259	5000	
Zn	66	3	72	4.638	ppb	4.638	14.45	991	5000	
As	75	3	72	5.536	ppb	5.536	13.75	685	2000	
Se	78	2	72	3.428	ppb	3.428	4.14	199	2000	
(Se)	78	3	72	1.185	ppb	1.185	118.88	40	2000	
Sr	88	3	72	264.652	ppb	264.652	2.35	142403	4000	
Mo	95	3	115	5.202	ppb	5.202	4.14	2549	2000	
Ag	107	3	115	0.039	ppb	0.039	22.77	80	100	
Cd	111	3	115	0.008	ppb	0.008	461.95	5	2000	
Sn	120	3	115	0.332	ppb	0.332	25.53	725	2000	
Sb	121	3	115	0.143	ppb	0.143	34.34	218	1000	
Ba	137	3	115	53.108	ppb	53.108	2.38	12471	5000	
Tl	205	3	193	0.003	ppb	0.003	246.32	113	2000	
(Pb)	206	3	193	0.065	ppb	0.065	33.80	210	100	
(Pb)	207	3	193	0.089	ppb	0.089	82.68	380	100	
Pb	208	3	193	0.105	ppb	0.105	10.76	1121	5000	
Th	232	3	193	0.268	ppb	0.268	25.51	5060	2000	
U	238	3	193	6.353	ppb	6.353	0.56	31098	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3960166	2.47	4331237	91.43	60	120	
Sc (IS)	45	3	HMI He	607331	0.48	654817	92.75	60	120	
Ge Internal standard	72	2	HMI H2	2198122	1.97	2307933	95.24	60	120	
Ge Internal standard	72	3	HMI He	720712	1.05	744678	96.78	60	120	
In Internal Standard	115	3	HMI He	2404141	2.42	2599142	92.50	60	120	
Ir (IS)	193	3	HMI He	4973684	1.02	5525410	90.01	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-aSD@5
Data File Name	264SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:40:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	4946.550	ppb	4946.550	3.19	626399	400000	
Mg	24	3	45	2913.368	ppb	2913.368	0.36	176684	400000	
Al	27	3	45	0.995	ppb	0.995	94.73	103	400000	
K	39	3	45	1312.754	ppb	1312.754	3.17	87257	400000	
Ca	40	2	45	10044.367	ppb	10044.367	0.85	5627373	400000	
V	51	3	72	2.533	ppb	2.533	7.65	1794	2000	
Cr	52	3	72	0.788	ppb	0.788	9.13	1948	5000	
Mn	55	3	72	0.459	ppb	0.459	23.88	360	10000	
Fe	56	2	72	16.186	ppb	16.186	2.41	33149	10000	
Co	59	3	72	0.007	ppb	0.007	39.45	33	2000	
Ni	60	3	72	0.111	ppb	0.111	75.07	157	5000	
Cu	63	3	72	0.328	ppb	0.328	32.30	650	5000	
Zn	66	3	72	2.288	ppb	2.288	20.35	610	5000	
As	75	3	72	1.057	ppb	1.057	15.88	172	2000	
Se	78	2	72	0.658	ppb	0.658	3.76	41	2000	
(Se)	78	3	72	-0.406	ppb	-0.406	-212.84	30	2000	
Sr	88	3	72	53.152	ppb	53.152	2.32	28926	4000	
Mo	95	3	115	1.059	ppb	1.059	7.44	551	2000	
Ag	107	3	115	0.006	ppb	0.006	158.90	27	100	
Cd	111	3	115	-0.006	ppb	-0.006	-204.22	2	2000	
Sn	120	3	115	0.510	ppb	0.510	11.50	860	2000	
Sb	121	3	115	-0.013	ppb	-0.013	-217.58	107	1000	
Ba	137	3	115	10.715	ppb	10.715	4.72	2592	5000	
Tl	205	3	193	0.002	ppb	0.002	233.52	112	2000	
(Pb)	206	3	193	-0.014	ppb	-0.014	-166.11	127	100	
(Pb)	207	3	193	-0.001	ppb	-0.001	-3493.70	302	100	
Pb	208	3	193	0.022	ppb	0.022	68.61	778	5000	
Th	232	3	193	0.046	ppb	0.046	33.20	4214	2000	
U	238	3	193	1.249	ppb	1.249	2.61	7500	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4071128	1.01	4331237	93.99	60	120	
Sc (IS)	45	3	HMI He	616823	3.24	654817	94.20	60	120	
Ge Internal standard	72	2	HMI H2	2218652	1.10	2307933	96.13	60	120	
Ge Internal standard	72	3	HMI He	727852	2.16	744678	97.74	60	120	
In Internal Standard	115	3	HMI He	2426231	1.84	2599142	93.35	60	120	
Ir (IS)	193	3	HMI He	5145433	2.89	5525410	93.12	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-b ms
Data File Name	265SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:42:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.183	ppb	42.183	9.78	2102	2000	
Na	23	3	45	25458.482	ppb	25458.482	1.37	2973107	400000	
Mg	24	3	45	15560.230	ppb	15560.230	0.61	926133	400000	
Al	27	3	45	818.755	ppb	818.755	0.14	17792	400000	
K	39	3	45	7415.741	ppb	7415.741	0.27	371221	400000	
Ca	40	2	45	50797.377	ppb	50797.377	2.01	28017875	400000	
V	51	3	72	52.312	ppb	52.312	0.90	31839	2000	
Cr	52	3	72	43.071	ppb	43.071	1.58	34146	5000	
Mn	55	3	72	41.653	ppb	41.653	1.33	17342	10000	
Fe	56	2	72	883.311	ppb	883.311	2.70	1312045	10000	
Co	59	3	72	38.966	ppb	38.966	1.89	48158	2000	
Ni	60	3	72	39.503	ppb	39.503	0.58	13642	5000	
Cu	63	3	72	40.547	ppb	40.547	0.57	37819	5000	
Zn	66	3	72	45.184	ppb	45.184	2.48	7635	5000	
As	75	3	72	45.057	ppb	45.057	0.99	5195	2000	
Se	78	2	72	44.421	ppb	44.421	3.51	2562	2000	
(Se)	78	3	72	43.287	ppb	43.287	1.04	310	2000	
Sr	88	3	72	350.584	ppb	350.584	0.32	187546	4000	
Mo	95	3	115	45.771	ppb	45.771	1.08	21960	2000	
Ag	107	3	115	40.278	ppb	40.278	1.47	63985	100	
Cd	111	3	115	41.021	ppb	41.021	2.59	9587	2000	
Sn	120	3	115	40.498	ppb	40.498	1.33	29226	2000	
Sb	121	3	115	41.512	ppb	41.512	0.74	29890	1000	
Ba	137	3	115	95.094	ppb	95.094	2.28	22066	5000	
Tl	205	3	193	42.191	ppb	42.191	0.75	139696	2000	
(Pb)	206	3	193	41.684	ppb	41.684	2.44	46497	100	
(Pb)	207	3	193	41.017	ppb	41.017	2.66	40768	100	
Pb	208	3	193	41.905	ppb	41.905	1.57	188427	5000	
Th	232	3	193	42.067	ppb	42.067	0.59	192359	2000	
U	238	3	193	47.943	ppb	47.943	1.30	226658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4015379	0.51	4331237	92.71	60	120	
Sc (IS)	45	3	HMI He	605864	0.94	654817	92.52	60	120	
Ge Internal standard	72	2	HMI H2	2208618	1.35	2307933	95.70	60	120	
Ge Internal standard	72	3	HMI He	716453	0.93	744678	96.21	60	120	
In Internal Standard	115	3	HMI He	2380457	0.86	2599142	91.59	60	120	
Ir (IS)	193	3	HMI He	5000234	0.30	5525410	90.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-c msd
Data File Name	266SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:44:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.146	ppb	39.146	3.30	1933	2000	
Na	23	3	45	25146.464	ppb	25146.464	1.56	2818018	400000	
Mg	24	3	45	15508.215	ppb	15508.215	1.54	885559	400000	
Al	27	3	45	819.192	ppb	819.192	0.09	17077	400000	
K	39	3	45	7431.970	ppb	7431.970	0.96	356843	400000	
Ca	40	2	45	50965.142	ppb	50965.142	2.05	27447850	400000	
V	51	3	72	51.865	ppb	51.865	1.68	30248	2000	
Cr	52	3	72	43.005	ppb	43.005	1.59	32674	5000	
Mn	55	3	72	40.882	ppb	40.882	0.90	16311	10000	
Fe	56	2	72	870.636	ppb	870.636	2.86	1279888	10000	
Co	59	3	72	39.372	ppb	39.372	0.59	46628	2000	
Ni	60	3	72	38.685	ppb	38.685	1.44	12803	5000	
Cu	63	3	72	40.380	ppb	40.380	1.15	36089	5000	
Zn	66	3	72	44.535	ppb	44.535	3.31	7215	5000	
As	75	3	72	45.686	ppb	45.686	1.96	5047	2000	
Se	78	2	72	43.254	ppb	43.254	3.91	2469	2000	
(Se)	78	3	72	44.013	ppb	44.013	14.17	302	2000	
Sr	88	3	72	346.274	ppb	346.274	0.63	177489	4000	
Mo	95	3	115	45.265	ppb	45.265	2.22	21049	2000	
Ag	107	3	115	40.451	ppb	40.451	1.61	62284	100	
Cd	111	3	115	41.023	ppb	41.023	4.21	9290	2000	
Sn	120	3	115	40.784	ppb	40.784	2.72	28520	2000	
Sb	121	3	115	41.067	ppb	41.067	3.51	28656	1000	
Ba	137	3	115	94.484	ppb	94.484	2.31	21253	5000	
Tl	205	3	193	42.080	ppb	42.080	1.20	135573	2000	
(Pb)	206	3	193	41.631	ppb	41.631	1.83	45186	100	
(Pb)	207	3	193	40.958	ppb	40.958	0.70	39615	100	
Pb	208	3	193	41.486	ppb	41.486	1.55	181523	5000	
Th	232	3	193	42.498	ppb	42.498	1.37	189056	2000	
U	238	3	193	48.130	ppb	48.130	2.27	221401	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3921208	1.07	4331237	90.53	60	120	
Sc (IS)	45	3	HMI He	581212	0.74	654817	88.76	60	120	
Ge Internal standard	72	2	HMI H2	2185366	0.99	2307933	94.69	60	120	
Ge Internal standard	72	3	HMI He	686475	0.59	744678	92.18	60	120	
In Internal Standard	115	3	HMI He	2307955	2.20	2599142	88.80	60	120	
Ir (IS)	193	3	HMI He	4865609	0.53	5525410	88.06	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-a PDS
Data File Name	267SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:46:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	194.251	ppb	194.251	2.79	9188	2000	
Na	23	3	45	34648.863	ppb	34648.863	0.68	3930050	400000	
Mg	24	3	45	16658.221	ppb	16658.221	2.99	966834	400000	
Al	27	3	45	2062.325	ppb	2062.325	1.18	43591	400000	
K	39	3	45	8509.186	ppb	8509.186	0.71	411918	400000	
Ca	40	2	45	50930.702	ppb	50930.702	2.85	26359248	400000	
V	51	3	72	205.973	ppb	205.973	1.06	122152	2000	
Cr	52	3	72	194.912	ppb	194.912	0.44	146859	5000	
Mn	55	3	72	193.396	ppb	193.396	1.19	78299	10000	
Fe	56	2	72	86.031	ppb	86.031	1.88	128125	10000	
Co	59	3	72	191.395	ppb	191.395	0.79	231687	2000	
Ni	60	3	72	188.191	ppb	188.191	0.66	63245	5000	
Cu	63	3	72	191.557	ppb	191.557	1.47	173844	5000	
Zn	66	3	72	202.586	ppb	202.586	2.32	32781	5000	
As	75	3	72	194.657	ppb	194.657	1.78	21833	2000	
Se	78	2	72	196.568	ppb	196.568	1.05	10673	2000	
(Se)	78	3	72	194.285	ppb	194.285	2.87	1253	2000	
Sr	88	3	72	456.767	ppb	456.767	1.66	239401	4000	
Mo	95	3	115	206.507	ppb	206.507	2.64	97320	2000	
Ag	107	3	115	49.355	ppb	49.355	4.40	77063	100	
Cd	111	3	115	199.136	ppb	199.136	2.74	45747	2000	
Sn	120	3	115	204.441	ppb	204.441	2.07	143167	2000	
Sb	121	3	115	203.850	ppb	203.850	3.28	143907	1000	
Ba	137	3	115	253.922	ppb	253.922	3.49	57837	5000	
Tl	205	3	193	201.199	ppb	201.199	2.66	664181	2000	
(Pb)	206	3	193	201.853	ppb	201.853	2.25	224088	100	
(Pb)	207	3	193	198.893	ppb	198.893	2.06	196091	100	
Pb	208	3	193	200.866	ppb	200.866	2.55	898528	5000	
Th	232	3	193	404.046	ppb	404.046	2.71	1809650	2000	
U	238	3	193	218.201	ppb	218.201	2.21	1024181	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3768499	1.22	4331237	87.01	60	120	
Sc (IS)	45	3	HMI He	590887	1.61	654817	90.24	60	120	
Ge Internal standard	72	2	HMI H2	2080296	1.22	2307933	90.14	60	120	
Ge Internal standard	72	3	HMI He	701907	1.13	744678	94.26	60	120	
In Internal Standard	115	3	HMI He	2342048	3.22	2599142	90.11	60	120	
Ir (IS)	193	3	HMI He	4988692	0.87	5525410	90.29	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	268_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:48:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.999	ppb	3.537	2392	50	100.0	90	110	
Na	23	3	45	49204.597	ppb	0.214	5844924	51000	96.5	90	110	
Mg	24	3	45	10872.196	ppb	0.765	663275	11000	98.8	90	110	
Al	27	3	45	1026.344	ppb	4.178	22835	1000	102.6	90	110	
K	39	3	45	10472.034	ppb	2.489	526949	11000	95.2	90	110	
Ca	40	2	45	11049.688	ppb	1.244	5827658	11000	100.5	90	110	
V	51	3	72	52.728	ppb	2.293	31104	50	105.5	90	110	
Cr	52	3	72	51.508	ppb	2.492	39334	50	103.0	90	110	
Mn	55	3	72	51.494	ppb	2.408	20745	50	103.0	90	110	
Fe	56	2	72	1042.836	ppb	0.256	1435033	1000	104.3	90	110	
Co	59	3	72	50.868	ppb	1.952	60935	50	101.7	90	110	
Ni	60	3	72	49.497	ppb	1.348	16540	50	99.0	90	110	
Cu	63	3	72	50.357	ppb	0.665	45452	50	100.7	90	110	
Zn	66	3	72	52.617	ppb	3.501	8583	50	105.2	90	110	
As	75	3	72	51.314	ppb	1.456	5728	50	102.6	90	110	
Se	78	2	72	50.592	ppb	3.215	2704	50	101.2	90	110	
(Se)	78	3	72	53.089	ppb	12.952	361	50	106.2	90	110	
Sr	88	3	72	104.043	ppb	1.984	53975	100	104.0	90	110	
Mo	95	3	115	50.642	ppb	1.872	24592	50	101.3	90	110	
Ag	107	3	115	50.795	ppb	1.583	81669	50	101.6	90	110	
Cd	111	3	115	50.571	ppb	1.629	11963	50	101.1	90	110	
Sn	120	3	115	52.564	ppb	1.815	38249	50	105.1	90	110	
Sb	121	3	115	51.618	ppb	1.630	37594	50	103.2	90	110	
Ba	137	3	115	50.900	ppb	2.765	11986	50	101.8	90	110	
Tl	205	3	193	51.394	ppb	1.655	173472	50	102.8	90	110	
(Pb)	206	3	193	51.268	ppb	1.912	58276	50	102.5	90	110	
(Pb)	207	3	193	49.882	ppb	0.986	50488	50	99.8	90	110	
Pb	208	3	193	50.900	ppb	0.961	233222	50	101.8	90	110	
Th	232	3	193	52.783	ppb	0.924	245081	50	105.6	90	110	
U	238	3	193	51.517	ppb	1.614	248223	50	103.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3833872	2.87	4331237	88.52	60	120	
Sc (IS)	45	3	HMI He	620953	0.54	654817	94.83	60	120	
Ge Internal standard	72	2	HMI H2	2047795	3.80	2307933	88.73	60	120	
Ge Internal standard	72	3	HMI He	694488	0.61	744678	93.26	60	120	
In Internal Standard	115	3	HMI He	2409721	0.59	2599142	92.71	60	120	
Ir (IS)	193	3	HMI He	5098619	1.04	5525410	92.28	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	269_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:49:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	40.464	ppb	31.8	51632	25	>RL
Mg	24	3	45	1.182	ppb	98.2	250	25	
Al	27	3	45	9.055	ppb	28.7	277	15	
K	39	3	45	-21.036	ppb	-142.2	23467	50	
V	51	3	72	-0.076	ppb	-33.1	182	1	
Cr	52	3	72	-0.008	ppb	-1965.2	1263	1	
Mn	55	3	72	0.000	ppb	21731.0	158	0.5	
Co	59	3	72	0.011	ppb	57.5	37	0.5	
Ni	60	3	72	0.025	ppb	39.5	120	1	
Cu	63	3	72	0.100	ppb	38.5	413	1	
Zn	66	3	72	0.906	ppb	30.1	360	5	
As	75	3	72	0.105	ppb	43.7	58	1	
Se	78	2	72	0.028	ppb	258.2	4	1	
(Se)	78	3	72	-1.521	ppb	-61.6	22	1	
Sr	88	3	72	0.032	ppb	67.4	57	0.5	
Mo	95	3	115	0.110	ppb	38.1	87	0.5	
Ag	107	3	115	0.003	ppb	429.3	22	1	
Cd	111	3	115	0.008	ppb	259.2	5	0.5	
Sn	120	3	115	0.392	ppb	21.2	765	1	
Sb	121	3	115	-0.002	ppb	-483.5	113	0.6	
Ba	137	3	115	0.037	ppb	368.6	72	0.5	
Tl	205	3	193	0.023	ppb	34.0	182	0.1	
(Pb)	206	3	193	0.018	ppb	214.7	162	1	
(Pb)	207	3	193	0.003	ppb	1021.9	302	1	
Pb	208	3	193	0.029	ppb	44.6	800	0.5	
Th	232	3	193	0.864	ppb	38.0	7846	1	
U	238	3	193	0.046	ppb	76.4	1653	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3912840	2.53	4331237	90.34	60	120	
Sc (IS)	45	3	HMI He	608339	1.65	654817	92.90	60	120	
Ge Internal standard	72	2	HMI H2	2119418	1.30	2307933	91.83	60	120	
Ge Internal standard	72	3	HMI He	691682	1.44	744678	92.88	60	120	
In Internal Standard	115	3	HMI He	2394697	0.82	2599142	92.13	60	120	
Ir (IS)	193	3	HMI He	5066692	1.63	5525410	91.70	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	270LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:51:47-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	1	0.0	70	130	>+/-30%
Na	23	3	45	-83.524	ppb	-23.020	68517	50	-167.0	70	130	>+/-30%
Mg	24	3	45	2.991	ppb	110.191	657	50	6.0	70	130	>+/-30%
Al	27	3	45	-2.119	ppb	-59.826	63	50	-4.2	70	130	>+/-30%
K	39	3	45	-247.231	ppb	-8.470	23533	100	-247.2	70	130	>+/-30%
V	51	3	72	-0.309	ppb	-7.996	85	5	-6.2	70	130	>+/-30%
Cr	52	3	72	-1.215	ppb	-1.057	693	2	-60.7	70	130	>+/-30%
Mn	55	3	72	-0.146	ppb	-17.302	185	1	-14.6	70	130	>+/-30%
Co	59	3	72	0.001	ppb	5.035	45	1	0.1	70	130	>+/-30%
Ni	60	3	72	-0.231	ppb	-7.001	65	2	-11.5	70	130	>+/-30%
Cu	63	3	72	-0.084	ppb	-13.268	458	2	-4.2	70	130	>+/-30%
Zn	66	3	72	-0.569	ppb	-22.926	233	10	-5.7	70	130	>+/-30%
As	75	3	72	-0.235	ppb	-33.786	38	5	-4.7	70	130	>+/-30%
Se	78	2	72	-0.003	ppb	-713.443	4	5	-0.1	70	130	>+/-30%
(Se)	78	3	72	-3.851	ppb	-17.423	13	5	-77.0	70	130	>+/-30%
Sr	88	3	72	0.008	ppb	743.661	82	1	0.8	70	130	>+/-30%
Mo	95	3	115	-0.043	ppb	-41.666	23	2	-2.1	70	130	>+/-30%
Ag	107	3	115	0.012	ppb	27.556	65	1	1.2	70	130	>+/-30%
Cd	111	3	115	0.034	ppb	150.660	20	1	3.4	70	130	>+/-30%
Sn	120	3	115	-0.427	ppb	-17.224	327	10	-4.3	70	130	>+/-30%
Sb	121	3	115	-0.112	ppb	-21.121	62	2	-5.6	70	130	>+/-30%
Ba	137	3	115	-0.136	ppb	-10.843	57	1	-13.6	70	130	>+/-30%
Tl	205	3	193	0.014	ppb	31.587	275	1	1.4	70	130	>+/-30%
(Pb)	206	3	193	0.071	ppb	14.996	400	1	7.1	70	130	>+/-30%
(Pb)	207	3	193	0.063	ppb	40.789	655	1	6.3	70	130	>+/-30%
Pb	208	3	193	0.072	ppb	15.775	1804	1	7.2	70	130	>+/-30%
Th	232	3	193	0.041	ppb	14.892	7490	2	2.1	70	130	>+/-30%
U	238	3	193	0.022	ppb	46.863	2794	1	2.2	70	130	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6950848	2.12	4331237	160.48	60	120	IS Failed
Sc (IS)	45	3	HMI He	1116679	2.00	654817	170.53	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3716138	1.26	2307933	161.02	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1274428	0.25	744678	171.14	60	120	IS Failed
In Internal Standard	115	3	HMI He	4332513	1.15	2599142	166.69	60	120	IS Failed
Ir (IS)	193	3	HMI He	9197845	0.84	5525410	166.46	60	120	IS Failed

Blank Report

Sample Table

Sample Name	mb 280-600040/1-a
Data File Name	271_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:53:38-07:00
Sample Type	Blank
Dilution	1
Comment	600040 6020
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	27.453	ppb	29.92055448	50463	25
Mg	24	3	45	14.926	ppb	11.29359744	1078	25
Al	27	3	45	19.049	ppb	12.73908124	497	15
K	39	3	45	-21.705	ppb	-161.8513588	23574	50
V	51	3	72	0.004	ppb	876.088293	230	1
Cr	52	3	72	0.163	ppb	98.86515795	1398	1
Mn	55	3	72	0.685	ppb	18.05149879	433	0.5
Co	59	3	72	0.026	ppb	83.24997057	55	0.5
Ni	60	3	72	0.078	ppb	138.9326491	138	1
Cu	63	3	72	0.430	ppb	3.129732998	711	1
Zn	66	3	72	0.325	ppb	69.18205923	270	5
As	75	3	72	0.074	ppb	481.6638874	55	1
(Se)	78	3	72	-0.463	ppb	-404.9064747	28	1
Sr	88	3	72	0.064	ppb	104.0194866	73	0.5
Mo	95	3	115	0.015	ppb	284.064948	42	0.5
Ag	107	3	115	0.001	ppb	1510.684607	18	1
Cd	111	3	115	-0.006	ppb	-204.6256454	2	0.5
Sn	120	3	115	0.437	ppb	21.76169015	811	1
Sb	121	3	115	0.004	ppb	490.9893609	120	0.6
Ba	137	3	115	0.200	ppb	86.06775194	112	0.5
Tl	205	3	193	0.004	ppb	167.6538885	118	0.1
(Pb)	206	3	193	0.000	ppb	-128033.0615	142	1
(Pb)	207	3	193	-0.001	ppb	-2876.778833	298	1
Pb	208	3	193	0.017	ppb	145.4049214	750	0.5
Th	232	3	193	0.221	ppb	34.66733066	4974	1
U	238	3	193	0.025	ppb	85.24021267	1564	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3938525	2.01	4331237	90.93	60	120	
Sc (IS)	45	3	HMI He	612215	0.53	654817	93.49	60	120	
Ge Internal standard	72	2	HMI H2	2093306	0.99	2307933	90.70	60	120	
Ge Internal standard	72	3	HMI He	695439	0.73	744678	93.39	60	120	
In Internal Standard	115	3	HMI He	2438445	1.34	2599142	93.82	60	120	
Ir (IS)	193	3	HMI He	5097472	0.47	5525410	92.26	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600040/2-a
Data File Name	272_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:55:31-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600040 6020
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.037	37.037	ppb	8.842	1806	40	92.6	80	120	
Na	23	3	45	782.251	782.251	ppb	4.211	135453	40	1955.6	80	120	>+/-20%
Mg	24	3	45	707.543	707.543	ppb	1.896	41904	40	1768.9	80	120	>+/-20%
Al	27	3	45	750.544	750.544	ppb	2.055	16169	40	1876.4	80	120	>+/-20%
K	39	3	45	711.373	711.373	ppb	10.413	57069	40	1778.4	80	120	>+/-20%
Ca	40	2	45	823.689	823.689	ppb	2.444	451758	40	2059.2	80	120	>+/-20%
V	51	3	72	38.388	38.388	ppb	0.577	22567	40	96.0	80	120	
Cr	52	3	72	38.274	38.274	ppb	2.103	29370	40	95.7	80	120	
Mn	55	3	72	38.560	38.560	ppb	1.834	15478	40	96.4	80	120	
Fe	56	2	72	801.752	801.752	ppb	3.438	1125394	40	2004.4	80	120	>+/-20%
(Fe)	56	3	72	762.227	762.227	ppb	0.584	472974	40	1905.6	80	120	>+/-20%
Co	59	3	72	38.478	38.478	ppb	1.020	45813	40	96.2	80	120	
Ni	60	3	72	37.925	37.925	ppb	1.756	12619	40	94.8	80	120	
Cu	63	3	72	38.759	38.759	ppb	0.925	34840	40	96.9	80	120	
Zn	66	3	72	39.077	39.077	ppb	2.845	6390	40	97.7	80	120	
As	75	3	72	37.256	37.256	ppb	2.674	4147	40	93.1	80	120	
Se	78	2	72	39.567	39.567	ppb	6.738	2154	40	98.9	80	120	
(Se)	78	3	72	41.635	41.635	ppb	24.324	288	40	104.1	80	120	
Sr	88	3	72	77.266	77.266	ppb	2.311	39843	40	193.2	80	120	>+/-20%
Mo	95	3	115	37.604	37.604	ppb	1.706	18090	40	94.0	80	120	
Ag	107	3	115	37.787	37.787	ppb	1.432	60169	40	94.5	80	120	
Cd	111	3	115	37.797	37.797	ppb	1.861	8854	40	94.5	80	120	
Sn	120	3	115	36.329	36.329	ppb	2.470	26324	40	90.8	80	120	
Sb	121	3	115	38.832	38.832	ppb	3.085	28032	40	97.1	80	120	
Ba	137	3	115	38.916	38.916	ppb	0.823	9092	40	97.3	80	120	
Tl	205	3	193	38.559	38.559	ppb	1.047	129847	40	96.4	80	120	
(Pb)	206	3	193	38.487	38.487	ppb	1.219	43677	40	96.2	80	120	
(Pb)	207	3	193	37.781	37.781	ppb	0.070	38219	40	94.5	80	120	
Pb	208	3	193	38.248	38.248	ppb	0.287	174977	40	95.6	80	120	
Th	232	3	193	38.607	38.607	ppb	1.501	179865	40	96.5	80	120	
U	238	3	193	38.429	38.429	ppb	0.499	185071	40	96.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882454	2.85	4331237	89.64	60	120	
Sc (IS)	45	3	HMI He	600507	1.80	654817	91.71	60	120	
Ge Internal standard	72	2	HMI H2	2085579	2.43	2307933	90.37	60	120	
Ge Internal standard	72	3	HMI He	690173	1.04	744678	92.68	60	120	
In Internal Standard	115	3	HMI He	2386561	1.84	2599142	91.82	60	120	
Ir (IS)	193	3	HMI He	5085618	1.15	5525410	92.04	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-a
Data File Name	273SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:57:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.729	ppb	1.729	13.11	83	2000	
Na	23	3	45	35613.320	ppb	35613.320	3.77	4008381	400000	
Mg	24	3	45	5380.630	ppb	5380.630	1.21	310171	400000	
Al	27	3	45	13511.061	ppb	13511.061	1.42	283053	400000	
K	39	3	45	2339.435	ppb	2339.435	2.59	129508	400000	
Ca	40	2	45	22664.984	ppb	22664.984	1.26	11839570	400000	
V	51	3	72	23.828	ppb	23.828	4.14	14108	2000	
Cr	52	3	72	17.022	ppb	17.022	4.33	13785	5000	
Mn	55	3	72	226.649	ppb	226.649	1.87	90318	10000	
Fe	56	2	72	14203.545	ppb	14203.545	3.32	20203277	10000	
Co	59	3	72	7.063	ppb	7.063	2.03	8440	2000	
Ni	60	3	72	20.835	ppb	20.835	0.92	6993	5000	
Cu	63	3	72	8.997	ppb	8.997	3.01	8345	5000	
Zn	66	3	72	30.874	ppb	30.874	8.13	5098	5000	
As	75	3	72	4.312	ppb	4.312	8.43	521	2000	
Se	78	2	72	0.268	ppb	0.268	33.24	17	2000	
(Se)	78	3	72	4.146	ppb	4.146	32.89	57	2000	
Sr	88	3	72	93.657	ppb	93.657	0.92	48360	4000	
Mo	95	3	115	0.272	ppb	0.272	22.85	162	2000	
Ag	107	3	115	0.018	ppb	0.018	55.40	45	100	
Cd	111	3	115	0.044	ppb	0.044	72.85	13	2000	
Sn	120	3	115	0.675	ppb	0.675	2.67	951	2000	
Sb	121	3	115	0.169	ppb	0.169	20.53	233	1000	
Ba	137	3	115	485.514	ppb	485.514	2.34	111222	5000	
Tl	205	3	193	0.190	ppb	0.190	6.28	726	2000	
(Pb)	206	3	193	8.312	ppb	8.312	1.70	9320	100	
(Pb)	207	3	193	7.581	ppb	7.581	4.05	7722	100	
Pb	208	3	193	8.024	ppb	8.024	1.04	36364	5000	
Th	232	3	193	6.089	ppb	6.089	1.99	30961	2000	
U	238	3	193	0.669	ppb	0.669	4.40	4530	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3801116	1.20	4331237	87.76	60	120	
Sc (IS)	45	3	HMI He	586586	0.45	654817	89.58	60	120	
Ge Internal standard	72	2	HMI H2	2128933	1.19	2307933	92.24	60	120	
Ge Internal standard	72	3	HMI He	691175	1.47	744678	92.82	60	120	
In Internal Standard	115	3	HMI He	2355817	1.99	2599142	90.64	60	120	
Ir (IS)	193	3	HMI He	4966539	0.88	5525410	89.89	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-aSD@5
Data File Name	274SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:59:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.349	ppb	0.349	62.15	17	2000	
Na	23	3	45	7599.747	ppb	7599.747	0.90	882202	400000	
Mg	24	3	45	1130.622	ppb	1130.622	1.56	64658	400000	
Al	27	3	45	2851.933	ppb	2851.933	1.60	59210	400000	
K	39	3	45	476.468	ppb	476.468	4.05	44696	400000	
Ca	40	2	45	4802.654	ppb	4802.654	0.80	2505618	400000	
V	51	3	72	5.016	ppb	5.016	1.50	3140	2000	
Cr	52	3	72	3.796	ppb	3.796	1.54	4049	5000	
Mn	55	3	72	46.918	ppb	46.918	3.23	18765	10000	
Fe	56	2	72	2976.230	ppb	2976.230	0.77	4193063	10000	
Co	59	3	72	1.559	ppb	1.559	3.10	1876	2000	
Ni	60	3	72	4.363	ppb	4.363	6.72	1548	5000	
Cu	63	3	72	1.829	ppb	1.829	2.47	1949	5000	
Zn	66	3	72	7.360	ppb	7.360	10.48	1378	5000	
As	75	3	72	0.807	ppb	0.807	35.49	135	2000	
Se	78	2	72	0.053	ppb	0.053	197.78	5	2000	
(Se)	78	3	72	-1.782	ppb	-1.782	-45.11	20	2000	
Sr	88	3	72	19.149	ppb	19.149	1.39	9892	4000	
Mo	95	3	115	0.093	ppb	0.093	34.16	77	2000	
Ag	107	3	115	0.008	ppb	0.008	123.35	28	100	
Cd	111	3	115	0.031	ppb	0.031	69.52	10	2000	
Sn	120	3	115	0.458	ppb	0.458	7.62	790	2000	
Sb	121	3	115	0.014	ppb	0.014	59.19	122	1000	
Ba	137	3	115	99.175	ppb	99.175	2.62	22513	5000	
Tl	205	3	193	0.046	ppb	0.046	41.40	250	2000	
(Pb)	206	3	193	1.716	ppb	1.716	8.15	2016	100	
(Pb)	207	3	193	1.650	ppb	1.650	7.11	1894	100	
Pb	208	3	193	1.713	ppb	1.713	0.90	8209	5000	
Th	232	3	193	1.387	ppb	1.387	2.02	9954	2000	
U	238	3	193	0.149	ppb	0.149	20.45	2084	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3781160	1.05	4331237	87.30	60	120	
Sc (IS)	45	3	HMI He	580710	0.64	654817	88.68	60	120	
Ge Internal standard	72	2	HMI H2	2104724	0.89	2307933	91.20	60	120	
Ge Internal standard	72	3	HMI He	689129	1.15	744678	92.54	60	120	
In Internal Standard	115	3	HMI He	2328924	1.62	2599142	89.60	60	120	
Ir (IS)	193	3	HMI He	4926200	1.16	5525410	89.16	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-b ms
Data File Name	275SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:01:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.193	ppb	37.193	5.40	1793	2000	
Na	23	3	45	34383.491	ppb	34383.491	2.10	3901549	400000	
Mg	24	3	45	5950.278	ppb	5950.278	1.84	345632	400000	
Al	27	3	45	16282.559	ppb	16282.559	1.44	343728	400000	
K	39	3	45	2970.574	ppb	2970.574	1.71	159325	400000	
Ca	40	2	45	22178.155	ppb	22178.155	0.43	11887078	400000	
V	51	3	72	60.578	ppb	60.578	0.83	36010	2000	
Cr	52	3	72	52.733	ppb	52.733	0.19	40585	5000	
Mn	55	3	72	250.988	ppb	250.988	1.57	101350	10000	
Fe	56	2	72	15634.054	ppb	15634.054	2.15	22174927	10000	
Co	59	3	72	41.891	ppb	41.891	0.96	50617	2000	
Ni	60	3	72	54.196	ppb	54.196	3.81	18253	5000	
Cu	63	3	72	44.859	ppb	44.859	1.58	40870	5000	
Zn	66	3	72	67.867	ppb	67.867	3.57	11104	5000	
As	75	3	72	37.577	ppb	37.577	5.92	4244	2000	
Se	78	2	72	35.341	ppb	35.341	3.10	1960	2000	
(Se)	78	3	72	45.454	ppb	45.454	3.80	317	2000	
Sr	88	3	72	160.106	ppb	160.106	0.16	83754	4000	
Mo	95	3	115	34.800	ppb	34.800	0.64	16527	2000	
Ag	107	3	115	35.391	ppb	35.391	0.54	55625	100	
Cd	111	3	115	35.128	ppb	35.128	0.93	8122	2000	
Sn	120	3	115	29.994	ppb	29.994	0.57	21540	2000	
Sb	121	3	115	26.445	ppb	26.445	0.63	18881	1000	
Ba	137	3	115	497.975	ppb	497.975	1.42	114066	5000	
Tl	205	3	193	36.294	ppb	36.294	0.28	120840	2000	
(Pb)	206	3	193	43.736	ppb	43.736	1.74	49043	100	
(Pb)	207	3	193	43.274	ppb	43.274	1.92	43230	100	
Pb	208	3	193	43.849	ppb	43.849	0.82	198213	5000	
Th	232	3	193	42.215	ppb	42.215	1.42	194068	2000	
U	238	3	193	37.147	ppb	37.147	0.47	176901	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899632	0.32	4331237	90.04	60	120	
Sc (IS)	45	3	HMI He	591129	0.92	654817	90.27	60	120	
Ge Internal standard	72	2	HMI H2	2123039	2.14	2307933	91.99	60	120	
Ge Internal standard	72	3	HMI He	700426	0.56	744678	94.06	60	120	
In Internal Standard	115	3	HMI He	2355287	1.50	2599142	90.62	60	120	
Ir (IS)	193	3	HMI He	5027584	0.77	5525410	90.99	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-c msd
Data File Name	276SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:02:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.192	ppb	42.192	1.29	1974	2000	
Na	23	3	45	37979.322	ppb	37979.322	1.20	4250331	400000	
Mg	24	3	45	6701.624	ppb	6701.624	0.97	384322	400000	
Al	27	3	45	18591.090	ppb	18591.090	1.32	387477	400000	
K	39	3	45	3350.166	ppb	3350.166	2.63	174394	400000	
Ca	40	2	45	25335.590	ppb	25335.590	2.94	13140652	400000	
V	51	3	72	65.658	ppb	65.658	1.63	38552	2000	
Cr	52	3	72	58.600	ppb	58.600	0.57	44432	5000	
Mn	55	3	72	280.089	ppb	280.089	1.35	111766	10000	
Fe	56	2	72	17501.519	ppb	17501.519	1.10	24436699	10000	
Co	59	3	72	46.538	ppb	46.538	0.25	55573	2000	
Ni	60	3	72	61.621	ppb	61.621	1.08	20498	5000	
Cu	63	3	72	49.338	ppb	49.338	1.09	44394	5000	
Zn	66	3	72	72.779	ppb	72.779	2.77	11751	5000	
As	75	3	72	41.408	ppb	41.408	0.68	4617	2000	
Se	78	2	72	39.014	ppb	39.014	5.04	2129	2000	
(Se)	78	3	72	42.284	ppb	42.284	13.45	293	2000	
Sr	88	3	72	177.600	ppb	177.600	0.73	91816	4000	
Mo	95	3	115	38.190	ppb	38.190	1.39	17798	2000	
Ag	107	3	115	39.368	ppb	39.368	2.55	60721	100	
Cd	111	3	115	39.654	ppb	39.654	0.68	8999	2000	
Sn	120	3	115	33.940	ppb	33.940	2.72	23854	2000	
Sb	121	3	115	30.031	ppb	30.031	2.07	21026	1000	
Ba	137	3	115	563.160	ppb	563.160	2.87	126588	5000	
Tl	205	3	193	40.148	ppb	40.148	1.71	131976	2000	
(Pb)	206	3	193	49.121	ppb	49.121	0.71	54383	100	
(Pb)	207	3	193	47.789	ppb	47.789	1.01	47114	100	
Pb	208	3	193	48.701	ppb	48.701	1.81	217293	5000	
Th	232	3	193	47.416	ppb	47.416	2.24	214738	2000	
U	238	3	193	41.430	ppb	41.430	2.77	194613	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3775988	2.45	4331237	87.18	60	120	
Sc (IS)	45	3	HMI He	583595	0.07	654817	89.12	60	120	
Ge Internal standard	72	2	HMI H2	2089592	1.30	2307933	90.54	60	120	
Ge Internal standard	72	3	HMI He	692233	0.32	744678	92.96	60	120	
In Internal Standard	115	3	HMI He	2311755	1.45	2599142	88.94	60	120	
Ir (IS)	193	3	HMI He	4965344	2.50	5525410	89.86	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-a PDS
Data File Name	277SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:04:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	199.719	ppb	199.719	0.52	9475	2000	
Na	23	3	45	44088.939	ppb	44088.939	2.48	5107332	400000	
Mg	24	3	45	7204.488	ppb	7204.488	1.73	428332	400000	
Al	27	3	45	15361.511	ppb	15361.511	1.15	331950	400000	
K	39	3	45	4277.988	ppb	4277.988	0.35	224139	400000	
Ca	40	2	45	24684.807	ppb	24684.807	2.73	13168370	400000	
V	51	3	72	216.906	ppb	216.906	3.30	129343	2000	
Cr	52	3	72	209.466	ppb	209.466	2.59	158625	5000	
Mn	55	3	72	416.173	ppb	416.173	2.34	169293	10000	
Fe	56	2	72	14300.006	ppb	14300.006	3.02	20452972	10000	
Co	59	3	72	200.051	ppb	200.051	1.65	243567	2000	
Ni	60	3	72	208.546	ppb	208.546	2.48	70485	5000	
Cu	63	3	72	205.017	ppb	205.017	1.42	187112	5000	
Zn	66	3	72	227.988	ppb	227.988	2.45	37070	5000	
As	75	3	72	194.668	ppb	194.668	3.83	21953	2000	
Se	78	2	72	200.180	ppb	200.180	3.87	11181	2000	
(Se)	78	3	72	212.206	ppb	212.206	7.61	1373	2000	
Sr	88	3	72	289.091	ppb	289.091	0.35	152434	4000	
Mo	95	3	115	200.470	ppb	200.470	2.20	96289	2000	
Ag	107	3	115	49.707	ppb	49.707	3.54	79121	100	
Cd	111	3	115	196.295	ppb	196.295	3.42	45957	2000	
Sn	120	3	115	205.445	ppb	205.445	2.67	146614	2000	
Sb	121	3	115	203.886	ppb	203.886	1.78	146714	1000	
Ba	137	3	115	688.727	ppb	688.727	3.12	159783	5000	
Tl	205	3	193	203.701	ppb	203.701	1.73	681358	2000	
(Pb)	206	3	193	212.929	ppb	212.929	2.39	239498	100	
(Pb)	207	3	193	207.901	ppb	207.901	1.00	207698	100	
Pb	208	3	193	211.011	ppb	211.011	1.86	956404	5000	
Th	232	3	193	196.722	ppb	196.722	1.36	895189	2000	
U	238	3	193	211.440	ppb	211.440	0.50	1005867	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3883398	2.33	4331237	89.66	60	120	
Sc (IS)	45	3	HMI He	605009	1.23	654817	92.39	60	120	
Ge Internal standard	72	2	HMI H2	2140893	1.93	2307933	92.76	60	120	
Ge Internal standard	72	3	HMI He	706179	2.20	744678	94.83	60	120	
In Internal Standard	115	3	HMI He	2386927	2.82	2599142	91.84	60	120	
Ir (IS)	193	3	HMI He	5055616	2.21	5525410	91.50	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-1-a
Data File Name	278SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:06:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	299770.616	ppb	299770.616	1.56	32410189	400000	
Mg	24	3	45	78985.660	ppb	78985.660	0.54	4415490	400000	
Al	27	3	45	35.058	ppb	35.058	5.73	787	400000	
K	39	3	45	6813.589	ppb	6813.589	1.19	322232	400000	
Ca	40	2	45	352375.773	ppb	352375.773	1.42	183550217	400000	
V	51	3	72	0.434	ppb	0.434	10.52	460	2000	
Cr	52	3	72	0.167	ppb	0.167	59.66	1336	5000	
Mn	55	3	72	5.795	ppb	5.795	5.82	2366	10000	
Fe	56	2	72	39.258	ppb	39.258	3.34	62731	10000	
Co	59	3	72	0.024	ppb	0.024	63.45	50	2000	
Ni	60	3	72	1.376	ppb	1.376	14.41	543	5000	
Cu	63	3	72	0.706	ppb	0.706	20.17	915	5000	
Zn	66	3	72	2.809	ppb	2.809	8.65	635	5000	
As	75	3	72	0.379	ppb	0.379	23.89	85	2000	
Se	78	2	72	7.000	ppb	7.000	2.80	380	2000	
(Se)	78	3	72	7.607	ppb	7.607	30.18	75	2000	
Sr	88	3	72	7516.991	ppb	7516.991	0.13	3723290	4000	
Mo	95	3	115	1.986	ppb	1.986	7.55	943	2000	
Ag	107	3	115	0.016	ppb	0.016	19.46	40	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.330	ppb	0.330	31.66	686	2000	
Sb	121	3	115	0.081	ppb	0.081	46.23	165	1000	
Ba	137	3	115	14.690	ppb	14.690	4.85	3317	5000	
Tl	205	3	193	0.061	ppb	0.061	24.64	287	2000	
(Pb)	206	3	193	0.179	ppb	0.179	21.88	320	100	
(Pb)	207	3	193	0.150	ppb	0.150	25.20	418	100	
Pb	208	3	193	0.158	ppb	0.158	10.18	1289	5000	
Th	232	3	193	1.178	ppb	1.178	18.47	8667	2000	
U	238	3	193	27.978	ppb	27.978	0.63	125659	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3794056	0.87	4331237	87.60	60	120	
Sc (IS)	45	3	HMI He	569120	0.83	654817	86.91	60	120	
Ge Internal standard	72	2	HMI H2	2066906	0.50	2307933	89.56	60	120	
Ge Internal standard	72	3	HMI He	663523	0.51	744678	89.10	60	120	
In Internal Standard	115	3	HMI He	2282369	2.49	2599142	87.81	60	120	
Ir (IS)	193	3	HMI He	4729001	0.94	5525410	85.59	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-2-a
Data File Name	279SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:08:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	503404.980	ppb	503404.980	2.70	62388686	400000	
Mg	24	3	45	134040.097	ppb	134040.097	2.71	8592872	400000	
Al	27	3	45	131.650	ppb	131.650	4.49	3154	400000	
K	39	3	45	9340.803	ppb	9340.803	2.56	496950	400000	
Ca	40	2	45	491095.263	ppb	491095.263	1.08	257086406	400000	
V	51	3	72	0.314	ppb	0.314	18.51	435	2000	
Cr	52	3	72	0.397	ppb	0.397	30.16	1659	5000	
Mn	55	3	72	756.503	ppb	756.503	2.67	320258	10000	
Fe	56	2	72	229.274	ppb	229.274	2.75	330107	10000	
Co	59	3	72	2.059	ppb	2.059	4.67	2634	2000	
Ni	60	3	72	7.159	ppb	7.159	5.48	2632	5000	
Cu	63	3	72	1.135	ppb	1.135	4.69	1421	5000	
Zn	66	3	72	6.334	ppb	6.334	4.24	1296	5000	
As	75	3	72	0.840	ppb	0.840	12.10	148	2000	
Se	78	2	72	0.163	ppb	0.163	68.51	11	2000	
(Se)	78	3	72	-1.198	ppb	-1.198	-120.39	25	2000	
Sr	88	3	72	9071.744	ppb	9071.744	0.99	4979276	4000	
Mo	95	3	115	0.479	ppb	0.479	4.99	278	2000	
Ag	107	3	115	0.008	ppb	0.008	76.28	32	100	
Cd	111	3	115	0.048	ppb	0.048	112.95	15	2000	
Sn	120	3	115	0.366	ppb	0.366	12.73	785	2000	
Sb	121	3	115	0.073	ppb	0.073	40.32	177	1000	
Ba	137	3	115	10.038	ppb	10.038	1.91	2524	5000	
Tl	205	3	193	0.050	ppb	0.050	7.43	283	2000	
(Pb)	206	3	193	0.157	ppb	0.157	34.82	332	100	
(Pb)	207	3	193	0.133	ppb	0.133	18.64	450	100	
Pb	208	3	193	0.160	ppb	0.160	2.76	1451	5000	
Th	232	3	193	0.301	ppb	0.301	20.67	5532	2000	
U	238	3	193	1.779	ppb	1.779	1.73	10334	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3813111	2.17	4331237	88.04	60	120	
Sc (IS)	45	3	HMI He	652980	2.78	654817	99.72	60	120	
Ge Internal standard	72	2	HMI H2	2099707	2.53	2307933	90.98	60	120	
Ge Internal standard	72	3	HMI He	735402	2.79	744678	98.75	60	120	
In Internal Standard	115	3	HMI He	2518959	1.32	2599142	96.92	60	120	
Ir (IS)	193	3	HMI He	5286020	1.74	5525410	95.67	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-3-a
Data File Name	280SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:10:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	173201.088	ppb	173201.088	0.49	20778681	400000	
Mg	24	3	45	75889.791	ppb	75889.791	1.21	4702068	400000	
Al	27	3	45	9.453	ppb	9.453	18.91	297	400000	
K	39	3	45	5497.210	ppb	5497.210	0.76	293091	400000	
Ca	40	2	45	531164.999	ppb	531164.999	1.90	283745482	400000	
V	51	3	72	0.005	ppb	0.005	910.64	245	2000	
Cr	52	3	72	0.059	ppb	0.059	21.26	1408	5000	
Mn	55	3	72	584.342	ppb	584.342	1.36	249449	10000	
Fe	56	2	72	323.198	ppb	323.198	1.01	471883	10000	
Co	59	3	72	3.410	ppb	3.410	2.62	4382	2000	
Ni	60	3	72	5.280	ppb	5.280	9.30	1989	5000	
Cu	63	3	72	0.207	ppb	0.207	47.42	545	5000	
Zn	66	3	72	5.639	ppb	5.639	6.18	1189	5000	
As	75	3	72	0.503	ppb	0.503	70.47	110	2000	
Se	78	2	72	0.182	ppb	0.182	63.02	13	2000	
(Se)	78	3	72	0.025	ppb	0.025	14294.60	33	2000	
Sr	88	3	72	7621.457	ppb	7621.457	1.47	4216233	4000	
Mo	95	3	115	0.909	ppb	0.909	5.17	485	2000	
Ag	107	3	115	0.000	ppb	0.000	-354.58	17	100	
Cd	111	3	115	0.036	ppb	0.036	92.13	12	2000	
Sn	120	3	115	0.429	ppb	0.429	34.42	811	2000	
Sb	121	3	115	0.002	ppb	0.002	3171.54	118	1000	
Ba	137	3	115	36.310	ppb	36.310	3.44	8744	5000	
Tl	205	3	193	0.025	ppb	0.025	10.71	192	2000	
(Pb)	206	3	193	0.000	ppb	0.000	3940.63	143	100	
(Pb)	207	3	193	0.035	ppb	0.035	136.02	338	100	
Pb	208	3	193	0.040	ppb	0.040	26.47	861	5000	
Th	232	3	193	0.102	ppb	0.102	40.68	4472	2000	
U	238	3	193	57.583	ppb	57.583	1.60	280059	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891371	1.36	4331237	89.84	60	120	
Sc (IS)	45	3	HMI He	630876	2.27	654817	96.34	60	120	
Ge Internal standard	72	2	HMI H2	2144619	0.13	2307933	92.92	60	120	
Ge Internal standard	72	3	HMI He	741227	2.36	744678	99.54	60	120	
In Internal Standard	115	3	HMI He	2460712	3.60	2599142	94.67	60	120	
Ir (IS)	193	3	HMI He	5149436	0.64	5525410	93.20	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	281_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:12:08-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.965	ppb	7.180	2654	50	103.9	90	110	
Na	23	3	45	50516.511	ppb	1.327	6017268	51000	99.1	90	110	
Mg	24	3	45	11091.282	ppb	0.771	678668	11000	100.8	90	110	
Al	27	3	45	1027.480	ppb	3.842	22932	1000	102.7	90	110	
K	39	3	45	10632.357	ppb	1.346	536256	11000	96.7	90	110	
Ca	40	2	45	11311.219	ppb	1.779	6395822	11000	102.8	90	110	
V	51	3	72	51.027	ppb	0.735	31011	50	102.1	90	110	
Cr	52	3	72	50.535	ppb	0.783	39772	50	101.1	90	110	
Mn	55	3	72	50.241	ppb	2.443	20849	50	100.5	90	110	
Fe	56	2	72	1042.482	ppb	1.793	1548219	1000	104.2	90	110	
Co	59	3	72	49.810	ppb	0.610	61457	50	99.6	90	110	
Ni	60	3	72	49.088	ppb	1.982	16895	50	98.2	90	110	
Cu	63	3	72	49.962	ppb	0.603	46446	50	99.9	90	110	
Zn	66	3	72	52.747	ppb	1.991	8862	50	105.5	90	110	
As	75	3	72	50.716	ppb	3.964	5832	50	101.4	90	110	
Se	78	2	72	51.803	ppb	1.298	2990	50	103.6	90	110	
(Se)	78	3	72	48.568	ppb	8.241	343	50	97.1	90	110	
Sr	88	3	72	103.412	ppb	1.029	55256	100	103.4	90	110	
Mo	95	3	115	50.029	ppb	2.595	25157	50	100.1	90	110	
Ag	107	3	115	48.911	ppb	2.282	81446	50	97.8	90	110	
Cd	111	3	115	51.070	ppb	1.811	12511	50	102.1	90	110	
Sn	120	3	115	51.734	ppb	3.715	38987	50	103.5	90	110	
Sb	121	3	115	51.716	ppb	1.313	39014	50	103.4	90	110	
Ba	137	3	115	50.316	ppb	3.048	12273	50	100.6	90	110	
Tl	205	3	193	50.992	ppb	1.112	176972	50	102.0	90	110	
(Pb)	206	3	193	50.336	ppb	2.142	58833	50	100.7	90	110	
(Pb)	207	3	193	50.454	ppb	2.068	52497	50	100.9	90	110	
Pb	208	3	193	50.358	ppb	1.377	237239	50	100.7	90	110	
Th	232	3	193	50.897	ppb	0.555	243139	50	101.8	90	110	
U	238	3	193	50.789	ppb	1.294	251632	50	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110022	0.79	4331237	94.89	60	120	
Sc (IS)	45	3	HMI He	622814	0.51	654817	95.11	60	120	
Ge Internal standard	72	2	HMI H2	2210059	0.92	2307933	95.76	60	120	
Ge Internal standard	72	3	HMI He	715246	0.05	744678	96.05	60	120	
In Internal Standard	115	3	HMI He	2496280	2.22	2599142	96.04	60	120	
Ir (IS)	193	3	HMI He	5242408	1.46	5525410	94.88	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	282_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:14:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	57.775	ppb	8.0	55825	25	>RL
Mg	24	3	45	2.358	ppb	20.6	334	25	
Al	27	3	45	10.747	ppb	29.4	327	15	
K	39	3	45	-46.457	ppb	-84.9	23179	50	
V	51	3	72	-0.033	ppb	-182.0	215	1	
Cr	52	3	72	0.026	ppb	298.4	1338	1	
Mn	55	3	72	0.158	ppb	38.6	230	0.5	
Co	59	3	72	0.017	ppb	22.5	45	0.5	
Ni	60	3	72	0.091	ppb	187.7	147	1	
Cu	63	3	72	0.145	ppb	78.8	470	1	
Zn	66	3	72	0.211	ppb	167.6	260	5	
As	75	3	72	-0.074	ppb	-97.7	40	1	
Se	78	2	72	0.024	ppb	3.0	4	1	
(Se)	78	3	72	-1.644	ppb	-74.3	22	1	
Sr	88	3	72	0.193	ppb	8.7	145	0.5	
Mo	95	3	115	0.039	ppb	30.2	55	0.5	
Ag	107	3	115	0.001	ppb	218.6	20	1	
Cd	111	3	115	0.000	ppb	3401.7	3	0.5	
Sn	120	3	115	0.334	ppb	21.4	760	1	
Sb	121	3	115	-0.003	ppb	-656.3	118	0.6	
Ba	137	3	115	-0.046	ppb	-39.3	55	0.5	
Tl	205	3	193	0.010	ppb	68.7	142	0.1	
(Pb)	206	3	193	0.015	ppb	163.0	163	1	
(Pb)	207	3	193	0.045	ppb	31.5	356	1	
Pb	208	3	193	0.037	ppb	60.7	865	0.5	
Th	232	3	193	0.528	ppb	20.5	6587	1	
U	238	3	193	0.022	ppb	102.0	1601	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4236874	1.51	4331237	97.82	60	120	
Sc (IS)	45	3	HMI He	633119	1.60	654817	96.69	60	120	
Ge Internal standard	72	2	HMI H2	2256609	1.06	2307933	97.78	60	120	
Ge Internal standard	72	3	HMI He	717741	1.20	744678	96.38	60	120	
In Internal Standard	115	3	HMI He	2511145	2.53	2599142	96.61	60	120	
Ir (IS)	193	3	HMI He	5276246	2.96	5525410	95.49	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-4-a
Data File Name	283SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:15:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	952454.087	ppb	952454.087	1.64	114441428	400000	
Mg	24	3	45	125977.164	ppb	125977.164	1.42	7833035	400000	
Al	27	3	45	65.391	ppb	65.391	2.66	1562	400000	
K	39	3	45	7002.710	ppb	7002.710	1.80	367686	400000	
Ca	40	2	45	415768.259	ppb	415768.259	2.14	232559016	400000	
V	51	3	72	0.058	ppb	0.058	170.73	273	2000	
Cr	52	3	72	0.325	ppb	0.325	29.58	1594	5000	
Mn	55	3	72	563.435	ppb	563.435	2.62	236867	10000	
Fe	56	2	72	2104.050	ppb	2104.050	3.55	3045999	10000	
Co	59	3	72	0.808	ppb	0.808	7.66	1041	2000	
Ni	60	3	72	5.891	ppb	5.891	10.68	2171	5000	
Cu	63	3	72	1.237	ppb	1.237	15.40	1506	5000	
Zn	66	3	72	3.543	ppb	3.543	22.26	823	5000	
As	75	3	72	1.280	ppb	1.280	19.60	198	2000	
Se	78	2	72	0.144	ppb	0.144	48.69	11	2000	
(Se)	78	3	72	-1.462	ppb	-1.462	-54.93	23	2000	
Sr	88	3	72	9481.355	ppb	9481.355	3.12	5164895	4000	
Mo	95	3	115	1.190	ppb	1.190	1.00	620	2000	
Ag	107	3	115	0.002	ppb	0.002	346.47	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-201.93	2	2000	
Sn	120	3	115	0.388	ppb	0.388	7.11	778	2000	
Sb	121	3	115	0.092	ppb	0.092	37.50	185	1000	
Ba	137	3	115	11.961	ppb	11.961	4.29	2907	5000	
Tl	205	3	193	0.007	ppb	0.007	114.06	127	2000	
(Pb)	206	3	193	0.217	ppb	0.217	10.89	381	100	
(Pb)	207	3	193	0.265	ppb	0.265	25.49	558	100	
Pb	208	3	193	0.256	ppb	0.256	5.43	1812	5000	
Th	232	3	193	0.213	ppb	0.213	36.14	4862	2000	
U	238	3	193	34.661	ppb	34.661	1.77	164936	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4074637	1.69	4331237	94.08	60	120	
Sc (IS)	45	3	HMI He	633098	1.30	654817	96.68	60	120	
Ge Internal standard	72	2	HMI H2	2161953	2.51	2307933	93.67	60	120	
Ge Internal standard	72	3	HMI He	730102	2.44	744678	98.04	60	120	
In Internal Standard	115	3	HMI He	2444427	0.72	2599142	94.05	60	120	
Ir (IS)	193	3	HMI He	5021968	2.30	5525410	90.89	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-5-a
Data File Name	284SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:17:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	1042987.242	ppb	1042987.242	0.14	126019780	400000	
Mg	24	3	45	187579.310	ppb	187579.310	1.88	11729092	400000	
Al	27	3	45	228.114	ppb	228.114	4.06	5270	400000	
K	39	3	45	12025.886	ppb	12025.886	0.69	616630	400000	
Ca	40	2	45	591699.125	ppb	591699.125	1.24	333921710	400000	
V	51	3	72	0.350	ppb	0.350	17.69	445	2000	
Cr	52	3	72	0.422	ppb	0.422	20.59	1634	5000	
Mn	55	3	72	2430.499	ppb	2430.499	1.41	1000829	10000	
Fe	56	2	72	643.213	ppb	643.213	0.71	956024	10000	
Co	59	3	72	7.573	ppb	7.573	2.44	9364	2000	
Ni	60	3	72	41.666	ppb	41.666	2.11	14359	5000	
Cu	63	3	72	1.338	ppb	1.338	2.90	1569	5000	
Zn	66	3	72	12.642	ppb	12.642	6.74	2294	5000	
As	75	3	72	0.892	ppb	0.892	51.67	150	2000	
Se	78	2	72	0.419	ppb	0.419	8.00	27	2000	
(Se)	78	3	72	-2.677	ppb	-2.677	-29.36	15	2000	
Sr	88	3	72	13900.673	ppb	13900.673	0.89	7421930	4000	
Mo	95	3	115	0.932	ppb	0.932	10.54	498	2000	
Ag	107	3	115	0.003	ppb	0.003	67.95	22	100	
Cd	111	3	115	0.145	ppb	0.145	59.00	38	2000	
Sn	120	3	115	0.306	ppb	0.306	9.99	726	2000	
Sb	121	3	115	0.051	ppb	0.051	124.31	157	1000	
Ba	137	3	115	20.246	ppb	20.246	3.31	4930	5000	
Tl	205	3	193	0.107	ppb	0.107	17.56	461	2000	
(Pb)	206	3	193	0.604	ppb	0.604	6.89	821	100	
(Pb)	207	3	193	0.551	ppb	0.551	5.15	850	100	
Pb	208	3	193	0.580	ppb	0.580	3.09	3302	5000	
Th	232	3	193	0.116	ppb	0.116	41.70	4472	2000	
U	238	3	193	117.639	ppb	117.639	0.54	561872	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110312	1.08	4331237	94.90	60	120	
Sc (IS)	45	3	HMI He	636580	0.35	654817	97.21	60	120	
Ge Internal standard	72	2	HMI H2	2203797	1.59	2307933	95.49	60	120	
Ge Internal standard	72	3	HMI He	715245	0.25	744678	96.05	60	120	
In Internal Standard	115	3	HMI He	2471876	0.40	2599142	95.10	60	120	
Ir (IS)	193	3	HMI He	5070563	1.76	5525410	91.77	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-6-a
Data File Name	285SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:19:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	672424.243	ppb	672424.243	1.30	81840850	400000	
Mg	24	3	45	128680.180	ppb	128680.180	0.23	8103253	400000	
Al	27	3	45	117.745	ppb	117.745	4.93	2780	400000	
K	39	3	45	7675.677	ppb	7675.677	0.74	405676	400000	
Ca	40	2	45	415941.523	ppb	415941.523	0.88	234200242	400000	
V	51	3	72	-0.045	ppb	-0.045	-29.28	213	2000	
Cr	52	3	72	0.077	ppb	0.077	144.61	1416	5000	
Mn	55	3	72	412.729	ppb	412.729	0.42	175556	10000	
Fe	56	2	72	2942.837	ppb	2942.837	0.87	4460510	10000	
Co	59	3	72	0.089	ppb	0.089	15.77	138	2000	
Ni	60	3	72	0.309	ppb	0.309	23.54	228	5000	
Cu	63	3	72	2.222	ppb	2.222	0.72	2462	5000	
Zn	66	3	72	4.546	ppb	4.546	8.82	1000	5000	
As	75	3	72	0.185	ppb	0.185	105.58	72	2000	
Se	78	2	72	0.046	ppb	0.046	41.25	5	2000	
(Se)	78	3	72	-1.489	ppb	-1.489	-147.02	23	2000	
Sr	88	3	72	9543.548	ppb	9543.548	0.78	5259311	4000	
Mo	95	3	115	0.105	ppb	0.105	71.68	88	2000	
Ag	107	3	115	0.002	ppb	0.002	186.73	22	100	
Cd	111	3	115	0.014	ppb	0.014	222.60	7	2000	
Sn	120	3	115	0.164	ppb	0.164	51.26	631	2000	
Sb	121	3	115	-0.036	ppb	-0.036	-82.12	93	1000	
Ba	137	3	115	7.274	ppb	7.274	4.49	1844	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-181.59	100	2000	
(Pb)	206	3	193	0.310	ppb	0.310	10.56	503	100	
(Pb)	207	3	193	0.257	ppb	0.257	19.67	570	100	
Pb	208	3	193	0.289	ppb	0.289	3.47	2032	5000	
Th	232	3	193	0.063	ppb	0.063	30.21	4339	2000	
U	238	3	193	0.087	ppb	0.087	17.51	1901	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4100988	0.31	4331237	94.68	60	120	
Sc (IS)	45	3	HMI He	641105	0.44	654817	97.91	60	120	
Ge Internal standard	72	2	HMI H2	2264290	0.63	2307933	98.11	60	120	
Ge Internal standard	72	3	HMI He	738222	0.30	744678	99.13	60	120	
In Internal Standard	115	3	HMI He	2514539	1.26	2599142	96.74	60	120	
Ir (IS)	193	3	HMI He	5204268	1.39	5525410	94.19	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-8-a
Data File Name	286SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:21:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	846496.396	ppb	846496.396	1.29	102597003	400000	
Mg	24	3	45	240693.272	ppb	240693.272	3.90	15092114	400000	
Al	27	3	45	22.917	ppb	22.917	8.63	607	400000	
K	39	3	45	15279.855	ppb	15279.855	1.47	779002	400000	
Ca	40	2	45	486679.879	ppb	486679.879	1.77	270132863	400000	
V	51	3	72	-0.059	ppb	-0.059	-39.09	203	2000	
Cr	52	3	72	0.085	ppb	0.085	134.08	1409	5000	
Mn	55	3	72	3355.494	ppb	3355.494	5.21	1413039	10000	
Fe	56	2	72	1907.491	ppb	1907.491	1.24	2876138	10000	
Co	59	3	72	8.968	ppb	8.968	2.62	11342	2000	
Ni	60	3	72	7.248	ppb	7.248	4.88	2654	5000	
Cu	63	3	72	0.452	ppb	0.452	7.98	770	5000	
Zn	66	3	72	11.345	ppb	11.345	8.67	2131	5000	
As	75	3	72	1.804	ppb	1.804	12.95	260	2000	
Se	78	2	72	0.059	ppb	0.059	60.29	6	2000	
(Se)	78	3	72	-0.470	ppb	-0.470	-411.76	30	2000	
Sr	88	3	72	9123.952	ppb	9123.952	4.25	4983187	4000	
Mo	95	3	115	0.513	ppb	0.513	24.36	292	2000	
Ag	107	3	115	0.000	ppb	0.000	-377.23	17	100	
Cd	111	3	115	0.042	ppb	0.042	74.69	13	2000	
Sn	120	3	115	0.194	ppb	0.194	9.09	646	2000	
Sb	121	3	115	0.012	ppb	0.012	215.94	128	1000	
Ba	137	3	115	10.823	ppb	10.823	5.73	2679	5000	
Tl	205	3	193	0.030	ppb	0.030	46.76	205	2000	
(Pb)	206	3	193	0.151	ppb	0.151	15.52	313	100	
(Pb)	207	3	193	0.118	ppb	0.118	25.98	418	100	
Pb	208	3	193	0.143	ppb	0.143	18.60	1324	5000	
Th	232	3	193	0.049	ppb	0.049	57.09	4195	2000	
U	238	3	193	5.283	ppb	5.283	2.43	26779	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4043543	2.92	4331237	93.36	60	120	
Sc (IS)	45	3	HMI He	638570	1.27	654817	97.52	60	120	
Ge Internal standard	72	2	HMI H2	2249977	1.78	2307933	97.49	60	120	
Ge Internal standard	72	3	HMI He	732323	3.32	744678	98.34	60	120	
In Internal Standard	115	3	HMI He	2483316	0.84	2599142	95.54	60	120	
Ir (IS)	193	3	HMI He	5106170	2.93	5525410	92.41	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-9-a
Data File Name	287SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:23:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1447860.225	ppb	1447860.225	1.81	173802016	400000	
Mg	24	3	45	185728.324	ppb	185728.324	2.60	11538147	400000	
Al	27	3	45	269.227	ppb	269.227	6.39	6168	400000	
K	39	3	45	8742.006	ppb	8742.006	1.95	452328	400000	
Ca	40	2	45	660717.702	ppb	660717.702	0.61	370232596	400000	
V	51	3	72	0.522	ppb	0.522	10.54	540	2000	
Cr	52	3	72	0.398	ppb	0.398	14.28	1591	5000	
Mn	55	3	72	290.995	ppb	290.995	1.76	118074	10000	
Fe	56	2	72	211.825	ppb	211.825	2.69	315448	10000	
Co	59	3	72	1.622	ppb	1.622	4.88	1992	2000	
Ni	60	3	72	2.469	ppb	2.469	5.70	945	5000	
Cu	63	3	72	1.842	ppb	1.842	5.80	2002	5000	
Zn	66	3	72	5.888	ppb	5.888	9.73	1169	5000	
As	75	3	72	0.898	ppb	0.898	23.70	148	2000	
Se	78	2	72	0.050	ppb	0.050	109.09	5	2000	
(Se)	78	3	72	-2.912	ppb	-2.912	-56.01	13	2000	
Sr	88	3	72	12031.782	ppb	12031.782	0.42	6322886	4000	
Mo	95	3	115	1.402	ppb	1.402	2.62	720	2000	
Ag	107	3	115	0.001	ppb	0.001	238.37	18	100	
Cd	111	3	115	0.036	ppb	0.036	30.61	12	2000	
Sn	120	3	115	0.127	ppb	0.127	70.39	585	2000	
Sb	121	3	115	0.014	ppb	0.014	206.09	127	1000	
Ba	137	3	115	16.061	ppb	16.061	1.65	3855	5000	
Tl	205	3	193	0.025	ppb	0.025	66.95	180	2000	
(Pb)	206	3	193	0.196	ppb	0.196	16.97	350	100	
(Pb)	207	3	193	0.272	ppb	0.272	19.70	551	100	
Pb	208	3	193	0.239	ppb	0.239	9.83	1696	5000	
Th	232	3	193	0.094	ppb	0.094	53.28	4225	2000	
U	238	3	193	32.529	ppb	32.529	1.94	151268	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4081332	1.53	4331237	94.23	60	120	
Sc (IS)	45	3	HMI He	632602	1.19	654817	96.61	60	120	
Ge Internal standard	72	2	HMI H2	2167097	2.79	2307933	93.90	60	120	
Ge Internal standard	72	3	HMI He	703990	0.71	744678	94.54	60	120	
In Internal Standard	115	3	HMI He	2428809	2.18	2599142	93.45	60	120	
Ir (IS)	193	3	HMI He	4904645	1.46	5525410	88.77	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-10-a
Data File Name	288SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:25:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1146396.734	ppb	1146396.734	0.45	137202097	400000	
Mg	24	3	45	216953.908	ppb	216953.908	1.22	13437066	400000	
Al	27	3	45	158.453	ppb	158.453	6.10	3654	400000	
K	39	3	45	6868.022	ppb	6868.022	0.70	359697	400000	
Ca	40	2	45	584990.760	ppb	584990.760	0.84	328990022	400000	
V	51	3	72	0.520	ppb	0.520	9.10	545	2000	
Cr	52	3	72	0.435	ppb	0.435	21.83	1636	5000	
Mn	55	3	72	687.529	ppb	687.529	0.26	281716	10000	
Fe	56	2	72	450.206	ppb	450.206	1.65	670942	10000	
Co	59	3	72	7.533	ppb	7.533	2.77	9263	2000	
Ni	60	3	72	16.657	ppb	16.657	0.26	5778	5000	
Cu	63	3	72	1.500	ppb	1.500	5.97	1709	5000	
Zn	66	3	72	30.919	ppb	30.919	1.59	5258	5000	
As	75	3	72	0.849	ppb	0.849	65.51	145	2000	
Se	78	2	72	0.177	ppb	0.177	41.30	13	2000	
(Se)	78	3	72	0.734	ppb	0.734	59.61	37	2000	
Sr	88	3	72	11530.351	ppb	11530.351	2.04	6124443	4000	
Mo	95	3	115	0.712	ppb	0.712	21.93	383	2000	
Ag	107	3	115	0.010	ppb	0.010	49.07	33	100	
Cd	111	3	115	0.147	ppb	0.147	55.57	38	2000	
Sn	120	3	115	0.232	ppb	0.232	31.98	661	2000	
Sb	121	3	115	0.015	ppb	0.015	98.35	128	1000	
Ba	137	3	115	13.703	ppb	13.703	3.24	3309	5000	
Tl	205	3	193	0.084	ppb	0.084	17.50	373	2000	
(Pb)	206	3	193	0.103	ppb	0.103	44.82	248	100	
(Pb)	207	3	193	0.093	ppb	0.093	22.30	378	100	
Pb	208	3	193	0.102	ppb	0.102	3.29	1091	5000	
Th	232	3	193	0.103	ppb	0.103	24.49	4255	2000	
U	238	3	193	22.302	ppb	22.302	1.47	103941	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4096331	1.20	4331237	94.58	60	120	
Sc (IS)	45	3	HMI He	630583	2.14	654817	96.30	60	120	
Ge Internal standard	72	2	HMI H2	2200879	0.80	2307933	95.36	60	120	
Ge Internal standard	72	3	HMI He	711401	1.43	744678	95.53	60	120	
In Internal Standard	115	3	HMI He	2436462	2.19	2599142	93.74	60	120	
Ir (IS)	193	3	HMI He	4895158	2.33	5525410	88.59	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-11-a
Data File Name	289SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:26:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	837045.300	ppb	837045.300	1.50	99062361	400000	
Mg	24	3	45	318250.861	ppb	318250.861	0.56	19488339	400000	
Al	27	3	45	55.385	ppb	55.385	5.76	1315	400000	
K	39	3	45	15497.004	ppb	15497.004	0.37	770965	400000	
Ca	40	2	45	899324.353	ppb	899324.353	1.07	496741157	400000	
V	51	3	72	-0.031	ppb	-0.031	-247.11	208	2000	
Cr	52	3	72	0.285	ppb	0.285	46.40	1483	5000	
Mn	55	3	72	4144.799	ppb	4144.799	2.25	1653395	10000	
Fe	56	2	72	132.995	ppb	132.995	2.93	199077	10000	
Co	59	3	72	6.023	ppb	6.023	1.40	7220	2000	
Ni	60	3	72	50.265	ppb	50.265	3.52	16755	5000	
Cu	63	3	72	0.992	ppb	0.992	7.90	1211	5000	
Zn	66	3	72	12.409	ppb	12.409	2.18	2186	5000	
As	75	3	72	0.406	ppb	0.406	62.17	92	2000	
Se	78	2	72	0.136	ppb	0.136	80.56	10	2000	
(Se)	78	3	72	-0.200	ppb	-0.200	-1037.02	30	2000	
Sr	88	3	72	19267.156	ppb	19267.156	2.55	9965343	4000	
Mo	95	3	115	0.370	ppb	0.370	15.68	210	2000	
Ag	107	3	115	0.000	ppb	0.000	-4928.61	17	100	
Cd	111	3	115	0.108	ppb	0.108	20.63	28	2000	
Sn	120	3	115	0.038	ppb	0.038	187.68	510	2000	
Sb	121	3	115	0.039	ppb	0.039	93.57	142	1000	
Ba	137	3	115	17.224	ppb	17.224	4.87	4045	5000	
Tl	205	3	193	0.144	ppb	0.144	10.08	546	2000	
(Pb)	206	3	193	0.198	ppb	0.198	26.50	340	100	
(Pb)	207	3	193	0.134	ppb	0.134	34.69	403	100	
Pb	208	3	193	0.188	ppb	0.188	13.95	1419	5000	
Th	232	3	193	0.058	ppb	0.058	22.65	3924	2000	
U	238	3	193	67.378	ppb	67.378	0.60	300794	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4023061	1.34	4331237	92.88	60	120	
Sc (IS)	45	3	HMI He	623421	1.25	654817	95.21	60	120	
Ge Internal standard	72	2	HMI H2	2141839	1.36	2307933	92.80	60	120	
Ge Internal standard	72	3	HMI He	692940	1.05	744678	93.05	60	120	
In Internal Standard	115	3	HMI He	2379290	3.99	2599142	91.54	60	120	
Ir (IS)	193	3	HMI He	4730028	0.64	5525410	85.61	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-12-a
Data File Name	290SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:28:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.62	3	2000	
Na	23	3	45	173442.812	ppb	173442.812	1.07	19011366	400000	
Mg	24	3	45	75866.995	ppb	75866.995	0.56	4295917	400000	
Al	27	3	45	219.581	ppb	219.581	26.89	4595	400000	
K	39	3	45	5096.402	ppb	5096.402	1.48	249931	400000	
Ca	40	2	45	413744.601	ppb	413744.601	2.09	220448656	400000	
V	51	3	72	1.011	ppb	1.011	15.00	781	2000	
Cr	52	3	72	0.319	ppb	0.319	38.21	1441	5000	
Mn	55	3	72	415.773	ppb	415.773	2.58	158797	10000	
Fe	56	2	72	335.828	ppb	335.828	2.07	481884	10000	
Co	59	3	72	1.351	ppb	1.351	8.77	1566	2000	
Ni	60	3	72	6.239	ppb	6.239	5.37	2082	5000	
Cu	63	3	72	1.537	ppb	1.537	4.92	1624	5000	
Zn	66	3	72	6.823	ppb	6.823	5.87	1244	5000	
As	75	3	72	2.885	ppb	2.885	5.52	350	2000	
Se	78	2	72	0.162	ppb	0.162	32.95	11	2000	
(Se)	78	3	72	-1.644	ppb	-1.644	-53.53	20	2000	
Sr	88	3	72	6054.919	ppb	6054.919	3.17	2995703	4000	
Mo	95	3	115	4.269	ppb	4.269	3.03	1964	2000	
Ag	107	3	115	0.003	ppb	0.003	114.87	20	100	
Cd	111	3	115	0.032	ppb	0.032	1.48	10	2000	
Sn	120	3	115	0.197	ppb	0.197	59.96	588	2000	
Sb	121	3	115	0.109	ppb	0.109	56.16	182	1000	
Ba	137	3	115	51.090	ppb	51.090	1.24	11233	5000	
Tl	205	3	193	0.019	ppb	0.019	47.28	155	2000	
(Pb)	206	3	193	0.195	ppb	0.195	17.11	333	100	
(Pb)	207	3	193	0.194	ppb	0.194	40.23	453	100	
Pb	208	3	193	0.226	ppb	0.226	8.90	1559	5000	
Th	232	3	193	0.052	ppb	0.052	76.80	3850	2000	
U	238	3	193	20.885	ppb	20.885	1.75	93014	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882068	2.68	4331237	89.63	60	120	
Sc (IS)	45	3	HMI He	576444	1.97	654817	88.03	60	120	
Ge Internal standard	72	2	HMI H2	2109857	2.57	2307933	91.42	60	120	
Ge Internal standard	72	3	HMI He	663114	2.52	744678	89.05	60	120	
In Internal Standard	115	3	HMI He	2249740	1.06	2599142	86.56	60	120	
Ir (IS)	193	3	HMI He	4672962	0.99	5525410	84.57	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	291_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:30:35-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.002	ppb	3.954	2202	50	96.0	90	110	
Na	23	3	45	50885.414	ppb	1.588	5464003	51000	99.8	90	110	
Mg	24	3	45	10920.610	ppb	1.184	602400	11000	99.3	90	110	
Al	27	3	45	1054.488	ppb	2.995	21204	1000	105.4	90	110	
K	39	3	45	10788.983	ppb	1.295	490098	11000	98.1	90	110	
Ca	40	2	45	11259.353	ppb	0.783	5763635	11000	102.4	90	110	
V	51	3	72	51.722	ppb	2.566	27710	50	103.4	90	110	
Cr	52	3	72	50.638	ppb	1.473	35113	50	101.3	90	110	
Mn	55	3	72	51.745	ppb	2.025	18920	50	103.5	90	110	
Fe	56	2	72	1079.705	ppb	2.489	1411001	1000	108.0	90	110	
Co	59	3	72	51.078	ppb	0.527	55542	50	102.2	90	110	
Ni	60	3	72	50.087	ppb	1.240	15191	50	100.2	90	110	
Cu	63	3	72	50.874	ppb	1.020	41673	50	101.7	90	110	
Zn	66	3	72	50.407	ppb	3.534	7472	50	100.8	90	110	
As	75	3	72	54.617	ppb	4.765	5532	50	109.2	90	110	
Se	78	2	72	51.951	ppb	1.897	2639	50	103.9	90	110	
(Se)	78	3	72	55.221	ppb	16.003	340	50	110.4	90	110	>+\-10%
Sr	88	3	72	108.127	ppb	1.043	50910	100	108.1	90	110	
Mo	95	3	115	51.143	ppb	2.080	22995	50	102.3	90	110	
Ag	107	3	115	49.157	ppb	1.972	73207	50	98.3	90	110	
Cd	111	3	115	50.199	ppb	3.488	10992	50	100.4	90	110	
Sn	120	3	115	52.223	ppb	2.385	35209	50	104.4	90	110	
Sb	121	3	115	51.322	ppb	1.415	34624	50	102.6	90	110	
Ba	137	3	115	49.396	ppb	2.525	10776	50	98.8	90	110	
Tl	205	3	193	52.185	ppb	2.065	158606	50	104.4	90	110	
(Pb)	206	3	193	52.026	ppb	0.968	53267	50	104.1	90	110	
(Pb)	207	3	193	51.531	ppb	2.434	46947	50	103.1	90	110	
Pb	208	3	193	51.811	ppb	1.859	213741	50	103.6	90	110	
Th	232	3	193	52.330	ppb	1.189	218899	50	104.7	90	110	
U	238	3	193	52.057	ppb	2.784	225778	50	104.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3720550	0.45	4331237	85.90	60	120	
Sc (IS)	45	3	HMI He	561435	3.09	654817	85.74	60	120	
Ge Internal standard	72	2	HMI H2	1944951	0.81	2307933	84.27	60	120	
Ge Internal standard	72	3	HMI He	630404	3.02	744678	84.65	60	120	
In Internal Standard	115	3	HMI He	2231732	1.92	2599142	85.86	60	120	
Ir (IS)	193	3	HMI He	4592727	3.98	5525410	83.12	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	292_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:32:27-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	408.268	ppb	4.1	82468	25	>RL
Mg	24	3	45	9.619	ppb	11.6	661	25	
Al	27	3	45	8.943	ppb	38.3	240	15	
K	39	3	45	41.943	ppb	72.2	23159	50	
V	51	3	72	-0.148	ppb	-16.1	122	1	
Cr	52	3	72	0.120	ppb	108.3	1179	1	
Mn	55	3	72	0.483	ppb	9.7	305	0.5	
Co	59	3	72	0.001	ppb	696.9	22	0.5	
Ni	60	3	72	0.074	ppb	82.2	118	1	
Cu	63	3	72	0.073	ppb	19.9	338	1	
Zn	66	3	72	0.887	ppb	55.0	310	5	
As	75	3	72	-0.059	ppb	-225.7	35	1	
Se	78	2	72	0.022	ppb	365.0	3	1	
(Se)	78	3	72	-0.093	ppb	-2834.3	27	1	
Sr	88	3	72	0.682	ppb	13.4	342	0.5	>RL
Mo	95	3	115	0.054	ppb	65.4	53	0.5	
Ag	107	3	115	-0.002	ppb	-344.3	12	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.308	ppb	24.3	631	1	
Sb	121	3	115	-0.025	ppb	-100.0	87	0.6	
Ba	137	3	115	-0.039	ppb	-174.4	48	0.5	
Tl	205	3	193	0.000	ppb	2571.2	93	0.1	
(Pb)	206	3	193	0.019	ppb	58.3	143	1	
(Pb)	207	3	193	0.044	ppb	50.9	302	1	
Pb	208	3	193	0.039	ppb	27.9	743	0.5	
Th	232	3	193	0.651	ppb	20.9	6088	1	
U	238	3	193	0.008	ppb	317.1	1299	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3535170	2.49	4331237	81.62	60	120	
Sc (IS)	45	3	HMI He	533207	1.39	654817	81.43	60	120	
Ge Internal standard	72	2	HMI H2	1888840	2.28	2307933	81.84	60	120	
Ge Internal standard	72	3	HMI He	601122	1.52	744678	80.72	60	120	
In Internal Standard	115	3	HMI He	2144880	0.24	2599142	82.52	60	120	
Ir (IS)	193	3	HMI He	4474221	1.10	5525410	80.98	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-13-a
Data File Name	293SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:34:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.041	ppb	0.041	173.21	2	2000	
Na	23	3	45	928960.113	ppb	928960.113	1.18	93923342	400000	
Mg	24	3	45	233068.999	ppb	233068.999	2.03	12194811	400000	
Al	27	3	45	92.642	ppb	92.642	4.46	1832	400000	
K	39	3	45	12642.716	ppb	12642.716	0.57	541334	400000	
Ca	40	2	45	413190.873	ppb	413190.873	2.23	181202259	400000	
V	51	3	72	0.536	ppb	0.536	7.42	473	2000	
Cr	52	3	72	0.590	ppb	0.590	27.32	1498	5000	
Mn	55	3	72	1884.311	ppb	1884.311	1.89	659337	10000	
Fe	56	2	72	473.200	ppb	473.200	0.62	571988	10000	
Co	59	3	72	13.445	ppb	13.445	2.53	14110	2000	
Ni	60	3	72	10.795	ppb	10.795	6.13	3234	5000	
Cu	63	3	72	1.819	ppb	1.819	1.96	1711	5000	
Zn	66	3	72	20.612	ppb	20.612	3.03	3059	5000	
As	75	3	72	2.225	ppb	2.225	5.46	257	2000	
Se	78	2	72	1.085	ppb	1.085	35.70	53	2000	
(Se)	78	3	72	3.862	ppb	3.862	60.08	48	2000	
Sr	88	3	72	7925.358	ppb	7925.358	2.46	3595656	4000	
Mo	95	3	115	0.522	ppb	0.522	23.13	247	2000	
Ag	107	3	115	0.009	ppb	0.009	45.34	27	100	
Cd	111	3	115	0.281	ppb	0.281	2.67	60	2000	
Sn	120	3	115	0.236	ppb	0.236	17.23	566	2000	
Sb	121	3	115	0.298	ppb	0.298	29.73	287	1000	
Ba	137	3	115	7.419	ppb	7.419	8.46	1551	5000	
Tl	205	3	193	0.071	ppb	0.071	14.25	290	2000	
(Pb)	206	3	193	0.077	ppb	0.077	30.49	193	100	
(Pb)	207	3	193	0.024	ppb	0.024	122.58	273	100	
Pb	208	3	193	0.072	ppb	0.072	19.44	843	5000	
Th	232	3	193	0.203	ppb	0.203	20.36	4124	2000	
U	238	3	193	1.131	ppb	1.131	4.81	5787	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3194506	1.09	4331237	73.76	60	120	
Sc (IS)	45	3	HMI He	532663	0.91	654817	81.35	60	120	
Ge Internal standard	72	2	HMI H2	1786181	0.82	2307933	77.39	60	120	
Ge Internal standard	72	3	HMI He	607763	0.64	744678	81.61	60	120	
In Internal Standard	115	3	HMI He	2076637	2.59	2599142	79.90	60	120	
Ir (IS)	193	3	HMI He	4299210	0.76	5525410	77.81	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-14-a
Data File Name	294SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:36:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.074	ppb	0.074	86.60	3	2000	
Na	23	3	45	825224.943	ppb	825224.943	0.60	86876029	400000	
Mg	24	3	45	226669.126	ppb	226669.126	1.27	12348253	400000	
Al	27	3	45	16.719	ppb	16.719	24.35	404	400000	
K	39	3	45	17816.014	ppb	17816.014	2.60	785005	400000	
Ca	40	2	45	460001.774	ppb	460001.774	1.31	227506632	400000	
V	51	3	72	0.105	ppb	0.105	60.73	263	2000	
Cr	52	3	72	0.066	ppb	0.066	135.91	1208	5000	
Mn	55	3	72	4560.005	ppb	4560.005	0.72	1662996	10000	
Fe	56	2	72	40.769	ppb	40.769	4.09	61718	10000	
Co	59	3	72	7.498	ppb	7.498	4.10	8210	2000	
Ni	60	3	72	8.265	ppb	8.265	5.85	2604	5000	
Cu	63	3	72	0.416	ppb	0.416	18.49	636	5000	
Zn	66	3	72	4.971	ppb	4.971	4.29	920	5000	
As	75	3	72	0.484	ppb	0.484	24.74	92	2000	
Se	78	2	72	0.099	ppb	0.099	60.55	7	2000	
(Se)	78	3	72	-0.025	ppb	-0.025	-2085.54	28	2000	
Sr	88	3	72	9116.469	ppb	9116.469	1.45	4310901	4000	
Mo	95	3	115	0.249	ppb	0.249	24.98	138	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-48.35	3	100	
Cd	111	3	115	0.066	ppb	0.066	20.25	17	2000	
Sn	120	3	115	0.153	ppb	0.153	6.88	535	2000	
Sb	121	3	115	-0.003	ppb	-0.003	-370.38	102	1000	
Ba	137	3	115	10.491	ppb	10.491	8.02	2256	5000	
Tl	205	3	193	0.064	ppb	0.064	27.68	277	2000	
(Pb)	206	3	193	0.114	ppb	0.114	18.98	235	100	
(Pb)	207	3	193	0.106	ppb	0.106	28.86	353	100	
Pb	208	3	193	0.129	ppb	0.129	8.66	1091	5000	
Th	232	3	193	0.074	ppb	0.074	17.22	3732	2000	
U	238	3	193	3.848	ppb	3.848	2.72	17242	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3602861	2.37	4331237	83.18	60	120	
Sc (IS)	45	3	HMI He	554626	1.35	654817	84.70	60	120	
Ge Internal standard	72	2	HMI H2	1968087	0.77	2307933	85.27	60	120	
Ge Internal standard	72	3	HMI He	633482	0.57	744678	85.07	60	120	
In Internal Standard	115	3	HMI He	2155755	1.47	2599142	82.94	60	120	
Ir (IS)	193	3	HMI He	4422627	2.18	5525410	80.04	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-15-a
Data File Name	295SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:38:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	598567.662	ppb	598567.662	0.59	66340077	400000	
Mg	24	3	45	136133.813	ppb	136133.813	1.95	7802723	400000	
Al	27	3	45	104.659	ppb	104.659	3.44	2259	400000	
K	39	3	45	10551.981	ppb	10551.981	0.79	498949	400000	
Ca	40	2	45	443348.272	ppb	443348.272	2.22	229023943	400000	
V	51	3	72	0.709	ppb	0.709	3.44	618	2000	
Cr	52	3	72	0.232	ppb	0.232	60.84	1393	5000	
Mn	55	3	72	1619.840	ppb	1619.840	0.64	623577	10000	
Fe	56	2	72	260.824	ppb	260.824	1.38	363410	10000	
Co	59	3	72	5.386	ppb	5.386	2.49	6230	2000	
Ni	60	3	72	2.806	ppb	2.806	1.24	1005	5000	
Cu	63	3	72	0.809	ppb	0.809	6.81	1011	5000	
Zn	66	3	72	7.442	ppb	7.442	5.85	1348	5000	
As	75	3	72	2.619	ppb	2.619	12.69	325	2000	
Se	78	2	72	0.083	ppb	0.083	140.73	7	2000	
(Se)	78	3	72	-1.667	ppb	-1.667	-54.36	20	2000	
Sr	88	3	72	9867.623	ppb	9867.623	1.05	4925662	4000	
Mo	95	3	115	0.418	ppb	0.418	12.46	227	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-28.29	7	100	
Cd	111	3	115	-0.006	ppb	-0.006	-212.64	2	2000	
Sn	120	3	115	0.105	ppb	0.105	116.41	540	2000	
Sb	121	3	115	0.014	ppb	0.014	376.96	120	1000	
Ba	137	3	115	11.602	ppb	11.602	10.27	2659	5000	
Tl	205	3	193	0.017	ppb	0.017	31.08	148	2000	
(Pb)	206	3	193	0.107	ppb	0.107	19.99	243	100	
(Pb)	207	3	193	0.026	ppb	0.026	37.90	302	100	
Pb	208	3	193	0.089	ppb	0.089	19.26	995	5000	
Th	232	3	193	0.079	ppb	0.079	13.18	4002	2000	
U	238	3	193	4.146	ppb	4.146	2.95	19696	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3763478	1.96	4331237	86.89	60	120	
Sc (IS)	45	3	HMI He	583737	2.85	654817	89.15	60	120	
Ge Internal standard	72	2	HMI H2	2037807	1.74	2307933	88.30	60	120	
Ge Internal standard	72	3	HMI He	668648	2.38	744678	89.79	60	120	
In Internal Standard	115	3	HMI He	2306128	2.40	2599142	88.73	60	120	
Ir (IS)	193	3	HMI He	4715523	2.42	5525410	85.34	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-16-a
Data File Name	296SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:39:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.075	ppb	0.075	86.61	3	2000	
Na	23	3	45	125561.300	ppb	125561.300	1.19	12905170	400000	
Mg	24	3	45	21219.575	ppb	21219.575	1.40	1125738	400000	
Al	27	3	45	170.398	ppb	170.398	4.35	3357	400000	
K	39	3	45	4290.340	ppb	4290.340	2.77	200536	400000	
Ca	40	2	45	68845.580	ppb	68845.580	0.97	33530876	400000	
V	51	3	72	4.849	ppb	4.849	5.76	2801	2000	
Cr	52	3	72	0.203	ppb	0.203	51.10	1303	5000	
Mn	55	3	72	129.257	ppb	129.257	1.79	47328	10000	
Fe	56	2	72	159.305	ppb	159.305	3.72	221247	10000	
Co	59	3	72	0.798	ppb	0.798	2.62	895	2000	
Ni	60	3	72	1.497	ppb	1.497	4.43	556	5000	
Cu	63	3	72	1.314	ppb	1.314	8.20	1371	5000	
Zn	66	3	72	2.141	ppb	2.141	0.79	510	5000	
As	75	3	72	4.238	ppb	4.238	0.68	471	2000	
Se	78	2	72	0.964	ppb	0.964	0.38	53	2000	
(Se)	78	3	72	0.276	ppb	0.276	653.05	30	2000	
Sr	88	3	72	1667.800	ppb	1667.800	1.63	789852	4000	
Mo	95	3	115	0.800	ppb	0.800	23.96	378	2000	
Ag	107	3	115	0.001	ppb	0.001	517.07	17	100	
Cd	111	3	115	0.011	ppb	0.011	224.73	5	2000	
Sn	120	3	115	0.120	ppb	0.120	49.28	516	2000	
Sb	121	3	115	0.084	ppb	0.084	51.75	158	1000	
Ba	137	3	115	31.996	ppb	31.996	3.74	6793	5000	
Tl	205	3	193	0.017	ppb	0.017	74.02	142	2000	
(Pb)	206	3	193	0.281	ppb	0.281	24.24	401	100	
(Pb)	207	3	193	0.273	ppb	0.273	19.94	501	100	
Pb	208	3	193	0.269	ppb	0.269	4.22	1659	5000	
Th	232	3	193	0.097	ppb	0.097	3.90	3854	2000	
U	238	3	193	0.922	ppb	0.922	1.07	5124	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3546414	1.05	4331237	81.88	60	120	
Sc (IS)	45	3	HMI He	540034	1.69	654817	82.47	60	120	
Ge Internal standard	72	2	HMI H2	2002318	1.94	2307933	86.76	60	120	
Ge Internal standard	72	3	HMI He	634324	2.47	744678	85.18	60	120	
In Internal Standard	115	3	HMI He	2165161	1.82	2599142	83.30	60	120	
Ir (IS)	193	3	HMI He	4456537	1.84	5525410	80.66	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-17-a
Data File Name	297SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:41:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	106427.983	ppb	106427.983	1.02	12065006	400000	
Mg	24	3	45	18717.424	ppb	18717.424	3.57	1094427	400000	
Al	27	3	45	15.608	ppb	15.608	13.19	410	400000	
K	39	3	45	2689.040	ppb	2689.040	0.68	147489	400000	
Ca	40	2	45	78376.243	ppb	78376.243	1.42	43320367	400000	
V	51	3	72	1.637	ppb	1.637	17.68	1193	2000	
Cr	52	3	72	0.122	ppb	0.122	151.62	1374	5000	
Mn	55	3	72	3.160	ppb	3.160	5.08	1431	10000	
Fe	56	2	72	15.260	ppb	15.260	4.56	31153	10000	
Co	59	3	72	0.018	ppb	0.018	46.45	45	2000	
Ni	60	3	72	0.206	ppb	0.206	10.09	182	5000	
Cu	63	3	72	0.319	ppb	0.319	12.05	615	5000	
Zn	66	3	72	1.931	ppb	1.931	8.85	528	5000	
As	75	3	72	0.849	ppb	0.849	40.71	142	2000	
Se	78	2	72	0.552	ppb	0.552	32.87	34	2000	
(Se)	78	3	72	-1.292	ppb	-1.292	-36.40	23	2000	
Sr	88	3	72	1505.433	ppb	1505.433	0.95	785535	4000	
Mo	95	3	115	4.354	ppb	4.354	3.48	2107	2000	
Ag	107	3	115	0.000	ppb	0.000	4854.28	17	100	
Cd	111	3	115	0.001	ppb	0.001	1760.92	3	2000	
Sn	120	3	115	0.536	ppb	0.536	2.88	858	2000	
Sb	121	3	115	-0.007	ppb	-0.007	-564.82	108	1000	
Ba	137	3	115	59.746	ppb	59.746	0.83	13810	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-616.12	95	2000	
(Pb)	206	3	193	0.021	ppb	0.021	81.00	158	100	
(Pb)	207	3	193	0.001	ppb	0.001	2905.14	287	100	
Pb	208	3	193	0.022	ppb	0.022	67.35	733	5000	
Th	232	3	193	0.014	ppb	0.014	82.18	3839	2000	
U	238	3	193	16.824	ppb	16.824	1.02	78175	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4025229	1.73	4331237	92.93	60	120	
Sc (IS)	45	3	HMI He	595227	0.21	654817	90.90	60	120	
Ge Internal standard	72	2	HMI H2	2176601	2.80	2307933	94.31	60	120	
Ge Internal standard	72	3	HMI He	698942	0.61	744678	93.86	60	120	
In Internal Standard	115	3	HMI He	2367015	1.06	2599142	91.07	60	120	
Ir (IS)	193	3	HMI He	4858524	1.11	5525410	87.93	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-18-a
Data File Name	298SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:43:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.61	3	2000	
Na	23	3	45	648831.122	ppb	648831.122	1.05	76029654	400000	
Mg	24	3	45	78241.863	ppb	78241.863	1.24	4743478	400000	
Al	27	3	45	159.331	ppb	159.331	11.31	3591	400000	
K	39	3	45	5611.240	ppb	5611.240	1.44	292183	400000	
Ca	40	2	45	336240.423	ppb	336240.423	3.63	178530594	400000	
V	51	3	72	1.246	ppb	1.246	4.62	978	2000	
Cr	52	3	72	0.508	ppb	0.508	30.15	1688	5000	
Mn	55	3	72	142.504	ppb	142.504	1.31	58363	10000	
Fe	56	2	72	164.353	ppb	164.353	9.02	244793	10000	
Co	59	3	72	0.424	ppb	0.424	8.12	543	2000	
Ni	60	3	72	2.855	ppb	2.855	4.79	1083	5000	
Cu	63	3	72	1.156	ppb	1.156	4.59	1391	5000	
Zn	66	3	72	5.627	ppb	5.627	17.52	1136	5000	
As	75	3	72	1.239	ppb	1.239	25.24	188	2000	
Se	78	2	72	0.394	ppb	0.394	26.00	25	2000	
(Se)	78	3	72	-1.357	ppb	-1.357	-85.91	23	2000	
Sr	88	3	72	6306.662	ppb	6306.662	1.56	3340283	4000	
Mo	95	3	115	4.280	ppb	4.280	11.04	2081	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-34.69	8	100	
Cd	111	3	115	0.016	ppb	0.016	209.68	7	2000	
Sn	120	3	115	0.236	ppb	0.236	63.38	648	2000	
Sb	121	3	115	0.061	ppb	0.061	101.24	158	1000	
Ba	137	3	115	17.844	ppb	17.844	4.35	4187	5000	
Tl	205	3	193	0.051	ppb	0.051	12.81	262	2000	
(Pb)	206	3	193	0.125	ppb	0.125	14.17	270	100	
(Pb)	207	3	193	0.161	ppb	0.161	28.06	438	100	
Pb	208	3	193	0.138	ppb	0.138	9.84	1234	5000	
Th	232	3	193	0.098	ppb	0.098	30.75	4194	2000	
U	238	3	193	33.526	ppb	33.526	2.22	153942	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3868388	1.40	4331237	89.31	60	120	
Sc (IS)	45	3	HMI He	617258	1.03	654817	94.26	60	120	
Ge Internal standard	72	2	HMI H2	2150501	1.56	2307933	93.18	60	120	
Ge Internal standard	72	3	HMI He	709578	1.21	744678	95.29	60	120	
In Internal Standard	115	3	HMI He	2378341	1.20	2599142	91.50	60	120	
Ir (IS)	193	3	HMI He	4844568	1.96	5525410	87.68	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-19-a
Data File Name	299SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:45:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.61	3	2000	
Na	23	3	45	282705.751	ppb	282705.751	0.54	32436961	400000	
Mg	24	3	45	83597.159	ppb	83597.159	1.16	4958723	400000	
Al	27	3	45	55.409	ppb	55.409	7.02	1275	400000	
K	39	3	45	6484.380	ppb	6484.380	1.42	326583	400000	
Ca	40	2	45	388503.354	ppb	388503.354	3.32	206023730	400000	
V	51	3	72	0.506	ppb	0.506	19.48	525	2000	
Cr	52	3	72	0.148	ppb	0.148	84.65	1388	5000	
Mn	55	3	72	599.531	ppb	599.531	1.52	240252	10000	
Fe	56	2	72	64.862	ppb	64.862	2.76	101695	10000	
Co	59	3	72	1.607	ppb	1.607	3.28	1951	2000	
Ni	60	3	72	3.153	ppb	3.153	11.73	1161	5000	
Cu	63	3	72	2.502	ppb	2.502	6.00	2572	5000	
Zn	66	3	72	11.511	ppb	11.511	9.26	2051	5000	
As	75	3	72	0.898	ppb	0.898	15.30	147	2000	
Se	78	2	72	0.087	ppb	0.087	63.36	7	2000	
(Se)	78	3	72	-3.146	ppb	-3.146	-39.13	12	2000	
Sr	88	3	72	7242.657	ppb	7242.657	1.95	3761006	4000	
Mo	95	3	115	2.478	ppb	2.478	5.25	1229	2000	
Ag	107	3	115	0.007	ppb	0.007	64.93	28	100	
Cd	111	3	115	0.001	ppb	0.001	1099.16	3	2000	
Sn	120	3	115	0.680	ppb	0.680	11.38	971	2000	
Sb	121	3	115	-0.012	ppb	-0.012	-277.70	107	1000	
Ba	137	3	115	32.663	ppb	32.663	1.21	7677	5000	
Tl	205	3	193	0.025	ppb	0.025	32.82	180	2000	
(Pb)	206	3	193	0.313	ppb	0.313	20.85	471	100	
(Pb)	207	3	193	0.277	ppb	0.277	25.84	550	100	
Pb	208	3	193	0.296	ppb	0.296	13.71	1921	5000	
Th	232	3	193	0.043	ppb	0.043	66.28	3950	2000	
U	238	3	193	30.869	ppb	30.869	2.20	141852	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3864773	3.06	4331237	89.23	60	120	
Sc (IS)	45	3	HMI He	603849	1.06	654817	92.22	60	120	
Ge Internal standard	72	2	HMI H2	2143557	1.75	2307933	92.88	60	120	
Ge Internal standard	72	3	HMI He	695687	0.70	744678	93.42	60	120	
In Internal Standard	115	3	HMI He	2397940	0.84	2599142	92.26	60	120	
Ir (IS)	193	3	HMI He	4843552	0.94	5525410	87.66	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	300_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:47:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.560	ppb	5.698	2439	50	103.1	90	110	
Na	23	3	45	50030.408	ppb	2.382	5479413	51000	98.1	90	110	
Mg	24	3	45	10812.978	ppb	1.463	608239	11000	98.3	90	110	
Al	27	3	45	1034.962	ppb	2.256	21237	1000	103.5	90	110	
K	39	3	45	10611.809	ppb	0.894	492120	11000	96.5	90	110	
Ca	40	2	45	11258.792	ppb	3.679	5948087	11000	102.4	90	110	
V	51	3	72	51.232	ppb	1.115	28001	50	102.5	90	110	
Cr	52	3	72	50.730	ppb	3.271	35900	50	101.5	90	110	
Mn	55	3	72	52.620	ppb	2.322	19627	50	105.2	90	110	
Fe	56	2	72	1046.361	ppb	3.177	1436778	1000	104.6	90	110	
Co	59	3	72	50.681	ppb	1.884	56229	50	101.4	90	110	
Ni	60	3	72	49.110	ppb	3.004	15197	50	98.2	90	110	
Cu	63	3	72	50.600	ppb	2.078	42292	50	101.2	90	110	
Zn	66	3	72	50.370	ppb	4.698	7617	50	100.7	90	110	
As	75	3	72	50.728	ppb	5.154	5243	50	101.5	90	110	
Se	78	2	72	51.069	ppb	1.876	2726	50	102.1	90	110	
(Se)	78	3	72	57.708	ppb	17.097	361	50	115.4	90	110	>+\-10%
Sr	88	3	72	105.367	ppb	2.456	50620	100	105.4	90	110	
Mo	95	3	115	49.338	ppb	4.467	22696	50	98.7	90	110	
Ag	107	3	115	48.887	ppb	1.192	74488	50	97.8	90	110	
Cd	111	3	115	49.363	ppb	2.403	11062	50	98.7	90	110	
Sn	120	3	115	51.071	ppb	1.477	35236	50	102.1	90	110	
Sb	121	3	115	50.483	ppb	0.924	34846	50	101.0	90	110	
Ba	137	3	115	49.533	ppb	1.946	11054	50	99.1	90	110	
Tl	205	3	193	51.387	ppb	0.875	160741	50	102.8	90	110	
(Pb)	206	3	193	50.951	ppb	2.910	53662	50	101.9	90	110	
(Pb)	207	3	193	50.431	ppb	2.655	47293	50	100.9	90	110	
Pb	208	3	193	51.074	ppb	2.972	216812	50	102.1	90	110	
Th	232	3	193	51.438	ppb	1.738	221403	50	102.9	90	110	
U	238	3	193	50.935	ppb	2.138	227423	50	101.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3841072	1.62	4331237	88.68	60	120	
Sc (IS)	45	3	HMI He	572638	2.13	654817	87.45	60	120	
Ge Internal standard	72	2	HMI H2	2043700	1.23	2307933	88.55	60	120	
Ge Internal standard	72	3	HMI He	643231	1.33	744678	86.38	60	120	
In Internal Standard	115	3	HMI He	2283503	1.28	2599142	87.86	60	120	
Ir (IS)	193	3	HMI He	4725094	1.79	5525410	85.52	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	301_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:49:08-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.037	ppb	173.2	2	0.5	
Na	23	3	45	286.351	ppb	1.9	71910	25	>RL
Mg	24	3	45	6.695	ppb	23.1	521	25	
Al	27	3	45	10.485	ppb	10.0	277	15	
K	39	3	45	5.053	ppb	1028.8	22177	50	
V	51	3	72	-0.195	ppb	-14.5	100	1	
Cr	52	3	72	-0.031	ppb	-104.7	1111	1	
Mn	55	3	72	0.424	ppb	34.0	292	0.5	
Co	59	3	72	0.007	ppb	100.8	28	0.5	
Ni	60	3	72	0.053	ppb	200.6	115	1	
Cu	63	3	72	0.063	ppb	73.6	338	1	
Zn	66	3	72	0.320	ppb	63.0	238	5	
As	75	3	72	-0.033	ppb	-749.6	38	1	
Se	78	2	72	0.047	ppb	130.6	5	1	
(Se)	78	3	72	-2.911	ppb	-78.3	12	1	
Sr	88	3	72	0.567	ppb	34.0	297	0.5	>RL
Mo	95	3	115	0.037	ppb	96.0	47	0.5	
Ag	107	3	115	0.004	ppb	249.3	22	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.353	ppb	27.4	670	1	
Sb	121	3	115	-0.050	ppb	-21.8	72	0.6	
Ba	137	3	115	-0.027	ppb	-119.8	52	0.5	
Tl	205	3	193	0.003	ppb	368.7	102	0.1	
(Pb)	206	3	193	-0.022	ppb	-35.7	103	1	
(Pb)	207	3	193	0.004	ppb	317.2	270	1	
Pb	208	3	193	0.012	ppb	45.5	645	0.5	
Th	232	3	193	0.568	ppb	21.8	5818	1	
U	238	3	193	0.005	ppb	104.9	1304	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3624759	3.66	4331237	83.69	60	120	
Sc (IS)	45	3	HMI He	546624	0.29	654817	83.48	60	120	
Ge Internal standard	72	2	HMI H2	1978536	2.56	2307933	85.73	60	120	
Ge Internal standard	72	3	HMI He	616397	0.63	744678	82.77	60	120	
In Internal Standard	115	3	HMI He	2176831	1.53	2599142	83.75	60	120	
Ir (IS)	193	3	HMI He	4523449	0.39	5525410	81.87	60	120	

Sample Report

Sample Table

Sample Name	280-171270-i-4-b
Data File Name	302SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:51:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.042	ppb	0.042	173.21	2	2000	
Na	23	3	45	13886866.218	ppb	13886866.218	0.83	1476111286	400000	>LDR
Mg	24	3	45	858643.440	ppb	858643.440	0.44	47249892	400000	
Al	27	3	45	362.111	ppb	362.111	7.41	7319	400000	
K	39	3	45	5576912.640	ppb	5576912.640	1.43	241244171	400000	>LDR
Ca	40	2	45	799885.009	ppb	799885.009	2.29	390296009	400000	
V	51	3	72	246.055	ppb	246.055	1.36	125443	2000	
Cr	52	3	72	438.938	ppb	438.938	1.28	283015	5000	
Mn	55	3	72	9025.324	ppb	9025.324	0.53	3136215	10000	
Fe	56	2	72	753.602	ppb	753.602	1.80	960652	10000	
Co	59	3	72	1.590	ppb	1.590	12.83	1676	2000	
Ni	60	3	72	8.505	ppb	8.505	3.43	2551	5000	
Cu	63	3	72	0.797	ppb	0.797	20.82	903	5000	
Zn	66	3	72	4.454	ppb	4.454	15.02	805	5000	
As	75	3	72	227.614	ppb	227.614	1.38	21948	2000	
Se	78	2	72	2.103	ppb	2.103	18.93	106	2000	
(Se)	78	3	72	4.228	ppb	4.228	57.89	50	2000	
Sr	88	3	72	5118.356	ppb	5118.356	1.84	2306290	4000	
Mo	95	3	115	1.660	ppb	1.660	5.12	665	2000	
Ag	107	3	115	0.022	ppb	0.022	26.80	42	100	
Cd	111	3	115	0.014	ppb	0.014	2.53	5	2000	
Sn	120	3	115	1.817	ppb	1.817	10.06	1421	2000	
Sb	121	3	115	162.667	ppb	162.667	1.05	93645	1000	
Ba	137	3	115	2229.593	ppb	2229.593	2.14	413696	5000	
Tl	205	3	193	0.003	ppb	0.003	280.73	78	2000	
(Pb)	206	3	193	0.236	ppb	0.236	32.49	278	100	
(Pb)	207	3	193	0.294	ppb	0.294	11.87	405	100	
Pb	208	3	193	0.277	ppb	0.277	9.34	1316	5000	
Th	232	3	193	0.226	ppb	0.226	8.29	3397	2000	
U	238	3	193	0.079	ppb	0.079	25.88	1238	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3554247	1.54	4331237	82.06	60	120	
Sc (IS)	45	3	HMI He	560248	0.87	654817	85.56	60	120	
Ge Internal standard	72	2	HMI H2	1893177	2.04	2307933	82.03	60	120	
Ge Internal standard	72	3	HMI He	603646	0.62	744678	81.06	60	120	
In Internal Standard	115	3	HMI He	1908776	1.30	2599142	73.44	60	120	
Ir (IS)	193	3	HMI He	3466752	0.31	5525410	62.74	60	120	

Sample Report

Sample Table

Sample Name	RINSE
Data File Name	303SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:52:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2067.205	ppb	2067.205	13.59	502587	400000	
Mg	24	3	45	49.913	ppb	49.913	18.01	5567	400000	
Al	27	3	45	-1.971	ppb	-1.971	-60.64	67	400000	
K	39	3	45	445.684	ppb	445.684	39.44	79903	400000	
Ca	40	2	45	175.282	ppb	175.282	6.75	201905	400000	
V	51	3	72	-0.297	ppb	-0.297	-9.63	93	2000	
Cr	52	3	72	-1.224	ppb	-1.224	-2.00	650	5000	
Mn	55	3	72	0.618	ppb	0.618	12.34	711	10000	
Fe	56	2	72	-2.679	ppb	-2.679	-12.06	9346	10000	
Co	59	3	72	-0.012	ppb	-0.012	-23.31	17	2000	
Ni	60	3	72	-0.252	ppb	-0.252	-12.16	50	5000	
Cu	63	3	72	-0.093	ppb	-0.093	-32.22	423	5000	
Zn	66	3	72	-0.713	ppb	-0.713	-16.82	183	5000	
As	75	3	72	-0.045	ppb	-0.045	-100.06	73	2000	
Se	78	2	72	0.007	ppb	0.007	422.35	5	2000	
(Se)	78	3	72	-2.886	ppb	-2.886	-16.90	23	2000	
Sr	88	3	72	0.686	ppb	0.686	24.72	695	4000	
Mo	95	3	115	-0.021	ppb	-0.021	-73.85	40	2000	
Ag	107	3	115	0.010	ppb	0.010	113.61	53	100	
Cd	111	3	115	0.008	ppb	0.008	232.11	8	2000	
Sn	120	3	115	-0.417	ppb	-0.417	-12.71	313	2000	
Sb	121	3	115	0.561	ppb	0.561	7.85	871	1000	
Ba	137	3	115	0.039	ppb	0.039	231.86	122	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-61.63	147	2000	
(Pb)	206	3	193	-0.021	ppb	-0.021	-141.53	180	100	
(Pb)	207	3	193	0.000	ppb	0.000	8438.58	458	100	
Pb	208	3	193	-0.005	ppb	-0.005	-254.44	990	5000	
Th	232	3	193	0.029	ppb	0.029	106.66	6247	2000	
U	238	3	193	0.012	ppb	0.012	32.15	2294	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	7370405	1.77	4331237	170.17	60	120	IS Failed
Sc (IS)	45	3	HMI He	1069394	1.93	654817	163.31	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3998812	1.73	2307933	173.26	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1217626	1.73	744678	163.51	60	120	IS Failed
In Internal Standard	115	3	HMI He	4020454	3.05	2599142	154.68	60	120	IS Failed
Ir (IS)	193	3	HMI He	7781722	1.89	5525410	140.84	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	304_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:54:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.278	ppb	5.988	2179	50	94.6	90	110	
Na	23	3	45	51308.073	ppb	1.093	5529951	51000	100.6	90	110	
Mg	24	3	45	10704.058	ppb	1.131	592868	11000	97.3	90	110	
Al	27	3	45	1040.555	ppb	2.170	21023	1000	104.1	90	110	
K	39	3	45	11427.916	ppb	0.127	519983	11000	103.9	90	110	
Ca	40	2	45	11186.941	ppb	1.416	5712252	11000	101.7	90	110	
V	51	3	72	51.065	ppb	2.909	26844	50	102.1	90	110	
Cr	52	3	72	51.208	ppb	0.877	34850	50	102.4	90	110	
Mn	55	3	72	53.105	ppb	1.892	19052	50	106.2	90	110	
Fe	56	2	72	1036.189	ppb	0.752	1374858	1000	103.6	90	110	
Co	59	3	72	50.793	ppb	0.528	54209	50	101.6	90	110	
Ni	60	3	72	49.234	ppb	1.974	14659	50	98.5	90	110	
Cu	63	3	72	50.086	ppb	2.687	40292	50	100.2	90	110	
Zn	66	3	72	51.294	ppb	1.833	7462	50	102.6	90	110	
As	75	3	72	50.974	ppb	3.216	5072	50	101.9	90	110	
Se	78	2	72	49.514	ppb	4.052	2553	50	99.0	90	110	
(Se)	78	3	72	48.855	ppb	8.321	298	50	97.7	90	110	
Sr	88	3	72	106.414	ppb	0.170	49186	100	106.4	90	110	
Mo	95	3	115	48.269	ppb	1.330	21581	50	96.5	90	110	
Ag	107	3	115	46.652	ppb	1.410	69064	50	93.3	90	110	
Cd	111	3	115	48.150	ppb	2.234	10486	50	96.3	90	110	
Sn	120	3	115	49.485	ppb	2.324	33183	50	99.0	90	110	
Sb	121	3	115	49.273	ppb	1.026	33046	50	98.5	90	110	
Ba	137	3	115	50.316	ppb	5.116	10912	50	100.6	90	110	
Tl	205	3	193	53.523	ppb	0.870	146460	50	107.0	90	110	
(Pb)	206	3	193	53.125	ppb	0.197	48962	50	106.2	90	110	
(Pb)	207	3	193	52.586	ppb	0.582	43139	50	105.2	90	110	
Pb	208	3	193	53.312	ppb	0.793	198050	50	106.6	90	110	
Th	232	3	193	52.707	ppb	0.672	198424	50	105.4	90	110	
U	238	3	193	52.906	ppb	0.492	206674	50	105.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3712085	3.24	4331237	85.70	60	120	
Sc (IS)	45	3	HMI He	563673	2.05	654817	86.08	60	120	
Ge Internal standard	72	2	HMI H2	1974534	1.78	2307933	85.55	60	120	
Ge Internal standard	72	3	HMI He	618733	1.90	744678	83.09	60	120	
In Internal Standard	115	3	HMI He	2218343	1.20	2599142	85.35	60	120	
Ir (IS)	193	3	HMI He	4133698	2.66	5525410	74.81	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	305_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:56:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	1196.009	ppb	2.1	176864	25	>RL
Mg	24	3	45	17.972	ppb	8.1	1198	25	
Al	27	3	45	13.645	ppb	24.1	360	15	
K	39	3	45	405.953	ppb	7.8	41593	50	>RL
V	51	3	72	-0.180	ppb	-16.4	113	1	
Cr	52	3	72	-0.062	ppb	-318.6	1144	1	
Mn	55	3	72	0.806	ppb	21.0	448	0.5	>RL
Co	59	3	72	0.003	ppb	263.1	25	0.5	
Ni	60	3	72	-0.019	ppb	-349.9	98	1	
Cu	63	3	72	0.079	ppb	33.2	368	1	
Zn	66	3	72	0.962	ppb	27.8	345	5	
As	75	3	72	-0.084	ppb	-202.0	35	1	
Se	78	2	72	0.005	ppb	384.8	3	1	
(Se)	78	3	72	-0.993	ppb	-304.2	23	1	
Sr	88	3	72	0.395	ppb	12.1	228	0.5	
Mo	95	3	115	0.046	ppb	87.0	53	0.5	
Ag	107	3	115	0.009	ppb	124.6	30	1	
Cd	111	3	115	0.002	ppb	724.7	3	0.5	
Sn	120	3	115	0.260	ppb	8.2	641	1	
Sb	121	3	115	0.133	ppb	19.0	202	0.6	
Ba	137	3	115	-0.009	ppb	-1080.3	58	0.5	
Tl	205	3	193	0.008	ppb	134.4	118	0.1	
(Pb)	206	3	193	0.002	ppb	1327.1	128	1	
(Pb)	207	3	193	0.026	ppb	360.7	290	1	
Pb	208	3	193	0.026	ppb	123.0	701	0.5	
Th	232	3	193	0.642	ppb	23.9	6150	1	
U	238	3	193	0.020	ppb	62.8	1373	0.5	

QC ISTD Table

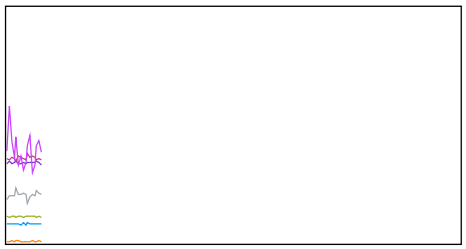
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891993	0.42	4331237	89.86	60	120	
Sc (IS)	45	3	HMI He	581533	0.31	654817	88.81	60	120	
Ge Internal standard	72	2	HMI H2	2062189	1.89	2307933	89.35	60	120	
Ge Internal standard	72	3	HMI He	646652	0.53	744678	86.84	60	120	
In Internal Standard	115	3	HMI He	2289297	1.01	2599142	88.08	60	120	
Ir (IS)	193	3	HMI He	4550023	1.71	5525410	82.35	60	120	

Current Signal

Operator Name	Denver Meta s
Acq. Date-Tme	1/24/2023 10:26:16 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	20000	4063	4047	2.077
2	59	50000	4037	4055	2 903
3	63	20000	172	183	6 135
4	70	1000	145	145	5.676
5	80	2000000	601447	604757	0.439
6	89	20000	6132	6317	1.681
7	115	20000	6636	6802	1.443
8	118	10000	57	62	13.885
9	137	10000	781	808	3.396
10	140	20000	7034	7178	2.253
11	205	50000	5408	5520	1.967
12	6	5000	6763	6848	1.355
13	70/140	10	2.062 %	2.028 %	7.019
14	156/140	1	0 384 %	0 393 %	17.975

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-50 V
Extract 2	175 0 V	Q1 Exit		Def ect	11 6 V
Omega Bias	85 V	Cel Focus		P ate Bias	35 V
Omega Lens	8.0 V	Cel Entrance	30 V		

Cell Parameters

Use Gas	No	3rd Gas F ow		Axia Acce eration	
He F ow	0.0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0 0 mL/min	OctP Bias	8 0 V	Energy Discrimination	5 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	-3 0 V
Mass Offset	122	Axis Offset	0.07		

Torch

Current Signal

Torch H	0 2 mm	Torch V	0 2 mm		

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

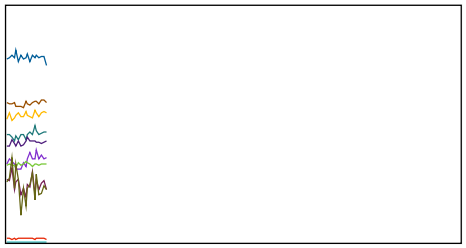
Name	Value	Unit
F/BK Press	2.56E+2	Pa
Ana yzer Press	1 02E 4	Pa
Reflected Power	1	W
Forward Power	1600	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/24/2023 10:26:50 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	200	124	120	8.456
2	9	500	179	172	6 899
3	59	1000	646	643	4 928
4	63	500	16	14	31 348
5	70	200	47	51	14 082
6	78	20	0	0	0.000
7	89	10000	5508	5385	2.400
8	115	20000	6641	6572	1 681
9	118	5000	58	66	11 607
10	137	2000	933	912	3.392
11	140	10000	4270	4216	2.588
12	205	10000	5925	5876	1.715
13	238	10000	7472	7842	1.943
14	70/140	5	1 101 %	1 218 %	13.476
15	156/140	2	0.445 %	0.477 %	25 219

Integration Time [sec] 0 1

Tune Parameters

Plasma Parameters

P asma Mode		Nebulizer Gas	0.64 L/min	Dilution Gas	0.26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1 40 V	Nebulizer Pump	0 10 rps	P asma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance		Cel Exit	60 V
Extract 2	180 0 V	Q1 Exit		Def ect	1 2 V
Omega Bias	90 V	Cel Focus		P ate Bias	60 V
Omega Lens	7 4 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	0 0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	5 0 mL/min	OctP Bias	18.0 V	Energy Discrimination	3 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Current Signal

Torch

Torch H	0 2 mm	Torch V	-0 2 mm		

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

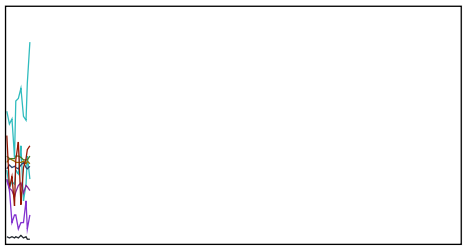
Name	Value	Unit
F/BK Press	2.63E+2	Pa
Ana yzer Press	4.89E 4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/24/2023 10:27:12 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012423.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	53	100	27	28	22 633
2	59	5000	1312	1291	1 976
3	66	500	49	43	12.344
4	70	100	57	40	20 249
5	78	20	1	1	142 725
6	115	5000	1622	1614	2.614
7	118	1000	17	22	19 040
8	137	1000	222	231	8 972
9	140	10000	3351	3437	1.675
10	205	10000	3693	3611	1.973
11	51/59	5	2.059 %	1.615 %	32 237
12	70/140	2	1.701 %	1.165 %	21 092
13	156/140	1	0.119 %	0.127 %	53 509

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas	---	Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-60 V
Extract 2	190 0 V	Q1 Exit		Def ect	0 8 V
Omega Bias	90 V	Cel Focus		P ate Bias	55 V
Omega Lens	7.3 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	4.3 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0.0 mL/min	OctP Bias	18 0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0.07		

Torch

Torch H	0.2 mm	Torch V	0.2 mm

Current Signal

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

Name	Value	Unit
F/BK Press	2 57E+2	Pa
Ana yzer Press	2 57E-4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 10:34:55 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

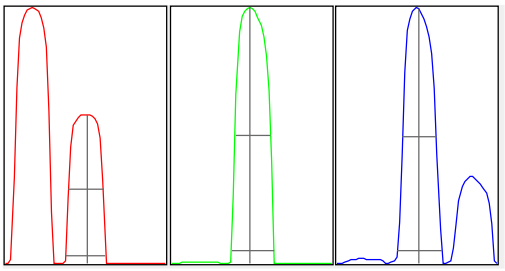
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2523	25225 43	0.545	5 000	
89		3979	39785 10	0.484	5 000	
205		3299	32988 39	1.122	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2510	2522	2545	2521	2514
89	3992	3965	4002	3977	3955
205	3238	3312	3328	3291	3325

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3978.80	7.05	6 90 7 10	
89	6328.75	89.00	88 90 89.10	
205	5440 83	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.65	0.742	0.900	
89	0.65	0.785	0.900	
205	0.62	0.822	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

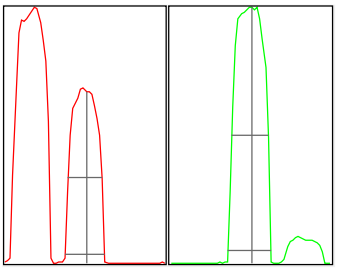
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		73	734 43	3 349	5.000	
9		109	1093 56	1.254	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	77	70	74	73	74
9	111	108	109	110	108

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	120 06	7 05	6.90 - 7.10	
9	168 96	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.742	0.900	
9	0.66	0.787	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		133	1325.99	1 927	5.000	
25		20	198 80	3 174	5.000	
26		24	240.20	6.237	5 000	Fai
59		853	8531 76	0.756	5 000	
103		2391	23912.19	0 947	5.000	
115		1018	10179.26	0 544	5.000	
205		2194	21937.26	0 470	5.000	
206		725	7251 19	0.903	5 000	
207		632	6321 65	0.914	5 000	

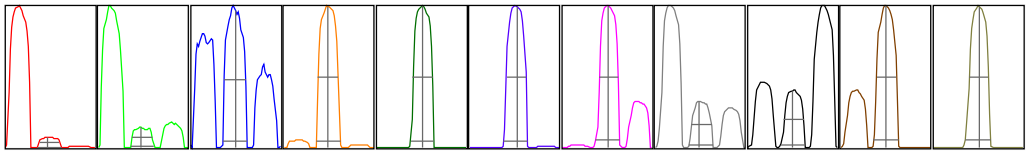
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1562	15622.68	0 455	5.000	
238		3214	32139.16	0 319	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	137	132	131	132	132
25	20	20	20	21	19
26	22	24	25	26	24
59	849	858	861	853	845
103	2391	2367	2373	2423	2402
115	1013	1025	1012	1019	1022
205	2189	2191	2184	2211	2194
206	717	721	725	727	735
207	631	636	631	624	640
208	1567	1567	1569	1556	1553
238	3220	3214	3201	3207	3227

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	210.67	23.95	23 90 24.10	
25	30.40	24.95	24 90 25.10	
26	36 25	26 00	25.90 - 26 10	
59	1316 48	59 00	58.90 - 59 10	
103	3851.03	103.05	102.90 103.10	
115	1631.04	115.10	114.90 115.10	
205	3595.79	205.05	204.90 205.10	
206	1164 79	206 00	205 90 - 206 10	
207	1012 16	207 00	206 90 - 207 10	
208	2519.76	208.05	207.90 208.10	
238	5140.44	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 67	0 790	0 900	
25	0.69	0.790	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.69	0.792	0.900	
59	0.68	0.790	0.900	
103	0 65	0 784	0 900	
115	0 64	0 779	0 900	
205	0.63	0.793	0.900	
206	0.64	0.791	0.900	
207	0.64	0.808	0.900	
208	0 64	0 821	0 900	
238	0 65	0 843	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 10:43:51 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

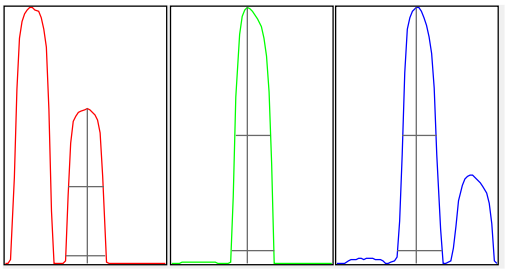
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2572	25719 39	0.585	5 000	
89		4101	41011 75	0.703	5 000	
205		3324	33238 80	0.370	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2581	2585	2559	2582	2552
89	4078	4065	4129	4128	4107
205	3329	3331	3335	3321	3304

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4074.02	7.05	6 90 7 10	
89	6558.43	88.95	88 90 89.10	
205	5485 26	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.65	0.742	0.900	
89	0.65	0.785	0.900	
205	0.62	0.822	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

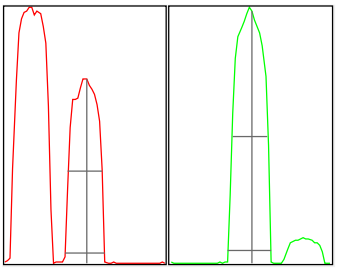
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		74	738 93	3 102	5.000	
9		113	1125 67	2.900	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	77	73	72	72	76
9	114	117	109	113	110

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	122 76	7 05	6.90 - 7.10	
9	179 26	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.743	0.900	
9	0.66	0.786	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		135	1347.19	2 417	5.000	
25		19	194 10	4 741	5.000	
26		24	244.50	1.835	5 000	
59		870	8695 81	0.600	5 000	
103		2446	24462.99	0 531	5.000	
115		1052	10517.55	0 867	5.000	
205		2213	22131.52	0 659	5.000	
206		729	7291 83	1.298	5 000	
207		640	6397 61	0.985	5 000	

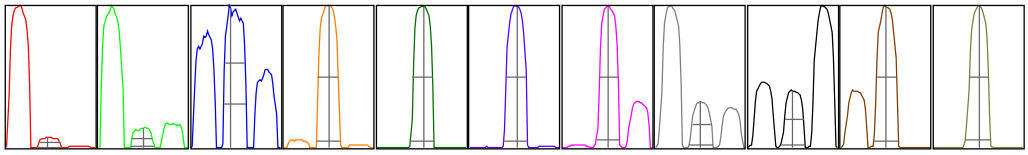
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1581	15805.33	0 690	5.000	
238		3226	32264.84	0 684	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	133	136	140	132	133
25	19	18	20	21	20
26	24	25	24	24	25
59	870	870	870	876	861
103	2451	2434	2460	2456	2431
115	1057	1052	1036	1054	1060
205	2228	2218	2192	2205	2223
206	726	727	717	732	743
207	647	643	630	639	639
208	1584	1580	1576	1596	1566
238	3249	3225	3194	3220	3244

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	206.77	23.95	23 90 24.10	
25	29.30	25.05	24 90 25.10	
26	36 50	25 85	25.90 - 26 10	Fail
59	1336 60	59 05	58.90 - 59 10	
103	3888.74	103.10	102.90 103.10	
115	1690.97	115.10	114.90 115.10	
205	3657.31	205.05	204.90 205.10	
206	1180 50	206 05	205 90 - 206 10	
207	1030 72	207 00	206 90 - 207 10	
208	2534.83	208.05	207.90 208.10	
238	5215.29	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 68	0 790	0 900	
25	0.69	0.790	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.66	0.738	0.900	
59	0.68	0.789	0.900	
103	0 65	0 784	0 900	
115	0 64	0 779	0 900	
205	0.62	0.786	0.900	
206	0.64	0.790	0.900	
207	0.64	0.802	0.900	
208	0 64	0 822	0 900	
238	0 64	0 841	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 11:11:06 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

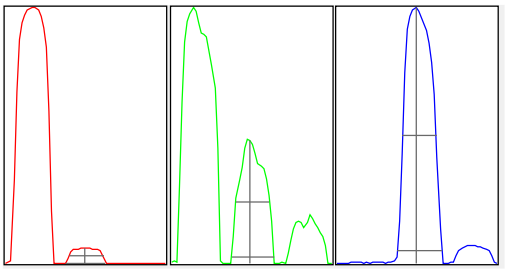
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		231	2312 78	1.617	5 000	
89		13	126.80	7.690	5 000	Fai
205		304	3035 34	5.409	5 000	Fai

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	232	235	232	231	225
89	14	13	12	11	13
205	328	305	308	292	285

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	368.00	7.00	6 90 7 10	
89	22.95	89.00	88 90 89.10	
205	508 30	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.63	0.741	0.900	
89	0.62	0.781	0.900	
205	0.62	0.823	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	3.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

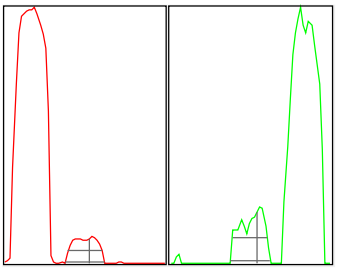
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		10	99 10	3 697	5.000	
9		1	8 60	16 133	5 000	Fai

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	10	10	10	10	10
9	1	1	1	1	1

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	15 65	7 10	6.90 - 7.10	
9	1 55	9 15	8.90 - 9.10	Fail

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.64	0.739	0.900	
9	0.64	0.738	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9998	QP Bias	15.0 V
Mass Offset	122	Axis Offset	0.07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		11	107 70	6 636	5.000	Fai
25		2	16 80	21.728	5.000	Fai
26		2	17.00	26 059	5 000	Fai
59		16	163.60	4.791	5 000	
103		1	10 00	20.000	5.000	Fai
115		30	303 81	3 199	5.000	
205		169	1693.07	3 007	5.000	
206		13	127.20	8.035	5 000	Fai
207		12	116.70	5.057	5 000	Fai

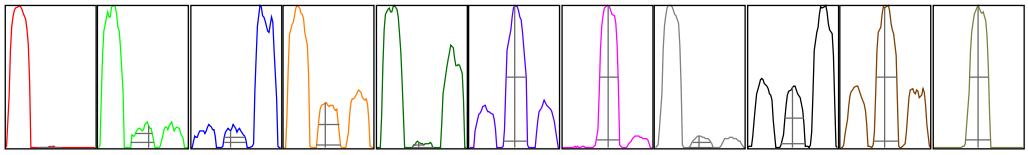
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		28	284 71	3 977	5.000	
238		157	1570.65	3 082	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	10	12	10	11	10
25	1	2	2	1	2
26	2	1	2	2	2
59	17	17	17	16	15
103	1	1	1	1	1
115	30	31	32	29	30
205	174	175	167	167	164
206	14	13	12	11	13
207	12	12	11	11	12
208	29	29	28	27	29
238	162	156	157	161	150

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	16.40	24.05	23 90 24.10	
25	2.75	25.20	24 90 25.10	Fail
26	2 25	25 85	25.90 - 26 10	Fail
59	25 50	58 90	58.90 - 59 10	
103	1.80	102.95	102.90 103.10	
115	51.70	115.05	114.90 115.10	
205	281.58	205.05	204.90 205.10	
206	22 80	206 00	205 90 - 206 10	
207	19 55	207 00	206 90 - 207 10	
208	45.60	208.00	207.90 208.10	
238	256.43	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 67	0 790	0 900	
25	0.56	0.761	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.66	0.747	0.900	
59	0.67	0.786	0.900	
103	0 35	0 723	0 900	
115	0 63	0 780	0 900	
205	0.62	0.783	0.900	
206	0.60	0.775	0.900	
207	0.62	0.792	0.900	
208	0 66	0 827	0 900	
238	0 64	0 829	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9998	QP Bias	-15 0 V
Mass Offset	122	Axis Offset	0 07		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name Denver Metals

Acq/Data Batch D:\Agi ent\ICPMH\1\DATA\79 012423.b

Acq. Date-Time 1/24/2023 11:32:50 AM

Report Comment ---

Instrument Name G8422A SG22251392

[No Gas]

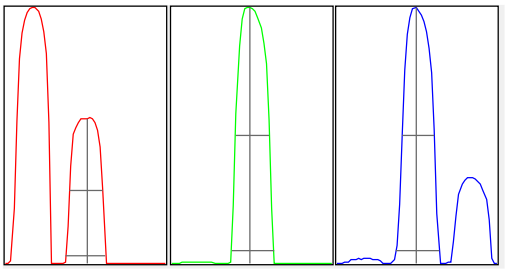
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2303	23032 32	2.511	5 000	
89		3795	37952 91	2.383	5 000	
205		2969	29694 25	1.967	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2238	2257	2302	2345	2375
89	3690	3725	3790	3897	3875
205	2885	2938	2986	3008	3030

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3801.37	7.05	6 90 7 10	
89	6340.77	89.00	88 90 89.10	
205	5130 94	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.807	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

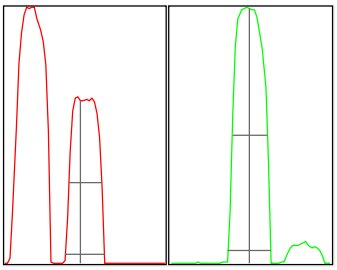
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		72	718 53	3 690	5.000	
9		106	1061 96	3.146	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	75	69	70	71	75
9	107	106	110	101	108

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	116 81	6 95	6.90 - 7.10	
9	170 06	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.62	0.738	0.900	
9	0.64	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		125	1247.99	2 555	5.000	
25		18	180 10	2 758	5.000	
26		23	228.50	5.649	5 000	Fai
59		851	8512 20	0.518	5 000	
103		2281	22813.31	0 538	5.000	
115		995	9946.14	0 663	5.000	
205		2065	20650.37	0 615	5.000	
206		679	6785 53	0.592	5 000	
207		601	6013 33	0.378	5 000	

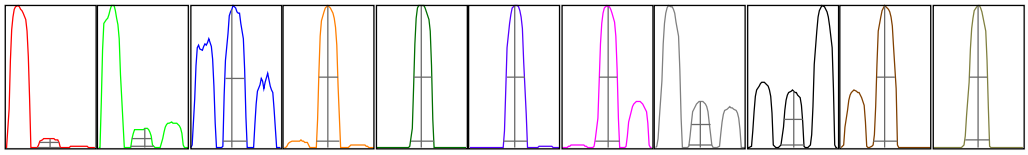
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1455	14549.82	0 470	5.000	
238		2998	29983.30	0 639	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	129	125	121	127	123
25	19	18	17	18	19
26	23	21	22	23	25
59	845	848	853	854	856
103	2296	2267	2272	2281	2290
115	992	996	986	994	1004
205	2071	2069	2051	2053	2081
206	677	677	677	677	686
207	603	604	599	600	602
208	1446	1457	1465	1454	1453
238	2996	2971	3006	3024	2995

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	210.07	24.00	23 90 24.10	
25	28.15	25.10	24 90 25.10	
26	37 05	25 90	25.90 - 26 10	
59	1380 89	59 00	58.90 - 59 10	
103	3908.90	103.00	102.90 103.10	
115	1708.64	115.05	114.90 115.10	
205	3529.00	205.05	204.90 205.10	
206	1153 58	206 05	205 90 - 206 10	
207	999 95	207 05	206 90 - 207 10	
208	2501.12	208.00	207.90 208.10	
238	5063.52	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 739	0 900	
25	0.65	0.778	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.64	0.784	0.900	
59	0.64	0.782	0.900	
103	0 60	0 771	0 900	
115	0 60	0 770	0 900	
205	0.60	0.801	0.900	
206	0.61	0.745	0.900	
207	0.62	0.746	0.900	
208	0 60	0 776	0 900	
238	0 61	0 817	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012423.b
Acq. Date-Time	1/24/2023 11:43:12 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

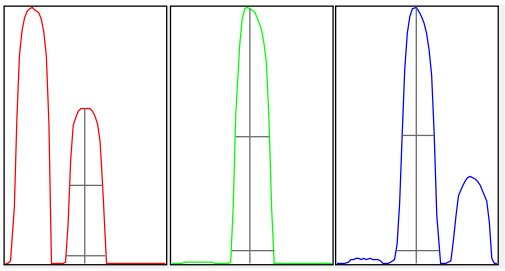
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2432	24318 38	0.622	5 000	
89		4012	40123 69	0.501	5 000	
205		3143	31426 52	0.128	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2428	2422	2434	2419	2457
89	4024	4024	3993	4032	3988
205	3138	3149	3141	3144	3142

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4048.70	7.00	6 90 7 10	
89	6713.63	89.00	88 90 89.10	
205	5438 36	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.806	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 0 V	Def ect	11 6 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

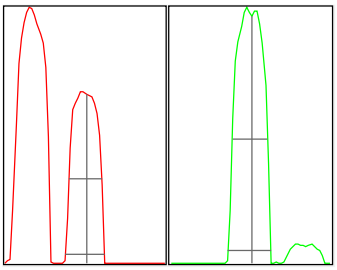
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		73	732 23	2 032	5.000	
9		110	1104 97	2.578	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	72	72	76	73	73
9	111	107	111	114	110

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	121 66	7 05	6.90 - 7.10	
9	173 96	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.62	0.737	0.900	
9	0.65	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 4 V	Def ect	-1 2 V
Extract 2	-180 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		128	1275.59	1 371	5.000	
25		19	186 20	3 124	5.000	
26		23	228.80	3.143	5 000	
59		861	8613 00	0.790	5 000	
103		2315	23154.21	0 967	5.000	
115		1011	10106.53	0 888	5.000	
205		2086	20855.72	0 364	5.000	
206		687	6871 61	1.068	5 000	
207		605	6048 36	0.814	5 000	

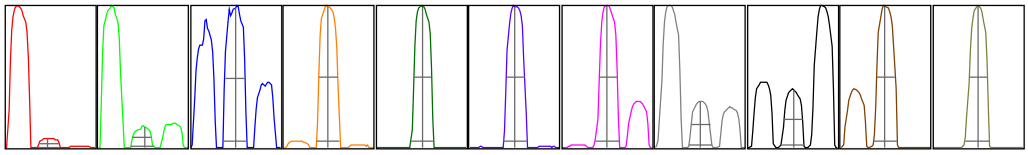
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1462	14623.18	0 416	5.000	
238		3022	30220.82	0 531	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	125	130	127	129	127
25	19	18	19	18	19
26	24	23	23	24	22
59	862	873	856	859	857
103	2345	2304	2333	2295	2300
115	1025	1003	1002	1011	1012
205	2098	2080	2086	2085	2078
206	695	695	685	679	682
207	603	603	608	598	611
208	1462	1473	1458	1461	1458
238	3043	3031	3010	3024	3003

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	209.47	23.95	23 90 24.10	
25	30.75	25.10	24 90 25.10	
26	36 05	26 00	25.90 - 26 10	
59	1388 40	59 00	58.90 - 59 10	
103	4028.55	103.05	102.90 103.10	
115	1734.07	115.05	114.90 115.10	
205	3575.73	205.00	204.90 205.10	
206	1157 78	206 05	205 90 - 206 10	
207	1019 31	207 05	206 90 - 207 10	
208	2507.43	208.00	207.90 208.10	
238	5131.09	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 740	0 900	
25	0.64	0.777	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.785	0.900	
59	0.64	0.782	0.900	
103	0 59	0 770	0 900	
115	0 60	0 770	0 900	
205	0.60	0.799	0.900	
206	0.61	0.753	0.900	
207	0.62	0.746	0.900	
208	0 60	0 775	0 900	
238	0 61	0 814	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.3 V	Def ect	0.8 V
Extract 2	190.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
6		0.078366	☑
9		0.085932	☑
23		0.087336	☑
24		0.089890	☑
27		0.092797	☑
39		0.095820	☑
45		0.096563	☑
48		0.098689	☑
51		0.099525	☑
52		0.099504	☑
55		0.100005	☑
59		0.101731	☑
60		0.103518	☑
63		0.103968	☑
66		0.103979	☑
72		0.103801	☑
75		0.103497	☑
88		0.103236	☑
98		0.103736	☑
102		0.104164	☑
106		0.105740	☑
114		0.104406	☑
115		0.103889	☑

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
118		0.106361	☑
121		0.105307	☑
138		0.105726	☑
175		0.112837	☑
193		0.107537	☑
205		0.113248	☑
208		0.114519	☑
209		0.105879	☑
232		0.109615	☑
238		0.114084	☑

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:53:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:55:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:57:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T11:59:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:00:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:05:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	007SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:07:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	008SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:10:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	009SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:12:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	010SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:14:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	011SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:16:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	012SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:18:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	013SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:23:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	014CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-24T12:25:08-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	29845	0.00
Mg	24	45	3	HMI He	130	0.00
Al	27	45	3	HMI He	67	64.89
K	39	45	3	HMI He	21338	0.04
Ca	40	45	2	HMI H2	11189	0.03
V	51	72	3	HMI He	158	14.02
Cr	52	72	3	HMI He	1736	0.23
Mn	55	72	3	HMI He	535	1.49
Fe	56	72	2	HMI H2	10735	0.02
Co	59	72	3	HMI He	38	39.33
Ni	60	72	3	HMI He	190	2.77
Cu	63	72	3	HMI He	518	1.68
Zn	66	72	3	HMI He	157	12.29
As	75	72	3	HMI He	37	93.64
Se	78	72	2	HMI H2	1	6495.19
(Se)	78	72	3	HMI He	13	429.74
Sr	88	72	3	HMI He	15	222.20
Mo	95	115	3	HMI He	57	9.00
Ag	107	115	3	HMI He	22	268.08
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	653	1.36
Sb	121	115	3	HMI He	67	17.19
Ba	137	115	3	HMI He	48	44.57
Tl	205	193	3	HMI He	396	0.66
(Pb)	206	193	3	HMI He	175	9.09
(Pb)	207	193	3	HMI He	375	1.88
Pb	208	193	3	HMI He	931	0.63
Th	232	193	3	HMI He	4202	0.01
U	238	193	3	HMI He	1586	0.31

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4299393	0.89
Sc (IS)	45	3	HMI He	674661	1.07
Ge Internal standard	72	2	HMI H2	2269722	1.08
Ge Internal standard	72	3	HMI He	739017	1.48
In Internal Standard	115	3	HMI He	2543041	2.84
Ir (IS)	193	3	HMI He	5570851	0.25

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	015CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T12:27:01-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5	3466.41
Na	23	45	3	HMI He	12613225	0.00
Mg	24	45	3	HMI He	1336979	0.00
Al	27	45	3	HMI He	224	10.08
K	39	45	3	HMI He	1022416	0.00
V	51	72	3	HMI He	197	7.35
Cr	52	72	3	HMI He	2299	0.27
Mn	55	72	3	HMI He	673	1.12
Co	59	72	3	HMI He	68	16.36
Ni	60	72	3	HMI He	260	3.39
Cu	63	72	3	HMI He	738	0.60
Zn	66	72	3	HMI He	430	3.39
As	75	72	3	HMI He	52	78.02
Se	78	72	2	HMI H2	2	5000.00
(Se)	78	72	3	HMI He	22	162.85
Sr	88	72	3	HMI He	460	3.28
Mo	95	115	3	HMI He	108	35.49
Ag	107	115	3	HMI He	48	24.71
Cd	111	115	3	HMI He	7	649.52
Sn	120	115	3	HMI He	1223	0.65
Sb	121	115	3	HMI He	102	20.15
Ba	137	115	3	HMI He	137	13.74
Tl	205	193	3	HMI He	491	1.53
(Pb)	206	193	3	HMI He	285	4.04
(Pb)	207	193	3	HMI He	415	3.20
Pb	208	193	3	HMI He	1259	0.36
Th	232	193	3	HMI He	4442	0.05
U	238	193	3	HMI He	1651	0.37

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4159773	1.64	4299393	96.75	60	120	
Sc (IS)	45	3	HMI He	654672	0.96	674661	97.04	60	120	
Ge Internal standard	72	2	HMI H2	2081219	1.81	2269722	91.69	60	120	
Ge Internal standard	72	3	HMI He	689612	0.14	739017	93.31	60	120	
In Internal Standard	115	3	HMI He	2533291	1.30	2543041	99.62	60	120	
Ir (IS)	193	3	HMI He	5457471	0.63	5570851	97.96	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	016CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T12:28:52-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5852	0.01
Na	23	45	3	HMI He	300642	0.00
Mg	24	45	3	HMI He	135080	0.00
Al	27	45	3	HMI He	48769	0.01
K	39	45	3	HMI He	121567	0.00
V	51	72	3	HMI He	65383	0.00
Cr	52	72	3	HMI He	85689	0.00
Mn	55	72	3	HMI He	44601	0.00
Co	59	72	3	HMI He	136221	0.00
Ni	60	72	3	HMI He	38180	0.00
Cu	63	72	3	HMI He	102641	0.00
Zn	66	72	3	HMI He	17728	0.01
As	75	72	3	HMI He	12109	0.00
Se	78	72	2	HMI H2	6214	0.06
(Se)	78	72	3	HMI He	763	0.78
Sr	88	72	3	HMI He	112758	0.00
Mo	95	115	3	HMI He	53898	0.00
Ag	107	115	3	HMI He	177208	0.00
Cd	111	115	3	HMI He	25782	0.00
Sn	120	115	3	HMI He	76468	0.00
Sb	121	115	3	HMI He	77031	0.00
Ba	137	115	3	HMI He	24304	0.00
Tl	205	193	3	HMI He	372960	0.00
(Pb)	206	193	3	HMI He	124573	0.00
(Pb)	207	193	3	HMI He	109997	0.00
Pb	208	193	3	HMI He	502020	0.00
Th	232	193	3	HMI He	505907	0.00
U	238	193	3	HMI He	529449	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306174	1.31	4299393	100.16	60	120	
Sc (IS)	45	3	HMI He	670405	0.98	674661	99.37	60	120	
Ge Internal standard	72	2	HMI H2	2377860	1.43	2269722	104.76	60	120	
Ge Internal standard	72	3	HMI He	771394	1.17	739017	104.38	60	120	
In Internal Standard	115	3	HMI He	2603249	0.52	2543041	102.37	60	120	
Ir (IS)	193	3	HMI He	5643403	0.25	5570851	101.30	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	017_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:33:29-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.247	ppb	3.983	2289	40	98.1	90	110	
Na	23	3	45	13284.811	ppb	1.702	1707209	12800	103.8	90	110	
Mg	24	3	45	4717.163	ppb	2.357	316661	4800	98.3	90	110	
Al	27	3	45	781.218	ppb	1.575	18718	800	97.7	90	110	
K	39	3	45	4720.815	ppb	1.814	258145	4800	98.4	90	110	
Ca	40	2	45	4912.696	ppb	2.185	2912573	4800	102.3	90	110	
V	51	3	72	41.734	ppb	0.513	26103	40	104.3	90	110	
Cr	52	3	72	42.012	ppb	2.837	35307	40	105.0	90	110	
Mn	55	3	72	42.257	ppb	2.969	18266	40	105.6	90	110	
Fe	56	2	72	864.529	ppb	2.380	1311438	800	108.1	90	110	
Co	59	3	72	41.512	ppb	2.037	53919	40	103.8	90	110	
Ni	60	3	72	40.785	ppb	1.055	14956	40	102.0	90	110	
Cu	63	3	72	43.550	ppb	2.275	42888	40	108.9	90	110	
Zn	66	3	72	82.051	ppb	3.190	13887	80	102.6	90	110	
As	75	3	72	41.885	ppb	4.047	4858	40	104.7	90	110	
Se	78	2	72	43.812	ppb	5.046	2592	40	109.5	90	110	
(Se)	78	3	72	41.501	ppb	10.400	310	40	103.8	90	110	
Sr	88	3	72	123.908	ppb	2.959	66577	120	103.3	90	110	
Mo	95	3	115	41.581	ppb	2.261	21830	40	104.0	90	110	
Ag	107	3	115	80.752	ppb	0.591	139157	80	100.9	90	110	
Cd	111	3	115	42.130	ppb	1.713	10564	40	105.3	90	110	
Sn	120	3	115	40.611	ppb	1.056	30585	40	101.5	90	110	
Sb	121	3	115	41.579	ppb	1.235	31184	40	103.9	90	110	
Ba	137	3	115	41.464	ppb	5.763	9825	40	103.7	90	110	
Tl	205	3	193	41.070	ppb	0.537	149577	40	102.7	90	110	
(Pb)	206	3	193	40.707	ppb	0.626	49544	40	101.8	90	110	
(Pb)	207	3	193	40.415	ppb	0.565	43566	40	101.0	90	110	
Pb	208	3	193	40.806	ppb	1.174	200271	40	102.0	90	110	
Th	232	3	193	82.066	ppb	0.694	405530	80	102.6	90	110	
U	238	3	193	41.460	ppb	1.898	214926	40	103.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4272688	2.05	4299393	99.38	60	120	
Sc (IS)	45	3	HMI He	657219	1.29	674661	97.41	60	120	
Ge Internal standard	72	2	HMI H2	2263621	0.63	2269722	99.73	60	120	
Ge Internal standard	72	3	HMI He	735318	1.91	739017	99.50	60	120	
In Internal Standard	115	3	HMI He	2531525	0.80	2543041	99.55	60	120	
Ir (IS)	193	3	HMI He	5502457	0.75	5570851	98.77	60	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	icb-7561103
Data File Name	018_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:36:17-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	0.028	ppb	176.8	3	0.5	
Na	23	3	15.042	ppb	69.6	31346	25	
Mg	24	3	0.271	ppb	192.4	147	25	
Al	27	3	-0.092	ppb	-1004.0	63	15	
K	39	3	-10.944	ppb	-320.4	20509	50	
V	51	3	-0.038	ppb	-155.3	135	1	
Cr	52	3	-0.204	ppb	-79.6	1574	1	
Mn	55	3	-0.326	ppb	-41.8	398	0.5	
Co	59	3	-0.009	ppb	-63.2	27	0.5	
Ni	60	3	-0.016	ppb	-483.3	185	1	
Cu	63	3	-0.059	ppb	-72.2	461	1	
Zn	66	3	-0.109	ppb	-53.5	138	5	
As	75	3	0.043	ppb	778.5	42	1	
Se	78	2	0.044	ppb	129.5	4	1	
(Se)	78	3	-0.690	ppb	-214.3	8	1	
Sr	88	3	0.031	ppb	120.9	32	0.5	
Mo	95	3	-0.032	ppb	-164.4	40	0.5	
Ag	107	3	0.003	ppb	158.4	27	1	
Cd	111	3	-0.006	ppb	0.0	0	0.5	
Sn	120	3	0.121	ppb	31.3	746	1	
Sb	121	3	-0.033	ppb	-69.8	42	0.6	
Ba	137	3	-0.091	ppb	-13.0	27	0.5	
Tl	205	3	-0.034	ppb	-17.1	272	0.1	
(Pb)	206	3	-0.005	ppb	-862.7	170	1	
(Pb)	207	3	-0.002	ppb	-150.2	375	1	
Pb	208	3	-0.002	ppb	-675.8	926	0.5	
Th	232	3	1.005	ppb	26.3	9222	1	>RL
U	238	3	-0.006	ppb	-173.0	1566	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4380120	0.59	4299393	101.88	60	120	
Sc (IS)	45	3	HMI He	665612	2.76	674661	98.66	60	120	
Ge Internal standard	72	2	HMI H2	2284912	2.39	2269722	100.67	60	120	
Ge Internal standard	72	3	HMI He	740469	1.80	739017	100.20	60	120	
In Internal Standard	115	3	HMI He	2552632	0.32	2543041	100.38	60	120	
Ir (IS)	193	3	HMI He	5602371	1.66	5570851	100.57	60	120	

CRI Report

Sample Table

Sample Name	cri-7561108
Data File Name	019LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:38:10-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	1.044	ppb	26.964	62	1	104.4	80	120	
Na	23	3	45	70.686	ppb	9.099	38099	50	141.4	80	120	>+/-30%
Mg	24	3	45	53.666	ppb	4.979	3738	50	107.3	80	120	
Al	27	3	45	45.794	ppb	13.432	1161	50	91.6	80	120	
K	39	3	45	101.508	ppb	41.397	25947	100	101.5	80	120	
Ca	40	2	45	60.038	ppb	5.411	46075	50	120.1	80	120	>+/-30%
V	51	3	72	5.207	ppb	5.540	3332	5	104.1	80	120	
Cr	52	3	72	2.128	ppb	8.814	3365	2	106.4	80	120	
Mn	55	3	72	1.005	ppb	7.912	936	1	100.5	80	120	
Fe	56	2	72	56.232	ppb	2.946	93906	50	112.5	80	120	
Co	59	3	72	1.080	ppb	8.449	1414	1	108.0	80	120	
Ni	60	3	72	2.117	ppb	4.753	938	2	105.8	80	120	
Cu	63	3	72	2.245	ppb	6.603	2651	2	112.3	80	120	
Zn	66	3	72	10.411	ppb	6.511	1864	10	104.1	80	120	
As	75	3	72	5.468	ppb	12.163	653	5	109.4	80	120	
Se	78	2	72	5.169	ppb	5.072	303	5	103.4	80	120	
Sr	88	3	72	1.062	ppb	10.453	575	1	106.2	80	120	
Mo	95	3	115	2.025	ppb	14.709	1119	2	101.3	80	120	
Ag	107	3	115	1.057	ppb	3.684	1851	1	105.7	80	120	
Cd	111	3	115	1.092	ppb	10.937	277	1	109.2	80	120	
Sn	120	3	115	10.145	ppb	1.491	8173	10	101.4	80	120	
Sb	121	3	115	2.085	ppb	7.794	1633	2	104.2	80	120	
Ba	137	3	115	0.879	ppb	8.926	257	1	87.9	80	120	
Tl	205	3	193	0.944	ppb	6.081	3922	1	94.4	80	120	
(Pb)	206	3	193	1.022	ppb	11.253	1449	1	102.2	80	120	
(Pb)	207	3	193	1.064	ppb	5.406	1548	1	106.4	80	120	
Pb	208	3	193	1.014	ppb	5.057	6029	1	101.4	80	120	
Th	232	3	193	2.252	ppb	5.036	15569	2	112.6	80	120	
U	238	3	193	1.044	ppb	3.116	7127	1	104.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4227925	1.96	4299393	98.34	60	120	
Sc (IS)	45	3	HMI He	658863	0.22	674661	97.66	60	120	
Ge Internal standard	72	2	HMI H2	2230693	1.47	2269722	98.28	60	120	
Ge Internal standard	72	3	HMI He	721882	1.22	739017	97.68	60	120	
In Internal Standard	115	3	HMI He	2545578	3.79	2543041	100.10	60	120	
Ir (IS)	193	3	HMI He	5652161	1.82	5570851	101.46	60	120	

CRI Report

Sample Table

Sample Name	cri-
Data File Name	020LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:44:44-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.029	ppb	171.604	3	1	2.9	80	120	>+/-30%
Na	23	3	45	171.155	ppb	4.958	50835	50	342.3	80	120	>+/-30%
Mg	24	3	45	1.437	ppb	34.513	224	50	2.9	80	120	>+/-30%
Al	27	3	45	1.015	ppb	140.994	90	50	2.0	80	120	>+/-30%
K	39	3	45	-4.031	ppb	-948.016	20626	100	-4.0	80	120	>+/-30%
Ca	40	2	45	283.193	ppb	4.472	176577	50	566.4	80	120	>+/-30%
V	51	3	72	0.021	ppb	52.370	170	5	0.4	80	120	>+/-30%
Cr	52	3	72	-0.009	ppb	-310.650	1716	2	-0.5	80	120	>+/-30%
Mn	55	3	72	-0.252	ppb	-39.703	425	1	-25.2	80	120	>+/-30%
Fe	56	2	72	0.578	ppb	28.552	11440	50	1.2	80	120	>+/-30%
Co	59	3	72	-0.008	ppb	-101.192	28	1	-0.8	80	120	>+/-30%
Ni	60	3	72	0.027	ppb	314.086	198	2	1.4	80	120	>+/-30%
Cu	63	3	72	0.007	ppb	95.996	521	2	0.4	80	120	>+/-30%
Zn	66	3	72	0.060	ppb	229.663	165	10	0.6	80	120	>+/-30%
As	75	3	72	0.119	ppb	43.105	50	5	2.4	80	120	>+/-30%
Se	78	2	72	0.011	ppb	296.744	2	5	0.2	80	120	>+/-30%
Sr	88	3	72	0.046	ppb	69.947	40	1	4.6	80	120	>+/-30%
Mo	95	3	115	0.032	ppb	129.047	72	2	1.6	80	120	>+/-30%
Ag	107	3	115	0.007	ppb	26.892	33	1	0.7	80	120	>+/-30%
Cd	111	3	115	0.007	ppb	164.710	3	1	0.7	80	120	>+/-30%
Sn	120	3	115	0.114	ppb	106.036	725	10	1.1	80	120	>+/-30%
Sb	121	3	115	0.038	ppb	112.624	93	2	1.9	80	120	>+/-30%
Ba	137	3	115	0.025	ppb	461.191	53	1	2.5	80	120	>+/-30%
Tl	205	3	193	-0.031	ppb	-29.348	282	1	-3.1	80	120	>+/-30%
(Pb)	206	3	193	-0.014	ppb	-158.332	157	1	-1.4	80	120	>+/-30%
(Pb)	207	3	193	-0.013	ppb	-376.320	358	1	-1.3	80	120	>+/-30%
Pb	208	3	193	-0.022	ppb	-52.123	818	1	-2.2	80	120	>+/-30%
Th	232	3	193	0.164	ppb	13.610	4980	2	8.2	80	120	>+/-30%
U	238	3	193	-0.018	ppb	-46.373	1479	1	-1.8	80	120	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4231520	2.69	4299393	98.42	60	120	
Sc (IS)	45	3	HMI He	659128	1.81	674661	97.70	60	120	
Ge Internal standard	72	2	HMI H2	2237659	2.65	2269722	98.59	60	120	
Ge Internal standard	72	3	HMI He	733850	1.74	739017	99.30	60	120	
In Internal Standard	115	3	HMI He	2493045	1.51	2543041	98.03	60	120	
Ir (IS)	193	3	HMI He	5532328	0.67	5570851	99.31	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	021ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:47:29-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	28105.0	2	0.5	
Na	23	3	45	97863.796	ppb	3.1	12633652	100000	
Mg	24	3	45	94667.107	ppb	2.7	6477249	100000	
Al	27	3	45	96810.636	ppb	1.7	2356862	100000	
K	39	3	45	94015.793	ppb	3.0	4841285	100000	
Ca	40	2	45	97119.608	ppb	0.6	58569301	100000	
V	51	3	72	0.015	ppb	393.8	175	1	
Cr	52	3	72	1.341	ppb	6.0	2946	1	>RL or LOD
Mn	55	3	72	0.101	ppb	74.2	605	0.95	
Fe	56	2	72	99788.063	ppb	0.3	151781458	100000	
Co	59	3	72	0.191	ppb	14.6	302	0.5	
Ni	60	3	72	0.454	ppb	24.3	371	1	
Cu	63	3	72	0.219	ppb	5.1	766	1	
Zn	66	3	72	1.019	ppb	11.9	343	1	>RL or LOD
As	75	3	72	0.085	ppb	200.3	48	1	
Se	78	2	72	0.067	ppb	77.3	5	1	
(Se)	78	3	72	1.035	ppb	106.2	22	1	>RL or LOD
Sr	88	3	72	0.641	ppb	2.1	378	1	
Mo	95	3	115	2001.042	ppb	0.7	1045482	2000	>RL or LOD
Ag	107	3	115	0.018	ppb	33.0	53	1	
Cd	111	3	115	0.200	ppb	25.1	52	1	
Sn	120	3	115	0.707	ppb	11.9	1169	1	
Sb	121	3	115	0.206	ppb	18.3	220	1	
Ba	137	3	115	1.651	ppb	10.1	436	0.95	>RL or LOD
Tl	205	3	193	-0.010	ppb	-41.3	355	1	
(Pb)	206	3	193	0.208	ppb	30.9	423	1	
(Pb)	207	3	193	0.175	ppb	30.8	556	1	
Pb	208	3	193	0.216	ppb	12.1	1969	1	
Th	232	3	193	0.123	ppb	27.3	4737	1	
U	238	3	193	0.003	ppb	387.5	1578	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4360968	1.88	4299393	101.43	60	120	
Sc (IS)	45	3	HMI He	670345	2.65	674661	99.36	60	120	
Ge Internal standard	72	2	HMI H2	2288061	0.73	2269722	100.81	60	120	
Ge Internal standard	72	3	HMI He	774064	2.98	739017	104.74	60	120	
In Internal Standard	115	3	HMI He	2526032	1.01	2543041	99.33	60	120	
Ir (IS)	193	3	HMI He	5487402	1.40	5570851	98.50	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7558071
Data File Name	022ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:50:32-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	97.081	ppb	2.266	5663	100	97.1	80	120	
Na	23	3	45	104958.361	ppb	2.574	13566033	100	104958.4	80	120	>+\-20%
Mg	24	3	45	100274.831	ppb	1.822	6871226	100	100274.8	80	120	>+\-20%
Al	27	3	45	98358.248	ppb	2.764	2396950	100	98358.2	80	120	>+\-20%
K	39	3	45	101887.144	ppb	2.805	5251361	100	101887.1	80	120	>+\-20%
Ca	40	2	45	104046.848	ppb	2.440	62807369	100	104046.8	80	120	>+\-20%
V	51	3	72	99.027	ppb	2.392	64537	100	99.0	80	120	
Cr	52	3	72	98.470	ppb	2.150	84131	100	98.5	80	120	
Mn	55	3	72	98.569	ppb	1.398	43834	100	98.6	80	120	
Fe	56	2	72	99814.936	ppb	2.024	153630495	100	99814.9	80	120	>+\-20%
Co	59	3	72	96.963	ppb	1.684	131670	100	97.0	80	120	
Ni	60	3	72	96.271	ppb	0.916	36650	100	96.3	80	120	
Cu	63	3	72	97.497	ppb	1.493	99761	100	97.5	80	120	
Zn	66	3	72	92.741	ppb	1.657	16400	100	92.7	80	120	
As	75	3	72	98.736	ppb	1.912	11919	100	98.7	80	120	
Se	78	2	72	100.565	ppb	1.109	6087	100	100.6	80	120	
(Se)	78	3	72	95.163	ppb	2.917	725	100	95.2	80	120	
Sr	88	3	72	194.595	ppb	1.787	109362	100	194.6	80	120	>+\-20%
Mo	95	3	115	2123.747	ppb	2.337	1091593	100	2123.7	80	120	>+\-20%
Ag	107	3	115	99.753	ppb	1.965	168751	100	99.8	80	120	
Cd	111	3	115	98.504	ppb	2.979	24241	100	98.5	80	120	
Sn	120	3	115	104.353	ppb	1.361	76158	100	104.4	80	120	
Sb	121	3	115	104.793	ppb	2.284	77060	100	104.8	80	120	
Ba	137	3	115	107.329	ppb	1.923	24901	100	107.3	80	120	
Tl	205	3	193	98.772	ppb	2.861	355670	100	98.8	80	120	
(Pb)	206	3	193	99.551	ppb	3.367	119729	100	99.6	80	120	
(Pb)	207	3	193	98.166	ppb	3.523	104246	100	98.2	80	120	
Pb	208	3	193	99.099	ppb	3.258	480296	100	99.1	80	120	
Th	232	3	193	102.217	ppb	4.133	499071	100	102.2	80	120	
U	238	3	193	101.902	ppb	3.061	520850	100	101.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4365904	1.41	4299393	101.55	60	120	
Sc (IS)	45	3	HMI He	671029	1.75	674661	99.46	60	120	
Ge Internal standard	72	2	HMI H2	2315568	0.74	2269722	102.02	60	120	
Ge Internal standard	72	3	HMI He	768956	1.24	739017	104.05	60	120	
In Internal Standard	115	3	HMI He	2485874	2.19	2543041	97.75	60	120	
Ir (IS)	193	3	HMI He	5451233	2.56	5570851	97.85	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	023SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:52:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.194	ppb	0.194	108.65	13	2000	
Na	23	3	45	45.591	ppb	45.591	13.82	36687	400000	
Mg	24	3	45	7.693	ppb	7.693	3.58	677	400000	
Al	27	3	45	7.903	ppb	7.903	48.52	267	400000	
K	39	3	45	9.973	ppb	9.973	438.47	22401	400000	
Ca	40	2	45	14.861	ppb	14.861	6.94	20529	400000	
V	51	3	72	0.177	ppb	0.177	7.17	287	2000	
Cr	52	3	72	-0.135	ppb	-0.135	-142.71	1734	5000	
Mn	55	3	72	-0.004	ppb	-0.004	-2758.58	568	10000	
Fe	56	2	72	10.819	ppb	10.819	9.55	27823	10000	
Co	59	3	72	0.144	ppb	0.144	7.36	242	2000	
Ni	60	3	72	0.140	ppb	0.140	124.51	257	5000	
Cu	63	3	72	0.140	ppb	0.140	16.49	698	5000	
Zn	66	3	72	0.492	ppb	0.492	21.71	255	5000	
As	75	3	72	0.169	ppb	0.169	19.37	60	2000	
Se	78	2	72	0.284	ppb	0.284	13.94	19	2000	
(Se)	78	3	72	0.530	ppb	0.530	68.69	18	2000	
Sr	88	3	72	0.222	ppb	0.222	34.44	143	4000	
Mo	95	3	115	1.682	ppb	1.682	22.66	971	2000	
Ag	107	3	115	0.014	ppb	0.014	33.13	47	100	
Cd	111	3	115	0.173	ppb	0.173	16.23	47	2000	
Sn	120	3	115	0.297	ppb	0.297	35.30	901	2000	
Sb	121	3	115	0.202	ppb	0.202	10.19	225	1000	
Ba	137	3	115	0.097	ppb	0.097	26.68	73	5000	
Tl	205	3	193	0.125	ppb	0.125	14.51	853	2000	
(Pb)	206	3	193	0.184	ppb	0.184	18.98	400	100	
(Pb)	207	3	193	0.168	ppb	0.168	23.79	555	100	
Pb	208	3	193	0.179	ppb	0.179	17.40	1812	5000	
Th	232	3	193	0.816	ppb	0.816	21.27	8219	2000	
U	238	3	193	0.027	ppb	0.027	148.25	1719	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4408231	0.63	4299393	102.53	60	120	
Sc (IS)	45	3	HMI He	692276	0.96	674661	102.61	60	120	
Ge Internal standard	72	2	HMI H2	2334506	0.66	2269722	102.85	60	120	
Ge Internal standard	72	3	HMI He	788283	1.80	739017	106.67	60	120	
In Internal Standard	115	3	HMI He	2621740	0.88	2543041	103.09	60	120	
Ir (IS)	193	3	HMI He	5554135	0.27	5570851	99.70	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	024_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:54:15-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1971.582	ppb	0.387	125135	2000	98.6	90	110	
Al	27	3	45	26.855	ppb	3.038	767	50000	0.1	90	110	LRS Main CR1 Failed
V	51	3	72	2155.586	ppb	2.310	1445100	2000	107.8	90	110	
Cr	52	3	72	5071.464	ppb	0.830	4373974	5000	101.4	90	110	
Mn	55	3	72	10134.989	ppb	2.318	4588500	10000	101.3	90	110	
Co	59	3	72	2093.220	ppb	1.325	2930048	2000	104.7	90	110	
Ni	60	3	72	5073.851	ppb	1.635	1981006	5000	101.5	90	110	
Cu	63	3	72	5339.528	ppb	1.192	5603368	5000	106.8	90	110	
Zn	66	3	72	5215.089	ppb	2.374	941539	5000	104.3	90	110	
As	75	3	72	2125.538	ppb	1.395	263767	2000	106.3	90	110	
Se	78	2	72	2107.855	ppb	3.246	135844	2000	105.4	90	110	
(Se)	78	3	72	2035.268	ppb	3.065	15688	2000	101.8	90	110	
Sr	88	3	72	5078.517	ppb	2.449	2942307	2000	253.9	90	110	LRS Main CR1 Failed
Mo	95	3	115	2031.537	ppb	2.148	1130242	2000	101.6	90	110	
Cd	111	3	115	2048.869	ppb	2.948	545733	2000	102.4	90	110	
Sn	120	3	115	2104.666	ppb	3.181	1648869	2000	105.2	90	110	
Sb	121	3	115	1008.108	ppb	2.847	801754	1000	100.8	90	110	
Ba	137	3	115	5281.127	ppb	3.599	1323319	5000	105.6	90	110	
Tl	205	3	193	1024.810	ppb	2.442	4020897	1000	102.5	90	110	
(Pb)	206	3	193	5022.957	ppb	3.204	6578955	5000	100.5	90	110	
(Pb)	207	3	193	5005.387	ppb	3.198	5777305	5000	100.1	90	110	
Pb	208	3	193	5106.599	ppb	3.195	26942141	5000	102.1	90	110	
Th	232	3	193	1023.394	ppb	3.102	5409866	1000	102.3	90	110	
U	238	3	193	2095.942	ppb	4.170	11648711	2000	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4673393	1.70	4299393	108.70	60	120	
Sc (IS)	45	3	HMI He	714082	1.30	674661	105.84	60	120	
Ge Internal standard	72	2	HMI H2	2467602	2.57	2269722	108.72	60	120	
Ge Internal standard	72	3	HMI He	792809	0.50	739017	107.28	60	120	
In Internal Standard	115	3	HMI He	2690548	1.97	2543041	105.80	60	120	
Ir (IS)	193	3	HMI He	5944412	2.01	5570851	106.71	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	025SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:55:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.169	ppb	0.169	28.13	12	2000	
Na	23	3	45	12.604	ppb	12.604	49.24	30574	400000	
Mg	24	3	45	0.951	ppb	0.951	44.82	190	400000	
Al	27	3	45	1.475	ppb	1.475	102.51	100	400000	
K	39	3	45	9.248	ppb	9.248	514.86	21174	400000	
Ca	40	2	45	2.052	ppb	2.052	7.58	12485	400000	
V	51	3	72	0.210	ppb	0.210	42.67	288	2000	
Cr	52	3	72	0.819	ppb	0.819	8.52	2381	5000	
Mn	55	3	72	1.555	ppb	1.555	5.08	1184	10000	
Fe	56	2	72	1.268	ppb	1.268	11.55	12705	10000	
Co	59	3	72	0.276	ppb	0.276	0.69	396	2000	
Ni	60	3	72	0.646	ppb	0.646	30.82	423	5000	
Cu	63	3	72	1.621	ppb	1.621	4.92	2092	5000	
Zn	66	3	72	0.774	ppb	0.774	19.48	285	5000	
As	75	3	72	0.161	ppb	0.161	56.11	55	2000	
Se	78	2	72	0.179	ppb	0.179	18.94	12	2000	
(Se)	78	3	72	0.703	ppb	0.703	114.01	18	2000	
Sr	88	3	72	0.651	ppb	0.651	10.41	365	4000	
Mo	95	3	115	4.175	ppb	4.175	14.66	2244	2000	
Ag	107	3	115	0.009	ppb	0.009	51.03	37	100	
Cd	111	3	115	0.239	ppb	0.239	42.75	62	2000	
Sn	120	3	115	3.292	ppb	3.292	2.70	3080	2000	
Sb	121	3	115	1.150	ppb	1.150	10.68	928	1000	
Ba	137	3	115	0.608	ppb	0.608	32.41	192	5000	
Tl	205	3	193	0.185	ppb	0.185	10.77	1071	2000	
(Pb)	206	3	193	0.898	ppb	0.898	1.81	1273	100	
(Pb)	207	3	193	0.999	ppb	0.999	10.32	1449	100	
Pb	208	3	193	0.930	ppb	0.930	4.30	5506	5000	
Th	232	3	193	7.018	ppb	7.018	20.62	38789	2000	
U	238	3	193	1.084	ppb	1.084	4.77	7204	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4326205	0.87	4299393	100.62	60	120	
Sc (IS)	45	3	HMI He	655309	0.84	674661	97.13	60	120	
Ge Internal standard	72	2	HMI H2	2279641	1.07	2269722	100.44	60	120	
Ge Internal standard	72	3	HMI He	735077	0.92	739017	99.47	60	120	
In Internal Standard	115	3	HMI He	2533975	0.29	2543041	99.64	60	120	
Ir (IS)	193	3	HMI He	5547157	0.38	5570851	99.57	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	026_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:57:50-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.938	ppb	7.991	3072	50	105.9	90	110	
Na	23	3	45	51517.439	ppb	1.535	6558092	51000	101.0	90	110	
Mg	24	3	45	10870.019	ppb	1.768	732056	11000	98.8	90	110	
Al	27	3	45	1015.272	ppb	1.236	24382	1000	101.5	90	110	
K	39	3	45	10734.818	ppb	1.493	562409	11000	97.6	90	110	
Ca	40	2	45	11069.066	ppb	1.500	6619534	11000	100.6	90	110	
V	51	3	72	51.583	ppb	1.331	32714	50	103.2	90	110	
Cr	52	3	72	51.736	ppb	1.963	43743	50	103.5	90	110	
Mn	55	3	72	50.918	ppb	1.141	22242	50	101.8	90	110	
Fe	56	2	72	1060.173	ppb	0.411	1622634	1000	106.0	90	110	
Co	59	3	72	50.211	ppb	1.353	66209	50	100.4	90	110	
Ni	60	3	72	50.640	ppb	1.134	18807	50	101.3	90	110	
Cu	63	3	72	52.020	ppb	1.806	51913	50	104.0	90	110	
Zn	66	3	72	51.254	ppb	3.473	8868	50	102.5	90	110	
As	75	3	72	53.579	ppb	3.359	6297	50	107.2	90	110	
Se	78	2	72	52.975	ppb	2.705	3168	50	105.9	90	110	
(Se)	78	3	72	47.038	ppb	15.599	355	50	94.1	90	110	
Sr	88	3	72	102.568	ppb	1.539	55965	100	102.6	90	110	
Mo	95	3	115	51.468	ppb	2.775	27155	50	102.9	90	110	
Ag	107	3	115	50.861	ppb	1.798	88147	50	101.7	90	110	
Cd	111	3	115	50.328	ppb	2.001	12690	50	100.7	90	110	
Sn	120	3	115	52.408	ppb	3.507	39495	50	104.8	90	110	
Sb	121	3	115	51.187	ppb	2.789	38588	50	102.4	90	110	
Ba	137	3	115	53.537	ppb	1.080	12748	50	107.1	90	110	
Tl	205	3	193	50.926	ppb	3.319	185014	50	101.9	90	110	
(Pb)	206	3	193	51.533	ppb	2.871	62554	50	103.1	90	110	
(Pb)	207	3	193	50.926	ppb	2.819	54694	50	101.9	90	110	
Pb	208	3	193	51.150	ppb	2.157	250361	50	102.3	90	110	
Th	232	3	193	53.265	ppb	2.552	264176	50	106.5	90	110	
U	238	3	193	51.719	ppb	2.483	267243	50	103.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4317912	0.56	4299393	100.43	60	120	
Sc (IS)	45	3	HMI He	659353	1.20	674661	97.73	60	120	
Ge Internal standard	72	2	HMI H2	2287207	0.60	2269722	100.77	60	120	
Ge Internal standard	72	3	HMI He	746443	0.73	739017	101.00	60	120	
In Internal Standard	115	3	HMI He	2546136	1.51	2543041	100.12	60	120	
Ir (IS)	193	3	HMI He	5494165	2.26	5570851	98.62	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	027_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T12:59:43-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.198	ppb	47.4	13	0.5	
Na	23	3	45	17.950	ppb	12.8	31945	25	
Mg	24	3	45	1.525	ppb	44.0	234	25	
Al	27	3	45	21.955	ppb	5.3	601	15	>RL
K	39	3	45	-15.733	ppb	-154.7	20365	50	
V	51	3	72	-0.029	ppb	-240.5	143	1	
Cr	52	3	72	-0.131	ppb	-84.9	1673	1	
Mn	55	3	72	-0.186	ppb	-49.0	468	0.5	
Co	59	3	72	0.007	ppb	305.8	48	0.5	
Ni	60	3	72	0.031	ppb	144.7	207	1	
Cu	63	3	72	0.202	ppb	22.6	735	1	
Zn	66	3	72	2.294	ppb	8.2	556	5	
As	75	3	72	0.132	ppb	75.6	53	1	
Se	78	2	72	0.045	ppb	129.8	4	1	
(Se)	78	3	72	-0.512	ppb	-129.6	10	1	
Sr	88	3	72	0.051	ppb	47.7	43	0.5	
Mo	95	3	115	0.295	ppb	47.9	212	0.5	
Ag	107	3	115	0.010	ppb	17.6	38	1	
Cd	111	3	115	0.007	ppb	333.8	3	0.5	
Sn	120	3	115	0.320	ppb	43.5	885	1	
Sb	121	3	115	0.106	ppb	35.3	145	0.6	
Ba	137	3	115	0.009	ppb	195.6	50	0.5	
Tl	205	3	193	-0.018	ppb	-43.4	338	0.1	
(Pb)	206	3	193	0.045	ppb	42.0	235	1	
(Pb)	207	3	193	0.103	ppb	35.0	496	1	
Pb	208	3	193	0.078	ppb	7.6	1344	0.5	
Th	232	3	193	0.804	ppb	20.7	8360	1	
U	238	3	193	0.074	ppb	24.5	2014	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4258075	2.88	4299393	99.04	60	120	
Sc (IS)	45	3	HMI He	669858	0.59	674661	99.29	60	120	
Ge Internal standard	72	2	HMI H2	2263413	2.36	2269722	99.72	60	120	
Ge Internal standard	72	3	HMI He	758865	2.04	739017	102.69	60	120	
In Internal Standard	115	3	HMI He	2528620	2.09	2543041	99.43	60	120	
Ir (IS)	193	3	HMI He	5690599	0.42	5570851	102.15	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	028LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:01:35-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.007	ppb	22.409	60	1	100.7	70	130	
Na	23	3	45	68.604	ppb	1.945	37782	50	137.2	70	130	>+/-30%
Mg	24	3	45	52.117	ppb	8.700	3627	50	104.2	70	130	
Al	27	3	45	50.446	ppb	5.147	1271	50	100.9	70	130	
K	39	3	45	91.682	ppb	23.111	25409	100	91.7	70	130	
V	51	3	72	5.071	ppb	5.739	3340	5	101.4	70	130	
Cr	52	3	72	2.277	ppb	12.321	3579	2	113.8	70	130	
Mn	55	3	72	0.869	ppb	13.300	906	1	86.9	70	130	
Co	59	3	72	1.011	ppb	3.023	1363	1	101.1	70	130	
Ni	60	3	72	2.108	ppb	10.583	963	2	105.4	70	130	
Cu	63	3	72	2.181	ppb	1.586	2664	2	109.0	70	130	
Zn	66	3	72	10.258	ppb	3.781	1891	10	102.6	70	130	
As	75	3	72	5.031	ppb	2.647	621	5	100.6	70	130	
Se	78	2	72	4.759	ppb	9.577	281	5	95.2	70	130	
(Se)	78	3	72	5.531	ppb	14.354	53	5	110.6	70	130	
Sr	88	3	72	0.969	ppb	10.761	540	1	96.9	70	130	
Mo	95	3	115	2.239	ppb	6.591	1218	2	112.0	70	130	
Ag	107	3	115	0.975	ppb	4.251	1686	1	97.5	70	130	
Cd	111	3	115	0.999	ppb	24.592	250	1	99.9	70	130	
Sn	120	3	115	9.917	ppb	3.376	7895	10	99.2	70	130	
Sb	121	3	115	2.288	ppb	4.774	1763	2	114.4	70	130	
Ba	137	3	115	0.844	ppb	18.286	245	1	84.4	70	130	
Tl	205	3	193	1.032	ppb	4.852	4182	1	103.2	70	130	
(Pb)	206	3	193	1.091	ppb	2.055	1513	1	109.1	70	130	
(Pb)	207	3	193	1.123	ppb	9.308	1586	1	112.3	70	130	
Pb	208	3	193	1.102	ppb	2.678	6369	1	110.2	70	130	
Th	232	3	193	2.280	ppb	5.516	15459	2	114.0	70	130	
U	238	3	193	1.093	ppb	2.543	7269	1	109.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4316646	0.26	4299393	100.40	60	120	
Sc (IS)	45	3	HMI He	657923	1.07	674661	97.52	60	120	
Ge Internal standard	72	2	HMI H2	2252572	0.87	2269722	99.24	60	120	
Ge Internal standard	72	3	HMI He	742425	2.20	739017	100.46	60	120	
In Internal Standard	115	3	HMI He	2509988	1.33	2543041	98.70	60	120	
Ir (IS)	193	3	HMI He	5563658	3.15	5570851	99.87	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599805/1-A
Data File Name	029_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:03:27-07:00
Sample Type	Blank
Dilution	1
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	46102.139	2	0.5
Na	23	3	45	42.282	ppb	11.48147687	34500	25
Mg	24	3	45	3.419	ppb	22.76217442	357	25
Al	27	3	45	8.838	ppb	16.14894954	277	15
K	39	3	45	1.961	ppb	2030.971452	20930	50
V	51	3	72	0.019	ppb	282.3229087	170	1
Cr	52	3	72	0.085	ppb	139.5241774	1796	1
Mn	55	3	72	0.039	ppb	306.878723	548	0.5
Co	59	3	72	0.021	ppb	40.74585301	65	0.5
Ni	60	3	72	0.115	ppb	120.5988782	232	1
Cu	63	3	72	0.300	ppb	13.17594005	808	1
Zn	66	3	72	1.241	ppb	29.41405764	363	5
As	75	3	72	0.173	ppb	70.95076869	57	1
(Se)	78	3	72	1.163	ppb	28.64734847	22	1
Sr	88	3	72	0.075	ppb	56.37116969	55	0.5
Mo	95	3	115	0.177	ppb	32.03123657	148	0.5
Ag	107	3	115	0.010	ppb	66.25139142	38	1
Cd	111	3	115	0.007	ppb	164.4000715	3	0.5
Sn	120	3	115	0.653	ppb	18.34268155	1123	1
Sb	121	3	115	0.124	ppb	7.392817043	158	0.6
Ba	137	3	115	0.145	ppb	28.53476839	82	0.5
Tl	205	3	193	-0.025	ppb	-30.43420227	307	0.1
(Pb)	206	3	193	0.069	ppb	24.14457034	263	1
(Pb)	207	3	193	0.061	ppb	38.18318889	446	1
Pb	208	3	193	0.062	ppb	13.33955655	1253	0.5
Th	232	3	193	0.179	ppb	50.30338717	5149	1
U	238	3	193	0.035	ppb	10.74468256	1789	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254470	0.37	4299393	98.96	60	120	
Sc (IS)	45	3	HMI He	658841	0.40	674661	97.66	60	120	
Ge Internal standard	72	2	HMI H2	2233069	1.08	2269722	98.39	60	120	
Ge Internal standard	72	3	HMI He	735955	2.32	739017	99.59	60	120	
In Internal Standard	115	3	HMI He	2513647	2.32	2543041	98.84	60	120	
Ir (IS)	193	3	HMI He	5637165	0.53	5570851	101.19	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599805/2-A
Data File Name	030_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:05:19-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.499	40.499	ppb	4.274	2376	40	101.2	80	120	
Na	23	3	45	910.416	910.416	ppb	0.670	144528	40	2276.0	80	120	>+/-20%
Mg	24	3	45	802.102	802.102	ppb	1.188	54124	40	2005.3	80	120	>+/-20%
Al	27	3	45	826.016	826.016	ppb	4.550	19837	40	2065.0	80	120	>+/-20%
K	39	3	45	784.020	784.020	ppb	4.343	60370	40	1960.0	80	120	>+/-20%
Ca	40	2	45	854.978	854.978	ppb	2.351	520822	40	2137.4	80	120	>+/-20%
V	51	3	72	41.981	41.981	ppb	1.937	26470	40	105.0	80	120	
Cr	52	3	72	41.922	41.922	ppb	1.800	35538	40	104.8	80	120	
Mn	55	3	72	42.699	42.699	ppb	2.850	18607	40	106.7	80	120	
Fe	56	2	72	878.072	878.072	ppb	1.316	1332324	40	2195.2	80	120	>+/-20%
(Fe)	56	3	72	831.451	831.451	ppb	2.250	575749	40	2078.6	80	120	>+/-20%
Co	59	3	72	41.799	41.799	ppb	3.593	54739	40	104.5	80	120	
Ni	60	3	72	41.244	41.244	ppb	2.076	15246	40	103.1	80	120	
Cu	63	3	72	41.898	41.898	ppb	3.353	41623	40	104.7	80	120	
Zn	66	3	72	43.382	43.382	ppb	5.865	7477	40	108.5	80	120	
As	75	3	72	42.291	42.291	ppb	1.079	4943	40	105.7	80	120	
Se	78	2	72	42.191	42.191	ppb	1.702	2498	40	105.5	80	120	
(Se)	78	3	72	37.016	37.016	ppb	6.123	280	40	92.5	80	120	
Sr	88	3	72	81.766	81.766	ppb	3.023	44306	40	204.4	80	120	>+/-20%
Mo	95	3	115	41.572	41.572	ppb	1.983	21611	40	103.9	80	120	
Ag	107	3	115	42.089	42.089	ppb	1.488	71849	40	105.2	80	120	
Cd	111	3	115	41.552	41.552	ppb	1.752	10319	40	103.9	80	120	
Sn	120	3	115	42.101	42.101	ppb	0.505	31381	40	105.3	80	120	
Sb	121	3	115	42.327	42.327	ppb	1.330	31441	40	105.8	80	120	
Ba	137	3	115	42.624	42.624	ppb	2.683	10007	40	106.6	80	120	
Tl	205	3	193	40.545	40.545	ppb	1.815	150055	40	101.4	80	120	
(Pb)	206	3	193	41.079	41.079	ppb	3.261	50793	40	102.7	80	120	
(Pb)	207	3	193	40.599	40.599	ppb	1.181	44472	40	101.5	80	120	
Pb	208	3	193	40.689	40.689	ppb	2.373	202918	40	101.7	80	120	
Th	232	3	193	41.365	41.365	ppb	2.780	209779	40	103.4	80	120	
U	238	3	193	40.968	40.968	ppb	2.671	215816	40	102.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4313234	3.74	4299393	100.32	60	120	
Sc (IS)	45	3	HMI He	659184	1.25	674661	97.71	60	120	
Ge Internal standard	72	2	HMI H2	2264636	1.54	2269722	99.78	60	120	
Ge Internal standard	72	3	HMI He	741367	1.14	739017	100.32	60	120	
In Internal Standard	115	3	HMI He	2507383	1.10	2543041	98.60	60	120	
Ir (IS)	193	3	HMI He	5592633	2.07	5570851	100.39	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCSD 280-599805/3-A
Data File Name	031_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:07:10-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599805 200.8
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.960	37.960	ppb	4.705	2221	40	94.9	80	120	
Na	23	3	45	900.384	900.384	ppb	2.131	141902	40	2251.0	80	120	>+/-20%
Mg	24	3	45	819.935	819.935	ppb	2.020	54797	40	2049.8	80	120	>+/-20%
Al	27	3	45	825.149	825.149	ppb	2.604	19637	40	2062.9	80	120	>+/-20%
K	39	3	45	784.790	784.790	ppb	4.028	59864	40	1962.0	80	120	>+/-20%
Ca	40	2	45	860.471	860.471	ppb	1.109	518001	40	2151.2	80	120	>+/-20%
V	51	3	72	42.064	42.064	ppb	3.904	26310	40	105.2	80	120	
Cr	52	3	72	41.788	41.788	ppb	1.335	35155	40	104.5	80	120	
Mn	55	3	72	41.310	41.310	ppb	3.077	17879	40	103.3	80	120	
Fe	56	2	72	881.570	881.570	ppb	3.248	1318172	40	2203.9	80	120	>+/-20%
(Fe)	56	3	72	828.998	828.998	ppb	1.729	569633	40	2072.5	80	120	>+/-20%
Co	59	3	72	42.162	42.162	ppb	2.270	54789	40	105.4	80	120	
Ni	60	3	72	41.872	41.872	ppb	2.685	15356	40	104.7	80	120	
Cu	63	3	72	42.379	42.379	ppb	2.770	41767	40	105.9	80	120	
Zn	66	3	72	44.671	44.671	ppb	2.743	7640	40	111.7	80	120	
As	75	3	72	44.127	44.127	ppb	1.851	5118	40	110.3	80	120	
Se	78	2	72	42.616	42.616	ppb	1.902	2486	40	106.5	80	120	
(Se)	78	3	72	40.579	40.579	ppb	9.060	303	40	101.4	80	120	
Sr	88	3	72	83.615	83.615	ppb	1.145	44965	40	209.0	80	120	>+/-20%
Mo	95	3	115	41.116	41.116	ppb	0.901	21690	40	102.8	80	120	
Ag	107	3	115	42.011	42.011	ppb	0.885	72754	40	105.0	80	120	
Cd	111	3	115	41.580	41.580	ppb	1.409	10477	40	103.9	80	120	
Sn	120	3	115	41.571	41.571	ppb	1.095	31445	40	103.9	80	120	
Sb	121	3	115	41.547	41.547	ppb	0.801	31314	40	103.9	80	120	
Ba	137	3	115	42.187	42.187	ppb	2.141	10046	40	105.5	80	120	
Tl	205	3	193	40.938	40.938	ppb	1.291	151748	40	102.3	80	120	
(Pb)	206	3	193	41.325	41.325	ppb	1.669	51186	40	103.3	80	120	
(Pb)	207	3	193	41.016	41.016	ppb	1.332	44992	40	102.5	80	120	
Pb	208	3	193	40.995	40.995	ppb	1.228	204777	40	102.5	80	120	
Th	232	3	193	42.521	42.521	ppb	0.605	215926	40	106.3	80	120	
U	238	3	193	42.052	42.052	ppb	0.431	221878	40	105.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4260757	0.40	4299393	99.10	60	120	
Sc (IS)	45	3	HMI He	653013	0.71	674661	96.79	60	120	
Ge Internal standard	72	2	HMI H2	2231627	0.53	2269722	98.32	60	120	
Ge Internal standard	72	3	HMI He	735688	1.96	739017	99.55	60	120	
In Internal Standard	115	3	HMI He	2543779	0.99	2543041	100.03	60	120	
Ir (IS)	193	3	HMI He	5600734	1.35	5570851	100.54	60	120	

Sample Report

Sample Table

Sample Name	280-171403-F-1-A
Data File Name	032SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:09:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.208	ppb	0.208	25.43	13	2000	
Na	23	3	45	925360.236	ppb	925360.236	2.60	123090767	400000	
Mg	24	3	45	192480.602	ppb	192480.602	3.71	13593664	400000	
Al	27	3	45	1878.918	ppb	1878.918	4.41	47266	400000	
K	39	3	45	151315.652	ppb	151315.652	2.41	8031641	400000	
Ca	40	2	45	210585.502	ppb	210585.502	1.19	124706036	400000	
V	51	3	72	10.460	ppb	10.460	2.61	7065	2000	
Cr	52	3	72	11.973	ppb	11.973	2.89	11986	5000	
Mn	55	3	72	1009.711	ppb	1009.711	0.29	450291	10000	
Fe	56	2	72	2965.300	ppb	2965.300	1.79	4583255	10000	
Co	59	3	72	8.354	ppb	8.354	1.01	11547	2000	
Ni	60	3	72	51.538	ppb	51.538	0.42	19999	5000	
Cu	63	3	72	21.038	ppb	21.038	2.72	22267	5000	
Zn	66	3	72	60.792	ppb	60.792	1.81	10964	5000	
As	75	3	72	10.931	ppb	10.931	12.19	1373	2000	
Se	78	2	72	0.538	ppb	0.538	11.30	34	2000	
(Se)	78	3	72	1.658	ppb	1.658	24.48	27	2000	
Sr	88	3	72	1353.238	ppb	1353.238	2.49	771663	4000	
Mo	95	3	115	6.914	ppb	6.914	2.22	3632	2000	
Ag	107	3	115	0.141	ppb	0.141	7.58	262	100	
Cd	111	3	115	0.269	ppb	0.269	15.67	68	2000	
Sn	120	3	115	1.018	ppb	1.018	14.74	1384	2000	
Sb	121	3	115	1.710	ppb	1.710	0.48	1329	1000	
Ba	137	3	115	119.973	ppb	119.973	0.57	28002	5000	
Tl	205	3	193	0.017	ppb	0.017	45.78	446	2000	
(Pb)	206	3	193	7.599	ppb	7.599	3.78	9239	100	
(Pb)	207	3	193	7.553	ppb	7.553	1.79	8309	100	
Pb	208	3	193	7.489	ppb	7.489	2.20	36909	5000	
Th	232	3	193	0.947	ppb	0.947	11.27	8642	2000	
U	238	3	193	2.836	ppb	2.836	0.98	15906	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4282473	1.20	4299393	99.61	60	120	
Sc (IS)	45	3	HMI He	692144	3.21	674661	102.59	60	120	
Ge Internal standard	72	2	HMI H2	2319616	0.96	2269722	102.20	60	120	
Ge Internal standard	72	3	HMI He	780094	1.21	739017	105.56	60	120	
In Internal Standard	115	3	HMI He	2500878	0.29	2543041	98.34	60	120	
Ir (IS)	193	3	HMI He	5414933	0.46	5570851	97.20	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-A
Data File Name	033SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	10234.67	2	2000	
Na	23	3	45	44290.489	ppb	44290.489	2.30	5774629	400000	
Mg	24	3	45	39496.207	ppb	39496.207	1.98	2721519	400000	
Al	27	3	45	111.149	ppb	111.149	20.22	2793	400000	
K	39	3	45	2335.136	ppb	2335.136	3.24	141890	400000	
Ca	40	2	45	85361.833	ppb	85361.833	2.52	51858648	400000	
V	51	3	72	0.495	ppb	0.495	4.51	495	2000	
Cr	52	3	72	4.516	ppb	4.516	2.77	5682	5000	
Mn	55	3	72	135.972	ppb	135.972	1.97	61331	10000	
Fe	56	2	72	142.453	ppb	142.453	2.33	233983	10000	
Co	59	3	72	1.539	ppb	1.539	3.22	2167	2000	
Ni	60	3	72	4.560	ppb	4.560	10.56	1958	5000	
Cu	63	3	72	0.618	ppb	0.618	1.65	1189	5000	
Zn	66	3	72	2.942	ppb	2.942	6.45	690	5000	
As	75	3	72	0.621	ppb	0.621	33.55	115	2000	
Se	78	2	72	1.670	ppb	1.670	11.69	104	2000	
(Se)	78	3	72	2.300	ppb	2.300	58.91	32	2000	
Sr	88	3	72	217.409	ppb	217.409	3.38	124350	4000	
Mo	95	3	115	9.510	ppb	9.510	4.94	5088	2000	
Ag	107	3	115	0.011	ppb	0.011	29.60	42	100	
Cd	111	3	115	0.046	ppb	0.046	65.43	13	2000	
Sn	120	3	115	0.455	ppb	0.455	25.94	996	2000	
Sb	121	3	115	0.475	ppb	0.475	17.30	426	1000	
Ba	137	3	115	76.453	ppb	76.453	1.30	18269	5000	
Tl	205	3	193	0.024	ppb	0.024	67.58	486	2000	
(Pb)	206	3	193	0.127	ppb	0.127	24.45	333	100	
(Pb)	207	3	193	0.121	ppb	0.121	40.52	510	100	
Pb	208	3	193	0.134	ppb	0.134	11.49	1608	5000	
Th	232	3	193	0.160	ppb	0.160	32.36	5030	2000	
U	238	3	193	4.853	ppb	4.853	1.52	27073	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4394465	2.77	4299393	102.21	60	120	
Sc (IS)	45	3	HMI He	674859	1.23	674661	100.03	60	120	
Ge Internal standard	72	2	HMI H2	2354009	1.75	2269722	103.71	60	120	
Ge Internal standard	72	3	HMI He	782919	2.49	739017	105.94	60	120	
In Internal Standard	115	3	HMI He	2557893	0.27	2543041	100.58	60	120	
Ir (IS)	193	3	HMI He	5612587	1.24	5570851	100.75	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-B MS
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:12:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	44.414	ppb	44.414	2.57	2532	2000	
Na	23	3	45	43603.026	ppb	43603.026	0.65	5615288	400000	
Mg	24	3	45	38825.361	ppb	38825.361	1.16	2642187	400000	
Al	27	3	45	940.188	ppb	940.188	0.76	22828	400000	
K	39	3	45	2996.825	ppb	2996.825	1.15	173890	400000	
Ca	40	2	45	83033.987	ppb	83033.987	2.63	49059249	400000	
V	51	3	72	41.511	ppb	41.511	1.68	27176	2000	
Cr	52	3	72	45.099	ppb	45.099	1.95	39550	5000	
Mn	55	3	72	172.234	ppb	172.234	0.49	76248	10000	
Fe	56	2	72	984.534	ppb	984.534	2.60	1525423	10000	
Co	59	3	72	41.567	ppb	41.567	0.76	56528	2000	
Ni	60	3	72	43.818	ppb	43.818	1.86	16805	5000	
Cu	63	3	72	41.864	ppb	41.864	2.51	43179	5000	
Zn	66	3	72	43.893	ppb	43.893	1.50	7857	5000	
As	75	3	72	42.822	ppb	42.822	1.68	5197	2000	
Se	78	2	72	44.090	ppb	44.090	3.73	2668	2000	
(Se)	78	3	72	42.563	ppb	42.563	20.47	332	2000	
Sr	88	3	72	293.789	ppb	293.789	1.14	165266	4000	
Mo	95	3	115	51.765	ppb	51.765	1.78	27120	2000	
Ag	107	3	115	42.105	ppb	42.105	2.53	72458	100	
Cd	111	3	115	41.552	ppb	41.552	2.71	10404	2000	
Sn	120	3	115	42.372	ppb	42.372	2.81	31837	2000	
Sb	121	3	115	42.455	ppb	42.455	1.27	31797	1000	
Ba	137	3	115	117.533	ppb	117.533	0.82	27732	5000	
Tl	205	3	193	41.100	ppb	41.100	1.87	152294	2000	
(Pb)	206	3	193	41.613	ppb	41.613	1.53	51527	100	
(Pb)	207	3	193	41.182	ppb	41.182	2.07	45158	100	
Pb	208	3	193	41.363	ppb	41.363	1.84	206535	5000	
Th	232	3	193	42.257	ppb	42.257	2.05	214499	2000	
U	238	3	193	47.373	ppb	47.373	1.63	249653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4273343	2.10	4299393	99.39	60	120	
Sc (IS)	45	3	HMI He	666439	0.78	674661	98.78	60	120	
Ge Internal standard	72	2	HMI H2	2314449	1.06	2269722	101.97	60	120	
Ge Internal standard	72	3	HMI He	769746	1.76	739017	104.16	60	120	
In Internal Standard	115	3	HMI He	2528300	1.68	2543041	99.42	60	120	
Ir (IS)	193	3	HMI He	5599061	1.26	5570851	100.51	60	120	

Sample Report

Sample Table

Sample Name	280-171419-A-1-C MSD
Data File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:14:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.630	ppb	43.630	1.16	2509	2000	
Na	23	3	45	44561.129	ppb	44561.129	0.59	5718044	400000	
Mg	24	3	45	39389.361	ppb	39389.361	0.40	2671301	400000	
Al	27	3	45	972.223	ppb	972.223	1.86	23520	400000	
K	39	3	45	3091.185	ppb	3091.185	1.45	178076	400000	
Ca	40	2	45	84602.674	ppb	84602.674	2.44	50763018	400000	
V	51	3	72	42.942	ppb	42.942	2.16	28011	2000	
Cr	52	3	72	45.214	ppb	45.214	3.45	39503	5000	
Mn	55	3	72	176.440	ppb	176.440	2.32	77816	10000	
Fe	56	2	72	1025.223	ppb	1025.223	1.26	1612445	10000	
Co	59	3	72	41.632	ppb	41.632	2.37	56415	2000	
Ni	60	3	72	44.854	ppb	44.854	2.31	17137	5000	
Cu	63	3	72	41.681	ppb	41.681	2.68	42847	5000	
Zn	66	3	72	44.854	ppb	44.854	3.70	7997	5000	
As	75	3	72	44.397	ppb	44.397	2.41	5370	2000	
Se	78	2	72	42.930	ppb	42.930	0.28	2638	2000	
(Se)	78	3	72	36.747	ppb	36.747	34.38	287	2000	
Sr	88	3	72	301.813	ppb	301.813	3.30	169158	4000	
Mo	95	3	115	52.059	ppb	52.059	2.22	27391	2000	
Ag	107	3	115	42.094	ppb	42.094	0.51	72760	100	
Cd	111	3	115	41.670	ppb	41.670	0.68	10479	2000	
Sn	120	3	115	43.125	ppb	43.125	1.25	32532	2000	
Sb	121	3	115	43.080	ppb	43.080	2.11	32400	1000	
Ba	137	3	115	117.245	ppb	117.245	1.20	27780	5000	
Tl	205	3	193	42.338	ppb	42.338	1.58	153912	2000	
(Pb)	206	3	193	42.027	ppb	42.027	1.45	51060	100	
(Pb)	207	3	193	42.172	ppb	42.172	0.88	45367	100	
Pb	208	3	193	42.190	ppb	42.190	0.79	206694	5000	
Th	232	3	193	44.223	ppb	44.223	0.83	220068	2000	
U	238	3	193	48.705	ppb	48.705	0.83	251802	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4339649	1.71	4299393	100.94	60	120	
Sc (IS)	45	3	HMI He	664097	0.23	674661	98.43	60	120	
Ge Internal standard	72	2	HMI H2	2350007	1.36	2269722	103.54	60	120	
Ge Internal standard	72	3	HMI He	767161	1.96	739017	103.81	60	120	
In Internal Standard	115	3	HMI He	2538811	0.74	2543041	99.83	60	120	
Ir (IS)	193	3	HMI He	5493125	0.75	5570851	98.60	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-A
Data File Name	036SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	347.04	3	2000	
Na	23	3	45	40766.849	ppb	40766.849	0.77	5217094	400000	
Mg	24	3	45	37736.295	ppb	37736.295	0.35	2551259	400000	
Al	27	3	45	11.578	ppb	11.578	40.05	344	400000	
K	39	3	45	2486.871	ppb	2486.871	0.22	146902	400000	
Ca	40	2	45	82527.424	ppb	82527.424	2.83	49145274	400000	
V	51	3	72	0.270	ppb	0.270	30.06	338	2000	
Cr	52	3	72	0.045	ppb	0.045	132.82	1833	5000	
Mn	55	3	72	6.915	ppb	6.915	1.19	3570	10000	
Fe	56	2	72	186.230	ppb	186.230	2.01	303690	10000	
Co	59	3	72	0.119	ppb	0.119	9.97	200	2000	
Ni	60	3	72	1.404	ppb	1.404	9.18	725	5000	
Cu	63	3	72	0.233	ppb	0.233	13.75	771	5000	
Zn	66	3	72	108.937	ppb	108.937	1.54	19115	5000	
As	75	3	72	0.576	ppb	0.576	37.74	107	2000	
Se	78	2	72	1.456	ppb	1.456	14.90	91	2000	
(Se)	78	3	72	2.400	ppb	2.400	69.87	32	2000	
Sr	88	3	72	211.925	ppb	211.925	1.94	118367	4000	
Mo	95	3	115	17.743	ppb	17.743	1.64	9399	2000	
Ag	107	3	115	0.016	ppb	0.016	64.51	50	100	
Cd	111	3	115	0.000	ppb	0.000	5043.65	2	2000	
Sn	120	3	115	0.184	ppb	0.184	14.92	791	2000	
Sb	121	3	115	0.497	ppb	0.497	17.91	441	1000	
Ba	137	3	115	48.161	ppb	48.161	2.24	11471	5000	
Tl	205	3	193	-0.013	ppb	-0.013	-135.53	348	2000	
(Pb)	206	3	193	-0.014	ppb	-0.014	-61.73	158	100	
(Pb)	207	3	193	-0.021	ppb	-0.021	-370.64	352	100	
Pb	208	3	193	-0.007	ppb	-0.007	-383.43	896	5000	
Th	232	3	193	0.613	ppb	0.613	4.91	7240	2000	
U	238	3	193	0.037	ppb	0.037	12.72	1781	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306753	1.42	4299393	100.17	60	120	
Sc (IS)	45	3	HMI He	662020	0.98	674661	98.13	60	120	
Ge Internal standard	72	2	HMI H2	2363247	0.84	2269722	104.12	60	120	
Ge Internal standard	72	3	HMI He	764251	1.11	739017	103.41	60	120	
In Internal Standard	115	3	HMI He	2546156	1.58	2543041	100.12	60	120	
Ir (IS)	193	3	HMI He	5571556	0.80	5570851	100.01	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-B MS
Data File Name	037SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:18:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599805 200.8
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.365	ppb	40.365	1.15	2331	2000	
Na	23	3	45	41479.569	ppb	41479.569	0.62	5397957	400000	
Mg	24	3	45	37897.002	ppb	37897.002	3.15	2605202	400000	
Al	27	3	45	821.798	ppb	821.798	3.38	20161	400000	
K	39	3	45	3285.479	ppb	3285.479	1.68	190519	400000	
Ca	40	2	45	84676.364	ppb	84676.364	0.21	50862890	400000	
V	51	3	72	41.561	ppb	41.561	2.83	27574	2000	
Cr	52	3	72	40.158	ppb	40.158	3.41	35888	5000	
Mn	55	3	72	46.920	ppb	46.920	1.33	21463	10000	
Fe	56	2	72	1006.742	ppb	1006.742	2.45	1601118	10000	
Co	59	3	72	39.862	ppb	39.862	1.53	54941	2000	
Ni	60	3	72	41.244	ppb	41.244	3.61	16038	5000	
Cu	63	3	72	40.332	ppb	40.332	2.14	42185	5000	
Zn	66	3	72	150.791	ppb	150.791	2.86	26940	5000	
As	75	3	72	42.919	ppb	42.919	3.23	5277	2000	
Se	78	2	72	41.762	ppb	41.762	1.90	2595	2000	
(Se)	78	3	72	39.341	ppb	39.341	17.60	312	2000	
Sr	88	3	72	288.249	ppb	288.249	1.98	164322	4000	
Mo	95	3	115	59.822	ppb	59.822	2.15	31501	2000	
Ag	107	3	115	42.042	ppb	42.042	1.48	72744	100	
Cd	111	3	115	41.874	ppb	41.874	0.39	10542	2000	
Sn	120	3	115	42.446	ppb	42.446	1.91	32063	2000	
Sb	121	3	115	43.191	ppb	43.191	2.40	32520	1000	
Ba	137	3	115	90.999	ppb	90.999	3.50	21595	5000	
Tl	205	3	193	41.882	ppb	41.882	2.14	152252	2000	
(Pb)	206	3	193	42.093	ppb	42.093	1.14	51141	100	
(Pb)	207	3	193	41.791	ppb	41.791	2.01	44957	100	
Pb	208	3	193	41.996	ppb	41.996	1.38	205738	5000	
Th	232	3	193	43.580	ppb	43.580	0.88	216941	2000	
U	238	3	193	43.293	ppb	43.293	1.69	223982	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4343372	1.30	4299393	101.02	60	120	
Sc (IS)	45	3	HMI He	673252	0.93	674661	99.79	60	120	
Ge Internal standard	72	2	HMI H2	2376303	1.31	2269722	104.70	60	120	
Ge Internal standard	72	3	HMI He	780185	2.23	739017	105.57	60	120	
In Internal Standard	115	3	HMI He	2541690	1.12	2543041	99.95	60	120	
Ir (IS)	193	3	HMI He	5493663	1.64	5570851	98.61	60	120	

Sample Report

Sample Table

Sample Name	280-171420-A-1-C MSD
Data File Name	038SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:20:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.906	ppb	39.906	1.75	2282	2000	
Na	23	3	45	42583.721	ppb	42583.721	1.49	5503061	400000	
Mg	24	3	45	39176.142	ppb	39176.142	0.99	2675066	400000	
Al	27	3	45	855.111	ppb	855.111	1.68	20836	400000	
K	39	3	45	3419.960	ppb	3419.960	0.66	196115	400000	
Ca	40	2	45	88347.807	ppb	88347.807	0.81	51880052	400000	
V	51	3	72	42.083	ppb	42.083	1.73	27904	2000	
Cr	52	3	72	41.208	ppb	41.208	2.65	36757	5000	
Mn	55	3	72	48.423	ppb	48.423	2.07	22115	10000	
Fe	56	2	72	1016.758	ppb	1016.758	0.86	1598204	10000	
Co	59	3	72	40.681	ppb	40.681	1.30	56035	2000	
Ni	60	3	72	41.984	ppb	41.984	4.27	16315	5000	
Cu	63	3	72	41.702	ppb	41.702	1.64	43573	5000	
Zn	66	3	72	151.950	ppb	151.950	2.67	27133	5000	
As	75	3	72	43.937	ppb	43.937	6.43	5398	2000	
Se	78	2	72	42.949	ppb	42.949	4.65	2635	2000	
(Se)	78	3	72	37.088	ppb	37.088	3.96	295	2000	
Sr	88	3	72	298.519	ppb	298.519	2.29	170075	4000	
Mo	95	3	115	61.454	ppb	61.454	2.54	32760	2000	
Ag	107	3	115	42.277	ppb	42.277	3.99	74036	100	
Cd	111	3	115	42.327	ppb	42.327	3.53	10786	2000	
Sn	120	3	115	42.894	ppb	42.894	5.08	32781	2000	
Sb	121	3	115	42.996	ppb	42.996	2.88	32774	1000	
Ba	137	3	115	92.119	ppb	92.119	2.03	22134	5000	
Tl	205	3	193	41.670	ppb	41.670	0.86	154564	2000	
(Pb)	206	3	193	41.926	ppb	41.926	2.02	51969	100	
(Pb)	207	3	193	41.957	ppb	41.957	2.60	46044	100	
Pb	208	3	193	41.793	ppb	41.793	0.84	208897	5000	
Th	232	3	193	43.559	ppb	43.559	0.42	221223	2000	
U	238	3	193	42.718	ppb	42.718	0.75	225511	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4246015	0.99	4299393	98.76	60	120	
Sc (IS)	45	3	HMI He	668643	0.25	674661	99.11	60	120	
Ge Internal standard	72	2	HMI H2	2348046	1.93	2269722	103.45	60	120	
Ge Internal standard	72	3	HMI He	779711	2.12	739017	105.51	60	120	
In Internal Standard	115	3	HMI He	2574239	3.07	2543041	101.23	60	120	
Ir (IS)	193	3	HMI He	5604391	0.93	5570851	100.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	039_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:21:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.596	ppb	3.128	2984	50	103.2	90	110	
Na	23	3	45	50534.375	ppb	1.667	6567010	51000	99.1	90	110	
Mg	24	3	45	11089.363	ppb	1.364	762201	11000	100.8	90	110	
Al	27	3	45	991.113	ppb	1.042	24295	1000	99.1	90	110	
K	39	3	45	10576.923	ppb	1.048	565912	11000	96.2	90	110	
Ca	40	2	45	10958.192	ppb	1.092	6640596	11000	99.6	90	110	
V	51	3	72	51.475	ppb	2.175	33270	50	103.0	90	110	
Cr	52	3	72	50.871	ppb	0.734	43864	50	101.7	90	110	
Mn	55	3	72	51.056	ppb	2.292	22722	50	102.1	90	110	
Fe	56	2	72	1055.859	ppb	0.891	1626178	1000	105.6	90	110	
Co	59	3	72	50.172	ppb	0.356	67419	50	100.3	90	110	
Ni	60	3	72	50.463	ppb	1.959	19097	50	100.9	90	110	
Cu	63	3	72	51.178	ppb	0.685	52057	50	102.4	90	110	
Zn	66	3	72	52.369	ppb	0.769	9230	50	104.7	90	110	
As	75	3	72	52.972	ppb	5.143	6343	50	105.9	90	110	
Se	78	2	72	53.182	ppb	2.546	3200	50	106.4	90	110	
(Se)	78	3	72	53.598	ppb	6.935	410	50	107.2	90	110	
Sr	88	3	72	102.609	ppb	1.493	57056	100	102.6	90	110	
Mo	95	3	115	50.368	ppb	0.336	26756	50	100.7	90	110	
Ag	107	3	115	50.598	ppb	0.701	88284	50	101.2	90	110	
Cd	111	3	115	51.473	ppb	2.462	13065	50	102.9	90	110	
Sn	120	3	115	51.647	ppb	2.120	39196	50	103.3	90	110	
Sb	121	3	115	52.119	ppb	2.713	39554	50	104.2	90	110	
Ba	137	3	115	52.775	ppb	1.741	12653	50	105.5	90	110	
Tl	205	3	193	50.220	ppb	0.520	188064	50	100.4	90	110	
(Pb)	206	3	193	50.069	ppb	1.388	62645	50	100.1	90	110	
(Pb)	207	3	193	50.164	ppb	0.536	55532	50	100.3	90	110	
Pb	208	3	193	50.101	ppb	0.727	252736	50	100.2	90	110	
Th	232	3	193	51.376	ppb	1.082	262765	50	102.8	90	110	
U	238	3	193	51.176	ppb	0.981	272539	50	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4375442	0.80	4299393	101.77	60	120	
Sc (IS)	45	3	HMI He	672968	0.29	674661	99.75	60	120	
Ge Internal standard	72	2	HMI H2	2301486	0.16	2269722	101.40	60	120	
Ge Internal standard	72	3	HMI He	760634	0.35	739017	102.93	60	120	
In Internal Standard	115	3	HMI He	2563049	1.29	2543041	100.79	60	120	
Ir (IS)	193	3	HMI He	5660238	0.35	5570851	101.60	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	040_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:23:56-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.029	ppb	0.0	0	0.5	
Na	23	3	45	34.537	ppb	9.4	33767	25	>RL
Mg	24	3	45	2.099	ppb	21.0	270	25	
Al	27	3	45	26.608	ppb	13.5	707	15	>RL
K	39	3	45	-20.057	ppb	-172.8	19964	50	
V	51	3	72	0.020	ppb	45.1	178	1	
Cr	52	3	72	-0.371	ppb	-16.7	1504	1	
Mn	55	3	72	-0.532	ppb	-13.1	325	0.5	
Co	59	3	72	-0.011	ppb	-95.0	25	0.5	
Ni	60	3	72	-0.033	ppb	-226.6	187	1	
Cu	63	3	72	-0.061	ppb	-76.3	480	1	
Zn	66	3	72	2.586	ppb	16.4	620	5	
As	75	3	72	0.066	ppb	289.1	47	1	
Se	78	2	72	0.044	ppb	2.7	4	1	
(Se)	78	3	72	-0.321	ppb	-308.4	12	1	
Sr	88	3	72	0.046	ppb	64.9	42	0.5	
Mo	95	3	115	0.000	ppb	13824.6	58	0.5	
Ag	107	3	115	0.004	ppb	173.1	30	1	
Cd	111	3	115	0.026	ppb	42.7	8	0.5	
Sn	120	3	115	-0.076	ppb	-108.7	613	1	
Sb	121	3	115	0.082	ppb	65.8	132	0.6	
Ba	137	3	115	-0.005	ppb	-1214.0	48	0.5	
Tl	205	3	193	-0.046	ppb	-42.4	230	0.1	
(Pb)	206	3	193	0.001	ppb	772.1	178	1	
(Pb)	207	3	193	0.004	ppb	137.1	383	1	
Pb	208	3	193	-0.002	ppb	-242.1	930	0.5	
Th	232	3	193	0.660	ppb	20.5	7537	1	
U	238	3	193	0.001	ppb	1016.1	1604	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4293589	1.80	4299393	99.86	60	120	
Sc (IS)	45	3	HMI He	663701	0.20	674661	98.38	60	120	
Ge Internal standard	72	2	HMI H2	2286423	1.76	2269722	100.74	60	120	
Ge Internal standard	72	3	HMI He	773625	1.92	739017	104.68	60	120	
In Internal Standard	115	3	HMI He	2611158	0.76	2543041	102.68	60	120	
Ir (IS)	193	3	HMI He	5626746	2.42	5570851	101.00	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	041LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:25:49-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.759	ppb	80.885	45	1	75.9	70	130	
Na	23	3	45	70.012	ppb	7.073	38538	50	140.0	70	130	>+/-30%
Mg	24	3	45	53.195	ppb	6.025	3758	50	106.4	70	130	
Al	27	3	45	48.409	ppb	14.467	1241	50	96.8	70	130	
K	39	3	45	81.952	ppb	36.977	25305	100	82.0	70	130	
V	51	3	72	5.168	ppb	2.466	3427	5	103.4	70	130	
Cr	52	3	72	1.752	ppb	16.382	3177	2	87.6	70	130	
Mn	55	3	72	0.704	ppb	21.885	841	1	70.4	70	130	
Co	59	3	72	1.106	ppb	3.082	1498	1	110.6	70	130	
Ni	60	3	72	1.883	ppb	8.847	885	2	94.2	70	130	
Cu	63	3	72	2.102	ppb	4.623	2604	2	105.1	70	130	
Zn	66	3	72	9.902	ppb	6.368	1844	10	99.0	70	130	
As	75	3	72	5.198	ppb	15.809	645	5	104.0	70	130	
Se	78	2	72	5.138	ppb	4.075	303	5	102.8	70	130	
(Se)	78	3	72	5.707	ppb	31.444	55	5	114.1	70	130	
Sr	88	3	72	1.032	ppb	13.524	578	1	103.2	70	130	
Mo	95	3	115	1.905	ppb	3.470	1053	2	95.3	70	130	
Ag	107	3	115	1.085	ppb	0.176	1889	1	108.5	70	130	
Cd	111	3	115	1.119	ppb	16.402	282	1	111.9	70	130	
Sn	120	3	115	9.677	ppb	2.849	7773	10	96.8	70	130	
Sb	121	3	115	2.170	ppb	4.988	1688	2	108.5	70	130	
Ba	137	3	115	0.829	ppb	2.970	243	1	82.9	70	130	
Tl	205	3	193	0.992	ppb	3.432	4069	1	99.2	70	130	
(Pb)	206	3	193	1.045	ppb	5.947	1466	1	104.5	70	130	
(Pb)	207	3	193	0.974	ppb	7.004	1436	1	97.4	70	130	
Pb	208	3	193	1.034	ppb	8.995	6074	1	103.4	70	130	
Th	232	3	193	2.220	ppb	1.389	15278	2	111.0	70	130	
U	238	3	193	1.069	ppb	3.781	7192	1	106.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4221241	1.65	4299393	98.18	60	120	
Sc (IS)	45	3	HMI He	667915	0.49	674661	99.00	60	120	
Ge Internal standard	72	2	HMI H2	2243265	2.90	2269722	98.83	60	120	
Ge Internal standard	72	3	HMI He	747482	2.40	739017	101.15	60	120	
In Internal Standard	115	3	HMI He	2529059	2.16	2543041	99.45	60	120	
Ir (IS)	193	3	HMI He	5601511	1.26	5570851	100.55	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599874/1-A
Data File Name	042_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:27:40-07:00
Sample Type	Blank
Dilution	1
Comment	599874 6020a
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.059	ppb	148.2485962	5	0.5
Na	23	3	45	59.518	ppb	13.19102701	36754	25
Mg	24	3	45	4.449	ppb	16.15730791	427	25
Al	27	3	45	5.476	ppb	41.67816558	197	15
K	39	3	45	-11.056	ppb	-199.8008493	20308	50
V	51	3	72	0.159	ppb	42.52696739	255	1
Cr	52	3	72	0.056	ppb	175.4068516	1764	1
Mn	55	3	72	0.195	ppb	56.83769553	611	0.5
Co	59	3	72	-0.004	ppb	-120.9512837	33	0.5
Ni	60	3	72	0.028	ppb	216.1019057	198	1
Cu	63	3	72	11.185	ppb	1.703404865	11354	1
Zn	66	3	72	7.383	ppb	4.615083644	1386	5
As	75	3	72	-0.026	ppb	-197.8416671	33	1
(Se)	78	3	72	1.649	ppb	41.67367146	25	1
Sr	88	3	72	0.078	ppb	39.15339188	57	0.5
Mo	95	3	115	0.033	ppb	168.8665666	73	0.5
Ag	107	3	115	0.004	ppb	185.848018	28	1
Cd	111	3	115	0.000	ppb	3399.909777	2	0.5
Sn	120	3	115	0.335	ppb	32.79095172	895	1
Sb	121	3	115	0.126	ppb	26.17871033	160	0.6
Ba	137	3	115	0.257	ppb	43.80625992	108	0.5
Tl	205	3	193	-0.049	ppb	-16.9391628	218	0.1
(Pb)	206	3	193	0.339	ppb	11.26230285	601	1
(Pb)	207	3	193	0.268	ppb	7.166903024	676	1
Pb	208	3	193	0.310	ppb	4.555124521	2506	0.5
Th	232	3	193	0.132	ppb	56.29479737	4932	1
U	238	3	193	0.000	ppb	-18183.3914	1613	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4251401	1.36	4299393	98.88	60	120	
Sc (IS)	45	3	HMI He	660089	0.26	674661	97.84	60	120	
Ge Internal standard	72	2	HMI H2	2252180	1.63	2269722	99.23	60	120	
Ge Internal standard	72	3	HMI He	732278	0.51	739017	99.09	60	120	
In Internal Standard	115	3	HMI He	2520760	1.13	2543041	99.12	60	120	
Ir (IS)	193	3	HMI He	5663261	1.70	5570851	101.66	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599874/2-A
Data File Name	043_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:29:33-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599874 6020a
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.763	39.763	ppb	2.394	2311	40	99.4	80	120	
Na	23	3	45	989.522	989.522	ppb	1.839	153064	40	2473.8	80	120	>+/-20%
Mg	24	3	45	832.754	832.754	ppb	1.757	55641	40	2081.9	80	120	>+/-20%
Al	27	3	45	835.143	835.143	ppb	1.564	19874	40	2087.9	80	120	>+/-20%
K	39	3	45	861.290	861.290	ppb	2.462	63664	40	2153.2	80	120	>+/-20%
Ca	40	2	45	871.251	871.251	ppb	0.949	529944	40	2178.1	80	120	>+/-20%
V	51	3	72	41.793	41.793	ppb	4.697	26729	40	104.5	80	120	
Cr	52	3	72	42.042	42.042	ppb	5.242	36137	40	105.1	80	120	
Mn	55	3	72	40.613	40.613	ppb	4.552	17983	40	101.5	80	120	
Fe	56	2	72	889.769	889.769	ppb	1.344	1343595	40	2224.4	80	120	>+/-20%
(Fe)	56	3	72	833.009	833.009	ppb	5.414	584944	40	2082.5	80	120	>+/-20%
Co	59	3	72	41.664	41.664	ppb	5.388	55336	40	104.2	80	120	
Ni	60	3	72	41.214	41.214	ppb	5.510	15449	40	103.0	80	120	
Cu	63	3	72	42.215	42.215	ppb	5.148	42532	40	105.5	80	120	
Zn	66	3	72	42.194	42.194	ppb	1.508	7390	40	105.5	80	120	
As	75	3	72	43.159	43.159	ppb	7.259	5112	40	107.9	80	120	
Se	78	2	72	42.696	42.696	ppb	3.119	2516	40	106.7	80	120	
(Se)	78	3	72	37.825	37.825	ppb	16.603	290	40	94.6	80	120	
Sr	88	3	72	83.037	83.037	ppb	4.237	45655	40	207.6	80	120	>+/-20%
Mo	95	3	115	41.989	41.989	ppb	1.895	21959	40	105.0	80	120	
Ag	107	3	115	41.583	41.583	ppb	2.706	71401	40	104.0	80	120	
Cd	111	3	115	41.885	41.885	ppb	3.074	10466	40	104.7	80	120	
Sn	120	3	115	42.158	42.158	ppb	0.638	31610	40	105.4	80	120	
Sb	121	3	115	42.599	42.599	ppb	1.324	31834	40	106.5	80	120	
Ba	137	3	115	43.944	43.944	ppb	4.982	10372	40	109.9	80	120	
Tl	205	3	193	41.321	41.321	ppb	1.118	154537	40	103.3	80	120	
(Pb)	206	3	193	40.989	40.989	ppb	3.474	51216	40	102.5	80	120	
(Pb)	207	3	193	40.861	40.861	ppb	2.943	45223	40	102.2	80	120	
Pb	208	3	193	41.259	41.259	ppb	2.613	207903	40	103.1	80	120	
Th	232	3	193	41.380	41.380	ppb	1.762	212080	40	103.5	80	120	
U	238	3	193	41.587	41.587	ppb	1.837	221367	40	104.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306238	0.65	4299393	100.16	60	120	
Sc (IS)	45	3	HMI He	652908	0.98	674661	96.78	60	120	
Ge Internal standard	72	2	HMI H2	2253760	0.92	2269722	99.30	60	120	
Ge Internal standard	72	3	HMI He	752921	4.56	739017	101.88	60	120	
In Internal Standard	115	3	HMI He	2522245	0.76	2543041	99.18	60	120	
Ir (IS)	193	3	HMI He	5650667	1.37	5570851	101.43	60	120	

Sample Report

Sample Table

Sample Name	280-171347-C-2-C@10
Data File Name	044SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:31:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	167.24	3	2000	
Na	23	3	45	11408.429	ppb	11408.429	1.70	1442337	400000	
Mg	24	3	45	3570.845	ppb	3570.845	0.62	235185	400000	
Al	27	3	45	14.927	ppb	14.927	19.60	414	400000	
K	39	3	45	625.404	ppb	625.404	5.20	51221	400000	
Ca	40	2	45	9480.363	ppb	9480.363	0.93	5432360	400000	
V	51	3	72	0.245	ppb	0.245	5.38	313	2000	
Cr	52	3	72	3.746	ppb	3.746	46.21	4784	5000	
Mn	55	3	72	0.699	ppb	0.699	10.26	835	10000	
Fe	56	2	72	30.579	ppb	30.579	1.85	55771	10000	
Co	59	3	72	0.075	ppb	0.075	27.87	137	2000	
Ni	60	3	72	1.575	ppb	1.575	9.79	768	5000	
Cu	63	3	72	0.405	ppb	0.405	22.30	920	5000	
Zn	66	3	72	3.214	ppb	3.214	8.11	701	5000	
As	75	3	72	0.140	ppb	0.140	151.12	53	2000	
Se	78	2	72	0.565	ppb	0.565	65.68	34	2000	
(Se)	78	3	72	0.681	ppb	0.681	295.29	18	2000	
Sr	88	3	72	99.877	ppb	99.877	1.19	54277	4000	
Mo	95	3	115	0.302	ppb	0.302	26.25	208	2000	
Ag	107	3	115	0.011	ppb	0.011	133.99	40	100	
Cd	111	3	115	0.014	ppb	0.014	146.72	5	2000	
Sn	120	3	115	0.577	ppb	0.577	18.50	1048	2000	
Sb	121	3	115	0.165	ppb	0.165	20.17	185	1000	
Ba	137	3	115	2.968	ppb	2.968	1.33	728	5000	
Tl	205	3	193	-0.013	ppb	-0.013	-70.53	347	2000	
(Pb)	206	3	193	0.012	ppb	0.012	190.39	188	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-406.91	365	100	
Pb	208	3	193	0.017	ppb	0.017	35.54	1006	5000	
Th	232	3	193	0.561	ppb	0.561	21.33	6927	2000	
U	238	3	193	1.302	ppb	1.302	2.63	8305	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4136373	1.54	4299393	96.21	60	120	
Sc (IS)	45	3	HMI He	644653	0.65	674661	95.55	60	120	
Ge Internal standard	72	2	HMI H2	2226322	2.24	2269722	98.09	60	120	
Ge Internal standard	72	3	HMI He	743412	1.02	739017	100.59	60	120	
In Internal Standard	115	3	HMI He	2464012	1.60	2543041	96.89	60	120	
Ir (IS)	193	3	HMI He	5526952	0.69	5570851	99.21	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599789/1-C
Data File Name	045_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:33:18-07:00
Sample Type	Blank
Dilution	1
Comment	599867 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.001	ppb	7634.686066	2	0.5
Na	23	3	45	122.638	ppb	3.377984956	44541	25
Mg	24	3	45	4.879	ppb	18.4260718	454	25
Al	27	3	45	7.200	ppb	9.312530346	237	15
K	39	3	45	-9.333	ppb	-362.4605737	20285	50
V	51	3	72	0.127	ppb	37.3846604	233	1
Cr	52	3	72	0.192	ppb	82.29896974	1854	1
Mn	55	3	72	0.557	ppb	13.4069177	755	0.5
Co	59	3	72	0.001	ppb	1623.799792	38	0.5
Ni	60	3	72	0.355	ppb	18.01620776	313	1
Cu	63	3	72	0.143	ppb	26.01395575	645	1
Zn	66	3	72	2.015	ppb	27.60277709	486	5
As	75	3	72	0.095	ppb	121.0980309	47	1
(Se)	78	3	72	0.749	ppb	200.8606507	18	1
Sr	88	3	72	0.126	ppb	17.8291913	82	0.5
Mo	95	3	115	0.057	ppb	55.01805762	87	0.5
Ag	107	3	115	0.009	ppb	173.5692882	37	1
Cd	111	3	115	-0.006	ppb	0	0	0.5
Sn	120	3	115	0.391	ppb	15.79696082	946	1
Sb	121	3	115	0.152	ppb	57.03148441	182	0.6
Ba	137	3	115	0.273	ppb	9.64389902	113	0.5
Tl	205	3	193	-0.054	ppb	-31.28807131	202	0.1
(Pb)	206	3	193	-0.007	ppb	-257.7891884	168	1
(Pb)	207	3	193	-0.040	ppb	-44.91106989	335	1
Pb	208	3	193	-0.005	ppb	-306.6805596	913	0.5
Th	232	3	193	0.090	ppb	49.93185235	4694	1
U	238	3	193	0.002	ppb	807.150969	1613	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4238869	0.64	4299393	98.59	60	120	
Sc (IS)	45	3	HMI He	656868	1.06	674661	97.36	60	120	
Ge Internal standard	72	2	HMI H2	2223957	1.96	2269722	97.98	60	120	
Ge Internal standard	72	3	HMI He	724966	0.83	739017	98.10	60	120	
In Internal Standard	115	3	HMI He	2551431	0.54	2543041	100.33	60	120	
Ir (IS)	193	3	HMI He	5625014	0.70	5570851	100.97	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599789/2-C
Data File Name	046_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:35:12-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599867 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.469	37.469	ppb	11.595	2149	40	93.7	80	120	
Na	23	3	45	870.660	870.660	ppb	1.650	136397	40	2176.6	80	120	>+/-20%
Mg	24	3	45	782.147	782.147	ppb	1.962	51605	40	1955.4	80	120	>+/-20%
Al	27	3	45	792.382	792.382	ppb	2.987	18618	40	1981.0	80	120	>+/-20%
K	39	3	45	767.268	767.268	ppb	4.019	58222	40	1918.2	80	120	>+/-20%
Ca	40	2	45	858.559	858.559	ppb	1.622	510971	40	2146.4	80	120	>+/-20%
V	51	3	72	40.958	40.958	ppb	0.470	25390	40	102.4	80	120	
Cr	52	3	72	40.209	40.209	ppb	1.619	33570	40	100.5	80	120	
Mn	55	3	72	40.275	40.275	ppb	2.634	17282	40	100.7	80	120	
Fe	56	2	72	846.933	846.933	ppb	3.160	1294570	40	2117.3	80	120	>+/-20%
(Fe)	56	3	72	823.193	823.193	ppb	1.930	560370	40	2058.0	80	120	>+/-20%
Co	59	3	72	40.351	40.351	ppb	2.642	51948	40	100.9	80	120	
Ni	60	3	72	40.680	40.680	ppb	1.963	14784	40	101.7	80	120	
Cu	63	3	72	40.899	40.899	ppb	1.734	39954	40	102.2	80	120	
Zn	66	3	72	41.184	41.184	ppb	1.210	6987	40	103.0	80	120	
As	75	3	72	42.033	42.033	ppb	2.580	4830	40	105.1	80	120	
Se	78	2	72	40.423	40.423	ppb	5.193	2410	40	101.1	80	120	
(Se)	78	3	72	43.596	43.596	ppb	27.935	322	40	109.0	80	120	
Sr	88	3	72	81.043	81.043	ppb	1.228	43172	40	202.6	80	120	>+/-20%
Mo	95	3	115	40.923	40.923	ppb	2.631	21078	40	102.3	80	120	
Ag	107	3	115	40.462	40.462	ppb	1.724	68427	40	101.2	80	120	
Cd	111	3	115	40.135	40.135	ppb	2.606	9874	40	100.3	80	120	
Sn	120	3	115	40.221	40.221	ppb	2.691	29728	40	100.6	80	120	
Sb	121	3	115	40.593	40.593	ppb	1.594	29882	40	101.5	80	120	
Ba	137	3	115	42.125	42.125	ppb	3.898	9795	40	105.3	80	120	
Tl	205	3	193	39.915	39.915	ppb	1.011	147859	40	99.8	80	120	
(Pb)	206	3	193	39.609	39.609	ppb	0.879	49039	40	99.0	80	120	
(Pb)	207	3	193	39.610	39.610	ppb	1.988	43429	40	99.0	80	120	
Pb	208	3	193	39.374	39.374	ppb	1.107	196573	40	98.4	80	120	
Th	232	3	193	39.817	39.817	ppb	0.776	202289	40	99.5	80	120	
U	238	3	193	39.885	39.885	ppb	2.006	210364	40	99.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4211939	1.92	4299393	97.97	60	120	
Sc (IS)	45	3	HMI He	644613	0.63	674661	95.55	60	120	
Ge Internal standard	72	2	HMI H2	2281337	2.15	2269722	100.51	60	120	
Ge Internal standard	72	3	HMI He	728683	0.51	739017	98.60	60	120	
In Internal Standard	115	3	HMI He	2484280	1.25	2543041	97.69	60	120	
Ir (IS)	193	3	HMI He	5596397	0.97	5570851	100.46	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-1-C@50
Data File Name	047SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:37:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	165.97	3	2000	
Na	23	3	45	11033.176	ppb	11033.176	2.37	1365433	400000	
Mg	24	3	45	3577.051	ppb	3577.051	0.88	230489	400000	
Al	27	3	45	16.607	ppb	16.607	25.78	444	400000	
K	39	3	45	647.684	ppb	647.684	7.44	51178	400000	
Ca	40	2	45	9395.866	ppb	9395.866	1.89	5260506	400000	
V	51	3	72	0.237	ppb	0.237	27.91	302	2000	
Cr	52	3	72	2.964	ppb	2.964	4.26	4055	5000	
Mn	55	3	72	0.653	ppb	0.653	19.30	798	10000	
Fe	56	2	72	29.833	ppb	29.833	2.91	54206	10000	
Co	59	3	72	0.068	ppb	0.068	1.59	125	2000	
Ni	60	3	72	1.527	ppb	1.527	6.85	735	5000	
Cu	63	3	72	0.351	ppb	0.351	15.65	848	5000	
Zn	66	3	72	3.133	ppb	3.133	4.32	673	5000	
As	75	3	72	0.239	ppb	0.239	13.02	63	2000	
Se	78	2	72	0.358	ppb	0.358	28.38	22	2000	
(Se)	78	3	72	0.724	ppb	0.724	108.37	18	2000	
Sr	88	3	72	100.877	ppb	100.877	2.19	53672	4000	
Mo	95	3	115	0.313	ppb	0.313	34.90	215	2000	
Ag	107	3	115	0.018	ppb	0.018	12.06	52	100	
Cd	111	3	115	0.048	ppb	0.048	131.67	13	2000	
Sn	120	3	115	0.488	ppb	0.488	30.28	990	2000	
Sb	121	3	115	0.169	ppb	0.169	16.85	188	1000	
Ba	137	3	115	2.454	ppb	2.454	10.98	613	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-55.65	328	2000	
(Pb)	206	3	193	0.012	ppb	0.012	236.56	183	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-292.96	337	100	
Pb	208	3	193	0.007	ppb	0.007	422.49	935	5000	
Th	232	3	193	0.629	ppb	0.629	20.99	7080	2000	
U	238	3	193	1.323	ppb	1.323	2.76	8205	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4041569	1.04	4299393	94.00	60	120	
Sc (IS)	45	3	HMI He	630713	1.16	674661	93.49	60	120	
Ge Internal standard	72	2	HMI H2	2207349	0.74	2269722	97.25	60	120	
Ge Internal standard	72	3	HMI He	727933	1.11	739017	98.50	60	120	
In Internal Standard	115	3	HMI He	2475741	2.71	2543041	97.35	60	120	
Ir (IS)	193	3	HMI He	5389937	0.72	5570851	96.75	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-2-C@50
Data File Name	048SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:38:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	144.76	5	2000	
Na	23	3	45	21953.942	ppb	21953.942	2.09	2693166	400000	
Mg	24	3	45	6848.049	ppb	6848.049	2.62	441694	400000	
Al	27	3	45	3.525	ppb	3.525	31.83	143	400000	
K	39	3	45	309.327	ppb	309.327	13.98	34895	400000	
Ca	40	2	45	10901.041	ppb	10901.041	2.58	6163397	400000	
V	51	3	72	0.166	ppb	0.166	31.77	248	2000	
Cr	52	3	72	0.282	ppb	0.282	25.52	1859	5000	
Mn	55	3	72	-0.045	ppb	-0.045	-289.72	488	10000	
Fe	56	2	72	2.309	ppb	2.309	16.59	13413	10000	
Co	59	3	72	0.011	ppb	0.011	108.92	50	2000	
Ni	60	3	72	0.129	ppb	0.129	56.58	225	5000	
Cu	63	3	72	0.134	ppb	0.134	69.90	615	5000	
Zn	66	3	72	3.877	ppb	3.877	2.96	766	5000	
As	75	3	72	0.231	ppb	0.231	54.65	60	2000	
Se	78	2	72	50.722	ppb	50.722	1.46	2839	2000	
(Se)	78	3	72	46.638	ppb	46.638	10.10	330	2000	
Sr	88	3	72	205.907	ppb	205.907	1.83	105378	4000	
Mo	95	3	115	0.110	ppb	0.110	20.53	112	2000	
Ag	107	3	115	0.017	ppb	0.017	62.12	50	100	
Cd	111	3	115	0.000	ppb	0.000	4638.60	2	2000	
Sn	120	3	115	0.529	ppb	0.529	6.46	1021	2000	
Sb	121	3	115	0.110	ppb	0.110	45.85	145	1000	
Ba	137	3	115	0.309	ppb	0.309	48.35	118	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-3.29	322	2000	
(Pb)	206	3	193	-0.011	ppb	-0.011	-208.23	158	100	
(Pb)	207	3	193	0.000	ppb	0.000	-19037.94	366	100	
Pb	208	3	193	-0.001	ppb	-0.001	-938.21	905	5000	
Th	232	3	193	0.109	ppb	0.109	21.15	4642	2000	
U	238	3	193	3.757	ppb	3.757	3.86	20705	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4082490	1.39	4299393	94.96	60	120	
Sc (IS)	45	3	HMI He	631660	1.88	674661	93.63	60	120	
Ge Internal standard	72	2	HMI H2	2141378	1.76	2269722	94.35	60	120	
Ge Internal standard	72	3	HMI He	700267	1.19	739017	94.76	60	120	
In Internal Standard	115	3	HMI He	2485552	2.74	2543041	97.74	60	120	
Ir (IS)	193	3	HMI He	5451855	0.83	5570851	97.86	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-4-E@50
Data File Name	049SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:40:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	165.39	3	2000	
Na	23	3	45	21560.161	ppb	21560.161	1.26	2660599	400000	
Mg	24	3	45	6710.697	ppb	6710.697	2.44	435334	400000	
Al	27	3	45	2.774	ppb	2.774	35.83	127	400000	
K	39	3	45	293.717	ppb	293.717	9.20	34363	400000	
Ca	40	2	45	11042.973	ppb	11042.973	0.71	6287598	400000	
V	51	3	72	0.262	ppb	0.262	16.58	300	2000	
Cr	52	3	72	0.447	ppb	0.447	10.29	1954	5000	
Mn	55	3	72	-0.106	ppb	-0.106	-161.23	456	10000	
Fe	56	2	72	2.319	ppb	2.319	10.46	13133	10000	
Co	59	3	72	0.023	ppb	0.023	94.24	63	2000	
Ni	60	3	72	0.273	ppb	0.273	18.12	270	5000	
Cu	63	3	72	0.098	ppb	0.098	64.14	573	5000	
Zn	66	3	72	3.935	ppb	3.935	12.02	763	5000	
As	75	3	72	0.070	ppb	0.070	205.60	42	2000	
Se	78	2	72	48.961	ppb	48.961	3.02	2680	2000	
(Se)	78	3	72	49.374	ppb	49.374	7.85	343	2000	
Sr	88	3	72	204.833	ppb	204.833	2.08	103184	4000	
Mo	95	3	115	0.027	ppb	0.027	202.72	70	2000	
Ag	107	3	115	0.013	ppb	0.013	103.47	43	100	
Cd	111	3	115	0.014	ppb	0.014	3.48	5	2000	
Sn	120	3	115	0.598	ppb	0.598	13.36	1075	2000	
Sb	121	3	115	0.102	ppb	0.102	16.40	140	1000	
Ba	137	3	115	0.297	ppb	0.297	38.07	117	5000	
Tl	205	3	193	-0.023	ppb	-0.023	-54.11	302	2000	
(Pb)	206	3	193	0.005	ppb	0.005	622.79	175	100	
(Pb)	207	3	193	0.003	ppb	0.003	1213.44	366	100	
Pb	208	3	193	0.005	ppb	0.005	332.46	926	5000	
Th	232	3	193	0.060	ppb	0.060	14.66	4360	2000	
U	238	3	193	3.776	ppb	3.776	3.63	20607	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110902	0.81	4299393	95.62	60	120	
Sc (IS)	45	3	HMI He	635258	1.56	674661	94.16	60	120	
Ge Internal standard	72	2	HMI H2	2095151	2.95	2269722	92.31	60	120	
Ge Internal standard	72	3	HMI He	689317	1.43	739017	93.27	60	120	
In Internal Standard	115	3	HMI He	2492835	2.39	2543041	98.03	60	120	
Ir (IS)	193	3	HMI He	5400225	1.66	5570851	96.94	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-8-E@50
Data File Name	050SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:42:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	23236.418	ppb	23236.418	0.90	2826907	400000	
Mg	24	3	45	5772.952	ppb	5772.952	0.55	369545	400000	
Al	27	3	45	3.712	ppb	3.712	25.66	147	400000	
K	39	3	45	249.742	ppb	249.742	14.98	31775	400000	
Ca	40	2	45	7096.571	ppb	7096.571	2.47	4061324	400000	
V	51	3	72	0.231	ppb	0.231	12.58	283	2000	
Cr	52	3	72	0.396	ppb	0.396	35.37	1923	5000	
Mn	55	3	72	3.971	ppb	3.971	6.26	2069	10000	
Fe	56	2	72	2.784	ppb	2.784	11.05	13854	10000	
Co	59	3	72	0.002	ppb	0.002	330.82	38	2000	
Ni	60	3	72	0.261	ppb	0.261	58.22	267	5000	
Cu	63	3	72	0.196	ppb	0.196	30.83	665	5000	
Zn	66	3	72	3.471	ppb	3.471	11.31	693	5000	
As	75	3	72	0.203	ppb	0.203	144.55	57	2000	
Se	78	2	72	5.307	ppb	5.307	4.32	293	2000	
(Se)	78	3	72	7.808	ppb	7.808	10.76	65	2000	
Sr	88	3	72	147.632	ppb	147.632	1.33	74677	4000	
Mo	95	3	115	0.070	ppb	0.070	35.98	88	2000	
Ag	107	3	115	0.011	ppb	0.011	83.83	38	100	
Cd	111	3	115	0.008	ppb	0.008	160.01	3	2000	
Sn	120	3	115	0.373	ppb	0.373	14.90	881	2000	
Sb	121	3	115	0.082	ppb	0.082	39.02	122	1000	
Ba	137	3	115	0.421	ppb	0.421	34.50	140	5000	
Tl	205	3	193	-0.032	ppb	-0.032	-35.89	270	2000	
(Pb)	206	3	193	-0.006	ppb	-0.006	-226.01	162	100	
(Pb)	207	3	193	-0.013	ppb	-0.013	-129.16	348	100	
Pb	208	3	193	-0.017	ppb	-0.017	-78.60	818	5000	
Th	232	3	193	0.101	ppb	0.101	6.61	4542	2000	
U	238	3	193	2.577	ppb	2.577	2.13	14501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4129678	2.39	4299393	96.05	60	120	
Sc (IS)	45	3	HMI He	626668	1.07	674661	92.89	60	120	
Ge Internal standard	72	2	HMI H2	2106223	1.98	2269722	92.80	60	120	
Ge Internal standard	72	3	HMI He	692083	1.33	739017	93.65	60	120	
In Internal Standard	115	3	HMI He	2409412	1.51	2543041	94.75	60	120	
Ir (IS)	193	3	HMI He	5381394	0.92	5570851	96.60	60	120	

Sample Report

Sample Table

Sample Name	280-171348-A-3-B@50
Data File Name	051SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:44:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.089	ppb	0.089	56.67	7	2000	
Na	23	3	45	52251.702	ppb	52251.702	3.31	6410018	400000	
Mg	24	3	45	5977.984	ppb	5977.984	3.28	387991	400000	
Al	27	3	45	5.967	ppb	5.967	29.88	200	400000	
K	39	3	45	313.680	ppb	313.680	13.77	35323	400000	
Ca	40	2	45	4591.208	ppb	4591.208	2.39	2641322	400000	
V	51	3	72	0.252	ppb	0.252	67.00	297	2000	
Cr	52	3	72	0.265	ppb	0.265	44.93	1833	5000	
Mn	55	3	72	1.522	ppb	1.522	7.92	1106	10000	
Fe	56	2	72	2.615	ppb	2.615	13.95	13657	10000	
Co	59	3	72	0.125	ppb	0.125	8.51	190	2000	
Ni	60	3	72	0.272	ppb	0.272	30.94	272	5000	
Cu	63	3	72	0.092	ppb	0.092	38.13	571	5000	
Zn	66	3	72	3.643	ppb	3.643	14.82	723	5000	
As	75	3	72	0.112	ppb	0.112	96.85	47	2000	
Se	78	2	72	0.376	ppb	0.376	44.08	22	2000	
(Se)	78	3	72	1.093	ppb	1.093	177.37	20	2000	
Sr	88	3	72	168.886	ppb	168.886	1.15	85773	4000	
Mo	95	3	115	0.153	ppb	0.153	24.52	132	2000	
Ag	107	3	115	0.014	ppb	0.014	32.67	45	100	
Cd	111	3	115	0.014	ppb	0.014	147.21	5	2000	
Sn	120	3	115	0.345	ppb	0.345	45.21	871	2000	
Sb	121	3	115	0.078	ppb	0.078	28.13	120	1000	
Ba	137	3	115	0.259	ppb	0.259	33.76	105	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-19.26	272	2000	
(Pb)	206	3	193	-0.016	ppb	-0.016	-74.75	150	100	
(Pb)	207	3	193	0.001	ppb	0.001	3431.52	363	100	
Pb	208	3	193	-0.005	ppb	-0.005	-186.68	876	5000	
Th	232	3	193	0.066	ppb	0.066	45.87	4369	2000	
U	238	3	193	0.229	ppb	0.229	5.86	2681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144313	1.14	4299393	96.39	60	120	
Sc (IS)	45	3	HMI He	635687	2.35	674661	94.22	60	120	
Ge Internal standard	72	2	HMI H2	2112417	1.85	2269722	93.07	60	120	
Ge Internal standard	72	3	HMI He	694831	0.58	739017	94.02	60	120	
In Internal Standard	115	3	HMI He	2442775	2.74	2543041	96.06	60	120	
Ir (IS)	193	3	HMI He	5372456	1.09	5570851	96.44	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	052_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:46:26-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.207	ppb	5.331	2841	50	98.4	90	110	
Na	23	3	45	50382.683	ppb	0.331	6376831	51000	98.8	90	110	
Mg	24	3	45	10703.795	ppb	1.288	716453	11000	97.3	90	110	
Al	27	3	45	997.843	ppb	3.072	23817	1000	99.8	90	110	
K	39	3	45	10630.228	ppb	1.381	553820	11000	96.6	90	110	
Ca	40	2	45	11065.806	ppb	1.663	6556545	11000	100.6	90	110	
V	51	3	72	51.151	ppb	2.412	32460	50	102.3	90	110	
Cr	52	3	72	50.511	ppb	1.673	42776	50	101.0	90	110	
Mn	55	3	72	50.834	ppb	2.649	22215	50	101.7	90	110	
Fe	56	2	72	1037.531	ppb	2.349	1614189	1000	103.8	90	110	
Co	59	3	72	50.414	ppb	1.452	66519	50	100.8	90	110	
Ni	60	3	72	50.552	ppb	1.433	18785	50	101.1	90	110	
Cu	63	3	72	50.171	ppb	0.594	50129	50	100.3	90	110	
Zn	66	3	72	51.670	ppb	2.437	8943	50	103.3	90	110	
As	75	3	72	52.950	ppb	4.155	6225	50	105.9	90	110	
Se	78	2	72	50.125	ppb	3.013	3046	50	100.2	90	110	
(Se)	78	3	72	45.454	ppb	10.456	343	50	90.9	90	110	
Sr	88	3	72	101.475	ppb	1.478	55403	100	101.5	90	110	
Mo	95	3	115	50.837	ppb	1.629	26701	50	101.7	90	110	
Ag	107	3	115	50.672	ppb	2.774	87414	50	101.3	90	110	
Cd	111	3	115	50.098	ppb	1.384	12576	50	100.2	90	110	
Sn	120	3	115	50.994	ppb	2.651	38277	50	102.0	90	110	
Sb	121	3	115	51.643	ppb	2.215	38759	50	103.3	90	110	
Ba	137	3	115	51.935	ppb	3.224	12310	50	103.9	90	110	
Tl	205	3	193	49.974	ppb	0.493	185129	50	99.9	90	110	
(Pb)	206	3	193	49.888	ppb	2.189	61747	50	99.8	90	110	
(Pb)	207	3	193	50.053	ppb	1.366	54814	50	100.1	90	110	
Pb	208	3	193	49.860	ppb	0.585	248823	50	99.7	90	110	
Th	232	3	193	50.452	ppb	0.842	255346	50	100.9	90	110	
U	238	3	193	50.743	ppb	0.832	267346	50	101.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4277892	0.70	4299393	99.50	60	120	
Sc (IS)	45	3	HMI He	655414	1.08	674661	97.15	60	120	
Ge Internal standard	72	2	HMI H2	2324656	0.36	2269722	102.42	60	120	
Ge Internal standard	72	3	HMI He	746964	1.42	739017	101.08	60	120	
In Internal Standard	115	3	HMI He	2534552	1.54	2543041	99.67	60	120	
Ir (IS)	193	3	HMI He	5599456	0.44	5570851	100.51	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	053_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:48:17-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	170.7	3	0.5	
Na	23	3	45	14.645	ppb	7.5	30741	25	
Mg	24	3	45	1.615	ppb	66.6	234	25	
Al	27	3	45	26.635	ppb	17.0	697	15	>RL
K	39	3	45	-8.610	ppb	-386.6	20225	50	
V	51	3	72	0.026	ppb	119.6	173	1	
Cr	52	3	72	-0.354	ppb	-41.6	1444	1	
Mn	55	3	72	-0.437	ppb	-19.3	348	0.5	
Co	59	3	72	-0.014	ppb	-26.3	20	0.5	
Ni	60	3	72	-0.007	ppb	-224.5	187	1	
Cu	63	3	72	-0.065	ppb	-108.5	451	1	
Zn	66	3	72	3.260	ppb	18.7	701	5	
As	75	3	72	0.191	ppb	82.8	58	1	
Se	78	2	72	0.056	ppb	91.0	5	1	
(Se)	78	3	72	0.010	ppb	8560.7	13	1	
Sr	88	3	72	0.031	ppb	44.2	32	0.5	
Mo	95	3	115	-0.025	ppb	-209.7	43	0.5	
Ag	107	3	115	0.014	ppb	21.6	47	1	
Cd	111	3	115	-0.006	ppb	0.0	0	0.5	
Sn	120	3	115	-0.163	ppb	-52.8	530	1	
Sb	121	3	115	0.063	ppb	92.2	113	0.6	
Ba	137	3	115	-0.097	ppb	-75.2	25	0.5	
Tl	205	3	193	-0.051	ppb	-15.6	208	0.1	
(Pb)	206	3	193	-0.036	ppb	-53.9	132	1	
(Pb)	207	3	193	-0.013	ppb	-290.9	363	1	
Pb	208	3	193	-0.031	ppb	-13.6	785	0.5	
Th	232	3	193	0.560	ppb	24.2	7012	1	
U	238	3	193	-0.012	ppb	-79.1	1533	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4223709	1.52	4299393	98.24	60	120	
Sc (IS)	45	3	HMI He	653324	0.93	674661	96.84	60	120	
Ge Internal standard	72	2	HMI H2	2252434	2.93	2269722	99.24	60	120	
Ge Internal standard	72	3	HMI He	735330	1.07	739017	99.50	60	120	
In Internal Standard	115	3	HMI He	2531060	1.19	2543041	99.53	60	120	
Ir (IS)	193	3	HMI He	5606195	1.20	5570851	100.63	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	054LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:50:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.891	ppb	5.307	52	1	89.1	70	130	
Na	23	3	45	62.147	ppb	4.457	35901	50	124.3	70	130	
Mg	24	3	45	50.129	ppb	1.418	3394	50	100.3	70	130	
Al	27	3	45	50.032	ppb	1.055	1225	50	100.1	70	130	
K	39	3	45	78.028	ppb	41.264	24021	100	78.0	70	130	
V	51	3	72	5.245	ppb	3.741	3389	5	104.9	70	130	
Cr	52	3	72	1.824	ppb	4.269	3159	2	91.2	70	130	
Mn	55	3	72	0.417	ppb	43.535	701	1	41.7	70	130	>+/-30%
Co	59	3	72	1.056	ppb	0.535	1398	1	105.6	70	130	
Ni	60	3	72	1.891	ppb	5.692	866	2	94.6	70	130	
Cu	63	3	72	2.046	ppb	5.782	2486	2	102.3	70	130	
Zn	66	3	72	10.454	ppb	6.089	1889	10	104.5	70	130	
As	75	3	72	5.128	ppb	8.828	621	5	102.6	70	130	
Se	78	2	72	5.392	ppb	5.866	313	5	107.8	70	130	
(Se)	78	3	72	6.374	ppb	13.610	58	5	127.5	70	130	
Sr	88	3	72	1.051	ppb	4.163	575	1	105.1	70	130	
Mo	95	3	115	1.877	ppb	9.999	1028	2	93.8	70	130	
Ag	107	3	115	1.069	ppb	11.467	1843	1	106.9	70	130	
Cd	111	3	115	1.037	ppb	17.708	260	1	103.7	70	130	
Sn	120	3	115	9.965	ppb	2.799	7920	10	99.6	70	130	
Sb	121	3	115	2.080	ppb	5.509	1608	2	104.0	70	130	
Ba	137	3	115	1.013	ppb	15.599	285	1	101.3	70	130	
Tl	205	3	193	0.969	ppb	2.389	3897	1	96.9	70	130	
(Pb)	206	3	193	1.125	ppb	2.782	1533	1	112.5	70	130	
(Pb)	207	3	193	1.004	ppb	12.753	1438	1	100.4	70	130	
Pb	208	3	193	1.021	ppb	6.386	5889	1	102.1	70	130	
Th	232	3	193	2.203	ppb	4.151	14878	2	110.2	70	130	
U	238	3	193	1.061	ppb	3.937	7004	1	106.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4172885	1.67	4299393	97.06	60	120	
Sc (IS)	45	3	HMI He	638952	0.97	674661	94.71	60	120	
Ge Internal standard	72	2	HMI H2	2214765	1.25	2269722	97.58	60	120	
Ge Internal standard	72	3	HMI He	729096	0.61	739017	98.66	60	120	
In Internal Standard	115	3	HMI He	2508564	2.87	2543041	98.64	60	120	
Ir (IS)	193	3	HMI He	5484916	1.95	5570851	98.46	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C@50
Data File Name	055SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:52:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	164.59	3	2000	
Na	23	3	45	7740.398	ppb	7740.398	2.83	951683	400000	
Mg	24	3	45	2568.054	ppb	2568.054	0.63	163004	400000	
Al	27	3	45	5.098	ppb	5.098	15.38	177	400000	
K	39	3	45	1432.612	ppb	1432.612	3.79	87704	400000	
Ca	40	2	45	563.803	ppb	563.803	1.09	318618	400000	
V	51	3	72	0.260	ppb	0.260	18.62	300	2000	
Cr	52	3	72	0.225	ppb	0.225	27.95	1791	5000	
Mn	55	3	72	3.721	ppb	3.721	10.78	1967	10000	
Fe	56	2	72	5.044	ppb	5.044	3.30	17058	10000	
Co	59	3	72	0.031	ppb	0.031	27.36	73	2000	
Ni	60	3	72	0.311	ppb	0.311	50.53	283	5000	
Cu	63	3	72	0.197	ppb	0.197	41.48	665	5000	
Zn	66	3	72	3.778	ppb	3.778	10.52	740	5000	
As	75	3	72	0.207	ppb	0.207	33.64	57	2000	
Se	78	2	72	0.098	ppb	0.098	93.04	7	2000	
(Se)	78	3	72	0.627	ppb	0.627	184.83	17	2000	
Sr	88	3	72	3.264	ppb	3.264	5.23	1661	4000	
Mo	95	3	115	0.043	ppb	0.043	90.95	73	2000	
Ag	107	3	115	0.020	ppb	0.020	59.45	52	100	
Cd	111	3	115	0.001	ppb	0.001	1621.56	2	2000	
Sn	120	3	115	0.461	ppb	0.461	25.99	920	2000	
Sb	121	3	115	0.051	ppb	0.051	22.39	97	1000	
Ba	137	3	115	0.413	ppb	0.413	15.38	135	5000	
Tl	205	3	193	-0.027	ppb	-0.027	-4.65	288	2000	
(Pb)	206	3	193	0.002	ppb	0.002	477.21	172	100	
(Pb)	207	3	193	0.010	ppb	0.010	62.12	371	100	
Pb	208	3	193	0.003	ppb	0.003	506.85	911	5000	
Th	232	3	193	0.192	ppb	0.192	19.64	4970	2000	
U	238	3	193	0.004	ppb	0.004	487.00	1551	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3955456	2.10	4299393	92.00	60	120	
Sc (IS)	45	3	HMI He	621161	1.71	674661	92.07	60	120	
Ge Internal standard	72	2	HMI H2	2110768	1.08	2269722	93.00	60	120	
Ge Internal standard	72	3	HMI He	690510	0.75	739017	93.44	60	120	
In Internal Standard	115	3	HMI He	2349469	0.68	2543041	92.39	60	120	
Ir (IS)	193	3	HMI He	5372289	1.74	5570851	96.44	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-Csd@250
Data File Name	056SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:53:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.091	ppb	0.091	149.53	7	2000	
Na	23	3	45	11832.346	ppb	11832.346	2.77	1469858	400000	
Mg	24	3	45	22.815	ppb	22.815	8.27	1598	400000	
Al	27	3	45	2.345	ppb	2.345	60.27	117	400000	
K	39	3	45	55.064	ppb	55.064	82.22	22695	400000	
Ca	40	2	45	78.099	ppb	78.099	2.37	54353	400000	
V	51	3	72	0.246	ppb	0.246	24.98	292	2000	
Cr	52	3	72	0.146	ppb	0.146	120.23	1733	5000	
Mn	55	3	72	-0.448	ppb	-0.448	-7.24	323	10000	
Fe	56	2	72	11.328	ppb	11.328	3.32	26037	10000	
Co	59	3	72	0.020	ppb	0.020	55.66	60	2000	
Ni	60	3	72	0.091	ppb	0.091	181.33	208	5000	
Cu	63	3	72	0.095	ppb	0.095	85.77	571	5000	
Zn	66	3	72	3.352	ppb	3.352	6.76	673	5000	
As	75	3	72	0.253	ppb	0.253	86.07	62	2000	
Se	78	2	72	0.013	ppb	0.013	3.27	2	2000	
(Se)	78	3	72	0.370	ppb	0.370	399.44	15	2000	
Sr	88	3	72	10.368	ppb	10.368	4.10	5247	4000	
Mo	95	3	115	0.011	ppb	0.011	18.18	60	2000	
Ag	107	3	115	0.017	ppb	0.017	55.67	48	100	
Cd	111	3	115	0.007	ppb	0.007	161.35	3	2000	
Sn	120	3	115	0.497	ppb	0.497	100.11	975	2000	
Sb	121	3	115	0.039	ppb	0.039	50.82	92	1000	
Ba	137	3	115	10.928	ppb	10.928	2.79	2524	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-33.20	270	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1481.90	165	100	
(Pb)	207	3	193	-0.052	ppb	-0.052	-80.58	305	100	
Pb	208	3	193	-0.016	ppb	-0.016	-149.49	815	5000	
Th	232	3	193	0.117	ppb	0.117	42.30	4574	2000	
U	238	3	193	0.020	ppb	0.020	42.71	1614	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4055431	1.18	4299393	94.33	60	120	
Sc (IS)	45	3	HMI He	634026	1.35	674661	93.98	60	120	
Ge Internal standard	72	2	HMI H2	2123939	1.22	2269722	93.58	60	120	
Ge Internal standard	72	3	HMI He	690675	0.62	739017	93.46	60	120	
In Internal Standard	115	3	HMI He	2434405	1.74	2543041	95.73	60	120	
Ir (IS)	193	3	HMI He	5330182	2.23	5570851	95.68	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-D MS@50
Data File Name	057SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:55:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.090	ppb	0.090	56.81	7	2000	
Na	23	3	45	2348.168	ppb	2348.168	0.81	314542	400000	
Mg	24	3	45	13.547	ppb	13.547	17.04	1001	400000	
Al	27	3	45	4.350	ppb	4.350	48.84	163	400000	
K	39	3	45	16.638	ppb	16.638	155.35	20877	400000	
Ca	40	2	45	39.014	ppb	39.014	6.29	33122	400000	
V	51	3	72	0.251	ppb	0.251	18.39	298	2000	
Cr	52	3	72	0.404	ppb	0.404	37.13	1951	5000	
Mn	55	3	72	-0.413	ppb	-0.413	-24.70	342	10000	
Fe	56	2	72	4.368	ppb	4.368	6.19	16553	10000	
Co	59	3	72	0.012	ppb	0.012	35.62	52	2000	
Ni	60	3	72	0.111	ppb	0.111	68.90	218	5000	
Cu	63	3	72	0.413	ppb	0.413	33.03	873	5000	
Zn	66	3	72	3.734	ppb	3.734	3.00	743	5000	
As	75	3	72	0.215	ppb	0.215	52.88	58	2000	
Se	78	2	72	0.072	ppb	0.072	30.29	5	2000	
(Se)	78	3	72	-0.887	ppb	-0.887	-125.81	7	2000	
Sr	88	3	72	2.275	ppb	2.275	2.64	1178	4000	
Mo	95	3	115	0.027	ppb	0.027	108.91	68	2000	
Ag	107	3	115	0.004	ppb	0.004	42.67	28	100	
Cd	111	3	115	0.000	ppb	0.000	2937.52	2	2000	
Sn	120	3	115	1.252	ppb	1.252	15.35	1521	2000	
Sb	121	3	115	0.062	ppb	0.062	70.23	108	1000	
Ba	137	3	115	2.497	ppb	2.497	5.24	616	5000	
Tl	205	3	193	-0.033	ppb	-0.033	-23.35	267	2000	
(Pb)	206	3	193	0.020	ppb	0.020	39.61	193	100	
(Pb)	207	3	193	-0.020	ppb	-0.020	-192.35	343	100	
Pb	208	3	193	0.003	ppb	0.003	523.52	916	5000	
Th	232	3	193	0.046	ppb	0.046	23.85	4297	2000	
U	238	3	193	0.016	ppb	0.016	102.92	1618	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4142049	0.77	4299393	96.34	60	120	
Sc (IS)	45	3	HMI He	634610	0.91	674661	94.06	60	120	
Ge Internal standard	72	2	HMI H2	2169335	2.82	2269722	95.58	60	120	
Ge Internal standard	72	3	HMI He	699852	0.71	739017	94.70	60	120	
In Internal Standard	115	3	HMI He	2449486	2.46	2543041	96.32	60	120	
Ir (IS)	193	3	HMI He	5404909	0.56	5570851	97.02	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-E MSD@50
Data File Name	058SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:57:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.667	ppb	0.667	34.01	38	2000	
Na	23	3	45	12216.074	ppb	12216.074	2.59	1495147	400000	
Mg	24	3	45	38.632	ppb	38.632	8.70	2583	400000	
Al	27	3	45	23.767	ppb	23.767	10.43	601	400000	
K	39	3	45	60.652	ppb	60.652	79.50	22618	400000	
Ca	40	2	45	94.588	ppb	94.588	3.16	64372	400000	
V	51	3	72	1.127	ppb	1.127	6.45	806	2000	
Cr	52	3	72	1.211	ppb	1.211	10.37	2534	5000	
Mn	55	3	72	0.609	ppb	0.609	29.80	740	10000	
Fe	56	2	72	29.020	ppb	29.020	3.12	51272	10000	
Co	59	3	72	0.822	ppb	0.822	5.18	1038	2000	
Ni	60	3	72	1.011	ppb	1.011	11.82	521	5000	
Cu	63	3	72	0.916	ppb	0.916	12.51	1323	5000	
Zn	66	3	72	3.943	ppb	3.943	5.08	766	5000	
As	75	3	72	1.165	ppb	1.165	33.43	160	2000	
Se	78	2	72	0.826	ppb	0.826	8.07	47	2000	
(Se)	78	3	72	1.581	ppb	1.581	138.23	23	2000	
Sr	88	3	72	12.136	ppb	12.136	3.02	6142	4000	
Mo	95	3	115	0.909	ppb	0.909	12.71	511	2000	
Ag	107	3	115	0.885	ppb	0.885	4.95	1488	100	
Cd	111	3	115	0.939	ppb	0.939	4.04	228	2000	
Sn	120	3	115	1.115	ppb	1.115	6.63	1418	2000	
Sb	121	3	115	0.954	ppb	0.954	6.23	750	1000	
Ba	137	3	115	12.206	ppb	12.206	7.15	2812	5000	
Tl	205	3	193	0.810	ppb	0.810	4.29	3264	2000	
(Pb)	206	3	193	0.777	ppb	0.777	10.28	1091	100	
(Pb)	207	3	193	0.823	ppb	0.823	8.39	1223	100	
Pb	208	3	193	0.826	ppb	0.826	4.38	4848	5000	
Th	232	3	193	0.894	ppb	0.894	4.74	8344	2000	
U	238	3	193	0.867	ppb	0.867	6.88	5905	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4106760	2.26	4299393	95.52	60	120	
Sc (IS)	45	3	HMI He	625270	3.40	674661	92.68	60	120	
Ge Internal standard	72	2	HMI H2	2135011	1.72	2269722	94.06	60	120	
Ge Internal standard	72	3	HMI He	691159	2.11	739017	93.52	60	120	
In Internal Standard	115	3	HMI He	2435436	2.88	2543041	95.77	60	120	
Ir (IS)	193	3	HMI He	5387416	1.65	5570851	96.71	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C pds@50
Data File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T13:59:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.000	ppb	1.000	14.10	58	2000	
Na	23	3	45	11657.112	ppb	11657.112	1.62	1453536	400000	
Mg	24	3	45	37.560	ppb	37.560	7.74	2563	400000	
Al	27	3	45	42.320	ppb	42.320	6.20	1041	400000	
K	39	3	45	54.085	ppb	54.085	57.63	22745	400000	
Ca	40	2	45	92.758	ppb	92.758	3.89	63812	400000	
V	51	3	72	1.199	ppb	1.199	0.61	858	2000	
Cr	52	3	72	1.237	ppb	1.237	17.31	2582	5000	
Mn	55	3	72	0.506	ppb	0.506	36.59	708	10000	
Fe	56	2	72	29.363	ppb	29.363	1.16	52927	10000	
Co	59	3	72	0.972	ppb	0.972	11.12	1234	2000	
Ni	60	3	72	0.886	ppb	0.886	18.06	485	5000	
Cu	63	3	72	1.009	ppb	1.009	4.28	1423	5000	
Zn	66	3	72	5.071	ppb	5.071	5.97	955	5000	
As	75	3	72	1.007	ppb	1.007	15.41	145	2000	
Se	78	2	72	0.796	ppb	0.796	13.02	47	2000	
(Se)	78	3	72	0.845	ppb	0.845	105.10	18	2000	
Sr	88	3	72	12.153	ppb	12.153	1.22	6220	4000	
Mo	95	3	115	0.864	ppb	0.864	16.02	503	2000	
Ag	107	3	115	0.842	ppb	0.842	6.91	1456	100	
Cd	111	3	115	0.781	ppb	0.781	24.90	195	2000	
Sn	120	3	115	1.191	ppb	1.191	14.73	1511	2000	
Sb	121	3	115	0.919	ppb	0.919	5.37	746	1000	
Ba	137	3	115	11.669	ppb	11.669	4.19	2769	5000	
Tl	205	3	193	0.809	ppb	0.809	4.66	3280	2000	
(Pb)	206	3	193	0.857	ppb	0.857	4.04	1193	100	
(Pb)	207	3	193	0.752	ppb	0.752	3.67	1156	100	
Pb	208	3	193	0.833	ppb	0.833	1.49	4910	5000	
Th	232	3	193	0.876	ppb	0.876	2.05	8304	2000	
U	238	3	193	0.900	ppb	0.900	6.68	6097	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4137564	1.56	4299393	96.24	60	120	
Sc (IS)	45	3	HMI He	636058	0.55	674661	94.28	60	120	
Ge Internal standard	72	2	HMI H2	2182829	0.50	2269722	96.17	60	120	
Ge Internal standard	72	3	HMI He	698701	1.16	739017	94.54	60	120	
In Internal Standard	115	3	HMI He	2503993	1.19	2543041	98.46	60	120	
Ir (IS)	193	3	HMI He	5416284	1.17	5570851	97.23	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	060_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:01:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.214	ppb	3.180	2766	50	98.4	90	110	
Na	23	3	45	51272.799	ppb	2.471	6497423	51000	100.5	90	110	
Mg	24	3	45	11063.648	ppb	2.205	741608	11000	100.6	90	110	
Al	27	3	45	1000.829	ppb	2.621	23924	1000	100.1	90	110	
K	39	3	45	10563.488	ppb	2.789	551221	11000	96.0	90	110	
Ca	40	2	45	11024.016	ppb	1.749	6478519	11000	100.2	90	110	
V	51	3	72	51.379	ppb	1.352	32510	50	102.8	90	110	
Cr	52	3	72	50.250	ppb	3.488	42430	50	100.5	90	110	
Mn	55	3	72	50.454	ppb	4.379	21985	50	100.9	90	110	
Fe	56	2	72	1082.375	ppb	2.485	1598425	1000	108.2	90	110	
Co	59	3	72	50.469	ppb	3.400	66380	50	100.9	90	110	
Ni	60	3	72	49.393	ppb	2.002	18303	50	98.8	90	110	
Cu	63	3	72	51.223	ppb	2.300	51003	50	102.4	90	110	
Zn	66	3	72	51.757	ppb	4.293	8932	50	103.5	90	110	
As	75	3	72	52.611	ppb	3.105	6170	50	105.2	90	110	
Se	78	2	72	52.419	ppb	2.693	3024	50	104.8	90	110	
(Se)	78	3	72	52.974	ppb	12.867	396	50	105.9	90	110	
Sr	88	3	72	101.472	ppb	1.299	55238	100	101.5	90	110	
Mo	95	3	115	49.533	ppb	1.662	26092	50	99.1	90	110	
Ag	107	3	115	50.679	ppb	1.733	87682	50	101.4	90	110	
Cd	111	3	115	50.373	ppb	2.842	12678	50	100.7	90	110	
Sn	120	3	115	50.741	ppb	1.595	38201	50	101.5	90	110	
Sb	121	3	115	51.391	ppb	1.328	38682	50	102.8	90	110	
Ba	137	3	115	51.509	ppb	2.098	12245	50	103.0	90	110	
Tl	205	3	193	51.243	ppb	1.439	184725	50	102.5	90	110	
(Pb)	206	3	193	51.592	ppb	1.037	62138	50	103.2	90	110	
(Pb)	207	3	193	51.086	ppb	1.059	54436	50	102.2	90	110	
Pb	208	3	193	51.537	ppb	0.747	250258	50	103.1	90	110	
Th	232	3	193	51.870	ppb	1.456	255340	50	103.7	90	110	
U	238	3	193	52.387	ppb	0.633	268554	50	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4243987	2.02	4299393	98.71	60	120	
Sc (IS)	45	3	HMI He	656441	1.55	674661	97.30	60	120	
Ge Internal standard	72	2	HMI H2	2207568	1.49	2269722	97.26	60	120	
Ge Internal standard	72	3	HMI He	744757	1.57	739017	100.78	60	120	
In Internal Standard	115	3	HMI He	2541726	1.58	2543041	99.95	60	120	
Ir (IS)	193	3	HMI He	5449346	1.04	5570851	97.82	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	061_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:03:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	339.6	3	0.5	
Na	23	3	45	8.839	ppb	39.5	30584	25	
Mg	24	3	45	1.500	ppb	20.0	230	25	
Al	27	3	45	27.609	ppb	5.6	734	15	>RL
K	39	3	45	-14.794	ppb	-209.7	20285	50	
V	51	3	72	0.055	ppb	123.1	197	1	
Cr	52	3	72	-0.414	ppb	-27.9	1433	1	
Mn	55	3	72	-0.517	ppb	-20.1	323	0.5	
Co	59	3	72	0.003	ppb	189.0	43	0.5	
Ni	60	3	72	-0.006	ppb	-554.3	192	1	
Cu	63	3	72	-0.074	ppb	-39.2	455	1	
Zn	66	3	72	2.670	ppb	17.2	618	5	
As	75	3	72	-0.076	ppb	-282.0	28	1	
Se	78	2	72	0.044	ppb	131.6	4	1	
(Se)	78	3	72	0.420	ppb	414.0	17	1	
Sr	88	3	72	0.030	ppb	72.0	32	0.5	
Mo	95	3	115	0.019	ppb	241.6	67	0.5	
Ag	107	3	115	0.005	ppb	60.3	30	1	
Cd	111	3	115	0.013	ppb	147.1	5	0.5	
Sn	120	3	115	-0.196	ppb	-34.8	510	1	
Sb	121	3	115	0.040	ppb	53.8	97	0.6	
Ba	137	3	115	-0.049	ppb	-89.2	37	0.5	
Tl	205	3	193	-0.060	ppb	-10.1	178	0.1	
(Pb)	206	3	193	-0.022	ppb	-78.7	152	1	
(Pb)	207	3	193	-0.055	ppb	-94.2	322	1	
Pb	208	3	193	-0.030	ppb	-63.3	801	0.5	
Th	232	3	193	0.648	ppb	28.4	7559	1	
U	238	3	193	0.022	ppb	111.3	1736	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4348426	1.06	4299393	101.14	60	120	
Sc (IS)	45	3	HMI He	665807	1.74	674661	98.69	60	120	
Ge Internal standard	72	2	HMI H2	2289087	2.09	2269722	100.85	60	120	
Ge Internal standard	72	3	HMI He	754392	0.74	739017	102.08	60	120	
In Internal Standard	115	3	HMI He	2550338	1.03	2543041	100.29	60	120	
Ir (IS)	193	3	HMI He	5693145	2.13	5570851	102.20	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	062LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:05:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.086	ppb	45.327	63	1	108.6	70	130	
Na	23	3	45	57.053	ppb	3.945	35627	50	114.1	70	130	
Mg	24	3	45	49.871	ppb	6.076	3411	50	99.7	70	130	
Al	27	3	45	48.390	ppb	11.549	1198	50	96.8	70	130	
K	39	3	45	74.559	ppb	60.876	24075	100	74.6	70	130	
V	51	3	72	5.085	ppb	3.080	3329	5	101.7	70	130	
Cr	52	3	72	1.861	ppb	8.121	3225	2	93.0	70	130	
Mn	55	3	72	0.311	ppb	12.226	665	1	31.1	70	130	>+/-30%
Co	59	3	72	1.000	ppb	5.151	1341	1	100.0	70	130	
Ni	60	3	72	1.866	ppb	11.839	868	2	93.3	70	130	
Cu	63	3	72	2.035	ppb	5.659	2504	2	101.8	70	130	
Zn	66	3	72	10.854	ppb	5.705	1979	10	108.5	70	130	
As	75	3	72	4.979	ppb	10.421	611	5	99.6	70	130	
Se	78	2	72	5.348	ppb	8.983	315	5	107.0	70	130	
(Se)	78	3	72	7.231	ppb	52.223	65	5	144.6	70	130	>+/-30%
Sr	88	3	72	1.027	ppb	5.721	568	1	102.7	70	130	
Mo	95	3	115	1.806	ppb	11.093	1000	2	90.3	70	130	
Ag	107	3	115	1.041	ppb	8.240	1814	1	104.1	70	130	
Cd	111	3	115	0.889	ppb	21.863	225	1	88.9	70	130	
Sn	120	3	115	9.730	ppb	2.569	7822	10	97.3	70	130	
Sb	121	3	115	2.165	ppb	6.153	1684	2	108.2	70	130	
Ba	137	3	115	1.060	ppb	10.145	298	1	106.0	70	130	
Tl	205	3	193	0.959	ppb	0.668	3902	1	95.9	70	130	
(Pb)	206	3	193	1.002	ppb	10.230	1396	1	100.2	70	130	
(Pb)	207	3	193	0.956	ppb	6.802	1403	1	95.6	70	130	
Pb	208	3	193	0.997	ppb	4.505	5831	1	99.7	70	130	
Th	232	3	193	2.264	ppb	2.034	15323	2	113.2	70	130	
U	238	3	193	1.032	ppb	3.964	6922	1	103.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4162745	1.68	4299393	96.82	60	120	
Sc (IS)	45	3	HMI He	645351	0.85	674661	95.66	60	120	
Ge Internal standard	72	2	HMI H2	2240692	1.22	2269722	98.72	60	120	
Ge Internal standard	72	3	HMI He	737782	2.37	739017	99.83	60	120	
In Internal Standard	115	3	HMI He	2531603	3.37	2543041	99.55	60	120	
Ir (IS)	193	3	HMI He	5540107	2.28	5570851	99.45	60	120	

Blank Report

Sample Table

Sample Name	MB 280-599677/1-A
Data File Name	063_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:07:03-07:00
Sample Type	Blank
Dilution	1
Comment	599677 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.030	ppb	169.176392	3	0.5
Na	23	3	45	25.675	ppb	3.876807943	31808	25
Mg	24	3	45	6.047	ppb	17.29224371	524	25
Al	27	3	45	5.786	ppb	18.50265177	200	15
K	39	3	45	-6.570	ppb	-439.8957384	20115	50
V	51	3	72	0.168	ppb	43.34130757	258	1
Cr	52	3	72	-0.097	ppb	-134.929472	1624	1
Mn	55	3	72	-0.506	ppb	-13.55300681	315	0.5
Co	59	3	72	-0.010	ppb	-67.2818475	25	0.5
Ni	60	3	72	-0.017	ppb	-586.2314234	180	1
Cu	63	3	72	0.165	ppb	27.39494917	666	1
Zn	66	3	72	1.839	ppb	5.752229335	456	5
As	75	3	72	-0.185	ppb	-62.51668898	15	1
(Se)	78	3	72	0.971	ppb	143.9686653	20	1
Sr	88	3	72	0.148	ppb	27.6445301	93	0.5
Mo	95	3	115	-0.018	ppb	-80.83233187	47	0.5
Ag	107	3	115	0.001	ppb	397.4932172	23	1
Cd	111	3	115	-0.006	ppb	0	0	0.5
Sn	120	3	115	0.138	ppb	84.21636212	743	1
Sb	121	3	115	0.026	ppb	90.84710384	85	0.6
Ba	137	3	115	0.247	ppb	8.404134304	105	0.5
Tl	205	3	193	-0.050	ppb	-3.418090361	208	0.1
(Pb)	206	3	193	0.011	ppb	133.6017347	185	1
(Pb)	207	3	193	0.001	ppb	4289.683828	370	1
Pb	208	3	193	-0.002	ppb	-217.0222648	906	0.5
Th	232	3	193	0.134	ppb	33.91876653	4784	1
U	238	3	193	0.002	ppb	1143.820779	1569	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4264019	0.25	4299393	99.18	60	120	
Sc (IS)	45	3	HMI He	646810	1.24	674661	95.87	60	120	
Ge Internal standard	72	2	HMI H2	2227602	1.15	2269722	98.14	60	120	
Ge Internal standard	72	3	HMI He	724399	1.06	739017	98.02	60	120	
In Internal Standard	115	3	HMI He	2500387	0.74	2543041	98.32	60	120	
Ir (IS)	193	3	HMI He	5476803	2.01	5570851	98.31	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-599677/2-A
Data File Name	064_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:08:56-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599677 6020b
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.208	39.208	ppb	6.688	2241	40	98.0	80	120	
Na	23	3	45	1357.400	1357.400	ppb	2.408	198630	40	3393.5	80	120	>+/-20%
Mg	24	3	45	820.990	820.990	ppb	1.918	54693	40	2052.5	80	120	>+/-20%
Al	27	3	45	803.631	803.631	ppb	4.793	19062	40	2009.1	80	120	>+/-20%
K	39	3	45	825.167	825.167	ppb	4.708	61667	40	2062.9	80	120	>+/-20%
Ca	40	2	45	875.008	875.008	ppb	1.648	523474	40	2187.5	80	120	>+/-20%
V	51	3	72	41.139	41.139	ppb	3.253	25923	40	102.8	80	120	
Cr	52	3	72	40.645	40.645	ppb	0.940	34482	40	101.6	80	120	
Mn	55	3	72	40.308	40.308	ppb	0.481	17586	40	100.8	80	120	
Fe	56	2	72	850.887	850.887	ppb	1.672	1298125	40	2127.2	80	120	>+/-20%
(Fe)	56	3	72	820.390	820.390	ppb	2.248	567763	40	2051.0	80	120	>+/-20%
Co	59	3	72	40.530	40.530	ppb	0.835	53051	40	101.3	80	120	
Ni	60	3	72	40.783	40.783	ppb	2.847	15067	40	102.0	80	120	
Cu	63	3	72	40.921	40.921	ppb	1.169	40644	40	102.3	80	120	
Zn	66	3	72	41.925	41.925	ppb	2.647	7228	40	104.8	80	120	
As	75	3	72	41.399	41.399	ppb	6.957	4835	40	103.5	80	120	
Se	78	2	72	40.244	40.244	ppb	2.620	2395	40	100.6	80	120	
(Se)	78	3	72	37.750	37.750	ppb	14.144	285	40	94.4	80	120	
Sr	88	3	72	82.339	82.339	ppb	0.339	44596	40	205.8	80	120	>+/-20%
Mo	95	3	115	39.968	39.968	ppb	2.579	20964	40	99.9	80	120	
Ag	107	3	115	41.066	41.066	ppb	2.437	70713	40	102.7	80	120	
Cd	111	3	115	41.627	41.627	ppb	1.469	10431	40	104.1	80	120	
Sn	120	3	115	40.761	40.761	ppb	2.917	30667	40	101.9	80	120	
Sb	121	3	115	41.037	41.037	ppb	4.298	30742	40	102.6	80	120	
Ba	137	3	115	42.468	42.468	ppb	6.248	10049	40	106.2	80	120	
Tl	205	3	193	40.739	40.739	ppb	1.484	148889	40	101.8	80	120	
(Pb)	206	3	193	40.679	40.679	ppb	0.823	49676	40	101.7	80	120	
(Pb)	207	3	193	40.792	40.792	ppb	0.746	44115	40	102.0	80	120	
Pb	208	3	193	40.695	40.695	ppb	0.818	200398	40	101.7	80	120	
Th	232	3	193	41.882	41.882	ppb	0.926	209690	40	104.7	80	120	
U	238	3	193	41.144	41.144	ppb	0.688	214029	40	102.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4236745	2.44	4299393	98.54	60	120	
Sc (IS)	45	3	HMI He	650978	1.13	674661	96.49	60	120	
Ge Internal standard	72	2	HMI H2	2276423	1.26	2269722	100.30	60	120	
Ge Internal standard	72	3	HMI He	740853	0.91	739017	100.25	60	120	
In Internal Standard	115	3	HMI He	2530034	2.37	2543041	99.49	60	120	
Ir (IS)	193	3	HMI He	5520870	0.94	5570851	99.10	60	120	

Sample Report

Sample Table

Sample Name	280-171331-E-1-B
Data File Name	065SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	149.18	5	2000	
Na	23	3	45	37128.452	ppb	37128.452	1.48	4654232	400000	
Mg	24	3	45	16175.947	ppb	16175.947	1.87	1070616	400000	
Al	27	3	45	733.524	ppb	733.524	0.30	17335	400000	
K	39	3	45	2185.531	ppb	2185.531	1.35	128880	400000	
Ca	40	2	45	38528.497	ppb	38528.497	3.25	22523745	400000	
V	51	3	72	4.724	ppb	4.724	2.75	3175	2000	
Cr	52	3	72	0.929	ppb	0.929	9.41	2534	5000	
Mn	55	3	72	982.544	ppb	982.544	2.62	423770	10000	
Fe	56	2	72	1308.840	ppb	1308.840	3.27	2007903	10000	
Co	59	3	72	1.528	ppb	1.528	7.62	2074	2000	
Ni	60	3	72	3.419	ppb	3.419	7.23	1464	5000	
Cu	63	3	72	4.914	ppb	4.914	2.26	5437	5000	
Zn	66	3	72	36.620	ppb	36.620	3.98	6450	5000	
As	75	3	72	0.472	ppb	0.472	39.38	93	2000	
Se	78	2	72	0.067	ppb	0.067	59.34	5	2000	
(Se)	78	3	72	1.771	ppb	1.771	110.87	27	2000	
Sr	88	3	72	396.942	ppb	396.942	3.04	218852	4000	
Mo	95	3	115	0.840	ppb	0.840	15.35	493	2000	
Ag	107	3	115	0.007	ppb	0.007	90.27	33	100	
Cd	111	3	115	0.147	ppb	0.147	29.10	38	2000	
Sn	120	3	115	0.098	ppb	0.098	194.41	718	2000	
Sb	121	3	115	0.326	ppb	0.326	16.35	308	1000	
Ba	137	3	115	77.148	ppb	77.148	3.28	18137	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-54.45	325	2000	
(Pb)	206	3	193	2.143	ppb	2.143	1.80	2757	100	
(Pb)	207	3	193	1.928	ppb	1.928	3.64	2417	100	
Pb	208	3	193	1.978	ppb	1.978	1.55	10525	5000	
Th	232	3	193	1.042	ppb	1.042	7.08	9199	2000	
U	238	3	193	2.130	ppb	2.130	1.00	12458	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4227754	1.99	4299393	98.33	60	120	
Sc (IS)	45	3	HMI He	648140	0.88	674661	96.07	60	120	
Ge Internal standard	72	2	HMI H2	2296134	1.47	2269722	101.16	60	120	
Ge Internal standard	72	3	HMI He	754729	2.40	739017	102.13	60	120	
In Internal Standard	115	3	HMI He	2516778	1.02	2543041	98.97	60	120	
Ir (IS)	193	3	HMI He	5472669	1.33	5570851	98.24	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-1-B@10
Data File Name	066SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:12:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	146.88	5	2000	
Na	23	3	45	10681.552	ppb	10681.552	0.59	1337922	400000	
Mg	24	3	45	20595.779	ppb	20595.779	1.01	1341733	400000	
Al	27	3	45	6.781	ppb	6.781	23.78	220	400000	
K	39	3	45	1886.775	ppb	1886.775	3.31	112238	400000	
Ca	40	2	45	39775.440	ppb	39775.440	0.96	23116330	400000	
V	51	3	72	0.139	ppb	0.139	22.20	240	2000	
Cr	52	3	72	0.224	ppb	0.224	68.52	1879	5000	
Mn	55	3	72	27.937	ppb	27.937	4.33	12074	10000	
Fe	56	2	72	2.948	ppb	2.948	11.59	14445	10000	
Co	59	3	72	0.048	ppb	0.048	60.75	100	2000	
Ni	60	3	72	0.796	ppb	0.796	15.62	470	5000	
Cu	63	3	72	0.103	ppb	0.103	53.36	606	5000	
Zn	66	3	72	4.730	ppb	4.730	11.70	935	5000	
As	75	3	72	0.082	ppb	0.082	203.21	45	2000	
Se	78	2	72	0.025	ppb	0.025	164.21	3	2000	
(Se)	78	3	72	0.974	ppb	0.974	124.92	20	2000	
Sr	88	3	72	1044.879	ppb	1044.879	2.47	553018	4000	
Mo	95	3	115	0.080	ppb	0.080	62.13	97	2000	
Ag	107	3	115	0.008	ppb	0.008	62.81	35	100	
Cd	111	3	115	0.000	ppb	0.000	3233.83	2	2000	
Sn	120	3	115	0.821	ppb	0.821	14.11	1234	2000	
Sb	121	3	115	0.063	ppb	0.063	49.61	112	1000	
Ba	137	3	115	0.630	ppb	0.630	23.06	193	5000	
Tl	205	3	193	-0.037	ppb	-0.037	-6.45	253	2000	
(Pb)	206	3	193	0.018	ppb	0.018	145.72	192	100	
(Pb)	207	3	193	-0.024	ppb	-0.024	-369.56	340	100	
Pb	208	3	193	0.000	ppb	0.000	-7832.51	905	5000	
Th	232	3	193	0.115	ppb	0.115	51.31	4642	2000	
U	238	3	193	0.229	ppb	0.229	16.26	2706	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4201221	1.28	4299393	97.72	60	120	
Sc (IS)	45	3	HMI He	637869	0.90	674661	94.55	60	120	
Ge Internal standard	72	2	HMI H2	2159589	2.28	2269722	95.15	60	120	
Ge Internal standard	72	3	HMI He	724495	2.62	739017	98.03	60	120	
In Internal Standard	115	3	HMI He	2488446	0.29	2543041	97.85	60	120	
Ir (IS)	193	3	HMI He	5419414	0.84	5570851	97.28	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-2-B@10
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:14:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	10389.879	ppb	10389.879	0.67	1317942	400000	
Mg	24	3	45	20050.223	ppb	20050.223	2.08	1321847	400000	
Al	27	3	45	4.092	ppb	4.092	36.38	160	400000	
K	39	3	45	1835.844	ppb	1835.844	3.41	111081	400000	
Ca	40	2	45	39693.414	ppb	39693.414	1.12	22981123	400000	
V	51	3	72	0.203	ppb	0.203	2.99	285	2000	
Cr	52	3	72	0.068	ppb	0.068	264.08	1791	5000	
Mn	55	3	72	27.194	ppb	27.194	0.36	12006	10000	
Fe	56	2	72	2.887	ppb	2.887	9.99	14542	10000	
Co	59	3	72	0.043	ppb	0.043	16.36	95	2000	
Ni	60	3	72	0.779	ppb	0.779	15.79	473	5000	
Cu	63	3	72	0.150	ppb	0.150	54.83	665	5000	
Zn	66	3	72	4.579	ppb	4.579	6.51	926	5000	
As	75	3	72	0.129	ppb	0.129	49.57	52	2000	
Se	78	2	72	0.129	ppb	0.129	40.41	9	2000	
(Se)	78	3	72	0.686	ppb	0.686	152.39	18	2000	
Sr	88	3	72	1009.844	ppb	1009.844	1.07	545238	4000	
Mo	95	3	115	0.107	ppb	0.107	62.52	112	2000	
Ag	107	3	115	0.011	ppb	0.011	50.97	40	100	
Cd	111	3	115	0.013	ppb	0.013	149.03	5	2000	
Sn	120	3	115	1.151	ppb	1.151	16.74	1489	2000	
Sb	121	3	115	0.050	ppb	0.050	33.98	103	1000	
Ba	137	3	115	0.634	ppb	0.634	9.29	197	5000	
Tl	205	3	193	-0.033	ppb	-0.033	-27.25	270	2000	
(Pb)	206	3	193	0.019	ppb	0.019	189.72	193	100	
(Pb)	207	3	193	0.027	ppb	0.027	143.49	393	100	
Pb	208	3	193	0.017	ppb	0.017	43.48	990	5000	
Th	232	3	193	0.075	ppb	0.075	72.05	4447	2000	
U	238	3	193	0.252	ppb	0.252	16.21	2821	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4184901	1.33	4299393	97.34	60	120	
Sc (IS)	45	3	HMI He	645569	0.68	674661	95.69	60	120	
Ge Internal standard	72	2	HMI H2	2186589	1.73	2269722	96.34	60	120	
Ge Internal standard	72	3	HMI He	738808	0.82	739017	99.97	60	120	
In Internal Standard	115	3	HMI He	2519380	2.47	2543041	99.07	60	120	
Ir (IS)	193	3	HMI He	5422139	1.88	5570851	97.33	60	120	

Sample Report

Sample Table

Sample Name	280-171142-E-4-B
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	6028.567	ppb	6028.567	2.07	793642	400000	
Mg	24	3	45	462.919	ppb	462.919	1.97	31313	400000	
Al	27	3	45	5.760	ppb	5.760	33.18	204	400000	
K	39	3	45	1069.321	ppb	1069.321	5.45	74823	400000	
Ca	40	2	45	1004.436	ppb	1004.436	2.24	601784	400000	
V	51	3	72	0.087	ppb	0.087	51.31	218	2000	
Cr	52	3	72	-0.161	ppb	-0.161	-38.47	1644	5000	
Mn	55	3	72	0.407	ppb	0.407	40.90	721	10000	
Fe	56	2	72	20.939	ppb	20.939	2.56	42273	10000	
Co	59	3	72	0.011	ppb	0.011	105.29	55	2000	
Ni	60	3	72	28.643	ppb	28.643	0.94	10861	5000	
Cu	63	3	72	0.347	ppb	0.347	8.51	878	5000	
Zn	66	3	72	5.766	ppb	5.766	15.33	1149	5000	
As	75	3	72	0.051	ppb	0.051	153.86	43	2000	
Se	78	2	72	0.022	ppb	0.022	87.58	3	2000	
(Se)	78	3	72	-0.022	ppb	-0.022	-5035.50	13	2000	
Sr	88	3	72	22.715	ppb	22.715	6.30	12551	4000	
Mo	95	3	115	0.017	ppb	0.017	304.58	67	2000	
Ag	107	3	115	0.004	ppb	0.004	244.91	28	100	
Cd	111	3	115	0.000	ppb	0.000	17342.58	2	2000	
Sn	120	3	115	0.847	ppb	0.847	12.16	1301	2000	
Sb	121	3	115	0.199	ppb	0.199	21.43	220	1000	
Ba	137	3	115	0.592	ppb	0.592	8.62	192	5000	
Tl	205	3	193	-0.059	ppb	-0.059	-15.01	180	2000	
(Pb)	206	3	193	0.015	ppb	0.015	117.19	193	100	
(Pb)	207	3	193	0.021	ppb	0.021	248.27	396	100	
Pb	208	3	193	0.021	ppb	0.021	84.74	1033	5000	
Th	232	3	193	0.009	ppb	0.009	291.22	4239	2000	
U	238	3	193	0.006	ppb	0.006	80.66	1616	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254395	1.66	4299393	98.95	60	120	
Sc (IS)	45	3	HMI He	659715	0.68	674661	97.78	60	120	
Ge Internal standard	72	2	HMI H2	2266943	0.48	2269722	99.88	60	120	
Ge Internal standard	72	3	HMI He	756363	4.03	739017	102.35	60	120	
In Internal Standard	115	3	HMI He	2583747	1.18	2543041	101.60	60	120	
Ir (IS)	193	3	HMI He	5559296	1.29	5570851	99.79	60	120	

Sample Report

Sample Table

Sample Name	280-171142-e-5-b@50
Data File Name	069SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:18:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	6.79	5	2000	
Na	23	3	45	11496.917	ppb	11496.917	2.34	1464977	400000	
Mg	24	3	45	23962.833	ppb	23962.833	0.90	1590378	400000	
Al	27	3	45	4.759	ppb	4.759	36.98	177	400000	
K	39	3	45	2005.164	ppb	2005.164	0.77	120255	400000	
Ca	40	2	45	18672.503	ppb	18672.503	1.50	10830637	400000	
V	51	3	72	0.220	ppb	0.220	28.78	300	2000	
Cr	52	3	72	0.079	ppb	0.079	182.88	1828	5000	
Mn	55	3	72	32.491	ppb	32.491	2.40	14475	10000	
Fe	56	2	72	1.703	ppb	1.703	22.33	12902	10000	
Co	59	3	72	0.049	ppb	0.049	36.82	105	2000	
Ni	60	3	72	0.906	ppb	0.906	10.49	528	5000	
Cu	63	3	72	0.099	ppb	0.099	28.93	625	5000	
Zn	66	3	72	4.395	ppb	4.395	11.04	911	5000	
As	75	3	72	0.137	ppb	0.137	69.54	53	2000	
Se	78	2	72	0.058	ppb	0.058	30.37	5	2000	
(Se)	78	3	72	-0.251	ppb	-0.251	-641.48	12	2000	
Sr	88	3	72	675.828	ppb	675.828	2.67	370901	4000	
Mo	95	3	115	0.056	ppb	0.056	152.96	85	2000	
Ag	107	3	115	0.005	ppb	0.005	4.26	30	100	
Cd	111	3	115	0.007	ppb	0.007	165.64	3	2000	
Sn	120	3	115	0.755	ppb	0.755	5.22	1199	2000	
Sb	121	3	115	0.064	ppb	0.064	11.92	113	1000	
Ba	137	3	115	0.841	ppb	0.841	12.68	245	5000	
Tl	205	3	193	-0.043	ppb	-0.043	-18.79	232	2000	
(Pb)	206	3	193	-0.018	ppb	-0.018	-173.33	148	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-91.83	315	100	
Pb	208	3	193	-0.023	ppb	-0.023	-50.08	796	5000	
Th	232	3	193	0.058	ppb	0.058	88.03	4364	2000	
U	238	3	193	0.280	ppb	0.280	4.37	2962	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4190878	0.47	4299393	97.48	60	120	
Sc (IS)	45	3	HMI He	649862	0.56	674661	96.32	60	120	
Ge Internal standard	72	2	HMI H2	2202701	2.83	2269722	97.05	60	120	
Ge Internal standard	72	3	HMI He	751175	1.96	739017	101.65	60	120	
In Internal Standard	115	3	HMI He	2515228	1.20	2543041	98.91	60	120	
Ir (IS)	193	3	HMI He	5416929	0.72	5570851	97.24	60	120	

Sample Report

Sample Table

Sample Name	280-171242-E-1-B@50
Data File Name	070SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:20:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4875.11	2	2000	
Na	23	3	45	9103.967	ppb	9103.967	1.62	1157214	400000	
Mg	24	3	45	3355.878	ppb	3355.878	1.43	221149	400000	
Al	27	3	45	5.247	ppb	5.247	55.49	187	400000	
K	39	3	45	8672.720	ppb	8672.720	0.37	448399	400000	
Ca	40	2	45	9477.743	ppb	9477.743	1.34	5487836	400000	
V	51	3	72	1.143	ppb	1.143	12.59	876	2000	
Cr	52	3	72	0.284	ppb	0.284	41.52	1974	5000	
Mn	55	3	72	306.572	ppb	306.572	2.36	130545	10000	
Fe	56	2	72	998.421	ppb	998.421	2.21	1458668	10000	
Co	59	3	72	2.314	ppb	2.314	2.00	3075	2000	
Ni	60	3	72	0.748	ppb	0.748	14.58	465	5000	
Cu	63	3	72	0.093	ppb	0.093	50.22	613	5000	
Zn	66	3	72	3.231	ppb	3.231	10.37	703	5000	
As	75	3	72	1.205	ppb	1.205	35.45	177	2000	
Se	78	2	72	0.165	ppb	0.165	97.12	11	2000	
(Se)	78	3	72	1.370	ppb	1.370	57.89	23	2000	
Sr	88	3	72	56.532	ppb	56.532	3.53	30693	4000	
Mo	95	3	115	0.075	ppb	0.075	44.63	95	2000	
Ag	107	3	115	0.008	ppb	0.008	171.55	35	100	
Cd	111	3	115	0.014	ppb	0.014	145.96	5	2000	
Sn	120	3	115	0.307	ppb	0.307	18.24	873	2000	
Sb	121	3	115	0.098	ppb	0.098	64.99	138	1000	
Ba	137	3	115	12.234	ppb	12.234	5.79	2919	5000	
Tl	205	3	193	-0.042	ppb	-0.042	-24.24	235	2000	
(Pb)	206	3	193	0.022	ppb	0.022	151.65	197	100	
(Pb)	207	3	193	-0.093	ppb	-0.093	-23.34	268	100	
Pb	208	3	193	-0.014	ppb	-0.014	-144.18	843	5000	
Th	232	3	193	0.035	ppb	0.035	112.72	4275	2000	
U	238	3	193	0.026	ppb	0.026	48.39	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4179773	1.11	4299393	97.22	60	120	
Sc (IS)	45	3	HMI He	644961	0.35	674661	95.60	60	120	
Ge Internal standard	72	2	HMI H2	2182714	1.14	2269722	96.17	60	120	
Ge Internal standard	72	3	HMI He	742937	2.32	739017	100.53	60	120	
In Internal Standard	115	3	HMI He	2520080	1.62	2543041	99.10	60	120	
Ir (IS)	193	3	HMI He	5445641	1.95	5570851	97.75	60	120	

Sample Report

Sample Table

Sample Name	280-171166-D-1-A@50
Data File Name	071SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:22:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.088	ppb	0.088	151.26	7	2000	
Na	23	3	45	11471.926	ppb	11471.926	0.70	1448878	400000	
Mg	24	3	45	16.315	ppb	16.315	10.33	1198	400000	
Al	27	3	45	4.401	ppb	4.401	6.42	167	400000	
K	39	3	45	2000.975	ppb	2000.975	5.19	118943	400000	
Ca	40	2	45	11325.704	ppb	11325.704	1.77	6526626	400000	
V	51	3	72	0.316	ppb	0.316	18.00	348	2000	
Cr	52	3	72	0.684	ppb	0.684	37.80	2239	5000	
Mn	55	3	72	-0.486	ppb	-0.486	-30.63	323	10000	
Fe	56	2	72	2.722	ppb	2.722	10.78	14282	10000	
Co	59	3	72	0.016	ppb	0.016	81.05	58	2000	
Ni	60	3	72	0.130	ppb	0.130	142.13	233	5000	
Cu	63	3	72	0.154	ppb	0.154	54.52	655	5000	
Zn	66	3	72	2.888	ppb	2.888	7.65	630	5000	
As	75	3	72	0.110	ppb	0.110	106.96	48	2000	
Se	78	2	72	0.071	ppb	0.071	75.08	5	2000	
(Se)	78	3	72	0.505	ppb	0.505	290.73	17	2000	
Sr	88	3	72	313.416	ppb	313.416	1.90	165907	4000	
Mo	95	3	115	0.034	ppb	0.034	148.06	73	2000	
Ag	107	3	115	0.019	ppb	0.019	20.41	53	100	
Cd	111	3	115	0.007	ppb	0.007	167.13	3	2000	
Sn	120	3	115	0.739	ppb	0.739	14.13	1184	2000	
Sb	121	3	115	0.015	ppb	0.015	190.47	77	1000	
Ba	137	3	115	0.303	ppb	0.303	19.55	118	5000	
Tl	205	3	193	-0.046	ppb	-0.046	-6.33	223	2000	
(Pb)	206	3	193	-0.007	ppb	-0.007	-94.05	165	100	
(Pb)	207	3	193	-0.054	ppb	-0.054	-59.99	313	100	
Pb	208	3	193	-0.022	ppb	-0.022	-23.21	811	5000	
Th	232	3	193	0.040	ppb	0.040	96.91	4357	2000	
U	238	3	193	0.017	ppb	0.017	8.20	1658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4161179	1.01	4299393	96.79	60	120	
Sc (IS)	45	3	HMI He	644098	1.07	674661	95.47	60	120	
Ge Internal standard	72	2	HMI H2	2184225	0.70	2269722	96.23	60	120	
Ge Internal standard	72	3	HMI He	724395	1.70	739017	98.02	60	120	
In Internal Standard	115	3	HMI He	2507794	1.30	2543041	98.61	60	120	
Ir (IS)	193	3	HMI He	5513044	1.65	5570851	98.96	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	072_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:23:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.969	ppb	5.580	2886	50	99.9	90	110	
Na	23	3	45	50683.372	ppb	1.816	6538859	51000	99.4	90	110	
Mg	24	3	45	10811.921	ppb	0.985	737899	11000	98.3	90	110	
Al	27	3	45	998.462	ppb	1.899	24299	1000	99.8	90	110	
K	39	3	45	10660.695	ppb	2.073	566113	11000	96.9	90	110	
Ca	40	2	45	10940.094	ppb	1.852	6543906	11000	99.5	90	110	
V	51	3	72	51.825	ppb	0.613	33053	50	103.6	90	110	
Cr	52	3	72	51.276	ppb	1.106	43616	50	102.6	90	110	
Mn	55	3	72	50.774	ppb	2.465	22303	50	101.5	90	110	
Fe	56	2	72	1035.920	ppb	2.146	1602410	1000	103.6	90	110	
Co	59	3	72	50.732	ppb	1.533	67276	50	101.5	90	110	
Ni	60	3	72	51.330	ppb	0.648	19167	50	102.7	90	110	
Cu	63	3	72	51.750	ppb	0.490	51941	50	103.5	90	110	
Zn	66	3	72	52.230	ppb	5.774	9085	50	104.5	90	110	
As	75	3	72	52.372	ppb	3.431	6190	50	104.7	90	110	
Se	78	2	72	50.769	ppb	2.152	3068	50	101.5	90	110	
(Se)	78	3	72	55.018	ppb	12.100	415	50	110.0	90	110	>+\-10%
Sr	88	3	72	102.185	ppb	2.626	56071	100	102.2	90	110	
Mo	95	3	115	49.761	ppb	1.452	26983	50	99.5	90	110	
Ag	107	3	115	49.703	ppb	0.598	88527	50	99.4	90	110	
Cd	111	3	115	49.737	ppb	1.217	12888	50	99.5	90	110	
Sn	120	3	115	50.183	ppb	1.633	38899	50	100.4	90	110	
Sb	121	3	115	51.530	ppb	1.495	39926	50	103.1	90	110	
Ba	137	3	115	51.925	ppb	0.346	12706	50	103.8	90	110	
Tl	205	3	193	50.670	ppb	1.133	188456	50	101.3	90	110	
(Pb)	206	3	193	50.397	ppb	0.584	62630	50	100.8	90	110	
(Pb)	207	3	193	50.077	ppb	0.841	55062	50	100.2	90	110	
Pb	208	3	193	50.272	ppb	0.932	251882	50	100.5	90	110	
Th	232	3	193	50.602	ppb	0.526	257110	50	101.2	90	110	
U	238	3	193	51.148	ppb	0.229	270552	50	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4318856	0.59	4299393	100.45	60	120	
Sc (IS)	45	3	HMI He	668205	1.22	674661	99.04	60	120	
Ge Internal standard	72	2	HMI H2	2311093	1.22	2269722	101.82	60	120	
Ge Internal standard	72	3	HMI He	750634	0.19	739017	101.57	60	120	
In Internal Standard	115	3	HMI He	2616238	0.58	2543041	102.88	60	120	
Ir (IS)	193	3	HMI He	5621883	0.16	5570851	100.92	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	073_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:25:45-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.028	ppb	175.1	3	0.5	
Na	23	3	45	-1.396	ppb	-378.4	29935	25	
Mg	24	3	45	1.711	ppb	38.4	250	25	
Al	27	3	45	28.401	ppb	15.7	771	15	>RL
K	39	3	45	-24.096	ppb	-170.2	20245	50	
V	51	3	72	0.052	ppb	102.6	197	1	
Cr	52	3	72	-0.356	ppb	-23.1	1493	1	
Mn	55	3	72	-0.296	ppb	-43.6	421	0.5	
Co	59	3	72	0.000	ppb	17061.4	40	0.5	
Ni	60	3	72	0.033	ppb	107.5	208	1	
Cu	63	3	72	-0.050	ppb	-44.4	483	1	
Zn	66	3	72	2.697	ppb	13.4	628	5	
As	75	3	72	0.007	ppb	2101.4	38	1	
Se	78	2	72	0.010	ppb	325.4	2	1	
(Se)	78	3	72	0.616	ppb	280.1	18	1	
Sr	88	3	72	0.062	ppb	40.4	50	0.5	
Mo	95	3	115	-0.013	ppb	-146.8	52	0.5	
Ag	107	3	115	0.011	ppb	54.6	42	1	
Cd	111	3	115	0.032	ppb	59.9	10	0.5	
Sn	120	3	115	-0.224	ppb	-61.2	505	1	
Sb	121	3	115	0.012	ppb	133.1	78	0.6	
Ba	137	3	115	-0.020	ppb	-266.6	45	0.5	
Tl	205	3	193	-0.061	ppb	-18.7	175	0.1	
(Pb)	206	3	193	-0.017	ppb	-197.8	158	1	
(Pb)	207	3	193	-0.081	ppb	-21.1	295	1	
Pb	208	3	193	-0.041	ppb	-34.8	746	0.5	
Th	232	3	193	0.607	ppb	4.5	7405	1	
U	238	3	193	-0.001	ppb	-921.1	1626	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4309114	2.53	4299393	100.23	60	120	
Sc (IS)	45	3	HMI He	680970	1.84	674661	100.94	60	120	
Ge Internal standard	72	2	HMI H2	2320873	1.99	2269722	102.25	60	120	
Ge Internal standard	72	3	HMI He	761652	2.60	739017	103.06	60	120	
In Internal Standard	115	3	HMI He	2632514	0.34	2543041	103.52	60	120	
Ir (IS)	193	3	HMI He	5722490	2.81	5570851	102.72	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	074LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:27:37-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.986	ppb	4.940	58	1	98.6	70	130	
Na	23	3	45	48.111	ppb	1.362	34995	50	96.2	70	130	
Mg	24	3	45	50.787	ppb	8.565	3521	50	101.6	70	130	
Al	27	3	45	47.813	ppb	0.373	1201	50	95.6	70	130	
K	39	3	45	72.845	ppb	32.533	24332	100	72.8	70	130	
V	51	3	72	5.263	ppb	9.297	3450	5	105.3	70	130	
Cr	52	3	72	1.905	ppb	10.074	3270	2	95.2	70	130	
Mn	55	3	72	0.255	ppb	52.732	643	1	25.5	70	130	>+/-30%
Co	59	3	72	1.044	ppb	4.781	1403	1	104.4	70	130	
Ni	60	3	72	1.982	ppb	6.782	913	2	99.1	70	130	
Cu	63	3	72	1.937	ppb	3.078	2416	2	96.8	70	130	
Zn	66	3	72	10.421	ppb	7.404	1913	10	104.2	70	130	
As	75	3	72	5.451	ppb	7.313	668	5	109.0	70	130	
Se	78	2	72	5.111	ppb	2.682	304	5	102.2	70	130	
(Se)	78	3	72	3.225	ppb	74.465	37	5	64.5	70	130	>+/-30%
Sr	88	3	72	1.094	ppb	5.009	606	1	109.4	70	130	
Mo	95	3	115	1.970	ppb	1.903	1095	2	98.5	70	130	
Ag	107	3	115	1.029	ppb	6.400	1804	1	102.9	70	130	
Cd	111	3	115	1.130	ppb	2.545	287	1	113.0	70	130	
Sn	120	3	115	9.792	ppb	6.236	7912	10	97.9	70	130	
Sb	121	3	115	1.982	ppb	2.656	1559	2	99.1	70	130	
Ba	137	3	115	1.011	ppb	7.902	288	1	101.1	70	130	
Tl	205	3	193	0.957	ppb	6.652	3947	1	95.7	70	130	
(Pb)	206	3	193	1.028	ppb	3.032	1448	1	102.8	70	130	
(Pb)	207	3	193	0.989	ppb	6.252	1456	1	98.9	70	130	
Pb	208	3	193	1.019	ppb	2.921	6014	1	101.9	70	130	
Th	232	3	193	2.205	ppb	0.966	15235	2	110.3	70	130	
U	238	3	193	1.035	ppb	3.813	7029	1	103.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4218001	1.02	4299393	98.11	60	120	
Sc (IS)	45	3	HMI He	654269	0.67	674661	96.98	60	120	
Ge Internal standard	72	2	HMI H2	2265582	0.26	2269722	99.82	60	120	
Ge Internal standard	72	3	HMI He	740032	0.72	739017	100.14	60	120	
In Internal Standard	115	3	HMI He	2547211	2.02	2543041	100.16	60	120	
Ir (IS)	193	3	HMI He	5612504	0.84	5570851	100.75	60	120	

Sample Report

Sample Table

Sample Name	280-171210-h-1-b@2
Data File Name	075SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:29:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.095	ppb	0.095	149.53	7	2000	
Na	23	3	45	5496557.415	ppb	5496557.415	2.35	760578385	400000	>LDR
Mg	24	3	45	92616.246	ppb	92616.246	3.03	6808183	400000	
Al	27	3	45	96.457	ppb	96.457	4.84	2593	400000	
K	39	3	45	2669047.609	ppb	2669047.609	3.80	147015732	400000	>LDR
Ca	40	2	45	76872.803	ppb	76872.803	0.52	46845357	400000	
V	51	3	72	99.677	ppb	99.677	1.79	71582	2000	
Cr	52	3	72	54.231	ppb	54.231	0.29	51972	5000	
Mn	55	3	72	282.475	ppb	282.475	1.57	137259	10000	
Fe	56	2	72	1178.302	ppb	1178.302	2.70	1908318	10000	
Co	59	3	72	4.207	ppb	4.207	2.12	6337	2000	
Ni	60	3	72	26.010	ppb	26.010	0.77	11072	5000	
Cu	63	3	72	1.817	ppb	1.817	11.32	2629	5000	
Zn	66	3	72	16.267	ppb	16.267	4.54	3317	5000	
As	75	3	72	97.615	ppb	97.615	1.24	12986	2000	
Se	78	2	72	0.799	ppb	0.799	17.25	52	2000	
(Se)	78	3	72	1.594	ppb	1.594	97.29	28	2000	
Sr	88	3	72	1159.417	ppb	1159.417	1.40	718086	4000	
Mo	95	3	115	1.391	ppb	1.391	8.51	775	2000	
Ag	107	3	115	0.016	ppb	0.016	53.58	48	100	
Cd	111	3	115	0.122	ppb	0.122	35.79	32	2000	
Sn	120	3	115	2.155	ppb	2.155	4.98	2211	2000	
Sb	121	3	115	8.903	ppb	8.903	3.75	6642	1000	
Ba	137	3	115	1803.389	ppb	1803.389	1.93	419993	5000	
Tl	205	3	193	0.019	ppb	0.019	96.76	406	2000	
(Pb)	206	3	193	0.386	ppb	0.386	18.01	565	100	
(Pb)	207	3	193	0.435	ppb	0.435	8.54	736	100	
Pb	208	3	193	0.394	ppb	0.394	11.62	2507	5000	
Th	232	3	193	0.220	ppb	0.220	33.21	4612	2000	
U	238	3	193	0.131	ppb	0.131	5.97	1978	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4406095	1.15	4299393	102.48	60	120	
Sc (IS)	45	3	HMI He	720006	1.82	674661	106.72	60	120	
Ge Internal standard	72	2	HMI H2	2421815	0.08	2269722	106.70	60	120	
Ge Internal standard	72	3	HMI He	847515	3.09	739017	114.68	60	120	
In Internal Standard	115	3	HMI He	2500301	3.13	2543041	98.32	60	120	
Ir (IS)	193	3	HMI He	4857030	2.03	5570851	87.19	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-2-b@2
Data File Name	076SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:31:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.064	ppb	0.064	3.51	5	2000	
Na	23	3	45	6778076.690	ppb	6778076.690	2.95	945874728	400000	>LDR
Mg	24	3	45	100038.563	ppb	100038.563	2.42	7416417	400000	
Al	27	3	45	99.162	ppb	99.162	5.18	2686	400000	
K	39	3	45	3293159.932	ppb	3293159.932	0.58	183015649	400000	>LDR
Ca	40	2	45	64004.073	ppb	64004.073	4.68	40173715	400000	
V	51	3	72	38.522	ppb	38.522	2.98	27053	2000	
Cr	52	3	72	31.151	ppb	31.151	2.12	29894	5000	
Mn	55	3	72	131.653	ppb	131.653	0.56	62628	10000	
Fe	56	2	72	3111.752	ppb	3111.752	3.35	5189375	10000	
Co	59	3	72	3.061	ppb	3.061	2.96	4502	2000	
Ni	60	3	72	33.547	ppb	33.547	1.46	13843	5000	
Cu	63	3	72	0.459	ppb	0.459	7.88	1080	5000	
Zn	66	3	72	5.529	ppb	5.529	13.28	1214	5000	
As	75	3	72	39.068	ppb	39.068	3.81	5088	2000	
Se	78	2	72	0.671	ppb	0.671	16.35	45	2000	
(Se)	78	3	72	1.666	ppb	1.666	40.64	28	2000	
Sr	88	3	72	1459.010	ppb	1459.010	2.83	879754	4000	
Mo	95	3	115	0.933	ppb	0.933	6.33	536	2000	
Ag	107	3	115	0.016	ppb	0.016	46.74	48	100	
Cd	111	3	115	0.048	ppb	0.048	88.81	13	2000	
Sn	120	3	115	1.391	ppb	1.391	15.34	1649	2000	
Sb	121	3	115	2.015	ppb	2.015	0.73	1549	1000	
Ba	137	3	115	3434.605	ppb	3434.605	1.32	797239	5000	
Tl	205	3	193	0.089	ppb	0.089	10.26	603	2000	
(Pb)	206	3	193	0.195	ppb	0.195	37.92	345	100	
(Pb)	207	3	193	0.219	ppb	0.219	29.59	510	100	
Pb	208	3	193	0.180	ppb	0.180	19.64	1516	5000	
Th	232	3	193	0.179	ppb	0.179	10.84	4240	2000	
U	238	3	193	0.021	ppb	0.021	58.36	1413	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4540158	1.47	4299393	105.60	60	120	
Sc (IS)	45	3	HMI He	726259	2.37	674661	107.65	60	120	
Ge Internal standard	72	2	HMI H2	2503518	0.76	2269722	110.30	60	120	
Ge Internal standard	72	3	HMI He	825243	1.53	739017	111.67	60	120	
In Internal Standard	115	3	HMI He	2491108	0.46	2543041	97.96	60	120	
Ir (IS)	193	3	HMI He	4640581	0.68	5570851	83.30	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-3-b@2
Data File Name	077SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:33:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.094	ppb	0.094	56.09	7	2000	
Na	23	3	45	3588872.205	ppb	3588872.205	2.69	510946168	400000	>LDR
Mg	24	3	45	72456.950	ppb	72456.950	2.65	5479354	400000	
Al	27	3	45	105.832	ppb	105.832	8.18	2920	400000	
K	39	3	45	1175962.038	ppb	1175962.038	1.86	66666454	400000	
Ca	40	2	45	42591.763	ppb	42591.763	4.85	26345626	400000	
V	51	3	72	73.651	ppb	73.651	0.35	53166	2000	
Cr	52	3	72	33.140	ppb	33.140	2.00	32657	5000	
Mn	55	3	72	168.005	ppb	168.005	1.00	82229	10000	
Fe	56	2	72	227.294	ppb	227.294	3.41	386826	10000	
Co	59	3	72	6.687	ppb	6.687	1.04	10089	2000	
Ni	60	3	72	38.977	ppb	38.977	3.10	16547	5000	
Cu	63	3	72	0.167	ppb	0.167	23.59	785	5000	
Zn	66	3	72	5.106	ppb	5.106	4.78	1169	5000	
As	75	3	72	61.689	ppb	61.689	2.93	8255	2000	
Se	78	2	72	1.293	ppb	1.293	5.97	85	2000	
(Se)	78	3	72	0.766	ppb	0.766	202.40	22	2000	
Sr	88	3	72	1136.896	ppb	1136.896	1.51	706915	4000	
Mo	95	3	115	1.185	ppb	1.185	9.63	691	2000	
Ag	107	3	115	0.022	ppb	0.022	31.99	62	100	
Cd	111	3	115	0.013	ppb	0.013	0.89	5	2000	
Sn	120	3	115	2.047	ppb	2.047	4.29	2206	2000	
Sb	121	3	115	1.596	ppb	1.596	8.38	1288	1000	
Ba	137	3	115	1727.630	ppb	1727.630	0.70	416190	5000	
Tl	205	3	193	0.013	ppb	0.013	157.38	400	2000	
(Pb)	206	3	193	0.153	ppb	0.153	20.37	327	100	
(Pb)	207	3	193	0.129	ppb	0.129	57.10	463	100	
Pb	208	3	193	0.152	ppb	0.152	11.64	1514	5000	
Th	232	3	193	0.109	ppb	0.109	36.73	4262	2000	
U	238	3	193	0.050	ppb	0.050	42.32	1661	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474569	2.17	4299393	104.07	60	120	
Sc (IS)	45	3	HMI He	740768	1.80	674661	109.80	60	120	
Ge Internal standard	72	2	HMI H2	2484015	2.60	2269722	109.44	60	120	
Ge Internal standard	72	3	HMI He	850859	1.17	739017	115.13	60	120	
In Internal Standard	115	3	HMI He	2585226	0.59	2543041	101.66	60	120	
Ir (IS)	193	3	HMI He	5010844	0.87	5570851	89.95	60	120	

Sample Report

Sample Table

Sample Name	280-171210-i-4-b@2
Data File Name	078SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:35:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.146	ppb	0.146	61.73	10	2000	
Na	23	3	45	1386445.116	ppb	1386445.116	0.92	183675646	400000	
Mg	24	3	45	69246.685	ppb	69246.685	3.00	4871061	400000	
Al	27	3	45	122.713	ppb	122.713	3.18	3140	400000	
K	39	3	45	361951.963	ppb	361951.963	1.70	19102722	400000	
Ca	40	2	45	50708.809	ppb	50708.809	2.94	31984224	400000	
V	51	3	72	119.319	ppb	119.319	1.95	80860	2000	
Cr	52	3	72	71.999	ppb	71.999	2.36	64495	5000	
Mn	55	3	72	105.556	ppb	105.556	1.63	48781	10000	
Fe	56	2	72	1100.153	ppb	1100.153	3.98	1850660	10000	
Co	59	3	72	17.779	ppb	17.779	1.45	25149	2000	
Ni	60	3	72	79.611	ppb	79.611	1.87	31560	5000	
Cu	63	3	72	1.957	ppb	1.957	4.68	2632	5000	
Zn	66	3	72	21.686	ppb	21.686	0.95	4119	5000	
As	75	3	72	78.836	ppb	78.836	3.07	9907	2000	
Se	78	2	72	0.940	ppb	0.940	22.53	63	2000	
(Se)	78	3	72	1.782	ppb	1.782	19.56	28	2000	
Sr	88	3	72	1209.934	ppb	1209.934	1.54	707237	4000	
Mo	95	3	115	2.462	ppb	2.462	5.71	1338	2000	
Ag	107	3	115	0.005	ppb	0.005	104.86	30	100	
Cd	111	3	115	0.067	ppb	0.067	91.32	18	2000	
Sn	120	3	115	10.621	ppb	10.621	2.50	8428	2000	
Sb	121	3	115	4.650	ppb	4.650	1.76	3525	1000	
Ba	137	3	115	1364.679	ppb	1364.679	0.72	320004	5000	
Tl	205	3	193	-0.035	ppb	-0.035	-9.09	245	2000	
(Pb)	206	3	193	1.062	ppb	1.062	6.00	1359	100	
(Pb)	207	3	193	0.973	ppb	0.973	11.42	1311	100	
Pb	208	3	193	1.014	ppb	1.014	2.76	5464	5000	
Th	232	3	193	0.113	ppb	0.113	30.30	4374	2000	
U	238	3	193	0.073	ppb	0.073	6.08	1806	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4561326	1.49	4299393	106.09	60	120	
Sc (IS)	45	3	HMI He	689092	1.87	674661	102.14	60	120	
Ge Internal standard	72	2	HMI H2	2515812	2.40	2269722	110.84	60	120	
Ge Internal standard	72	3	HMI He	799859	0.78	739017	108.23	60	120	
In Internal Standard	115	3	HMI He	2516533	1.26	2543041	98.96	60	120	
Ir (IS)	193	3	HMI He	5119875	1.96	5570851	91.90	60	120	

Sample Report

Sample Table

Sample Name	280-171227-B-6-B
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:36:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.028	ppb	0.028	175.35	3	2000	
Na	23	3	45	1298.347	ppb	1298.347	3.13	204149	400000	
Mg	24	3	45	48.191	ppb	48.191	9.39	3551	400000	
Al	27	3	45	14.809	ppb	14.809	28.18	444	400000	
K	39	3	45	348.268	ppb	348.268	11.38	40472	400000	
Ca	40	2	45	186.791	ppb	186.791	0.82	128620	400000	
V	51	3	72	0.455	ppb	0.455	13.72	471	2000	
Cr	52	3	72	-0.204	ppb	-0.204	-29.26	1676	5000	
Mn	55	3	72	-0.213	ppb	-0.213	-28.55	475	10000	
Fe	56	2	72	14.998	ppb	14.998	3.67	35775	10000	
Co	59	3	72	0.005	ppb	0.005	322.35	48	2000	
Ni	60	3	72	-0.023	ppb	-0.023	-243.01	193	5000	
Cu	63	3	72	0.311	ppb	0.311	6.73	876	5000	
Zn	66	3	72	1.841	ppb	1.841	17.16	496	5000	
As	75	3	72	0.360	ppb	0.360	28.14	83	2000	
Se	78	2	72	0.040	ppb	0.040	76.57	4	2000	
(Se)	78	3	72	1.186	ppb	1.186	31.62	23	2000	
Sr	88	3	72	1.555	ppb	1.555	5.67	911	4000	
Mo	95	3	115	0.029	ppb	0.029	83.04	73	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-86.62	13	100	
Cd	111	3	115	0.013	ppb	0.013	148.91	5	2000	
Sn	120	3	115	0.056	ppb	0.056	50.38	711	2000	
Sb	121	3	115	0.195	ppb	0.195	38.90	218	1000	
Ba	137	3	115	0.848	ppb	0.848	15.60	255	5000	
Tl	205	3	193	-0.064	ppb	-0.064	-7.21	160	2000	
(Pb)	206	3	193	0.002	ppb	0.002	650.07	177	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-152.50	365	100	
Pb	208	3	193	-0.012	ppb	-0.012	-39.70	865	5000	
Th	232	3	193	0.024	ppb	0.024	293.48	4290	2000	
U	238	3	193	-0.005	ppb	-0.005	-539.64	1549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4524257	0.65	4299393	105.23	60	120	
Sc (IS)	45	3	HMI He	695110	2.46	674661	103.03	60	120	
Ge Internal standard	72	2	HMI H2	2433648	1.33	2269722	107.22	60	120	
Ge Internal standard	72	3	HMI He	788079	3.52	739017	106.64	60	120	
In Internal Standard	115	3	HMI He	2602419	0.82	2543041	102.33	60	120	
Ir (IS)	193	3	HMI He	5538207	1.93	5570851	99.41	60	120	

Sample Report

Sample Table

Sample Name	280-171160-c-8
Data File Name	080SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:38:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2808.444	ppb	2808.444	7.86	444987	400000	
Mg	24	3	45	54.491	ppb	54.491	2.07	4388	400000	
Al	27	3	45	-0.203	ppb	-0.203	-523.06	70	400000	
K	39	3	45	974.875	ppb	974.875	13.29	80897	400000	
Ca	40	2	45	112.714	ppb	112.714	1.80	89604	400000	
V	51	3	72	-0.087	ppb	-0.087	-23.40	123	2000	
Cr	52	3	72	-1.430	ppb	-1.430	-1.42	696	5000	
Mn	55	3	72	-0.582	ppb	-0.582	-12.56	343	10000	
Fe	56	2	72	-1.875	ppb	-1.875	-10.98	9526	10000	
Co	59	3	72	-0.012	ppb	-0.012	-88.93	27	2000	
Ni	60	3	72	-0.307	ppb	-0.307	-29.59	93	5000	
Cu	63	3	72	-0.120	ppb	-0.120	-78.41	475	5000	
Zn	66	3	72	-0.171	ppb	-0.171	-104.89	152	5000	
As	75	3	72	0.022	ppb	0.022	680.97	47	2000	
Se	78	2	72	-0.013	ppb	-0.013	-122.18	1	2000	
(Se)	78	3	72	1.247	ppb	1.247	160.07	27	2000	
Sr	88	3	72	0.778	ppb	0.778	12.30	516	4000	
Mo	95	3	115	-0.072	ppb	-0.072	-13.18	22	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-1048.99	23	100	
Cd	111	3	115	-0.001	ppb	-0.001	-1415.42	2	2000	
Sn	120	3	115	-0.064	ppb	-0.064	-165.56	703	2000	
Sb	121	3	115	-0.020	ppb	-0.020	-105.34	60	1000	
Ba	137	3	115	1.433	ppb	1.433	12.66	450	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-23.05	202	2000	
(Pb)	206	3	193	-0.039	ppb	-0.039	-65.71	138	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-41.23	353	100	
Pb	208	3	193	-0.044	ppb	-0.044	-17.31	776	5000	
Th	232	3	193	0.032	ppb	0.032	59.60	4754	2000	
U	238	3	193	-0.004	ppb	-0.004	-254.16	1704	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4927376	1.27	4299393	114.61	60	120	
Sc (IS)	45	3	HMI He	762306	1.62	674661	112.99	60	120	
Ge Internal standard	72	2	HMI H2	2735422	0.95	2269722	120.52	60	120	IS Failed
Ge Internal standard	72	3	HMI He	877664	2.03	739017	118.76	60	120	
In Internal Standard	115	3	HMI He	2949126	0.20	2543041	115.97	60	120	
Ir (IS)	193	3	HMI He	6072190	1.19	5570851	109.00	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	081_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:40:41-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.590	ppb	2.940	2652	50	95.2	90	110	
Na	23	3	45	50084.332	ppb	2.714	6489252	51000	98.2	90	110	
Mg	24	3	45	10629.372	ppb	2.174	728430	11000	96.6	90	110	
Al	27	3	45	995.079	ppb	2.134	24329	1000	99.5	90	110	
K	39	3	45	10892.592	ppb	2.830	580422	11000	99.0	90	110	
Ca	40	2	45	11201.670	ppb	3.568	6579074	11000	101.8	90	110	
V	51	3	72	52.328	ppb	3.056	33322	50	104.7	90	110	
Cr	52	3	72	50.030	ppb	1.942	42544	50	100.1	90	110	
Mn	55	3	72	50.478	ppb	3.603	22143	50	101.0	90	110	
Fe	56	2	72	1049.356	ppb	1.299	1585619	1000	104.9	90	110	
Co	59	3	72	50.091	ppb	3.377	66325	50	100.2	90	110	
Ni	60	3	72	49.570	ppb	4.881	18483	50	99.1	90	110	
Cu	63	3	72	50.303	ppb	2.781	50430	50	100.6	90	110	
Zn	66	3	72	51.884	ppb	3.815	9012	50	103.8	90	110	
As	75	3	72	52.684	ppb	1.815	6218	50	105.4	90	110	
Se	78	2	72	50.050	ppb	2.269	2954	50	100.1	90	110	
(Se)	78	3	72	50.521	ppb	1.899	381	50	101.0	90	110	
Sr	88	3	72	106.235	ppb	2.130	58217	100	106.2	90	110	
Mo	95	3	115	49.611	ppb	1.064	26359	50	99.2	90	110	
Ag	107	3	115	49.422	ppb	0.425	86247	50	98.8	90	110	
Cd	111	3	115	50.079	ppb	1.071	12715	50	100.2	90	110	
Sn	120	3	115	51.733	ppb	1.994	39271	50	103.5	90	110	
Sb	121	3	115	51.738	ppb	2.916	39278	50	103.5	90	110	
Ba	137	3	115	52.798	ppb	4.156	12658	50	105.6	90	110	
Tl	205	3	193	51.310	ppb	1.332	183568	50	102.6	90	110	
(Pb)	206	3	193	51.020	ppb	0.607	60987	50	102.0	90	110	
(Pb)	207	3	193	50.728	ppb	0.655	53650	50	101.5	90	110	
Pb	208	3	193	51.088	ppb	0.721	246209	50	102.2	90	110	
Th	232	3	193	51.449	ppb	0.266	251395	50	102.9	90	110	
U	238	3	193	51.841	ppb	1.301	263754	50	103.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4243000	2.51	4299393	98.69	60	120	
Sc (IS)	45	3	HMI He	671184	2.08	674661	99.48	60	120	
Ge Internal standard	72	2	HMI H2	2258396	2.82	2269722	99.50	60	120	
Ge Internal standard	72	3	HMI He	749852	2.31	739017	101.47	60	120	
In Internal Standard	115	3	HMI He	2563302	0.21	2543041	100.80	60	120	
Ir (IS)	193	3	HMI He	5407848	0.25	5570851	97.07	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	082_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:42:32-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	12818.5	2	0.5	
Na	23	3	45	298.930	ppb	4.5	67662	25	>RL
Mg	24	3	45	2.236	ppb	23.5	280	25	
Al	27	3	45	27.640	ppb	9.8	734	15	>RL
K	39	3	45	109.529	ppb	27.1	26605	50	>RL
V	51	3	72	0.282	ppb	15.2	345	1	
Cr	52	3	72	-0.350	ppb	-39.2	1501	1	
Mn	55	3	72	-0.702	ppb	-11.6	247	0.5	
Co	59	3	72	0.015	ppb	28.4	60	0.5	
Ni	60	3	72	-0.043	ppb	-64.8	180	1	
Cu	63	3	72	-0.089	ppb	-40.0	445	1	
Zn	66	3	72	2.899	ppb	5.0	665	5	
As	75	3	72	0.185	ppb	22.3	60	1	
Se	78	2	72	0.055	ppb	93.2	5	1	
(Se)	78	3	72	-0.067	ppb	-549.2	13	1	
Sr	88	3	72	0.041	ppb	13.7	38	0.5	
Mo	95	3	115	-0.016	ppb	-149.1	50	0.5	
Ag	107	3	115	0.006	ppb	22.7	33	1	
Cd	111	3	115	0.013	ppb	2.1	5	0.5	
Sn	120	3	115	-0.307	ppb	-24.1	440	1	
Sb	121	3	115	0.056	ppb	35.0	112	0.6	
Ba	137	3	115	-0.005	ppb	-661.7	48	0.5	
Tl	205	3	193	-0.062	ppb	-19.5	168	0.1	
(Pb)	206	3	193	-0.020	ppb	-80.5	150	1	
(Pb)	207	3	193	-0.050	ppb	-27.5	320	1	
Pb	208	3	193	-0.034	ppb	-25.9	760	0.5	
Th	232	3	193	0.713	ppb	20.4	7720	1	
U	238	3	193	-0.005	ppb	-122.6	1558	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4328727	2.35	4299393	100.68	60	120	
Sc (IS)	45	3	HMI He	665372	0.73	674661	98.62	60	120	
Ge Internal standard	72	2	HMI H2	2316260	2.07	2269722	102.05	60	120	
Ge Internal standard	72	3	HMI He	762883	1.37	739017	103.23	60	120	
In Internal Standard	115	3	HMI He	2619782	1.39	2543041	103.02	60	120	
Ir (IS)	193	3	HMI He	5560491	0.55	5570851	99.81	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	083LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:44:24-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.963	ppb	52.478	57	1	96.3	70	130	
Na	23	3	45	301.313	ppb	2.125	66599	50	602.6	70	130	>+/-30%
Mg	24	3	45	50.994	ppb	0.235	3521	50	102.0	70	130	
Al	27	3	45	54.907	ppb	6.356	1365	50	109.8	70	130	
K	39	3	45	204.355	ppb	22.833	30795	100	204.4	70	130	>+/-30%
V	51	3	72	5.608	ppb	8.755	3672	5	112.2	70	130	
Cr	52	3	72	1.709	ppb	6.537	3122	2	85.5	70	130	
Mn	55	3	72	0.432	ppb	51.123	720	1	43.2	70	130	>+/-30%
Co	59	3	72	1.023	ppb	12.063	1378	1	102.3	70	130	
Ni	60	3	72	1.910	ppb	7.038	888	2	95.5	70	130	
Cu	63	3	72	2.103	ppb	2.976	2586	2	105.2	70	130	
Zn	66	3	72	10.144	ppb	5.187	1869	10	101.4	70	130	
As	75	3	72	5.815	ppb	11.707	711	5	116.3	70	130	
Se	78	2	72	4.666	ppb	4.066	279	5	93.3	70	130	
(Se)	78	3	72	5.774	ppb	32.684	55	5	115.5	70	130	
Sr	88	3	72	1.076	ppb	12.499	598	1	107.6	70	130	
Mo	95	3	115	1.888	ppb	1.169	1055	2	94.4	70	130	
Ag	107	3	115	0.995	ppb	7.573	1751	1	99.5	70	130	
Cd	111	3	115	1.066	ppb	15.000	272	1	106.6	70	130	
Sn	120	3	115	9.709	ppb	5.483	7877	10	97.1	70	130	
Sb	121	3	115	2.178	ppb	5.083	1713	2	108.9	70	130	
Ba	137	3	115	1.078	ppb	11.154	305	1	107.8	70	130	
Tl	205	3	193	0.980	ppb	5.717	3930	1	98.0	70	130	
(Pb)	206	3	193	0.960	ppb	7.288	1329	1	96.0	70	130	
(Pb)	207	3	193	1.022	ppb	8.852	1454	1	102.2	70	130	
Pb	208	3	193	0.983	ppb	1.940	5689	1	98.3	70	130	
Th	232	3	193	2.217	ppb	1.122	14917	2	110.9	70	130	
U	238	3	193	1.044	ppb	6.793	6898	1	104.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4346462	1.65	4299393	101.09	60	120	
Sc (IS)	45	3	HMI He	651940	0.86	674661	96.63	60	120	
Ge Internal standard	72	2	HMI H2	2274809	1.38	2269722	100.22	60	120	
Ge Internal standard	72	3	HMI He	741844	2.03	739017	100.38	60	120	
In Internal Standard	115	3	HMI He	2554849	1.39	2543041	100.46	60	120	
Ir (IS)	193	3	HMI He	5474043	1.95	5570851	98.26	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-D
Data File Name	084SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:46:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4444.48	2	2000	
Na	23	3	45	19270.631	ppb	19270.631	1.48	2473263	400000	
Mg	24	3	45	11657.012	ppb	11657.012	1.02	785477	400000	
Al	27	3	45	26.523	ppb	26.523	21.62	701	400000	
K	39	3	45	5757.572	ppb	5757.572	0.65	311514	400000	
Ca	40	2	45	51179.003	ppb	51179.003	2.02	29928894	400000	
V	51	3	72	10.631	ppb	10.631	3.84	7063	2000	
Cr	52	3	72	8.156	ppb	8.156	2.63	8610	5000	
Mn	55	3	72	-0.004	ppb	-0.004	-4146.93	553	10000	
Fe	56	2	72	60.270	ppb	60.270	1.40	104468	10000	
Co	59	3	72	0.046	ppb	0.046	25.02	102	2000	
Ni	60	3	72	0.809	ppb	0.809	7.14	503	5000	
Cu	63	3	72	1.276	ppb	1.276	1.94	1834	5000	
Zn	66	3	72	2.090	ppb	2.090	10.61	528	5000	
As	75	3	72	4.262	ppb	4.262	8.21	550	2000	
Se	78	2	72	1.442	ppb	1.442	10.39	89	2000	
(Se)	78	3	72	1.254	ppb	1.254	108.20	23	2000	
Sr	88	3	72	249.498	ppb	249.498	2.50	139957	4000	
Mo	95	3	115	2.414	ppb	2.414	11.75	1331	2000	
Ag	107	3	115	0.003	ppb	0.003	265.94	27	100	
Cd	111	3	115	0.000	ppb	0.000	4525.08	2	2000	
Sn	120	3	115	0.158	ppb	0.158	21.19	775	2000	
Sb	121	3	115	0.258	ppb	0.258	4.52	262	1000	
Ba	137	3	115	34.204	ppb	34.204	2.20	8190	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-15.13	178	2000	
(Pb)	206	3	193	0.012	ppb	0.012	137.12	185	100	
(Pb)	207	3	193	-0.050	ppb	-0.050	-58.56	313	100	
Pb	208	3	193	-0.005	ppb	-0.005	-202.92	883	5000	
Th	232	3	193	0.171	ppb	0.171	23.94	4924	2000	
U	238	3	193	5.022	ppb	5.022	1.15	27061	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4228934	2.08	4299393	98.36	60	120	
Sc (IS)	45	3	HMI He	659736	0.65	674661	97.79	60	120	
Ge Internal standard	72	2	HMI H2	2332465	0.93	2269722	102.76	60	120	
Ge Internal standard	72	3	HMI He	767709	1.98	739017	103.88	60	120	
In Internal Standard	115	3	HMI He	2555160	1.30	2543041	100.48	60	120	
Ir (IS)	193	3	HMI He	5431889	0.79	5570851	97.51	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-Dsd@5
Data File Name	085SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:48:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.009	ppb	-0.009	-360.63	2	2000	
Na	23	3	45	465.155	ppb	465.155	133.03	139897	400000	
Mg	24	3	45	228.918	ppb	228.918	119.06	24497	400000	
Al	27	3	45	10.592	ppb	10.592	72.13	521	400000	
K	39	3	45	4.852	ppb	4.852	5172.42	33729	400000	
Ca	40	2	45	1418.131	ppb	1418.131	72.22	1320267	400000	
V	51	3	72	0.215	ppb	0.215	193.54	455	2000	
Cr	52	3	72	-1.148	ppb	-1.148	-41.33	1283	5000	
Mn	55	3	72	-0.702	ppb	-0.702	-57.91	373	10000	
Fe	56	2	72	-1.109	ppb	-1.109	-220.82	14546	10000	
Co	59	3	72	-0.016	ppb	-0.016	-38.51	27	2000	
Ni	60	3	72	-0.255	ppb	-0.255	-49.74	153	5000	
Cu	63	3	72	-0.202	ppb	-0.202	-39.35	508	5000	
Zn	66	3	72	-0.163	ppb	-0.163	-135.26	205	5000	
As	75	3	72	0.079	ppb	0.079	170.33	73	2000	
Se	78	2	72	0.014	ppb	0.014	331.83	3	2000	
(Se)	78	3	72	0.615	ppb	0.615	289.45	28	2000	
Sr	88	3	72	5.520	ppb	5.520	119.10	4611	4000	
Mo	95	3	115	0.258	ppb	0.258	38.47	307	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-10.53	18	100	
Cd	111	3	115	0.006	ppb	0.006	220.21	5	2000	
Sn	120	3	115	-0.592	ppb	-0.592	-13.58	343	2000	
Sb	121	3	115	-0.026	ppb	-0.026	-40.22	75	1000	
Ba	137	3	115	0.779	ppb	0.779	135.84	357	5000	
Tl	205	3	193	-0.075	ppb	-0.075	-4.13	193	2000	
(Pb)	206	3	193	-0.054	ppb	-0.054	-17.43	173	100	
(Pb)	207	3	193	-0.079	ppb	-0.079	-35.26	461	100	
Pb	208	3	193	-0.052	ppb	-0.052	-9.02	1079	5000	
Th	232	3	193	0.091	ppb	0.091	64.62	7420	2000	
U	238	3	193	0.116	ppb	0.116	106.70	3454	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6883233	7.31	4299393	160.10	60	120	IS Failed
Sc (IS)	45	3	HMI He	1070511	3.89	674661	158.67	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3730393	8.63	2269722	164.35	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1183786	5.29	739017	160.18	60	120	IS Failed
In Internal Standard	115	3	HMI He	4102503	7.60	2543041	161.32	60	120	IS Failed
Ir (IS)	193	3	HMI He	8896645	6.49	5570851	159.70	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171396-A-1-E MS
Data File Name	086SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:50:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.206	ppb	41.206	6.03	2291	2000	
Na	23	3	45	19611.474	ppb	19611.474	3.14	2549449	400000	
Mg	24	3	45	12404.866	ppb	12404.866	3.92	846786	400000	
Al	27	3	45	831.312	ppb	831.312	4.75	20248	400000	
K	39	3	45	6400.593	ppb	6400.593	2.66	348530	400000	
Ca	40	2	45	51057.061	ppb	51057.061	3.98	30038182	400000	
V	51	3	72	48.853	ppb	48.853	1.29	33196	2000	
Cr	52	3	72	46.198	ppb	46.198	2.81	42034	5000	
Mn	55	3	72	38.972	ppb	38.972	1.16	18366	10000	
Fe	56	2	72	902.807	ppb	902.807	0.94	1426632	10000	
Co	59	3	72	38.463	ppb	38.463	1.91	54327	2000	
Ni	60	3	72	37.487	ppb	37.487	0.14	14964	5000	
Cu	63	3	72	39.528	ppb	39.528	1.47	42389	5000	
Zn	66	3	72	41.358	ppb	41.358	1.91	7697	5000	
As	75	3	72	44.259	ppb	44.259	1.74	5577	2000	
Se	78	2	72	40.628	ppb	40.628	0.81	2506	2000	
(Se)	78	3	72	43.378	ppb	43.378	23.27	351	2000	
Sr	88	3	72	319.353	ppb	319.353	1.42	186590	4000	
Mo	95	3	115	42.944	ppb	42.944	2.44	23208	2000	
Ag	107	3	115	40.388	ppb	40.388	1.79	71674	100	
Cd	111	3	115	40.387	ppb	40.387	1.94	10427	2000	
Sn	120	3	115	42.250	ppb	42.250	1.34	32737	2000	
Sb	121	3	115	41.763	ppb	41.763	2.08	32251	1000	
Ba	137	3	115	73.658	ppb	73.658	2.43	17937	5000	
Tl	205	3	193	41.972	ppb	41.972	1.11	151433	2000	
(Pb)	206	3	193	41.678	ppb	41.678	1.63	50251	100	
(Pb)	207	3	193	41.368	ppb	41.368	1.54	44168	100	
Pb	208	3	193	41.473	ppb	41.473	1.35	201645	5000	
Th	232	3	193	42.983	ppb	42.983	1.32	212390	2000	
U	238	3	193	47.672	ppb	47.672	1.19	244613	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4256176	2.56	4299393	98.99	60	120	
Sc (IS)	45	3	HMI He	668750	2.45	674661	99.12	60	120	
Ge Internal standard	72	2	HMI H2	2358807	0.73	2269722	103.92	60	120	
Ge Internal standard	72	3	HMI He	799463	1.02	739017	108.18	60	120	
In Internal Standard	115	3	HMI He	2606966	1.49	2543041	102.51	60	120	
Ir (IS)	193	3	HMI He	5451305	0.30	5570851	97.85	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-F MSD
Data File Name	087SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:51:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.782	ppb	41.782	5.59	2372	2000	
Na	23	3	45	20286.395	ppb	20286.395	1.10	2613001	400000	
Mg	24	3	45	12377.346	ppb	12377.346	3.53	837495	400000	
Al	27	3	45	845.093	ppb	845.093	0.71	20405	400000	
K	39	3	45	6644.870	ppb	6644.870	0.36	357811	400000	
Ca	40	2	45	50446.659	ppb	50446.659	1.70	31223941	400000	
V	51	3	72	52.170	ppb	52.170	0.90	34165	2000	
Cr	52	3	72	48.099	ppb	48.099	1.97	42118	5000	
Mn	55	3	72	39.911	ppb	39.911	4.64	18118	10000	
Fe	56	2	72	896.513	ppb	896.513	0.99	1452972	10000	
Co	59	3	72	39.575	ppb	39.575	2.43	53884	2000	
Ni	60	3	72	39.646	ppb	39.646	2.86	15242	5000	
Cu	63	3	72	40.294	ppb	40.294	2.72	41635	5000	
Zn	66	3	72	42.368	ppb	42.368	2.14	7597	5000	
As	75	3	72	46.335	ppb	46.335	3.96	5625	2000	
Se	78	2	72	41.004	ppb	41.004	2.19	2594	2000	
(Se)	78	3	72	37.390	ppb	37.390	17.68	293	2000	
Sr	88	3	72	333.945	ppb	333.945	2.62	188075	4000	
Mo	95	3	115	43.372	ppb	43.372	2.53	23028	2000	
Ag	107	3	115	41.194	ppb	41.194	0.55	71833	100	
Cd	111	3	115	41.325	ppb	41.325	1.30	10484	2000	
Sn	120	3	115	41.915	ppb	41.915	1.83	31914	2000	
Sb	121	3	115	41.619	ppb	41.619	3.04	31577	1000	
Ba	137	3	115	77.419	ppb	77.419	2.16	18520	5000	
Tl	205	3	193	41.702	ppb	41.702	1.23	150486	2000	
(Pb)	206	3	193	42.024	ppb	42.024	1.36	50679	100	
(Pb)	207	3	193	41.340	ppb	41.340	0.75	44150	100	
Pb	208	3	193	41.805	ppb	41.805	0.17	203291	5000	
Th	232	3	193	43.421	ppb	43.421	1.46	214548	2000	
U	238	3	193	47.863	ppb	47.863	0.48	245635	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474816	0.88	4299393	104.08	60	120	
Sc (IS)	45	3	HMI He	662533	0.68	674661	98.20	60	120	
Ge Internal standard	72	2	HMI H2	2418943	1.39	2269722	106.57	60	120	
Ge Internal standard	72	3	HMI He	770894	2.55	739017	104.31	60	120	
In Internal Standard	115	3	HMI He	2561366	1.47	2543041	100.72	60	120	
Ir (IS)	193	3	HMI He	5452333	0.77	5570851	97.87	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-D pds
Data File Name	088SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:53:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	92.409	ppb	92.409	41.21	6808	2000	
Na	23	3	45	7673.819	ppb	7673.819	91.38	1229279	400000	
Mg	24	3	45	4388.199	ppb	4388.199	90.98	361595	400000	
Al	27	3	45	795.131	ppb	795.131	91.14	23388	400000	
K	39	3	45	2154.055	ppb	2154.055	98.90	160480	400000	
Ca	40	2	45	22824.610	ppb	22824.610	39.06	17653731	400000	
V	51	3	72	82.171	ppb	82.171	90.90	64026	2000	
Cr	52	3	72	80.020	ppb	80.020	93.48	82106	5000	
Mn	55	3	72	80.015	ppb	80.015	92.38	42633	10000	
Fe	56	2	72	35.047	ppb	35.047	42.14	86036	10000	
Co	59	3	72	77.401	ppb	77.401	91.68	125531	2000	
Ni	60	3	72	75.680	ppb	75.680	92.54	34458	5000	
Cu	63	3	72	79.789	ppb	79.789	91.40	97728	5000	
Zn	66	3	72	81.426	ppb	81.426	91.63	17249	5000	
As	75	3	72	80.423	ppb	80.423	91.58	11617	2000	
Se	78	2	72	94.215	ppb	94.215	42.39	7508	2000	
(Se)	78	3	72	83.689	ppb	83.689	90.94	766	2000	
Sr	88	3	72	180.630	ppb	180.630	91.03	121414	4000	
Mo	95	3	115	81.307	ppb	81.307	90.12	52301	2000	
Ag	107	3	115	20.187	ppb	20.187	90.68	42698	100	
Cd	111	3	115	79.963	ppb	79.963	91.45	24577	2000	
Sn	120	3	115	83.897	ppb	83.897	90.66	76785	2000	
Sb	121	3	115	82.425	ppb	82.425	90.64	75825	1000	
Ba	137	3	115	99.004	ppb	99.004	91.36	28722	5000	
Tl	205	3	193	83.698	ppb	83.698	90.77	365310	2000	
(Pb)	206	3	193	84.244	ppb	84.244	90.99	122856	100	
(Pb)	207	3	193	84.954	ppb	84.954	90.37	109538	100	
Pb	208	3	193	84.634	ppb	84.634	90.85	497656	5000	
Th	232	3	193	225.698	ppb	225.698	89.30	1333228	2000	
U	238	3	193	90.816	ppb	90.816	90.84	563482	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5761972	11.56	4299393	134.02	60	120	IS Failed
Sc (IS)	45	3	HMI He	931524	22.68	674661	138.07	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3171964	13.86	2269722	139.75	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1066156	23.25	739017	144.27	60	120	IS Failed
In Internal Standard	115	3	HMI He	3617820	24.08	2543041	142.26	60	120	IS Failed
Ir (IS)	193	3	HMI He	7680972	23.72	5570851	137.88	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171444-E-1-B
Data File Name	089SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T14:55:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	138078.544	ppb	138078.544	0.97	17418713	400000	
Mg	24	3	45	8036.585	ppb	8036.585	0.44	537807	400000	
Al	27	3	45	121.503	ppb	121.503	1.21	2957	400000	
K	39	3	45	1866.308	ppb	1866.308	0.92	114276	400000	
Ca	40	2	45	20277.776	ppb	20277.776	1.97	11898447	400000	
V	51	3	72	1.106	ppb	1.106	4.10	885	2000	
Cr	52	3	72	-0.088	ppb	-0.088	-270.52	1734	5000	
Mn	55	3	72	6.185	ppb	6.185	5.34	3275	10000	
Fe	56	2	72	179.148	ppb	179.148	2.30	290748	10000	
Co	59	3	72	0.126	ppb	0.126	13.61	212	2000	
Ni	60	3	72	0.826	ppb	0.826	12.73	511	5000	
Cu	63	3	72	0.471	ppb	0.471	10.13	1020	5000	
Zn	66	3	72	3.906	ppb	3.906	2.84	848	5000	
As	75	3	72	1.273	ppb	1.273	9.14	192	2000	
Se	78	2	72	0.650	ppb	0.650	13.89	41	2000	
(Se)	78	3	72	0.807	ppb	0.807	79.85	20	2000	
Sr	88	3	72	277.991	ppb	277.991	0.08	156469	4000	
Mo	95	3	115	9.105	ppb	9.105	4.47	4877	2000	
Ag	107	3	115	0.009	ppb	0.009	47.72	38	100	
Cd	111	3	115	0.040	ppb	0.040	76.46	12	2000	
Sn	120	3	115	0.300	ppb	0.300	6.26	881	2000	
Sb	121	3	115	1.343	ppb	1.343	20.36	1085	1000	
Ba	137	3	115	42.087	ppb	42.087	2.23	10086	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-77.52	323	2000	
(Pb)	206	3	193	0.269	ppb	0.269	20.52	491	100	
(Pb)	207	3	193	0.215	ppb	0.215	15.16	591	100	
Pb	208	3	193	0.224	ppb	0.224	3.07	1986	5000	
Th	232	3	193	3.659	ppb	3.659	23.71	21697	2000	
U	238	3	193	1.160	ppb	1.160	2.26	7419	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4239363	1.91	4299393	98.60	60	120	
Sc (IS)	45	3	HMI He	655167	0.65	674661	97.11	60	120	
Ge Internal standard	72	2	HMI H2	2348461	1.28	2269722	103.47	60	120	
Ge Internal standard	72	3	HMI He	770085	1.06	739017	104.20	60	120	
In Internal Standard	115	3	HMI He	2559868	0.67	2543041	100.66	60	120	
Ir (IS)	193	3	HMI He	5417551	0.87	5570851	97.25	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-Dsd@5
Data File Name	090SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:00:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	3871.008	ppb	3871.008	1.81	526031	400000	
Mg	24	3	45	2293.156	ppb	2293.156	2.01	156364	400000	
Al	27	3	45	7.714	ppb	7.714	21.90	254	400000	
K	39	3	45	1154.698	ppb	1154.698	2.18	80050	400000	
Ca	40	2	45	10016.417	ppb	10016.417	3.12	5794897	400000	
V	51	3	72	2.722	ppb	2.722	6.47	1974	2000	
Cr	52	3	72	1.304	ppb	1.304	19.98	2956	5000	
Mn	55	3	72	-0.258	ppb	-0.258	-49.71	453	10000	
Fe	56	2	72	11.279	ppb	11.279	7.87	28257	10000	
Co	59	3	72	0.058	ppb	0.058	25.59	122	2000	
Ni	60	3	72	0.153	ppb	0.153	79.71	262	5000	
Cu	63	3	72	0.260	ppb	0.260	37.38	821	5000	
Zn	66	3	72	1.645	ppb	1.645	23.82	460	5000	
As	75	3	72	1.256	ppb	1.256	11.92	193	2000	
Se	78	2	72	0.411	ppb	0.411	33.44	26	2000	
(Se)	78	3	72	1.422	ppb	1.422	138.46	25	2000	
Sr	88	3	72	48.709	ppb	48.709	3.39	27965	4000	
Mo	95	3	115	0.509	ppb	0.509	11.66	335	2000	
Ag	107	3	115	0.004	ppb	0.004	131.89	30	100	
Cd	111	3	115	0.013	ppb	0.013	148.87	5	2000	
Sn	120	3	115	0.317	ppb	0.317	35.18	916	2000	
Sb	121	3	115	0.096	ppb	0.096	21.32	143	1000	
Ba	137	3	115	6.585	ppb	6.585	2.36	1659	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-48.78	325	2000	
(Pb)	206	3	193	0.014	ppb	0.014	76.93	188	100	
(Pb)	207	3	193	0.027	ppb	0.027	162.05	395	100	
Pb	208	3	193	0.027	ppb	0.027	29.04	1040	5000	
Th	232	3	193	0.518	ppb	0.518	9.87	6603	2000	
U	238	3	193	1.003	ppb	1.003	2.21	6650	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4177659	1.60	4299393	97.17	60	120	
Sc (IS)	45	3	HMI He	667416	2.50	674661	98.93	60	120	
Ge Internal standard	72	2	HMI H2	2314034	4.07	2269722	101.95	60	120	
Ge Internal standard	72	3	HMI He	785414	1.59	739017	106.28	60	120	
In Internal Standard	115	3	HMI He	2623922	1.36	2543041	103.18	60	120	
Ir (IS)	193	3	HMI He	5438699	1.69	5570851	97.63	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-5-B
Data File Name	092SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:05:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	337.95	3	2000	
Na	23	3	45	33872.640	ppb	33872.640	1.81	4369127	400000	
Mg	24	3	45	14030.896	ppb	14030.896	2.72	954958	400000	
Al	27	3	45	442.577	ppb	442.577	0.45	10782	400000	
K	39	3	45	2353.530	ppb	2353.530	2.64	141084	400000	
Ca	40	2	45	52751.227	ppb	52751.227	2.00	31115044	400000	
V	51	3	72	1.416	ppb	1.416	13.12	1086	2000	
Cr	52	3	72	0.925	ppb	0.925	6.70	2584	5000	
Mn	55	3	72	57.046	ppb	57.046	3.30	25643	10000	
Fe	56	2	72	424.766	ppb	424.766	0.95	672113	10000	
Co	59	3	72	0.414	ppb	0.414	8.13	603	2000	
Ni	60	3	72	0.904	ppb	0.904	3.93	541	5000	
Cu	63	3	72	19.203	ppb	19.203	1.69	20120	5000	
Zn	66	3	72	31.881	ppb	31.881	3.43	5753	5000	
As	75	3	72	0.593	ppb	0.593	15.63	110	2000	
Se	78	2	72	0.284	ppb	0.284	54.50	19	2000	
(Se)	78	3	72	2.816	ppb	2.816	24.52	35	2000	
Sr	88	3	72	144.769	ppb	144.769	2.41	81524	4000	
Mo	95	3	115	21.342	ppb	21.342	2.83	11437	2000	
Ag	107	3	115	0.011	ppb	0.011	77.63	42	100	
Cd	111	3	115	0.555	ppb	0.555	10.99	143	2000	
Sn	120	3	115	-0.086	ppb	-0.086	-50.76	598	2000	
Sb	121	3	115	0.266	ppb	0.266	9.58	270	1000	
Ba	137	3	115	65.997	ppb	65.997	0.98	15902	5000	
Tl	205	3	193	-0.059	ppb	-0.059	-6.76	177	2000	
(Pb)	206	3	193	1.199	ppb	1.199	4.07	1608	100	
(Pb)	207	3	193	1.012	ppb	1.012	4.56	1434	100	
Pb	208	3	193	1.078	ppb	1.078	1.02	6114	5000	
Th	232	3	193	0.221	ppb	0.221	22.73	5162	2000	
U	238	3	193	48.651	ppb	48.651	1.79	248838	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4264523	1.66	4299393	99.19	60	120	
Sc (IS)	45	3	HMI He	666502	0.71	674661	98.79	60	120	
Ge Internal standard	72	2	HMI H2	2341599	2.58	2269722	103.17	60	120	
Ge Internal standard	72	3	HMI He	770538	2.23	739017	104.27	60	120	
In Internal Standard	115	3	HMI He	2578086	0.40	2543041	101.38	60	120	
Ir (IS)	193	3	HMI He	5435999	2.44	5570851	97.58	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	093_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:09:56-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.521	ppb	3.806	2894	50	101.0	90	110	
Na	23	3	45	49673.545	ppb	1.864	6535938	51000	97.4	90	110	
Mg	24	3	45	10436.857	ppb	2.036	726252	11000	94.9	90	110	
Al	27	3	45	1012.011	ppb	2.307	25114	1000	101.2	90	110	
K	39	3	45	10702.051	ppb	2.834	579433	11000	97.3	90	110	
Ca	40	2	45	11259.829	ppb	0.852	6826557	11000	102.4	90	110	
V	51	3	72	51.400	ppb	2.959	33163	50	102.8	90	110	
Cr	52	3	72	50.676	ppb	3.863	43623	50	101.4	90	110	
Mn	55	3	72	49.694	ppb	3.736	22095	50	99.4	90	110	
Fe	56	2	72	1044.246	ppb	1.007	1632779	1000	104.4	90	110	
Co	59	3	72	49.629	ppb	2.821	66576	50	99.3	90	110	
Ni	60	3	72	49.805	ppb	2.917	18818	50	99.6	90	110	
Cu	63	3	72	49.992	ppb	2.375	50779	50	100.0	90	110	
Zn	66	3	72	50.677	ppb	2.972	8922	50	101.4	90	110	
As	75	3	72	54.053	ppb	6.797	6458	50	108.1	90	110	
Se	78	2	72	49.659	ppb	2.638	3033	50	99.3	90	110	
(Se)	78	3	72	52.590	ppb	21.591	401	50	105.2	90	110	
Sr	88	3	72	105.367	ppb	1.750	58499	100	105.4	90	110	
Mo	95	3	115	47.253	ppb	1.678	26297	50	94.5	90	110	
Ag	107	3	115	47.906	ppb	0.791	87565	50	95.8	90	110	
Cd	111	3	115	47.797	ppb	1.001	12711	50	95.6	90	110	
Sn	120	3	115	49.550	ppb	0.509	39430	50	99.1	90	110	
Sb	121	3	115	50.014	ppb	1.119	39769	50	100.0	90	110	
Ba	137	3	115	51.120	ppb	1.096	12838	50	102.2	90	110	
Tl	205	3	193	50.680	ppb	1.629	184503	50	101.4	90	110	
(Pb)	206	3	193	51.020	ppb	1.317	62059	50	102.0	90	110	
(Pb)	207	3	193	50.476	ppb	1.630	54321	50	101.0	90	110	
Pb	208	3	193	50.820	ppb	1.032	249228	50	101.6	90	110	
Th	232	3	193	51.018	ppb	1.667	253702	50	102.0	90	110	
U	238	3	193	51.563	ppb	0.734	266970	50	103.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4377395	1.07	4299393	101.81	60	120	
Sc (IS)	45	3	HMI He	681432	1.31	674661	101.00	60	120	
Ge Internal standard	72	2	HMI H2	2336467	0.65	2269722	102.94	60	120	
Ge Internal standard	72	3	HMI He	759584	1.77	739017	102.78	60	120	
In Internal Standard	115	3	HMI He	2684977	1.23	2543041	105.58	60	120	
Ir (IS)	193	3	HMI He	5503329	0.99	5570851	98.79	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	094_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:14:15-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	-87718.4	2	0.5	
Na	23	3	45	71.706	ppb	72.7	45735	25	>RL
Mg	24	3	45	1.870	ppb	80.1	304	25	
Al	27	3	45	21.548	ppb	18.1	694	15	>RL
K	39	3	45	-40.416	ppb	-133.2	22471	50	
V	51	3	72	0.230	ppb	32.4	366	1	
Cr	52	3	72	-0.975	ppb	-22.1	1153	1	
Mn	55	3	72	-0.920	ppb	-7.2	178	0.5	
Co	59	3	72	-0.010	ppb	-82.0	30	0.5	
Ni	60	3	72	-0.199	ppb	-47.9	143	1	
Cu	63	3	72	-0.184	ppb	-35.3	410	1	
Zn	66	3	72	1.643	ppb	64.4	516	5	
As	75	3	72	0.088	ppb	223.9	58	1	
Se	78	2	72	0.070	ppb	91.4	6	1	
(Se)	78	3	72	-0.571	ppb	-99.6	12	1	
Sr	88	3	72	0.044	ppb	59.3	47	0.5	
Mo	95	3	115	0.558	ppb	60.8	433	0.5	>RL
Ag	107	3	115	-0.003	ppb	-129.0	20	1	
Cd	111	3	115	0.010	ppb	12.7	5	0.5	
Sn	120	3	115	-0.399	ppb	-23.1	431	1	
Sb	121	3	115	0.004	ppb	544.6	85	0.6	
Ba	137	3	115	0.017	ppb	403.1	63	0.5	
Tl	205	3	193	-0.062	ppb	-11.3	197	0.1	
(Pb)	206	3	193	-0.043	ppb	-16.0	143	1	
(Pb)	207	3	193	-0.042	ppb	-107.5	385	1	
Pb	208	3	193	-0.035	ppb	-38.5	886	0.5	
Th	232	3	193	1.090	ppb	73.7	11031	1	>RL
U	238	3	193	-0.015	ppb	-39.0	1768	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4592613	4.18	4299393	106.82	60	120	
Sc (IS)	45	3	HMI He	790794	5.75	674661	117.21	60	120	
Ge Internal standard	72	2	HMI H2	2472458	7.48	2269722	108.93	60	120	
Ge Internal standard	72	3	HMI He	906005	9.91	739017	122.60	60	120	IS Failed
In Internal Standard	115	3	HMI He	3093887	7.37	2543041	121.66	60	120	IS Failed
Ir (IS)	193	3	HMI He	6539953	7.65	5570851	117.40	60	120	

Sample Report

Sample Table

Sample Name	280-171417-h-3-c@50 PDS
Data File Name	095SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:18:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 20602
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	197.367	ppb	197.367	2.24	11075	2000	
Na	23	3	45	21062.633	ppb	21062.633	2.28	2729401	400000	
Mg	24	3	45	2034.774	ppb	2034.774	3.78	138672	400000	
Al	27	3	45	2016.867	ppb	2016.867	2.47	48920	400000	
K	39	3	45	2158.059	ppb	2158.059	1.54	131209	400000	
Ca	40	2	45	2226.527	ppb	2226.527	1.90	1341356	400000	
V	51	3	72	199.958	ppb	199.958	4.15	128859	2000	
Cr	52	3	72	197.358	ppb	197.358	3.87	165170	5000	
Mn	55	3	72	203.071	ppb	203.071	2.81	88835	10000	
Fe	56	2	72	28.604	ppb	28.604	2.48	55550	10000	
Co	59	3	72	195.515	ppb	195.515	2.59	262895	2000	
Ni	60	3	72	191.786	ppb	191.786	3.01	72106	5000	
Cu	63	3	72	199.758	ppb	199.758	2.62	201856	5000	
Zn	66	3	72	211.870	ppb	211.870	2.36	36894	5000	
As	75	3	72	197.013	ppb	197.013	3.83	23510	2000	
Se	78	2	72	197.504	ppb	197.504	1.39	12078	2000	
(Se)	78	3	72	197.536	ppb	197.536	2.16	1476	2000	
Sr	88	3	72	212.376	ppb	212.376	2.80	118194	4000	
Mo	95	3	115	199.100	ppb	199.100	2.77	104765	2000	
Ag	107	3	115	50.118	ppb	50.118	1.95	86772	100	
Cd	111	3	115	197.180	ppb	197.180	1.99	49660	2000	
Sn	120	3	115	202.445	ppb	202.445	1.68	150567	2000	
Sb	121	3	115	205.342	ppb	205.342	1.96	154455	1000	
Ba	137	3	115	218.353	ppb	218.353	3.03	51777	5000	
Tl	205	3	193	202.166	ppb	202.166	0.25	710879	2000	
(Pb)	206	3	193	205.437	ppb	205.437	1.12	241231	100	
(Pb)	207	3	193	203.118	ppb	203.118	0.59	210389	100	
Pb	208	3	193	204.175	ppb	204.175	0.83	965958	5000	
Th	232	3	193	227.550	ppb	227.550	2.21	1080823	2000	
U	238	3	193	215.739	ppb	215.739	2.48	1075726	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4320895	1.02	4299393	100.50	60	120	
Sc (IS)	45	3	HMI He	666946	1.23	674661	98.86	60	120	
Ge Internal standard	72	2	HMI H2	2340204	2.40	2269722	103.11	60	120	
Ge Internal standard	72	3	HMI He	761841	3.01	739017	103.09	60	120	
In Internal Standard	115	3	HMI He	2543566	1.74	2543041	100.02	60	120	
Ir (IS)	193	3	HMI He	5323503	0.18	5570851	95.56	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-D
Data File Name	096SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:22:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	171.20	3	2000	
Na	23	3	45	33373.950	ppb	33373.950	1.98	4133960	400000	
Mg	24	3	45	13381.916	ppb	13381.916	2.05	874620	400000	
Al	27	3	45	36.019	ppb	36.019	7.20	901	400000	
K	39	3	45	2199.526	ppb	2199.526	2.29	127936	400000	
Ca	40	2	45	49275.464	ppb	49275.464	1.86	29319071	400000	
V	51	3	72	0.913	ppb	0.913	5.13	733	2000	
Cr	52	3	72	0.198	ppb	0.198	17.09	1904	5000	
Mn	55	3	72	14.168	ppb	14.168	3.78	6542	10000	
Fe	56	2	72	30.350	ppb	30.350	2.77	58210	10000	
Co	59	3	72	0.070	ppb	0.070	33.77	130	2000	
Ni	60	3	72	0.564	ppb	0.564	20.42	396	5000	
Cu	63	3	72	6.493	ppb	6.493	3.66	6900	5000	
Zn	66	3	72	12.814	ppb	12.814	5.83	2322	5000	
As	75	3	72	0.454	ppb	0.454	33.39	90	2000	
Se	78	2	72	0.293	ppb	0.293	23.85	19	2000	
(Se)	78	3	72	0.922	ppb	0.922	82.64	20	2000	
Sr	88	3	72	137.329	ppb	137.329	3.24	74523	4000	
Mo	95	3	115	22.193	ppb	22.193	1.51	11329	2000	
Ag	107	3	115	0.000	ppb	0.000	1229.81	22	100	
Cd	111	3	115	0.268	ppb	0.268	38.12	67	2000	
Sn	120	3	115	0.440	ppb	0.440	19.84	946	2000	
Sb	121	3	115	0.276	ppb	0.276	18.48	265	1000	
Ba	137	3	115	57.813	ppb	57.813	0.68	13277	5000	
Tl	205	3	193	-0.052	ppb	-0.052	-30.02	192	2000	
(Pb)	206	3	193	0.101	ppb	0.101	45.20	280	100	
(Pb)	207	3	193	0.086	ppb	0.086	68.90	438	100	
Pb	208	3	193	0.080	ppb	0.080	2.44	1243	5000	
Th	232	3	193	0.561	ppb	0.561	22.23	6542	2000	
U	238	3	193	47.576	ppb	47.576	2.13	233677	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4301636	0.11	4299393	100.05	60	120	
Sc (IS)	45	3	HMI He	639997	0.53	674661	94.86	60	120	
Ge Internal standard	72	2	HMI H2	2337493	2.13	2269722	102.99	60	120	
Ge Internal standard	72	3	HMI He	742759	2.70	739017	100.51	60	120	
In Internal Standard	115	3	HMI He	2456197	0.26	2543041	96.59	60	120	
Ir (IS)	193	3	HMI He	5218714	1.10	5570851	93.68	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-E MS
Data File Name	097SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.170	ppb	39.170	5.12	2187	2000	
Na	23	3	45	34413.261	ppb	34413.261	0.40	4286343	400000	
Mg	24	3	45	14402.576	ppb	14402.576	2.25	946598	400000	
Al	27	3	45	861.064	ppb	861.064	3.60	20191	400000	
K	39	3	45	3043.035	ppb	3043.035	1.60	170198	400000	
Ca	40	2	45	50824.002	ppb	50824.002	1.13	29138536	400000	
V	51	3	72	41.322	ppb	41.322	2.55	25883	2000	
Cr	52	3	72	40.406	ppb	40.406	1.35	34083	5000	
Mn	55	3	72	54.943	ppb	54.943	1.69	23632	10000	
Fe	56	2	72	896.029	ppb	896.029	0.93	1350230	10000	
Co	59	3	72	39.947	ppb	39.947	1.10	51974	2000	
Ni	60	3	72	39.432	ppb	39.432	0.74	14489	5000	
Cu	63	3	72	45.612	ppb	45.612	2.48	44967	5000	
Zn	66	3	72	53.073	ppb	53.073	4.96	9052	5000	
As	75	3	72	41.198	ppb	41.198	4.55	4783	2000	
Se	78	2	72	40.576	ppb	40.576	5.11	2385	2000	
(Se)	78	3	72	38.871	ppb	38.871	11.97	292	2000	
Sr	88	3	72	224.164	ppb	224.164	0.87	120651	4000	
Mo	95	3	115	62.704	ppb	62.704	1.18	32336	2000	
Ag	107	3	115	40.297	ppb	40.297	0.44	68292	100	
Cd	111	3	115	40.130	ppb	40.130	1.23	9894	2000	
Sn	120	3	115	41.598	ppb	41.598	0.87	30788	2000	
Sb	121	3	115	41.340	ppb	41.340	1.51	30490	1000	
Ba	137	3	115	99.803	ppb	99.803	1.51	23194	5000	
Tl	205	3	193	41.233	ppb	41.233	1.23	143568	2000	
(Pb)	206	3	193	41.186	ppb	41.186	1.86	47928	100	
(Pb)	207	3	193	40.911	ppb	40.911	0.52	42161	100	
Pb	208	3	193	40.931	ppb	40.931	0.68	192071	5000	
Th	232	3	193	42.543	ppb	42.543	2.04	202900	2000	
U	238	3	193	89.095	ppb	89.095	0.62	439889	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4145053	1.40	4299393	96.41	60	120	
Sc (IS)	45	3	HMI He	643638	1.12	674661	95.40	60	120	
Ge Internal standard	72	2	HMI H2	2249123	1.42	2269722	99.09	60	120	
Ge Internal standard	72	3	HMI He	736413	0.97	739017	99.65	60	120	
In Internal Standard	115	3	HMI He	2489132	0.43	2543041	97.88	60	120	
Ir (IS)	193	3	HMI He	5260881	1.13	5570851	94.44	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-F MSD
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:28:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.768	ppb	37.768	4.21	2086	2000	
Na	23	3	45	34530.388	ppb	34530.388	1.84	4376561	400000	
Mg	24	3	45	14554.102	ppb	14554.102	2.79	973945	400000	
Al	27	3	45	859.342	ppb	859.342	5.92	20492	400000	
K	39	3	45	3083.869	ppb	3083.869	3.57	175231	400000	
Ca	40	2	45	52047.874	ppb	52047.874	1.74	29690185	400000	
V	51	3	72	41.428	ppb	41.428	1.42	26699	2000	
Cr	52	3	72	40.331	ppb	40.331	1.10	34995	5000	
Mn	55	3	72	54.884	ppb	54.884	2.34	24287	10000	
Fe	56	2	72	873.859	ppb	873.859	2.84	1298787	10000	
Co	59	3	72	39.512	ppb	39.512	0.97	52877	2000	
Ni	60	3	72	40.096	ppb	40.096	2.42	15146	5000	
Cu	63	3	72	45.420	ppb	45.420	0.99	46069	5000	
Zn	66	3	72	52.071	ppb	52.071	2.73	9142	5000	
As	75	3	72	40.232	ppb	40.232	2.19	4808	2000	
Se	78	2	72	40.905	ppb	40.905	2.41	2372	2000	
(Se)	78	3	72	31.663	ppb	31.663	20.87	247	2000	
Sr	88	3	72	225.343	ppb	225.343	0.47	124766	4000	
Mo	95	3	115	63.504	ppb	63.504	1.68	33122	2000	
Ag	107	3	115	40.779	ppb	40.779	2.51	69899	100	
Cd	111	3	115	40.922	ppb	40.922	1.65	10204	2000	
Sn	120	3	115	41.467	ppb	41.467	2.42	31044	2000	
Sb	121	3	115	42.099	ppb	42.099	1.78	31401	1000	
Ba	137	3	115	102.383	ppb	102.383	2.46	24063	5000	
Tl	205	3	193	41.007	ppb	41.007	2.17	146692	2000	
(Pb)	206	3	193	41.137	ppb	41.137	3.09	49177	100	
(Pb)	207	3	193	40.642	ppb	40.642	1.62	43028	100	
Pb	208	3	193	40.799	ppb	40.799	2.55	196689	5000	
Th	232	3	193	42.294	ppb	42.294	1.40	207280	2000	
U	238	3	193	90.071	ppb	90.071	2.85	456862	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4124860	1.74	4299393	95.94	60	120	
Sc (IS)	45	3	HMI He	655253	3.50	674661	97.12	60	120	
Ge Internal standard	72	2	HMI H2	2217995	0.80	2269722	97.72	60	120	
Ge Internal standard	72	3	HMI He	757499	2.50	739017	102.50	60	120	
In Internal Standard	115	3	HMI He	2517373	0.67	2543041	98.99	60	120	
Ir (IS)	193	3	HMI He	5405124	1.02	5570851	97.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	099_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:30:17-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.275	ppb	5.189	2844	50	98.5	90	110	
Na	23	3	45	50084.598	ppb	4.065	6609484	51000	98.2	90	110	
Mg	24	3	45	10918.513	ppb	5.042	762008	11000	99.3	90	110	
Al	27	3	45	1007.668	ppb	2.652	25084	1000	100.8	90	110	
K	39	3	45	10581.992	ppb	2.748	575015	11000	96.2	90	110	
Ca	40	2	45	11032.541	ppb	1.508	6711698	11000	100.3	90	110	
V	51	3	72	51.583	ppb	2.935	32785	50	103.2	90	110	
Cr	52	3	72	51.237	ppb	3.032	43431	50	102.5	90	110	
Mn	55	3	72	51.100	ppb	2.849	22369	50	102.2	90	110	
Fe	56	2	72	1080.083	ppb	3.628	1642736	1000	108.0	90	110	
Co	59	3	72	50.454	ppb	2.064	66680	50	100.9	90	110	
Ni	60	3	72	49.669	ppb	2.050	18490	50	99.3	90	110	
Cu	63	3	72	50.614	ppb	2.432	50637	50	101.2	90	110	
Zn	66	3	72	51.688	ppb	2.317	8962	50	103.4	90	110	
As	75	3	72	54.377	ppb	2.916	6403	50	108.8	90	110	
Se	78	2	72	51.457	ppb	0.890	3059	50	102.9	90	110	
(Se)	78	3	72	47.996	ppb	14.306	363	50	96.0	90	110	
Sr	88	3	72	103.753	ppb	1.572	56745	100	103.8	90	110	
Mo	95	3	115	49.395	ppb	2.541	26493	50	98.8	90	110	
Ag	107	3	115	49.127	ppb	1.584	86550	50	98.3	90	110	
Cd	111	3	115	49.943	ppb	1.077	12801	50	99.9	90	110	
Sn	120	3	115	50.255	ppb	1.357	38533	50	100.5	90	110	
Sb	121	3	115	50.692	ppb	2.022	38850	50	101.4	90	110	
Ba	137	3	115	51.255	ppb	0.610	12408	50	102.5	90	110	
Tl	205	3	193	51.246	ppb	2.411	183778	50	102.5	90	110	
(Pb)	206	3	193	51.274	ppb	2.396	61439	50	102.5	90	110	
(Pb)	207	3	193	50.683	ppb	3.124	53727	50	101.4	90	110	
Pb	208	3	193	50.892	ppb	2.274	245864	50	101.8	90	110	
Th	232	3	193	51.973	ppb	2.562	254530	50	103.9	90	110	
U	238	3	193	52.014	ppb	3.142	265247	50	104.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4392384	1.43	4299393	102.16	60	120	
Sc (IS)	45	3	HMI He	683695	2.29	674661	101.34	60	120	
Ge Internal standard	72	2	HMI H2	2274266	2.86	2269722	100.20	60	120	
Ge Internal standard	72	3	HMI He	748301	2.24	739017	101.26	60	120	
In Internal Standard	115	3	HMI He	2588142	1.61	2543041	101.77	60	120	
Ir (IS)	193	3	HMI He	5422485	1.86	5570851	97.34	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	100_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:32:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.001	ppb	9908.4	2	0.5	
Na	23	3	45	49.750	ppb	11.0	35992	25	>RL
Mg	24	3	45	1.539	ppb	42.7	234	25	
Al	27	3	45	7.973	ppb	7.8	260	15	
K	39	3	45	2.531	ppb	942.2	21271	50	
V	51	3	72	0.437	ppb	6.9	431	1	
Cr	52	3	72	-0.258	ppb	-0.8	1531	1	
Mn	55	3	72	-0.760	ppb	-16.7	215	0.5	
Co	59	3	72	-0.006	ppb	-101.0	30	0.5	
Ni	60	3	72	-0.024	ppb	-449.2	182	1	
Cu	63	3	72	-0.069	ppb	-53.1	451	1	
Zn	66	3	72	1.029	ppb	6.1	330	5	
As	75	3	72	0.085	ppb	101.5	47	1	
Se	78	2	72	0.056	ppb	91.8	5	1	
(Se)	78	3	72	0.223	ppb	18.6	15	1	
Sr	88	3	72	0.034	ppb	40.7	33	0.5	
Mo	95	3	115	0.032	ppb	133.4	75	0.5	
Ag	107	3	115	0.006	ppb	24.8	33	1	
Cd	111	3	115	0.007	ppb	171.4	3	0.5	
Sn	120	3	115	-0.012	ppb	-551.8	658	1	
Sb	121	3	115	0.061	ppb	48.3	115	0.6	
Ba	137	3	115	-0.017	ppb	-212.6	45	0.5	
Tl	205	3	193	-0.053	ppb	-15.7	198	0.1	
(Pb)	206	3	193	-0.018	ppb	-118.9	152	1	
(Pb)	207	3	193	0.005	ppb	833.1	378	1	
Pb	208	3	193	-0.018	ppb	-123.9	836	0.5	
Th	232	3	193	0.348	ppb	16.0	5890	1	
U	238	3	193	0.019	ppb	22.8	1676	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4286711	0.36	4299393	99.71	60	120	
Sc (IS)	45	3	HMI He	668961	2.22	674661	99.16	60	120	
Ge Internal standard	72	2	HMI H2	2269342	0.19	2269722	99.98	60	120	
Ge Internal standard	72	3	HMI He	740348	2.00	739017	100.18	60	120	
In Internal Standard	115	3	HMI He	2594639	0.47	2543041	102.03	60	120	
Ir (IS)	193	3	HMI He	5542533	2.65	5570851	99.49	60	120	

Sample Report

Sample Table

Sample Name	280-171306-E-5-F
Data File Name	101SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:34:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	-34473.89	2	2000	
Na	23	3	45	141.699	ppb	141.699	1.11	47788	400000	
Mg	24	3	45	6.808	ppb	6.808	15.90	594	400000	
Al	27	3	45	5.929	ppb	5.929	37.25	210	400000	
K	39	3	45	36.138	ppb	36.138	134.00	22992	400000	
Ca	40	2	45	42.450	ppb	42.450	3.12	37073	400000	
V	51	3	72	0.580	ppb	0.580	8.68	531	2000	
Cr	52	3	72	0.254	ppb	0.254	18.82	1979	5000	
Mn	55	3	72	-0.338	ppb	-0.338	-19.23	400	10000	
Fe	56	2	72	8.317	ppb	8.317	4.33	23737	10000	
Co	59	3	72	-0.001	ppb	-0.001	-1224.80	38	2000	
Ni	60	3	72	0.066	ppb	0.066	154.23	218	5000	
Cu	63	3	72	0.073	ppb	0.073	33.69	601	5000	
Zn	66	3	72	1.933	ppb	1.933	10.81	491	5000	
As	75	3	72	0.120	ppb	0.120	81.23	52	2000	
Se	78	2	72	0.033	ppb	0.033	154.11	3	2000	
(Se)	78	3	72	-0.267	ppb	-0.267	-393.29	12	2000	
Sr	88	3	72	0.281	ppb	0.281	8.64	170	4000	
Mo	95	3	115	0.088	ppb	0.088	44.14	105	2000	
Ag	107	3	115	0.003	ppb	0.003	50.02	28	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	0.031	ppb	0.031	292.12	690	2000	
Sb	121	3	115	0.070	ppb	0.070	60.74	122	1000	
Ba	137	3	115	0.237	ppb	0.237	24.30	107	5000	
Tl	205	3	193	-0.069	ppb	-0.069	-11.81	143	2000	
(Pb)	206	3	193	-0.013	ppb	-0.013	-166.89	158	100	
(Pb)	207	3	193	-0.015	ppb	-0.015	-111.26	356	100	
Pb	208	3	193	-0.027	ppb	-0.027	-20.60	790	5000	
Th	232	3	193	0.154	ppb	0.154	33.55	4930	2000	
U	238	3	193	0.011	ppb	0.011	96.99	1631	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4375667	1.57	4299393	101.77	60	120	
Sc (IS)	45	3	HMI He	668563	0.61	674661	99.10	60	120	
Ge Internal standard	72	2	HMI H2	2314345	1.44	2269722	101.97	60	120	
Ge Internal standard	72	3	HMI He	754125	0.42	739017	102.04	60	120	
In Internal Standard	115	3	HMI He	2594557	1.36	2543041	102.03	60	120	
Ir (IS)	193	3	HMI He	5530596	0.33	5570851	99.28	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-1-C
Data File Name	102SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:36:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	172.95	3	2000	
Na	23	3	45	988057.580	ppb	988057.580	2.97	136891710	400000	
Mg	24	3	45	304012.097	ppb	304012.097	3.28	22368853	400000	
Al	27	3	45	8.116	ppb	8.116	12.61	284	400000	
K	39	3	45	14689.855	ppb	14689.855	3.00	832768	400000	
Ca	40	2	45	530885.188	ppb	530885.188	1.30	326818580	400000	
V	51	3	72	0.458	ppb	0.458	14.92	476	2000	
Cr	52	3	72	0.517	ppb	0.517	12.48	2307	5000	
Mn	55	3	72	20.166	ppb	20.166	2.97	9700	10000	
Fe	56	2	72	10.021	ppb	10.021	5.55	26723	10000	
Co	59	3	72	0.090	ppb	0.090	30.21	167	2000	
Ni	60	3	72	1.515	ppb	1.515	12.91	795	5000	
Cu	63	3	72	1.156	ppb	1.156	7.97	1769	5000	
Zn	66	3	72	3.323	ppb	3.323	15.11	768	5000	
As	75	3	72	0.446	ppb	0.446	45.17	95	2000	
Se	78	2	72	2293.420	ppb	2293.420	1.56	140624	2000	
(Se)	78	3	72	2170.427	ppb	2170.427	3.64	16724	2000	
Sr	88	3	72	9245.883	ppb	9245.883	1.26	5357098	4000	
Mo	95	3	115	1.001	ppb	1.001	5.50	596	2000	
Ag	107	3	115	0.004	ppb	0.004	128.13	30	100	
Cd	111	3	115	0.045	ppb	0.045	88.04	13	2000	
Sn	120	3	115	0.224	ppb	0.224	29.91	838	2000	
Sb	121	3	115	0.143	ppb	0.143	13.81	178	1000	
Ba	137	3	115	11.499	ppb	11.499	6.16	2836	5000	
Tl	205	3	193	-0.047	ppb	-0.047	-15.64	218	2000	
(Pb)	206	3	193	0.020	ppb	0.020	60.10	193	100	
(Pb)	207	3	193	0.027	ppb	0.027	87.30	391	100	
Pb	208	3	193	0.011	ppb	0.011	88.82	958	5000	
Th	232	3	193	0.122	ppb	0.122	17.80	4657	2000	
U	238	3	193	188.095	ppb	188.095	0.87	951421	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4452800	1.88	4299393	103.57	60	120	
Sc (IS)	45	3	HMI He	720836	2.28	674661	106.84	60	120	
Ge Internal standard	72	2	HMI H2	2346835	1.64	2269722	103.40	60	120	
Ge Internal standard	72	3	HMI He	792905	2.05	739017	107.29	60	120	
In Internal Standard	115	3	HMI He	2602174	1.48	2543041	102.33	60	120	
Ir (IS)	193	3	HMI He	5399341	0.88	5570851	96.92	60	120	

Sample Report

Sample Table

Sample Name	280-171307-E-2-C
Data File Name	103SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:38:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.028	ppb	0.028	348.42	3	2000	
Na	23	3	45	955309.974	ppb	955309.974	3.03	137079715	400000	
Mg	24	3	45	298467.482	ppb	298467.482	2.66	22746998	400000	
Al	27	3	45	7.343	ppb	7.343	32.91	274	400000	
K	39	3	45	14516.505	ppb	14516.505	3.18	852554	400000	
Ca	40	2	45	523832.421	ppb	523832.421	2.25	331451527	400000	
V	51	3	72	0.527	ppb	0.527	22.52	531	2000	
Cr	52	3	72	0.444	ppb	0.444	10.35	2284	5000	
Mn	55	3	72	22.403	ppb	22.403	0.79	10901	10000	
Fe	56	2	72	10.891	ppb	10.891	5.36	28739	10000	
Co	59	3	72	0.075	ppb	0.075	14.26	148	2000	
Ni	60	3	72	1.647	ppb	1.647	4.13	861	5000	
Cu	63	3	72	1.217	ppb	1.217	3.31	1864	5000	
Zn	66	3	72	5.615	ppb	5.615	8.74	1201	5000	
As	75	3	72	0.460	ppb	0.460	33.75	98	2000	
Se	78	2	72	2231.289	ppb	2231.289	2.45	140013	2000	
(Se)	78	3	72	2199.023	ppb	2199.023	4.37	17239	2000	
Sr	88	3	72	9343.178	ppb	9343.178	4.22	5505598	4000	
Mo	95	3	115	1.071	ppb	1.071	7.20	651	2000	
Ag	107	3	115	0.006	ppb	0.006	124.07	33	100	
Cd	111	3	115	0.000	ppb	0.000	-3581.08	2	2000	
Sn	120	3	115	0.210	ppb	0.210	57.69	848	2000	
Sb	121	3	115	0.138	ppb	0.138	48.78	178	1000	
Ba	137	3	115	11.953	ppb	11.953	6.41	3024	5000	
Tl	205	3	193	-0.054	ppb	-0.054	-10.92	190	2000	
(Pb)	206	3	193	0.032	ppb	0.032	42.85	205	100	
(Pb)	207	3	193	0.027	ppb	0.027	312.08	386	100	
Pb	208	3	193	0.021	ppb	0.021	130.57	991	5000	
Th	232	3	193	0.072	ppb	0.072	38.90	4370	2000	
U	238	3	193	186.707	ppb	186.707	3.92	933645	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4576841	2.19	4299393	106.45	60	120	
Sc (IS)	45	3	HMI He	746681	2.67	674661	110.67	60	120	
Ge Internal standard	72	2	HMI H2	2401954	1.67	2269722	105.83	60	120	
Ge Internal standard	72	3	HMI He	806637	1.53	739017	109.15	60	120	
In Internal Standard	115	3	HMI He	2669425	2.57	2543041	104.97	60	120	
Ir (IS)	193	3	HMI He	5339753	1.52	5570851	95.85	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-4-E
Data File Name	104SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:40:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-3229.34	2	2000	
Na	23	3	45	1027755.110	ppb	1027755.110	3.74	146879863	400000	
Mg	24	3	45	254215.900	ppb	254215.900	2.64	19301228	400000	
Al	27	3	45	6.709	ppb	6.709	37.84	254	400000	
K	39	3	45	12047.245	ppb	12047.245	2.56	709126	400000	
Ca	40	2	45	339579.833	ppb	339579.833	1.00	220446909	400000	
V	51	3	72	0.565	ppb	0.565	4.52	568	2000	
Cr	52	3	72	-0.007	ppb	-0.007	-884.33	1923	5000	
Mn	55	3	72	189.061	ppb	189.061	0.49	89237	10000	
Fe	56	2	72	4.859	ppb	4.859	11.22	19827	10000	
Co	59	3	72	0.207	ppb	0.207	18.83	343	2000	
Ni	60	3	72	3.879	ppb	3.879	2.44	1779	5000	
Cu	63	3	72	2.095	ppb	2.095	10.11	2851	5000	
Zn	66	3	72	3.075	ppb	3.075	18.66	748	5000	
As	75	3	72	0.578	ppb	0.578	32.17	115	2000	
Se	78	2	72	240.854	ppb	240.854	1.06	15684	2000	
(Se)	78	3	72	234.719	ppb	234.719	6.71	1886	2000	
Sr	88	3	72	6806.285	ppb	6806.285	2.16	4083929	4000	
Mo	95	3	115	2.735	ppb	2.735	5.06	1574	2000	
Ag	107	3	115	0.006	ppb	0.006	114.45	33	100	
Cd	111	3	115	0.038	ppb	0.038	59.10	12	2000	
Sn	120	3	115	0.078	ppb	0.078	219.33	748	2000	
Sb	121	3	115	0.152	ppb	0.152	37.08	190	1000	
Ba	137	3	115	11.225	ppb	11.225	2.28	2852	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-33.42	177	2000	
(Pb)	206	3	193	0.047	ppb	0.047	63.50	223	100	
(Pb)	207	3	193	-0.004	ppb	-0.004	-1926.16	355	100	
Pb	208	3	193	0.025	ppb	0.025	19.80	1013	5000	
Th	232	3	193	0.088	ppb	0.088	19.26	4447	2000	
U	238	3	193	121.889	ppb	121.889	2.23	610271	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4695270	2.75	4299393	109.21	60	120	
Sc (IS)	45	3	HMI He	743865	3.31	674661	110.26	60	120	
Ge Internal standard	72	2	HMI H2	2491984	1.66	2269722	109.79	60	120	
Ge Internal standard	72	3	HMI He	821218	1.73	739017	111.12	60	120	
In Internal Standard	115	3	HMI He	2678996	2.09	2543041	105.35	60	120	
Ir (IS)	193	3	HMI He	5340601	1.28	5570851	95.87	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-8-E
Data File Name	105SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:42:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-3486.04	2	2000	
Na	23	3	45	2266124.120	ppb	2266124.120	1.69	326162167	400000	>LDR
Mg	24	3	45	260506.013	ppb	260506.013	1.31	19914875	400000	
Al	27	3	45	17.504	ppb	17.504	6.03	551	400000	
K	39	3	45	14569.078	ppb	14569.078	1.05	858251	400000	
Ca	40	2	45	216107.006	ppb	216107.006	1.38	138237569	400000	
V	51	3	72	0.428	ppb	0.428	18.33	475	2000	
Cr	52	3	72	0.164	ppb	0.164	79.23	2082	5000	
Mn	55	3	72	83.067	ppb	83.067	2.48	39702	10000	
Fe	56	2	72	7.605	ppb	7.605	6.65	23727	10000	
Co	59	3	72	5.621	ppb	5.621	5.55	8222	2000	
Ni	60	3	72	12.102	ppb	12.102	2.53	5127	5000	
Cu	63	3	72	0.432	ppb	0.432	9.67	1050	5000	
Zn	66	3	72	4.721	ppb	4.721	11.28	1060	5000	
As	75	3	72	0.565	ppb	0.565	51.93	113	2000	
Se	78	2	72	10.286	ppb	10.286	2.71	653	2000	
(Se)	78	3	72	11.883	ppb	11.883	15.86	110	2000	
Sr	88	3	72	7567.904	ppb	7567.904	1.76	4560802	4000	
Mo	95	3	115	5.281	ppb	5.281	3.67	3004	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-62.44	18	100	
Cd	111	3	115	0.025	ppb	0.025	115.31	8	2000	
Sn	120	3	115	0.236	ppb	0.236	17.14	878	2000	
Sb	121	3	115	0.986	ppb	0.986	5.49	856	1000	
Ba	137	3	115	12.388	ppb	12.388	2.04	3162	5000	
Tl	205	3	193	-0.036	ppb	-0.036	-9.99	247	2000	
(Pb)	206	3	193	0.081	ppb	0.081	43.13	257	100	
(Pb)	207	3	193	0.055	ppb	0.055	128.01	406	100	
Pb	208	3	193	0.060	ppb	0.060	64.08	1148	5000	
Th	232	3	193	0.061	ppb	0.061	54.98	4215	2000	
U	238	3	193	10.145	ppb	10.145	2.55	50954	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4626077	1.26	4299393	107.60	60	120	
Sc (IS)	45	3	HMI He	748712	1.34	674661	110.98	60	120	
Ge Internal standard	72	2	HMI H2	2424952	0.14	2269722	106.84	60	120	
Ge Internal standard	72	3	HMI He	824815	2.28	739017	111.61	60	120	
In Internal Standard	115	3	HMI He	2695629	0.47	2543041	106.00	60	120	
Ir (IS)	193	3	HMI He	5214723	1.59	5570851	93.61	60	120	

Sample Report

Sample Table

Sample Name	280-171307-C-9-E
Data File Name	106SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:44:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.050	ppb	0.050	156.49	5	2000	
Na	23	3	45	650.487	ppb	650.487	4.40	125345	400000	
Mg	24	3	45	28.989	ppb	28.989	12.58	2336	400000	
Al	27	3	45	8.546	ppb	8.546	39.54	304	400000	
K	39	3	45	70.511	ppb	70.511	60.62	27388	400000	
Ca	40	2	45	82.189	ppb	82.189	4.46	66158	400000	
V	51	3	72	0.571	ppb	0.571	16.61	560	2000	
Cr	52	3	72	0.083	ppb	0.083	187.83	1959	5000	
Mn	55	3	72	-0.486	ppb	-0.486	-18.56	358	10000	
Fe	56	2	72	15.279	ppb	15.279	5.08	37234	10000	
Co	59	3	72	0.013	ppb	0.013	56.15	60	2000	
Ni	60	3	72	0.240	ppb	0.240	42.26	302	5000	
Cu	63	3	72	0.041	ppb	0.041	56.04	606	5000	
Zn	66	3	72	6.039	ppb	6.039	8.27	1274	5000	
As	75	3	72	0.028	ppb	0.028	446.73	43	2000	
Se	78	2	72	0.345	ppb	0.345	24.82	24	2000	
(Se)	78	3	72	1.118	ppb	1.118	142.04	23	2000	
Sr	88	3	72	0.915	ppb	0.915	12.74	553	4000	
Mo	95	3	115	0.061	ppb	0.061	21.08	95	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-107.85	18	100	
Cd	111	3	115	0.000	ppb	0.000	-3026.53	2	2000	
Sn	120	3	115	0.283	ppb	0.283	29.85	925	2000	
Sb	121	3	115	0.108	ppb	0.108	31.34	158	1000	
Ba	137	3	115	0.165	ppb	0.165	3.87	93	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-9.04	132	2000	
(Pb)	206	3	193	0.001	ppb	0.001	1506.28	175	100	
(Pb)	207	3	193	0.048	ppb	0.048	16.52	423	100	
Pb	208	3	193	-0.002	ppb	-0.002	-715.27	915	5000	
Th	232	3	193	0.086	ppb	0.086	62.64	4590	2000	
U	238	3	193	0.012	ppb	0.012	20.10	1636	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4739561	2.93	4299393	110.24	60	120	
Sc (IS)	45	3	HMI He	740700	1.64	674661	109.79	60	120	
Ge Internal standard	72	2	HMI H2	2501523	2.56	2269722	110.21	60	120	
Ge Internal standard	72	3	HMI He	803479	0.81	739017	108.72	60	120	
In Internal Standard	115	3	HMI He	2721357	1.87	2543041	107.01	60	120	
Ir (IS)	193	3	HMI He	5523929	2.15	5570851	99.16	60	120	

Sample Report

Sample Table

Sample Name	280-171331-F-1-C
Data File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:46:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	35593.582	ppb	35593.582	1.24	4697191	400000	
Mg	24	3	45	15598.221	ppb	15598.221	2.16	1086876	400000	
Al	27	3	45	3.736	ppb	3.736	39.03	160	400000	
K	39	3	45	2133.031	ppb	2133.031	1.96	132877	400000	
Ca	40	2	45	38771.551	ppb	38771.551	2.05	23996216	400000	
V	51	3	72	1.872	ppb	1.872	4.50	1429	2000	
Cr	52	3	72	0.201	ppb	0.201	80.25	2041	5000	
Mn	55	3	72	906.564	ppb	906.564	2.13	412283	10000	
Fe	56	2	72	7.689	ppb	7.689	11.95	24322	10000	
Co	59	3	72	0.686	ppb	0.686	13.78	1005	2000	
Ni	60	3	72	1.778	ppb	1.778	13.33	901	5000	
Cu	63	3	72	0.811	ppb	0.811	11.30	1411	5000	
Zn	66	3	72	12.526	ppb	12.526	1.55	2437	5000	
As	75	3	72	0.485	ppb	0.485	6.42	100	2000	
Se	78	2	72	0.256	ppb	0.256	46.83	18	2000	
(Se)	78	3	72	1.802	ppb	1.802	19.75	28	2000	
Sr	88	3	72	392.649	ppb	392.649	1.82	228263	4000	
Mo	95	3	115	3.402	ppb	3.402	9.85	1898	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-412.67	20	100	
Cd	111	3	115	0.103	ppb	0.103	57.29	28	2000	
Sn	120	3	115	0.069	ppb	0.069	136.68	725	2000	
Sb	121	3	115	0.452	ppb	0.452	5.85	418	1000	
Ba	137	3	115	63.207	ppb	63.207	1.23	15448	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-9.82	182	2000	
(Pb)	206	3	193	0.210	ppb	0.210	20.61	418	100	
(Pb)	207	3	193	0.204	ppb	0.204	27.24	576	100	
Pb	208	3	193	0.211	ppb	0.211	10.15	1911	5000	
Th	232	3	193	0.052	ppb	0.052	37.83	4315	2000	
U	238	3	193	1.888	ppb	1.888	3.70	11048	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4474580	0.96	4299393	104.07	60	120	
Sc (IS)	45	3	HMI He	682175	2.06	674661	101.11	60	120	
Ge Internal standard	72	2	HMI H2	2469390	2.86	2269722	108.80	60	120	
Ge Internal standard	72	3	HMI He	795536	1.47	739017	107.65	60	120	
In Internal Standard	115	3	HMI He	2614760	0.55	2543041	102.82	60	120	
Ir (IS)	193	3	HMI He	5389041	1.13	5570851	96.74	60	120	

Sample Report

Sample Table

Sample Name	280-171348-A-3-B
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:48:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	333059.305	ppb	333059.305	1.17	44915891	400000	
Mg	24	3	45	111072.521	ppb	111072.521	0.80	7951729	400000	
Al	27	3	45	14.197	ppb	14.197	18.98	430	400000	
K	39	3	45	63861.246	ppb	63861.246	0.98	3448153	400000	
Ca	40	2	45	23652.147	ppb	23652.147	0.79	14712893	400000	
V	51	3	72	1.895	ppb	1.895	3.87	1476	2000	
Cr	52	3	72	2.487	ppb	2.487	3.26	4105	5000	
Mn	55	3	72	184.202	ppb	184.202	1.18	86042	10000	
Fe	56	2	72	167.089	ppb	167.089	0.85	277978	10000	
Co	59	3	72	0.607	ppb	0.607	6.05	913	2000	
Ni	60	3	72	6.689	ppb	6.689	2.70	2886	5000	
Cu	63	3	72	4.191	ppb	4.191	1.31	5077	5000	
Zn	66	3	72	22.041	ppb	22.041	5.98	4250	5000	
As	75	3	72	0.364	ppb	0.364	23.91	87	2000	
Se	78	2	72	0.550	ppb	0.550	24.04	36	2000	
(Se)	78	3	72	0.669	ppb	0.669	92.98	20	2000	
Sr	88	3	72	117.202	ppb	117.202	0.53	69611	4000	
Mo	95	3	115	0.315	ppb	0.315	33.73	230	2000	
Ag	107	3	115	0.056	ppb	0.056	21.29	123	100	
Cd	111	3	115	0.019	ppb	0.019	115.28	7	2000	
Sn	120	3	115	0.133	ppb	0.133	86.44	776	2000	
Sb	121	3	115	0.266	ppb	0.266	18.29	275	1000	
Ba	137	3	115	13.827	ppb	13.827	2.10	3432	5000	
Tl	205	3	193	-0.073	ppb	-0.073	-17.30	125	2000	
(Pb)	206	3	193	0.142	ppb	0.142	21.56	342	100	
(Pb)	207	3	193	0.146	ppb	0.146	46.89	520	100	
Pb	208	3	193	0.132	ppb	0.132	23.84	1546	5000	
Th	232	3	193	0.099	ppb	0.099	20.42	4584	2000	
U	238	3	193	0.032	ppb	0.032	50.50	1713	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4495771	2.20	4299393	104.57	60	120	
Sc (IS)	45	3	HMI He	701126	1.87	674661	103.92	60	120	
Ge Internal standard	72	2	HMI H2	2400547	1.32	2269722	105.76	60	120	
Ge Internal standard	72	3	HMI He	812491	0.75	739017	109.94	60	120	
In Internal Standard	115	3	HMI He	2625227	1.10	2543041	103.23	60	120	
Ir (IS)	193	3	HMI He	5443192	2.05	5570851	97.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	109_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:49:59-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.188	ppb	4.721	2907	50	100.4	90	110	
Na	23	3	45	49439.022	ppb	1.193	6640508	51000	96.9	90	110	
Mg	24	3	45	10544.169	ppb	2.669	748824	11000	95.9	90	110	
Al	27	3	45	1025.100	ppb	1.357	25967	1000	102.5	90	110	
K	39	3	45	10585.028	ppb	2.182	585208	11000	96.2	90	110	
Ca	40	2	45	11265.328	ppb	1.464	6882921	11000	102.4	90	110	
V	51	3	72	51.187	ppb	3.128	33686	50	102.4	90	110	
Cr	52	3	72	49.195	ppb	3.092	43252	50	98.4	90	110	
Mn	55	3	72	50.117	ppb	2.782	22724	50	100.2	90	110	
Fe	56	2	72	1062.245	ppb	0.774	1659958	1000	106.2	90	110	
Co	59	3	72	49.146	ppb	2.492	67254	50	98.3	90	110	
Ni	60	3	72	48.258	ppb	2.595	18607	50	96.5	90	110	
Cu	63	3	72	49.027	ppb	2.191	50811	50	98.1	90	110	
Zn	66	3	72	50.707	ppb	3.525	9107	50	101.4	90	110	
As	75	3	72	51.914	ppb	4.188	6330	50	103.8	90	110	
Se	78	2	72	51.030	ppb	4.434	3115	50	102.1	90	110	
(Se)	78	3	72	51.326	ppb	7.742	400	50	102.7	90	110	
Sr	88	3	72	103.630	ppb	3.506	58672	100	103.6	90	110	
Mo	95	3	115	48.590	ppb	1.944	26681	50	97.2	90	110	
Ag	107	3	115	48.042	ppb	0.741	86649	50	96.1	90	110	
Cd	111	3	115	49.026	ppb	0.717	12865	50	98.1	90	110	
Sn	120	3	115	50.560	ppb	2.099	39679	50	101.1	90	110	
Sb	121	3	115	49.946	ppb	2.925	39183	50	99.9	90	110	
Ba	137	3	115	51.801	ppb	2.264	12835	50	103.6	90	110	
Tl	205	3	193	51.949	ppb	1.700	184621	50	103.9	90	110	
(Pb)	206	3	193	51.787	ppb	0.691	61496	50	103.6	90	110	
(Pb)	207	3	193	51.405	ppb	1.234	54003	50	102.8	90	110	
Pb	208	3	193	51.709	ppb	1.203	247552	50	103.4	90	110	
Th	232	3	193	52.066	ppb	0.689	252697	50	104.1	90	110	
U	238	3	193	52.298	ppb	1.675	264316	50	104.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4411685	0.82	4299393	102.61	60	120	
Sc (IS)	45	3	HMI He	695597	2.16	674661	103.10	60	120	
Ge Internal standard	72	2	HMI H2	2335302	0.42	2269722	102.89	60	120	
Ge Internal standard	72	3	HMI He	774984	3.05	739017	104.87	60	120	
In Internal Standard	115	3	HMI He	2649309	0.98	2543041	104.18	60	120	
Ir (IS)	193	3	HMI He	5372755	1.16	5570851	96.44	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	110_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:51:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.001	ppb	4764.9	2	0.5	
Na	23	3	45	188.773	ppb	5.0	53993	25	>RL
Mg	24	3	45	8.654	ppb	16.4	721	25	
Al	27	3	45	5.358	ppb	11.6	197	15	
K	39	3	45	36.478	ppb	94.9	23069	50	
V	51	3	72	0.632	ppb	12.1	566	1	
Cr	52	3	72	-0.361	ppb	-16.7	1483	1	
Mn	55	3	72	-0.766	ppb	-1.8	217	0.5	
Co	59	3	72	-0.004	ppb	-304.8	33	0.5	
Ni	60	3	72	-0.196	ppb	-19.5	122	1	
Cu	63	3	72	-0.097	ppb	-64.3	435	1	
Zn	66	3	72	1.113	ppb	31.6	353	5	
As	75	3	72	-0.009	ppb	-949.7	37	1	
Se	78	2	72	0.168	ppb	82.9	11	1	
(Se)	78	3	72	1.077	ppb	95.8	22	1	>RL
Sr	88	3	72	0.171	ppb	30.3	110	0.5	
Mo	95	3	115	0.030	ppb	254.3	73	0.5	
Ag	107	3	115	0.001	ppb	1304.9	23	1	
Cd	111	3	115	0.007	ppb	170.5	3	0.5	
Sn	120	3	115	-0.138	ppb	-32.4	560	1	
Sb	121	3	115	0.084	ppb	51.8	132	0.6	
Ba	137	3	115	0.012	ppb	108.0	52	0.5	
Tl	205	3	193	-0.069	ppb	-9.2	142	0.1	
(Pb)	206	3	193	-0.020	ppb	-57.6	150	1	
(Pb)	207	3	193	-0.033	ppb	-94.4	337	1	
Pb	208	3	193	-0.026	ppb	-58.8	798	0.5	
Th	232	3	193	0.353	ppb	21.2	5913	1	
U	238	3	193	0.020	ppb	28.2	1679	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4339735	2.52	4299393	100.94	60	120	
Sc (IS)	45	3	HMI He	670715	2.21	674661	99.42	60	120	
Ge Internal standard	72	2	HMI H2	2294819	2.05	2269722	101.11	60	120	
Ge Internal standard	72	3	HMI He	757755	2.25	739017	102.54	60	120	
In Internal Standard	115	3	HMI He	2580049	0.23	2543041	101.46	60	120	
Ir (IS)	193	3	HMI He	5533834	0.80	5570851	99.34	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-1-E
Data File Name	111SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:53:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	329.31	3	2000	
Na	23	3	45	539600.695	ppb	539600.695	2.05	67504773	400000	
Mg	24	3	45	507.688	ppb	507.688	1.33	33851	400000	
Al	27	3	45	13.492	ppb	13.492	11.06	384	400000	
K	39	3	45	2666.078	ppb	2666.078	1.49	153272	400000	
Ca	40	2	45	2309.966	ppb	2309.966	3.25	1385970	400000	
V	51	3	72	0.646	ppb	0.646	22.72	575	2000	
Cr	52	3	72	-0.028	ppb	-0.028	-119.04	1754	5000	
Mn	55	3	72	5.852	ppb	5.852	1.28	3075	10000	
Fe	56	2	72	185.593	ppb	185.593	0.81	293914	10000	
Co	59	3	72	0.025	ppb	0.025	98.60	73	2000	
Ni	60	3	72	0.359	ppb	0.359	14.79	328	5000	
Cu	63	3	72	0.114	ppb	0.114	18.24	645	5000	
Zn	66	3	72	8.001	ppb	8.001	12.62	1538	5000	
As	75	3	72	0.175	ppb	0.175	72.85	58	2000	
Se	78	2	72	0.144	ppb	0.144	23.11	10	2000	
(Se)	78	3	72	2.887	ppb	2.887	60.29	35	2000	
Sr	88	3	72	485.047	ppb	485.047	2.45	268202	4000	
Mo	95	3	115	0.393	ppb	0.393	22.97	258	2000	
Ag	107	3	115	0.004	ppb	0.004	181.40	28	100	
Cd	111	3	115	0.007	ppb	0.007	164.92	3	2000	
Sn	120	3	115	0.057	ppb	0.057	269.08	683	2000	
Sb	121	3	115	0.090	ppb	0.090	41.56	132	1000	
Ba	137	3	115	536.312	ppb	536.312	0.75	124717	5000	
Tl	205	3	193	-0.075	ppb	-0.075	-9.99	117	2000	
(Pb)	206	3	193	0.005	ppb	0.005	183.47	175	100	
(Pb)	207	3	193	0.060	ppb	0.060	60.48	423	100	
Pb	208	3	193	0.034	ppb	0.034	30.11	1058	5000	
Th	232	3	193	0.148	ppb	0.148	16.11	4750	2000	
U	238	3	193	0.026	ppb	0.026	147.84	1659	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4304844	0.92	4299393	100.13	60	120	
Sc (IS)	45	3	HMI He	650601	1.41	674661	96.43	60	120	
Ge Internal standard	72	2	HMI H2	2294612	1.03	2269722	101.10	60	120	
Ge Internal standard	72	3	HMI He	756672	1.30	739017	102.39	60	120	
In Internal Standard	115	3	HMI He	2494997	0.38	2543041	98.11	60	120	
Ir (IS)	193	3	HMI He	5363184	0.87	5570851	96.27	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-2-C
Data File Name	112SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:55:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	16242.23	2	2000	
Na	23	3	45	466330.460	ppb	466330.460	4.22	60257508	400000	
Mg	24	3	45	552.729	ppb	552.729	1.91	38069	400000	
Al	27	3	45	10.359	ppb	10.359	18.03	320	400000	
K	39	3	45	1855.740	ppb	1855.740	4.22	116682	400000	
Ca	40	2	45	2634.094	ppb	2634.094	2.77	1568024	400000	
V	51	3	72	0.664	ppb	0.664	24.03	595	2000	
Cr	52	3	72	0.445	ppb	0.445	32.11	2176	5000	
Mn	55	3	72	9.396	ppb	9.396	3.65	4678	10000	
Fe	56	2	72	550.686	ppb	550.686	2.96	861626	10000	
Co	59	3	72	0.011	ppb	0.011	93.76	55	2000	
Ni	60	3	72	-0.055	ppb	-0.055	-197.32	177	5000	
Cu	63	3	72	-0.019	ppb	-0.019	-197.48	520	5000	
Zn	66	3	72	6.732	ppb	6.732	7.66	1339	5000	
As	75	3	72	0.487	ppb	0.487	54.77	97	2000	
Se	78	2	72	0.097	ppb	0.097	67.15	7	2000	
(Se)	78	3	72	1.020	ppb	1.020	144.63	22	2000	
Sr	88	3	72	416.376	ppb	416.376	2.23	233835	4000	
Mo	95	3	115	0.989	ppb	0.989	9.60	581	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-74.30	8	100	
Cd	111	3	115	0.007	ppb	0.007	167.74	3	2000	
Sn	120	3	115	-0.088	ppb	-0.088	-68.03	593	2000	
Sb	121	3	115	0.076	ppb	0.076	56.40	125	1000	
Ba	137	3	115	572.362	ppb	572.362	3.03	136574	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-7.44	130	2000	
(Pb)	206	3	193	0.006	ppb	0.006	491.75	177	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-153.88	355	100	
Pb	208	3	193	-0.005	ppb	-0.005	-362.70	876	5000	
Th	232	3	193	0.075	ppb	0.075	43.08	4420	2000	
U	238	3	193	0.042	ppb	0.042	71.51	1744	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4275070	1.20	4299393	99.43	60	120	
Sc (IS)	45	3	HMI He	672327	2.48	674661	99.65	60	120	
Ge Internal standard	72	2	HMI H2	2325072	3.05	2269722	102.44	60	120	
Ge Internal standard	72	3	HMI He	768632	2.34	739017	104.01	60	120	
In Internal Standard	115	3	HMI He	2561198	2.11	2543041	100.71	60	120	
Ir (IS)	193	3	HMI He	5382911	0.83	5570851	96.63	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C
Data File Name	113SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:57:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	166.21	3	2000	
Na	23	3	45	524134.241	ppb	524134.241	1.98	66621357	400000	
Mg	24	3	45	465.248	ppb	465.248	3.05	31523	400000	
Al	27	3	45	14.784	ppb	14.784	5.88	420	400000	
K	39	3	45	2209.616	ppb	2209.616	3.56	132624	400000	
Ca	40	2	45	2276.820	ppb	2276.820	2.06	1340705	400000	
V	51	3	72	0.706	ppb	0.706	10.85	616	2000	
Cr	52	3	72	0.247	ppb	0.247	49.25	1989	5000	
Mn	55	3	72	5.621	ppb	5.621	2.64	2989	10000	
Fe	56	2	72	408.144	ppb	408.144	2.33	641163	10000	
Co	59	3	72	0.048	ppb	0.048	44.57	103	2000	
Ni	60	3	72	0.039	ppb	0.039	129.01	210	5000	
Cu	63	3	72	0.378	ppb	0.378	24.06	913	5000	
Zn	66	3	72	8.370	ppb	8.370	4.61	1609	5000	
As	75	3	72	0.215	ppb	0.215	40.84	63	2000	
Se	78	2	72	0.131	ppb	0.131	16.43	9	2000	
(Se)	78	3	72	0.839	ppb	0.839	210.57	20	2000	
Sr	88	3	72	458.482	ppb	458.482	1.86	254681	4000	
Mo	95	3	115	0.436	ppb	0.436	17.63	285	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-57.46	12	100	
Cd	111	3	115	0.000	ppb	0.000	4986.28	2	2000	
Sn	120	3	115	-0.011	ppb	-0.011	-883.94	643	2000	
Sb	121	3	115	0.087	ppb	0.087	16.88	132	1000	
Ba	137	3	115	518.486	ppb	518.486	0.89	122407	5000	
Tl	205	3	193	-0.076	ppb	-0.076	-5.14	112	2000	
(Pb)	206	3	193	0.096	ppb	0.096	37.19	280	100	
(Pb)	207	3	193	0.066	ppb	0.066	43.78	426	100	
Pb	208	3	193	0.053	ppb	0.053	22.14	1143	5000	
Th	232	3	193	0.078	ppb	0.078	89.21	4382	2000	
U	238	3	193	-0.009	ppb	-0.009	-163.82	1469	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4224310	0.85	4299393	98.25	60	120	
Sc (IS)	45	3	HMI He	661031	1.52	674661	97.98	60	120	
Ge Internal standard	72	2	HMI H2	2323469	1.85	2269722	102.37	60	120	
Ge Internal standard	72	3	HMI He	760114	0.88	739017	102.85	60	120	
In Internal Standard	115	3	HMI He	2532837	0.50	2543041	99.60	60	120	
Ir (IS)	193	3	HMI He	5325857	1.78	5570851	95.60	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-Csd@5
Data File Name	114SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T15:59:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	109125.965	ppb	109125.965	2.86	13966683	400000	
Mg	24	3	45	111.410	ppb	111.410	3.22	7687	400000	
Al	27	3	45	11.210	ppb	11.210	17.14	337	400000	
K	39	3	45	480.746	ppb	480.746	8.79	45429	400000	
Ca	40	2	45	498.460	ppb	498.460	1.13	305865	400000	
V	51	3	72	0.846	ppb	0.846	14.44	701	2000	
Cr	52	3	72	0.151	ppb	0.151	72.84	1898	5000	
Mn	55	3	72	0.453	ppb	0.453	26.06	741	10000	
Fe	56	2	72	88.411	ppb	88.411	1.67	145963	10000	
Co	59	3	72	0.013	ppb	0.013	20.83	57	2000	
Ni	60	3	72	-0.159	ppb	-0.159	-61.80	135	5000	
Cu	63	3	72	0.065	ppb	0.065	27.59	595	5000	
Zn	66	3	72	3.274	ppb	3.274	11.20	723	5000	
As	75	3	72	0.093	ppb	0.093	276.33	48	2000	
Se	78	2	72	0.144	ppb	0.144	23.85	10	2000	
(Se)	78	3	72	0.407	ppb	0.407	191.82	17	2000	
Sr	88	3	72	95.386	ppb	95.386	1.93	52670	4000	
Mo	95	3	115	0.114	ppb	0.114	42.65	117	2000	
Ag	107	3	115	0.001	ppb	0.001	186.76	23	100	
Cd	111	3	115	0.013	ppb	0.013	147.50	5	2000	
Sn	120	3	115	0.296	ppb	0.296	108.27	875	2000	
Sb	121	3	115	0.091	ppb	0.091	7.70	135	1000	
Ba	137	3	115	109.015	ppb	109.015	0.16	25897	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-17.42	143	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-24.59	145	100	
(Pb)	207	3	193	0.027	ppb	0.027	247.75	395	100	
Pb	208	3	193	-0.008	ppb	-0.008	-196.75	871	5000	
Th	232	3	193	0.039	ppb	0.039	62.67	4304	2000	
U	238	3	193	-0.001	ppb	-0.001	-5209.60	1549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4276679	0.87	4299393	99.47	60	120	
Sc (IS)	45	3	HMI He	664666	2.26	674661	98.52	60	120	
Ge Internal standard	72	2	HMI H2	2298948	1.44	2269722	101.29	60	120	
Ge Internal standard	72	3	HMI He	755486	1.67	739017	102.23	60	120	
In Internal Standard	115	3	HMI He	2544955	0.57	2543041	100.08	60	120	
Ir (IS)	193	3	HMI He	5457017	1.23	5570851	97.96	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-D MS
Data File Name	115SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:01:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.113	ppb	39.113	3.28	2172	2000	
Na	23	3	45	535085.573	ppb	535085.573	0.68	67755543	400000	
Mg	24	3	45	1258.417	ppb	1258.417	1.73	84737	400000	
Al	27	3	45	828.598	ppb	828.598	1.31	19884	400000	
K	39	3	45	3032.843	ppb	3032.843	0.63	173612	400000	
Ca	40	2	45	3137.362	ppb	3137.362	2.23	1859087	400000	
V	51	3	72	39.917	ppb	39.917	3.15	26130	2000	
Cr	52	3	72	39.115	ppb	39.115	3.83	34525	5000	
Mn	55	3	72	44.193	ppb	44.193	4.30	19964	10000	
Fe	56	2	72	1235.705	ppb	1235.705	2.34	1923199	10000	
Co	59	3	72	38.576	ppb	38.576	4.37	52426	2000	
Ni	60	3	72	37.998	ppb	37.998	3.03	14594	5000	
Cu	63	3	72	39.105	ppb	39.105	2.88	40360	5000	
Zn	66	3	72	46.035	ppb	46.035	1.03	8232	5000	
As	75	3	72	40.077	ppb	40.077	3.74	4863	2000	
Se	78	2	72	40.567	ppb	40.567	2.50	2470	2000	
(Se)	78	3	72	37.811	ppb	37.811	5.97	297	2000	
Sr	88	3	72	541.255	ppb	541.255	2.67	304355	4000	
Mo	95	3	115	40.331	ppb	40.331	3.53	21261	2000	
Ag	107	3	115	38.472	ppb	38.472	2.77	66594	100	
Cd	111	3	115	39.509	ppb	39.509	2.05	9950	2000	
Sn	120	3	115	41.171	ppb	41.171	1.73	31136	2000	
Sb	121	3	115	41.843	ppb	41.843	1.91	31521	1000	
Ba	137	3	115	570.920	ppb	570.920	1.77	135300	5000	
Tl	205	3	193	41.156	ppb	41.156	0.44	144857	2000	
(Pb)	206	3	193	41.738	ppb	41.738	1.41	49084	100	
(Pb)	207	3	193	41.315	ppb	41.315	1.72	43026	100	
Pb	208	3	193	41.381	ppb	41.381	1.08	196247	5000	
Th	232	3	193	42.672	ppb	42.672	0.39	205709	2000	
U	238	3	193	41.875	ppb	41.875	1.17	209768	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4260618	0.98	4299393	99.10	60	120	
Sc (IS)	45	3	HMI He	658428	0.32	674661	97.59	60	120	
Ge Internal standard	72	2	HMI H2	2328197	1.24	2269722	102.58	60	120	
Ge Internal standard	72	3	HMI He	769751	2.78	739017	104.16	60	120	
In Internal Standard	115	3	HMI He	2543210	1.89	2543041	100.01	60	120	
Ir (IS)	193	3	HMI He	5317505	1.19	5570851	95.45	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-E MSD
Data File Name	116SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:03:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.286	ppb	40.286	4.92	2281	2000	
Na	23	3	45	535935.065	ppb	535935.065	1.92	68606049	400000	
Mg	24	3	45	1246.977	ppb	1246.977	2.24	84888	400000	
Al	27	3	45	858.091	ppb	858.091	3.16	20816	400000	
K	39	3	45	3075.288	ppb	3075.288	1.94	177684	400000	
Ca	40	2	45	3210.659	ppb	3210.659	0.94	1907939	400000	
V	51	3	72	39.860	ppb	39.860	2.02	26590	2000	
Cr	52	3	72	38.484	ppb	38.484	1.21	34651	5000	
Mn	55	3	72	44.626	ppb	44.626	3.67	20543	10000	
Fe	56	2	72	1228.194	ppb	1228.194	1.03	1929304	10000	
Co	59	3	72	38.038	ppb	38.038	1.44	52695	2000	
Ni	60	3	72	37.565	ppb	37.565	2.39	14704	5000	
Cu	63	3	72	38.562	ppb	38.562	2.08	40564	5000	
Zn	66	3	72	47.817	ppb	47.817	0.51	8702	5000	
As	75	3	72	39.604	ppb	39.604	0.93	4898	2000	
Se	78	2	72	40.152	ppb	40.152	2.41	2466	2000	
(Se)	78	3	72	38.817	ppb	38.817	7.58	310	2000	
Sr	88	3	72	539.025	ppb	539.025	1.81	308854	4000	
Mo	95	3	115	41.625	ppb	41.625	1.78	21994	2000	
Ag	107	3	115	38.831	ppb	38.831	2.16	67363	100	
Cd	111	3	115	40.312	ppb	40.312	1.85	10177	2000	
Sn	120	3	115	42.391	ppb	42.391	2.53	32104	2000	
Sb	121	3	115	41.839	ppb	41.839	2.30	31583	1000	
Ba	137	3	115	581.461	ppb	581.461	1.66	138095	5000	
Tl	205	3	193	40.800	ppb	40.800	1.70	146955	2000	
(Pb)	206	3	193	41.139	ppb	41.139	1.13	49515	100	
(Pb)	207	3	193	40.670	ppb	40.670	2.03	43349	100	
Pb	208	3	193	40.971	ppb	40.971	0.60	198862	5000	
Th	232	3	193	42.256	ppb	42.256	0.22	208501	2000	
U	238	3	193	41.749	ppb	41.749	0.62	214037	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4272913	0.78	4299393	99.38	60	120	
Sc (IS)	45	3	HMI He	665669	0.39	674661	98.67	60	120	
Ge Internal standard	72	2	HMI H2	2349811	1.44	2269722	103.53	60	120	
Ge Internal standard	72	3	HMI He	784049	0.65	739017	106.09	60	120	
In Internal Standard	115	3	HMI He	2548812	2.49	2543041	100.23	60	120	
Ir (IS)	193	3	HMI He	5441746	0.93	5570851	97.68	60	120	

Sample Report

Sample Table

Sample Name	280-171417-H-3-C pds
Data File Name	117SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:05:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	206.727	ppb	206.727	1.99	11307	2000	
Na	23	3	45	529470.594	ppb	529470.594	1.48	67328778	400000	
Mg	24	3	45	525.166	ppb	525.166	1.53	35587	400000	
Al	27	3	45	2150.840	ppb	2150.840	0.50	51729	400000	
K	39	3	45	2285.784	ppb	2285.784	1.53	136552	400000	
Ca	40	2	45	2311.509	ppb	2311.509	1.36	1384255	400000	
V	51	3	72	203.644	ppb	203.644	1.36	130891	2000	
Cr	52	3	72	201.291	ppb	201.291	1.25	167970	5000	
Mn	55	3	72	212.794	ppb	212.794	3.31	92770	10000	
Fe	56	2	72	428.784	ppb	428.784	0.47	674820	10000	
Co	59	3	72	200.217	ppb	200.217	0.93	268435	2000	
Ni	60	3	72	193.351	ppb	193.351	2.68	72471	5000	
Cu	63	3	72	203.013	ppb	203.013	1.04	204545	5000	
Zn	66	3	72	219.561	ppb	219.561	3.11	38107	5000	
As	75	3	72	204.516	ppb	204.516	0.86	24339	2000	
Se	78	2	72	203.126	ppb	203.126	0.80	12364	2000	
(Se)	78	3	72	211.351	ppb	211.351	2.00	1573	2000	
Sr	88	3	72	672.948	ppb	672.948	1.16	373404	4000	
Mo	95	3	115	207.573	ppb	207.573	1.58	108109	2000	
Ag	107	3	115	50.763	ppb	50.763	0.80	86988	100	
Cd	111	3	115	204.669	ppb	204.669	1.41	51018	2000	
Sn	120	3	115	214.380	ppb	214.380	1.04	157766	2000	
Sb	121	3	115	217.477	ppb	217.477	1.98	161890	1000	
Ba	137	3	115	756.019	ppb	756.019	2.03	177336	5000	
Tl	205	3	193	208.757	ppb	208.757	1.32	737955	2000	
(Pb)	206	3	193	212.733	ppb	212.733	2.04	251115	100	
(Pb)	207	3	193	208.529	ppb	208.529	0.42	217156	100	
Pb	208	3	193	211.123	ppb	211.123	1.18	1004135	5000	
Th	232	3	193	358.309	ppb	358.309	2.10	1708537	2000	
U	238	3	193	228.927	ppb	228.927	0.92	1147576	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4296786	2.37	4299393	99.94	60	120	
Sc (IS)	45	3	HMI He	661257	0.81	674661	98.01	60	120	
Ge Internal standard	72	2	HMI H2	2329074	1.20	2269722	102.61	60	120	
Ge Internal standard	72	3	HMI He	759321	1.78	739017	102.75	60	120	
In Internal Standard	115	3	HMI He	2517218	1.26	2543041	98.98	60	120	
Ir (IS)	193	3	HMI He	5352287	0.95	5570851	96.08	60	120	

Sample Report

Sample Table

Sample Name	280-171461-A-1-C
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:06:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.029	ppb	0.029	173.58	3	2000	
Na	23	3	45	2617.763	ppb	2617.763	1.12	370066	400000	
Mg	24	3	45	10749.263	ppb	10749.263	3.02	741995	400000	
Al	27	3	45	4.480	ppb	4.480	33.48	177	400000	
K	39	3	45	1274.699	ppb	1274.699	0.89	87310	400000	
Ca	40	2	45	25257.920	ppb	25257.920	1.59	15202834	400000	
V	51	3	72	0.491	ppb	0.491	19.56	486	2000	
Cr	52	3	72	0.041	ppb	0.041	538.44	1851	5000	
Mn	55	3	72	-0.242	ppb	-0.242	-23.11	453	10000	
Fe	56	2	72	33.701	ppb	33.701	1.05	64802	10000	
Co	59	3	72	0.010	ppb	0.010	25.23	53	2000	
Ni	60	3	72	0.017	ppb	0.017	645.45	205	5000	
Cu	63	3	72	0.386	ppb	0.386	25.64	936	5000	
Zn	66	3	72	9.262	ppb	9.262	14.87	1793	5000	
As	75	3	72	0.209	ppb	0.209	86.82	63	2000	
Se	78	2	72	0.405	ppb	0.405	5.54	27	2000	
(Se)	78	3	72	0.753	ppb	0.753	216.98	20	2000	
Sr	88	3	72	295.537	ppb	295.537	3.37	167283	4000	
Mo	95	3	115	5.889	ppb	5.889	5.74	3254	2000	
Ag	107	3	115	0.002	ppb	0.002	184.87	27	100	
Cd	111	3	115	0.013	ppb	0.013	0.84	5	2000	
Sn	120	3	115	0.353	ppb	0.353	44.98	945	2000	
Sb	121	3	115	0.234	ppb	0.234	20.02	250	1000	
Ba	137	3	115	29.431	ppb	29.431	1.55	7245	5000	
Tl	205	3	193	-0.054	ppb	-0.054	-24.49	195	2000	
(Pb)	206	3	193	0.976	ppb	0.976	2.77	1363	100	
(Pb)	207	3	193	0.942	ppb	0.942	4.80	1383	100	
Pb	208	3	193	0.966	ppb	0.966	3.23	5663	5000	
Th	232	3	193	0.829	ppb	0.829	20.56	8232	2000	
U	238	3	193	1.181	ppb	1.181	1.52	7674	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4350378	1.15	4299393	101.19	60	120	
Sc (IS)	45	3	HMI He	676009	1.18	674661	100.20	60	120	
Ge Internal standard	72	2	HMI H2	2388633	1.51	2269722	105.24	60	120	
Ge Internal standard	72	3	HMI He	775085	3.72	739017	104.88	60	120	
In Internal Standard	115	3	HMI He	2623909	0.56	2543041	103.18	60	120	
Ir (IS)	193	3	HMI He	5524514	1.83	5570851	99.17	60	120	

Sample Report

Sample Table

Sample Name	280-171491-A-1-B
Data File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:08:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599867 6020b
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	43960.558	ppb	43960.558	1.80	5706031	400000	
Mg	24	3	45	64119.019	ppb	64119.019	2.13	4398111	400000	
Al	27	3	45	35.290	ppb	35.290	6.54	928	400000	
K	39	3	45	8200.425	ppb	8200.425	1.96	442714	400000	
Ca	40	2	45	382037.994	ppb	382037.994	2.20	230838609	400000	
V	51	3	72	0.432	ppb	0.432	10.75	441	2000	
Cr	52	3	72	1.300	ppb	1.300	18.10	2861	5000	
Mn	55	3	72	143.274	ppb	143.274	3.82	62778	10000	
Fe	56	2	72	329.647	ppb	329.647	2.01	512330	10000	
Co	59	3	72	0.331	ppb	0.331	2.04	485	2000	
Ni	60	3	72	0.859	ppb	0.859	15.43	518	5000	
Cu	63	3	72	1.337	ppb	1.337	3.59	1881	5000	
Zn	66	3	72	29.693	ppb	29.693	5.14	5303	5000	
As	75	3	72	0.213	ppb	0.213	79.47	63	2000	
Se	78	2	72	0.224	ppb	0.224	57.63	15	2000	
(Se)	78	3	72	2.637	ppb	2.637	78.14	33	2000	
Sr	88	3	72	1999.519	ppb	1999.519	3.08	1111868	4000	
Mo	95	3	115	0.414	ppb	0.414	17.24	285	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-200.94	17	100	
Cd	111	3	115	0.032	ppb	0.032	60.60	10	2000	
Sn	120	3	115	0.158	ppb	0.158	59.08	800	2000	
Sb	121	3	115	0.140	ppb	0.140	30.58	178	1000	
Ba	137	3	115	2.669	ppb	2.669	4.56	706	5000	
Tl	205	3	193	0.003	ppb	0.003	224.87	401	2000	
(Pb)	206	3	193	0.131	ppb	0.131	12.30	330	100	
(Pb)	207	3	193	0.125	ppb	0.125	33.49	501	100	
Pb	208	3	193	0.127	ppb	0.127	3.83	1534	5000	
Th	232	3	193	0.269	ppb	0.269	9.98	5442	2000	
U	238	3	193	0.488	ppb	0.488	9.23	4054	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4370614	1.33	4299393	101.66	60	120	
Sc (IS)	45	3	HMI He	671824	1.49	674661	99.58	60	120	
Ge Internal standard	72	2	HMI H2	2289087	1.29	2269722	100.85	60	120	
Ge Internal standard	72	3	HMI He	761236	2.86	739017	103.01	60	120	
In Internal Standard	115	3	HMI He	2638975	1.34	2543041	103.77	60	120	
Ir (IS)	193	3	HMI He	5474915	2.35	5570851	98.28	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	120_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:10:47-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.501	ppb	7.463	2836	50	99.0	90	110	
Na	23	3	45	50970.793	ppb	0.868	6572318	51000	99.9	90	110	
Mg	24	3	45	10933.038	ppb	1.415	745624	11000	99.4	90	110	
Al	27	3	45	1027.395	ppb	1.237	24987	1000	102.7	90	110	
K	39	3	45	10888.972	ppb	2.210	577451	11000	99.0	90	110	
Ca	40	2	45	11072.301	ppb	2.564	6718849	11000	100.7	90	110	
V	51	3	72	50.695	ppb	2.821	33200	50	101.4	90	110	
Cr	52	3	72	49.713	ppb	4.357	43466	50	99.4	90	110	
Mn	55	3	72	50.250	ppb	4.715	22667	50	100.5	90	110	
Fe	56	2	72	1037.359	ppb	3.463	1629754	1000	103.7	90	110	
Co	59	3	72	48.913	ppb	3.651	66589	50	97.8	90	110	
Ni	60	3	72	47.842	ppb	3.064	18355	50	95.7	90	110	
Cu	63	3	72	48.873	ppb	2.940	50393	50	97.7	90	110	
Zn	66	3	72	51.724	ppb	1.302	9244	50	103.4	90	110	
As	75	3	72	53.312	ppb	3.204	6468	50	106.6	90	110	
Se	78	2	72	51.370	ppb	0.811	3152	50	102.7	90	110	
(Se)	78	3	72	49.739	ppb	5.585	386	50	99.5	90	110	
Sr	88	3	72	103.969	ppb	2.877	58576	100	104.0	90	110	
Mo	95	3	115	50.239	ppb	3.445	27224	50	100.5	90	110	
Ag	107	3	115	49.455	ppb	1.859	88036	50	98.9	90	110	
Cd	111	3	115	50.691	ppb	3.058	13128	50	101.4	90	110	
Sn	120	3	115	51.917	ppb	1.689	40200	50	103.8	90	110	
Sb	121	3	115	51.954	ppb	1.113	40234	50	103.9	90	110	
Ba	137	3	115	53.043	ppb	2.079	12972	50	106.1	90	110	
Tl	205	3	193	52.099	ppb	2.922	189055	50	104.2	90	110	
(Pb)	206	3	193	52.073	ppb	2.302	63139	50	104.1	90	110	
(Pb)	207	3	193	51.942	ppb	2.054	55721	50	103.9	90	110	
Pb	208	3	193	52.005	ppb	1.678	254246	50	104.0	90	110	
Th	232	3	193	52.410	ppb	2.243	259719	50	104.8	90	110	
U	238	3	193	52.420	ppb	2.903	270507	50	104.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4381461	0.76	4299393	101.91	60	120	
Sc (IS)	45	3	HMI He	667778	0.65	674661	98.98	60	120	
Ge Internal standard	72	2	HMI H2	2347354	0.84	2269722	103.42	60	120	
Ge Internal standard	72	3	HMI He	771010	2.33	739017	104.33	60	120	
In Internal Standard	115	3	HMI He	2615133	1.28	2543041	102.83	60	120	
Ir (IS)	193	3	HMI He	5487449	1.99	5570851	98.50	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	121_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:12:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	57125.0	2	0.5	
Na	23	3	45	158.930	ppb	7.3	50289	25	>RL
Mg	24	3	45	3.499	ppb	28.1	370	25	
Al	27	3	45	7.243	ppb	40.1	244	15	
K	39	3	45	35.254	ppb	104.8	23056	50	
V	51	3	72	0.306	ppb	40.7	358	1	
Cr	52	3	72	-0.296	ppb	-29.4	1534	1	
Mn	55	3	72	-0.781	ppb	-6.4	210	0.5	
Co	59	3	72	-0.007	ppb	-151.1	30	0.5	
Ni	60	3	72	-0.138	ppb	-39.7	143	1	
Cu	63	3	72	-0.036	ppb	-144.6	495	1	
Zn	66	3	72	1.219	ppb	25.8	370	5	
As	75	3	72	0.007	ppb	1024.8	38	1	
Se	78	2	72	0.154	ppb	71.3	11	1	
(Se)	78	3	72	1.293	ppb	75.3	23	1	>RL
Sr	88	3	72	0.197	ppb	29.5	125	0.5	
Mo	95	3	115	0.006	ppb	955.4	62	0.5	
Ag	107	3	115	0.005	ppb	87.4	32	1	
Cd	111	3	115	0.000	ppb	12525.4	2	0.5	
Sn	120	3	115	-0.108	ppb	-83.6	593	1	
Sb	121	3	115	0.076	ppb	26.5	128	0.6	
Ba	137	3	115	-0.033	ppb	-140.5	42	0.5	
Tl	205	3	193	-0.076	ppb	-4.4	120	0.1	
(Pb)	206	3	193	-0.023	ppb	-170.9	148	1	
(Pb)	207	3	193	0.013	ppb	410.7	393	1	
Pb	208	3	193	-0.009	ppb	-109.7	900	0.5	
Th	232	3	193	0.409	ppb	32.8	6290	1	
U	238	3	193	0.025	ppb	40.2	1736	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4363640	1.29	4299393	101.49	60	120	
Sc (IS)	45	3	HMI He	672638	1.75	674661	99.70	60	120	
Ge Internal standard	72	2	HMI H2	2328497	2.52	2269722	102.59	60	120	
Ge Internal standard	72	3	HMI He	757706	2.22	739017	102.53	60	120	
In Internal Standard	115	3	HMI He	2626800	1.44	2543041	103.29	60	120	
Ir (IS)	193	3	HMI He	5634202	2.09	5570851	101.14	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	122LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:14:31-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.700	ppb	36.848	42	1	70.0	70	130	>+/-30%
Na	23	3	45	188.974	ppb	5.659	53263	50	377.9	70	130	>+/-30%
Mg	24	3	45	49.999	ppb	7.149	3504	50	100.0	70	130	
Al	27	3	45	50.895	ppb	1.488	1288	50	101.8	70	130	
K	39	3	45	128.700	ppb	30.142	27404	100	128.7	70	130	
V	51	3	72	5.150	ppb	2.797	3425	5	103.0	70	130	
Cr	52	3	72	1.704	ppb	2.706	3150	2	85.2	70	130	
Mn	55	3	72	0.340	ppb	45.925	688	1	34.0	70	130	>+/-30%
Co	59	3	72	0.993	ppb	5.725	1354	1	99.3	70	130	
Ni	60	3	72	2.068	ppb	7.018	956	2	103.4	70	130	
Cu	63	3	72	1.966	ppb	5.708	2477	2	98.3	70	130	
Zn	66	3	72	10.839	ppb	0.694	2009	10	108.4	70	130	
As	75	3	72	4.980	ppb	11.513	621	5	99.6	70	130	
Se	78	2	72	5.488	ppb	3.281	326	5	109.8	70	130	
(Se)	78	3	72	3.406	ppb	47.418	38	5	68.1	70	130	>+/-30%
Sr	88	3	72	1.131	ppb	12.025	635	1	113.1	70	130	
Mo	95	3	115	1.827	ppb	6.674	1048	2	91.4	70	130	
Ag	107	3	115	0.964	ppb	5.375	1739	1	96.4	70	130	
Cd	111	3	115	1.048	ppb	7.404	273	1	104.8	70	130	
Sn	120	3	115	9.805	ppb	3.217	8147	10	98.0	70	130	
Sb	121	3	115	2.105	ppb	4.872	1698	2	105.3	70	130	
Ba	137	3	115	1.006	ppb	2.812	295	1	100.6	70	130	
Tl	205	3	193	1.001	ppb	3.098	4050	1	100.1	70	130	
(Pb)	206	3	193	0.975	ppb	2.314	1363	1	97.5	70	130	
(Pb)	207	3	193	0.972	ppb	12.245	1416	1	97.2	70	130	
Pb	208	3	193	1.022	ppb	2.436	5943	1	102.2	70	130	
Th	232	3	193	2.079	ppb	5.019	14399	2	104.0	70	130	
U	238	3	193	1.053	ppb	1.917	7024	1	105.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4268825	0.82	4299393	99.29	60	120	
Sc (IS)	45	3	HMI He	661178	0.65	674661	98.00	60	120	
Ge Internal standard	72	2	HMI H2	2262975	1.08	2269722	99.70	60	120	
Ge Internal standard	72	3	HMI He	749815	0.86	739017	101.46	60	120	
In Internal Standard	115	3	HMI He	2617989	0.67	2543041	102.95	60	120	
Ir (IS)	193	3	HMI He	5531755	0.96	5570851	99.30	60	120	

Sample Report

Sample Table

Sample Name	280-171347-C-2-C
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:16:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	105846.345	ppb	105846.345	0.43	13439920	400000	
Mg	24	3	45	35361.185	ppb	35361.185	1.99	2379899	400000	
Al	27	3	45	137.908	ppb	137.908	1.85	3367	400000	
K	39	3	45	6374.008	ppb	6374.008	1.20	342290	400000	
Ca	40	2	45	94434.718	ppb	94434.718	0.55	55230872	400000	
V	51	3	72	1.235	ppb	1.235	41.90	978	2000	
Cr	52	3	72	25.383	ppb	25.383	1.96	23288	5000	
Mn	55	3	72	10.871	ppb	10.871	4.17	5388	10000	
Fe	56	2	72	284.417	ppb	284.417	1.20	448383	10000	
Co	59	3	72	0.570	ppb	0.570	2.75	823	2000	
Ni	60	3	72	14.543	ppb	14.543	3.36	5768	5000	
Cu	63	3	72	3.174	ppb	3.174	3.28	3812	5000	
Zn	66	3	72	4.322	ppb	4.322	9.13	930	5000	
As	75	3	72	0.217	ppb	0.217	75.76	65	2000	
Se	78	2	72	3.318	ppb	3.318	8.87	202	2000	
(Se)	78	3	72	4.971	ppb	4.971	73.17	52	2000	
Sr	88	3	72	992.330	ppb	992.330	1.33	563911	4000	
Mo	95	3	115	1.884	ppb	1.884	5.44	1076	2000	
Ag	107	3	115	0.008	ppb	0.008	79.67	37	100	
Cd	111	3	115	0.026	ppb	0.026	114.74	8	2000	
Sn	120	3	115	0.891	ppb	0.891	13.82	1349	2000	
Sb	121	3	115	0.136	ppb	0.136	28.44	173	1000	
Ba	137	3	115	24.670	ppb	24.670	2.79	6052	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-2.22	132	2000	
(Pb)	206	3	193	0.125	ppb	0.125	20.76	323	100	
(Pb)	207	3	193	0.109	ppb	0.109	53.93	483	100	
Pb	208	3	193	0.113	ppb	0.113	17.25	1461	5000	
Th	232	3	193	0.229	ppb	0.229	19.69	5235	2000	
U	238	3	193	12.617	ppb	12.617	3.77	66069	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4229202	1.17	4299393	98.37	60	120	
Sc (IS)	45	3	HMI He	659094	0.66	674661	97.69	60	120	
Ge Internal standard	72	2	HMI H2	2313838	0.56	2269722	101.94	60	120	
Ge Internal standard	72	3	HMI He	777567	0.25	739017	105.22	60	120	
In Internal Standard	115	3	HMI He	2611670	0.80	2543041	102.70	60	120	
Ir (IS)	193	3	HMI He	5468631	1.69	5570851	98.17	60	120	

Sample Report

Sample Table

Sample Name	280-171261-G-1-A
Data File Name	124SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:18:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4307.56	2	2000	
Na	23	3	45	62359.002	ppb	62359.002	3.47	8123612	400000	
Mg	24	3	45	45938.827	ppb	45938.827	2.53	3167692	400000	
Al	27	3	45	270.979	ppb	270.979	2.36	6715	400000	
K	39	3	45	4330.810	ppb	4330.810	3.09	245082	400000	
Ca	40	2	45	135654.126	ppb	135654.126	1.18	79447764	400000	
V	51	3	72	2.265	ppb	2.265	2.97	1629	2000	
Cr	52	3	72	1.583	ppb	1.583	19.29	3112	5000	
Mn	55	3	72	5.247	ppb	5.247	3.76	2846	10000	
Fe	56	2	72	293.190	ppb	293.190	2.45	460779	10000	
Co	59	3	72	0.157	ppb	0.157	26.24	252	2000	
Ni	60	3	72	0.721	ppb	0.721	13.51	468	5000	
Cu	63	3	72	1.369	ppb	1.369	10.30	1921	5000	
Zn	66	3	72	3.892	ppb	3.892	2.03	840	5000	
As	75	3	72	3.592	ppb	3.592	3.42	468	2000	
Se	78	2	72	0.308	ppb	0.308	41.96	20	2000	
(Se)	78	3	72	1.058	ppb	1.058	100.10	22	2000	
Sr	88	3	72	556.514	ppb	556.514	1.61	311103	4000	
Mo	95	3	115	0.943	ppb	0.943	7.95	560	2000	
Ag	107	3	115	0.156	ppb	0.156	13.61	297	100	
Cd	111	3	115	0.098	ppb	0.098	101.88	27	2000	
Sn	120	3	115	0.390	ppb	0.390	27.62	955	2000	
Sb	121	3	115	0.244	ppb	0.244	2.95	253	1000	
Ba	137	3	115	382.620	ppb	382.620	1.18	91944	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-12.37	130	2000	
(Pb)	206	3	193	0.313	ppb	0.313	7.09	551	100	
(Pb)	207	3	193	0.345	ppb	0.345	15.87	738	100	
Pb	208	3	193	0.313	ppb	0.313	6.02	2444	5000	
Th	232	3	193	0.201	ppb	0.201	27.78	5120	2000	
U	238	3	193	5.733	ppb	5.733	3.01	31010	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4235908	2.50	4299393	98.52	60	120	
Sc (IS)	45	3	HMI He	675474	2.45	674661	100.12	60	120	
Ge Internal standard	72	2	HMI H2	2308821	1.43	2269722	101.72	60	120	
Ge Internal standard	72	3	HMI He	764994	1.46	739017	103.52	60	120	
In Internal Standard	115	3	HMI He	2577933	0.86	2543041	101.37	60	120	
Ir (IS)	193	3	HMI He	5493531	1.92	5570851	98.61	60	120	

Sample Report

Sample Table

Sample Name	280-171261-G-2-A
Data File Name	125SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:20:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	167.81	3	2000	
Na	23	3	45	62847.870	ppb	62847.870	3.07	8150812	400000	
Mg	24	3	45	46476.108	ppb	46476.108	2.09	3190744	400000	
Al	27	3	45	237.572	ppb	237.572	4.10	5867	400000	
K	39	3	45	4386.664	ppb	4386.664	2.74	246896	400000	
Ca	40	2	45	137412.577	ppb	137412.577	1.86	82418222	400000	
V	51	3	72	2.065	ppb	2.065	7.06	1526	2000	
Cr	52	3	72	1.395	ppb	1.395	14.51	3009	5000	
Mn	55	3	72	4.441	ppb	4.441	3.46	2537	10000	
Fe	56	2	72	258.454	ppb	258.454	2.09	410886	10000	
Co	59	3	72	0.147	ppb	0.147	12.54	243	2000	
Ni	60	3	72	0.629	ppb	0.629	11.77	441	5000	
Cu	63	3	72	1.285	ppb	1.285	1.68	1869	5000	
Zn	66	3	72	4.177	ppb	4.177	11.40	905	5000	
As	75	3	72	3.114	ppb	3.114	17.09	418	2000	
Se	78	2	72	0.338	ppb	0.338	32.73	22	2000	
(Se)	78	3	72	0.130	ppb	0.130	539.30	15	2000	
Sr	88	3	72	558.352	ppb	558.352	2.15	317618	4000	
Mo	95	3	115	0.955	ppb	0.955	11.49	570	2000	
Ag	107	3	115	0.195	ppb	0.195	9.06	366	100	
Cd	111	3	115	0.363	ppb	0.363	20.85	95	2000	
Sn	120	3	115	-0.143	ppb	-0.143	-21.06	558	2000	
Sb	121	3	115	0.227	ppb	0.227	37.85	242	1000	
Ba	137	3	115	385.764	ppb	385.764	0.44	93223	5000	
Tl	205	3	193	-0.064	ppb	-0.064	-9.99	158	2000	
(Pb)	206	3	193	0.301	ppb	0.301	8.84	535	100	
(Pb)	207	3	193	0.316	ppb	0.316	3.17	705	100	
Pb	208	3	193	0.285	ppb	0.285	1.39	2302	5000	
Th	232	3	193	0.165	ppb	0.165	4.73	4934	2000	
U	238	3	193	5.773	ppb	5.773	3.13	31112	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337310	0.34	4299393	100.88	60	120	
Sc (IS)	45	3	HMI He	672438	1.72	674661	99.67	60	120	
Ge Internal standard	72	2	HMI H2	2327886	1.14	2269722	102.56	60	120	
Ge Internal standard	72	3	HMI He	778531	1.96	739017	105.35	60	120	
In Internal Standard	115	3	HMI He	2592274	0.58	2543041	101.94	60	120	
Ir (IS)	193	3	HMI He	5475298	1.81	5570851	98.28	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-1-B
Data File Name	126SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:22:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.003	ppb	0.003	1691.62	2	2000	
Na	23	3	45	11822171.708	ppb	11822171.708	1.14	1651482838	400000	>LDR
Mg	24	3	45	192597.528	ppb	192597.528	1.50	14291558	400000	
Al	27	3	45	48.460	ppb	48.460	7.22	1351	400000	
K	39	3	45	6693097.446	ppb	6693097.446	0.58	372187381	400000	>LDR
Ca	40	2	45	16757.576	ppb	16757.576	1.30	10111381	400000	
V	51	3	72	91.978	ppb	91.978	1.07	62877	2000	
Cr	52	3	72	115.309	ppb	115.309	0.14	102997	5000	
Mn	55	3	72	113.201	ppb	113.201	1.30	52697	10000	
Fe	56	2	72	454.490	ppb	454.490	1.24	719438	10000	
Co	59	3	72	13.670	ppb	13.670	0.36	19504	2000	
Ni	60	3	72	44.285	ppb	44.285	0.69	17791	5000	
Cu	63	3	72	0.182	ppb	0.182	10.57	760	5000	
Zn	66	3	72	4.632	ppb	4.632	6.73	1021	5000	
As	75	3	72	46.415	ppb	46.415	5.16	5897	2000	
Se	78	2	72	2.000	ppb	2.000	7.03	124	2000	
(Se)	78	3	72	4.296	ppb	4.296	59.21	48	2000	
Sr	88	3	72	1760.400	ppb	1760.400	1.29	1037326	4000	
Mo	95	3	115	2.647	ppb	2.647	9.49	1376	2000	
Ag	107	3	115	0.005	ppb	0.005	97.97	28	100	
Cd	111	3	115	0.050	ppb	0.050	107.00	13	2000	
Sn	120	3	115	2.195	ppb	2.195	5.00	2164	2000	
Sb	121	3	115	4.304	ppb	4.304	1.75	3135	1000	
Ba	137	3	115	1607.924	ppb	1607.924	0.55	361778	5000	
Tl	205	3	193	-0.042	ppb	-0.042	-28.37	183	2000	
(Pb)	206	3	193	0.151	ppb	0.151	25.96	273	100	
(Pb)	207	3	193	0.155	ppb	0.155	27.96	411	100	
Pb	208	3	193	0.142	ppb	0.142	9.04	1239	5000	
Th	232	3	193	0.136	ppb	0.136	32.52	3694	2000	
U	238	3	193	0.052	ppb	0.052	79.23	1408	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4358726	0.78	4299393	101.38	60	120	
Sc (IS)	45	3	HMI He	726678	0.24	674661	107.71	60	120	
Ge Internal standard	72	2	HMI H2	2344805	1.13	2269722	103.31	60	120	
Ge Internal standard	72	3	HMI He	806326	0.88	739017	109.11	60	120	
In Internal Standard	115	3	HMI He	2414628	1.04	2543041	94.95	60	120	
Ir (IS)	193	3	HMI He	4223647	1.02	5570851	75.82	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-2-B
Data File Name	127SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:23:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.003	ppb	0.003	1927.24	2	2000	
Na	23	3	45	8485386.028	ppb	8485386.028	3.06	1228718008	400000	>LDR
Mg	24	3	45	107264.039	ppb	107264.039	1.25	8251521	400000	
Al	27	3	45	54.338	ppb	54.338	3.44	1562	400000	
K	39	3	45	3913472.210	ppb	3913472.210	2.43	225600047	400000	>LDR
Ca	40	2	45	103258.470	ppb	103258.470	2.61	64499491	400000	
V	51	3	72	166.087	ppb	166.087	2.55	116752	2000	
Cr	52	3	72	149.857	ppb	149.857	2.08	137232	5000	
Mn	55	3	72	151.157	ppb	151.157	2.88	72239	10000	
Fe	56	2	72	2976.683	ppb	2976.683	2.34	4773009	10000	
Co	59	3	72	8.400	ppb	8.400	4.62	12353	2000	
Ni	60	3	72	37.847	ppb	37.847	3.91	15681	5000	
Cu	63	3	72	0.092	ppb	0.092	104.95	681	5000	
Zn	66	3	72	39.601	ppb	39.601	3.11	7663	5000	
As	75	3	72	92.328	ppb	92.328	2.16	12038	2000	
Se	78	2	72	1.642	ppb	1.642	3.14	105	2000	
(Se)	78	3	72	1.247	ppb	1.247	90.27	25	2000	
Sr	88	3	72	2080.261	ppb	2080.261	3.08	1261928	4000	
Mo	95	3	115	2.566	ppb	2.566	4.59	1391	2000	
Ag	107	3	115	0.028	ppb	0.028	49.78	70	100	
Cd	111	3	115	0.014	ppb	0.014	148.00	5	2000	
Sn	120	3	115	2.732	ppb	2.732	3.28	2649	2000	
Sb	121	3	115	1.399	ppb	1.399	8.55	1106	1000	
Ba	137	3	115	2946.831	ppb	2946.831	1.24	691013	5000	
Tl	205	3	193	0.000	ppb	0.000	1609.40	322	2000	
(Pb)	206	3	193	0.159	ppb	0.159	19.55	300	100	
(Pb)	207	3	193	0.170	ppb	0.170	34.70	451	100	
Pb	208	3	193	0.167	ppb	0.167	18.32	1421	5000	
Th	232	3	193	0.130	ppb	0.130	4.09	3922	2000	
U	238	3	193	0.093	ppb	0.093	24.04	1678	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4516907	0.19	4299393	105.06	60	120	
Sc (IS)	45	3	HMI He	753379	0.95	674661	111.67	60	120	
Ge Internal standard	72	2	HMI H2	2406890	1.14	2269722	106.04	60	120	
Ge Internal standard	72	3	HMI He	830475	2.62	739017	112.38	60	120	
In Internal Standard	115	3	HMI He	2516945	1.53	2543041	98.97	60	120	
Ir (IS)	193	3	HMI He	4510939	2.68	5570851	80.97	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-3-B
Data File Name	128SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:25:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2449940.249	ppb	2449940.249	0.75	382143981	400000	>LDR
Mg	24	3	45	228901.529	ppb	228901.529	0.43	18965750	400000	
Al	27	3	45	48.081	ppb	48.081	9.28	1498	400000	
K	39	3	45	814109.188	ppb	814109.188	1.35	50565130	400000	
Ca	40	2	45	649958.598	ppb	649958.598	3.30	434250162	400000	
V	51	3	72	2.734	ppb	2.734	1.93	2207	2000	
Cr	52	3	72	5.273	ppb	5.273	4.57	7063	5000	
Mn	55	3	72	1353.318	ppb	1353.318	1.67	675939	10000	
Fe	56	2	72	683.860	ppb	683.860	3.70	1167707	10000	
Co	59	3	72	4.487	ppb	4.487	2.86	6968	2000	
Ni	60	3	72	54.053	ppb	54.053	3.54	23483	5000	
Cu	63	3	72	61.866	ppb	61.866	1.76	72176	5000	
Zn	66	3	72	26.781	ppb	26.781	3.50	5513	5000	
As	75	3	72	5.634	ppb	5.634	12.53	813	2000	
Se	78	2	72	1.078	ppb	1.078	24.20	73	2000	
(Se)	78	3	72	1.464	ppb	1.464	57.80	28	2000	
Sr	88	3	72	6362.768	ppb	6362.768	2.31	4063707	4000	
Mo	95	3	115	2.407	ppb	2.407	8.38	1389	2000	
Ag	107	3	115	0.006	ppb	0.006	146.49	33	100	
Cd	111	3	115	0.259	ppb	0.259	39.55	70	2000	
Sn	120	3	115	0.400	ppb	0.400	15.29	998	2000	
Sb	121	3	115	1.332	ppb	1.332	4.18	1121	1000	
Ba	137	3	115	1146.017	ppb	1146.017	2.91	284911	5000	
Tl	205	3	193	-0.039	ppb	-0.039	-54.26	230	2000	
(Pb)	206	3	193	0.480	ppb	0.480	2.59	693	100	
(Pb)	207	3	193	0.417	ppb	0.417	19.23	750	100	
Pb	208	3	193	0.455	ppb	0.455	1.13	2885	5000	
Th	232	3	193	0.080	ppb	0.080	48.25	4167	2000	
U	238	3	193	0.415	ppb	0.415	3.79	3399	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4835105	3.07	4299393	112.46	60	120	
Sc (IS)	45	3	HMI He	811392	1.17	674661	120.27	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2544335	3.36	2269722	112.10	60	120	
Ge Internal standard	72	3	HMI He	874137	1.78	739017	118.28	60	120	
In Internal Standard	115	3	HMI He	2669391	3.01	2543041	104.97	60	120	
Ir (IS)	193	3	HMI He	5051684	1.74	5570851	90.68	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-5-B
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:27:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	-15927.80	2	2000	
Na	23	3	45	6656269.011	ppb	6656269.011	0.89	996149715	400000	>LDR
Mg	24	3	45	133208.190	ppb	133208.190	0.89	10589801	400000	
Al	27	3	45	227.437	ppb	227.437	9.99	6505	400000	
K	39	3	45	2823998.915	ppb	2823998.915	1.99	168233648	400000	>LDR
Ca	40	2	45	93075.625	ppb	93075.625	2.52	63628802	400000	
V	51	3	72	41.882	ppb	41.882	2.79	30929	2000	
Cr	52	3	72	22.853	ppb	22.853	1.38	23618	5000	
Mn	55	3	72	171.261	ppb	171.261	1.21	85526	10000	
Fe	56	2	72	13016.136	ppb	13016.136	0.34	22212835	10000	
Co	59	3	72	7.498	ppb	7.498	0.77	11539	2000	
Ni	60	3	72	51.945	ppb	51.945	2.48	22430	5000	
Cu	63	3	72	0.213	ppb	0.213	15.58	853	5000	
Zn	66	3	72	6.612	ppb	6.612	3.46	1491	5000	
As	75	3	72	97.664	ppb	97.664	2.57	13313	2000	
Se	78	2	72	1.499	ppb	1.499	7.62	102	2000	
(Se)	78	3	72	1.699	ppb	1.699	37.53	30	2000	
Sr	88	3	72	2237.337	ppb	2237.337	1.88	1419524	4000	
Mo	95	3	115	1.296	ppb	1.296	6.01	783	2000	
Ag	107	3	115	0.005	ppb	0.005	175.19	32	100	
Cd	111	3	115	0.012	ppb	0.012	150.03	5	2000	
Sn	120	3	115	1.549	ppb	1.549	6.64	1908	2000	
Sb	121	3	115	3.974	ppb	3.974	6.36	3235	1000	
Ba	137	3	115	3526.356	ppb	3526.356	1.87	885268	5000	
Tl	205	3	193	-0.046	ppb	-0.046	-11.65	192	2000	
(Pb)	206	3	193	0.338	ppb	0.338	5.54	500	100	
(Pb)	207	3	193	0.311	ppb	0.311	11.67	601	100	
Pb	208	3	193	0.326	ppb	0.326	8.01	2154	5000	
Th	232	3	193	0.190	ppb	0.190	16.52	4352	2000	
U	238	3	193	0.059	ppb	0.059	33.75	1601	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4944210	1.47	4299393	115.00	60	120	
Sc (IS)	45	3	HMI He	778544	1.13	674661	115.40	60	120	
Ge Internal standard	72	2	HMI H2	2565925	0.87	2269722	113.05	60	120	
Ge Internal standard	72	3	HMI He	868248	1.26	739017	117.49	60	120	
In Internal Standard	115	3	HMI He	2695189	2.73	2543041	105.98	60	120	
Ir (IS)	193	3	HMI He	4711460	2.51	5570851	84.57	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-6-B
Data File Name	130SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:29:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	166.51	3	2000	
Na	23	3	45	7599393.029	ppb	7599393.029	0.67	1122801575	400000	>LDR
Mg	24	3	45	23260.841	ppb	23260.841	1.38	1825679	400000	
Al	27	3	45	31.805	ppb	31.805	20.51	964	400000	
K	39	3	45	2924820.325	ppb	2924820.325	1.28	172034342	400000	>LDR
Ca	40	2	45	17631.355	ppb	17631.355	0.88	11654282	400000	
V	51	3	72	43.023	ppb	43.023	1.64	31737	2000	
Cr	52	3	72	44.955	ppb	44.955	0.55	44440	5000	
Mn	55	3	72	74.230	ppb	74.230	3.24	37382	10000	
Fe	56	2	72	470.450	ppb	470.450	1.93	808459	10000	
Co	59	3	72	6.527	ppb	6.527	5.41	10039	2000	
Ni	60	3	72	58.697	ppb	58.697	3.26	25289	5000	
Cu	63	3	72	0.864	ppb	0.864	8.86	1601	5000	
Zn	66	3	72	4.522	ppb	4.522	13.75	1078	5000	
As	75	3	72	56.382	ppb	56.382	3.65	7697	2000	
Se	78	2	72	1.269	ppb	1.269	8.21	86	2000	
(Se)	78	3	72	2.703	ppb	2.703	69.84	38	2000	
Sr	88	3	72	391.074	ppb	391.074	1.13	247917	4000	
Mo	95	3	115	3.200	ppb	3.200	7.61	1798	2000	
Ag	107	3	115	0.000	ppb	0.000	367.02	23	100	
Cd	111	3	115	0.051	ppb	0.051	35.56	15	2000	
Sn	120	3	115	0.845	ppb	0.845	10.94	1323	2000	
Sb	121	3	115	8.349	ppb	8.349	3.50	6560	1000	
Ba	137	3	115	1335.543	ppb	1335.543	1.96	327233	5000	
Tl	205	3	193	-0.055	ppb	-0.055	-34.21	158	2000	
(Pb)	206	3	193	0.461	ppb	0.461	3.67	608	100	
(Pb)	207	3	193	0.390	ppb	0.390	25.70	653	100	
Pb	208	3	193	0.410	ppb	0.410	7.86	2431	5000	
Th	232	3	193	0.125	ppb	0.125	38.81	3955	2000	
U	238	3	193	0.263	ppb	0.263	18.74	2424	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4775354	0.31	4299393	111.07	60	120	
Sc (IS)	45	3	HMI He	768571	0.40	674661	113.92	60	120	
Ge Internal standard	72	2	HMI H2	2547137	1.24	2269722	112.22	60	120	
Ge Internal standard	72	3	HMI He	867451	1.46	739017	117.38	60	120	
In Internal Standard	115	3	HMI He	2630036	1.95	2543041	103.42	60	120	
Ir (IS)	193	3	HMI He	4572857	2.07	5570851	82.09	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	131_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:31:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.912	ppb	2.834	3224	50	101.8	90	110	
Na	23	3	45	53142.667	ppb	1.970	8474975	51000	104.2	90	110	
Mg	24	3	45	10666.853	ppb	3.754	899756	11000	97.0	90	110	
Al	27	3	45	1013.424	ppb	2.815	30490	1000	101.3	90	110	
K	39	3	45	12955.774	ppb	3.797	844932	11000	117.8	90	110	>+\-10%
Ca	40	2	45	11219.978	ppb	1.711	7937338	11000	102.0	90	110	
V	51	3	72	52.659	ppb	2.261	39449	50	105.3	90	110	
Cr	52	3	72	50.502	ppb	1.224	50498	50	101.0	90	110	
Mn	55	3	72	51.678	ppb	0.427	26657	50	103.4	90	110	
Fe	56	2	72	1068.296	ppb	0.894	1888922	1000	106.8	90	110	
Co	59	3	72	48.919	ppb	1.320	76209	50	97.8	90	110	
Ni	60	3	72	47.918	ppb	1.964	21035	50	95.8	90	110	
Cu	63	3	72	48.168	ppb	2.434	56835	50	96.3	90	110	
Zn	66	3	72	50.746	ppb	2.723	10374	50	101.5	90	110	
As	75	3	72	53.133	ppb	3.317	7377	50	106.3	90	110	
Se	78	2	72	50.991	ppb	1.308	3522	50	102.0	90	110	
(Se)	78	3	72	57.451	ppb	11.307	508	50	114.9	90	110	>+\-10%
Sr	88	3	72	105.811	ppb	2.046	68204	100	105.8	90	110	
Mo	95	3	115	48.768	ppb	0.947	29469	50	97.5	90	110	
Ag	107	3	115	47.465	ppb	1.914	94182	50	94.9	90	110	
Cd	111	3	115	48.234	ppb	0.705	13927	50	96.5	90	110	
Sn	120	3	115	51.179	ppb	2.144	44183	50	102.4	90	110	
Sb	121	3	115	50.983	ppb	2.121	44017	50	102.0	90	110	
Ba	137	3	115	52.037	ppb	1.088	14187	50	104.1	90	110	
Tl	205	3	193	52.451	ppb	3.119	186063	50	104.9	90	110	
(Pb)	206	3	193	53.948	ppb	1.619	63947	50	107.9	90	110	
(Pb)	207	3	193	52.720	ppb	3.904	55266	50	105.4	90	110	
Pb	208	3	193	53.453	ppb	2.953	255397	50	106.9	90	110	
Th	232	3	193	52.620	ppb	2.657	254871	50	105.2	90	110	
U	238	3	193	52.558	ppb	3.088	265131	50	105.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5107853	1.27	4299393	118.80	60	120	
Sc (IS)	45	3	HMI He	826074	0.99	674661	122.44	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2642566	0.83	2269722	116.43	60	120	
Ge Internal standard	72	3	HMI He	881811	0.60	739017	119.32	60	120	
In Internal Standard	115	3	HMI He	2915014	1.33	2543041	114.63	60	120	
Ir (IS)	193	3	HMI He	5364475	2.05	5570851	96.30	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	132_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:33:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.002	ppb	-2359.6	2	0.5	
Na	23	3	45	2041.483	ppb	2.0	337207	25	>RL
Mg	24	3	45	8.644	ppb	12.2	831	25	
Al	27	3	45	7.377	ppb	14.9	284	15	
K	39	3	45	1272.104	ppb	5.2	99587	50	>RL
V	51	3	72	0.354	ppb	4.6	428	1	
Cr	52	3	72	-0.335	ppb	-75.4	1653	1	
Mn	55	3	72	-0.661	ppb	-8.5	288	0.5	
Co	59	3	72	-0.010	ppb	-86.1	28	0.5	
Ni	60	3	72	-0.214	ppb	-20.3	127	1	
Cu	63	3	72	0.000	ppb	22723.7	585	1	
Zn	66	3	72	1.010	ppb	19.3	368	5	
As	75	3	72	0.194	ppb	14.7	67	1	
Se	78	2	72	0.107	ppb	87.7	9	1	
(Se)	78	3	72	2.044	ppb	34.4	32	1	>RL
Sr	88	3	72	0.191	ppb	29.5	133	0.5	
Mo	95	3	115	0.007	ppb	271.0	67	0.5	
Ag	107	3	115	0.000	ppb	-332.8	23	1	
Cd	111	3	115	0.006	ppb	371.8	3	0.5	
Sn	120	3	115	-0.158	ppb	-27.3	595	1	
Sb	121	3	115	0.075	ppb	39.6	137	0.6	
Ba	137	3	115	0.253	ppb	38.1	120	0.5	
Tl	205	3	193	-0.077	ppb	-13.0	110	0.1	
(Pb)	206	3	193	-0.012	ppb	-212.1	155	1	
(Pb)	207	3	193	-0.010	ppb	-473.1	350	1	
Pb	208	3	193	-0.015	ppb	-81.4	823	0.5	
Th	232	3	193	0.320	ppb	33.6	5567	1	
U	238	3	193	0.001	ppb	676.6	1529	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4826081	1.50	4299393	112.25	60	120	
Sc (IS)	45	3	HMI He	772228	0.47	674661	114.46	60	120	
Ge Internal standard	72	2	HMI H2	2543666	2.35	2269722	112.07	60	120	
Ge Internal standard	72	3	HMI He	834012	1.53	739017	112.85	60	120	
In Internal Standard	115	3	HMI He	2819871	0.79	2543041	110.89	60	120	
Ir (IS)	193	3	HMI He	5361894	1.51	5570851	96.25	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	133LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:35:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.064	ppb	26.486	68	1	106.4	70	130	
Na	23	3	45	1645.649	ppb	3.867	269532	50	3291.3	70	130	>+/-30%
Mg	24	3	45	55.210	ppb	5.111	4362	50	110.4	70	130	
Al	27	3	45	46.626	ppb	5.280	1341	50	93.3	70	130	
K	39	3	45	1071.775	ppb	5.797	84927	100	1071.8	70	130	>+/-30%
V	51	3	72	5.399	ppb	2.041	3900	5	108.0	70	130	
Cr	52	3	72	1.784	ppb	2.786	3500	2	89.2	70	130	
Mn	55	3	72	0.360	ppb	49.044	758	1	36.0	70	130	>+/-30%
Co	59	3	72	0.956	ppb	5.342	1421	1	95.6	70	130	
Ni	60	3	72	1.596	ppb	10.334	851	2	79.8	70	130	
Cu	63	3	72	1.837	ppb	6.046	2557	2	91.9	70	130	
Zn	66	3	72	10.251	ppb	4.116	2077	10	102.5	70	130	
As	75	3	72	4.625	ppb	4.252	631	5	92.5	70	130	
Se	78	2	72	4.946	ppb	4.293	325	5	98.9	70	130	
(Se)	78	3	72	5.288	ppb	39.111	57	5	105.8	70	130	
Sr	88	3	72	1.274	ppb	1.089	776	1	127.4	70	130	
Mo	95	3	115	1.836	ppb	8.185	1129	2	91.8	70	130	
Ag	107	3	115	0.959	ppb	6.477	1856	1	95.9	70	130	
Cd	111	3	115	0.977	ppb	10.323	273	1	97.7	70	130	
Sn	120	3	115	9.434	ppb	1.284	8437	10	94.3	70	130	
Sb	121	3	115	2.092	ppb	5.048	1811	2	104.6	70	130	
Ba	137	3	115	1.159	ppb	1.396	356	1	115.9	70	130	
Tl	205	3	193	0.923	ppb	3.848	3735	1	92.3	70	130	
(Pb)	206	3	193	1.056	ppb	2.637	1451	1	105.6	70	130	
(Pb)	207	3	193	1.080	ppb	6.479	1521	1	108.0	70	130	
Pb	208	3	193	1.052	ppb	2.866	6044	1	105.2	70	130	
Th	232	3	193	2.051	ppb	4.311	14151	2	102.6	70	130	
U	238	3	193	1.045	ppb	10.413	6922	1	104.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4722415	2.42	4299393	109.84	60	120	
Sc (IS)	45	3	HMI He	747933	2.89	674661	110.86	60	120	
Ge Internal standard	72	2	HMI H2	2506666	2.54	2269722	110.44	60	120	
Ge Internal standard	72	3	HMI He	816264	0.53	739017	110.45	60	120	
In Internal Standard	115	3	HMI He	2808424	1.03	2543041	110.44	60	120	
Ir (IS)	193	3	HMI He	5491906	2.36	5570851	98.58	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-7-B
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:37:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.088	ppb	0.088	59.44	7	2000	
Na	23	3	45	2881167.517	ppb	2881167.517	0.78	408079405	400000	>LDR
Mg	24	3	45	73290.209	ppb	73290.209	1.39	5513592	400000	
Al	27	3	45	474.922	ppb	474.922	2.20	12782	400000	
K	39	3	45	793248.063	ppb	793248.063	1.62	44737968	400000	
Ca	40	2	45	37324.159	ppb	37324.159	1.02	23945742	400000	
V	51	3	72	247.762	ppb	247.762	2.78	170903	2000	
Cr	52	3	72	218.989	ppb	218.989	3.36	195969	5000	
Mn	55	3	72	107.229	ppb	107.229	1.98	50495	10000	
Fe	56	2	72	6591.728	ppb	6591.728	1.72	10793616	10000	
Co	59	3	72	46.578	ppb	46.578	2.47	67068	2000	
Ni	60	3	72	196.360	ppb	196.360	0.73	79038	5000	
Cu	63	3	72	2.721	ppb	2.721	9.67	3504	5000	
Zn	66	3	72	105.809	ppb	105.809	2.23	19811	5000	
As	75	3	72	144.194	ppb	144.194	0.97	18438	2000	
Se	78	2	72	2.370	ppb	2.370	11.56	154	2000	
(Se)	78	3	72	4.018	ppb	4.018	21.11	47	2000	
Sr	88	3	72	1579.461	ppb	1579.461	3.56	940646	4000	
Mo	95	3	115	8.638	ppb	8.638	4.18	4747	2000	
Ag	107	3	115	0.011	ppb	0.011	38.66	42	100	
Cd	111	3	115	0.237	ppb	0.237	23.10	63	2000	
Sn	120	3	115	29.671	ppb	29.671	1.48	23349	2000	
Sb	121	3	115	6.915	ppb	6.915	2.79	5433	1000	
Ba	137	3	115	2498.010	ppb	2498.010	2.09	610749	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-6.28	132	2000	
(Pb)	206	3	193	2.270	ppb	2.270	5.57	2679	100	
(Pb)	207	3	193	2.348	ppb	2.348	7.06	2637	100	
Pb	208	3	193	2.274	ppb	2.274	4.28	11018	5000	
Th	232	3	193	0.161	ppb	0.161	32.74	4525	2000	
U	238	3	193	0.130	ppb	0.130	3.04	2047	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4637171	1.60	4299393	107.86	60	120	
Sc (IS)	45	3	HMI He	736760	1.03	674661	109.20	60	120	
Ge Internal standard	72	2	HMI H2	2461017	1.12	2269722	108.43	60	120	
Ge Internal standard	72	3	HMI He	815306	2.20	739017	110.32	60	120	
In Internal Standard	115	3	HMI He	2624318	1.09	2543041	103.20	60	120	
Ir (IS)	193	3	HMI He	5040274	1.04	5570851	90.48	60	120	

Sample Report

Sample Table

Sample Name	280-171270-I-8-B
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:38:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	2005731.573	ppb	2005731.573	1.86	297102826	400000	>LDR
Mg	24	3	45	67499.168	ppb	67499.168	1.80	5310901	400000	
Al	27	3	45	159.243	ppb	159.243	4.27	4532	400000	
K	39	3	45	480406.660	ppb	480406.660	2.41	28345428	400000	
Ca	40	2	45	58005.155	ppb	58005.155	1.26	38125608	400000	
V	51	3	72	111.475	ppb	111.475	1.88	78598	2000	
Cr	52	3	72	106.194	ppb	106.194	1.00	98039	5000	
Mn	55	3	72	152.949	ppb	152.949	2.57	73254	10000	
Fe	56	2	72	6959.229	ppb	6959.229	2.05	11519290	10000	
Co	59	3	72	30.646	ppb	30.646	1.93	45072	2000	
Ni	60	3	72	137.317	ppb	137.317	2.95	56470	5000	
Cu	63	3	72	1.198	ppb	1.198	6.74	1903	5000	
Zn	66	3	72	31.990	ppb	31.990	1.46	6237	5000	
As	75	3	72	92.951	ppb	92.951	2.12	12144	2000	
Se	78	2	72	1.270	ppb	1.270	11.52	84	2000	
(Se)	78	3	72	1.233	ppb	1.233	52.43	25	2000	
Sr	88	3	72	1375.091	ppb	1375.091	3.88	835997	4000	
Mo	95	3	115	4.014	ppb	4.014	4.31	2256	2000	
Ag	107	3	115	0.007	ppb	0.007	41.52	35	100	
Cd	111	3	115	0.032	ppb	0.032	59.53	10	2000	
Sn	120	3	115	19.619	ppb	19.619	1.20	15793	2000	
Sb	121	3	115	3.017	ppb	3.017	0.97	2429	1000	
Ba	137	3	115	1692.172	ppb	1692.172	0.98	417162	5000	
Tl	205	3	193	-0.077	ppb	-0.077	-4.25	107	2000	
(Pb)	206	3	193	1.274	ppb	1.274	2.80	1613	100	
(Pb)	207	3	193	1.228	ppb	1.228	6.14	1578	100	
Pb	208	3	193	1.298	ppb	1.298	2.10	6811	5000	
Th	232	3	193	0.110	ppb	0.110	32.64	4397	2000	
U	238	3	193	0.084	ppb	0.084	24.68	1876	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4752436	1.14	4299393	110.54	60	120	
Sc (IS)	45	3	HMI He	770684	2.14	674661	114.23	60	120	
Ge Internal standard	72	2	HMI H2	2487728	0.43	2269722	109.60	60	120	
Ge Internal standard	72	3	HMI He	832148	1.41	739017	112.60	60	120	
In Internal Standard	115	3	HMI He	2645651	0.54	2543041	104.03	60	120	
Ir (IS)	193	3	HMI He	5162305	1.92	5570851	92.67	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-4-B
Data File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:40:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.026	ppb	0.026	181.75	3	2000	
Na	23	3	45	70594.701	ppb	70594.701	1.77	10312985	400000	
Mg	24	3	45	32119.437	ppb	32119.437	3.47	2484071	400000	
Al	27	3	45	10.392	ppb	10.392	20.54	360	400000	
K	39	3	45	8869.611	ppb	8869.611	2.22	538006	400000	
Ca	40	2	45	171654.003	ppb	171654.003	0.52	114023806	400000	
V	51	3	72	1.594	ppb	1.594	1.52	1313	2000	
Cr	52	3	72	0.289	ppb	0.289	27.29	2241	5000	
Mn	55	3	72	470.769	ppb	470.769	2.61	226523	10000	
Fe	56	2	72	38242.025	ppb	38242.025	0.98	64080616	10000	
Co	59	3	72	3.030	ppb	3.030	1.35	4542	2000	
Ni	60	3	72	6.296	ppb	6.296	3.56	2824	5000	
Cu	63	3	72	0.126	ppb	0.126	45.79	730	5000	
Zn	66	3	72	79.967	ppb	79.967	2.65	15481	5000	
As	75	3	72	6.709	ppb	6.709	2.40	925	2000	
Se	78	2	72	0.503	ppb	0.503	8.60	35	2000	
(Se)	78	3	72	1.604	ppb	1.604	57.07	28	2000	
Sr	88	3	72	1122.124	ppb	1122.124	2.16	689353	4000	
Mo	95	3	115	0.980	ppb	0.980	10.17	621	2000	
Ag	107	3	115	0.001	ppb	0.001	350.15	25	100	
Cd	111	3	115	0.011	ppb	0.011	270.29	5	2000	
Sn	120	3	115	0.221	ppb	0.221	45.14	888	2000	
Sb	121	3	115	0.238	ppb	0.238	9.40	267	1000	
Ba	137	3	115	535.832	ppb	535.832	2.21	137916	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-11.82	105	2000	
(Pb)	206	3	193	0.204	ppb	0.204	15.14	425	100	
(Pb)	207	3	193	0.140	ppb	0.140	12.38	526	100	
Pb	208	3	193	0.181	ppb	0.181	6.84	1824	5000	
Th	232	3	193	0.036	ppb	0.036	47.26	4380	2000	
U	238	3	193	1.529	ppb	1.529	5.71	9549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4803679	0.49	4299393	111.73	60	120	
Sc (IS)	45	3	HMI He	757716	2.58	674661	112.31	60	120	
Ge Internal standard	72	2	HMI H2	2520530	0.83	2269722	111.05	60	120	
Ge Internal standard	72	3	HMI He	840865	2.60	739017	113.78	60	120	
In Internal Standard	115	3	HMI He	2762290	2.15	2543041	108.62	60	120	
Ir (IS)	193	3	HMI He	5570110	1.44	5570851	99.99	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-4-Bsd@5
Data File Name	137SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:42:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	15552.193	ppb	15552.193	4.12	2016223	400000	
Mg	24	3	45	6560.900	ppb	6560.900	1.24	445431	400000	
Al	27	3	45	4.590	ppb	4.590	35.98	177	400000	
K	39	3	45	2085.576	ppb	2085.576	2.64	127081	400000	
Ca	40	2	45	33862.361	ppb	33862.361	3.46	20805911	400000	
V	51	3	72	0.722	ppb	0.722	13.93	633	2000	
Cr	52	3	72	0.025	ppb	0.025	316.56	1824	5000	
Mn	55	3	72	93.408	ppb	93.408	4.41	41481	10000	
Fe	56	2	72	7581.739	ppb	7581.739	1.54	12037615	10000	
Co	59	3	72	0.623	ppb	0.623	9.43	885	2000	
Ni	60	3	72	1.151	ppb	1.151	15.03	633	5000	
Cu	63	3	72	0.042	ppb	0.042	171.02	581	5000	
Zn	66	3	72	17.107	ppb	17.107	1.94	3152	5000	
As	75	3	72	1.461	ppb	1.461	20.62	213	2000	
Se	78	2	72	0.202	ppb	0.202	42.08	14	2000	
(Se)	78	3	72	0.612	ppb	0.612	236.40	18	2000	
Sr	88	3	72	223.435	ppb	223.435	1.96	125349	4000	
Mo	95	3	115	0.201	ppb	0.201	17.36	165	2000	
Ag	107	3	115	0.003	ppb	0.003	248.73	27	100	
Cd	111	3	115	0.013	ppb	0.013	2.35	5	2000	
Sn	120	3	115	0.118	ppb	0.118	72.47	751	2000	
Sb	121	3	115	0.144	ppb	0.144	58.28	177	1000	
Ba	137	3	115	106.722	ppb	106.722	3.04	25716	5000	
Tl	205	3	193	-0.073	ppb	-0.073	-15.46	125	2000	
(Pb)	206	3	193	0.021	ppb	0.021	87.29	193	100	
(Pb)	207	3	193	0.030	ppb	0.030	240.34	391	100	
Pb	208	3	193	0.020	ppb	0.020	49.61	993	5000	
Th	232	3	193	0.042	ppb	0.042	149.38	4240	2000	
U	238	3	193	0.318	ppb	0.318	3.23	3117	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4442253	1.47	4299393	103.32	60	120	
Sc (IS)	45	3	HMI He	664647	0.54	674661	98.52	60	120	
Ge Internal standard	72	2	HMI H2	2386372	0.28	2269722	105.14	60	120	
Ge Internal standard	72	3	HMI He	767712	1.73	739017	103.88	60	120	
In Internal Standard	115	3	HMI He	2581895	1.59	2543041	101.53	60	120	
Ir (IS)	193	3	HMI He	5357736	1.05	5570851	96.17	60	120	

Sample Report

Sample Table

Sample Name	280-171363-A-6-B
Data File Name	138SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:44:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-6058.17	2	2000	
Na	23	3	45	58190.089	ppb	58190.089	1.33	7552366	400000	
Mg	24	3	45	28116.979	ppb	28116.979	2.86	1930820	400000	
Al	27	3	45	6.700	ppb	6.700	32.85	230	400000	
K	39	3	45	6634.948	ppb	6634.948	1.23	362688	400000	
Ca	40	2	45	148595.606	ppb	148595.606	1.04	93775103	400000	
V	51	3	72	0.791	ppb	0.791	12.83	698	2000	
Cr	52	3	72	-0.033	ppb	-0.033	-608.63	1831	5000	
Mn	55	3	72	717.453	ppb	717.453	2.38	324773	10000	
Fe	56	2	72	22186.932	ppb	22186.932	0.51	35823219	10000	
Co	59	3	72	2.851	ppb	2.851	3.78	4025	2000	
Ni	60	3	72	5.148	ppb	5.148	5.53	2209	5000	
Cu	63	3	72	0.302	ppb	0.302	12.70	871	5000	
Zn	66	3	72	40.359	ppb	40.359	7.02	7437	5000	
As	75	3	72	4.321	ppb	4.321	5.07	575	2000	
Se	78	2	72	0.555	ppb	0.555	21.65	37	2000	
(Se)	78	3	72	1.159	ppb	1.159	127.18	23	2000	
Sr	88	3	72	909.080	ppb	909.080	1.43	525883	4000	
Mo	95	3	115	0.817	ppb	0.817	10.57	500	2000	
Ag	107	3	115	0.003	ppb	0.003	392.14	28	100	
Cd	111	3	115	0.006	ppb	0.006	174.22	3	2000	
Sn	120	3	115	0.116	ppb	0.116	63.25	760	2000	
Sb	121	3	115	0.300	ppb	0.300	23.18	300	1000	
Ba	137	3	115	429.906	ppb	429.906	2.59	104641	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-12.98	105	2000	
(Pb)	206	3	193	0.075	ppb	0.075	21.14	268	100	
(Pb)	207	3	193	0.084	ppb	0.084	69.20	466	100	
Pb	208	3	193	0.075	ppb	0.075	22.19	1308	5000	
Th	232	3	193	0.037	ppb	0.037	71.42	4402	2000	
U	238	3	193	1.718	ppb	1.718	1.70	10571	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4563826	1.81	4299393	106.15	60	120	
Sc (IS)	45	3	HMI He	672564	1.01	674661	99.69	60	120	
Ge Internal standard	72	2	HMI H2	2428239	0.54	2269722	106.98	60	120	
Ge Internal standard	72	3	HMI He	791660	1.89	739017	107.12	60	120	
In Internal Standard	115	3	HMI He	2612033	1.82	2543041	102.71	60	120	
Ir (IS)	193	3	HMI He	5588630	1.32	5570851	100.32	60	120	

Sample Report

Sample Table

Sample Name	280-171329-A-10-B
Data File Name	139SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:46:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	8159.92	2	2000	
Na	23	3	45	1290.216	ppb	1290.216	1.53	194781	400000	
Mg	24	3	45	36.762	ppb	36.762	11.15	2630	400000	
Al	27	3	45	29.102	ppb	29.102	9.00	771	400000	
K	39	3	45	440.917	ppb	440.917	5.24	43558	400000	
Ca	40	2	45	140.750	ppb	140.750	3.42	95543	400000	
V	51	3	72	0.398	ppb	0.398	15.89	410	2000	
Cr	52	3	72	0.744	ppb	0.744	19.91	2351	5000	
Mn	55	3	72	0.333	ppb	0.333	29.71	680	10000	
Fe	56	2	72	52.725	ppb	52.725	3.36	89896	10000	
Co	59	3	72	0.001	ppb	0.001	736.26	40	2000	
Ni	60	3	72	0.193	ppb	0.193	55.77	262	5000	
Cu	63	3	72	0.334	ppb	0.334	17.06	850	5000	
Zn	66	3	72	2.149	ppb	2.149	6.33	521	5000	
As	75	3	72	0.257	ppb	0.257	94.18	67	2000	
Se	78	2	72	0.112	ppb	0.112	77.81	8	2000	
(Se)	78	3	72	0.918	ppb	0.918	262.41	20	2000	
Sr	88	3	72	0.481	ppb	0.481	9.99	277	4000	
Mo	95	3	115	0.000	ppb	0.000	11534.94	58	2000	
Ag	107	3	115	0.000	ppb	0.000	-3563.82	22	100	
Cd	111	3	115	0.026	ppb	0.026	115.58	8	2000	
Sn	120	3	115	1.257	ppb	1.257	2.48	1626	2000	
Sb	121	3	115	0.130	ppb	0.130	4.89	168	1000	
Ba	137	3	115	1.670	ppb	1.670	14.59	455	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-13.25	125	2000	
(Pb)	206	3	193	0.435	ppb	0.435	5.91	713	100	
(Pb)	207	3	193	0.444	ppb	0.444	11.07	860	100	
Pb	208	3	193	0.436	ppb	0.436	5.83	3104	5000	
Th	232	3	193	0.015	ppb	0.015	261.46	4295	2000	
U	238	3	193	-0.013	ppb	-0.013	-135.48	1524	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4329950	0.62	4299393	100.71	60	120	
Sc (IS)	45	3	HMI He	666505	0.67	674661	98.79	60	120	
Ge Internal standard	72	2	HMI H2	2260738	1.86	2269722	99.60	60	120	
Ge Internal standard	72	3	HMI He	744251	1.90	739017	100.71	60	120	
In Internal Standard	115	3	HMI He	2609624	2.22	2543041	102.62	60	120	
Ir (IS)	193	3	HMI He	5599539	1.83	5570851	100.51	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	140_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:48:20-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.002	ppb	7.747	2707	50	96.0	90	110	
Na	23	3	45	51439.877	ppb	0.404	6573599	51000	100.9	90	110	
Mg	24	3	45	10791.809	ppb	1.015	729467	11000	98.1	90	110	
Al	27	3	45	1008.938	ppb	1.738	24322	1000	100.9	90	110	
K	39	3	45	11149.614	ppb	0.268	585553	11000	101.4	90	110	
Ca	40	2	45	11251.228	ppb	2.735	6720069	11000	102.3	90	110	
V	51	3	72	51.986	ppb	2.290	33420	50	104.0	90	110	
Cr	52	3	72	49.755	ppb	2.708	42714	50	99.5	90	110	
Mn	55	3	72	50.209	ppb	3.142	22237	50	100.4	90	110	
Fe	56	2	72	1085.760	ppb	3.004	1646258	1000	108.6	90	110	
Co	59	3	72	49.349	ppb	2.054	65965	50	98.7	90	110	
Ni	60	3	72	49.432	ppb	2.897	18612	50	98.9	90	110	
Cu	63	3	72	49.307	ppb	1.448	49911	50	98.6	90	110	
Zn	66	3	72	51.159	ppb	4.193	8973	50	102.3	90	110	
As	75	3	72	52.279	ppb	3.054	6228	50	104.6	90	110	
Se	78	2	72	50.260	ppb	3.840	2978	50	100.5	90	110	
(Se)	78	3	72	49.104	ppb	7.660	375	50	98.2	90	110	
Sr	88	3	72	105.901	ppb	2.553	58575	100	105.9	90	110	
Mo	95	3	115	49.882	ppb	1.709	27194	50	99.8	90	110	
Ag	107	3	115	49.175	ppb	0.769	88058	50	98.3	90	110	
Cd	111	3	115	49.971	ppb	2.142	13018	50	99.9	90	110	
Sn	120	3	115	51.605	ppb	1.674	40204	50	103.2	90	110	
Sb	121	3	115	51.447	ppb	1.199	40079	50	102.9	90	110	
Ba	137	3	115	51.725	ppb	0.959	12726	50	103.5	90	110	
Tl	205	3	193	51.176	ppb	2.628	185570	50	102.4	90	110	
(Pb)	206	3	193	51.214	ppb	2.156	62052	50	102.4	90	110	
(Pb)	207	3	193	51.262	ppb	1.458	54953	50	102.5	90	110	
Pb	208	3	193	51.100	ppb	1.625	249634	50	102.2	90	110	
Th	232	3	193	51.461	ppb	2.402	254873	50	102.9	90	110	
U	238	3	193	51.626	ppb	1.625	266260	50	103.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4313502	1.34	4299393	100.33	60	120	
Sc (IS)	45	3	HMI He	661825	0.12	674661	98.10	60	120	
Ge Internal standard	72	2	HMI H2	2266585	1.21	2269722	99.86	60	120	
Ge Internal standard	72	3	HMI He	756722	0.98	739017	102.40	60	120	
In Internal Standard	115	3	HMI He	2630397	0.77	2543041	103.44	60	120	
Ir (IS)	193	3	HMI He	5482778	1.66	5570851	98.42	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	141_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:50:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.030	ppb	168.7	3	0.5	
Na	23	3	45	512.649	ppb	2.6	94339	25	>RL
Mg	24	3	45	4.439	ppb	18.3	427	25	
Al	27	3	45	7.002	ppb	4.3	234	15	
K	39	3	45	281.112	ppb	9.8	35096	50	>RL
V	51	3	72	0.280	ppb	11.9	330	1	
Cr	52	3	72	-0.322	ppb	-7.9	1463	1	
Mn	55	3	72	-0.665	ppb	-9.5	252	0.5	
Co	59	3	72	-0.006	ppb	-4.7	30	0.5	
Ni	60	3	72	-0.110	ppb	-52.0	148	1	
Cu	63	3	72	-0.113	ppb	-8.9	403	1	
Zn	66	3	72	1.210	ppb	18.6	356	5	
As	75	3	72	0.250	ppb	62.2	65	1	
Se	78	2	72	0.087	ppb	117.4	7	1	
(Se)	78	3	72	0.246	ppb	492.3	15	1	
Sr	88	3	72	0.119	ppb	5.8	78	0.5	
Mo	95	3	115	-0.005	ppb	-791.0	55	0.5	
Ag	107	3	115	0.005	ppb	29.8	32	1	
Cd	111	3	115	-0.006	ppb	0.0	0	0.5	
Sn	120	3	115	-0.118	ppb	-53.2	578	1	
Sb	121	3	115	0.074	ppb	23.7	125	0.6	
Ba	137	3	115	0.107	ppb	20.1	75	0.5	
Tl	205	3	193	-0.071	ppb	-11.1	133	0.1	
(Pb)	206	3	193	-0.047	ppb	-42.6	115	1	
(Pb)	207	3	193	-0.020	ppb	-131.9	345	1	
Pb	208	3	193	-0.029	ppb	-72.4	768	0.5	
Th	232	3	193	0.351	ppb	24.8	5813	1	
U	238	3	193	0.013	ppb	119.6	1614	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4359938	2.07	4299393	101.41	60	120	
Sc (IS)	45	3	HMI He	660738	0.66	674661	97.94	60	120	
Ge Internal standard	72	2	HMI H2	2282190	3.60	2269722	100.55	60	120	
Ge Internal standard	72	3	HMI He	731917	1.25	739017	99.04	60	120	
In Internal Standard	115	3	HMI He	2595610	0.27	2543041	102.07	60	120	
Ir (IS)	193	3	HMI He	5447338	1.61	5570851	97.78	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	142LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:52:03-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.874	ppb	21.697	52	1	87.4	70	130	
Na	23	3	45	518.491	ppb	1.078	96042	50	1037.0	70	130	>+/-30%
Mg	24	3	45	51.997	ppb	8.770	3674	50	104.0	70	130	
Al	27	3	45	49.597	ppb	9.198	1268	50	99.2	70	130	
K	39	3	45	351.757	ppb	6.607	39060	100	351.8	70	130	>+/-30%
V	51	3	72	5.163	ppb	3.221	3462	5	103.3	70	130	
Cr	52	3	72	1.785	ppb	9.105	3242	2	89.2	70	130	
Mn	55	3	72	0.389	ppb	50.499	716	1	38.9	70	130	>+/-30%
Co	59	3	72	1.014	ppb	8.867	1391	1	101.4	70	130	
Ni	60	3	72	2.087	ppb	7.028	971	2	104.4	70	130	
Cu	63	3	72	1.998	ppb	5.088	2529	2	99.9	70	130	
Zn	66	3	72	10.786	ppb	5.560	2019	10	107.9	70	130	
As	75	3	72	5.281	ppb	12.330	661	5	105.6	70	130	
Se	78	2	72	5.313	ppb	9.844	323	5	106.3	70	130	
(Se)	78	3	72	5.395	ppb	14.298	53	5	107.9	70	130	
Sr	88	3	72	1.209	ppb	6.224	683	1	120.9	70	130	
Mo	95	3	115	1.846	ppb	11.914	1066	2	92.3	70	130	
Ag	107	3	115	0.999	ppb	6.063	1818	1	99.9	70	130	
Cd	111	3	115	1.179	ppb	4.215	310	1	117.9	70	130	
Sn	120	3	115	9.941	ppb	3.466	8315	10	99.4	70	130	
Sb	121	3	115	2.094	ppb	5.463	1703	2	104.7	70	130	
Ba	137	3	115	0.948	ppb	29.969	283	1	94.8	70	130	
Tl	205	3	193	0.935	ppb	7.213	3862	1	93.5	70	130	
(Pb)	206	3	193	1.031	ppb	4.765	1453	1	103.1	70	130	
(Pb)	207	3	193	1.080	ppb	9.784	1554	1	108.0	70	130	
Pb	208	3	193	1.042	ppb	8.524	6128	1	104.2	70	130	
Th	232	3	193	2.068	ppb	5.419	14556	2	103.4	70	130	
U	238	3	193	1.048	ppb	6.432	7104	1	104.8	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4389819	0.81	4299393	102.10	60	120	
Sc (IS)	45	3	HMI He	667396	1.25	674661	98.92	60	120	
Ge Internal standard	72	2	HMI H2	2317459	2.52	2269722	102.10	60	120	
Ge Internal standard	72	3	HMI He	756354	2.48	739017	102.35	60	120	
In Internal Standard	115	3	HMI He	2639356	1.98	2543041	103.79	60	120	
Ir (IS)	193	3	HMI He	5619864	3.36	5570851	100.88	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-G
Data File Name	143SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:53:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	4356.41	2	2000	
Na	23	3	45	424.766	ppb	424.766	5.05	84021	400000	
Mg	24	3	45	4.280	ppb	4.280	7.11	420	400000	
Al	27	3	45	8.575	ppb	8.575	20.72	274	400000	
K	39	3	45	229.935	ppb	229.935	25.13	32815	400000	
Ca	40	2	45	34.825	ppb	34.825	3.62	31581	400000	
V	51	3	72	0.293	ppb	0.293	29.37	348	2000	
Cr	52	3	72	0.052	ppb	0.052	320.47	1813	5000	
Mn	55	3	72	-0.148	ppb	-0.148	-56.72	481	10000	
Fe	56	2	72	13.358	ppb	13.358	6.49	30738	10000	
Co	59	3	72	0.003	ppb	0.003	366.27	43	2000	
Ni	60	3	72	0.448	ppb	0.448	39.31	360	5000	
Cu	63	3	72	0.022	ppb	0.022	255.16	550	5000	
Zn	66	3	72	2.250	ppb	2.250	27.69	546	5000	
As	75	3	72	0.148	ppb	0.148	99.99	55	2000	
Se	78	2	72	0.079	ppb	0.079	43.33	6	2000	
(Se)	78	3	72	0.406	ppb	0.406	250.59	17	2000	
Sr	88	3	72	0.117	ppb	0.117	32.73	80	4000	
Mo	95	3	115	-0.001	ppb	-0.001	-3548.35	57	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-56.16	8	100	
Cd	111	3	115	0.006	ppb	0.006	172.51	3	2000	
Sn	120	3	115	0.235	ppb	0.235	78.04	846	2000	
Sb	121	3	115	0.044	ppb	0.044	27.09	102	1000	
Ba	137	3	115	0.321	ppb	0.321	35.26	127	5000	
Tl	205	3	193	-0.078	ppb	-0.078	-3.25	112	2000	
(Pb)	206	3	193	0.005	ppb	0.005	273.30	183	100	
(Pb)	207	3	193	-0.010	ppb	-0.010	-56.35	368	100	
Pb	208	3	193	-0.002	ppb	-0.002	-341.03	930	5000	
Th	232	3	193	0.090	ppb	0.090	9.09	4699	2000	
U	238	3	193	-0.027	ppb	-0.027	-44.57	1459	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4257925	0.99	4299393	99.04	60	120	
Sc (IS)	45	3	HMI He	667711	2.08	674661	98.97	60	120	
Ge Internal standard	72	2	HMI H2	2259734	1.60	2269722	99.56	60	120	
Ge Internal standard	72	3	HMI He	753879	1.10	739017	102.01	60	120	
In Internal Standard	115	3	HMI He	2595295	2.67	2543041	102.05	60	120	
Ir (IS)	193	3	HMI He	5631681	1.29	5570851	101.09	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-Gsd@5
Data File Name	144SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:55:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	422.384	ppb	422.384	2.34	81484	400000	
Mg	24	3	45	11.696	ppb	11.696	4.90	901	400000	
Al	27	3	45	4.054	ppb	4.054	27.29	160	400000	
K	39	3	45	241.239	ppb	241.239	13.66	32527	400000	
Ca	40	2	45	32.178	ppb	32.178	4.31	29771	400000	
V	51	3	72	0.385	ppb	0.385	23.86	385	2000	
Cr	52	3	72	-0.024	ppb	-0.024	-678.17	1656	5000	
Mn	55	3	72	-0.526	ppb	-0.526	-19.17	302	10000	
Fe	56	2	72	4.233	ppb	4.233	2.43	16650	10000	
Co	59	3	72	0.005	ppb	0.005	200.82	43	2000	
Ni	60	3	72	0.213	ppb	0.213	50.06	258	5000	
Cu	63	3	72	0.028	ppb	0.028	239.83	526	5000	
Zn	66	3	72	3.134	ppb	3.134	11.00	660	5000	
As	75	3	72	0.324	ppb	0.324	47.83	72	2000	
Se	78	2	72	0.012	ppb	0.012	292.22	2	2000	
(Se)	78	3	72	-0.178	ppb	-0.178	-235.29	12	2000	
Sr	88	3	72	0.212	ppb	0.212	12.32	125	4000	
Mo	95	3	115	0.000	ppb	0.000	-4704.01	58	2000	
Ag	107	3	115	0.001	ppb	0.001	349.65	25	100	
Cd	111	3	115	0.006	ppb	0.006	174.73	3	2000	
Sn	120	3	115	0.124	ppb	0.124	98.77	770	2000	
Sb	121	3	115	0.118	ppb	0.118	6.50	160	1000	
Ba	137	3	115	0.137	ppb	0.137	5.53	83	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-14.39	135	2000	
(Pb)	206	3	193	-0.017	ppb	-0.017	-123.56	153	100	
(Pb)	207	3	193	-0.010	ppb	-0.010	-472.59	361	100	
Pb	208	3	193	-0.029	ppb	-0.029	-44.32	781	5000	
Th	232	3	193	0.079	ppb	0.079	71.80	4559	2000	
U	238	3	193	-0.003	ppb	-0.003	-927.41	1556	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4222883	1.88	4299393	98.22	60	120	
Sc (IS)	45	3	HMI He	649697	1.33	674661	96.30	60	120	
Ge Internal standard	72	2	HMI H2	2207534	1.67	2269722	97.26	60	120	
Ge Internal standard	72	3	HMI He	713046	0.37	739017	96.49	60	120	
In Internal Standard	115	3	HMI He	2625204	1.34	2543041	103.23	60	120	
Ir (IS)	193	3	HMI He	5530560	1.15	5570851	99.28	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-H MS
Data File Name	145SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:57:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.653	ppb	38.653	1.31	2187	2000	
Na	23	3	45	1256.861	ppb	1256.861	0.77	190333	400000	
Mg	24	3	45	802.005	ppb	802.005	1.69	54660	400000	
Al	27	3	45	852.617	ppb	852.617	0.58	20689	400000	
K	39	3	45	1022.448	ppb	1022.448	1.80	73143	400000	
Ca	40	2	45	887.000	ppb	887.000	2.02	543636	400000	
V	51	3	72	42.329	ppb	42.329	1.21	27138	2000	
Cr	52	3	72	41.500	ppb	41.500	2.67	35776	5000	
Mn	55	3	72	41.420	ppb	41.420	2.34	18368	10000	
Fe	56	2	72	891.647	ppb	891.647	2.55	1371701	10000	
Co	59	3	72	41.135	ppb	41.135	2.61	54769	2000	
Ni	60	3	72	40.211	ppb	40.211	1.82	15117	5000	
Cu	63	3	72	41.283	ppb	41.283	1.51	41710	5000	
Zn	66	3	72	43.008	ppb	43.008	4.74	7537	5000	
As	75	3	72	42.712	ppb	42.712	5.78	5075	2000	
Se	78	2	72	42.315	ppb	42.315	1.54	2540	2000	
(Se)	78	3	72	41.579	ppb	41.579	10.22	318	2000	
Sr	88	3	72	84.416	ppb	84.416	2.71	46504	4000	
Mo	95	3	115	39.259	ppb	39.259	1.33	21815	2000	
Ag	107	3	115	39.355	ppb	39.355	1.99	71787	100	
Cd	111	3	115	39.632	ppb	39.632	6.08	10519	2000	
Sn	120	3	115	41.152	ppb	41.152	0.58	32792	2000	
Sb	121	3	115	41.287	ppb	41.287	1.01	32776	1000	
Ba	137	3	115	42.522	ppb	42.522	2.69	10666	5000	
Tl	205	3	193	41.593	ppb	41.593	3.48	154741	2000	
(Pb)	206	3	193	41.745	ppb	41.745	2.88	51902	100	
(Pb)	207	3	193	41.344	ppb	41.344	4.48	45509	100	
Pb	208	3	193	41.604	ppb	41.604	3.41	208575	5000	
Th	232	3	193	41.334	ppb	41.334	3.82	210750	2000	
U	238	3	193	41.321	ppb	41.321	2.85	218857	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4341184	1.19	4299393	100.97	60	120	
Sc (IS)	45	3	HMI He	665858	0.29	674661	98.70	60	120	
Ge Internal standard	72	2	HMI H2	2295903	1.27	2269722	101.15	60	120	
Ge Internal standard	72	3	HMI He	753854	2.29	739017	102.01	60	120	
In Internal Standard	115	3	HMI He	2679249	0.55	2543041	105.36	60	120	
Ir (IS)	193	3	HMI He	5623867	2.37	5570851	100.95	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-I MSD
Data File Name	146SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T16:59:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.331	ppb	38.331	2.52	2164	2000	
Na	23	3	45	1312.260	ppb	1312.260	1.37	196634	400000	
Mg	24	3	45	795.674	ppb	795.674	2.08	54010	400000	
Al	27	3	45	852.183	ppb	852.183	3.66	20593	400000	
K	39	3	45	1053.496	ppb	1053.496	2.19	74428	400000	
Ca	40	2	45	892.868	ppb	892.868	2.46	546650	400000	
V	51	3	72	40.432	ppb	40.432	3.21	26390	2000	
Cr	52	3	72	40.096	ppb	40.096	2.28	35254	5000	
Mn	55	3	72	40.234	ppb	40.234	2.17	18180	10000	
Fe	56	2	72	882.548	ppb	882.548	2.72	1347547	10000	
Co	59	3	72	39.404	ppb	39.404	1.76	53419	2000	
Ni	60	3	72	38.681	ppb	38.681	0.93	14814	5000	
Cu	63	3	72	39.272	ppb	39.272	2.11	40417	5000	
Zn	66	3	72	41.408	ppb	41.408	1.74	7397	5000	
As	75	3	72	42.674	ppb	42.674	4.27	5167	2000	
Se	78	2	72	41.983	ppb	41.983	1.56	2502	2000	
(Se)	78	3	72	40.594	ppb	40.594	4.19	317	2000	
Sr	88	3	72	82.074	ppb	82.074	2.48	46033	4000	
Mo	95	3	115	40.319	ppb	40.319	2.07	21928	2000	
Ag	107	3	115	39.353	ppb	39.353	0.80	70273	100	
Cd	111	3	115	41.629	ppb	41.629	1.99	10814	2000	
Sn	120	3	115	41.151	ppb	41.151	0.91	32101	2000	
Sb	121	3	115	42.166	ppb	42.166	1.42	32766	1000	
Ba	137	3	115	42.509	ppb	42.509	2.12	10437	5000	
Tl	205	3	193	40.884	ppb	40.884	2.78	153296	2000	
(Pb)	206	3	193	40.760	ppb	40.760	2.40	51079	100	
(Pb)	207	3	193	40.561	ppb	40.561	2.76	45014	100	
Pb	208	3	193	40.798	ppb	40.798	1.87	206170	5000	
Th	232	3	193	41.327	ppb	41.327	1.77	212400	2000	
U	238	3	193	41.061	ppb	41.061	3.39	219156	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337965	2.19	4299393	100.90	60	120	
Sc (IS)	45	3	HMI He	663222	0.87	674661	98.30	60	120	
Ge Internal standard	72	2	HMI H2	2279284	1.70	2269722	100.42	60	120	
Ge Internal standard	72	3	HMI He	767442	2.17	739017	103.85	60	120	
In Internal Standard	115	3	HMI He	2622723	0.23	2543041	103.13	60	120	
Ir (IS)	193	3	HMI He	5666535	1.70	5570851	101.72	60	120	

Sample Report

Sample Table

Sample Name	280-171038-V-1-G pds
Data File Name	147SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:01:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	188.383	ppb	188.383	0.70	10874	2000	
Na	23	3	45	436.277	ppb	436.277	4.97	85076	400000	
Mg	24	3	45	67.388	ppb	67.388	1.94	4699	400000	
Al	27	3	45	2016.661	ppb	2016.661	1.17	48726	400000	
K	39	3	45	237.779	ppb	237.779	13.79	33072	400000	
Ca	40	2	45	106.180	ppb	106.180	1.79	75340	400000	
V	51	3	72	196.079	ppb	196.079	4.29	127401	2000	
Cr	52	3	72	193.100	ppb	193.100	3.70	162975	5000	
Mn	55	3	72	200.031	ppb	200.031	3.10	88230	10000	
Fe	56	2	72	29.531	ppb	29.531	0.57	57724	10000	
Co	59	3	72	193.296	ppb	193.296	4.17	261970	2000	
Ni	60	3	72	190.452	ppb	190.452	4.11	72183	5000	
Cu	63	3	72	195.769	ppb	195.769	3.74	199425	5000	
Zn	66	3	72	208.003	ppb	208.003	3.33	36518	5000	
As	75	3	72	195.857	ppb	195.857	4.18	23563	2000	
Se	78	2	72	195.414	ppb	195.414	1.53	12103	2000	
(Se)	78	3	72	198.869	ppb	198.869	5.84	1496	2000	
Sr	88	3	72	200.497	ppb	200.497	3.94	112481	4000	
Mo	95	3	115	198.340	ppb	198.340	0.32	105552	2000	
Ag	107	3	115	49.768	ppb	49.768	2.28	87125	100	
Cd	111	3	115	199.387	ppb	199.387	0.91	50780	2000	
Sn	120	3	115	206.186	ppb	206.186	1.31	155047	2000	
Sb	121	3	115	208.616	ppb	208.616	1.43	158675	1000	
Ba	137	3	115	209.164	ppb	209.164	2.44	50160	5000	
Tl	205	3	193	197.999	ppb	197.999	2.17	740642	2000	
(Pb)	206	3	193	199.171	ppb	199.171	1.61	248807	100	
(Pb)	207	3	193	199.995	ppb	199.995	2.49	220362	100	
Pb	208	3	193	199.193	ppb	199.193	1.68	1002551	5000	
Th	232	3	193	412.061	ppb	412.061	1.82	2078912	2000	
U	238	3	193	208.494	ppb	208.494	4.71	1105720	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4359155	0.43	4299393	101.39	60	120	
Sc (IS)	45	3	HMI He	664224	0.91	674661	98.45	60	120	
Ge Internal standard	72	2	HMI H2	2369741	0.83	2269722	104.41	60	120	
Ge Internal standard	72	3	HMI He	768181	3.32	739017	103.95	60	120	
In Internal Standard	115	3	HMI He	2571683	0.72	2543041	101.13	60	120	
Ir (IS)	193	3	HMI He	5664002	1.28	5570851	101.67	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-A
Data File Name	148SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:03:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	5165.04	2	2000	
Na	23	3	45	38788.784	ppb	38788.784	2.57	5080500	400000	
Mg	24	3	45	30490.126	ppb	30490.126	1.68	2109471	400000	
Al	27	3	45	38.349	ppb	38.349	1.02	1011	400000	
K	39	3	45	3792.390	ppb	3792.390	1.94	217990	400000	
Ca	40	2	45	67344.926	ppb	67344.926	1.18	40542877	400000	
V	51	3	72	1.995	ppb	1.995	5.96	1466	2000	
Cr	52	3	72	0.187	ppb	0.187	40.71	1968	5000	
Mn	55	3	72	621.855	ppb	621.855	0.76	274333	10000	
Fe	56	2	72	123.523	ppb	123.523	1.80	201029	10000	
Co	59	3	72	2.555	ppb	2.555	4.22	3519	2000	
Ni	60	3	72	7.495	ppb	7.495	6.51	3044	5000	
Cu	63	3	72	0.645	ppb	0.645	21.20	1199	5000	
Zn	66	3	72	4.689	ppb	4.689	6.33	986	5000	
As	75	3	72	0.759	ppb	0.759	26.85	130	2000	
Se	78	2	72	0.143	ppb	0.143	24.35	10	2000	
(Se)	78	3	72	0.583	ppb	0.583	64.29	18	2000	
Sr	88	3	72	620.306	ppb	620.306	1.27	349563	4000	
Mo	95	3	115	1.988	ppb	1.988	3.09	1141	2000	
Ag	107	3	115	0.026	ppb	0.026	31.26	70	100	
Cd	111	3	115	0.064	ppb	0.064	62.86	18	2000	
Sn	120	3	115	0.426	ppb	0.426	5.94	1003	2000	
Sb	121	3	115	0.498	ppb	0.498	3.12	456	1000	
Ba	137	3	115	144.021	ppb	144.021	1.50	35375	5000	
Tl	205	3	193	-0.031	ppb	-0.031	-9.42	283	2000	
(Pb)	206	3	193	0.181	ppb	0.181	17.80	400	100	
(Pb)	207	3	193	0.123	ppb	0.123	68.27	511	100	
Pb	208	3	193	0.160	ppb	0.160	16.07	1738	5000	
Th	232	3	193	1.044	ppb	1.044	26.58	9431	2000	
U	238	3	193	0.415	ppb	0.415	5.31	3775	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4353007	0.71	4299393	101.25	60	120	
Sc (IS)	45	3	HMI He	677540	1.70	674661	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2315406	1.50	2269722	102.01	60	120	
Ge Internal standard	72	3	HMI He	771086	0.49	739017	104.34	60	120	
In Internal Standard	115	3	HMI He	2632589	0.39	2543041	103.52	60	120	
Ir (IS)	193	3	HMI He	5611560	0.83	5570851	100.73	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-B MS
Data File Name	149SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:05:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.335	ppb	40.335	4.14	2271	2000	
Na	23	3	45	40333.089	ppb	40333.089	1.21	5177055	400000	
Mg	24	3	45	31195.763	ppb	31195.763	2.24	2115124	400000	
Al	27	3	45	902.034	ppb	902.034	4.23	21822	400000	
K	39	3	45	4693.371	ppb	4693.371	1.79	259427	400000	
Ca	40	2	45	69019.349	ppb	69019.349	2.20	40840141	400000	
V	51	3	72	43.607	ppb	43.607	2.74	28553	2000	
Cr	52	3	72	40.437	ppb	40.437	0.27	35661	5000	
Mn	55	3	72	661.018	ppb	661.018	1.83	291117	10000	
Fe	56	2	72	995.432	ppb	995.432	0.58	1545679	10000	
Co	59	3	72	42.341	ppb	42.341	1.70	57594	2000	
Ni	60	3	72	45.710	ppb	45.710	0.55	17527	5000	
Cu	63	3	72	40.300	ppb	40.300	1.15	41603	5000	
Zn	66	3	72	46.961	ppb	46.961	3.58	8393	5000	
As	75	3	72	42.996	ppb	42.996	1.60	5218	2000	
Se	78	2	72	42.950	ppb	42.950	4.29	2604	2000	
(Se)	78	3	72	37.364	ppb	37.364	15.09	293	2000	
Sr	88	3	72	709.730	ppb	709.730	1.55	399329	4000	
Mo	95	3	115	43.760	ppb	43.760	1.57	23282	2000	
Ag	107	3	115	41.028	ppb	41.028	2.17	71676	100	
Cd	111	3	115	41.822	ppb	41.822	2.07	10629	2000	
Sn	120	3	115	43.637	ppb	43.637	1.21	33266	2000	
Sb	121	3	115	43.309	ppb	43.309	2.88	32919	1000	
Ba	137	3	115	188.925	ppb	188.925	1.69	45216	5000	
Tl	205	3	193	42.219	ppb	42.219	2.34	155125	2000	
(Pb)	206	3	193	42.297	ppb	42.297	2.10	51933	100	
(Pb)	207	3	193	42.550	ppb	42.550	3.40	46251	100	
Pb	208	3	193	42.359	ppb	42.359	2.48	209720	5000	
Th	232	3	193	42.660	ppb	42.660	1.87	214714	2000	
U	238	3	193	43.080	ppb	43.080	2.01	225286	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4279544	2.19	4299393	99.54	60	120	
Sc (IS)	45	3	HMI He	663964	0.47	674661	98.41	60	120	
Ge Internal standard	72	2	HMI H2	2319339	1.08	2269722	102.19	60	120	
Ge Internal standard	72	3	HMI He	769878	0.79	739017	104.18	60	120	
In Internal Standard	115	3	HMI He	2566646	2.30	2543041	100.93	60	120	
Ir (IS)	193	3	HMI He	5552761	1.46	5570851	99.68	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-1-C MSD
Data File Name	150SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:07:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.257	ppb	40.257	5.12	2324	2000	
Na	23	3	45	41708.472	ppb	41708.472	1.49	5334347	400000	
Mg	24	3	45	33027.649	ppb	33027.649	0.73	2231880	400000	
Al	27	3	45	873.975	ppb	873.975	1.50	21074	400000	
K	39	3	45	4844.149	ppb	4844.149	3.27	266154	400000	
Ca	40	2	45	70135.601	ppb	70135.601	0.75	42076683	400000	
V	51	3	72	43.489	ppb	43.489	2.40	28608	2000	
Cr	52	3	72	40.303	ppb	40.303	1.47	35723	5000	
Mn	55	3	72	679.665	ppb	679.665	1.38	300757	10000	
Fe	56	2	72	972.392	ppb	972.392	1.05	1530666	10000	
Co	59	3	72	42.249	ppb	42.249	1.98	57744	2000	
Ni	60	3	72	45.259	ppb	45.259	0.80	17442	5000	
Cu	63	3	72	39.638	ppb	39.638	2.31	41125	5000	
Zn	66	3	72	44.335	ppb	44.335	2.58	7972	5000	
As	75	3	72	43.792	ppb	43.792	2.78	5340	2000	
Se	78	2	72	41.715	ppb	41.715	4.08	2564	2000	
(Se)	78	3	72	40.231	ppb	40.231	7.25	317	2000	
Sr	88	3	72	725.345	ppb	725.345	1.78	410087	4000	
Mo	95	3	115	43.368	ppb	43.368	1.97	23118	2000	
Ag	107	3	115	40.681	ppb	40.681	2.73	71202	100	
Cd	111	3	115	41.333	ppb	41.333	2.28	10526	2000	
Sn	120	3	115	42.988	ppb	42.988	2.19	32841	2000	
Sb	121	3	115	43.765	ppb	43.765	1.69	33335	1000	
Ba	137	3	115	195.493	ppb	195.493	2.65	46873	5000	
Tl	205	3	193	41.769	ppb	41.769	0.66	155843	2000	
(Pb)	206	3	193	41.402	ppb	41.402	1.83	51617	100	
(Pb)	207	3	193	41.612	ppb	41.612	0.82	45945	100	
Pb	208	3	193	41.589	ppb	41.589	1.17	209096	5000	
Th	232	3	193	42.230	ppb	42.230	1.38	215848	2000	
U	238	3	193	42.037	ppb	42.037	1.10	223242	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4337922	1.65	4299393	100.90	60	120	
Sc (IS)	45	3	HMI He	661729	0.82	674661	98.08	60	120	
Ge Internal standard	72	2	HMI H2	2350791	0.96	2269722	103.57	60	120	
Ge Internal standard	72	3	HMI He	773663	1.21	739017	104.69	60	120	
In Internal Standard	115	3	HMI He	2571319	1.30	2543041	101.11	60	120	
Ir (IS)	193	3	HMI He	5637297	0.87	5570851	101.19	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-2-A
Data File Name	151SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:09:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	14394.10	2	2000	
Na	23	3	45	39616.162	ppb	39616.162	1.81	5089777	400000	
Mg	24	3	45	30711.531	ppb	30711.531	2.51	2083952	400000	
Al	27	3	45	20.644	ppb	20.644	21.98	564	400000	
K	39	3	45	3865.002	ppb	3865.002	2.19	217519	400000	
Ca	40	2	45	66632.686	ppb	66632.686	1.61	40494304	400000	
V	51	3	72	1.792	ppb	1.792	7.62	1328	2000	
Cr	52	3	72	-0.024	ppb	-0.024	-389.39	1783	5000	
Mn	55	3	72	624.370	ppb	624.370	3.18	274076	10000	
Fe	56	2	72	115.131	ppb	115.131	0.53	193273	10000	
Co	59	3	72	2.554	ppb	2.554	2.45	3500	2000	
Ni	60	3	72	6.069	ppb	6.069	9.81	2487	5000	
Cu	63	3	72	0.585	ppb	0.585	26.62	1129	5000	
Zn	66	3	72	4.467	ppb	4.467	2.50	943	5000	
As	75	3	72	0.546	ppb	0.546	46.81	103	2000	
Se	78	2	72	0.190	ppb	0.190	102.05	13	2000	
(Se)	78	3	72	0.363	ppb	0.363	450.44	17	2000	
Sr	88	3	72	624.356	ppb	624.356	3.48	350083	4000	
Mo	95	3	115	1.994	ppb	1.994	3.23	1123	2000	
Ag	107	3	115	0.012	ppb	0.012	47.25	43	100	
Cd	111	3	115	0.026	ppb	0.026	85.02	8	2000	
Sn	120	3	115	0.403	ppb	0.403	47.65	966	2000	
Sb	121	3	115	0.437	ppb	0.437	3.57	401	1000	
Ba	137	3	115	145.008	ppb	145.008	2.52	34940	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-2.52	182	2000	
(Pb)	206	3	193	0.215	ppb	0.215	17.75	431	100	
(Pb)	207	3	193	0.178	ppb	0.178	38.89	556	100	
Pb	208	3	193	0.199	ppb	0.199	9.14	1879	5000	
Th	232	3	193	0.390	ppb	0.390	20.24	6022	2000	
U	238	3	193	0.406	ppb	0.406	5.65	3634	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4394390	1.17	4299393	102.21	60	120	
Sc (IS)	45	3	HMI He	664548	0.81	674661	98.50	60	120	
Ge Internal standard	72	2	HMI H2	2378552	1.36	2269722	104.79	60	120	
Ge Internal standard	72	3	HMI He	767778	3.29	739017	103.89	60	120	
In Internal Standard	115	3	HMI He	2582875	1.11	2543041	101.57	60	120	
Ir (IS)	193	3	HMI He	5468547	1.25	5570851	98.16	60	120	

Sample Report

Sample Table

Sample Name	280-171373-A-3-A
Data File Name	152SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:10:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020a
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.001	ppb	0.001	5615.67	2	2000	
Na	23	3	45	617.137	ppb	617.137	1.71	107458	400000	
Mg	24	3	45	18.021	ppb	18.021	7.92	1341	400000	
Al	27	3	45	8.687	ppb	8.687	3.58	274	400000	
K	39	3	45	233.957	ppb	233.957	15.48	32671	400000	
Ca	40	2	45	79.669	ppb	79.669	0.58	58550	400000	
V	51	3	72	0.252	ppb	0.252	4.84	313	2000	
Cr	52	3	72	0.133	ppb	0.133	96.11	1828	5000	
Mn	55	3	72	-0.108	ppb	-0.108	-106.08	485	10000	
Fe	56	2	72	18.742	ppb	18.742	3.97	38529	10000	
Co	59	3	72	0.016	ppb	0.016	28.23	58	2000	
Ni	60	3	72	0.364	ppb	0.364	49.22	320	5000	
Cu	63	3	72	0.379	ppb	0.379	10.05	881	5000	
Zn	66	3	72	1.677	ppb	1.677	15.67	435	5000	
As	75	3	72	0.162	ppb	0.162	139.76	55	2000	
Se	78	2	72	0.160	ppb	0.160	33.67	11	2000	
(Se)	78	3	72	1.408	ppb	1.408	114.10	23	2000	
Sr	88	3	72	0.482	ppb	0.482	1.42	273	4000	
Mo	95	3	115	0.031	ppb	0.031	110.20	75	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-69.87	15	100	
Cd	111	3	115	0.000	ppb	0.000	-15686.83	2	2000	
Sn	120	3	115	0.080	ppb	0.080	62.83	733	2000	
Sb	121	3	115	0.097	ppb	0.097	43.15	143	1000	
Ba	137	3	115	0.344	ppb	0.344	39.72	133	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-7.49	123	2000	
(Pb)	206	3	193	0.008	ppb	0.008	341.88	183	100	
(Pb)	207	3	193	0.011	ppb	0.011	136.55	385	100	
Pb	208	3	193	0.004	ppb	0.004	389.05	943	5000	
Th	232	3	193	0.082	ppb	0.082	58.67	4579	2000	
U	238	3	193	0.020	ppb	0.020	47.70	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4299425	0.83	4299393	100.00	60	120	
Sc (IS)	45	3	HMI He	659804	0.61	674661	97.80	60	120	
Ge Internal standard	72	2	HMI H2	2242215	1.38	2269722	98.79	60	120	
Ge Internal standard	72	3	HMI He	732910	0.66	739017	99.17	60	120	
In Internal Standard	115	3	HMI He	2615070	1.41	2543041	102.83	60	120	
Ir (IS)	193	3	HMI He	5536343	0.16	5570851	99.38	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	153_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:12:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.286	ppb	0.871	2754	50	96.6	90	110	
Na	23	3	45	50712.482	ppb	1.643	6542294	51000	99.4	90	110	
Mg	24	3	45	10835.036	ppb	3.549	739532	11000	98.5	90	110	
Al	27	3	45	990.925	ppb	1.460	24118	1000	99.1	90	110	
K	39	3	45	10901.705	ppb	1.381	578389	11000	99.1	90	110	
Ca	40	2	45	11188.522	ppb	1.109	6750742	11000	101.7	90	110	
V	51	3	72	50.309	ppb	2.456	32787	50	100.6	90	110	
Cr	52	3	72	49.436	ppb	1.956	43030	50	98.9	90	110	
Mn	55	3	72	49.155	ppb	0.939	22082	50	98.3	90	110	
Fe	56	2	72	1053.823	ppb	1.724	1624533	1000	105.4	90	110	
Co	59	3	72	49.350	ppb	2.094	66862	50	98.7	90	110	
Ni	60	3	72	48.214	ppb	3.539	18403	50	96.4	90	110	
Cu	63	3	72	48.302	ppb	2.824	49566	50	96.6	90	110	
Zn	66	3	72	49.030	ppb	2.159	8727	50	98.1	90	110	
As	75	3	72	50.454	ppb	2.867	6093	50	100.9	90	110	
Se	78	2	72	50.034	ppb	3.942	3012	50	100.1	90	110	
(Se)	78	3	72	49.540	ppb	4.015	383	50	99.1	90	110	
Sr	88	3	72	102.393	ppb	1.580	57409	100	102.4	90	110	
Mo	95	3	115	49.728	ppb	2.108	26783	50	99.5	90	110	
Ag	107	3	115	49.428	ppb	1.459	87446	50	98.9	90	110	
Cd	111	3	115	50.880	ppb	2.169	13095	50	101.8	90	110	
Sn	120	3	115	51.588	ppb	2.258	39699	50	103.2	90	110	
Sb	121	3	115	51.100	ppb	1.360	39328	50	102.2	90	110	
Ba	137	3	115	51.623	ppb	2.628	12548	50	103.2	90	110	
Tl	205	3	193	51.160	ppb	0.717	186253	50	102.3	90	110	
(Pb)	206	3	193	51.226	ppb	0.722	62310	50	102.5	90	110	
(Pb)	207	3	193	51.097	ppb	0.875	54988	50	102.2	90	110	
Pb	208	3	193	51.234	ppb	1.183	251248	50	102.5	90	110	
Th	232	3	193	51.756	ppb	1.478	257316	50	103.5	90	110	
U	238	3	193	51.823	ppb	0.681	268307	50	103.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4356516	0.46	4299393	101.33	60	120	
Sc (IS)	45	3	HMI He	668128	1.33	674661	99.03	60	120	
Ge Internal standard	72	2	HMI H2	2303781	1.58	2269722	101.50	60	120	
Ge Internal standard	72	3	HMI He	767076	1.58	739017	103.80	60	120	
In Internal Standard	115	3	HMI He	2598934	1.37	2543041	102.20	60	120	
Ir (IS)	193	3	HMI He	5503126	0.66	5570851	98.78	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	154_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:14:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	20861.1	2	0.5	
Na	23	3	45	258.755	ppb	1.0	61974	25	>RL
Mg	24	3	45	2.074	ppb	15.9	267	25	
Al	27	3	45	6.604	ppb	10.2	224	15	
K	39	3	45	138.391	ppb	23.4	27832	50	>RL
V	51	3	72	0.176	ppb	28.8	275	1	
Cr	52	3	72	-0.436	ppb	-20.4	1421	1	
Mn	55	3	72	-0.741	ppb	-9.5	228	0.5	
Co	59	3	72	-0.006	ppb	-92.7	32	0.5	
Ni	60	3	72	-0.094	ppb	-43.6	160	1	
Cu	63	3	72	-0.054	ppb	-68.2	476	1	
Zn	66	3	72	1.147	ppb	11.7	358	5	
As	75	3	72	0.188	ppb	36.3	60	1	
Se	78	2	72	0.137	ppb	51.9	9	1	
(Se)	78	3	72	1.096	ppb	161.0	22	1	>RL
Sr	88	3	72	0.066	ppb	40.8	52	0.5	
Mo	95	3	115	0.017	ppb	287.5	67	0.5	
Ag	107	3	115	-0.004	ppb	-68.4	15	1	
Cd	111	3	115	0.000	ppb	22415.2	2	0.5	
Sn	120	3	115	-0.042	ppb	-178.5	635	1	
Sb	121	3	115	0.042	ppb	80.3	100	0.6	
Ba	137	3	115	0.093	ppb	58.3	72	0.5	
Tl	205	3	193	-0.073	ppb	-10.1	128	0.1	
(Pb)	206	3	193	-0.028	ppb	-150.3	142	1	
(Pb)	207	3	193	-0.031	ppb	-93.2	343	1	
Pb	208	3	193	-0.031	ppb	-37.6	785	0.5	
Th	232	3	193	0.370	ppb	22.6	6068	1	
U	238	3	193	-0.002	ppb	-938.5	1583	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4331592	1.33	4299393	100.75	60	120	
Sc (IS)	45	3	HMI He	659443	0.36	674661	97.74	60	120	
Ge Internal standard	72	2	HMI H2	2242192	2.35	2269722	98.79	60	120	
Ge Internal standard	72	3	HMI He	758388	1.70	739017	102.62	60	120	
In Internal Standard	115	3	HMI He	2593981	0.88	2543041	102.00	60	120	
Ir (IS)	193	3	HMI He	5603363	1.23	5570851	100.58	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	155LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:16:32-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.756	ppb	39.634	45	1	75.6	70	130	
Na	23	3	45	288.080	ppb	9.109	66304	50	576.2	70	130	>+/-30%
Mg	24	3	45	51.244	ppb	6.521	3611	50	102.5	70	130	
Al	27	3	45	43.219	ppb	4.278	1111	50	86.4	70	130	
K	39	3	45	247.324	ppb	24.339	33617	100	247.3	70	130	>+/-30%
V	51	3	72	5.113	ppb	3.911	3410	5	102.3	70	130	
Cr	52	3	72	1.705	ppb	5.640	3160	2	85.2	70	130	
Mn	55	3	72	0.422	ppb	30.584	726	1	42.2	70	130	>+/-30%
Co	59	3	72	1.088	ppb	11.452	1481	1	108.8	70	130	
Ni	60	3	72	1.795	ppb	6.263	858	2	89.8	70	130	
Cu	63	3	72	2.078	ppb	7.474	2594	2	103.9	70	130	
Zn	66	3	72	10.130	ppb	4.059	1894	10	101.3	70	130	
As	75	3	72	5.424	ppb	12.051	675	5	108.5	70	130	
Se	78	2	72	5.148	ppb	13.371	313	5	103.0	70	130	
(Se)	78	3	72	5.656	ppb	31.564	55	5	113.1	70	130	
Sr	88	3	72	1.238	ppb	11.635	695	1	123.8	70	130	
Mo	95	3	115	2.053	ppb	10.198	1159	2	102.6	70	130	
Ag	107	3	115	1.022	ppb	9.868	1829	1	102.2	70	130	
Cd	111	3	115	0.934	ppb	12.660	242	1	93.4	70	130	
Sn	120	3	115	9.834	ppb	2.810	8103	10	98.3	70	130	
Sb	121	3	115	2.264	ppb	5.780	1806	2	113.2	70	130	
Ba	137	3	115	1.064	ppb	8.241	307	1	106.4	70	130	
Tl	205	3	193	0.949	ppb	3.150	3919	1	94.9	70	130	
(Pb)	206	3	193	0.954	ppb	4.938	1358	1	95.4	70	130	
(Pb)	207	3	193	1.029	ppb	11.274	1501	1	102.9	70	130	
Pb	208	3	193	0.993	ppb	4.173	5893	1	99.3	70	130	
Th	232	3	193	2.103	ppb	0.971	14741	2	105.2	70	130	
U	238	3	193	1.072	ppb	2.271	7235	1	107.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4343565	2.94	4299393	101.03	60	120	
Sc (IS)	45	3	HMI He	666123	2.38	674661	98.73	60	120	
Ge Internal standard	72	2	HMI H2	2319778	1.21	2269722	102.21	60	120	
Ge Internal standard	72	3	HMI He	752149	2.33	739017	101.78	60	120	
In Internal Standard	115	3	HMI He	2597046	1.32	2543041	102.12	60	120	
Ir (IS)	193	3	HMI He	5618406	0.32	5570851	100.85	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	156SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:18:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-2463.61	2	2000	
Na	23	3	45	609.889	ppb	609.889	2.96	118729	400000	
Mg	24	3	45	17.262	ppb	17.262	15.49	1438	400000	
Al	27	3	45	-0.107	ppb	-0.107	-1054.24	70	400000	
K	39	3	45	246.098	ppb	246.098	11.85	37090	400000	
Ca	40	2	45	16.508	ppb	16.508	11.39	23086	400000	
V	51	3	72	-0.096	ppb	-0.096	-18.54	112	2000	
Cr	52	3	72	-1.127	ppb	-1.127	-6.42	945	5000	
Mn	55	3	72	-0.750	ppb	-0.750	-4.77	248	10000	
Fe	56	2	72	-1.442	ppb	-1.442	-4.02	9690	10000	
Co	59	3	72	0.002	ppb	0.002	683.43	47	2000	
Ni	60	3	72	-0.289	ppb	-0.289	-32.65	97	5000	
Cu	63	3	72	-0.210	ppb	-0.210	-7.43	355	5000	
Zn	66	3	72	0.063	ppb	0.063	249.57	190	5000	
As	75	3	72	-0.064	ppb	-0.064	-207.39	33	2000	
Se	78	2	72	0.047	ppb	0.047	72.72	5	2000	
(Se)	78	3	72	0.989	ppb	0.989	217.59	23	2000	
Sr	88	3	72	0.297	ppb	0.297	32.95	200	4000	
Mo	95	3	115	-0.048	ppb	-0.048	-31.57	35	2000	
Ag	107	3	115	0.005	ppb	0.005	113.54	33	100	
Cd	111	3	115	0.006	ppb	0.006	372.32	3	2000	
Sn	120	3	115	-0.536	ppb	-0.536	-6.65	285	2000	
Sb	121	3	115	0.021	ppb	0.021	87.66	92	1000	
Ba	137	3	115	0.100	ppb	0.100	85.55	80	5000	
Tl	205	3	193	-0.068	ppb	-0.068	-7.35	158	2000	
(Pb)	206	3	193	-0.035	ppb	-0.035	-64.09	142	100	
(Pb)	207	3	193	-0.035	ppb	-0.035	-61.10	360	100	
Pb	208	3	193	-0.036	ppb	-0.036	-17.97	805	5000	
Th	232	3	193	0.043	ppb	0.043	74.43	4714	2000	
U	238	3	193	0.014	ppb	0.014	68.96	1771	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4727222	0.74	4299393	109.95	60	120	
Sc (IS)	45	3	HMI He	735229	0.36	674661	108.98	60	120	
Ge Internal standard	72	2	HMI H2	2569605	0.96	2269722	113.21	60	120	
Ge Internal standard	72	3	HMI He	840367	1.20	739017	113.71	60	120	
In Internal Standard	115	3	HMI He	2823430	0.61	2543041	111.03	60	120	
Ir (IS)	193	3	HMI He	5950422	0.44	5570851	106.81	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	157SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:20:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.027	ppb	0.027	179.92	3	2000	
Na	23	3	45	390.651	ppb	390.651	0.89	87257	400000	
Mg	24	3	45	8.885	ppb	8.885	14.72	804	400000	
Al	27	3	45	1.032	ppb	1.032	156.20	100	400000	
K	39	3	45	174.575	ppb	174.575	12.96	32888	400000	
Ca	40	2	45	7.757	ppb	7.757	7.61	17004	400000	
V	51	3	72	-0.114	ppb	-0.114	-23.88	98	2000	
Cr	52	3	72	-1.175	ppb	-1.175	-4.37	891	5000	
Mn	55	3	72	-0.891	ppb	-0.891	-6.79	178	10000	
Fe	56	2	72	-1.834	ppb	-1.834	-8.37	8762	10000	
Co	59	3	72	-0.004	ppb	-0.004	-160.08	37	2000	
Ni	60	3	72	-0.286	ppb	-0.286	-6.87	97	5000	
Cu	63	3	72	-0.227	ppb	-0.227	-15.49	333	5000	
Zn	66	3	72	0.010	ppb	0.010	2399.37	178	5000	
As	75	3	72	0.029	ppb	0.029	361.97	45	2000	
Se	78	2	72	0.029	ppb	0.029	64.74	3	2000	
(Se)	78	3	72	1.225	ppb	1.225	45.82	25	2000	
Sr	88	3	72	0.154	ppb	0.154	34.92	110	4000	
Mo	95	3	115	-0.044	ppb	-0.044	-99.48	37	2000	
Ag	107	3	115	0.006	ppb	0.006	195.94	35	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.540	ppb	-0.540	-15.41	278	2000	
Sb	121	3	115	-0.022	ppb	-0.022	-127.79	55	1000	
Ba	137	3	115	0.014	ppb	0.014	425.59	57	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-19.28	143	2000	
(Pb)	206	3	193	-0.038	ppb	-0.038	-85.44	138	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-72.67	363	100	
Pb	208	3	193	-0.038	ppb	-0.038	-41.10	800	5000	
Th	232	3	193	0.051	ppb	0.051	64.70	4792	2000	
U	238	3	193	-0.009	ppb	-0.009	-95.59	1656	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4626742	0.90	4299393	107.61	60	120	
Sc (IS)	45	3	HMI He	731183	0.85	674661	108.38	60	120	
Ge Internal standard	72	2	HMI H2	2496171	2.32	2269722	109.98	60	120	
Ge Internal standard	72	3	HMI He	831720	2.36	739017	112.54	60	120	
In Internal Standard	115	3	HMI He	2790786	0.40	2543041	109.74	60	120	
Ir (IS)	193	3	HMI He	5997846	2.37	5570851	107.66	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	158SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:22:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.054	ppb	0.054	0.31	5	2000	
Na	23	3	45	305.254	ppb	305.254	3.70	74741	400000	
Mg	24	3	45	6.120	ppb	6.120	19.10	594	400000	
Al	27	3	45	-0.580	ppb	-0.580	-39.06	57	400000	
K	39	3	45	145.488	ppb	145.488	18.04	31046	400000	
Ca	40	2	45	4.406	ppb	4.406	32.43	14873	400000	
V	51	3	72	-0.109	ppb	-0.109	-16.86	100	2000	
Cr	52	3	72	-1.118	ppb	-1.118	-8.36	928	5000	
Mn	55	3	72	-0.914	ppb	-0.914	-7.72	165	10000	
Fe	56	2	72	-2.011	ppb	-2.011	-7.34	8535	10000	
Co	59	3	72	0.002	ppb	0.002	401.57	45	2000	
Ni	60	3	72	-0.316	ppb	-0.316	-12.49	83	5000	
Cu	63	3	72	-0.221	ppb	-0.221	-24.82	335	5000	
Zn	66	3	72	-0.053	ppb	-0.053	-336.63	163	5000	
As	75	3	72	-0.082	ppb	-0.082	-249.85	30	2000	
Se	78	2	72	0.008	ppb	0.008	377.84	2	2000	
(Se)	78	3	72	0.845	ppb	0.845	223.58	22	2000	
Sr	88	3	72	0.142	ppb	0.142	24.04	102	4000	
Mo	95	3	115	-0.056	ppb	-0.056	-26.50	30	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-124.99	22	100	
Cd	111	3	115	0.012	ppb	0.012	268.65	5	2000	
Sn	120	3	115	-0.485	ppb	-0.485	-10.64	323	2000	
Sb	121	3	115	-0.016	ppb	-0.016	-79.42	60	1000	
Ba	137	3	115	0.078	ppb	0.078	158.16	73	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-15.05	133	2000	
(Pb)	206	3	193	-0.034	ppb	-0.034	-36.21	142	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-60.05	330	100	
Pb	208	3	193	-0.043	ppb	-0.043	-15.25	763	5000	
Th	232	3	193	0.070	ppb	0.070	36.59	4842	2000	
U	238	3	193	0.007	ppb	0.007	126.94	1728	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4631506	1.30	4299393	107.72	60	120	
Sc (IS)	45	3	HMI He	726228	0.37	674661	107.64	60	120	
Ge Internal standard	72	2	HMI H2	2516551	1.87	2269722	110.87	60	120	
Ge Internal standard	72	3	HMI He	819515	1.29	739017	110.89	60	120	
In Internal Standard	115	3	HMI He	2789782	0.51	2543041	109.70	60	120	
Ir (IS)	193	3	HMI He	5927994	0.73	5570851	106.41	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	159SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-2953.40	2	2000	
Na	23	3	45	291.268	ppb	291.268	2.87	70894	400000	
Mg	24	3	45	4.853	ppb	4.853	1.70	487	400000	
Al	27	3	45	0.787	ppb	0.787	175.90	90	400000	
K	39	3	45	150.699	ppb	150.699	19.55	30517	400000	
Ca	40	2	45	4.814	ppb	4.814	7.34	15100	400000	
V	51	3	72	-0.136	ppb	-0.136	-19.66	80	2000	
Cr	52	3	72	-1.162	ppb	-1.162	-4.95	876	5000	
Mn	55	3	72	-0.881	ppb	-0.881	-5.02	178	10000	
Fe	56	2	72	-2.297	ppb	-2.297	-13.83	8241	10000	
Co	59	3	72	-0.012	ppb	-0.012	-53.99	25	2000	
Ni	60	3	72	-0.281	ppb	-0.281	-43.26	97	5000	
Cu	63	3	72	-0.203	ppb	-0.203	-16.12	350	5000	
Zn	66	3	72	-0.089	ppb	-0.089	-197.06	155	5000	
As	75	3	72	-0.080	ppb	-0.080	-132.59	30	2000	
Se	78	2	72	0.086	ppb	0.086	38.05	7	2000	
(Se)	78	3	72	1.728	ppb	1.728	71.63	28	2000	
Sr	88	3	72	0.111	ppb	0.111	50.84	82	4000	
Mo	95	3	115	-0.049	ppb	-0.049	-53.56	33	2000	
Ag	107	3	115	0.001	ppb	0.001	379.39	25	100	
Cd	111	3	115	0.036	ppb	0.036	105.39	12	2000	
Sn	120	3	115	-0.533	ppb	-0.533	-7.63	282	2000	
Sb	121	3	115	-0.035	ppb	-0.035	-37.64	43	1000	
Ba	137	3	115	-0.048	ppb	-0.048	-239.21	40	5000	
Tl	205	3	193	-0.080	ppb	-0.080	-5.65	108	2000	
(Pb)	206	3	193	-0.020	ppb	-0.020	-118.92	160	100	
(Pb)	207	3	193	-0.072	ppb	-0.072	-64.22	315	100	
Pb	208	3	193	-0.046	ppb	-0.046	-40.86	746	5000	
Th	232	3	193	0.011	ppb	0.011	299.92	4509	2000	
U	238	3	193	0.000	ppb	0.000	-1806.37	1678	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4620670	0.63	4299393	107.47	60	120	
Sc (IS)	45	3	HMI He	707482	2.24	674661	104.86	60	120	
Ge Internal standard	72	2	HMI H2	2572996	1.28	2269722	113.36	60	120	
Ge Internal standard	72	3	HMI He	808388	2.25	739017	109.39	60	120	
In Internal Standard	115	3	HMI He	2760866	1.02	2543041	108.57	60	120	
Ir (IS)	193	3	HMI He	5903236	1.11	5570851	105.97	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	160SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:25:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-5992.28	2	2000	
Na	23	3	45	262.494	ppb	262.494	4.90	66995	400000	
Mg	24	3	45	3.049	ppb	3.049	32.20	357	400000	
Al	27	3	45	1.429	ppb	1.429	137.43	107	400000	
K	39	3	45	139.912	ppb	139.912	19.28	29932	400000	
Ca	40	2	45	3.352	ppb	3.352	29.47	14061	400000	
V	51	3	72	-0.123	ppb	-0.123	-20.67	90	2000	
Cr	52	3	72	-1.011	ppb	-1.011	-5.77	1025	5000	
Mn	55	3	72	-0.836	ppb	-0.836	-6.93	202	10000	
Fe	56	2	72	-2.226	ppb	-2.226	-17.05	8194	10000	
Co	59	3	72	-0.005	ppb	-0.005	-61.18	35	2000	
Ni	60	3	72	-0.295	ppb	-0.295	-14.59	92	5000	
Cu	63	3	72	-0.240	ppb	-0.240	-5.31	315	5000	
Zn	66	3	72	-0.064	ppb	-0.064	-72.52	162	5000	
As	75	3	72	-0.032	ppb	-0.032	-413.67	37	2000	
Se	78	2	72	0.028	ppb	0.028	64.06	3	2000	
(Se)	78	3	72	1.263	ppb	1.263	147.03	25	2000	
Sr	88	3	72	0.128	ppb	0.128	20.31	93	4000	
Mo	95	3	115	-0.029	ppb	-0.029	-131.98	45	2000	
Ag	107	3	115	0.000	ppb	0.000	-1101.11	23	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.529	ppb	-0.529	-1.06	287	2000	
Sb	121	3	115	-0.023	ppb	-0.023	-160.84	53	1000	
Ba	137	3	115	0.047	ppb	0.047	174.68	65	5000	
Tl	205	3	193	-0.072	ppb	-0.072	-13.02	137	2000	
(Pb)	206	3	193	-0.044	ppb	-0.044	-20.13	127	100	
(Pb)	207	3	193	-0.046	ppb	-0.046	-109.63	342	100	
Pb	208	3	193	-0.042	ppb	-0.042	-21.14	760	5000	
Th	232	3	193	0.076	ppb	0.076	26.77	4799	2000	
U	238	3	193	0.007	ppb	0.007	301.24	1703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4589641	2.39	4299393	106.75	60	120	
Sc (IS)	45	3	HMI He	707419	1.06	674661	104.86	60	120	
Ge Internal standard	72	2	HMI H2	2522433	1.24	2269722	111.13	60	120	
Ge Internal standard	72	3	HMI He	820128	1.14	739017	110.98	60	120	
In Internal Standard	115	3	HMI He	2782313	1.41	2543041	109.41	60	120	
Ir (IS)	193	3	HMI He	5841498	1.02	5570851	104.86	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	161SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	240.498	ppb	240.498	0.91	63733	400000	
Mg	24	3	45	4.293	ppb	4.293	20.05	444	400000	
Al	27	3	45	0.398	ppb	0.398	256.16	80	400000	
K	39	3	45	119.482	ppb	119.482	28.89	28702	400000	
Ca	40	2	45	3.303	ppb	3.303	28.84	13624	400000	
V	51	3	72	-0.117	ppb	-0.117	-26.32	95	2000	
Cr	52	3	72	-1.154	ppb	-1.154	-11.77	898	5000	
Mn	55	3	72	-0.891	ppb	-0.891	-6.33	177	10000	
Fe	56	2	72	-2.214	ppb	-2.214	-8.99	8101	10000	
Co	59	3	72	-0.011	ppb	-0.011	-44.42	27	2000	
Ni	60	3	72	-0.272	ppb	-0.272	-16.61	102	5000	
Cu	63	3	72	-0.237	ppb	-0.237	-6.32	318	5000	
Zn	66	3	72	0.066	ppb	0.066	213.53	187	5000	
As	75	3	72	-0.057	ppb	-0.057	-151.69	33	2000	
Se	78	2	72	-0.002	ppb	-0.002	-837.35	1	2000	
(Se)	78	3	72	0.641	ppb	0.641	8.14	20	2000	
Sr	88	3	72	0.111	ppb	0.111	5.82	83	4000	
Mo	95	3	115	-0.061	ppb	-0.061	-17.12	27	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-345.09	18	100	
Cd	111	3	115	0.006	ppb	0.006	186.16	3	2000	
Sn	120	3	115	-0.539	ppb	-0.539	-4.12	280	2000	
Sb	121	3	115	0.004	ppb	0.004	97.95	77	1000	
Ba	137	3	115	0.007	ppb	0.007	737.73	55	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-10.86	138	2000	
(Pb)	206	3	193	-0.038	ppb	-0.038	-79.26	133	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-131.59	350	100	
Pb	208	3	193	-0.041	ppb	-0.041	-32.62	753	5000	
Th	232	3	193	0.043	ppb	0.043	92.63	4572	2000	
U	238	3	193	-0.012	ppb	-0.012	-72.88	1579	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4454914	1.11	4299393	103.62	60	120	
Sc (IS)	45	3	HMI He	704499	2.25	674661	104.42	60	120	
Ge Internal standard	72	2	HMI H2	2486298	0.41	2269722	109.54	60	120	
Ge Internal standard	72	3	HMI He	822501	2.06	739017	111.30	60	120	
In Internal Standard	115	3	HMI He	2793845	1.30	2543041	109.86	60	120	
Ir (IS)	193	3	HMI He	5768349	0.62	5570851	103.55	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	162SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:29:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	240.606	ppb	240.606	3.43	65355	400000	
Mg	24	3	45	2.860	ppb	2.860	6.61	350	400000	
Al	27	3	45	1.090	ppb	1.090	41.17	100	400000	
K	39	3	45	107.042	ppb	107.042	37.44	28742	400000	
Ca	40	2	45	2.759	ppb	2.759	38.79	13777	400000	
V	51	3	72	-0.134	ppb	-0.134	-25.70	83	2000	
Cr	52	3	72	-1.111	ppb	-1.111	-3.40	945	5000	
Mn	55	3	72	-0.905	ppb	-0.905	-9.75	172	10000	
Fe	56	2	72	-2.084	ppb	-2.084	-5.32	8344	10000	
Co	59	3	72	-0.008	ppb	-0.008	-120.95	32	2000	
Ni	60	3	72	-0.293	ppb	-0.293	-9.92	93	5000	
Cu	63	3	72	-0.178	ppb	-0.178	-33.52	385	5000	
Zn	66	3	72	0.030	ppb	0.030	834.40	182	5000	
As	75	3	72	-0.060	ppb	-0.060	-207.74	33	2000	
Se	78	2	72	0.029	ppb	0.029	124.73	3	2000	
(Se)	78	3	72	1.224	ppb	1.224	145.82	25	2000	
Sr	88	3	72	0.075	ppb	0.075	30.19	62	4000	
Mo	95	3	115	-0.053	ppb	-0.053	-33.65	32	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-94.04	15	100	
Cd	111	3	115	0.006	ppb	0.006	186.83	3	2000	
Sn	120	3	115	-0.516	ppb	-0.516	-11.77	300	2000	
Sb	121	3	115	-0.032	ppb	-0.032	-45.79	47	1000	
Ba	137	3	115	0.026	ppb	0.026	224.61	60	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-4.47	142	2000	
(Pb)	206	3	193	-0.042	ppb	-0.042	-12.35	130	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-91.46	325	100	
Pb	208	3	193	-0.043	ppb	-0.043	-21.21	755	5000	
Th	232	3	193	0.017	ppb	0.017	35.63	4507	2000	
U	238	3	193	0.003	ppb	0.003	855.37	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4621410	2.50	4299393	107.49	60	120	
Sc (IS)	45	3	HMI He	722351	1.79	674661	107.07	60	120	
Ge Internal standard	72	2	HMI H2	2494821	0.47	2269722	109.92	60	120	
Ge Internal standard	72	3	HMI He	827577	2.84	739017	111.98	60	120	
In Internal Standard	115	3	HMI He	2809625	0.54	2543041	110.48	60	120	
Ir (IS)	193	3	HMI He	5855251	1.66	5570851	105.11	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	163SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:31:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	0.00	0	2000	
Na	23	3	45	212.229	ppb	212.229	3.14	60593	400000	
Mg	24	3	45	4.023	ppb	4.023	21.24	430	400000	
Al	27	3	45	1.147	ppb	1.147	92.84	100	400000	
K	39	3	45	100.975	ppb	100.975	47.91	27993	400000	
Ca	40	2	45	2.875	ppb	2.875	15.62	13580	400000	
V	51	3	72	-0.097	ppb	-0.097	-44.02	110	2000	
Cr	52	3	72	-1.146	ppb	-1.146	-11.73	918	5000	
Mn	55	3	72	-0.896	ppb	-0.896	-3.60	177	10000	
Fe	56	2	72	-2.110	ppb	-2.110	-9.52	8294	10000	
Co	59	3	72	-0.017	ppb	-0.017	-12.01	18	2000	
Ni	60	3	72	-0.327	ppb	-0.327	-16.88	80	5000	
Cu	63	3	72	-0.223	ppb	-0.223	-3.74	338	5000	
Zn	66	3	72	0.115	ppb	0.115	106.99	198	5000	
As	75	3	72	-0.100	ppb	-0.100	-96.46	28	2000	
Se	78	2	72	0.019	ppb	0.019	382.08	3	2000	
(Se)	78	3	72	0.195	ppb	0.195	176.26	17	2000	
Sr	88	3	72	0.104	ppb	0.104	55.03	80	4000	
Mo	95	3	115	-0.050	ppb	-0.050	-64.38	33	2000	
Ag	107	3	115	0.001	ppb	0.001	17.46	25	100	
Cd	111	3	115	-0.006	ppb	-0.006	0.00	0	2000	
Sn	120	3	115	-0.469	ppb	-0.469	-3.78	337	2000	
Sb	121	3	115	-0.018	ppb	-0.018	-124.30	58	1000	
Ba	137	3	115	0.008	ppb	0.008	1010.77	55	5000	
Tl	205	3	193	-0.071	ppb	-0.071	-3.26	145	2000	
(Pb)	206	3	193	-0.044	ppb	-0.044	-11.57	128	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-66.69	358	100	
Pb	208	3	193	-0.041	ppb	-0.041	-17.47	775	5000	
Th	232	3	193	0.055	ppb	0.055	9.83	4749	2000	
U	238	3	193	0.000	ppb	0.000	-7274.77	1681	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4527154	1.78	4299393	105.30	60	120	
Sc (IS)	45	3	HMI He	712747	2.69	674661	105.65	60	120	
Ge Internal standard	72	2	HMI H2	2493876	1.31	2269722	109.88	60	120	
Ge Internal standard	72	3	HMI He	833250	1.10	739017	112.75	60	120	
In Internal Standard	115	3	HMI He	2792356	0.76	2543041	109.80	60	120	
Ir (IS)	193	3	HMI He	5909928	0.86	5570851	106.09	60	120	

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	164CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-24T17:33:31-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	50571	0.01
Mg	24	45	3	HMI He	194	20.06
Al	27	45	3	HMI He	87	27.69
K	39	45	3	HMI He	26294	0.02
Ca	40	45	2	HMI H2	14375	0.00
V	51	72	3	HMI He	243	3.99
Cr	52	72	3	HMI He	1368	0.55
Mn	55	72	3	HMI He	170	18.24
Fe	56	72	2	HMI H2	9523	0.02
Co	59	72	3	HMI He	25	0.00
Ni	60	72	3	HMI He	120	10.42
Cu	63	72	3	HMI He	348	2.90
Zn	66	72	3	HMI He	233	5.22
As	75	72	3	HMI He	50	87.21
Se	78	72	2	HMI H2	3	4296.16
(Se)	78	72	3	HMI He	33	103.98
Sr	88	72	3	HMI He	43	40.71
Mo	95	115	3	HMI He	37	77.45
Ag	107	115	3	HMI He	18	227.24
Cd	111	115	3	HMI He	3	5196.15
Sn	120	115	3	HMI He	526	0.93
Sb	121	115	3	HMI He	125	13.96
Ba	137	115	3	HMI He	68	16.36
Tl	205	193	3	HMI He	113	5.95
(Pb)	206	193	3	HMI He	153	20.44
(Pb)	207	193	3	HMI He	325	3.42
Pb	208	193	3	HMI He	726	1.53
Th	232	193	3	HMI He	4297	0.11
U	238	193	3	HMI He	1564	0.41

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4331237	1.40
Sc (IS)	45	3	HMI He	654817	1.95
Ge Internal standard	72	2	HMI H2	2307933	0.86
Ge Internal standard	72	3	HMI He	744678	1.89
In Internal Standard	115	3	HMI He	2599142	2.51
Ir (IS)	193	3	HMI He	5525410	1.45

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	165CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T17:35:24-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	12223424	0.00
Mg	24	45	3	HMI He	1260623	0.00
Al	27	45	3	HMI He	217	4.43
K	39	45	3	HMI He	1016525	0.00
V	51	72	3	HMI He	350	3.08
Cr	52	72	3	HMI He	1904	0.13
Mn	55	72	3	HMI He	297	4.19
Co	59	72	3	HMI He	48	44.57
Ni	60	72	3	HMI He	253	1.19
Cu	63	72	3	HMI He	2049	0.10
Zn	66	72	3	HMI He	506	0.92
As	75	72	3	HMI He	57	91.29
Se	78	72	2	HMI H2	3	1623.80
(Se)	78	72	3	HMI He	23	140.40
Sr	88	72	3	HMI He	695	0.37
Mo	95	115	3	HMI He	82	51.05
Ag	107	115	3	HMI He	45	85.59
Cd	111	115	3	HMI He	3	2598.08
Sn	120	115	3	HMI He	961	0.44
Sb	121	115	3	HMI He	117	18.50
Ba	137	115	3	HMI He	217	15.16
Tl	205	193	3	HMI He	162	4.42
(Pb)	206	193	3	HMI He	320	1.29
(Pb)	207	193	3	HMI He	496	3.25
Pb	208	193	3	HMI He	1549	0.34
Th	232	193	3	HMI He	4534	0.07
U	238	193	3	HMI He	1601	0.13

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4247421	0.77	4331237	98.06	60	120	
Sc (IS)	45	3	HMI He	641618	0.35	654817	97.98	60	120	
Ge Internal standard	72	2	HMI H2	2145853	1.89	2307933	92.98	60	120	
Ge Internal standard	72	3	HMI He	684275	0.82	744678	91.89	60	120	
In Internal Standard	115	3	HMI He	2522836	0.98	2599142	97.06	60	120	
Ir (IS)	193	3	HMI He	5351857	1.39	5525410	96.86	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	166CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-24T17:37:15-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5447	0.05
Na	23	45	3	HMI He	310369	0.00
Mg	24	45	3	HMI He	130142	0.00
Al	27	45	3	HMI He	46895	0.00
K	39	45	3	HMI He	126495	0.00
V	51	72	3	HMI He	64227	0.00
Cr	52	72	3	HMI He	82120	0.00
Mn	55	72	3	HMI He	43845	0.00
Co	59	72	3	HMI He	130840	0.00
Ni	60	72	3	HMI He	36378	0.00
Cu	63	72	3	HMI He	98256	0.00
Zn	66	72	3	HMI He	17604	0.01
As	75	72	3	HMI He	12146	0.01
Se	78	72	2	HMI H2	6155	0.02
(Se)	78	72	3	HMI He	713	0.74
Sr	88	72	3	HMI He	113302	0.00
Mo	95	115	3	HMI He	52326	0.00
Ag	107	115	3	HMI He	173369	0.00
Cd	111	115	3	HMI He	25505	0.01
Sn	120	115	3	HMI He	77996	0.00
Sb	121	115	3	HMI He	78424	0.00
Ba	137	115	3	HMI He	25328	0.00
Tl	205	193	3	HMI He	366769	0.00
(Pb)	206	193	3	HMI He	123410	0.00
(Pb)	207	193	3	HMI He	109676	0.00
Pb	208	193	3	HMI He	497287	0.00
Th	232	193	3	HMI He	500853	0.00
U	238	193	3	HMI He	522201	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254523	2.02	4331237	98.23	60	120	
Sc (IS)	45	3	HMI He	655480	1.40	654817	100.10	60	120	
Ge Internal standard	72	2	HMI H2	2357907	1.44	2307933	102.17	60	120	
Ge Internal standard	72	3	HMI He	758777	1.61	744678	101.89	60	120	
In Internal Standard	115	3	HMI He	2598609	0.92	2599142	99.98	60	120	
Ir (IS)	193	3	HMI He	5543190	2.16	5525410	100.32	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	167_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:39:06-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.020	ppb	2.576	2117	40	97.6	90	110	
Na	23	3	45	13215.453	ppb	1.404	1705190	12800	103.2	90	110	
Mg	24	3	45	4810.536	ppb	1.487	311924	4800	100.2	90	110	
Al	27	3	45	796.776	ppb	0.457	18858	800	99.6	90	110	
K	39	3	45	4684.714	ppb	3.345	265111	4800	97.6	90	110	
Ca	40	2	45	5015.889	ppb	2.334	2952165	4800	104.5	90	110	
V	51	3	72	41.156	ppb	0.677	26131	40	102.9	90	110	
Cr	52	3	72	41.637	ppb	1.644	34414	40	104.1	90	110	
Mn	55	3	72	41.543	ppb	1.752	18008	40	103.9	90	110	
Fe	56	2	72	837.740	ppb	3.883	1275516	800	104.7	90	110	
Co	59	3	72	41.240	ppb	1.680	53066	40	103.1	90	110	
Ni	60	3	72	41.206	ppb	1.395	14811	40	103.0	90	110	
Cu	63	3	72	41.575	ppb	1.756	40364	40	103.9	90	110	
Zn	66	3	72	80.102	ppb	2.421	13913	80	100.1	90	110	
As	75	3	72	40.078	ppb	4.548	4817	40	100.2	90	110	
Se	78	2	72	42.683	ppb	2.677	2524	40	106.7	90	110	
(Se)	78	3	72	47.147	ppb	14.364	348	40	117.9	90	110	>+\-10%
Sr	88	3	72	123.112	ppb	2.554	68590	120	102.6	90	110	
Mo	95	3	115	40.907	ppb	3.075	21687	40	102.3	90	110	
Ag	107	3	115	79.687	ppb	1.017	139836	80	99.6	90	110	
Cd	111	3	115	39.290	ppb	2.908	10145	40	98.2	90	110	
Sn	120	3	115	39.165	ppb	2.093	31241	40	97.9	90	110	
Sb	121	3	115	40.527	ppb	1.830	32245	40	101.3	90	110	
Ba	137	3	115	39.912	ppb	2.007	10274	40	99.8	90	110	
Tl	205	3	193	41.619	ppb	1.832	150116	40	104.0	90	110	
(Pb)	206	3	193	41.351	ppb	3.026	50243	40	103.4	90	110	
(Pb)	207	3	193	40.611	ppb	1.105	43981	40	101.5	90	110	
Pb	208	3	193	41.171	ppb	2.364	201668	40	102.9	90	110	
Th	232	3	193	82.907	ppb	2.175	408850	80	103.6	90	110	
U	238	3	193	41.753	ppb	1.724	215238	40	104.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4266680	0.53	4331237	98.51	60	120	
Sc (IS)	45	3	HMI He	659800	0.86	654817	100.76	60	120	
Ge Internal standard	72	2	HMI H2	2264290	3.00	2307933	98.11	60	120	
Ge Internal standard	72	3	HMI He	745953	0.88	744678	100.17	60	120	
In Internal Standard	115	3	HMI He	2630174	0.69	2599142	101.19	60	120	
Ir (IS)	193	3	HMI He	5448198	1.90	5525410	98.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	168_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:40:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.993	ppb	5.894	2807	50	106.0	90	110	
Na	23	3	45	50389.599	ppb	3.307	6336967	51000	98.8	90	110	
Mg	24	3	45	10946.255	ppb	2.033	707179	11000	99.5	90	110	
Al	27	3	45	979.152	ppb	2.921	23075	1000	97.9	90	110	
K	39	3	45	10496.343	ppb	1.893	559305	11000	95.4	90	110	
Ca	40	2	45	11282.939	ppb	3.457	6518493	11000	102.6	90	110	
V	51	3	72	49.953	ppb	2.122	31316	50	99.9	90	110	
Cr	52	3	72	51.912	ppb	2.260	42101	50	103.8	90	110	
Mn	55	3	72	50.049	ppb	0.777	21424	50	100.1	90	110	
Fe	56	2	72	1089.570	ppb	3.022	1616077	1000	109.0	90	110	
Co	59	3	72	50.716	ppb	0.630	64549	50	101.4	90	110	
Ni	60	3	72	50.762	ppb	2.030	18018	50	101.5	90	110	
Cu	63	3	72	51.581	ppb	1.075	49450	50	103.2	90	110	
Zn	66	3	72	52.111	ppb	3.002	9032	50	104.2	90	110	
As	75	3	72	52.363	ppb	1.164	6210	50	104.7	90	110	
Se	78	2	72	52.472	ppb	2.957	3026	50	104.9	90	110	
(Se)	78	3	72	47.253	ppb	18.270	345	50	94.5	90	110	
Sr	88	3	72	101.339	ppb	1.804	55850	100	101.3	90	110	
Mo	95	3	115	51.256	ppb	1.174	26451	50	102.5	90	110	
Ag	107	3	115	50.373	ppb	2.698	86059	50	100.7	90	110	
Cd	111	3	115	50.848	ppb	2.254	12780	50	101.7	90	110	
Sn	120	3	115	50.480	ppb	1.596	39061	50	101.0	90	110	
Sb	121	3	115	50.355	ppb	2.264	38974	50	100.7	90	110	
Ba	137	3	115	49.234	ppb	3.084	12321	50	98.5	90	110	
Tl	205	3	193	50.307	ppb	0.203	182863	50	100.6	90	110	
(Pb)	206	3	193	50.212	ppb	1.598	61466	50	100.4	90	110	
(Pb)	207	3	193	49.643	ppb	0.913	54110	50	99.3	90	110	
Pb	208	3	193	50.076	ppb	1.203	247085	50	100.2	90	110	
Th	232	3	193	50.993	ppb	1.188	255104	50	102.0	90	110	
U	238	3	193	50.879	ppb	1.685	264007	50	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4200791	2.94	4331237	96.99	60	120	
Sc (IS)	45	3	HMI He	657621	0.72	654817	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2208099	0.64	2307933	95.67	60	120	
Ge Internal standard	72	3	HMI He	737827	1.30	744678	99.08	60	120	
In Internal Standard	115	3	HMI He	2560943	1.31	2599142	98.53	60	120	
Ir (IS)	193	3	HMI He	5490126	0.40	5525410	99.36	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	169_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:42:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-14.013	ppb	-51.7	48917	25	
Mg	24	3	45	-0.205	ppb	-207.7	180	25	
Al	27	3	45	8.120	ppb	13.6	277	15	
K	39	3	45	-26.189	ppb	-139.9	25034	50	
V	51	3	72	-0.002	ppb	-2325.4	238	1	
Cr	52	3	72	0.248	ppb	54.8	1539	1	
Mn	55	3	72	0.048	ppb	54.7	188	0.5	
Co	59	3	72	0.011	ppb	41.3	38	0.5	
Ni	60	3	72	0.152	ppb	72.3	172	1	
Cu	63	3	72	0.090	ppb	41.7	428	1	
Zn	66	3	72	1.063	ppb	27.0	408	5	
As	75	3	72	-0.038	ppb	-110.1	45	1	
Se	78	2	72	-0.021	ppb	-188.0	1	1	
(Se)	78	3	72	-2.227	ppb	-20.1	18	1	
Sr	88	3	72	0.019	ppb	163.5	53	0.5	
Mo	95	3	115	0.075	ppb	45.4	75	0.5	
Ag	107	3	115	0.007	ppb	42.0	30	1	
Cd	111	3	115	0.007	ppb	290.7	5	0.5	
Sn	120	3	115	0.249	ppb	31.1	713	1	
Sb	121	3	115	-0.037	ppb	-49.7	95	0.6	
Ba	137	3	115	0.015	ppb	720.3	72	0.5	
Tl	205	3	193	0.011	ppb	29.2	152	0.1	
(Pb)	206	3	193	-0.013	ppb	-118.3	137	1	
(Pb)	207	3	193	-0.009	ppb	-119.0	313	1	
Pb	208	3	193	0.019	ppb	77.2	815	0.5	
Th	232	3	193	0.688	ppb	21.8	7667	1	
U	238	3	193	0.011	ppb	247.4	1613	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4172434	1.15	4331237	96.33	60	120	
Sc (IS)	45	3	HMI He	656088	0.70	654817	100.19	60	120	
Ge Internal standard	72	2	HMI H2	2212516	0.72	2307933	95.87	60	120	
Ge Internal standard	72	3	HMI He	733051	0.40	744678	98.44	60	120	
In Internal Standard	115	3	HMI He	2576504	1.35	2599142	99.13	60	120	
Ir (IS)	193	3	HMI He	5499565	1.32	5525410	99.53	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	170LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:44:42-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.477	ppb	33.945	80	1	147.7	70	130	>+/-30%
Na	23	3	45	19.433	ppb	53.793	53658	50	38.9	70	130	>+/-30%
Mg	24	3	45	50.118	ppb	3.843	3461	50	100.2	70	130	
Al	27	3	45	49.966	ppb	12.286	1271	50	99.9	70	130	
K	39	3	45	70.512	ppb	67.215	30240	100	70.5	70	130	
V	51	3	72	4.701	ppb	2.750	3245	5	94.0	70	130	
Cr	52	3	72	2.180	ppb	4.754	3144	2	109.0	70	130	
Mn	55	3	72	1.110	ppb	9.096	656	1	111.0	70	130	
Co	59	3	72	0.978	ppb	4.755	1301	1	97.8	70	130	
Ni	60	3	72	2.036	ppb	7.441	858	2	101.8	70	130	
Cu	63	3	72	2.136	ppb	6.623	2437	2	106.8	70	130	
Zn	66	3	72	9.698	ppb	4.307	1916	10	97.0	70	130	
As	75	3	72	5.171	ppb	7.371	675	5	103.4	70	130	
Se	78	2	72	5.132	ppb	6.043	304	5	102.6	70	130	
(Se)	78	3	72	3.565	ppb	94.919	58	5	71.3	70	130	
Sr	88	3	72	1.023	ppb	2.874	621	1	102.3	70	130	
Mo	95	3	115	2.070	ppb	6.495	1118	2	103.5	70	130	
Ag	107	3	115	1.005	ppb	7.225	1759	1	100.5	70	130	
Cd	111	3	115	1.030	ppb	32.996	265	1	103.0	70	130	
Sn	120	3	115	9.864	ppb	4.668	8163	10	98.6	70	130	
Sb	121	3	115	1.893	ppb	4.221	1608	2	94.7	70	130	
Ba	137	3	115	0.863	ppb	1.989	287	1	86.3	70	130	
Tl	205	3	193	0.984	ppb	1.939	3735	1	98.4	70	130	
(Pb)	206	3	193	1.048	ppb	3.969	1451	1	104.8	70	130	
(Pb)	207	3	193	0.974	ppb	5.194	1396	1	97.4	70	130	
Pb	208	3	193	1.038	ppb	5.198	5904	1	103.8	70	130	
Th	232	3	193	2.173	ppb	3.410	15152	2	108.6	70	130	
U	238	3	193	1.006	ppb	7.006	6830	1	100.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4235565	2.38	4331237	97.79	60	120	
Sc (IS)	45	3	HMI He	663342	1.45	654817	101.30	60	120	
Ge Internal standard	72	2	HMI H2	2251246	1.47	2307933	97.54	60	120	
Ge Internal standard	72	3	HMI He	756410	1.36	744678	101.58	60	120	
In Internal Standard	115	3	HMI He	2598447	2.20	2599142	99.97	60	120	
Ir (IS)	193	3	HMI He	5562917	1.78	5525410	100.68	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	171ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:46:35-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	96509.183	ppb	2.0	12233041	100000	
Mg	24	3	45	94421.282	ppb	1.8	6170386	100000	
Al	27	3	45	95504.741	ppb	2.9	2268540	100000	
K	39	3	45	91758.487	ppb	2.8	4739301	100000	
Ca	40	2	45	98279.187	ppb	1.7	56883114	100000	
V	51	3	72	-0.104	ppb	-29.7	192	1	
Cr	52	3	72	1.279	ppb	7.2	2561	1	>RL or LOD
Mn	55	3	72	0.326	ppb	29.4	333	0.95	
Fe	56	2	72	95960.571	ppb	0.8	145691765	100000	
Co	59	3	72	0.238	ppb	17.7	356	0.5	
Ni	60	3	72	0.460	ppb	36.6	305	1	
Cu	63	3	72	0.209	ppb	38.8	590	1	
Zn	66	3	72	0.386	ppb	66.8	322	1	
As	75	3	72	0.139	ppb	90.7	72	1	
Se	78	2	72	0.102	ppb	68.7	9	1	
(Se)	78	3	72	-2.000	ppb	-53.3	22	1	
Sr	88	3	72	0.636	ppb	13.6	426	1	
Mo	95	3	115	2004.752	ppb	1.7	1016538	2000	>RL or LOD
Ag	107	3	115	0.010	ppb	58.3	35	1	
Cd	111	3	115	0.243	ppb	18.7	63	1	
Sn	120	3	115	0.729	ppb	9.4	1058	1	
Sb	121	3	115	0.086	ppb	69.2	187	1	
Ba	137	3	115	1.449	ppb	18.1	421	0.95	>RL or LOD
Tl	205	3	193	0.017	ppb	11.2	173	1	
(Pb)	206	3	193	0.171	ppb	46.3	356	1	
(Pb)	207	3	193	0.149	ppb	32.6	478	1	
Pb	208	3	193	0.167	ppb	26.3	1524	1	
Th	232	3	193	0.184	ppb	29.5	5115	1	
U	238	3	193	0.028	ppb	68.9	1679	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4215136	1.19	4331237	97.32	60	120	
Sc (IS)	45	3	HMI He	665437	1.82	654817	101.62	60	120	
Ge Internal standard	72	2	HMI H2	2272536	0.78	2307933	98.47	60	120	
Ge Internal standard	72	3	HMI He	800741	1.69	744678	107.53	60	120	
In Internal Standard	115	3	HMI He	2519617	0.93	2599142	96.94	60	120	
Ir (IS)	193	3	HMI He	5426249	1.98	5525410	98.21	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7558071
Data File Name	172ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:48:25-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	99.812	ppb	2.784	5375	100	99.8	80	120	
Na	23	3	45	104034.171	ppb	2.196	13018504	100	104034.2	80	120	>+\-20%
Mg	24	3	45	101426.866	ppb	1.612	6545526	100	101426.9	80	120	>+\-20%
Al	27	3	45	97186.527	ppb	1.747	2279974	100	97186.5	80	120	>+\-20%
K	39	3	45	99189.671	ppb	1.228	5058072	100	99189.7	80	120	>+\-20%
Ca	40	2	45	106249.706	ppb	1.063	61518212	100	106249.7	80	120	>+\-20%
V	51	3	72	94.120	ppb	3.080	62697	100	94.1	80	120	
Cr	52	3	72	94.669	ppb	3.485	80687	100	94.7	80	120	
Mn	55	3	72	94.265	ppb	1.818	42881	100	94.3	80	120	
Fe	56	2	72	98415.070	ppb	4.025	151917794	100	98415.1	80	120	>+\-20%
Co	59	3	72	92.466	ppb	1.885	125508	100	92.5	80	120	
Ni	60	3	72	90.705	ppb	3.264	34230	100	90.7	80	120	
Cu	63	3	72	93.455	ppb	1.762	95262	100	93.5	80	120	
Zn	66	3	72	89.972	ppb	2.635	16455	100	90.0	80	120	
As	75	3	72	92.185	ppb	1.915	11619	100	92.2	80	120	
Se	78	2	72	98.797	ppb	2.521	5961	100	98.8	80	120	
(Se)	78	3	72	95.008	ppb	4.143	705	100	95.0	80	120	
Sr	88	3	72	189.580	ppb	3.255	111381	100	189.6	80	120	>+\-20%
Mo	95	3	115	2118.880	ppb	3.075	1068785	100	2118.9	80	120	
Ag	107	3	115	99.575	ppb	2.478	166529	100	99.6	80	120	
Cd	111	3	115	99.068	ppb	2.818	24372	100	99.1	80	120	
Sn	120	3	115	103.468	ppb	1.423	77844	100	103.5	80	120	
Sb	121	3	115	102.475	ppb	2.753	77519	100	102.5	80	120	
Ba	137	3	115	105.799	ppb	3.757	25844	100	105.8	80	120	
Tl	205	3	193	100.114	ppb	1.636	361077	100	100.1	80	120	
(Pb)	206	3	193	98.980	ppb	2.514	120104	100	99.0	80	120	
(Pb)	207	3	193	97.171	ppb	1.678	104819	100	97.2	80	120	
Pb	208	3	193	98.816	ppb	1.922	483232	100	98.8	80	120	
Th	232	3	193	102.258	ppb	2.086	503482	100	102.3	80	120	
U	238	3	193	102.270	ppb	2.442	525114	100	102.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4216424	1.28	4331237	97.35	60	120	
Sc (IS)	45	3	HMI He	657131	1.78	654817	100.35	60	120	
Ge Internal standard	72	2	HMI H2	2311762	2.11	2307933	100.17	60	120	
Ge Internal standard	72	3	HMI He	787129	2.59	744678	105.70	60	120	
In Internal Standard	115	3	HMI He	2507478	2.16	2599142	96.47	60	120	
Ir (IS)	193	3	HMI He	5450039	1.67	5525410	98.64	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	173SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:50:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.119	ppb	0.119	43.51	7	2000	
Na	23	3	45	-48.055	ppb	-48.055	-29.66	46339	400000	
Mg	24	3	45	5.871	ppb	5.871	16.55	594	400000	
Al	27	3	45	5.359	ppb	5.359	24.00	220	400000	
K	39	3	45	-36.892	ppb	-36.892	-89.36	25382	400000	
Ca	40	2	45	13.203	ppb	13.203	2.56	23072	400000	
V	51	3	72	-0.064	ppb	-0.064	-33.23	215	2000	
Cr	52	3	72	0.113	ppb	0.113	126.08	1538	5000	
Mn	55	3	72	0.092	ppb	0.092	124.50	222	10000	
Fe	56	2	72	10.517	ppb	10.517	3.34	26161	10000	
Co	59	3	72	0.189	ppb	0.189	9.15	283	2000	
Ni	60	3	72	0.253	ppb	0.253	58.26	222	5000	
Cu	63	3	72	0.262	ppb	0.262	9.84	635	5000	
Zn	66	3	72	0.253	ppb	0.253	77.69	292	5000	
As	75	3	72	0.121	ppb	0.121	68.39	68	2000	
Se	78	2	72	0.076	ppb	0.076	133.75	7	2000	
(Se)	78	3	72	-1.967	ppb	-1.967	-109.52	22	2000	
Sr	88	3	72	0.184	ppb	0.184	50.10	153	4000	
Mo	95	3	115	1.726	ppb	1.726	14.53	968	2000	
Ag	107	3	115	0.011	ppb	0.011	54.97	38	100	
Cd	111	3	115	0.227	ppb	0.227	40.48	63	2000	
Sn	120	3	115	0.321	ppb	0.321	15.08	798	2000	
Sb	121	3	115	0.144	ppb	0.144	35.45	245	1000	
Ba	137	3	115	0.075	ppb	0.075	90.38	90	5000	
Tl	205	3	193	0.165	ppb	0.165	20.23	728	2000	
(Pb)	206	3	193	0.147	ppb	0.147	30.61	340	100	
(Pb)	207	3	193	0.172	ppb	0.172	20.14	521	100	
Pb	208	3	193	0.173	ppb	0.173	9.09	1613	5000	
Th	232	3	193	0.684	ppb	0.684	17.45	7825	2000	
U	238	3	193	0.036	ppb	0.036	32.83	1784	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4495588	0.50	4331237	103.79	60	120	
Sc (IS)	45	3	HMI He	680987	3.37	654817	104.00	60	120	
Ge Internal standard	72	2	HMI H2	2346420	2.26	2307933	101.67	60	120	
Ge Internal standard	72	3	HMI He	787054	2.74	744678	105.69	60	120	
In Internal Standard	115	3	HMI He	2676028	0.94	2599142	102.96	60	120	
Ir (IS)	193	3	HMI He	5624942	1.30	5525410	101.80	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	174_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:52:07-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.033	ppb	3.964	2681	50	98.1	90	110	
Na	23	3	45	49598.718	ppb	2.435	6508476	51000	97.3	90	110	
Mg	24	3	45	10857.247	ppb	2.925	731670	11000	98.7	90	110	
Al	27	3	45	985.065	ppb	2.474	24222	1000	98.5	90	110	
K	39	3	45	10344.986	ppb	2.918	575420	11000	94.0	90	110	
Ca	40	2	45	11449.871	ppb	0.861	6703730	11000	104.1	90	110	
V	51	3	72	49.738	ppb	2.137	32887	50	99.5	90	110	
Cr	52	3	72	50.120	ppb	1.268	42921	50	100.2	90	110	
Mn	55	3	72	49.110	ppb	3.253	22170	50	98.2	90	110	
Fe	56	2	72	1071.753	ppb	1.167	1643995	1000	107.2	90	110	
Co	59	3	72	49.491	ppb	2.313	66420	50	99.0	90	110	
Ni	60	3	72	49.515	ppb	5.294	18533	50	99.0	90	110	
Cu	63	3	72	49.605	ppb	1.926	50167	50	99.2	90	110	
Zn	66	3	72	48.542	ppb	5.130	8888	50	97.1	90	110	
As	75	3	72	47.955	ppb	4.886	6000	50	95.9	90	110	
Se	78	2	72	51.719	ppb	3.374	3084	50	103.4	90	110	
(Se)	78	3	72	43.724	ppb	19.185	340	50	87.4	90	110	>+\-10%
Sr	88	3	72	98.394	ppb	2.701	57188	100	98.4	90	110	
Mo	95	3	115	50.578	ppb	2.685	26998	50	101.2	90	110	
Ag	107	3	115	49.442	ppb	2.048	87395	50	98.9	90	110	
Cd	111	3	115	49.427	ppb	1.627	12853	50	98.9	90	110	
Sn	120	3	115	49.720	ppb	1.392	39806	50	99.4	90	110	
Sb	121	3	115	50.407	ppb	1.973	40366	50	100.8	90	110	
Ba	137	3	115	50.071	ppb	1.165	12967	50	100.1	90	110	
Tl	205	3	193	50.466	ppb	2.922	186299	50	100.9	90	110	
(Pb)	206	3	193	50.281	ppb	1.967	62516	50	100.6	90	110	
(Pb)	207	3	193	49.341	ppb	2.267	54625	50	98.7	90	110	
Pb	208	3	193	50.025	ppb	1.631	250714	50	100.0	90	110	
Th	232	3	193	50.334	ppb	2.131	255810	50	100.7	90	110	
U	238	3	193	50.196	ppb	1.089	264590	50	100.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4255371	0.84	4331237	98.25	60	120	
Sc (IS)	45	3	HMI He	686198	2.17	654817	104.79	60	120	
Ge Internal standard	72	2	HMI H2	2283228	0.85	2307933	98.93	60	120	
Ge Internal standard	72	3	HMI He	778147	1.24	744678	104.49	60	120	
In Internal Standard	115	3	HMI He	2649455	1.19	2599142	101.94	60	120	
Ir (IS)	193	3	HMI He	5576992	1.27	5525410	100.93	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	175_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:53:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	-34.297	ppb	-17.7	47005	25	
Mg	24	3	45	0.419	ppb	66.9	224	25	
Al	27	3	45	9.211	ppb	18.4	307	15	
K	39	3	45	-27.979	ppb	-90.9	25268	50	
V	51	3	72	-0.124	ppb	-21.7	167	1	
Cr	52	3	72	0.057	ppb	81.5	1423	1	
Mn	55	3	72	-0.004	ppb	-70.6	170	0.5	
Co	59	3	72	0.005	ppb	32.1	32	0.5	
Ni	60	3	72	0.187	ppb	25.3	188	1	
Cu	63	3	72	0.087	ppb	37.6	435	1	
Zn	66	3	72	1.259	ppb	4.1	451	5	
As	75	3	72	-0.061	ppb	-54.2	43	1	
Se	78	2	72	-0.010	ppb	-343.8	2	1	
(Se)	78	3	72	-3.518	ppb	-22.1	10	1	
Sr	88	3	72	-0.013	ppb	-27.8	37	0.5	
Mo	95	3	115	0.175	ppb	10.6	127	0.5	
Ag	107	3	115	0.005	ppb	35.9	27	1	
Cd	111	3	115	-0.006	ppb	-181.1	2	0.5	
Sn	120	3	115	0.209	ppb	27.7	680	1	
Sb	121	3	115	-0.028	ppb	-204.0	102	0.6	
Ba	137	3	115	-0.104	ppb	-72.1	42	0.5	
Tl	205	3	193	0.006	ppb	244.6	135	0.1	
(Pb)	206	3	193	0.017	ppb	117.9	175	1	
(Pb)	207	3	193	0.016	ppb	173.9	345	1	
Pb	208	3	193	0.018	ppb	7.1	823	0.5	
Th	232	3	193	0.544	ppb	29.8	7030	1	
U	238	3	193	0.022	ppb	38.9	1688	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4289125	1.14	4331237	99.03	60	120	
Sc (IS)	45	3	HMI He	664781	1.60	654817	101.52	60	120	
Ge Internal standard	72	2	HMI H2	2249954	2.35	2307933	97.49	60	120	
Ge Internal standard	72	3	HMI He	750249	2.61	744678	100.75	60	120	
In Internal Standard	115	3	HMI He	2566578	1.25	2599142	98.75	60	120	
Ir (IS)	193	3	HMI He	5562057	1.17	5525410	100.66	60	120	

Blank Report

Sample Table

Sample Name	mb 280-599676/1-a
Data File Name	176_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:55:53-07:00
Sample Type	Blank
Dilution	1
Comment	599676 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.092	ppb	1.865605156	5	0.5
Na	23	3	45	-6.390	ppb	-69.92202571	50045	25
Mg	24	3	45	2.421	ppb	26.71062705	350	25
Al	27	3	45	4.087	ppb	40.6739366	184	15
K	39	3	45	-8.596	ppb	-406.818999	26000	50
V	51	3	72	-0.043	ppb	-101.6192803	217	1
Cr	52	3	72	0.371	ppb	18.58410689	1661	1
Mn	55	3	72	1.453	ppb	12.51815055	793	0.5
Co	59	3	72	0.005	ppb	125.1757634	32	0.5
Ni	60	3	72	0.304	ppb	31.15022131	228	1
Cu	63	3	72	0.159	ppb	15.71346062	501	1
Zn	66	3	72	0.670	ppb	58.77275165	347	5
As	75	3	72	-0.155	ppb	-99.84960347	32	1
(Se)	78	3	72	-2.298	ppb	-95.74714883	18	1
Sr	88	3	72	0.207	ppb	23.7866084	158	0.5
Mo	95	3	115	0.121	ppb	41.74221887	100	0.5
Ag	107	3	115	0.009	ppb	75.73266691	33	1
Cd	111	3	115	0.013	ppb	86.58646003	7	0.5
Sn	120	3	115	0.533	ppb	8.603001215	941	1
Sb	121	3	115	-0.027	ppb	-117.2345088	103	0.6
Ba	137	3	115	0.091	ppb	52.71556876	92	0.5
Tl	205	3	193	-0.004	ppb	-164.9786306	102	0.1
(Pb)	206	3	193	-0.008	ppb	-170.6521432	145	1
(Pb)	207	3	193	-0.008	ppb	-346.8414132	320	1
Pb	208	3	193	0.012	ppb	155.7497534	793	0.5
Th	232	3	193	0.109	ppb	28.95673483	4887	1
U	238	3	193	-0.010	ppb	-63.42471981	1526	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4332793	1.01	4331237	100.04	60	120	
Sc (IS)	45	3	HMI He	658473	1.68	654817	100.56	60	120	
Ge Internal standard	72	2	HMI H2	2251061	1.01	2307933	97.54	60	120	
Ge Internal standard	72	3	HMI He	743962	2.91	744678	99.90	60	120	
In Internal Standard	115	3	HMI He	2605105	0.77	2599142	100.23	60	120	
Ir (IS)	193	3	HMI He	5581282	1.22	5525410	101.01	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599676/2-a
Data File Name	177_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:57:47-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599676 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.857	40.857	ppb	6.714	2226	40	102.1	80	120	
Na	23	3	45	814.839	814.839	ppb	1.800	150839	40	2037.1	80	120	>+/-20%
Mg	24	3	45	823.883	823.883	ppb	0.408	52845	40	2059.7	80	120	>+/-20%
Al	27	3	45	832.924	832.924	ppb	1.056	19436	40	2082.3	80	120	>+/-20%
K	39	3	45	776.553	776.553	ppb	3.888	65149	40	1941.4	80	120	>+/-20%
Ca	40	2	45	883.937	883.937	ppb	2.198	528479	40	2209.8	80	120	>+/-20%
V	51	3	72	40.272	40.272	ppb	2.655	25896	40	100.7	80	120	
Cr	52	3	72	40.867	40.867	ppb	3.928	34220	40	102.2	80	120	
Mn	55	3	72	58.530	58.530	ppb	1.533	25621	40	146.3	80	120	>+/-20%
Fe	56	2	72	861.307	861.307	ppb	6.165	1312343	40	2153.3	80	120	>+/-20%
(Fe)	56	3	72	826.357	826.357	ppb	1.645	560812	40	2065.9	80	120	>+/-20%
Co	59	3	72	40.831	40.831	ppb	3.732	53189	40	102.1	80	120	
Ni	60	3	72	40.989	40.989	ppb	1.923	14917	40	102.5	80	120	
Cu	63	3	72	40.784	40.784	ppb	3.238	40096	40	102.0	80	120	
Zn	66	3	72	44.504	44.504	ppb	0.621	7935	40	111.3	80	120	
As	75	3	72	40.341	40.341	ppb	2.775	4912	40	100.9	80	120	
Se	78	2	72	41.580	41.580	ppb	3.186	2461	40	103.9	80	120	
(Se)	78	3	72	39.808	39.808	ppb	1.614	303	40	99.5	80	120	
Sr	88	3	72	81.685	81.685	ppb	1.770	46102	40	204.2	80	120	>+/-20%
Mo	95	3	115	41.863	41.863	ppb	1.670	21698	40	104.7	80	120	
Ag	107	3	115	40.821	40.821	ppb	1.465	70045	40	102.1	80	120	
Cd	111	3	115	41.212	41.212	ppb	3.644	10401	40	103.0	80	120	
Sn	120	3	115	40.617	40.617	ppb	2.572	31655	40	101.5	80	120	
Sb	121	3	115	40.992	40.992	ppb	1.123	31889	40	102.5	80	120	
Ba	137	3	115	40.558	40.558	ppb	1.547	10207	40	101.4	80	120	
Tl	205	3	193	40.665	40.665	ppb	1.800	150361	40	101.7	80	120	
(Pb)	206	3	193	39.838	39.838	ppb	3.420	49622	40	99.6	80	120	
(Pb)	207	3	193	39.924	39.924	ppb	1.914	44322	40	99.8	80	120	
Pb	208	3	193	39.836	39.836	ppb	2.321	200051	40	99.6	80	120	
Th	232	3	193	40.483	40.483	ppb	2.745	206863	40	101.2	80	120	
U	238	3	193	40.565	40.565	ppb	3.044	214380	40	101.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4239052	2.18	4331237	97.87	60	120	
Sc (IS)	45	3	HMI He	650649	0.47	654817	99.36	60	120	
Ge Internal standard	72	2	HMI H2	2266551	2.08	2307933	98.21	60	120	
Ge Internal standard	72	3	HMI He	755472	2.04	744678	101.45	60	120	
In Internal Standard	115	3	HMI He	2571804	1.73	2599142	98.95	60	120	
Ir (IS)	193	3	HMI He	5584914	1.81	5525410	101.08	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-a
Data File Name	178SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T17:59:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	19784.976	ppb	19784.976	1.77	2483879	400000	
Mg	24	3	45	12517.063	ppb	12517.063	1.29	797319	400000	
Al	27	3	45	8.979	ppb	8.979	28.09	294	400000	
K	39	3	45	5752.439	ppb	5752.439	1.01	313997	400000	
Ca	40	2	45	52110.635	ppb	52110.635	1.69	29952147	400000	
V	51	3	72	9.767	ppb	9.767	1.08	6638	2000	
Cr	52	3	72	9.273	ppb	9.273	1.22	9072	5000	
Mn	55	3	72	1.562	ppb	1.562	7.27	875	10000	
Fe	56	2	72	20.547	ppb	20.547	2.77	41153	10000	
Co	59	3	72	0.045	ppb	0.045	42.05	87	2000	
Ni	60	3	72	0.868	ppb	0.868	15.72	446	5000	
Cu	63	3	72	0.782	ppb	0.782	12.27	1144	5000	
Zn	66	3	72	4.442	ppb	4.442	4.25	1031	5000	
As	75	3	72	3.634	ppb	3.634	15.99	501	2000	
Se	78	2	72	1.408	ppb	1.408	10.15	87	2000	
(Se)	78	3	72	1.216	ppb	1.216	87.54	43	2000	
Sr	88	3	72	244.982	ppb	244.982	0.19	141817	4000	
Mo	95	3	115	2.801	ppb	2.801	7.52	1454	2000	
Ag	107	3	115	0.011	ppb	0.011	16.28	37	100	
Cd	111	3	115	0.007	ppb	0.007	281.71	5	2000	
Sn	120	3	115	0.840	ppb	0.840	4.11	1141	2000	
Sb	121	3	115	0.280	ppb	0.280	19.30	333	1000	
Ba	137	3	115	32.958	ppb	32.958	2.95	8135	5000	
Tl	205	3	193	0.010	ppb	0.010	39.85	145	2000	
(Pb)	206	3	193	0.023	ppb	0.023	277.53	177	100	
(Pb)	207	3	193	0.070	ppb	0.070	44.35	390	100	
Pb	208	3	193	0.055	ppb	0.055	38.10	970	5000	
Th	232	3	193	0.646	ppb	0.646	18.25	7285	2000	
U	238	3	193	5.242	ppb	5.242	4.61	27984	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4185309	1.58	4331237	96.63	60	120	
Sc (IS)	45	3	HMI He	648350	0.21	654817	99.01	60	120	
Ge Internal standard	72	2	HMI H2	2305372	1.21	2307933	99.89	60	120	
Ge Internal standard	72	3	HMI He	775237	0.60	744678	104.10	60	120	
In Internal Standard	115	3	HMI He	2518552	0.83	2599142	96.90	60	120	
Ir (IS)	193	3	HMI He	5374249	0.80	5525410	97.26	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-aSD@5
Data File Name	179SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:01:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.093	ppb	0.093	173.21	5	2000	
Na	23	3	45	4011.238	ppb	4011.238	1.66	542344	400000	
Mg	24	3	45	2496.210	ppb	2496.210	2.28	158807	400000	
Al	27	3	45	-0.093	ppb	-0.093	-539.74	83	400000	
K	39	3	45	1151.583	ppb	1151.583	4.05	83507	400000	
Ca	40	2	45	10408.799	ppb	10408.799	0.79	6151491	400000	
V	51	3	72	2.061	ppb	2.061	7.87	1593	2000	
Cr	52	3	72	2.073	ppb	2.073	5.33	3115	5000	
Mn	55	3	72	0.334	ppb	0.334	20.67	325	10000	
Fe	56	2	72	4.865	ppb	4.865	7.45	16947	10000	
Co	59	3	72	0.013	ppb	0.013	58.60	43	2000	
Ni	60	3	72	0.241	ppb	0.241	43.55	213	5000	
Cu	63	3	72	0.252	ppb	0.252	6.53	611	5000	
Zn	66	3	72	1.338	ppb	1.338	43.15	478	5000	
As	75	3	72	0.715	ppb	0.715	14.23	140	2000	
Se	78	2	72	0.346	ppb	0.346	32.64	23	2000	
(Se)	78	3	72	-2.614	ppb	-2.614	-62.97	17	2000	
Sr	88	3	72	50.298	ppb	50.298	2.22	28985	4000	
Mo	95	3	115	0.582	ppb	0.582	11.45	337	2000	
Ag	107	3	115	0.014	ppb	0.014	9.95	42	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.471	ppb	0.471	19.04	880	2000	
Sb	121	3	115	0.024	ppb	0.024	76.77	142	1000	
Ba	137	3	115	6.600	ppb	6.600	8.49	1713	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-437.23	108	2000	
(Pb)	206	3	193	-0.004	ppb	-0.004	-67.09	147	100	
(Pb)	207	3	193	-0.003	ppb	-0.003	-794.84	317	100	
Pb	208	3	193	0.009	ppb	0.009	101.32	760	5000	
Th	232	3	193	0.120	ppb	0.120	11.90	4807	2000	
U	238	3	193	1.043	ppb	1.043	4.75	6867	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4294876	1.88	4331237	99.16	60	120	
Sc (IS)	45	3	HMI He	647013	0.88	654817	98.81	60	120	
Ge Internal standard	72	2	HMI H2	2298764	2.83	2307933	99.60	60	120	
Ge Internal standard	72	3	HMI He	770932	1.43	744678	103.53	60	120	
In Internal Standard	115	3	HMI He	2565663	1.28	2599142	98.71	60	120	
Ir (IS)	193	3	HMI He	5434278	1.35	5525410	98.35	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-b ms
Data File Name	180SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:03:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.250	ppb	42.250	1.09	2279	2000	
Na	23	3	45	20741.799	ppb	20741.799	2.52	2607897	400000	
Mg	24	3	45	13500.433	ppb	13500.433	1.51	862307	400000	
Al	27	3	45	827.696	ppb	827.696	3.34	19296	400000	
K	39	3	45	6553.218	ppb	6553.218	1.50	354978	400000	
Ca	40	2	45	52791.876	ppb	52791.876	1.24	30805575	400000	
V	51	3	72	49.854	ppb	49.854	3.28	33089	2000	
Cr	52	3	72	48.297	ppb	48.297	2.51	41574	5000	
Mn	55	3	72	39.546	ppb	39.546	3.89	17956	10000	
Fe	56	2	72	861.787	ppb	861.787	2.42	1350164	10000	
Co	59	3	72	39.811	ppb	39.811	3.49	53647	2000	
Ni	60	3	72	40.228	ppb	40.228	2.07	15146	5000	
Cu	63	3	72	40.533	ppb	40.533	2.31	41222	5000	
Zn	66	3	72	40.413	ppb	40.413	3.07	7472	5000	
As	75	3	72	45.072	ppb	45.072	1.09	5668	2000	
Se	78	2	72	42.450	ppb	42.450	1.12	2582	2000	
(Se)	78	3	72	47.841	ppb	47.841	0.59	370	2000	
Sr	88	3	72	320.770	ppb	320.770	2.67	187079	4000	
Mo	95	3	115	45.100	ppb	45.100	1.97	23200	2000	
Ag	107	3	115	42.088	ppb	42.088	1.60	71678	100	
Cd	111	3	115	41.662	ppb	41.662	1.26	10439	2000	
Sn	120	3	115	42.283	ppb	42.283	1.07	32690	2000	
Sb	121	3	115	41.964	ppb	41.964	1.08	32395	1000	
Ba	137	3	115	74.862	ppb	74.862	0.33	18642	5000	
Tl	205	3	193	41.063	ppb	41.063	1.40	151680	2000	
(Pb)	206	3	193	40.702	ppb	40.702	0.53	50656	100	
(Pb)	207	3	193	40.001	ppb	40.001	0.74	44365	100	
Pb	208	3	193	40.580	ppb	40.580	0.15	203595	5000	
Th	232	3	193	41.577	ppb	41.577	1.41	212143	2000	
U	238	3	193	46.173	ppb	46.173	1.43	243595	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4248504	0.71	4331237	98.09	60	120	
Sc (IS)	45	3	HMI He	650074	1.35	654817	99.28	60	120	
Ge Internal standard	72	2	HMI H2	2328993	1.45	2307933	100.91	60	120	
Ge Internal standard	72	3	HMI He	781421	2.42	744678	104.93	60	120	
In Internal Standard	115	3	HMI He	2552321	0.70	2599142	98.20	60	120	
Ir (IS)	193	3	HMI He	5578366	0.37	5525410	100.96	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-c msd
Data File Name	181SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:05:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.174	ppb	42.174	2.51	2291	2000	
Na	23	3	45	19738.245	ppb	19738.245	0.78	2588120	400000	
Mg	24	3	45	12520.788	ppb	12520.788	0.51	832953	400000	
Al	27	3	45	813.608	ppb	813.608	1.76	19760	400000	
K	39	3	45	6189.627	ppb	6189.627	1.21	350803	400000	
Ca	40	2	45	50938.528	ppb	50938.528	2.13	30137755	400000	
V	51	3	72	50.627	ppb	50.627	1.17	34220	2000	
Cr	52	3	72	48.601	ppb	48.601	1.51	42594	5000	
Mn	55	3	72	39.584	ppb	39.584	2.08	18308	10000	
Fe	56	2	72	850.098	ppb	850.098	0.75	1339014	10000	
Co	59	3	72	39.677	ppb	39.677	0.91	54451	2000	
Ni	60	3	72	40.672	ppb	40.672	5.34	15586	5000	
Cu	63	3	72	40.210	ppb	40.210	0.30	41648	5000	
Zn	66	3	72	40.818	ppb	40.818	0.53	7683	5000	
As	75	3	72	43.578	ppb	43.578	2.82	5580	2000	
Se	78	2	72	42.914	ppb	42.914	1.53	2624	2000	
(Se)	78	3	72	45.962	ppb	45.962	5.27	363	2000	
Sr	88	3	72	313.383	ppb	313.383	1.33	186131	4000	
Mo	95	3	115	43.942	ppb	43.942	2.46	23492	2000	
Ag	107	3	115	41.610	ppb	41.610	2.43	73646	100	
Cd	111	3	115	41.789	ppb	41.789	4.20	10879	2000	
Sn	120	3	115	41.201	ppb	41.201	4.10	33111	2000	
Sb	121	3	115	41.186	ppb	41.186	3.19	33041	1000	
Ba	137	3	115	71.258	ppb	71.258	2.52	18444	5000	
Tl	205	3	193	40.889	ppb	40.889	0.95	154250	2000	
(Pb)	206	3	193	40.465	ppb	40.465	0.90	51433	100	
(Pb)	207	3	193	40.669	ppb	40.669	0.93	46061	100	
Pb	208	3	193	40.591	ppb	40.591	1.20	207971	5000	
Th	232	3	193	41.700	ppb	41.700	1.54	217274	2000	
U	238	3	193	45.830	ppb	45.830	1.35	246926	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4307848	0.83	4331237	99.46	60	120	
Sc (IS)	45	3	HMI He	677144	0.48	654817	103.41	60	120	
Ge Internal standard	72	2	HMI H2	2340953	0.71	2307933	101.43	60	120	
Ge Internal standard	72	3	HMI He	795516	1.08	744678	106.83	60	120	
In Internal Standard	115	3	HMI He	2653178	1.97	2599142	102.08	60	120	
Ir (IS)	193	3	HMI He	5697362	1.26	5525410	103.11	60	120	

Sample Report

Sample Table

Sample Name	280-171396-a-2-a PDS
Data File Name	182SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:07:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	211.281	ppb	211.281	4.08	11257	2000	
Na	23	3	45	30046.058	ppb	30046.058	4.48	3772175	400000	
Mg	24	3	45	14349.484	ppb	14349.484	2.23	920590	400000	
Al	27	3	45	2063.282	ppb	2063.282	2.11	48197	400000	
K	39	3	45	7619.681	ppb	7619.681	3.33	410336	400000	
Ca	40	2	45	53584.506	ppb	53584.506	1.05	31056458	400000	
V	51	3	72	206.313	ppb	206.313	2.01	137214	2000	
Cr	52	3	72	206.418	ppb	206.418	2.22	174338	5000	
Mn	55	3	72	196.732	ppb	196.732	2.26	89334	10000	
Fe	56	2	72	40.407	ppb	40.407	3.56	72300	10000	
Co	59	3	72	194.286	ppb	194.286	1.27	263784	2000	
Ni	60	3	72	195.277	ppb	195.277	1.01	73604	5000	
Cu	63	3	72	198.154	ppb	198.154	1.85	201663	5000	
Zn	66	3	72	207.892	ppb	207.892	2.45	37714	5000	
As	75	3	72	196.583	ppb	196.583	0.69	24730	2000	
Se	78	2	72	206.940	ppb	206.940	5.63	12540	2000	
(Se)	78	3	72	207.799	ppb	207.799	6.39	1499	2000	
Sr	88	3	72	433.336	ppb	433.336	0.13	254748	4000	
Mo	95	3	115	210.913	ppb	210.913	2.48	109755	2000	
Ag	107	3	115	53.096	ppb	53.096	2.16	91576	100	
Cd	111	3	115	205.274	ppb	205.274	0.81	52088	2000	
Sn	120	3	115	207.713	ppb	207.713	0.77	160615	2000	
Sb	121	3	115	204.131	ppb	204.131	1.69	159125	1000	
Ba	137	3	115	234.435	ppb	234.435	2.45	58977	5000	
Tl	205	3	193	204.955	ppb	204.955	0.85	754697	2000	
(Pb)	206	3	193	206.316	ppb	206.316	0.69	255519	100	
(Pb)	207	3	193	202.003	ppb	202.003	1.67	222131	100	
Pb	208	3	193	204.085	ppb	204.085	0.99	1018340	5000	
Th	232	3	193	216.642	ppb	216.642	4.07	1084499	2000	
U	238	3	193	223.183	ppb	223.183	2.14	1168279	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4220211	2.19	4331237	97.44	60	120	
Sc (IS)	45	3	HMI He	653266	2.55	654817	99.76	60	120	
Ge Internal standard	72	2	HMI H2	2325245	4.21	2307933	100.75	60	120	
Ge Internal standard	72	3	HMI He	787388	1.75	744678	105.74	60	120	
In Internal Standard	115	3	HMI He	2585349	1.52	2599142	99.47	60	120	
Ir (IS)	193	3	HMI He	5564530	1.28	5525410	100.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	183_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:09:00-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.765	ppb	4.242	2809	50	101.5	90	110	
Na	23	3	45	50252.170	ppb	2.351	6510504	51000	98.5	90	110	
Mg	24	3	45	10917.252	ppb	3.648	726437	11000	99.2	90	110	
Al	27	3	45	995.921	ppb	5.025	24165	1000	99.6	90	110	
K	39	3	45	10464.611	ppb	3.083	574403	11000	95.1	90	110	
Ca	40	2	45	10965.828	ppb	0.879	6617715	11000	99.7	90	110	
V	51	3	72	51.028	ppb	3.355	33492	50	102.1	90	110	
Cr	52	3	72	50.476	ppb	2.461	42913	50	101.0	90	110	
Mn	55	3	72	49.145	ppb	3.019	22033	50	98.3	90	110	
Fe	56	2	72	1064.004	ppb	0.234	1633187	1000	106.4	90	110	
Co	59	3	72	50.371	ppb	2.695	67127	50	100.7	90	110	
Ni	60	3	72	50.331	ppb	3.890	18703	50	100.7	90	110	
Cu	63	3	72	49.541	ppb	2.889	49744	50	99.1	90	110	
Zn	66	3	72	47.872	ppb	1.142	8712	50	95.7	90	110	
As	75	3	72	51.415	ppb	2.909	6390	50	102.8	90	110	
Se	78	2	72	52.337	ppb	1.258	3123	50	104.7	90	110	
(Se)	78	3	72	47.864	ppb	11.775	366	50	95.7	90	110	
Sr	88	3	72	99.252	ppb	4.342	57265	100	99.3	90	110	
Mo	95	3	115	51.032	ppb	2.401	26878	50	102.1	90	110	
Ag	107	3	115	50.724	ppb	0.219	88460	50	101.4	90	110	
Cd	111	3	115	51.518	ppb	2.603	13215	50	103.0	90	110	
Sn	120	3	115	50.482	ppb	1.956	39861	50	101.0	90	110	
Sb	121	3	115	50.889	ppb	1.546	40200	50	101.8	90	110	
Ba	137	3	115	50.169	ppb	3.418	12813	50	100.3	90	110	
Tl	205	3	193	50.455	ppb	1.869	186316	50	100.9	90	110	
(Pb)	206	3	193	50.827	ppb	1.495	63207	50	101.7	90	110	
(Pb)	207	3	193	50.196	ppb	2.564	55572	50	100.4	90	110	
Pb	208	3	193	50.408	ppb	1.474	252676	50	100.8	90	110	
Th	232	3	193	52.108	ppb	1.343	264742	50	104.2	90	110	
U	238	3	193	50.965	ppb	2.226	268640	50	101.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4386128	1.60	4331237	101.27	60	120	
Sc (IS)	45	3	HMI He	677635	2.71	654817	103.48	60	120	
Ge Internal standard	72	2	HMI H2	2284531	1.19	2307933	98.99	60	120	
Ge Internal standard	72	3	HMI He	772887	2.65	744678	103.79	60	120	
In Internal Standard	115	3	HMI He	2613609	0.95	2599142	100.56	60	120	
Ir (IS)	193	3	HMI He	5578151	1.52	5525410	100.95	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	184_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:10:52-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-31.335	ppb	-16.4	46780	25	
Mg	24	3	45	0.151	ppb	652.2	204	25	
Al	27	3	45	10.967	ppb	18.9	344	15	
K	39	3	45	-27.871	ppb	-141.3	24964	50	
V	51	3	72	-0.060	ppb	-91.1	208	1	
Cr	52	3	72	0.196	ppb	20.6	1548	1	
Mn	55	3	72	0.013	ppb	598.1	178	0.5	
Co	59	3	72	0.014	ppb	39.8	43	0.5	
Ni	60	3	72	0.134	ppb	49.5	170	1	
Cu	63	3	72	0.087	ppb	34.0	438	1	
Zn	66	3	72	1.394	ppb	6.5	478	5	
As	75	3	72	-0.033	ppb	-499.0	47	1	
Se	78	2	72	0.035	ppb	197.5	5	1	
(Se)	78	3	72	-2.784	ppb	-53.8	15	1	
Sr	88	3	72	-0.013	ppb	-153.4	37	0.5	
Mo	95	3	115	0.121	ppb	35.8	100	0.5	
Ag	107	3	115	-0.002	ppb	-274.4	15	1	
Cd	111	3	115	-0.007	ppb	-169.4	2	0.5	
Sn	120	3	115	0.268	ppb	31.4	736	1	
Sb	121	3	115	0.062	ppb	40.7	173	0.6	
Ba	137	3	115	-0.061	ppb	-72.5	53	0.5	
Tl	205	3	193	0.013	ppb	44.9	163	0.1	
(Pb)	206	3	193	-0.006	ppb	-293.7	147	1	
(Pb)	207	3	193	-0.002	ppb	-897.5	325	1	
Pb	208	3	193	0.016	ppb	38.9	813	0.5	
Th	232	3	193	0.758	ppb	24.3	8084	1	
U	238	3	193	0.025	ppb	56.3	1704	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4284544	2.12	4331237	98.92	60	120	
Sc (IS)	45	3	HMI He	656332	0.58	654817	100.23	60	120	
Ge Internal standard	72	2	HMI H2	2242630	4.22	2307933	97.17	60	120	
Ge Internal standard	72	3	HMI He	756545	3.57	744678	101.59	60	120	
In Internal Standard	115	3	HMI He	2605985	1.17	2599142	100.26	60	120	
Ir (IS)	193	3	HMI He	5558424	2.21	5525410	100.60	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-3-a
Data File Name	185SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:12:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.093	ppb	0.093	101.12	5	2000	
Na	23	3	45	72897.641	ppb	72897.641	0.71	9487085	400000	
Mg	24	3	45	33932.763	ppb	33932.763	1.98	2273469	400000	
Al	27	3	45	2.869	ppb	2.869	37.25	160	400000	
K	39	3	45	8203.379	ppb	8203.379	1.61	459381	400000	
Ca	40	2	45	177048.324	ppb	177048.324	1.98	104960876	400000	
V	51	3	72	0.413	ppb	0.413	14.72	525	2000	
Cr	52	3	72	0.771	ppb	0.771	11.68	2066	5000	
Mn	55	3	72	476.392	ppb	476.392	1.39	213438	10000	
Fe	56	2	72	35670.407	ppb	35670.407	2.63	55668734	10000	
Co	59	3	72	3.782	ppb	3.782	2.17	5098	2000	
Ni	60	3	72	7.377	ppb	7.377	2.90	2867	5000	
Cu	63	3	72	0.273	ppb	0.273	28.84	638	5000	
Zn	66	3	72	64.546	ppb	64.546	2.88	11736	5000	
As	75	3	72	5.676	ppb	5.676	10.92	756	2000	
Se	78	2	72	0.383	ppb	0.383	18.84	26	2000	
(Se)	78	3	72	-1.670	ppb	-1.670	-99.25	23	2000	
Sr	88	3	72	1113.096	ppb	1113.096	1.48	646232	4000	
Mo	95	3	115	0.997	ppb	0.997	28.86	563	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-329.63	17	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.699	ppb	0.699	10.71	1080	2000	
Sb	121	3	115	0.190	ppb	0.190	5.28	277	1000	
Ba	137	3	115	505.977	ppb	505.977	0.92	129255	5000	
Tl	205	3	193	0.003	ppb	0.003	267.53	127	2000	
(Pb)	206	3	193	0.000	ppb	0.000	3153.38	157	100	
(Pb)	207	3	193	0.005	ppb	0.005	493.08	337	100	
Pb	208	3	193	0.014	ppb	0.014	48.83	811	5000	
Th	232	3	193	0.204	ppb	0.204	23.29	5395	2000	
U	238	3	193	1.538	ppb	1.538	5.08	9711	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4318405	2.18	4331237	99.70	60	120	
Sc (IS)	45	3	HMI He	682197	2.23	654817	104.18	60	120	
Ge Internal standard	72	2	HMI H2	2336951	2.84	2307933	101.26	60	120	
Ge Internal standard	72	3	HMI He	777685	0.21	744678	104.43	60	120	
In Internal Standard	115	3	HMI He	2626596	1.42	2599142	101.06	60	120	
Ir (IS)	193	3	HMI He	5619374	1.53	5525410	101.70	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-b
Data File Name	186SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:14:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	173.21	3	2000	
Na	23	3	45	63170.028	ppb	63170.028	1.94	7925097	400000	
Mg	24	3	45	30843.258	ppb	30843.258	3.51	1990437	400000	
Al	27	3	45	3.694	ppb	3.694	18.92	174	400000	
K	39	3	45	6487.507	ppb	6487.507	0.60	355540	400000	
Ca	40	2	45	165186.512	ppb	165186.512	1.97	96453349	400000	
V	51	3	72	0.206	ppb	0.206	48.63	381	2000	
Cr	52	3	72	0.417	ppb	0.417	39.82	1741	5000	
Mn	55	3	72	758.626	ppb	758.626	3.67	333396	10000	
Fe	56	2	72	9379.854	ppb	9379.854	1.27	14573546	10000	
Co	59	3	72	3.119	ppb	3.119	5.63	4129	2000	
Ni	60	3	72	6.061	ppb	6.061	4.16	2334	5000	
Cu	63	3	72	0.289	ppb	0.289	8.64	643	5000	
Zn	66	3	72	31.055	ppb	31.055	1.13	5668	5000	
As	75	3	72	2.324	ppb	2.324	19.94	335	2000	
Se	78	2	72	0.428	ppb	0.428	15.00	29	2000	
(Se)	78	3	72	-1.351	ppb	-1.351	-97.25	25	2000	
Sr	88	3	72	937.297	ppb	937.297	3.91	533903	4000	
Mo	95	3	115	0.913	ppb	0.913	18.95	510	2000	
Ag	107	3	115	0.000	ppb	0.000	3268.71	18	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.452	ppb	0.452	11.66	870	2000	
Sb	121	3	115	0.270	ppb	0.270	12.09	333	1000	
Ba	137	3	115	323.108	ppb	323.108	1.52	81039	5000	
Tl	205	3	193	0.002	ppb	0.002	177.86	120	2000	
(Pb)	206	3	193	0.223	ppb	0.223	24.30	426	100	
(Pb)	207	3	193	0.201	ppb	0.201	23.63	545	100	
Pb	208	3	193	0.242	ppb	0.242	1.07	1924	5000	
Th	232	3	193	0.088	ppb	0.088	34.20	4732	2000	
U	238	3	193	1.883	ppb	1.883	2.08	11345	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4253107	2.08	4331237	98.20	60	120	
Sc (IS)	45	3	HMI He	657123	1.43	654817	100.35	60	120	
Ge Internal standard	72	2	HMI H2	2324437	1.02	2307933	100.72	60	120	
Ge Internal standard	72	3	HMI He	763636	3.20	744678	102.55	60	120	
In Internal Standard	115	3	HMI He	2577899	0.92	2599142	99.18	60	120	
Ir (IS)	193	3	HMI He	5527370	1.52	5525410	100.04	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-c ms
Data File Name	187SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:16:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.955	ppb	40.955	3.72	2209	2000	
Na	23	3	45	61044.609	ppb	61044.609	1.11	7729910	400000	
Mg	24	3	45	30602.542	ppb	30602.542	2.35	1992954	400000	
Al	27	3	45	837.171	ppb	837.171	3.69	19904	400000	
K	39	3	45	7039.263	ppb	7039.263	1.13	386958	400000	
Ca	40	2	45	155395.901	ppb	155395.901	2.15	91017197	400000	
V	51	3	72	42.302	ppb	42.302	0.85	27734	2000	
Cr	52	3	72	41.620	ppb	41.620	0.87	35531	5000	
Mn	55	3	72	778.225	ppb	778.225	0.82	345294	10000	
Fe	56	2	72	9865.957	ppb	9865.957	2.36	15012068	10000	
Co	59	3	72	43.643	ppb	43.643	1.12	58000	2000	
Ni	60	3	72	46.445	ppb	46.445	1.93	17226	5000	
Cu	63	3	72	40.780	ppb	40.780	1.46	40898	5000	
Zn	66	3	72	68.776	ppb	68.776	2.59	12371	5000	
As	75	3	72	42.483	ppb	42.483	2.12	5270	2000	
Se	78	2	72	42.057	ppb	42.057	2.20	2501	2000	
(Se)	78	3	72	33.178	ppb	33.178	28.42	263	2000	
Sr	88	3	72	981.421	ppb	981.421	1.12	564449	4000	
Mo	95	3	115	43.850	ppb	43.850	1.23	22414	2000	
Ag	107	3	115	42.069	ppb	42.069	1.98	71185	100	
Cd	111	3	115	42.396	ppb	42.396	1.86	10554	2000	
Sn	120	3	115	42.003	ppb	42.003	2.89	32273	2000	
Sb	121	3	115	42.746	ppb	42.746	2.62	32782	1000	
Ba	137	3	115	357.717	ppb	357.717	0.69	88263	5000	
Tl	205	3	193	41.348	ppb	41.348	2.05	150892	2000	
(Pb)	206	3	193	41.002	ppb	41.002	1.61	50413	100	
(Pb)	207	3	193	41.060	ppb	41.060	2.61	44982	100	
Pb	208	3	193	41.132	ppb	41.132	1.46	203867	5000	
Th	232	3	193	42.230	ppb	42.230	1.59	212838	2000	
U	238	3	193	43.640	ppb	43.640	0.81	227558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4266669	2.00	4331237	98.51	60	120	
Sc (IS)	45	3	HMI He	663016	0.88	654817	101.25	60	120	
Ge Internal standard	72	2	HMI H2	2276919	1.67	2307933	98.66	60	120	
Ge Internal standard	72	3	HMI He	770377	0.60	744678	103.45	60	120	
In Internal Standard	115	3	HMI He	2536299	1.66	2599142	97.58	60	120	
Ir (IS)	193	3	HMI He	5511514	0.78	5525410	99.75	60	120	

Sample Report

Sample Table

Sample Name	280-171363-a-5-d msd
Data File Name	188SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:18:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599676 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.521	ppb	41.521	3.25	2266	2000	
Na	23	3	45	64115.458	ppb	64115.458	0.59	8108115	400000	
Mg	24	3	45	32166.767	ppb	32166.767	1.17	2092701	400000	
Al	27	3	45	831.764	ppb	831.764	2.53	19760	400000	
K	39	3	45	7408.659	ppb	7408.659	0.37	405459	400000	
Ca	40	2	45	164466.189	ppb	164466.189	1.12	95505812	400000	
V	51	3	72	41.509	ppb	41.509	1.51	27592	2000	
Cr	52	3	72	41.159	ppb	41.159	2.51	35629	5000	
Mn	55	3	72	802.458	ppb	802.458	1.33	360913	10000	
Fe	56	2	72	10154.173	ppb	10154.173	2.06	15735094	10000	
Co	59	3	72	43.459	ppb	43.459	0.82	58552	2000	
Ni	60	3	72	46.264	ppb	46.264	1.11	17394	5000	
Cu	63	3	72	40.451	ppb	40.451	1.05	41131	5000	
Zn	66	3	72	70.676	ppb	70.676	3.47	12880	5000	
As	75	3	72	42.381	ppb	42.381	3.40	5332	2000	
Se	78	2	72	41.889	ppb	41.889	1.54	2538	2000	
(Se)	78	3	72	36.925	ppb	36.925	7.79	293	2000	
Sr	88	3	72	1009.482	ppb	1009.482	0.95	588568	4000	
Mo	95	3	115	44.102	ppb	44.102	1.77	22409	2000	
Ag	107	3	115	42.401	ppb	42.401	1.31	71331	100	
Cd	111	3	115	42.881	ppb	42.881	0.97	10614	2000	
Sn	120	3	115	42.544	ppb	42.544	1.49	32493	2000	
Sb	121	3	115	42.592	ppb	42.592	1.35	32483	1000	
Ba	137	3	115	376.820	ppb	376.820	1.39	92417	5000	
Tl	205	3	193	41.594	ppb	41.594	0.37	151956	2000	
(Pb)	206	3	193	40.755	ppb	40.755	1.19	50167	100	
(Pb)	207	3	193	40.817	ppb	40.817	1.34	44763	100	
Pb	208	3	193	40.987	ppb	40.987	0.82	203370	5000	
Th	232	3	193	42.530	ppb	42.530	1.59	214518	2000	
U	238	3	193	43.756	ppb	43.756	1.32	228373	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4229159	1.53	4331237	97.64	60	120	
Sc (IS)	45	3	HMI He	662343	0.99	654817	101.15	60	120	
Ge Internal standard	72	2	HMI H2	2318982	2.11	2307933	100.48	60	120	
Ge Internal standard	72	3	HMI He	781069	1.84	744678	104.89	60	120	
In Internal Standard	115	3	HMI He	2521424	1.69	2599142	97.01	60	120	
Ir (IS)	193	3	HMI He	5517070	0.85	5525410	99.85	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	189_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:20:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	54.435	ppb	6.420	2952	50	108.9	90	110	
Na	23	3	45	50512.928	ppb	2.933	6465244	51000	99.0	90	110	
Mg	24	3	45	10854.739	ppb	2.542	713711	11000	98.7	90	110	
Al	27	3	45	1013.754	ppb	3.023	24312	1000	101.4	90	110	
K	39	3	45	10579.483	ppb	4.071	573388	11000	96.2	90	110	
Ca	40	2	45	11018.995	ppb	2.548	6460609	11000	100.2	90	110	
V	51	3	72	51.281	ppb	1.315	32984	50	102.6	90	110	
Cr	52	3	72	51.156	ppb	2.374	42594	50	102.3	90	110	
Mn	55	3	72	50.385	ppb	2.021	22128	50	100.8	90	110	
Fe	56	2	72	1063.468	ppb	1.499	1608989	1000	106.3	90	110	
Co	59	3	72	50.451	ppb	1.421	65881	50	100.9	90	110	
Ni	60	3	72	51.180	ppb	1.662	18638	50	102.4	90	110	
Cu	63	3	72	50.526	ppb	0.628	49711	50	101.1	90	110	
Zn	66	3	72	50.608	ppb	2.807	9008	50	101.2	90	110	
As	75	3	72	50.595	ppb	1.556	6158	50	101.2	90	110	
Se	78	2	72	51.159	ppb	0.680	3009	50	102.3	90	110	
(Se)	78	3	72	47.055	ppb	17.292	353	50	94.1	90	110	
Sr	88	3	72	100.616	ppb	1.344	56902	100	100.6	90	110	
Mo	95	3	115	50.723	ppb	3.067	26559	50	101.4	90	110	
Ag	107	3	115	49.953	ppb	2.187	86607	50	99.9	90	110	
Cd	111	3	115	50.962	ppb	3.221	12998	50	101.9	90	110	
Sn	120	3	115	49.998	ppb	0.374	39258	50	100.0	90	110	
Sb	121	3	115	50.290	ppb	1.452	39500	50	100.6	90	110	
Ba	137	3	115	49.855	ppb	1.445	12661	50	99.7	90	110	
Tl	205	3	193	50.663	ppb	0.331	184904	50	101.3	90	110	
(Pb)	206	3	193	50.415	ppb	2.492	61962	50	100.8	90	110	
(Pb)	207	3	193	50.307	ppb	1.846	55054	50	100.6	90	110	
Pb	208	3	193	50.124	ppb	1.101	248324	50	100.2	90	110	
Th	232	3	193	50.822	ppb	0.767	255302	50	101.6	90	110	
U	238	3	193	50.291	ppb	2.212	262023	50	100.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4261336	0.33	4331237	98.39	60	120	
Sc (IS)	45	3	HMI He	669489	2.35	654817	102.24	60	120	
Ge Internal standard	72	2	HMI H2	2251926	0.69	2307933	97.57	60	120	
Ge Internal standard	72	3	HMI He	757053	0.68	744678	101.66	60	120	
In Internal Standard	115	3	HMI He	2598372	0.24	2599142	99.97	60	120	
Ir (IS)	193	3	HMI He	5512518	0.73	5525410	99.77	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	190_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:22:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.094	ppb	100.6	5	0.5	
Na	23	3	45	-23.691	ppb	-5.1	47654	25	
Mg	24	3	45	0.107	ppb	235.5	200	25	
Al	27	3	45	9.999	ppb	18.3	320	15	
K	39	3	45	-10.213	ppb	-258.5	25816	50	
V	51	3	72	-0.084	ppb	-42.8	185	1	
Cr	52	3	72	0.229	ppb	83.1	1501	1	
Mn	55	3	72	0.167	ppb	49.2	235	0.5	
Co	59	3	72	0.011	ppb	124.1	38	0.5	
Ni	60	3	72	0.214	ppb	79.6	190	1	
Cu	63	3	72	0.041	ppb	97.6	376	1	
Zn	66	3	72	1.401	ppb	12.7	458	5	
As	75	3	72	-0.178	ppb	-60.7	28	1	
Se	78	2	72	0.014	ppb	522.0	3	1	
(Se)	78	3	72	-2.187	ppb	-53.4	18	1	
Sr	88	3	72	0.036	ppb	36.6	62	0.5	
Mo	95	3	115	0.019	ppb	3.1	45	0.5	
Ag	107	3	115	0.004	ppb	135.4	25	1	
Cd	111	3	115	0.014	ppb	220.8	7	0.5	
Sn	120	3	115	0.296	ppb	33.0	731	1	
Sb	121	3	115	0.014	ppb	187.5	132	0.6	
Ba	137	3	115	-0.039	ppb	-267.5	57	0.5	
Tl	205	3	193	0.003	ppb	321.0	120	0.1	
(Pb)	206	3	193	0.006	ppb	676.2	157	1	
(Pb)	207	3	193	0.037	ppb	51.5	356	1	
Pb	208	3	193	0.030	ppb	66.7	856	0.5	
Th	232	3	193	0.687	ppb	17.7	7517	1	
U	238	3	193	0.016	ppb	57.5	1611	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4265231	1.68	4331237	98.48	60	120	
Sc (IS)	45	3	HMI He	655225	1.10	654817	100.06	60	120	
Ge Internal standard	72	2	HMI H2	2196000	2.39	2307933	95.15	60	120	
Ge Internal standard	72	3	HMI He	722111	1.23	744678	96.97	60	120	
In Internal Standard	115	3	HMI He	2516814	0.66	2599142	96.83	60	120	
Ir (IS)	193	3	HMI He	5398457	0.97	5525410	97.70	60	120	

Blank Report

Sample Table

Sample Name	mb 280-599925/1-b
Data File Name	191_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:24:02-07:00
Sample Type	Blank
Dilution	1
Comment	600009 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	26.715	ppb	10.20573254	53678	25
Mg	24	3	45	1.888	ppb	44.95688483	314	25
Al	27	3	45	28.091	ppb	14.10525346	741	15
K	39	3	45	-0.355	ppb	-11933.41767	26177	50
V	51	3	72	-0.050	ppb	-131.0658281	208	1
Cr	52	3	72	0.412	ppb	37.51630686	1664	1
Mn	55	3	72	1.855	ppb	5.871183762	950	0.5
Co	59	3	72	0.015	ppb	54.66515839	43	0.5
Ni	60	3	72	0.124	ppb	64.03668073	162	1
Cu	63	3	72	25.633	ppb	3.930785221	24550	1
Zn	66	3	72	13.698	ppb	4.620444481	2526	5
As	75	3	72	-0.038	ppb	-203.360732	45	1
(Se)	78	3	72	-0.965	ppb	-160.6647405	27	1
Sr	88	3	72	0.154	ppb	60.9807496	127	0.5
Mo	95	3	115	-0.008	ppb	-292.4164883	32	0.5
Ag	107	3	115	0.012	ppb	123.5783979	38	1
Cd	111	3	115	-0.006	ppb	-176.264593	2	0.5
Sn	120	3	115	0.991	ppb	18.80124198	1263	1
Sb	121	3	115	-0.006	ppb	-88.08048478	117	0.6
Ba	137	3	115	0.642	ppb	15.39860015	225	0.5
Tl	205	3	193	0.002	ppb	438.2434732	122	0.1
(Pb)	206	3	193	0.188	ppb	27.1610572	383	1
(Pb)	207	3	193	0.111	ppb	35.07696966	445	1
Pb	208	3	193	0.171	ppb	25.84899239	1571	0.5
Th	232	3	193	0.151	ppb	26.09517765	5034	1
U	238	3	193	0.000	ppb	-7683.928796	1563	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4254609	1.68	4331237	98.23	60	120	
Sc (IS)	45	3	HMI He	652294	0.92	654817	99.61	60	120	
Ge Internal standard	72	2	HMI H2	2194236	1.63	2307933	95.07	60	120	
Ge Internal standard	72	3	HMI He	732061	1.16	744678	98.31	60	120	
In Internal Standard	115	3	HMI He	2535138	1.79	2599142	97.54	60	120	
Ir (IS)	193	3	HMI He	5518731	1.83	5525410	99.88	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599925/2-b
Data File Name	192_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:25:56-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600009 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.228	40.228	ppb	3.274	2189	40	100.6	80	120	
Na	23	3	45	792.780	792.780	ppb	1.554	151365	40	1981.9	80	120	>+/-20%
Mg	24	3	45	766.882	766.882	ppb	1.235	50283	40	1917.2	80	120	>+/-20%
Al	27	3	45	806.610	806.610	ppb	2.374	19239	40	2016.5	80	120	>+/-20%
K	39	3	45	756.306	756.306	ppb	5.604	65541	40	1890.8	80	120	>+/-20%
Ca	40	2	45	862.142	862.142	ppb	2.881	526312	40	2155.4	80	120	>+/-20%
V	51	3	72	40.585	40.585	ppb	1.430	26694	40	101.5	80	120	
Cr	52	3	72	40.947	40.947	ppb	2.692	35082	40	102.4	80	120	
Mn	55	3	72	40.823	40.823	ppb	0.821	18333	40	102.1	80	120	
Fe	56	2	72	862.332	862.332	ppb	1.310	1293323	40	2155.8	80	120	>+/-20%
(Fe)	56	3	72	804.096	804.096	ppb	0.874	558318	40	2010.2	80	120	>+/-20%
Co	59	3	72	40.283	40.283	ppb	2.219	53700	40	100.7	80	120	
Ni	60	3	72	39.699	39.699	ppb	2.336	14782	40	99.2	80	120	
Cu	63	3	72	41.013	41.013	ppb	1.034	41253	40	102.5	80	120	
Zn	66	3	72	39.815	39.815	ppb	3.157	7285	40	99.5	80	120	
As	75	3	72	38.283	38.283	ppb	2.850	4768	40	95.7	80	120	
Se	78	2	72	42.565	42.565	ppb	4.440	2480	40	106.4	80	120	
(Se)	78	3	72	38.072	38.072	ppb	18.893	298	40	95.2	80	120	
Sr	88	3	72	78.455	78.455	ppb	0.464	45294	40	196.1	80	120	>+/-20%
Mo	95	3	115	41.735	41.735	ppb	2.351	21426	40	104.3	80	120	
Ag	107	3	115	41.802	41.802	ppb	2.322	71045	40	104.5	80	120	
Cd	111	3	115	42.322	42.322	ppb	2.897	10581	40	105.8	80	120	
Sn	120	3	115	40.390	40.390	ppb	1.965	31188	40	101.0	80	120	
Sb	121	3	115	40.797	40.797	ppb	3.178	31431	40	102.0	80	120	
Ba	137	3	115	41.086	41.086	ppb	3.178	10239	40	102.7	80	120	
Tl	205	3	193	40.640	40.640	ppb	1.613	149634	40	101.6	80	120	
(Pb)	206	3	193	40.815	40.815	ppb	2.697	50629	40	102.0	80	120	
(Pb)	207	3	193	40.440	40.440	ppb	1.084	44703	40	101.1	80	120	
Pb	208	3	193	40.656	40.656	ppb	2.082	203303	40	101.6	80	120	
Th	232	3	193	40.464	40.464	ppb	0.128	205919	40	101.2	80	120	
U	238	3	193	40.843	40.843	ppb	1.598	214950	40	102.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4327268	2.79	4331237	99.91	60	120	
Sc (IS)	45	3	HMI He	664914	0.55	654817	101.54	60	120	
Ge Internal standard	72	2	HMI H2	2229828	3.42	2307933	96.62	60	120	
Ge Internal standard	72	3	HMI He	772626	0.75	744678	103.75	60	120	
In Internal Standard	115	3	HMI He	2547625	1.85	2599142	98.02	60	120	
Ir (IS)	193	3	HMI He	5560336	0.44	5525410	100.63	60	120	

Sample Report

Sample Table

Sample Name	280-171306-e-4-g
Data File Name	193SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	173.21	3	2000	
Na	23	3	45	217744.128	ppb	217744.128	0.28	27442547	400000	
Mg	24	3	45	17404.997	ppb	17404.997	1.54	1133629	400000	
Al	27	3	45	5.173	ppb	5.173	37.06	210	400000	
K	39	3	45	2865.004	ppb	2865.004	2.24	173288	400000	
Ca	40	2	45	34342.525	ppb	34342.525	3.45	20392291	400000	
V	51	3	72	0.147	ppb	0.147	61.07	352	2000	
Cr	52	3	72	1.108	ppb	1.108	26.07	2349	5000	
Mn	55	3	72	16.812	ppb	16.812	2.33	7725	10000	
Fe	56	2	72	10.672	ppb	10.672	2.11	26224	10000	
Co	59	3	72	0.270	ppb	0.270	16.21	388	2000	
Ni	60	3	72	1.720	ppb	1.720	8.43	766	5000	
Cu	63	3	72	0.429	ppb	0.429	11.63	798	5000	
Zn	66	3	72	2.681	ppb	2.681	4.34	723	5000	
As	75	3	72	0.555	ppb	0.555	23.65	122	2000	
Se	78	2	72	0.811	ppb	0.811	0.36	52	2000	
(Se)	78	3	72	0.432	ppb	0.432	643.60	38	2000	
Sr	88	3	72	807.499	ppb	807.499	2.09	470066	4000	
Mo	95	3	115	8.790	ppb	8.790	3.82	4594	2000	
Ag	107	3	115	0.012	ppb	0.012	33.84	38	100	
Cd	111	3	115	0.027	ppb	0.027	3.53	10	2000	
Sn	120	3	115	0.266	ppb	0.266	12.67	726	2000	
Sb	121	3	115	1.904	ppb	1.904	6.02	1601	1000	
Ba	137	3	115	37.559	ppb	37.559	3.63	9474	5000	
Tl	205	3	193	0.018	ppb	0.018	42.37	177	2000	
(Pb)	206	3	193	0.001	ppb	0.001	1636.79	153	100	
(Pb)	207	3	193	0.005	ppb	0.005	250.14	328	100	
Pb	208	3	193	0.016	ppb	0.016	28.98	798	5000	
Th	232	3	193	0.437	ppb	0.437	24.48	6413	2000	
U	238	3	193	1.366	ppb	1.366	3.66	8597	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4325057	3.59	4331237	99.86	60	120	
Sc (IS)	45	3	HMI He	663029	0.46	654817	101.25	60	120	
Ge Internal standard	72	2	HMI H2	2329835	0.35	2307933	100.95	60	120	
Ge Internal standard	72	3	HMI He	779931	1.90	744678	104.73	60	120	
In Internal Standard	115	3	HMI He	2577495	2.34	2599142	99.17	60	120	
Ir (IS)	193	3	HMI He	5486745	1.22	5525410	99.30	60	120	

Sample Report

Sample Table

Sample Name	280-171444-f-1-d
Data File Name	194SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:29:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	139559.670	ppb	139559.670	1.25	17477325	400000	
Mg	24	3	45	8027.823	ppb	8027.823	1.31	519145	400000	
Al	27	3	45	7.367	ppb	7.367	16.42	260	400000	
K	39	3	45	1765.448	ppb	1765.448	1.45	116166	400000	
Ca	40	2	45	19823.050	ppb	19823.050	0.83	11629106	400000	
V	51	3	72	0.300	ppb	0.300	35.29	445	2000	
Cr	52	3	72	0.447	ppb	0.447	17.29	1769	5000	
Mn	55	3	72	3.512	ppb	3.512	10.70	1721	10000	
Fe	56	2	72	7.360	ppb	7.360	2.53	21485	10000	
Co	59	3	72	0.059	ppb	0.059	29.47	103	2000	
Ni	60	3	72	0.827	ppb	0.827	6.97	426	5000	
Cu	63	3	72	0.449	ppb	0.449	20.41	801	5000	
Zn	66	3	72	2.608	ppb	2.608	11.40	696	5000	
As	75	3	72	0.955	ppb	0.955	40.06	168	2000	
Se	78	2	72	0.622	ppb	0.622	33.99	41	2000	
(Se)	78	3	72	-2.573	ppb	-2.573	-45.39	17	2000	
Sr	88	3	72	269.539	ppb	269.539	1.98	154057	4000	
Mo	95	3	115	9.121	ppb	9.121	1.91	4748	2000	
Ag	107	3	115	0.001	ppb	0.001	245.70	20	100	
Cd	111	3	115	0.000	ppb	0.000	6363.33	3	2000	
Sn	120	3	115	0.352	ppb	0.352	14.75	790	2000	
Sb	121	3	115	1.092	ppb	1.092	9.12	968	1000	
Ba	137	3	115	38.241	ppb	38.241	1.57	9612	5000	
Tl	205	3	193	0.000	ppb	0.000	-650.85	112	2000	
(Pb)	206	3	193	0.029	ppb	0.029	19.07	188	100	
(Pb)	207	3	193	0.028	ppb	0.028	103.92	353	100	
Pb	208	3	193	0.040	ppb	0.040	39.57	918	5000	
Th	232	3	193	0.064	ppb	0.064	35.57	4590	2000	
U	238	3	193	1.076	ppb	1.076	0.70	7115	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267731	1.05	4331237	98.53	60	120	
Sc (IS)	45	3	HMI He	658182	1.14	654817	100.51	60	120	
Ge Internal standard	72	2	HMI H2	2375900	1.67	2307933	102.94	60	120	
Ge Internal standard	72	3	HMI He	765622	2.29	744678	102.81	60	120	
In Internal Standard	115	3	HMI He	2567499	0.59	2599142	98.78	60	120	
Ir (IS)	193	3	HMI He	5497427	0.79	5525410	99.49	60	120	

Sample Report

Sample Table

Sample Name	280-171468-h-1-e
Data File Name	195SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:31:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	622099.999	ppb	622099.999	2.28	75280710	400000	
Mg	24	3	45	535.588	ppb	535.588	1.64	33714	400000	
Al	27	3	45	10.535	ppb	10.535	24.01	324	400000	
K	39	3	45	1601.937	ppb	1601.937	1.85	104410	400000	
Ca	40	2	45	2955.248	ppb	2955.248	0.34	1741800	400000	
V	51	3	72	-0.005	ppb	-0.005	-582.10	238	2000	
Cr	52	3	72	1.176	ppb	1.176	3.37	2281	5000	
Mn	55	3	72	9.500	ppb	9.500	4.41	4207	10000	
Fe	56	2	72	713.788	ppb	713.788	3.23	1086028	10000	
Co	59	3	72	0.024	ppb	0.024	87.07	55	2000	
Ni	60	3	72	0.291	ppb	0.291	52.54	222	5000	
Cu	63	3	72	0.503	ppb	0.503	11.74	825	5000	
Zn	66	3	72	9.301	ppb	9.301	5.82	1806	5000	
As	75	3	72	-0.097	ppb	-0.097	-97.09	38	2000	
Se	78	2	72	0.035	ppb	0.035	149.56	5	2000	
(Se)	78	3	72	-0.519	ppb	-0.519	-625.35	30	2000	
Sr	88	3	72	631.117	ppb	631.117	1.53	348063	4000	
Mo	95	3	115	0.619	ppb	0.619	15.41	333	2000	
Ag	107	3	115	0.000	ppb	0.000	-993.82	17	100	
Cd	111	3	115	-0.006	ppb	-0.006	-193.54	2	2000	
Sn	120	3	115	0.261	ppb	0.261	32.26	675	2000	
Sb	121	3	115	0.041	ppb	0.041	52.30	145	1000	
Ba	137	3	115	351.089	ppb	351.089	0.97	82235	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-302.63	102	2000	
(Pb)	206	3	193	0.007	ppb	0.007	419.41	152	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-343.91	297	100	
Pb	208	3	193	0.033	ppb	0.033	36.02	830	5000	
Th	232	3	193	0.038	ppb	0.038	106.63	4190	2000	
U	238	3	193	0.027	ppb	0.027	124.37	1594	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4258086	0.27	4331237	98.31	60	120	
Sc (IS)	45	3	HMI He	637271	1.21	654817	97.32	60	120	
Ge Internal standard	72	2	HMI H2	2259181	2.43	2307933	97.89	60	120	
Ge Internal standard	72	3	HMI He	738786	1.91	744678	99.21	60	120	
In Internal Standard	115	3	HMI He	2407858	2.35	2599142	92.64	60	120	
Ir (IS)	193	3	HMI He	5163296	1.38	5525410	93.45	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-b
Data File Name	196SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:33:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	87541.274	ppb	87541.274	0.56	11086521	400000	
Mg	24	3	45	10581.985	ppb	10581.985	1.67	690793	400000	
Al	27	3	45	26.524	ppb	26.524	16.28	717	400000	
K	39	3	45	17899.353	ppb	17899.353	0.61	944889	400000	
Ca	40	2	45	29736.337	ppb	29736.337	1.64	17493999	400000	
V	51	3	72	0.084	ppb	0.084	65.74	313	2000	
Cr	52	3	72	0.818	ppb	0.818	13.93	2134	5000	
Mn	55	3	72	23.082	ppb	23.082	3.78	10659	10000	
Fe	56	2	72	48.379	ppb	48.379	2.73	83661	10000	
Co	59	3	72	0.221	ppb	0.221	1.40	327	2000	
Ni	60	3	72	1.405	ppb	1.405	11.96	656	5000	
Cu	63	3	72	5.698	ppb	5.698	4.43	6167	5000	
Zn	66	3	72	60.077	ppb	60.077	1.97	11094	5000	
As	75	3	72	0.306	ppb	0.306	22.63	92	2000	
Se	78	2	72	0.546	ppb	0.546	34.17	35	2000	
(Se)	78	3	72	-2.203	ppb	-2.203	-52.85	20	2000	
Sr	88	3	72	248.642	ppb	248.642	1.51	146425	4000	
Mo	95	3	115	0.717	ppb	0.717	19.89	410	2000	
Ag	107	3	115	0.000	ppb	0.000	2506.30	18	100	
Cd	111	3	115	-0.006	ppb	-0.006	-185.19	2	2000	
Sn	120	3	115	0.830	ppb	0.830	5.60	1163	2000	
Sb	121	3	115	0.725	ppb	0.725	13.01	690	1000	
Ba	137	3	115	18.338	ppb	18.338	0.99	4675	5000	
Tl	205	3	193	0.002	ppb	0.002	546.04	120	2000	
(Pb)	206	3	193	0.454	ppb	0.454	10.73	708	100	
(Pb)	207	3	193	0.402	ppb	0.402	16.35	760	100	
Pb	208	3	193	0.440	ppb	0.440	8.56	2889	5000	
Th	232	3	193	0.030	ppb	0.030	101.91	4422	2000	
U	238	3	193	0.059	ppb	0.059	7.75	1864	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4282044	1.54	4331237	98.86	60	120	
Sc (IS)	45	3	HMI He	664409	0.68	654817	101.46	60	120	
Ge Internal standard	72	2	HMI H2	2295523	0.81	2307933	99.46	60	120	
Ge Internal standard	72	3	HMI He	788771	1.88	744678	105.92	60	120	
In Internal Standard	115	3	HMI He	2584188	2.32	2599142	99.42	60	120	
Ir (IS)	193	3	HMI He	5502063	2.28	5525410	99.58	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-bSD@5
Data File Name	197SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:35:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	17494.704	ppb	17494.704	4.20	2232186	400000	
Mg	24	3	45	2068.911	ppb	2068.911	1.69	133746	400000	
Al	27	3	45	3.548	ppb	3.548	36.25	170	400000	
K	39	3	45	3499.961	ppb	3499.961	1.16	203996	400000	
Ca	40	2	45	5946.624	ppb	5946.624	0.61	3401182	400000	
V	51	3	72	-0.011	ppb	-0.011	-161.21	240	2000	
Cr	52	3	72	0.422	ppb	0.422	42.48	1726	5000	
Mn	55	3	72	4.915	ppb	4.915	7.11	2309	10000	
Fe	56	2	72	9.460	ppb	9.460	3.12	23276	10000	
Co	59	3	72	0.048	ppb	0.048	28.01	88	2000	
Ni	60	3	72	0.386	ppb	0.386	5.08	262	5000	
Cu	63	3	72	1.204	ppb	1.204	4.00	1528	5000	
Zn	66	3	72	12.770	ppb	12.770	7.83	2444	5000	
As	75	3	72	-0.062	ppb	-0.062	-224.81	43	2000	
Se	78	2	72	0.173	ppb	0.173	28.80	13	2000	
(Se)	78	3	72	-2.067	ppb	-2.067	-34.75	20	2000	
Sr	88	3	72	51.289	ppb	51.289	2.59	28976	4000	
Mo	95	3	115	0.164	ppb	0.164	33.27	120	2000	
Ag	107	3	115	0.005	ppb	0.005	69.51	27	100	
Cd	111	3	115	0.000	ppb	0.000	3173.10	3	2000	
Sn	120	3	115	0.255	ppb	0.255	32.51	713	2000	
Sb	121	3	115	0.105	ppb	0.105	59.49	203	1000	
Ba	137	3	115	4.151	ppb	4.151	5.71	1101	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-92.24	92	2000	
(Pb)	206	3	193	0.064	ppb	0.064	47.78	230	100	
(Pb)	207	3	193	0.093	ppb	0.093	54.45	423	100	
Pb	208	3	193	0.084	ppb	0.084	14.61	1131	5000	
Th	232	3	193	-0.001	ppb	-0.001	-1308.18	4249	2000	
U	238	3	193	0.022	ppb	0.022	94.45	1663	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4149409	2.19	4331237	95.80	60	120	
Sc (IS)	45	3	HMI He	657206	0.30	654817	100.36	60	120	
Ge Internal standard	72	2	HMI H2	2228248	1.23	2307933	96.55	60	120	
Ge Internal standard	72	3	HMI He	756076	3.27	744678	101.53	60	120	
In Internal Standard	115	3	HMI He	2560112	1.48	2599142	98.50	60	120	
Ir (IS)	193	3	HMI He	5473864	1.31	5525410	99.07	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-c ms
Data File Name	198SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:37:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.924	ppb	40.924	1.31	2139	2000	
Na	23	3	45	86642.699	ppb	86642.699	1.73	10861446	400000	
Mg	24	3	45	11071.578	ppb	11071.578	1.92	715297	400000	
Al	27	3	45	806.096	ppb	806.096	1.46	19015	400000	
K	39	3	45	18243.170	ppb	18243.170	1.59	952764	400000	
Ca	40	2	45	30192.266	ppb	30192.266	1.70	17451028	400000	
V	51	3	72	39.855	ppb	39.855	1.33	26267	2000	
Cr	52	3	72	40.262	ppb	40.262	3.29	34559	5000	
Mn	55	3	72	63.624	ppb	63.624	1.39	28528	10000	
Fe	56	2	72	869.313	ppb	869.313	1.01	1341895	10000	
Co	59	3	72	39.894	ppb	39.894	0.80	53262	2000	
Ni	60	3	72	40.232	ppb	40.232	3.18	15006	5000	
Cu	63	3	72	45.937	ppb	45.937	2.94	46221	5000	
Zn	66	3	72	97.123	ppb	97.123	1.58	17449	5000	
As	75	3	72	39.738	ppb	39.738	5.35	4952	2000	
Se	78	2	72	41.824	ppb	41.824	4.71	2505	2000	
(Se)	78	3	72	43.099	ppb	43.099	11.70	333	2000	
Sr	88	3	72	323.443	ppb	323.443	1.37	186877	4000	
Mo	95	3	115	40.991	ppb	40.991	3.62	20909	2000	
Ag	107	3	115	41.045	ppb	41.045	2.80	69312	100	
Cd	111	3	115	40.580	ppb	40.580	3.61	10080	2000	
Sn	120	3	115	41.972	ppb	41.972	2.77	32181	2000	
Sb	121	3	115	42.039	ppb	42.039	0.94	32183	1000	
Ba	137	3	115	58.855	ppb	58.855	1.22	14547	5000	
Tl	205	3	193	41.149	ppb	41.149	2.02	147961	2000	
(Pb)	206	3	193	41.214	ppb	41.214	1.54	49945	100	
(Pb)	207	3	193	40.986	ppb	40.986	3.01	44235	100	
Pb	208	3	193	41.107	ppb	41.107	1.90	200756	5000	
Th	232	3	193	40.921	ppb	40.921	2.45	203315	2000	
U	238	3	193	41.056	ppb	41.056	2.73	211010	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4206628	0.92	4331237	97.12	60	120	
Sc (IS)	45	3	HMI He	657629	0.88	654817	100.43	60	120	
Ge Internal standard	72	2	HMI H2	2294254	2.18	2307933	99.41	60	120	
Ge Internal standard	72	3	HMI He	773984	2.61	744678	103.94	60	120	
In Internal Standard	115	3	HMI He	2531024	1.09	2599142	97.38	60	120	
Ir (IS)	193	3	HMI He	5431757	2.32	5525410	98.31	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-d msd
Data File Name	199SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:39:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.062	ppb	43.062	3.53	2234	2000	
Na	23	3	45	87472.307	ppb	87472.307	0.73	10962649	400000	
Mg	24	3	45	12581.279	ppb	12581.279	1.01	812732	400000	
Al	27	3	45	803.907	ppb	803.907	2.96	18959	400000	
K	39	3	45	18773.054	ppb	18773.054	1.97	979404	400000	
Ca	40	2	45	30946.806	ppb	30946.806	0.92	17622148	400000	
V	51	3	72	40.165	ppb	40.165	2.97	26270	2000	
Cr	52	3	72	40.886	ppb	40.886	2.66	34831	5000	
Mn	55	3	72	65.144	ppb	65.144	3.43	28984	10000	
Fe	56	2	72	888.157	ppb	888.157	2.30	1329035	10000	
Co	59	3	72	39.958	ppb	39.958	1.63	52965	2000	
Ni	60	3	72	40.564	ppb	40.564	3.17	15017	5000	
Cu	63	3	72	45.765	ppb	45.765	1.23	45734	5000	
Zn	66	3	72	99.813	ppb	99.813	2.80	17798	5000	
As	75	3	72	38.067	ppb	38.067	2.15	4715	2000	
Se	78	2	72	42.501	ppb	42.501	4.65	2470	2000	
(Se)	78	3	72	41.168	ppb	41.168	12.49	318	2000	
Sr	88	3	72	332.281	ppb	332.281	2.15	190618	4000	
Mo	95	3	115	41.528	ppb	41.528	2.25	21254	2000	
Ag	107	3	115	40.817	ppb	40.817	1.40	69151	100	
Cd	111	3	115	39.758	ppb	39.758	3.96	9912	2000	
Sn	120	3	115	40.700	ppb	40.700	1.15	31321	2000	
Sb	121	3	115	41.381	ppb	41.381	0.98	31784	1000	
Ba	137	3	115	58.777	ppb	58.777	0.65	14574	5000	
Tl	205	3	193	41.443	ppb	41.443	2.08	147909	2000	
(Pb)	206	3	193	41.532	ppb	41.532	0.11	49947	100	
(Pb)	207	3	193	41.756	ppb	41.756	1.33	44733	100	
Pb	208	3	193	41.944	ppb	41.944	0.46	203321	5000	
Th	232	3	193	41.871	ppb	41.871	1.22	206406	2000	
U	238	3	193	41.662	ppb	41.662	0.77	212529	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144130	0.82	4331237	95.68	60	120	
Sc (IS)	45	3	HMI He	657519	0.98	654817	100.41	60	120	
Ge Internal standard	72	2	HMI H2	2224719	0.42	2307933	96.39	60	120	
Ge Internal standard	72	3	HMI He	768486	2.08	744678	103.20	60	120	
In Internal Standard	115	3	HMI He	2539037	0.92	2599142	97.69	60	120	
Ir (IS)	193	3	HMI He	5390606	1.49	5525410	97.56	60	120	

Sample Report

Sample Table

Sample Name	280-171511-c-1-bPDS
Data File Name	200SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:41:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	200.063	ppb	200.063	2.87	10534	2000	
Na	23	3	45	94130.069	ppb	94130.069	2.90	11918398	400000	
Mg	24	3	45	12192.842	ppb	12192.842	2.82	795960	400000	
Al	27	3	45	2011.874	ppb	2011.874	2.70	47825	400000	
K	39	3	45	19039.573	ppb	19039.573	2.83	1003443	400000	
Ca	40	2	45	30894.679	ppb	30894.679	0.25	17600673	400000	
V	51	3	72	197.407	ppb	197.407	2.96	130629	2000	
Cr	52	3	72	198.265	ppb	198.265	4.11	166622	5000	
Mn	55	3	72	218.253	ppb	218.253	3.61	98563	10000	
Fe	56	2	72	62.918	ppb	62.918	2.84	105830	10000	
Co	59	3	72	197.357	ppb	197.357	2.63	266560	2000	
Ni	60	3	72	194.069	ppb	194.069	3.82	72756	5000	
Cu	63	3	72	205.254	ppb	205.254	3.22	207784	5000	
Zn	66	3	72	257.806	ppb	257.806	3.56	46468	5000	
As	75	3	72	190.185	ppb	190.185	3.23	23800	2000	
Se	78	2	72	202.714	ppb	202.714	1.93	12132	2000	
(Se)	78	3	72	208.402	ppb	208.402	5.26	1496	2000	
Sr	88	3	72	439.388	ppb	439.388	3.34	256910	4000	
Mo	95	3	115	208.816	ppb	208.816	0.68	108177	2000	
Ag	107	3	115	52.404	ppb	52.404	1.50	89979	100	
Cd	111	3	115	200.100	ppb	200.100	1.88	50531	2000	
Sn	120	3	115	208.608	ppb	208.608	1.56	160559	2000	
Sb	121	3	115	207.837	ppb	207.837	1.40	161284	1000	
Ba	137	3	115	220.682	ppb	220.682	1.18	55278	5000	
Tl	205	3	193	203.441	ppb	203.441	2.82	737072	2000	
(Pb)	206	3	193	204.260	ppb	204.260	2.23	248892	100	
(Pb)	207	3	193	199.941	ppb	199.941	2.66	216342	100	
Pb	208	3	193	203.525	ppb	203.525	2.73	999199	5000	
Th	232	3	193	144.675	ppb	144.675	6.52	714875	2000	
U	238	3	193	214.999	ppb	214.999	1.84	1107630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4146169	1.41	4331237	95.73	60	120	
Sc (IS)	45	3	HMI He	664698	1.93	654817	101.51	60	120	
Ge Internal standard	72	2	HMI H2	2293181	0.90	2307933	99.36	60	120	
Ge Internal standard	72	3	HMI He	783519	2.29	744678	105.22	60	120	
In Internal Standard	115	3	HMI He	2573558	1.33	2599142	99.02	60	120	
Ir (IS)	193	3	HMI He	5476803	2.32	5525410	99.12	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	201_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:42:51-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.031	ppb	3.126	2797	50	104.1	90	110	
Na	23	3	45	51744.869	ppb	0.742	6593580	51000	101.5	90	110	
Mg	24	3	45	11050.413	ppb	3.142	723478	11000	100.5	90	110	
Al	27	3	45	1010.793	ppb	2.420	24138	1000	101.1	90	110	
K	39	3	45	10658.266	ppb	0.447	575107	11000	96.9	90	110	
Ca	40	2	45	11233.073	ppb	1.960	6604818	11000	102.1	90	110	
V	51	3	72	51.260	ppb	0.993	33163	50	102.5	90	110	
Cr	52	3	72	51.310	ppb	0.735	42968	50	102.6	90	110	
Mn	55	3	72	49.656	ppb	1.090	21940	50	99.3	90	110	
Fe	56	2	72	1071.823	ppb	3.577	1618914	1000	107.2	90	110	
Co	59	3	72	50.881	ppb	0.943	66830	50	101.8	90	110	
Ni	60	3	72	49.673	ppb	0.411	18200	50	99.3	90	110	
Cu	63	3	72	50.897	ppb	1.738	50365	50	101.8	90	110	
Zn	66	3	72	51.622	ppb	1.837	9239	50	103.2	90	110	
As	75	3	72	51.428	ppb	1.799	6295	50	102.9	90	110	
Se	78	2	72	52.429	ppb	6.556	3078	50	104.9	90	110	
(Se)	78	3	72	55.594	ppb	15.103	413	50	111.2	90	110	>+\-10%
Sr	88	3	72	101.286	ppb	0.532	57616	100	101.3	90	110	
Mo	95	3	115	50.951	ppb	2.622	27057	50	101.9	90	110	
Ag	107	3	115	49.756	ppb	2.365	87493	50	99.5	90	110	
Cd	111	3	115	51.291	ppb	3.806	13267	50	102.6	90	110	
Sn	120	3	115	49.364	ppb	2.038	39320	50	98.7	90	110	
Sb	121	3	115	49.495	ppb	1.836	39432	50	99.0	90	110	
Ba	137	3	115	49.761	ppb	3.093	12817	50	99.5	90	110	
Tl	205	3	193	50.273	ppb	1.797	184404	50	100.5	90	110	
(Pb)	206	3	193	50.115	ppb	2.253	61915	50	100.2	90	110	
(Pb)	207	3	193	50.024	ppb	0.316	55028	50	100.0	90	110	
Pb	208	3	193	49.906	ppb	1.757	248511	50	99.8	90	110	
Th	232	3	193	51.873	ppb	1.587	261813	50	103.7	90	110	
U	238	3	193	50.489	ppb	1.529	264396	50	101.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4274169	1.35	4331237	98.68	60	120	
Sc (IS)	45	3	HMI He	666364	0.28	654817	101.76	60	120	
Ge Internal standard	72	2	HMI H2	2249458	2.65	2307933	97.47	60	120	
Ge Internal standard	72	3	HMI He	761447	0.33	744678	102.25	60	120	
In Internal Standard	115	3	HMI He	2635888	1.58	2599142	101.41	60	120	
Ir (IS)	193	3	HMI He	5541063	1.44	5525410	100.28	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	202_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:44:43-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	12.382	ppb	46.2	52000	25	
Mg	24	3	45	0.167	ppb	462.9	204	25	
Al	27	3	45	8.895	ppb	25.8	294	15	
K	39	3	45	-8.657	ppb	-436.7	25803	50	
V	51	3	72	-0.137	ppb	-42.9	158	1	
Cr	52	3	72	0.179	ppb	154.5	1516	1	
Mn	55	3	72	0.159	ppb	15.3	240	0.5	
Co	59	3	72	0.021	ppb	77.9	52	0.5	
Ni	60	3	72	0.152	ppb	56.8	175	1	
Cu	63	3	72	0.084	ppb	23.0	431	1	
Zn	66	3	72	1.550	ppb	30.1	500	5	
As	75	3	72	-0.144	ppb	-44.1	33	1	
Se	78	2	72	0.058	ppb	58.8	6	1	
(Se)	78	3	72	-2.284	ppb	-100.0	18	1	
Sr	88	3	72	0.003	ppb	587.2	45	0.5	
Mo	95	3	115	0.060	ppb	27.4	67	0.5	
Ag	107	3	115	0.014	ppb	22.4	42	1	
Cd	111	3	115	0.000	ppb	3228.3	3	0.5	
Sn	120	3	115	0.197	ppb	49.9	665	1	
Sb	121	3	115	-0.003	ppb	-1104.3	120	0.6	
Ba	137	3	115	-0.055	ppb	-183.3	53	0.5	
Tl	205	3	193	0.007	ppb	141.0	138	0.1	
(Pb)	206	3	193	-0.012	ppb	-100.8	137	1	
(Pb)	207	3	193	0.011	ppb	26.5	333	1	
Pb	208	3	193	0.024	ppb	44.8	838	0.5	
Th	232	3	193	0.752	ppb	17.6	7930	1	
U	238	3	193	0.023	ppb	100.4	1664	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4288825	1.35	4331237	99.02	60	120	
Sc (IS)	45	3	HMI He	653577	1.55	654817	99.81	60	120	
Ge Internal standard	72	2	HMI H2	2247174	0.69	2307933	97.37	60	120	
Ge Internal standard	72	3	HMI He	748020	0.29	744678	100.45	60	120	
In Internal Standard	115	3	HMI He	2545338	1.23	2599142	97.93	60	120	
Ir (IS)	193	3	HMI He	5465285	0.09	5525410	98.91	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-1-d
Data File Name	203SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:46:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	111903.822	ppb	111903.822	2.73	14102675	400000	
Mg	24	3	45	45253.730	ppb	45253.730	3.81	2941509	400000	
Al	27	3	45	7.585	ppb	7.585	24.96	267	400000	
K	39	3	45	6116.674	ppb	6116.674	2.60	339147	400000	
Ca	40	2	45	76092.391	ppb	76092.391	3.04	43740747	400000	
V	51	3	72	1.028	ppb	1.028	5.68	901	2000	
Cr	52	3	72	0.470	ppb	0.470	23.29	1764	5000	
Mn	55	3	72	45.096	ppb	45.096	2.22	19771	10000	
Fe	56	2	72	33.801	ppb	33.801	5.44	59869	10000	
Co	59	3	72	0.278	ppb	0.278	16.44	388	2000	
Ni	60	3	72	1.441	ppb	1.441	10.73	641	5000	
Cu	63	3	72	1.893	ppb	1.893	3.29	2197	5000	
Zn	66	3	72	11.963	ppb	11.963	2.81	2304	5000	
As	75	3	72	0.711	ppb	0.711	29.01	137	2000	
Se	78	2	72	1.930	ppb	1.930	27.88	115	2000	
(Se)	78	3	72	0.642	ppb	0.642	233.63	38	2000	
Sr	88	3	72	1119.752	ppb	1119.752	0.72	631104	4000	
Mo	95	3	115	2.783	ppb	2.783	3.27	1454	2000	
Ag	107	3	115	0.009	ppb	0.009	82.79	33	100	
Cd	111	3	115	-0.006	ppb	-0.006	-180.05	2	2000	
Sn	120	3	115	0.265	ppb	0.265	5.94	713	2000	
Sb	121	3	115	0.265	ppb	0.265	13.14	323	1000	
Ba	137	3	115	49.810	ppb	49.810	2.42	12330	5000	
Tl	205	3	193	0.004	ppb	0.004	101.35	125	2000	
(Pb)	206	3	193	0.107	ppb	0.107	32.20	280	100	
(Pb)	207	3	193	0.090	ppb	0.090	54.85	415	100	
Pb	208	3	193	0.122	ppb	0.122	24.81	1304	5000	
Th	232	3	193	0.191	ppb	0.191	25.79	5142	2000	
U	238	3	193	10.788	ppb	10.788	2.43	56481	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4186221	1.32	4331237	96.65	60	120	
Sc (IS)	45	3	HMI He	662062	2.00	654817	101.11	60	120	
Ge Internal standard	72	2	HMI H2	2243760	2.96	2307933	97.22	60	120	
Ge Internal standard	72	3	HMI He	755003	1.32	744678	101.39	60	120	
In Internal Standard	115	3	HMI He	2532916	1.27	2599142	97.45	60	120	
Ir (IS)	193	3	HMI He	5420944	0.63	5525410	98.11	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-2-d
Data File Name	204SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:48:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	113287.330	ppb	113287.330	1.85	13888730	400000	
Mg	24	3	45	43665.268	ppb	43665.268	2.88	2761480	400000	
Al	27	3	45	7.466	ppb	7.466	46.78	257	400000	
K	39	3	45	6765.704	ppb	6765.704	1.44	362185	400000	
Ca	40	2	45	73753.595	ppb	73753.595	1.45	42329186	400000	
V	51	3	72	0.889	ppb	0.889	8.36	805	2000	
Cr	52	3	72	0.361	ppb	0.361	27.21	1661	5000	
Mn	55	3	72	41.120	ppb	41.120	1.69	17876	10000	
Fe	56	2	72	39.825	ppb	39.825	1.37	68708	10000	
Co	59	3	72	0.298	ppb	0.298	9.20	410	2000	
Ni	60	3	72	1.380	ppb	1.380	6.17	615	5000	
Cu	63	3	72	1.852	ppb	1.852	5.96	2137	5000	
Zn	66	3	72	15.499	ppb	15.499	6.34	2886	5000	
As	75	3	72	0.532	ppb	0.532	50.60	113	2000	
Se	78	2	72	1.880	ppb	1.880	16.43	112	2000	
(Se)	78	3	72	-1.030	ppb	-1.030	-52.26	27	2000	
Sr	88	3	72	1057.310	ppb	1057.310	1.46	590225	4000	
Mo	95	3	115	2.738	ppb	2.738	10.55	1384	2000	
Ag	107	3	115	0.002	ppb	0.002	16.32	20	100	
Cd	111	3	115	0.015	ppb	0.015	218.29	7	2000	
Sn	120	3	115	0.289	ppb	0.289	18.86	706	2000	
Sb	121	3	115	0.324	ppb	0.324	3.84	356	1000	
Ba	137	3	115	46.715	ppb	46.715	1.27	11174	5000	
Tl	205	3	193	0.004	ppb	0.004	82.98	122	2000	
(Pb)	206	3	193	0.107	ppb	0.107	12.95	270	100	
(Pb)	207	3	193	0.099	ppb	0.099	18.47	410	100	
Pb	208	3	193	0.121	ppb	0.121	7.84	1254	5000	
Th	232	3	193	0.069	ppb	0.069	64.32	4389	2000	
U	238	3	193	10.091	ppb	10.091	2.85	51088	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4178410	1.30	4331237	96.47	60	120	
Sc (IS)	45	3	HMI He	643847	0.26	654817	98.32	60	120	
Ge Internal standard	72	2	HMI H2	2235652	2.44	2307933	96.87	60	120	
Ge Internal standard	72	3	HMI He	747961	2.86	744678	100.44	60	120	
In Internal Standard	115	3	HMI He	2446239	2.34	2599142	94.12	60	120	
Ir (IS)	193	3	HMI He	5232419	2.22	5525410	94.70	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-3-d
Data File Name	205SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:50:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	101507.837	ppb	101507.837	1.16	12634777	400000	
Mg	24	3	45	44004.538	ppb	44004.538	0.57	2824593	400000	
Al	27	3	45	7.600	ppb	7.600	10.41	264	400000	
K	39	3	45	5629.953	ppb	5629.953	1.50	310270	400000	
Ca	40	2	45	51988.866	ppb	51988.866	2.87	30073412	400000	
V	51	3	72	0.982	ppb	0.982	11.52	826	2000	
Cr	52	3	72	0.561	ppb	0.561	3.84	1741	5000	
Mn	55	3	72	25.069	ppb	25.069	1.08	10487	10000	
Fe	56	2	72	14.312	ppb	14.312	5.70	29959	10000	
Co	59	3	72	0.356	ppb	0.356	8.17	463	2000	
Ni	60	3	72	1.509	ppb	1.509	6.47	631	5000	
Cu	63	3	72	1.611	ppb	1.611	5.01	1823	5000	
Zn	66	3	72	9.077	ppb	9.077	5.06	1711	5000	
As	75	3	72	3.272	ppb	3.272	12.84	421	2000	
Se	78	2	72	0.504	ppb	0.504	28.48	31	2000	
(Se)	78	3	72	-2.421	ppb	-2.421	-80.85	17	2000	
Sr	88	3	72	1023.157	ppb	1023.157	1.41	546435	4000	
Mo	95	3	115	4.175	ppb	4.175	5.56	2176	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-815.90	17	100	
Cd	111	3	115	-0.006	ppb	-0.006	-184.46	2	2000	
Sn	120	3	115	0.179	ppb	0.179	31.13	651	2000	
Sb	121	3	115	0.163	ppb	0.163	32.77	247	1000	
Ba	137	3	115	23.804	ppb	23.804	4.45	5960	5000	
Tl	205	3	193	-0.004	ppb	-0.004	-199.50	98	2000	
(Pb)	206	3	193	0.016	ppb	0.016	208.16	170	100	
(Pb)	207	3	193	-0.004	ppb	-0.004	-789.07	315	100	
Pb	208	3	193	0.033	ppb	0.033	47.79	876	5000	
Th	232	3	193	-0.003	ppb	-0.003	-366.40	4215	2000	
U	238	3	193	7.464	ppb	7.464	0.88	39680	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4213151	2.69	4331237	97.27	60	120	
Sc (IS)	45	3	HMI He	653492	1.42	654817	99.80	60	120	
Ge Internal standard	72	2	HMI H2	2190868	3.69	2307933	94.93	60	120	
Ge Internal standard	72	3	HMI He	715393	0.21	744678	96.07	60	120	
In Internal Standard	115	3	HMI He	2547946	2.00	2599142	98.03	60	120	
Ir (IS)	193	3	HMI He	5438628	1.44	5525410	98.43	60	120	

Sample Report

Sample Table

Sample Name	280-171433-e-4-d
Data File Name	206SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:52:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600009 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	115204.762	ppb	115204.762	3.57	14445256	400000	
Mg	24	3	45	42896.203	ppb	42896.203	3.49	2775204	400000	
Al	27	3	45	2.833	ppb	2.833	84.56	153	400000	
K	39	3	45	2406.396	ppb	2406.396	4.75	148807	400000	
Ca	40	2	45	101183.396	ppb	101183.396	1.68	58402338	400000	
V	51	3	72	-0.006	ppb	-0.006	-973.90	250	2000	
Cr	52	3	72	0.540	ppb	0.540	21.62	1863	5000	
Mn	55	3	72	0.709	ppb	0.709	20.71	491	10000	
Fe	56	2	72	4.712	ppb	4.712	1.79	16984	10000	
Co	59	3	72	0.267	ppb	0.267	2.34	381	2000	
Ni	60	3	72	1.365	ppb	1.365	16.53	628	5000	
Cu	63	3	72	1.658	ppb	1.658	6.75	2014	5000	
Zn	66	3	72	414.227	ppb	414.227	4.72	73498	5000	
As	75	3	72	0.120	ppb	0.120	122.52	67	2000	
Se	78	2	72	0.427	ppb	0.427	14.05	29	2000	
(Se)	78	3	72	-1.886	ppb	-1.886	-89.29	22	2000	
Sr	88	3	72	794.111	ppb	794.111	4.54	457947	4000	
Mo	95	3	115	2.581	ppb	2.581	6.42	1359	2000	
Ag	107	3	115	0.001	ppb	0.001	399.79	20	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.231	ppb	0.231	35.05	691	2000	
Sb	121	3	115	0.012	ppb	0.012	134.33	132	1000	
Ba	137	3	115	27.997	ppb	27.997	4.84	7005	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-318.26	103	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-79.92	120	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-210.24	292	100	
Pb	208	3	193	-0.001	ppb	-0.001	-1478.67	706	5000	
Th	232	3	193	0.004	ppb	0.004	1062.08	4240	2000	
U	238	3	193	26.282	ppb	26.282	4.46	135464	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4203495	1.97	4331237	97.05	60	120	
Sc (IS)	45	3	HMI He	658932	2.52	654817	100.63	60	120	
Ge Internal standard	72	2	HMI H2	2334737	2.17	2307933	101.16	60	120	
Ge Internal standard	72	3	HMI He	773252	3.47	744678	103.84	60	120	
In Internal Standard	115	3	HMI He	2551421	3.39	2599142	98.16	60	120	
Ir (IS)	193	3	HMI He	5428483	3.20	5525410	98.25	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	207_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:54:06-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.457	ppb	7.413	2637	50	98.9	90	110	
Na	23	3	45	50309.823	ppb	2.428	6060315	51000	98.6	90	110	
Mg	24	3	45	11239.942	ppb	2.649	696044	11000	102.2	90	110	
Al	27	3	45	1014.570	ppb	4.650	22932	1000	101.5	90	110	
K	39	3	45	10657.850	ppb	0.899	543622	11000	96.9	90	110	
Ca	40	2	45	10910.149	ppb	0.640	6439051	11000	99.2	90	110	
V	51	3	72	51.011	ppb	3.241	31301	50	102.0	90	110	
Cr	52	3	72	50.760	ppb	2.193	40348	50	101.5	90	110	
Mn	55	3	72	50.122	ppb	4.436	21007	50	100.2	90	110	
Fe	56	2	72	1074.796	ppb	1.806	1598800	1000	107.5	90	110	
Co	59	3	72	50.238	ppb	1.915	62588	50	100.5	90	110	
Ni	60	3	72	50.269	ppb	1.245	17469	50	100.5	90	110	
Cu	63	3	72	50.322	ppb	2.804	47227	50	100.6	90	110	
Zn	66	3	72	48.805	ppb	4.226	8300	50	97.6	90	110	
As	75	3	72	50.666	ppb	6.871	5875	50	101.3	90	110	
Se	78	2	72	51.778	ppb	3.104	2995	50	103.6	90	110	
(Se)	78	3	72	52.093	ppb	4.414	370	50	104.2	90	110	
Sr	88	3	72	100.900	ppb	1.696	54443	100	100.9	90	110	
Mo	95	3	115	52.833	ppb	2.197	25872	50	105.7	90	110	
Ag	107	3	115	50.738	ppb	1.066	82259	50	101.5	90	110	
Cd	111	3	115	51.967	ppb	4.311	12390	50	103.9	90	110	
Sn	120	3	115	51.447	ppb	1.440	37763	50	102.9	90	110	
Sb	121	3	115	51.399	ppb	1.237	37750	50	102.8	90	110	
Ba	137	3	115	50.342	ppb	3.264	11960	50	100.7	90	110	
Tl	205	3	193	50.380	ppb	2.464	174234	50	100.8	90	110	
(Pb)	206	3	193	50.183	ppb	2.083	58449	50	100.4	90	110	
(Pb)	207	3	193	49.547	ppb	0.450	51392	50	99.1	90	110	
Pb	208	3	193	50.039	ppb	2.614	234892	50	100.1	90	110	
Th	232	3	193	50.071	ppb	1.619	238401	50	100.1	90	110	
U	238	3	193	50.135	ppb	2.125	247543	50	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4289350	0.65	4331237	99.03	60	120	
Sc (IS)	45	3	HMI He	630001	3.75	654817	96.21	60	120	
Ge Internal standard	72	2	HMI H2	2214362	1.26	2307933	95.95	60	120	
Ge Internal standard	72	3	HMI He	722541	4.61	744678	97.03	60	120	
In Internal Standard	115	3	HMI He	2429277	2.93	2599142	93.46	60	120	
Ir (IS)	193	3	HMI He	5224485	4.01	5525410	94.55	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	208_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:55:58-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	26.649	ppb	44.0	52148	25	>RL
Mg	24	3	45	1.116	ppb	53.8	257	25	
Al	27	3	45	9.545	ppb	13.1	300	15	
K	39	3	45	-8.989	ppb	-272.7	25034	50	
V	51	3	72	-0.116	ppb	-31.3	163	1	
Cr	52	3	72	0.128	ppb	53.3	1408	1	
Mn	55	3	72	-0.012	ppb	-488.3	158	0.5	
Co	59	3	72	0.015	ppb	101.3	42	0.5	
Ni	60	3	72	0.059	ppb	117.1	135	1	
Cu	63	3	72	0.084	ppb	17.5	411	1	
Zn	66	3	72	1.592	ppb	29.5	483	5	
As	75	3	72	0.030	ppb	318.1	52	1	
Se	78	2	72	0.036	ppb	147.3	5	1	
(Se)	78	3	72	-0.589	ppb	-69.9	28	1	
Sr	88	3	72	0.057	ppb	39.1	72	0.5	
Mo	95	3	115	0.031	ppb	110.0	50	0.5	
Ag	107	3	115	0.006	ppb	111.5	27	1	
Cd	111	3	115	0.008	ppb	456.1	5	0.5	
Sn	120	3	115	0.181	ppb	41.3	630	1	
Sb	121	3	115	0.003	ppb	1256.9	120	0.6	
Ba	137	3	115	-0.096	ppb	-31.3	42	0.5	
Tl	205	3	193	0.004	ppb	105.9	123	0.1	
(Pb)	206	3	193	0.005	ppb	529.3	152	1	
(Pb)	207	3	193	-0.008	ppb	-793.1	302	1	
Pb	208	3	193	0.019	ppb	43.3	780	0.5	
Th	232	3	193	0.768	ppb	26.8	7692	1	
U	238	3	193	0.015	ppb	66.4	1561	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4270821	1.36	4331237	98.61	60	120	
Sc (IS)	45	3	HMI He	634005	2.12	654817	96.82	60	120	
Ge Internal standard	72	2	HMI H2	2240958	1.98	2307933	97.10	60	120	
Ge Internal standard	72	3	HMI He	713518	1.37	744678	95.82	60	120	
In Internal Standard	115	3	HMI He	2452635	1.04	2599142	94.36	60	120	
Ir (IS)	193	3	HMI He	5256794	2.05	5525410	95.14	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600128/1-a
Data File Name	209_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:57:52-07:00
Sample Type	Blank
Dilution	1
Comment	600128 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.031	ppb	173.2050808	2	0.5
Na	23	3	45	-2.980	ppb	-11.47599794	52151	25
Mg	24	3	45	1.791	ppb	36.58049844	320	25
Al	27	3	45	3.582	ppb	38.15571217	177	15
K	39	3	45	-28.412	ppb	-135.5448544	25833	50
V	51	3	72	-0.042	ppb	-69.54978389	225	1
Cr	52	3	72	0.167	ppb	92.39130346	1553	1
Mn	55	3	72	0.341	ppb	11.38492166	328	0.5
Co	59	3	72	0.008	ppb	56.53423441	37	0.5
Ni	60	3	72	0.033	ppb	157.9823286	137	1
Cu	63	3	72	0.101	ppb	46.25517196	461	1
Zn	66	3	72	0.809	ppb	29.25544647	385	5
As	75	3	72	-0.071	ppb	-26.59675389	43	1
(Se)	78	3	72	-2.616	ppb	-41.06886094	17	1
Sr	88	3	72	0.064	ppb	41.19742108	82	0.5
Mo	95	3	115	0.045	ppb	115.3685285	60	0.5
Ag	107	3	115	0.000	ppb	6565.334385	18	1
Cd	111	3	115	-0.007	ppb	-172.9802902	2	0.5
Sn	120	3	115	0.304	ppb	40.087764	763	1
Sb	121	3	115	-0.032	ppb	-115.7276607	100	0.6
Ba	137	3	115	0.111	ppb	38.54854784	97	0.5
Tl	205	3	193	0.005	ppb	158.4021292	133	0.1
(Pb)	206	3	193	0.471	ppb	1.794045308	741	1
(Pb)	207	3	193	0.481	ppb	8.808279273	861	1
Pb	208	3	193	0.489	ppb	3.323989379	3189	0.5
Th	232	3	193	0.158	ppb	35.30339283	5144	1
U	238	3	193	0.004	ppb	289.180314	1608	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4222389	1.04	4331237	97.49	60	120	
Sc (IS)	45	3	HMI He	680318	0.72	654817	103.89	60	120	
Ge Internal standard	72	2	HMI H2	2201306	0.86	2307933	95.38	60	120	
Ge Internal standard	72	3	HMI He	771338	1.38	744678	103.58	60	120	
In Internal Standard	115	3	HMI He	2603157	1.06	2599142	100.15	60	120	
Ir (IS)	193	3	HMI He	5598321	1.14	5525410	101.32	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600128/2-a
Data File Name	210_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T18:59:46-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600128 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	38.217	38.217	ppb	4.076	2036	40	95.5	80	120	
Na	23	3	45	802.105	802.105	ppb	2.223	153399	40	2005.3	80	120	>+/-20%
Mg	24	3	45	747.380	747.380	ppb	1.342	49285	40	1868.5	80	120	>+/-20%
Al	27	3	45	788.194	788.194	ppb	2.892	18908	40	1970.5	80	120	>+/-20%
K	39	3	45	746.322	746.322	ppb	2.117	65394	40	1865.8	80	120	>+/-20%
Ca	40	2	45	856.460	856.460	ppb	1.068	507710	40	2141.2	80	120	>+/-20%
V	51	3	72	40.442	40.442	ppb	4.614	26091	40	101.1	80	120	
Cr	52	3	72	41.659	41.659	ppb	2.746	34981	40	104.1	80	120	
Mn	55	3	72	41.377	41.377	ppb	2.353	18226	40	103.4	80	120	
Fe	56	2	72	831.497	831.497	ppb	1.528	1248448	40	2078.7	80	120	>+/-20%
(Fe)	56	3	72	817.282	817.282	ppb	1.547	556668	40	2043.2	80	120	>+/-20%
Co	59	3	72	41.169	41.169	ppb	2.573	53836	40	102.9	80	120	
Ni	60	3	72	40.331	40.331	ppb	1.984	14732	40	100.8	80	120	
Cu	63	3	72	42.245	42.245	ppb	2.569	41667	40	105.6	80	120	
Zn	66	3	72	40.552	40.552	ppb	4.056	7277	40	101.4	80	120	
As	75	3	72	39.944	39.944	ppb	2.938	4880	40	99.9	80	120	
Se	78	2	72	41.193	41.193	ppb	2.850	2400	40	103.0	80	120	
(Se)	78	3	72	40.956	40.956	ppb	17.326	312	40	102.4	80	120	
Sr	88	3	72	80.451	80.451	ppb	2.302	45560	40	201.1	80	120	>+/-20%
Mo	95	3	115	40.021	40.021	ppb	1.487	21061	40	100.1	80	120	
Ag	107	3	115	40.255	40.255	ppb	0.631	70117	40	100.6	80	120	
Cd	111	3	115	38.650	38.650	ppb	0.995	9905	40	96.6	80	120	
Sn	120	3	115	38.957	38.957	ppb	1.818	30847	40	97.4	80	120	
Sb	121	3	115	39.251	39.251	ppb	2.245	30994	40	98.1	80	120	
Ba	137	3	115	39.591	39.591	ppb	1.784	10114	40	99.0	80	120	
Tl	205	3	193	40.485	40.485	ppb	1.931	148563	40	101.2	80	120	
(Pb)	206	3	193	39.851	39.851	ppb	2.187	49268	40	99.6	80	120	
(Pb)	207	3	193	39.404	39.404	ppb	2.364	43416	40	98.5	80	120	
Pb	208	3	193	40.066	40.066	ppb	1.769	199690	40	100.2	80	120	
Th	232	3	193	40.292	40.292	ppb	0.380	204389	40	100.7	80	120	
U	238	3	193	40.329	40.329	ppb	1.316	211550	40	100.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4199675	1.57	4331237	96.96	60	120	
Sc (IS)	45	3	HMI He	668713	0.96	654817	102.12	60	120	
Ge Internal standard	72	2	HMI H2	2231224	1.92	2307933	96.68	60	120	
Ge Internal standard	72	3	HMI He	758144	2.60	744678	101.81	60	120	
In Internal Standard	115	3	HMI He	2610379	1.55	2599142	100.43	60	120	
Ir (IS)	193	3	HMI He	5542127	1.60	5525410	100.30	60	120	

Sample Report

Sample Table

Sample Name	280-171552-e-1-b
Data File Name	211SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:01:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.127	ppb	0.127	86.61	7	2000	
Na	23	3	45	4140981.388	ppb	4140981.388	1.73	538135944	400000	>LDR
Mg	24	3	45	474305.492	ppb	474305.492	4.19	31895139	400000	
Al	27	3	45	224.722	ppb	224.722	4.41	5583	400000	
K	39	3	45	281370.939	ppb	281370.939	2.31	14903088	400000	
Ca	40	2	45	130872.642	ppb	130872.642	1.24	76677106	400000	
V	51	3	72	108.072	ppb	108.072	4.46	69980	2000	
Cr	52	3	72	476.428	ppb	476.428	4.04	389311	5000	
Mn	55	3	72	420.891	ppb	420.891	3.31	185605	10000	
Fe	56	2	72	10057.553	ppb	10057.553	3.60	15314852	10000	
Co	59	3	72	49.000	ppb	49.000	5.42	64661	2000	
Ni	60	3	72	797.679	ppb	797.679	4.33	291830	5000	
Cu	63	3	72	2208.296	ppb	2208.296	3.53	2181157	5000	
Zn	66	3	72	796.166	ppb	796.166	3.59	139747	5000	
As	75	3	72	158.456	ppb	158.456	4.85	19381	2000	
Se	78	2	72	1.717	ppb	1.717	5.75	105	2000	
(Se)	78	3	72	-1.136	ppb	-1.136	-28.81	27	2000	
Sr	88	3	72	4217.596	ppb	4217.596	4.04	2409240	4000	
Mo	95	3	115	35.340	ppb	35.340	0.90	17461	2000	
Ag	107	3	115	0.507	ppb	0.507	3.33	846	100	
Cd	111	3	115	2.820	ppb	2.820	4.04	681	2000	
Sn	120	3	115	28.135	ppb	28.135	3.39	21046	2000	
Sb	121	3	115	11.151	ppb	11.151	0.69	8352	1000	
Ba	137	3	115	1451.730	ppb	1451.730	0.48	345896	5000	
Tl	205	3	193	0.059	ppb	0.059	12.47	298	2000	
(Pb)	206	3	193	227.023	ppb	227.023	2.61	252065	100	
(Pb)	207	3	193	216.674	ppb	216.674	2.60	213634	100	
Pb	208	3	193	221.709	ppb	221.709	3.04	991803	5000	
Th	232	3	193	0.709	ppb	0.709	24.80	7039	2000	
U	238	3	193	0.197	ppb	0.197	25.34	2332	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267216	1.80	4331237	98.52	60	120	
Sc (IS)	45	3	HMI He	684994	2.21	654817	104.61	60	120	
Ge Internal standard	72	2	HMI H2	2279607	2.87	2307933	98.77	60	120	
Ge Internal standard	72	3	HMI He	766014	3.88	744678	102.87	60	120	
In Internal Standard	115	3	HMI He	2450453	1.13	2599142	94.28	60	120	
Ir (IS)	193	3	HMI He	4991942	3.33	5525410	90.35	60	120	

Sample Report

Sample Table

Sample Name	280-171552-e-2-b
Data File Name	212SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:03:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.128	ppb	0.128	115.22	7	2000	
Na	23	3	45	2400852.040	ppb	2400852.040	1.49	300708261	400000	>LDR
Mg	24	3	45	745168.491	ppb	745168.491	2.42	48307992	400000	
Al	27	3	45	63.672	ppb	63.672	1.30	1588	400000	
K	39	3	45	252539.409	ppb	252539.409	1.11	12897680	400000	
Ca	40	2	45	558746.893	ppb	558746.893	2.14	323670079	400000	
V	51	3	72	8.274	ppb	8.274	3.81	5432	2000	
Cr	52	3	72	23.279	ppb	23.279	4.70	19769	5000	
Mn	55	3	72	1708.866	ppb	1708.866	1.22	731917	10000	
Fe	56	2	72	14485.844	ppb	14485.844	2.43	21639867	10000	
Co	59	3	72	38.143	ppb	38.143	2.58	48938	2000	
Ni	60	3	72	618.551	ppb	618.551	2.83	219940	5000	
Cu	63	3	72	229.598	ppb	229.598	3.01	220595	5000	
Zn	66	3	72	168.501	ppb	168.501	2.42	28929	5000	
As	75	3	72	11.960	ppb	11.960	10.79	1466	2000	
Se	78	2	72	1.262	ppb	1.262	15.31	76	2000	
(Se)	78	3	72	2.972	ppb	2.972	18.51	53	2000	
Sr	88	3	72	8516.103	ppb	8516.103	3.74	4725578	4000	
Mo	95	3	115	16.763	ppb	16.763	4.81	8098	2000	
Ag	107	3	115	0.037	ppb	0.037	39.01	77	100	
Cd	111	3	115	0.057	ppb	0.057	37.80	17	2000	
Sn	120	3	115	1.498	ppb	1.498	7.60	1551	2000	
Sb	121	3	115	1.836	ppb	1.836	4.88	1438	1000	
Ba	137	3	115	2293.034	ppb	2293.034	2.09	533166	5000	
Tl	205	3	193	0.012	ppb	0.012	76.93	138	2000	
(Pb)	206	3	193	12.030	ppb	12.030	3.37	13174	100	
(Pb)	207	3	193	11.764	ppb	11.764	4.73	11611	100	
Pb	208	3	193	11.834	ppb	11.834	1.35	52348	5000	
Th	232	3	193	0.135	ppb	0.135	8.68	4384	2000	
U	238	3	193	0.038	ppb	0.038	74.23	1558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4219675	1.47	4331237	97.42	60	120	
Sc (IS)	45	3	HMI He	660276	4.23	654817	100.83	60	120	
Ge Internal standard	72	2	HMI H2	2236229	2.88	2307933	96.89	60	120	
Ge Internal standard	72	3	HMI He	744015	4.73	744678	99.91	60	120	
In Internal Standard	115	3	HMI He	2393224	5.16	2599142	92.08	60	120	
Ir (IS)	193	3	HMI He	4877498	4.47	5525410	88.27	60	120	

Sample Report

Sample Table

Sample Name	280-171574-e-1-a
Data File Name	213SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:05:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	4811186.135	ppb	4811186.135	1.58	636284175	400000	>LDR
Mg	24	3	45	1436170.306	ppb	1436170.306	1.40	98308820	400000	
Al	27	3	45	4.624	ppb	4.624	19.81	207	400000	
K	39	3	45	38480.324	ppb	38480.324	0.98	2097885	400000	
Ca	40	2	45	410702.964	ppb	410702.964	0.60	254986719	400000	
V	51	3	72	1.319	ppb	1.319	13.56	1076	2000	
Cr	52	3	72	0.703	ppb	0.703	5.84	1938	5000	
Mn	55	3	72	218.311	ppb	218.311	2.07	94379	10000	
Fe	56	2	72	15.255	ppb	15.255	2.22	33150	10000	
Co	59	3	72	11.371	ppb	11.371	1.20	14721	2000	
Ni	60	3	72	107.606	ppb	107.606	2.20	38666	5000	
Cu	63	3	72	24.092	ppb	24.092	2.00	23652	5000	
Zn	66	3	72	24.158	ppb	24.158	1.50	4384	5000	
As	75	3	72	0.648	ppb	0.648	20.33	128	2000	
Se	78	2	72	1061.298	ppb	1061.298	1.92	64126	2000	
(Se)	78	3	72	1162.175	ppb	1162.175	1.76	7833	2000	
Sr	88	3	72	7921.228	ppb	7921.228	2.03	4432284	4000	
Mo	95	3	115	17.502	ppb	17.502	1.49	8553	2000	
Ag	107	3	115	0.027	ppb	0.027	17.31	60	100	
Cd	111	3	115	1.083	ppb	1.083	19.75	260	2000	
Sn	120	3	115	0.492	ppb	0.492	5.06	845	2000	
Sb	121	3	115	0.554	ppb	0.554	4.26	520	1000	
Ba	137	3	115	14.361	ppb	14.361	4.38	3445	5000	
Tl	205	3	193	2.344	ppb	2.344	1.19	7293	2000	
(Pb)	206	3	193	0.108	ppb	0.108	34.56	242	100	
(Pb)	207	3	193	0.111	ppb	0.111	37.05	375	100	
Pb	208	3	193	0.137	ppb	0.137	11.57	1183	5000	
Th	232	3	193	0.089	ppb	0.089	14.35	3982	2000	
U	238	3	193	270.933	ppb	270.933	1.03	1182897	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4522089	1.53	4331237	104.41	60	120	
Sc (IS)	45	3	HMI He	696701	4.83	654817	106.40	60	120	
Ge Internal standard	72	2	HMI H2	2315441	0.48	2307933	100.33	60	120	
Ge Internal standard	72	3	HMI He	749696	5.37	744678	100.67	60	120	
In Internal Standard	115	3	HMI He	2419583	4.32	2599142	93.09	60	120	
Ir (IS)	193	3	HMI He	4642386	4.90	5525410	84.02	60	120	

Sample Report

Sample Table

Sample Name	280-171574-e-2-a
Data File Name	214SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:07:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	4753428.067	ppb	4753428.067	2.13	689164467	400000	>LDR
Mg	24	3	45	1384683.533	ppb	1384683.533	1.69	103926742	400000	
Al	27	3	45	8.165	ppb	8.165	14.97	324	400000	
K	39	3	45	38525.084	ppb	38525.084	0.55	2303727	400000	
Ca	40	2	45	419020.717	ppb	419020.717	2.01	246837931	400000	
V	51	3	72	1.320	ppb	1.320	13.06	1164	2000	
Cr	52	3	72	0.738	ppb	0.738	15.45	2119	5000	
Mn	55	3	72	214.404	ppb	214.404	2.02	99949	10000	
Fe	56	2	72	22.981	ppb	22.981	4.84	43508	10000	
Co	59	3	72	11.055	ppb	11.055	3.00	15436	2000	
Ni	60	3	72	106.302	ppb	106.302	1.47	41201	5000	
Cu	63	3	72	23.887	ppb	23.887	2.43	25301	5000	
Zn	66	3	72	25.091	ppb	25.091	4.14	4897	5000	
As	75	3	72	0.702	ppb	0.702	24.82	145	2000	
Se	78	2	72	1056.279	ppb	1056.279	2.78	61573	2000	
(Se)	78	3	72	1149.789	ppb	1149.789	1.64	8358	2000	
Sr	88	3	72	7929.443	ppb	7929.443	0.91	4785238	4000	
Mo	95	3	115	16.542	ppb	16.542	2.56	8473	2000	
Ag	107	3	115	0.027	ppb	0.027	6.37	63	100	
Cd	111	3	115	1.032	ppb	1.032	13.70	260	2000	
Sn	120	3	115	0.818	ppb	0.818	7.65	1131	2000	
Sb	121	3	115	0.480	ppb	0.480	13.91	488	1000	
Ba	137	3	115	14.354	ppb	14.354	2.18	3604	5000	
Tl	205	3	193	2.347	ppb	2.347	2.06	7334	2000	
(Pb)	206	3	193	0.259	ppb	0.259	12.65	398	100	
(Pb)	207	3	193	0.264	ppb	0.264	3.93	516	100	
Pb	208	3	193	0.274	ppb	0.274	11.98	1756	5000	
Th	232	3	193	0.096	ppb	0.096	39.74	4025	2000	
U	238	3	193	281.038	ppb	281.038	1.03	1231998	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4291754	2.98	4331237	99.09	60	120	
Sc (IS)	45	3	HMI He	764238	1.43	654817	116.71	60	120	
Ge Internal standard	72	2	HMI H2	2233461	0.65	2307933	96.77	60	120	
Ge Internal standard	72	3	HMI He	808435	0.91	744678	108.56	60	120	
In Internal Standard	115	3	HMI He	2534690	0.07	2599142	97.52	60	120	
Ir (IS)	193	3	HMI He	4660870	1.05	5525410	84.35	60	120	

Sample Report

Sample Table

Sample Name	280-171588-c-1-a
Data File Name	215SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:09:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	86.63	3	2000	
Na	23	3	45	1592958.830	ppb	1592958.830	0.83	232068452	400000	
Mg	24	3	45	2135328.766	ppb	2135328.766	1.36	160985063	400000	>LDR
Al	27	3	45	104.312	ppb	104.312	56.60	2995	400000	
K	39	3	45	31137.733	ppb	31137.733	3.29	1876009	400000	
Ca	40	2	45	464713.331	ppb	464713.331	1.51	298959249	400000	
V	51	3	72	0.751	ppb	0.751	8.28	791	2000	
Cr	52	3	72	0.556	ppb	0.556	18.56	2004	5000	
Mn	55	3	72	3500.104	ppb	3500.104	0.93	1661107	10000	
Fe	56	2	72	98.998	ppb	98.998	11.01	170462	10000	
Co	59	3	72	19.438	ppb	19.438	2.99	27645	2000	
Ni	60	3	72	96.128	ppb	96.128	1.00	38008	5000	
Cu	63	3	72	7.645	ppb	7.645	2.66	8517	5000	
Zn	66	3	72	20.443	ppb	20.443	2.61	4115	5000	
As	75	3	72	0.424	ppb	0.424	81.05	112	2000	
Se	78	2	72	105.471	ppb	105.471	0.10	6692	2000	
(Se)	78	3	72	110.207	ppb	110.207	10.89	850	2000	
Sr	88	3	72	7630.917	ppb	7630.917	1.92	4695663	4000	
Mo	95	3	115	3.639	ppb	3.639	3.56	1963	2000	
Ag	107	3	115	0.192	ppb	0.192	3.20	355	100	
Cd	111	3	115	2.800	ppb	2.800	6.04	726	2000	
Sn	120	3	115	0.156	ppb	0.156	35.85	655	2000	
Sb	121	3	115	0.383	ppb	0.383	3.00	430	1000	
Ba	137	3	115	12.876	ppb	12.876	2.84	3360	5000	
Tl	205	3	193	5.790	ppb	5.790	2.86	19198	2000	
(Pb)	206	3	193	0.237	ppb	0.237	26.28	401	100	
(Pb)	207	3	193	0.247	ppb	0.247	10.97	536	100	
Pb	208	3	193	0.253	ppb	0.253	11.36	1784	5000	
Th	232	3	193	0.112	ppb	0.112	17.43	4374	2000	
U	238	3	193	148.672	ppb	148.672	2.96	697570	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4685163	0.72	4331237	108.17	60	120	
Sc (IS)	45	3	HMI He	767770	3.10	654817	117.25	60	120	
Ge Internal standard	72	2	HMI H2	2430476	2.70	2307933	105.31	60	120	
Ge Internal standard	72	3	HMI He	824549	3.60	744678	110.73	60	120	
In Internal Standard	115	3	HMI He	2629857	0.98	2599142	101.18	60	120	
Ir (IS)	193	3	HMI He	4984056	1.22	5525410	90.20	60	120	

Sample Report

Sample Table

Sample Name	280-171630-b-1-b
Data File Name	216SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:10:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.232	ppb	0.232	66.34	12	2000	
Na	23	3	45	301740.141	ppb	301740.141	2.46	40453035	400000	
Mg	24	3	45	157388.656	ppb	157388.656	2.95	10906143	400000	
Al	27	3	45	4346.546	ppb	4346.546	3.74	109563	400000	
K	39	3	45	8029.498	ppb	8029.498	3.67	465652	400000	
Ca	40	2	45	461370.799	ppb	461370.799	0.42	258943364	400000	
V	51	3	72	10.874	ppb	10.874	3.17	7567	2000	
Cr	52	3	72	6.855	ppb	6.855	2.40	7272	5000	
Mn	55	3	72	68.338	ppb	68.338	2.22	31513	10000	
Fe	56	2	72	3717.475	ppb	3717.475	3.36	5448212	10000	
Co	59	3	72	5.265	ppb	5.265	3.19	7257	2000	
Ni	60	3	72	9.130	ppb	9.130	3.36	3604	5000	
Cu	63	3	72	2.841	ppb	2.841	4.94	3292	5000	
Zn	66	3	72	14.769	ppb	14.769	4.78	2942	5000	
As	75	3	72	4.505	ppb	4.505	12.33	626	2000	
Se	78	2	72	251.396	ppb	251.396	3.15	14382	2000	
(Se)	78	3	72	280.567	ppb	280.567	6.23	2036	2000	
Sr	88	3	72	5751.257	ppb	5751.257	0.82	3419924	4000	
Mo	95	3	115	5.962	ppb	5.962	4.83	3142	2000	
Ag	107	3	115	0.020	ppb	0.020	78.22	53	100	
Cd	111	3	115	0.079	ppb	0.079	57.64	23	2000	
Sn	120	3	115	0.933	ppb	0.933	13.18	1244	2000	
Sb	121	3	115	1.364	ppb	1.364	7.09	1188	1000	
Ba	137	3	115	86.817	ppb	86.817	1.93	21914	5000	
Tl	205	3	193	0.052	ppb	0.052	13.85	282	2000	
(Pb)	206	3	193	4.652	ppb	4.652	4.83	5470	100	
(Pb)	207	3	193	4.309	ppb	4.309	3.14	4679	100	
Pb	208	3	193	4.625	ppb	4.625	6.00	22007	5000	
Th	232	3	193	1.366	ppb	1.366	1.51	10301	2000	
U	238	3	193	45.303	ppb	45.303	2.12	220521	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4087866	3.55	4331237	94.38	60	120	
Sc (IS)	45	3	HMI He	705912	3.18	654817	107.80	60	120	
Ge Internal standard	72	2	HMI H2	2192067	3.80	2307933	94.98	60	120	
Ge Internal standard	72	3	HMI He	796591	1.25	744678	106.97	60	120	
In Internal Standard	115	3	HMI He	2588445	0.02	2599142	99.59	60	120	
Ir (IS)	193	3	HMI He	5146843	1.12	5525410	93.15	60	120	

Sample Report

Sample Table

Sample Name	280-171608-b-2-a
Data File Name	217SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:12:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	823504.201	ppb	823504.201	2.47	113078267	400000	
Mg	24	3	45	64692.572	ppb	64692.572	3.42	4595839	400000	
Al	27	3	45	150.564	ppb	150.564	6.94	3988	400000	
K	39	3	45	29289.433	ppb	29289.433	3.10	1664642	400000	
Ca	40	2	45	160220.637	ppb	160220.637	1.93	98139332	400000	
V	51	3	72	0.189	ppb	0.189	12.64	381	2000	
Cr	52	3	72	0.288	ppb	0.288	38.08	1683	5000	
Mn	55	3	72	14.428	ppb	14.428	2.30	6700	10000	
Fe	56	2	72	169.942	ppb	169.942	0.41	278730	10000	
Co	59	3	72	0.309	ppb	0.309	11.12	445	2000	
Ni	60	3	72	1.519	ppb	1.519	6.09	696	5000	
Cu	63	3	72	0.711	ppb	0.711	8.78	1088	5000	
Zn	66	3	72	192.952	ppb	192.952	0.92	34935	5000	
As	75	3	72	10.722	ppb	10.722	5.02	1396	2000	
Se	78	2	72	0.140	ppb	0.140	96.35	11	2000	
(Se)	78	3	72	-1.246	ppb	-1.246	-138.41	27	2000	
Sr	88	3	72	9592.238	ppb	9592.238	1.82	5621945	4000	
Mo	95	3	115	0.788	ppb	0.788	3.59	455	2000	
Ag	107	3	115	0.000	ppb	0.000	-1926.01	18	100	
Cd	111	3	115	0.276	ppb	0.276	45.23	75	2000	
Sn	120	3	115	0.104	ppb	0.104	54.56	615	2000	
Sb	121	3	115	0.066	ppb	0.066	69.88	178	1000	
Ba	137	3	115	18.677	ppb	18.677	5.93	4852	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-272.91	102	2000	
(Pb)	206	3	193	0.289	ppb	0.289	3.75	481	100	
(Pb)	207	3	193	0.271	ppb	0.271	5.90	588	100	
Pb	208	3	193	0.312	ppb	0.312	7.61	2152	5000	
Th	232	3	193	0.075	ppb	0.075	25.50	4422	2000	
U	238	3	193	1.487	ppb	1.487	4.59	8795	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4462134	2.38	4331237	103.02	60	120	
Sc (IS)	45	3	HMI He	723770	3.34	654817	110.53	60	120	
Ge Internal standard	72	2	HMI H2	2369210	1.74	2307933	102.66	60	120	
Ge Internal standard	72	3	HMI He	785273	1.55	744678	105.45	60	120	
In Internal Standard	115	3	HMI He	2634383	0.76	2599142	101.36	60	120	
Ir (IS)	193	3	HMI He	5234558	1.44	5525410	94.74	60	120	

Sample Report

Sample Table

Sample Name	280-171608-b-3-a
Data File Name	218SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:14:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	15617.205	ppb	15617.205	1.33	1963880	400000	
Mg	24	3	45	52714.571	ppb	52714.571	2.25	3344944	400000	
Al	27	3	45	78.635	ppb	78.635	5.18	1899	400000	
K	39	3	45	8322.203	ppb	8322.203	1.53	440998	400000	
Ca	40	2	45	80467.830	ppb	80467.830	1.39	49207849	400000	
V	51	3	72	0.520	ppb	0.520	3.41	570	2000	
Cr	52	3	72	0.486	ppb	0.486	5.57	1751	5000	
Mn	55	3	72	50.989	ppb	50.989	2.41	22011	10000	
Fe	56	2	72	75.540	ppb	75.540	2.22	126562	10000	
Co	59	3	72	1.185	ppb	1.185	1.79	1546	2000	
Ni	60	3	72	2.990	ppb	2.990	8.84	1183	5000	
Cu	63	3	72	10.684	ppb	10.684	1.76	10607	5000	
Zn	66	3	72	333.457	ppb	333.457	0.90	57046	5000	
As	75	3	72	0.208	ppb	0.208	92.93	75	2000	
Se	78	2	72	13.820	ppb	13.820	3.77	839	2000	
(Se)	78	3	72	12.738	ppb	12.738	17.51	118	2000	
Sr	88	3	72	692.691	ppb	692.691	1.46	384814	4000	
Mo	95	3	115	19.884	ppb	19.884	3.18	9994	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-188.35	13	100	
Cd	111	3	115	1.788	ppb	1.788	4.15	440	2000	
Sn	120	3	115	0.086	ppb	0.086	63.01	568	2000	
Sb	121	3	115	9.795	ppb	9.795	2.39	7465	1000	
Ba	137	3	115	20.780	ppb	20.780	6.04	5093	5000	
Tl	205	3	193	0.066	ppb	0.066	19.86	330	2000	
(Pb)	206	3	193	1.405	ppb	1.405	2.45	1749	100	
(Pb)	207	3	193	1.272	ppb	1.272	2.65	1593	100	
Pb	208	3	193	1.377	ppb	1.377	1.43	7016	5000	
Th	232	3	193	0.015	ppb	0.015	320.45	4062	2000	
U	238	3	193	1.607	ppb	1.607	0.51	9214	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4453401	1.49	4331237	102.82	60	120	
Sc (IS)	45	3	HMI He	645918	0.72	654817	98.64	60	120	
Ge Internal standard	72	2	HMI H2	2319316	2.74	2307933	100.49	60	120	
Ge Internal standard	72	3	HMI He	744183	1.15	744678	99.93	60	120	
In Internal Standard	115	3	HMI He	2488524	0.49	2599142	95.74	60	120	
Ir (IS)	193	3	HMI He	5139650	0.93	5525410	93.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	219_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:16:34-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.122	ppb	2.533	2577	50	98.2	90	110	
Na	23	3	45	49927.989	ppb	2.202	5958752	51000	97.9	90	110	
Mg	24	3	45	10797.576	ppb	0.516	661774	11000	98.2	90	110	
Al	27	3	45	991.456	ppb	1.045	22160	1000	99.1	90	110	
K	39	3	45	10588.154	ppb	0.633	535056	11000	96.3	90	110	
Ca	40	2	45	11105.092	ppb	1.820	6520374	11000	101.0	90	110	
V	51	3	72	51.474	ppb	0.861	30341	50	102.9	90	110	
Cr	52	3	72	51.409	ppb	2.286	39237	50	102.8	90	110	
Mn	55	3	72	50.866	ppb	2.647	20480	50	101.7	90	110	
Fe	56	2	72	1077.548	ppb	2.231	1595235	1000	107.8	90	110	
Co	59	3	72	51.068	ppb	1.478	61115	50	102.1	90	110	
Ni	60	3	72	50.612	ppb	1.863	16902	50	101.2	90	110	
Cu	63	3	72	50.966	ppb	2.306	45977	50	101.9	90	110	
Zn	66	3	72	51.317	ppb	3.252	8372	50	102.6	90	110	
As	75	3	72	52.240	ppb	2.420	5828	50	104.5	90	110	
Se	78	2	72	52.723	ppb	2.289	3034	50	105.4	90	110	
(Se)	78	3	72	53.964	ppb	10.613	366	50	107.9	90	110	
Sr	88	3	72	105.317	ppb	0.884	54597	100	105.3	90	110	
Mo	95	3	115	49.639	ppb	0.853	24286	50	99.3	90	110	
Ag	107	3	115	48.715	ppb	0.668	78918	50	97.4	90	110	
Cd	111	3	115	49.216	ppb	2.634	11724	50	98.4	90	110	
Sn	120	3	115	51.362	ppb	1.925	37678	50	102.7	90	110	
Sb	121	3	115	50.505	ppb	2.099	37060	50	101.0	90	110	
Ba	137	3	115	48.563	ppb	4.003	11528	50	97.1	90	110	
Tl	205	3	193	51.301	ppb	1.061	167324	50	102.6	90	110	
(Pb)	206	3	193	51.555	ppb	1.341	56620	50	103.1	90	110	
(Pb)	207	3	193	49.992	ppb	1.695	48897	50	100.0	90	110	
Pb	208	3	193	51.059	ppb	1.569	226039	50	102.1	90	110	
Th	232	3	193	51.159	ppb	2.440	229540	50	102.3	90	110	
U	238	3	193	51.069	ppb	2.534	237692	50	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267302	0.22	4331237	98.52	60	120	
Sc (IS)	45	3	HMI He	623779	3.61	654817	95.26	60	120	
Ge Internal standard	72	2	HMI H2	2203508	0.79	2307933	95.48	60	120	
Ge Internal standard	72	3	HMI He	693876	2.95	744678	93.18	60	120	
In Internal Standard	115	3	HMI He	2427430	3.28	2599142	93.39	60	120	
Ir (IS)	193	3	HMI He	4928040	5.80	5525410	89.19	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	220_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:18:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	510.261	ppb	2.1	109102	25	>RL
Mg	24	3	45	49.346	ppb	0.2	3224	25	>RL
Al	27	3	45	10.482	ppb	40.7	317	15	
K	39	3	45	29.922	ppb	139.5	26629	50	
V	51	3	72	0.185	ppb	55.4	343	1	
Cr	52	3	72	0.068	ppb	283.4	1354	1	
Mn	55	3	72	0.145	ppb	25.5	222	0.5	
Co	59	3	72	0.024	ppb	51.3	53	0.5	
Ni	60	3	72	0.075	ppb	83.6	140	1	
Cu	63	3	72	0.199	ppb	27.0	515	1	
Zn	66	3	72	0.584	ppb	40.4	317	5	
As	75	3	72	0.094	ppb	145.0	58	1	
Se	78	2	72	0.039	ppb	57.2	5	1	
(Se)	78	3	72	-2.412	ppb	-66.6	17	1	
Sr	88	3	72	0.366	ppb	11.2	235	0.5	
Mo	95	3	115	0.024	ppb	53.5	47	0.5	
Ag	107	3	115	0.005	ppb	65.0	25	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.386	ppb	18.2	778	1	
Sb	121	3	115	-0.033	ppb	-64.4	93	0.6	
Ba	137	3	115	-0.019	ppb	-311.2	60	0.5	
Tl	205	3	193	0.006	ppb	118.6	125	0.1	
(Pb)	206	3	193	-0.009	ppb	-128.6	130	1	
(Pb)	207	3	193	0.034	ppb	19.3	330	1	
Pb	208	3	193	0.017	ppb	27.8	741	0.5	
Th	232	3	193	0.636	ppb	21.3	6789	1	
U	238	3	193	0.004	ppb	92.5	1448	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4101192	0.81	4331237	94.69	60	120	
Sc (IS)	45	3	HMI He	626940	1.40	654817	95.74	60	120	
Ge Internal standard	72	2	HMI H2	2164571	2.17	2307933	93.79	60	120	
Ge Internal standard	72	3	HMI He	709044	1.64	744678	95.21	60	120	
In Internal Standard	115	3	HMI He	2452275	2.57	2599142	94.35	60	120	
Ir (IS)	193	3	HMI He	5042149	2.05	5525410	91.25	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-11-a
Data File Name	221SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:20:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	24265.722	ppb	24265.722	1.54	3068935	400000	
Mg	24	3	45	12809.933	ppb	12809.933	1.69	824846	400000	
Al	27	3	45	38.626	ppb	38.626	5.58	991	400000	
K	39	3	45	6558.264	ppb	6558.264	1.06	358227	400000	
Ca	40	2	45	51149.750	ppb	51149.750	2.26	29120006	400000	
V	51	3	72	9.627	ppb	9.627	0.16	6553	2000	
Cr	52	3	72	2.649	ppb	2.649	12.18	3617	5000	
Mn	55	3	72	1.413	ppb	1.413	7.63	810	10000	
Fe	56	2	72	60.111	ppb	60.111	1.93	102498	10000	
Co	59	3	72	0.075	ppb	0.075	25.95	127	2000	
Ni	60	3	72	0.525	ppb	0.525	2.16	320	5000	
Cu	63	3	72	0.554	ppb	0.554	5.28	918	5000	
Zn	66	3	72	1.443	ppb	1.443	23.29	500	5000	
As	75	3	72	3.554	ppb	3.554	8.96	491	2000	
Se	78	2	72	2.540	ppb	2.540	17.69	156	2000	
(Se)	78	3	72	1.938	ppb	1.938	44.78	48	2000	
Sr	88	3	72	231.312	ppb	231.312	0.86	134037	4000	
Mo	95	3	115	4.977	ppb	4.977	3.57	2621	2000	
Ag	107	3	115	0.031	ppb	0.031	31.29	72	100	
Cd	111	3	115	0.001	ppb	0.001	3304.40	3	2000	
Sn	120	3	115	0.344	ppb	0.344	13.67	788	2000	
Sb	121	3	115	0.123	ppb	0.123	50.68	218	1000	
Ba	137	3	115	57.915	ppb	57.915	1.44	14606	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-597.91	103	2000	
(Pb)	206	3	193	0.115	ppb	0.115	9.50	278	100	
(Pb)	207	3	193	0.130	ppb	0.130	31.11	440	100	
Pb	208	3	193	0.128	ppb	0.128	4.37	1283	5000	
Th	232	3	193	0.176	ppb	0.176	21.53	4877	2000	
U	238	3	193	20.001	ppb	20.001	0.97	99432	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4146362	2.66	4331237	95.73	60	120	
Sc (IS)	45	3	HMI He	655560	2.04	654817	100.11	60	120	
Ge Internal standard	72	2	HMI H2	2315014	1.31	2307933	100.31	60	120	
Ge Internal standard	72	3	HMI He	776047	2.87	744678	104.21	60	120	
In Internal Standard	115	3	HMI He	2582784	3.68	2599142	99.37	60	120	
Ir (IS)	193	3	HMI He	5212680	1.78	5525410	94.34	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-a
Data File Name	222SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:22:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	28863.609	ppb	28863.609	1.53	3532088	400000	
Mg	24	3	45	12594.863	ppb	12594.863	1.01	787285	400000	
Al	27	3	45	12.015	ppb	12.015	13.63	357	400000	
K	39	3	45	5588.999	ppb	5588.999	2.52	299972	400000	
Ca	40	2	45	52996.853	ppb	52996.853	0.85	30208848	400000	
V	51	3	72	9.497	ppb	9.497	2.50	6255	2000	
Cr	52	3	72	2.945	ppb	2.945	5.76	3730	5000	
Mn	55	3	72	8.138	ppb	8.138	2.19	3685	10000	
Fe	56	2	72	481.997	ppb	481.997	1.87	745835	10000	
Co	59	3	72	0.165	ppb	0.165	25.57	238	2000	
Ni	60	3	72	4.246	ppb	4.246	4.59	1643	5000	
Cu	63	3	72	0.625	ppb	0.625	5.52	956	5000	
Zn	66	3	72	2.295	ppb	2.295	13.68	630	5000	
As	75	3	72	5.783	ppb	5.783	14.66	741	2000	
Se	78	2	72	3.137	ppb	3.137	5.32	190	2000	
(Se)	78	3	72	-0.059	ppb	-0.059	-4065.89	33	2000	
Sr	88	3	72	242.256	ppb	242.256	0.23	135717	4000	
Mo	95	3	115	4.752	ppb	4.752	6.40	2406	2000	
Ag	107	3	115	0.448	ppb	0.448	5.84	760	100	
Cd	111	3	115	-0.006	ppb	-0.006	-210.33	2	2000	
Sn	120	3	115	1.280	ppb	1.280	8.72	1449	2000	
Sb	121	3	115	0.165	ppb	0.165	41.86	242	1000	
Ba	137	3	115	70.273	ppb	70.273	5.41	17006	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-269.44	98	2000	
(Pb)	206	3	193	0.064	ppb	0.064	19.21	215	100	
(Pb)	207	3	193	0.094	ppb	0.094	54.43	396	100	
Pb	208	3	193	0.093	ppb	0.093	13.20	1098	5000	
Th	232	3	193	0.092	ppb	0.092	26.32	4397	2000	
U	238	3	193	38.028	ppb	38.028	1.16	183993	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4150246	2.04	4331237	95.82	60	120	
Sc (IS)	45	3	HMI He	636156	2.40	654817	97.15	60	120	
Ge Internal standard	72	2	HMI H2	2287691	2.32	2307933	99.12	60	120	
Ge Internal standard	72	3	HMI He	750216	1.84	744678	100.74	60	120	
In Internal Standard	115	3	HMI He	2483402	4.29	2599142	95.55	60	120	
Ir (IS)	193	3	HMI He	5109910	2.97	5525410	92.48	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-aSD@5
Data File Name	223SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:24:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	6264.703	ppb	6264.703	2.73	831465	400000	
Mg	24	3	45	2562.866	ppb	2562.866	1.20	165519	400000	
Al	27	3	45	0.854	ppb	0.854	226.46	107	400000	
K	39	3	45	1127.059	ppb	1127.059	3.95	83548	400000	
Ca	40	2	45	10670.422	ppb	10670.422	2.39	6431259	400000	
V	51	3	72	2.349	ppb	2.349	6.47	1801	2000	
Cr	52	3	72	0.795	ppb	0.795	16.35	2092	5000	
Mn	55	3	72	1.771	ppb	1.771	6.21	975	10000	
Fe	56	2	72	99.150	ppb	99.150	1.78	164300	10000	
Co	59	3	72	0.041	ppb	0.041	25.62	82	2000	
Ni	60	3	72	0.987	ppb	0.987	30.23	495	5000	
Cu	63	3	72	0.188	ppb	0.188	19.47	555	5000	
Zn	66	3	72	1.263	ppb	1.263	43.69	470	5000	
As	75	3	72	0.875	ppb	0.875	4.47	162	2000	
Se	78	2	72	0.786	ppb	0.786	11.85	51	2000	
(Se)	78	3	72	-0.023	ppb	-0.023	-10873.16	35	2000	
Sr	88	3	72	49.853	ppb	49.853	2.92	29083	4000	
Mo	95	3	115	0.959	ppb	0.959	12.34	528	2000	
Ag	107	3	115	0.076	ppb	0.076	24.11	148	100	
Cd	111	3	115	0.007	ppb	0.007	499.24	5	2000	
Sn	120	3	115	0.479	ppb	0.479	6.91	881	2000	
Sb	121	3	115	-0.025	ppb	-0.025	-66.19	103	1000	
Ba	137	3	115	14.296	ppb	14.296	1.92	3615	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-368.58	103	2000	
(Pb)	206	3	193	0.003	ppb	0.003	765.67	150	100	
(Pb)	207	3	193	0.054	ppb	0.054	38.96	366	100	
Pb	208	3	193	0.023	ppb	0.023	15.17	805	5000	
Th	232	3	193	0.032	ppb	0.032	83.02	4250	2000	
U	238	3	193	7.728	ppb	7.728	3.90	39792	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4381193	1.90	4331237	101.15	60	120	
Sc (IS)	45	3	HMI He	656790	0.68	654817	100.30	60	120	
Ge Internal standard	72	2	HMI H2	2335602	1.92	2307933	101.20	60	120	
Ge Internal standard	72	3	HMI He	780430	1.07	744678	104.80	60	120	
In Internal Standard	115	3	HMI He	2552747	1.28	2599142	98.21	60	120	
Ir (IS)	193	3	HMI He	5276832	1.90	5525410	95.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-b ms
Data File Name	224SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:25:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.849	ppb	41.849	1.61	2212	2000	
Na	23	3	45	29196.657	ppb	29196.657	1.21	3729225	400000	
Mg	24	3	45	13327.197	ppb	13327.197	5.41	868863	400000	
Al	27	3	45	800.514	ppb	800.514	1.43	19065	400000	
K	39	3	45	6314.583	ppb	6314.583	1.07	350380	400000	
Ca	40	2	45	54729.626	ppb	54729.626	0.75	31816854	400000	
V	51	3	72	49.356	ppb	49.356	3.17	32824	2000	
Cr	52	3	72	41.968	ppb	41.968	3.60	36378	5000	
Mn	55	3	72	46.725	ppb	46.725	4.21	21221	10000	
Fe	56	2	72	1270.276	ppb	1270.276	2.76	2002129	10000	
Co	59	3	72	39.075	ppb	39.075	3.87	52742	2000	
Ni	60	3	72	42.208	ppb	42.208	2.09	15915	5000	
Cu	63	3	72	39.293	ppb	39.293	2.14	40050	5000	
Zn	66	3	72	39.053	ppb	39.053	4.59	7240	5000	
As	75	3	72	44.278	ppb	44.278	6.06	5573	2000	
Se	78	2	72	44.251	ppb	44.251	2.23	2714	2000	
(Se)	78	3	72	39.317	ppb	39.317	15.67	310	2000	
Sr	88	3	72	322.265	ppb	322.265	3.88	188255	4000	
Mo	95	3	115	44.778	ppb	44.778	2.05	23610	2000	
Ag	107	3	115	40.107	ppb	40.107	2.00	70016	100	
Cd	111	3	115	39.027	ppb	39.027	3.11	10022	2000	
Sn	120	3	115	40.000	ppb	40.000	2.59	31727	2000	
Sb	121	3	115	40.229	ppb	40.229	0.89	31842	1000	
Ba	137	3	115	109.434	ppb	109.434	1.66	27902	5000	
Tl	205	3	193	41.991	ppb	41.991	2.28	147420	2000	
(Pb)	206	3	193	41.446	ppb	41.446	1.68	49029	100	
(Pb)	207	3	193	41.004	ppb	41.004	2.10	43217	100	
Pb	208	3	193	41.516	ppb	41.516	1.88	197968	5000	
Th	232	3	193	42.418	ppb	42.418	2.36	205635	2000	
U	238	3	193	80.593	ppb	80.593	3.12	402946	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4232861	2.00	4331237	97.73	60	120	
Sc (IS)	45	3	HMI He	664050	1.89	654817	101.41	60	120	
Ge Internal standard	72	2	HMI H2	2348888	2.30	2307933	101.77	60	120	
Ge Internal standard	72	3	HMI He	783045	3.42	744678	105.15	60	120	
In Internal Standard	115	3	HMI He	2616461	1.04	2599142	100.67	60	120	
Ir (IS)	193	3	HMI He	5303740	2.24	5525410	95.99	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-c msd
Data File Name	225SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:27:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.946	ppb	39.946	3.73	2069	2000	
Na	23	3	45	29852.328	ppb	29852.328	0.58	3661811	400000	
Mg	24	3	45	13588.083	ppb	13588.083	1.61	851403	400000	
Al	27	3	45	819.435	ppb	819.435	2.63	18748	400000	
K	39	3	45	6400.703	ppb	6400.703	0.39	340822	400000	
Ca	40	2	45	54023.628	ppb	54023.628	3.83	31035850	400000	
V	51	3	72	49.813	ppb	49.813	1.94	31984	2000	
Cr	52	3	72	42.899	ppb	42.899	1.04	35880	5000	
Mn	55	3	72	48.196	ppb	48.196	2.02	21134	10000	
Fe	56	2	72	1283.591	ppb	1283.591	1.92	1975293	10000	
Co	59	3	72	39.317	ppb	39.317	0.87	51257	2000	
Ni	60	3	72	41.897	ppb	41.897	1.68	15251	5000	
Cu	63	3	72	39.901	ppb	39.901	0.99	39259	5000	
Zn	66	3	72	41.128	ppb	41.128	1.30	7352	5000	
As	75	3	72	44.436	ppb	44.436	4.75	5403	2000	
Se	78	2	72	42.766	ppb	42.766	1.65	2562	2000	
(Se)	78	3	72	40.974	ppb	40.974	13.67	312	2000	
Sr	88	3	72	323.511	ppb	323.511	0.50	182533	4000	
Mo	95	3	115	45.094	ppb	45.094	1.47	22631	2000	
Ag	107	3	115	40.592	ppb	40.592	2.06	67420	100	
Cd	111	3	115	40.802	ppb	40.802	1.76	9972	2000	
Sn	120	3	115	40.827	ppb	40.827	1.25	30807	2000	
Sb	121	3	115	41.563	ppb	41.563	1.28	31294	1000	
Ba	137	3	115	109.806	ppb	109.806	2.33	26634	5000	
Tl	205	3	193	42.099	ppb	42.099	1.39	144919	2000	
(Pb)	206	3	193	41.317	ppb	41.317	1.47	47921	100	
(Pb)	207	3	193	40.748	ppb	40.748	1.43	42112	100	
Pb	208	3	193	41.451	ppb	41.451	0.60	193806	5000	
Th	232	3	193	42.383	ppb	42.383	0.57	201477	2000	
U	238	3	193	79.916	ppb	79.916	0.73	391853	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4184611	2.19	4331237	96.61	60	120	
Sc (IS)	45	3	HMI He	637828	0.79	654817	97.41	60	120	
Ge Internal standard	72	2	HMI H2	2292985	1.66	2307933	99.35	60	120	
Ge Internal standard	72	3	HMI He	755698	1.76	744678	101.48	60	120	
In Internal Standard	115	3	HMI He	2489601	2.09	2599142	95.79	60	120	
Ir (IS)	193	3	HMI He	5199094	1.21	5525410	94.09	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-13-a PDS
Data File Name	226SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:29:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	201.391	ppb	201.391	1.40	10499	2000	
Na	23	3	45	37225.202	ppb	37225.202	1.08	4653232	400000	
Mg	24	3	45	14201.721	ppb	14201.721	1.67	909344	400000	
Al	27	3	45	2069.226	ppb	2069.226	1.35	48240	400000	
K	39	3	45	7442.427	ppb	7442.427	1.67	400653	400000	
Ca	40	2	45	53777.251	ppb	53777.251	3.84	30715510	400000	
V	51	3	72	208.682	ppb	208.682	2.27	134534	2000	
Cr	52	3	72	203.750	ppb	203.750	4.10	166760	5000	
Mn	55	3	72	206.570	ppb	206.570	3.14	90890	10000	
Fe	56	2	72	484.467	ppb	484.467	1.53	746537	10000	
Co	59	3	72	197.980	ppb	197.980	2.74	260494	2000	
Ni	60	3	72	197.233	ppb	197.233	3.49	72030	5000	
Cu	63	3	72	198.905	ppb	198.905	3.99	196137	5000	
Zn	66	3	72	201.485	ppb	201.485	2.91	35436	5000	
As	75	3	72	202.190	ppb	202.190	3.43	24643	2000	
Se	78	2	72	203.951	ppb	203.951	0.10	12125	2000	
(Se)	78	3	72	216.487	ppb	216.487	9.14	1511	2000	
Sr	88	3	72	441.448	ppb	441.448	3.57	251435	4000	
Mo	95	3	115	209.631	ppb	209.631	1.01	107643	2000	
Ag	107	3	115	52.034	ppb	52.034	1.91	88557	100	
Cd	111	3	115	201.236	ppb	201.236	1.81	50372	2000	
Sn	120	3	115	208.680	ppb	208.680	1.47	159210	2000	
Sb	121	3	115	206.881	ppb	206.881	2.38	159115	1000	
Ba	137	3	115	275.562	ppb	275.562	1.42	68396	5000	
Tl	205	3	193	211.095	ppb	211.095	1.27	726647	2000	
(Pb)	206	3	193	212.119	ppb	212.119	1.65	245545	100	
(Pb)	207	3	193	207.452	ppb	207.452	0.67	213283	100	
Pb	208	3	193	211.071	ppb	211.071	0.47	984598	5000	
Th	232	3	193	282.998	ppb	282.998	1.35	1322999	2000	
U	238	3	193	262.744	ppb	262.744	1.44	1285682	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4160181	1.85	4331237	96.05	60	120	
Sc (IS)	45	3	HMI He	651743	0.59	654817	99.53	60	120	
Ge Internal standard	72	2	HMI H2	2277634	0.67	2307933	98.69	60	120	
Ge Internal standard	72	3	HMI He	763467	3.54	744678	102.52	60	120	
In Internal Standard	115	3	HMI He	2551075	1.75	2599142	98.15	60	120	
Ir (IS)	193	3	HMI He	5201878	1.08	5525410	94.14	60	120	

Sample Report

Sample Table

Sample Name	280-171086-f-1-b
Data File Name	227SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:31:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	114575.159	ppb	114575.159	2.92	14770137	400000	
Mg	24	3	45	12903.456	ppb	12903.456	3.04	858277	400000	
Al	27	3	45	33.638	ppb	33.638	9.91	904	400000	
K	39	3	45	4618.865	ppb	4618.865	3.55	268629	400000	
Ca	40	2	45	30199.323	ppb	30199.323	1.94	17925986	400000	
V	51	3	72	0.692	ppb	0.692	18.81	720	2000	
Cr	52	3	72	0.478	ppb	0.478	4.58	1856	5000	
Mn	55	3	72	3.812	ppb	3.812	9.96	1916	10000	
Fe	56	2	72	58.756	ppb	58.756	3.31	101524	10000	
Co	59	3	72	0.071	ppb	0.071	19.15	123	2000	
Ni	60	3	72	0.143	ppb	0.143	68.15	182	5000	
Cu	63	3	72	0.377	ppb	0.377	20.14	755	5000	
Zn	66	3	72	0.599	ppb	0.599	54.42	356	5000	
As	75	3	72	0.359	ppb	0.359	67.50	98	2000	
Se	78	2	72	5.606	ppb	5.606	4.31	345	2000	
(Se)	78	3	72	2.986	ppb	2.986	62.94	57	2000	
Sr	88	3	72	602.065	ppb	602.065	2.87	355644	4000	
Mo	95	3	115	23.289	ppb	23.289	1.86	12343	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-158.56	17	100	
Cd	111	3	115	0.006	ppb	0.006	2.87	5	2000	
Sn	120	3	115	0.491	ppb	0.491	9.46	916	2000	
Sb	121	3	115	0.102	ppb	0.102	24.68	207	1000	
Ba	137	3	115	74.367	ppb	74.367	2.76	19049	5000	
Tl	205	3	193	0.024	ppb	0.024	9.90	193	2000	
(Pb)	206	3	193	0.099	ppb	0.099	50.61	267	100	
(Pb)	207	3	193	0.092	ppb	0.092	15.28	411	100	
Pb	208	3	193	0.110	ppb	0.110	7.05	1233	5000	
Th	232	3	193	1.999	ppb	1.999	20.65	13743	2000	
U	238	3	193	16.797	ppb	16.797	1.24	85919	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4320047	0.48	4331237	99.74	60	120	
Sc (IS)	45	3	HMI He	677336	2.22	654817	103.44	60	120	
Ge Internal standard	72	2	HMI H2	2341830	2.86	2307933	101.47	60	120	
Ge Internal standard	72	3	HMI He	791562	2.38	744678	106.30	60	120	
In Internal Standard	115	3	HMI He	2625827	0.94	2599142	101.03	60	120	
Ir (IS)	193	3	HMI He	5348129	0.55	5525410	96.79	60	120	

Sample Report

Sample Table

Sample Name	280-171476-n-1-b
Data File Name	228SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:33:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.095	ppb	0.095	173.21	5	2000	
Na	23	3	45	1172793.588	ppb	1172793.588	2.70	157069002	400000	
Mg	24	3	45	92349.337	ppb	92349.337	1.69	6401532	400000	
Al	27	3	45	156.928	ppb	156.928	3.79	4048	400000	
K	39	3	45	287038.827	ppb	287038.827	1.91	15667303	400000	
Ca	40	2	45	106723.228	ppb	106723.228	2.47	65711809	400000	
V	51	3	72	21.450	ppb	21.450	2.05	14774	2000	
Cr	52	3	72	90.503	ppb	90.503	2.73	78722	5000	
Mn	55	3	72	354.367	ppb	354.367	2.73	163822	10000	
Fe	56	2	72	5258.175	ppb	5258.175	3.52	8306378	10000	
Co	59	3	72	24.247	ppb	24.247	2.35	33569	2000	
Ni	60	3	72	131.224	ppb	131.224	1.06	50451	5000	
Cu	63	3	72	3.187	ppb	3.187	6.32	3674	5000	
Zn	66	3	72	42.150	ppb	42.150	1.71	7997	5000	
As	75	3	72	100.160	ppb	100.160	4.06	12863	2000	
Se	78	2	72	1.197	ppb	1.197	11.33	77	2000	
(Se)	78	3	72	-2.244	ppb	-2.244	-29.20	20	2000	
Sr	88	3	72	1023.767	ppb	1023.767	2.84	613111	4000	
Mo	95	3	115	5.962	ppb	5.962	8.41	3179	2000	
Ag	107	3	115	0.012	ppb	0.012	62.07	40	100	
Cd	111	3	115	0.058	ppb	0.058	51.09	18	2000	
Sn	120	3	115	8.354	ppb	8.354	6.29	7055	2000	
Sb	121	3	115	4.651	ppb	4.651	7.79	3799	1000	
Ba	137	3	115	922.918	ppb	922.918	2.99	235150	5000	
Tl	205	3	193	0.006	ppb	0.006	208.33	130	2000	
(Pb)	206	3	193	2.626	ppb	2.626	6.08	3240	100	
(Pb)	207	3	193	2.538	ppb	2.538	1.92	2962	100	
Pb	208	3	193	2.549	ppb	2.549	1.82	12791	5000	
Th	232	3	193	0.277	ppb	0.277	22.92	5427	2000	
U	238	3	193	0.202	ppb	0.202	4.75	2506	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4484558	1.87	4331237	103.54	60	120	
Sc (IS)	45	3	HMI He	705831	1.54	654817	107.79	60	120	
Ge Internal standard	72	2	HMI H2	2362763	2.64	2307933	102.38	60	120	
Ge Internal standard	72	3	HMI He	802455	1.71	744678	107.76	60	120	
In Internal Standard	115	3	HMI He	2621062	2.01	2599142	100.84	60	120	
Ir (IS)	193	3	HMI He	5293930	1.10	5525410	95.81	60	120	

Sample Report

Sample Table

Sample Name	280-171476-n-2-b
Data File Name	229SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:35:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	1512078.938	ppb	1512078.938	2.19	186130999	400000	
Mg	24	3	45	87138.032	ppb	87138.032	1.40	5552045	400000	
Al	27	3	45	311.486	ppb	311.486	5.94	7299	400000	
K	39	3	45	357065.220	ppb	357065.220	2.06	17907724	400000	
Ca	40	2	45	117691.520	ppb	117691.520	1.27	67196337	400000	
V	51	3	72	68.232	ppb	68.232	2.87	43397	2000	
Cr	52	3	72	208.057	ppb	208.057	0.76	167427	5000	
Mn	55	3	72	364.777	ppb	364.777	2.20	157656	10000	
Fe	56	2	72	3269.811	ppb	3269.811	2.78	4829651	10000	
Co	59	3	72	35.016	ppb	35.016	3.53	45306	2000	
Ni	60	3	72	203.765	ppb	203.765	1.41	73164	5000	
Cu	63	3	72	7.053	ppb	7.053	2.62	7177	5000	
Zn	66	3	72	90.623	ppb	90.623	2.49	15796	5000	
As	75	3	72	144.693	ppb	144.693	1.57	17354	2000	
Se	78	2	72	2.306	ppb	2.306	8.71	135	2000	
(Se)	78	3	72	0.699	ppb	0.699	486.79	38	2000	
Sr	88	3	72	1184.255	ppb	1184.255	1.99	663086	4000	
Mo	95	3	115	14.188	ppb	14.188	3.07	7127	2000	
Ag	107	3	115	0.022	ppb	0.022	40.87	53	100	
Cd	111	3	115	0.124	ppb	0.124	42.90	33	2000	
Sn	120	3	115	24.516	ppb	24.516	4.42	18655	2000	
Sb	121	3	115	27.600	ppb	27.600	1.43	20778	1000	
Ba	137	3	115	1031.315	ppb	1031.315	1.39	249105	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-250.11	93	2000	
(Pb)	206	3	193	5.968	ppb	5.968	1.40	6738	100	
(Pb)	207	3	193	5.619	ppb	5.619	3.92	5805	100	
Pb	208	3	193	5.851	ppb	5.851	0.80	26723	5000	
Th	232	3	193	0.191	ppb	0.191	6.61	4719	2000	
U	238	3	193	0.202	ppb	0.202	9.52	2354	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4158196	1.35	4331237	96.00	60	120	
Sc (IS)	45	3	HMI He	648754	1.49	654817	99.07	60	120	
Ge Internal standard	72	2	HMI H2	2207015	0.41	2307933	95.63	60	120	
Ge Internal standard	72	3	HMI He	750110	0.93	744678	100.73	60	120	
In Internal Standard	115	3	HMI He	2484212	1.25	2599142	95.58	60	120	
Ir (IS)	193	3	HMI He	4971952	0.76	5525410	89.98	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	230_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:37:09-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	53.136	ppb	3.646	2722	50	106.3	90	110	
Na	23	3	45	51052.529	ppb	1.364	6274599	51000	100.1	90	110	
Mg	24	3	45	10917.666	ppb	1.484	689362	11000	99.3	90	110	
Al	27	3	45	1008.365	ppb	3.623	23222	1000	100.8	90	110	
K	39	3	45	10868.825	ppb	1.276	565109	11000	98.8	90	110	
Ca	40	2	45	11350.578	ppb	0.988	6452837	11000	103.2	90	110	
V	51	3	72	52.690	ppb	2.676	32194	50	105.4	90	110	
Cr	52	3	72	51.619	ppb	2.105	40826	50	103.2	90	110	
Mn	55	3	72	51.453	ppb	2.826	21468	50	102.9	90	110	
Fe	56	2	72	1101.594	ppb	0.566	1597111	1000	110.2	90	110	>+\-10%
Co	59	3	72	50.757	ppb	2.614	62976	50	101.5	90	110	
Ni	60	3	72	49.586	ppb	3.555	17160	50	99.2	90	110	
Cu	63	3	72	51.150	ppb	2.202	47812	50	102.3	90	110	
Zn	66	3	72	50.703	ppb	2.784	8577	50	101.4	90	110	
As	75	3	72	52.120	ppb	4.275	6025	50	104.2	90	110	
Se	78	2	72	51.287	ppb	0.891	2891	50	102.6	90	110	
(Se)	78	3	72	51.133	ppb	9.288	361	50	102.3	90	110	
Sr	88	3	72	104.088	ppb	2.487	55930	100	104.1	90	110	
Mo	95	3	115	50.251	ppb	2.315	25496	50	100.5	90	110	
Ag	107	3	115	48.792	ppb	1.184	81979	50	97.6	90	110	
Cd	111	3	115	49.397	ppb	4.572	12208	50	98.8	90	110	
Sn	120	3	115	51.679	ppb	2.452	39303	50	103.4	90	110	
Sb	121	3	115	50.764	ppb	2.329	38635	50	101.5	90	110	
Ba	137	3	115	50.376	ppb	2.935	12396	50	100.8	90	110	
Tl	205	3	193	51.153	ppb	3.006	175600	50	102.3	90	110	
(Pb)	206	3	193	50.546	ppb	2.592	58438	50	101.1	90	110	
(Pb)	207	3	193	50.406	ppb	2.254	51888	50	100.8	90	110	
Pb	208	3	193	50.595	ppb	2.328	235778	50	101.2	90	110	
Th	232	3	193	50.646	ppb	2.571	239332	50	101.3	90	110	
U	238	3	193	51.275	ppb	3.055	251268	50	102.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4131984	0.68	4331237	95.40	60	120	
Sc (IS)	45	3	HMI He	642697	0.66	654817	98.15	60	120	
Ge Internal standard	72	2	HMI H2	2158170	0.65	2307933	93.51	60	120	
Ge Internal standard	72	3	HMI He	719384	0.95	744678	96.60	60	120	
In Internal Standard	115	3	HMI He	2518154	0.95	2599142	96.88	60	120	
Ir (IS)	193	3	HMI He	5186297	1.38	5525410	93.86	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	231_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:39:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.032	ppb	173.2	2	0.5	
Na	23	3	45	352.487	ppb	3.6	90105	25	>RL
Mg	24	3	45	18.588	ppb	15.6	1328	25	
Al	27	3	45	7.033	ppb	26.8	240	15	
K	39	3	45	38.005	ppb	67.0	26976	50	
V	51	3	72	0.141	ppb	33.8	310	1	
Cr	52	3	72	0.043	ppb	143.7	1309	1	
Mn	55	3	72	0.089	ppb	42.3	195	0.5	
Co	59	3	72	0.021	ppb	49.8	48	0.5	
Ni	60	3	72	0.073	ppb	43.8	137	1	
Cu	63	3	72	0.099	ppb	11.6	415	1	
Zn	66	3	72	0.514	ppb	36.4	300	5	
As	75	3	72	0.043	ppb	974.7	52	1	
Se	78	2	72	0.050	ppb	107.0	5	1	
(Se)	78	3	72	-1.013	ppb	-74.6	25	1	
Sr	88	3	72	0.197	ppb	33.1	143	0.5	
Mo	95	3	115	0.054	ppb	60.2	60	0.5	
Ag	107	3	115	0.005	ppb	65.4	25	1	
Cd	111	3	115	0.001	ppb	1108.1	3	0.5	
Sn	120	3	115	0.343	ppb	20.6	738	1	
Sb	121	3	115	0.064	ppb	60.5	163	0.6	
Ba	137	3	115	0.027	ppb	422.5	70	0.5	
Tl	205	3	193	0.008	ppb	76.9	130	0.1	
(Pb)	206	3	193	0.000	ppb	-6745.3	140	1	
(Pb)	207	3	193	-0.016	ppb	-62.2	282	1	
Pb	208	3	193	0.017	ppb	31.8	741	0.5	
Th	232	3	193	0.696	ppb	23.0	7097	1	
U	238	3	193	0.035	ppb	48.4	1601	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4105741	0.27	4331237	94.79	60	120	
Sc (IS)	45	3	HMI He	625413	1.87	654817	95.51	60	120	
Ge Internal standard	72	2	HMI H2	2168920	0.60	2307933	93.98	60	120	
Ge Internal standard	72	3	HMI He	695721	1.16	744678	93.43	60	120	
In Internal Standard	115	3	HMI He	2420347	1.39	2599142	93.12	60	120	
Ir (IS)	193	3	HMI He	5069536	3.20	5525410	91.75	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-1-a
Data File Name	232SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:40:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	41400.882	ppb	41400.882	8.73	4864683	400000	
Mg	24	3	45	10094.033	ppb	10094.033	10.08	607677	400000	
Al	27	3	45	186.678	ppb	186.678	18.79	4148	400000	
K	39	3	45	2395.082	ppb	2395.082	11.00	138028	400000	
Ca	40	2	45	43176.967	ppb	43176.967	1.00	23140999	400000	
V	51	3	72	1.164	ppb	1.164	13.04	940	2000	
Cr	52	3	72	0.773	ppb	0.773	15.29	1914	5000	
Mn	55	3	72	31.213	ppb	31.213	6.94	13085	10000	
Fe	56	2	72	207.746	ppb	207.746	0.53	301791	10000	
Co	59	3	72	0.243	ppb	0.243	21.11	325	2000	
Ni	60	3	72	0.552	ppb	0.552	29.11	305	5000	
Cu	63	3	72	3.019	ppb	3.019	14.15	3132	5000	
Zn	66	3	72	18.507	ppb	18.507	11.48	3267	5000	
As	75	3	72	0.468	ppb	0.468	35.51	102	2000	
Se	78	2	72	0.246	ppb	0.246	39.30	16	2000	
(Se)	78	3	72	-2.132	ppb	-2.132	-52.98	18	2000	
Sr	88	3	72	125.065	ppb	125.065	8.38	67126	4000	
Mo	95	3	115	5.437	ppb	5.437	11.60	2642	2000	
Ag	107	3	115	0.003	ppb	0.003	263.12	22	100	
Cd	111	3	115	0.072	ppb	0.072	47.70	20	2000	
Sn	120	3	115	0.202	ppb	0.202	1.79	630	2000	
Sb	121	3	115	0.220	ppb	0.220	13.07	273	1000	
Ba	137	3	115	66.678	ppb	66.678	10.17	15525	5000	
Tl	205	3	193	0.011	ppb	0.011	116.00	138	2000	
(Pb)	206	3	193	0.502	ppb	0.502	8.99	703	100	
(Pb)	207	3	193	0.468	ppb	0.468	6.69	761	100	
Pb	208	3	193	0.503	ppb	0.503	6.21	2932	5000	
Th	232	3	193	0.274	ppb	0.274	11.41	5160	2000	
U	238	3	193	24.761	ppb	24.761	5.39	118547	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3902078	2.07	4331237	90.09	60	120	
Sc (IS)	45	3	HMI He	615946	7.88	654817	94.06	60	120	
Ge Internal standard	72	2	HMI H2	2111817	0.26	2307933	91.50	60	120	
Ge Internal standard	72	3	HMI He	721247	6.70	744678	96.85	60	120	
In Internal Standard	115	3	HMI He	2396003	6.54	2599142	92.18	60	120	
Ir (IS)	193	3	HMI He	5044611	5.84	5525410	91.30	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-5-b
Data File Name	233SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:42:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	28971.514	ppb	28971.514	1.17	3547556	400000	
Mg	24	3	45	14485.385	ppb	14485.385	0.24	905715	400000	
Al	27	3	45	580.807	ppb	580.807	2.24	13283	400000	
K	39	3	45	2254.435	ppb	2254.435	1.79	136346	400000	
Ca	40	2	45	53256.024	ppb	53256.024	1.97	29778411	400000	
V	51	3	72	1.144	ppb	1.144	13.45	961	2000	
Cr	52	3	72	1.144	ppb	1.144	7.12	2269	5000	
Mn	55	3	72	68.854	ppb	68.854	4.79	29592	10000	
Fe	56	2	72	298.211	ppb	298.211	1.19	456096	10000	
Co	59	3	72	0.541	ppb	0.541	2.78	718	2000	
Ni	60	3	72	1.461	ppb	1.461	13.34	638	5000	
Cu	63	3	72	14.013	ppb	14.013	5.90	13767	5000	
Zn	66	3	72	37.238	ppb	37.238	6.35	6562	5000	
As	75	3	72	0.309	ppb	0.309	44.53	87	2000	
Se	78	2	72	0.286	ppb	0.286	34.49	19	2000	
(Se)	78	3	72	-1.783	ppb	-1.783	-59.19	22	2000	
Sr	88	3	72	148.082	ppb	148.082	2.64	82127	4000	
Mo	95	3	115	7.527	ppb	7.527	0.78	3822	2000	
Ag	107	3	115	0.007	ppb	0.007	3.70	30	100	
Cd	111	3	115	0.353	ppb	0.353	24.61	90	2000	
Sn	120	3	115	0.208	ppb	0.208	20.34	661	2000	
Sb	121	3	115	0.186	ppb	0.186	23.68	260	1000	
Ba	137	3	115	65.250	ppb	65.250	0.68	15922	5000	
Tl	205	3	193	0.014	ppb	0.014	25.24	157	2000	
(Pb)	206	3	193	1.732	ppb	1.732	5.33	2154	100	
(Pb)	207	3	193	1.632	ppb	1.632	9.08	1988	100	
Pb	208	3	193	1.723	ppb	1.723	4.21	8744	5000	
Th	232	3	193	0.137	ppb	0.137	10.50	4695	2000	
U	238	3	193	35.644	ppb	35.644	1.68	176174	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4071193	1.22	4331237	94.00	60	120	
Sc (IS)	45	3	HMI He	636447	0.18	654817	97.19	60	120	
Ge Internal standard	72	2	HMI H2	2243068	0.45	2307933	97.19	60	120	
Ge Internal standard	72	3	HMI He	742917	2.81	744678	99.76	60	120	
In Internal Standard	115	3	HMI He	2499776	1.56	2599142	96.18	60	120	
Ir (IS)	193	3	HMI He	5216778	1.29	5525410	94.41	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-b
Data File Name	234SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:44:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	29691.030	ppb	29691.030	1.45	3651001	400000	
Mg	24	3	45	13612.402	ppb	13612.402	1.88	855059	400000	
Al	27	3	45	39.689	ppb	39.689	11.28	991	400000	
K	39	3	45	2275.564	ppb	2275.564	2.35	138010	400000	
Ca	40	2	45	52982.087	ppb	52982.087	3.29	29118168	400000	
V	51	3	72	0.601	ppb	0.601	12.37	620	2000	
Cr	52	3	72	0.638	ppb	0.638	19.27	1866	5000	
Mn	55	3	72	14.117	ppb	14.117	3.09	6202	10000	
Fe	56	2	72	30.678	ppb	30.678	1.44	54193	10000	
Co	59	3	72	0.092	ppb	0.092	21.99	143	2000	
Ni	60	3	72	0.465	ppb	0.465	40.59	285	5000	
Cu	63	3	72	3.176	ppb	3.176	4.48	3390	5000	
Zn	66	3	72	12.724	ppb	12.724	6.44	2394	5000	
As	75	3	72	0.265	ppb	0.265	28.60	82	2000	
Se	78	2	72	0.327	ppb	0.327	5.03	21	2000	
(Se)	78	3	72	-2.994	ppb	-2.994	-54.07	13	2000	
Sr	88	3	72	151.179	ppb	151.179	1.90	83818	4000	
Mo	95	3	115	9.473	ppb	9.473	5.05	4785	2000	
Ag	107	3	115	0.001	ppb	0.001	697.99	20	100	
Cd	111	3	115	0.191	ppb	0.191	19.22	50	2000	
Sn	120	3	115	0.185	ppb	0.185	67.61	643	2000	
Sb	121	3	115	0.233	ppb	0.233	9.66	295	1000	
Ba	137	3	115	60.411	ppb	60.411	2.29	14703	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-131.35	103	2000	
(Pb)	206	3	193	0.047	ppb	0.047	20.47	200	100	
(Pb)	207	3	193	0.036	ppb	0.036	66.03	343	100	
Pb	208	3	193	0.070	ppb	0.070	3.54	1013	5000	
Th	232	3	193	0.058	ppb	0.058	37.99	4320	2000	
U	238	3	193	38.146	ppb	38.146	2.69	188223	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4003201	2.47	4331237	92.43	60	120	
Sc (IS)	45	3	HMI He	639428	1.37	654817	97.65	60	120	
Ge Internal standard	72	2	HMI H2	2201283	1.77	2307933	95.38	60	120	
Ge Internal standard	72	3	HMI He	742505	1.94	744678	99.71	60	120	
In Internal Standard	115	3	HMI He	2492401	0.81	2599142	95.89	60	120	
Ir (IS)	193	3	HMI He	5211748	1.87	5525410	94.32	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-c ms
Data File Name	235SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:46:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.827	ppb	39.827	7.21	2091	2000	
Na	23	3	45	30947.530	ppb	30947.530	1.88	3830176	400000	
Mg	24	3	45	14805.208	ppb	14805.208	0.79	936510	400000	
Al	27	3	45	809.444	ppb	809.444	2.96	18694	400000	
K	39	3	45	3084.231	ppb	3084.231	1.56	179184	400000	
Ca	40	2	45	54155.732	ppb	54155.732	2.21	31390533	400000	
V	51	3	72	40.375	ppb	40.375	1.97	25941	2000	
Cr	52	3	72	40.052	ppb	40.052	1.98	33547	5000	
Mn	55	3	72	54.797	ppb	54.797	1.92	23977	10000	
Fe	56	2	72	840.641	ppb	840.641	1.67	1304892	10000	
Co	59	3	72	39.314	ppb	39.314	3.57	51170	2000	
Ni	60	3	72	38.591	ppb	38.591	2.90	14039	5000	
Cu	63	3	72	42.870	ppb	42.870	2.95	42093	5000	
Zn	66	3	72	50.768	ppb	50.768	0.47	9010	5000	
As	75	3	72	39.549	ppb	39.549	1.36	4810	2000	
Se	78	2	72	41.503	ppb	41.503	4.04	2501	2000	
(Se)	78	3	72	44.444	ppb	44.444	24.61	333	2000	
Sr	88	3	72	231.946	ppb	231.946	2.16	130709	4000	
Mo	95	3	115	49.392	ppb	49.392	1.24	25486	2000	
Ag	107	3	115	39.275	ppb	39.275	1.15	67103	100	
Cd	111	3	115	40.379	ppb	40.379	4.03	10147	2000	
Sn	120	3	115	39.117	ppb	39.117	0.15	30379	2000	
Sb	121	3	115	40.069	ppb	40.069	0.25	31037	1000	
Ba	137	3	115	98.905	ppb	98.905	0.40	24686	5000	
Tl	205	3	193	41.599	ppb	41.599	1.87	144724	2000	
(Pb)	206	3	193	41.244	ppb	41.244	0.64	48345	100	
(Pb)	207	3	193	40.774	ppb	40.774	1.73	42587	100	
Pb	208	3	193	41.209	ppb	41.209	0.72	194719	5000	
Th	232	3	193	41.545	ppb	41.545	0.82	199663	2000	
U	238	3	193	81.042	ppb	81.042	1.18	401568	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4220383	1.04	4331237	97.44	60	120	
Sc (IS)	45	3	HMI He	643870	0.41	654817	98.33	60	120	
Ge Internal standard	72	2	HMI H2	2306641	0.35	2307933	99.94	60	120	
Ge Internal standard	72	3	HMI He	754872	2.33	744678	101.37	60	120	
In Internal Standard	115	3	HMI He	2560448	0.77	2599142	98.51	60	120	
Ir (IS)	193	3	HMI He	5254070	0.26	5525410	95.09	60	120	

Sample Report

Sample Table

Sample Name	160-48477-a-6-d msd
Data File Name	236SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:48:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.987	ppb	39.987	4.40	2011	2000	
Na	23	3	45	30709.615	ppb	30709.615	1.03	3629866	400000	
Mg	24	3	45	14804.263	ppb	14804.263	2.70	894122	400000	
Al	27	3	45	795.052	ppb	795.052	1.07	17535	400000	
K	39	3	45	3045.967	ppb	3045.967	2.46	169250	400000	
Ca	40	2	45	52482.601	ppb	52482.601	1.01	29156652	400000	
V	51	3	72	40.529	ppb	40.529	0.80	24371	2000	
Cr	52	3	72	41.039	ppb	41.039	2.49	32124	5000	
Mn	55	3	72	54.910	ppb	54.910	2.82	22479	10000	
Fe	56	2	72	831.490	ppb	831.490	1.90	1222517	10000	
Co	59	3	72	38.937	ppb	38.937	2.06	47427	2000	
Ni	60	3	72	38.206	ppb	38.206	0.39	13010	5000	
Cu	63	3	72	42.845	ppb	42.845	2.57	39365	5000	
Zn	66	3	72	51.840	ppb	51.840	2.64	8602	5000	
As	75	3	72	39.584	ppb	39.584	2.07	4504	2000	
Se	78	2	72	41.102	ppb	41.102	2.26	2346	2000	
(Se)	78	3	72	42.867	ppb	42.867	10.25	303	2000	
Sr	88	3	72	233.415	ppb	233.415	1.66	123074	4000	
Mo	95	3	115	48.143	ppb	48.143	0.55	23894	2000	
Ag	107	3	115	38.512	ppb	38.512	1.21	63272	100	
Cd	111	3	115	39.174	ppb	39.174	1.44	9467	2000	
Sn	120	3	115	38.498	ppb	38.498	2.00	28752	2000	
Sb	121	3	115	39.550	ppb	39.550	2.48	29451	1000	
Ba	137	3	115	98.301	ppb	98.301	0.84	23596	5000	
Tl	205	3	193	41.446	ppb	41.446	0.35	137835	2000	
(Pb)	206	3	193	40.796	ppb	40.796	0.67	45713	100	
(Pb)	207	3	193	40.528	ppb	40.528	2.03	40468	100	
Pb	208	3	193	41.117	ppb	41.117	0.60	185720	5000	
Th	232	3	193	41.980	ppb	41.980	0.49	192816	2000	
U	238	3	193	79.916	ppb	79.916	1.20	378552	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4044649	0.35	4331237	93.38	60	120	
Sc (IS)	45	3	HMI He	614838	1.94	654817	93.89	60	120	
Ge Internal standard	72	2	HMI H2	2185124	1.82	2307933	94.68	60	120	
Ge Internal standard	72	3	HMI He	706251	2.33	744678	94.84	60	120	
In Internal Standard	115	3	HMI He	2462492	3.01	2599142	94.74	60	120	
Ir (IS)	193	3	HMI He	5022279	0.54	5525410	90.89	60	120	

Sample Report

Sample Table

Sample Name	160-48478-a-3-b
Data File Name	237SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:50:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	11788.628	ppb	11788.628	0.15	1390819	400000	
Mg	24	3	45	25220.925	ppb	25220.925	1.84	1489152	400000	
Al	27	3	45	2.680	ppb	2.680	39.62	137	400000	
K	39	3	45	3018.918	ppb	3018.918	0.50	164242	400000	
Ca	40	2	45	19651.156	ppb	19651.156	2.01	10944214	400000	
V	51	3	72	0.229	ppb	0.229	11.98	356	2000	
Cr	52	3	72	0.266	ppb	0.266	14.17	1453	5000	
Mn	55	3	72	78.246	ppb	78.246	1.58	31031	10000	
Fe	56	2	72	646.519	ppb	646.519	2.33	936384	10000	
Co	59	3	72	0.049	ppb	0.049	52.82	82	2000	
Ni	60	3	72	0.124	ppb	0.124	38.56	152	5000	
Cu	63	3	72	0.211	ppb	0.211	25.19	508	5000	
Zn	66	3	72	1.734	ppb	1.734	19.99	486	5000	
As	75	3	72	0.141	ppb	0.141	245.45	62	2000	
Se	78	2	72	0.170	ppb	0.170	36.90	12	2000	
(Se)	78	3	72	-2.855	ppb	-2.855	-14.86	13	2000	
Sr	88	3	72	363.702	ppb	363.702	0.34	186170	4000	
Mo	95	3	115	4.298	ppb	4.298	6.13	2099	2000	
Ag	107	3	115	0.001	ppb	0.001	639.70	18	100	
Cd	111	3	115	0.001	ppb	0.001	1029.59	3	2000	
Sn	120	3	115	0.866	ppb	0.866	8.99	1100	2000	
Sb	121	3	115	0.063	ppb	0.063	68.87	160	1000	
Ba	137	3	115	12.599	ppb	12.599	6.80	2987	5000	
Tl	205	3	193	0.003	ppb	0.003	144.11	113	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1468.73	137	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-52.16	260	100	
Pb	208	3	193	0.013	ppb	0.013	116.40	716	5000	
Th	232	3	193	0.678	ppb	0.678	23.56	6924	2000	
U	238	3	193	0.046	ppb	0.046	79.20	1634	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4051923	1.08	4331237	93.55	60	120	
Sc (IS)	45	3	HMI He	601074	1.36	654817	91.79	60	120	
Ge Internal standard	72	2	HMI H2	2147732	0.70	2307933	93.06	60	120	
Ge Internal standard	72	3	HMI He	685598	2.40	744678	92.07	60	120	
In Internal Standard	115	3	HMI He	2387248	0.92	2599142	91.85	60	120	
Ir (IS)	193	3	HMI He	4997677	1.10	5525410	90.45	60	120	

Sample Report

Sample Table

Sample Name	160-48478-a-7-b
Data File Name	238SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:52:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	10856.301	ppb	10856.301	1.30	1339950	400000	
Mg	24	3	45	22241.514	ppb	22241.514	0.27	1369918	400000	
Al	27	3	45	5.552	ppb	5.552	32.76	207	400000	
K	39	3	45	2703.766	ppb	2703.766	1.78	156092	400000	
Ca	40	2	45	17380.417	ppb	17380.417	2.20	10040652	400000	
V	51	3	72	0.077	ppb	0.077	47.86	278	2000	
Cr	52	3	72	0.203	ppb	0.203	94.77	1456	5000	
Mn	55	3	72	70.641	ppb	70.641	0.19	29029	10000	
Fe	56	2	72	574.958	ppb	574.958	2.00	876253	10000	
Co	59	3	72	0.063	ppb	0.063	33.60	102	2000	
Ni	60	3	72	0.251	ppb	0.251	6.48	200	5000	
Cu	63	3	72	0.306	ppb	0.306	27.99	613	5000	
Zn	66	3	72	2.719	ppb	2.719	9.06	665	5000	
As	75	3	72	0.076	ppb	0.076	180.61	57	2000	
Se	78	2	72	-0.033	ppb	-0.033	-59.04	1	2000	
(Se)	78	3	72	-1.352	ppb	-1.352	-201.99	23	2000	
Sr	88	3	72	328.483	ppb	328.483	1.39	174139	4000	
Mo	95	3	115	3.664	ppb	3.664	9.55	1888	2000	
Ag	107	3	115	0.002	ppb	0.002	188.07	22	100	
Cd	111	3	115	0.007	ppb	0.007	278.99	5	2000	
Sn	120	3	115	0.982	ppb	0.982	8.58	1244	2000	
Sb	121	3	115	0.017	ppb	0.017	59.15	133	1000	
Ba	137	3	115	10.910	ppb	10.910	7.50	2731	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-150.41	97	2000	
(Pb)	206	3	193	-0.001	ppb	-0.001	-1721.33	142	100	
(Pb)	207	3	193	0.015	ppb	0.015	190.02	320	100	
Pb	208	3	193	0.011	ppb	0.011	41.50	731	5000	
Th	232	3	193	0.097	ppb	0.097	63.22	4465	2000	
U	238	3	193	0.037	ppb	0.037	63.53	1644	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4203141	2.31	4331237	97.04	60	120	
Sc (IS)	45	3	HMI He	626996	1.25	654817	95.75	60	120	
Ge Internal standard	72	2	HMI H2	2256828	1.31	2307933	97.79	60	120	
Ge Internal standard	72	3	HMI He	709897	1.63	744678	95.33	60	120	
In Internal Standard	115	3	HMI He	2512065	0.06	2599142	96.65	60	120	
Ir (IS)	193	3	HMI He	5169749	2.26	5525410	93.56	60	120	

Sample Report

Sample Table

Sample Name	160-48480-a-1-b
Data File Name	239SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:54:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600128 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	33271.297	ppb	33271.297	0.78	4079540	400000	
Mg	24	3	45	16743.593	ppb	16743.593	3.97	1050061	400000	
Al	27	3	45	114.273	ppb	114.273	3.37	2690	400000	
K	39	3	45	3246.236	ppb	3246.236	0.81	185661	400000	
Ca	40	2	45	65472.827	ppb	65472.827	1.00	37448735	400000	
V	51	3	72	0.890	ppb	0.890	6.49	816	2000	
Cr	52	3	72	0.949	ppb	0.949	17.63	2159	5000	
Mn	55	3	72	31.704	ppb	31.704	2.86	14005	10000	
Fe	56	2	72	119.727	ppb	119.727	2.87	191078	10000	
Co	59	3	72	0.183	ppb	0.183	14.54	265	2000	
Ni	60	3	72	0.550	ppb	0.550	10.21	322	5000	
Cu	63	3	72	5.491	ppb	5.491	5.16	5723	5000	
Zn	66	3	72	15.380	ppb	15.380	4.16	2906	5000	
As	75	3	72	0.073	ppb	0.073	107.44	60	2000	
Se	78	2	72	0.496	ppb	0.496	19.81	32	2000	
(Se)	78	3	72	-2.811	ppb	-2.811	-1.34	15	2000	
Sr	88	3	72	190.371	ppb	190.371	1.61	107750	4000	
Mo	95	3	115	18.086	ppb	18.086	2.15	9015	2000	
Ag	107	3	115	0.005	ppb	0.005	170.98	25	100	
Cd	111	3	115	0.207	ppb	0.207	30.99	53	2000	
Sn	120	3	115	0.109	ppb	0.109	69.84	580	2000	
Sb	121	3	115	0.154	ppb	0.154	25.84	233	1000	
Ba	137	3	115	79.963	ppb	79.963	0.70	19248	5000	
Tl	205	3	193	0.011	ppb	0.011	30.48	147	2000	
(Pb)	206	3	193	0.277	ppb	0.277	11.71	470	100	
(Pb)	207	3	193	0.255	ppb	0.255	28.92	573	100	
Pb	208	3	193	0.269	ppb	0.269	8.92	1959	5000	
Th	232	3	193	0.083	ppb	0.083	62.13	4475	2000	
U	238	3	193	85.373	ppb	85.373	1.60	423022	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4164612	0.28	4331237	96.15	60	120	
Sc (IS)	45	3	HMI He	638446	0.44	654817	97.50	60	120	
Ge Internal standard	72	2	HMI H2	2272444	1.61	2307933	98.46	60	120	
Ge Internal standard	72	3	HMI He	758038	1.70	744678	101.79	60	120	
In Internal Standard	115	3	HMI He	2467595	1.36	2599142	94.94	60	120	
Ir (IS)	193	3	HMI He	5255169	0.54	5525410	95.11	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	240_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:55:55-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.009	ppb	6.016	2656	50	102.0	90	110	
Na	23	3	45	50448.291	ppb	0.560	6249165	51000	98.9	90	110	
Mg	24	3	45	10932.314	ppb	2.450	695643	11000	99.4	90	110	
Al	27	3	45	1039.483	ppb	1.164	24125	1000	103.9	90	110	
K	39	3	45	10582.114	ppb	0.536	555163	11000	96.2	90	110	
Ca	40	2	45	11046.880	ppb	1.418	6393868	11000	100.4	90	110	
V	51	3	72	50.098	ppb	3.360	31762	50	100.2	90	110	
Cr	52	3	72	49.963	ppb	1.287	41043	50	99.9	90	110	
Mn	55	3	72	50.653	ppb	2.086	21928	50	101.3	90	110	
Fe	56	2	72	1047.999	ppb	2.253	1577936	1000	104.8	90	110	
Co	59	3	72	49.933	ppb	2.687	64268	50	99.9	90	110	
Ni	60	3	72	50.290	ppb	2.941	18054	50	100.6	90	110	
Cu	63	3	72	49.359	ppb	4.012	47862	50	98.7	90	110	
Zn	66	3	72	49.515	ppb	3.007	8693	50	99.0	90	110	
As	75	3	72	49.684	ppb	5.483	5958	50	99.4	90	110	
Se	78	2	72	50.891	ppb	0.960	2978	50	101.8	90	110	
(Se)	78	3	72	55.262	ppb	14.529	403	50	110.5	90	110	>+\-10%
Sr	88	3	72	100.842	ppb	2.499	56214	100	100.8	90	110	
Mo	95	3	115	50.731	ppb	1.076	25755	50	101.5	90	110	
Ag	107	3	115	49.492	ppb	1.500	83195	50	99.0	90	110	
Cd	111	3	115	50.647	ppb	2.461	12525	50	101.3	90	110	
Sn	120	3	115	52.935	ppb	1.599	40271	50	105.9	90	110	
Sb	121	3	115	51.755	ppb	0.667	39410	50	103.5	90	110	
Ba	137	3	115	50.318	ppb	2.166	12390	50	100.6	90	110	
Tl	205	3	193	51.288	ppb	2.279	181221	50	102.6	90	110	
(Pb)	206	3	193	51.277	ppb	2.963	61011	50	102.6	90	110	
(Pb)	207	3	193	50.658	ppb	1.409	53677	50	101.3	90	110	
Pb	208	3	193	50.977	ppb	2.595	244491	50	102.0	90	110	
Th	232	3	193	51.104	ppb	2.647	248510	50	102.2	90	110	
U	238	3	193	51.068	ppb	2.795	257576	50	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4206832	1.67	4331237	97.13	60	120	
Sc (IS)	45	3	HMI He	647679	0.80	654817	98.91	60	120	
Ge Internal standard	72	2	HMI H2	2240750	0.12	2307933	97.09	60	120	
Ge Internal standard	72	3	HMI He	746428	2.28	744678	100.24	60	120	
In Internal Standard	115	3	HMI He	2519281	0.48	2599142	96.93	60	120	
Ir (IS)	193	3	HMI He	5338355	1.93	5525410	96.61	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	241_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:57:46-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	77.171	ppb	7.9	59866	25	>RL
Mg	24	3	45	10.553	ppb	13.6	868	25	
Al	27	3	45	10.069	ppb	32.8	320	15	
K	39	3	45	-41.844	ppb	-86.6	24068	50	
V	51	3	72	0.020	ppb	428.3	260	1	
Cr	52	3	72	-0.016	ppb	-846.6	1371	1	
Mn	55	3	72	0.070	ppb	39.1	203	0.5	
Co	59	3	72	0.002	ppb	343.8	28	0.5	
Ni	60	3	72	-0.010	ppb	-386.8	118	1	
Cu	63	3	72	0.087	ppb	54.2	438	1	
Zn	66	3	72	0.581	ppb	45.7	337	5	
As	75	3	72	-0.174	ppb	-46.2	30	1	
Se	78	2	72	0.036	ppb	56.2	5	1	
(Se)	78	3	72	-0.603	ppb	-307.2	30	1	
Sr	88	3	72	0.085	ppb	6.8	92	0.5	
Mo	95	3	115	0.014	ppb	224.4	43	0.5	
Ag	107	3	115	0.002	ppb	159.6	22	1	
Cd	111	3	115	0.013	ppb	84.8	7	0.5	
Sn	120	3	115	0.401	ppb	11.0	828	1	
Sb	121	3	115	-0.041	ppb	-53.0	92	0.6	
Ba	137	3	115	-0.031	ppb	-256.4	60	0.5	
Tl	205	3	193	0.003	ppb	232.0	123	0.1	
(Pb)	206	3	193	0.003	ppb	1360.2	153	1	
(Pb)	207	3	193	0.010	ppb	263.7	328	1	
Pb	208	3	193	0.016	ppb	89.8	790	0.5	
Th	232	3	193	0.633	ppb	24.6	7270	1	
U	238	3	193	-0.005	ppb	-287.6	1508	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4157316	1.41	4331237	95.98	60	120	
Sc (IS)	45	3	HMI He	651638	0.72	654817	99.51	60	120	
Ge Internal standard	72	2	HMI H2	2226910	2.20	2307933	96.49	60	120	
Ge Internal standard	72	3	HMI He	753866	2.51	744678	101.23	60	120	
In Internal Standard	115	3	HMI He	2570662	0.69	2599142	98.90	60	120	
Ir (IS)	193	3	HMI He	5406414	0.45	5525410	97.85	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600021/1-a
Data File Name	242_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T19:59:39-07:00
Sample Type	Blank
Dilution	1
Comment	600021 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.035	ppb	173.2050808	2	0.5
Na	23	3	45	118.603	ppb	9.623698447	59213	25
Mg	24	3	45	10.370	ppb	14.10587033	781	25
Al	27	3	45	2.595	ppb	23.06982309	133	15
K	39	3	45	8.533	ppb	297.3157401	24249	50
V	51	3	72	0.108	ppb	25.65324779	282	1
Cr	52	3	72	0.227	ppb	124.6104501	1394	1
Mn	55	3	72	0.191	ppb	27.83901299	228	0.5
Co	59	3	72	0.005	ppb	201.620893	28	0.5
Ni	60	3	72	0.013	ppb	881.2884367	113	1
Cu	63	3	72	0.113	ppb	64.85439516	413	1
Zn	66	3	72	0.222	ppb	91.61897885	245	5
As	75	3	72	-0.065	ppb	-100.8357485	38	1
(Se)	78	3	72	-0.815	ppb	-322.4774045	25	1
Sr	88	3	72	0.098	ppb	10.79122947	88	0.5
Mo	95	3	115	0.011	ppb	427.0432677	38	0.5
Ag	107	3	115	0.005	ppb	115.9848641	25	1
Cd	111	3	115	-0.013	ppb	0	0	0.5
Sn	120	3	115	0.462	ppb	32.46086657	800	1
Sb	121	3	115	0.003	ppb	1466.746581	115	0.6
Ba	137	3	115	-0.023	ppb	-243.151707	57	0.5
Tl	205	3	193	-0.001	ppb	-1923.272973	100	0.1
(Pb)	206	3	193	-0.009	ppb	-81.55720486	128	1
(Pb)	207	3	193	-0.014	ppb	-245.8264281	278	1
Pb	208	3	193	0.000	ppb	-11345.77307	653	0.5
Th	232	3	193	0.241	ppb	33.89146992	4940	1
U	238	3	193	0.014	ppb	153.4317329	1474	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3763864	1.77	4331237	86.90	60	120	
Sc (IS)	45	3	HMI He	593833	1.41	654817	90.69	60	120	
Ge Internal standard	72	2	HMI H2	1987094	0.96	2307933	86.10	60	120	
Ge Internal standard	72	3	HMI He	672399	3.10	744678	90.29	60	120	
In Internal Standard	115	3	HMI He	2348409	0.57	2599142	90.35	60	120	
Ir (IS)	193	3	HMI He	4971605	1.05	5525410	89.98	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600021/2-a
Data File Name	243_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:01:33-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600021 6020B
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.657	37.657	ppb	5.844	1916	40	94.1	80	120	
Na	23	3	45	870.603	870.603	ppb	0.604	150006	40	2176.5	80	120	>+/-20%
Mg	24	3	45	752.766	752.766	ppb	1.516	45937	40	1881.9	80	120	>+/-20%
Al	27	3	45	804.673	804.673	ppb	1.278	17863	40	2011.7	80	120	>+/-20%
K	39	3	45	748.157	748.157	ppb	5.784	60621	40	1870.4	80	120	>+/-20%
Ca	40	2	45	853.517	853.517	ppb	1.076	492086	40	2133.8	80	120	>+/-20%
V	51	3	72	40.776	40.776	ppb	1.595	24897	40	101.9	80	120	
Cr	52	3	72	39.851	39.851	ppb	2.191	31730	40	99.6	80	120	
Mn	55	3	72	40.703	40.703	ppb	1.625	16969	40	101.8	80	120	
Fe	56	2	72	854.355	854.355	ppb	4.674	1250226	40	2135.9	80	120	>+/-20%
(Fe)	56	3	72	809.111	809.111	ppb	1.446	521522	40	2022.8	80	120	>+/-20%
Co	59	3	72	39.963	39.963	ppb	2.813	49452	40	99.9	80	120	
Ni	60	3	72	39.736	39.736	ppb	0.664	13737	40	99.3	80	120	
Cu	63	3	72	41.395	41.395	ppb	2.323	38650	40	103.5	80	120	
Zn	66	3	72	40.222	40.222	ppb	4.357	6830	40	100.6	80	120	
As	75	3	72	39.313	39.313	ppb	4.428	4544	40	98.3	80	120	
Se	78	2	72	41.602	41.602	ppb	3.439	2364	40	104.0	80	120	
(Se)	78	3	72	43.490	43.490	ppb	6.274	312	40	108.7	80	120	
Sr	88	3	72	80.854	80.854	ppb	0.525	43332	40	202.1	80	120	>+/-20%
Mo	95	3	115	40.082	40.082	ppb	1.637	19441	40	100.2	80	120	
Ag	107	3	115	40.890	40.890	ppb	1.667	65654	40	102.2	80	120	
Cd	111	3	115	40.633	40.633	ppb	1.350	9597	40	101.6	80	120	
Sn	120	3	115	39.654	39.654	ppb	2.200	28934	40	99.1	80	120	
Sb	121	3	115	40.582	40.582	ppb	2.529	29540	40	101.5	80	120	
Ba	137	3	115	41.567	41.567	ppb	3.918	9787	40	103.9	80	120	
Tl	205	3	193	40.402	40.402	ppb	0.990	141361	40	101.0	80	120	
(Pb)	206	3	193	39.669	39.669	ppb	2.208	46776	40	99.2	80	120	
(Pb)	207	3	193	39.725	39.725	ppb	2.084	41735	40	99.3	80	120	
Pb	208	3	193	39.946	39.946	ppb	1.337	189847	40	99.9	80	120	
Th	232	3	193	40.697	40.697	ppb	1.527	196781	40	101.7	80	120	
U	238	3	193	40.028	40.028	ppb	0.656	200229	40	100.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4083735	1.99	4331237	94.29	60	120	
Sc (IS)	45	3	HMI He	618814	1.26	654817	94.50	60	120	
Ge Internal standard	72	2	HMI H2	2176359	2.90	2307933	94.30	60	120	
Ge Internal standard	72	3	HMI He	717239	0.35	744678	96.32	60	120	
In Internal Standard	115	3	HMI He	2405964	0.65	2599142	92.57	60	120	
Ir (IS)	193	3	HMI He	5283917	1.11	5525410	95.63	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-1-a
Data File Name	244SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:03:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	246243.838	ppb	246243.838	0.54	29199352	400000	
Mg	24	3	45	114818.892	ppb	114818.892	1.39	7037122	400000	
Al	27	3	45	2.735	ppb	2.735	24.50	143	400000	
K	39	3	45	15626.648	ppb	15626.648	1.25	777857	400000	
Ca	40	2	45	115010.353	ppb	115010.353	0.79	61589365	400000	
V	51	3	72	43.406	ppb	43.406	0.11	27368	2000	
Cr	52	3	72	0.348	ppb	0.348	33.41	1636	5000	
Mn	55	3	72	9.658	ppb	9.658	2.38	4289	10000	
Fe	56	2	72	9.126	ppb	9.126	5.69	22133	10000	
Co	59	3	72	1.495	ppb	1.495	5.21	1936	2000	
Ni	60	3	72	3.857	ppb	3.857	6.58	1486	5000	
Cu	63	3	72	0.754	ppb	0.754	14.19	1068	5000	
Zn	66	3	72	1.333	ppb	1.333	22.62	458	5000	
As	75	3	72	9.336	ppb	9.336	4.26	1153	2000	
Se	78	2	72	1.076	ppb	1.076	17.39	63	2000	
(Se)	78	3	72	-1.253	ppb	-1.253	-104.34	25	2000	
Sr	88	3	72	4497.659	ppb	4497.659	2.54	2487321	4000	
Mo	95	3	115	1.483	ppb	1.483	11.88	765	2000	
Ag	107	3	115	0.004	ppb	0.004	336.36	23	100	
Cd	111	3	115	0.015	ppb	0.015	81.80	7	2000	
Sn	120	3	115	0.321	ppb	0.321	26.15	730	2000	
Sb	121	3	115	0.089	ppb	0.089	18.88	183	1000	
Ba	137	3	115	35.656	ppb	35.656	1.31	8545	5000	
Tl	205	3	193	0.012	ppb	0.012	35.01	145	2000	
(Pb)	206	3	193	0.021	ppb	0.021	143.27	167	100	
(Pb)	207	3	193	0.000	ppb	0.000	8561.36	302	100	
Pb	208	3	193	0.034	ppb	0.034	24.92	828	5000	
Th	232	3	193	0.603	ppb	0.603	11.81	6755	2000	
U	238	3	193	34.271	ppb	34.271	0.88	166462	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899986	1.87	4331237	90.04	60	120	
Sc (IS)	45	3	HMI He	623963	0.32	654817	95.29	60	120	
Ge Internal standard	72	2	HMI H2	2165644	1.90	2307933	93.83	60	120	
Ge Internal standard	72	3	HMI He	741075	2.03	744678	99.52	60	120	
In Internal Standard	115	3	HMI He	2446675	0.18	2599142	94.13	60	120	
Ir (IS)	193	3	HMI He	5124535	0.70	5525410	92.74	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-2-a
Data File Name	245SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:05:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	243955.206	ppb	243955.206	1.82	29537236	400000	
Mg	24	3	45	112778.710	ppb	112778.710	1.13	7057228	400000	
Al	27	3	45	10.518	ppb	10.518	40.80	324	400000	
K	39	3	45	15684.403	ppb	15684.403	1.23	796991	400000	
Ca	40	2	45	112168.475	ppb	112168.475	1.17	59408431	400000	
V	51	3	72	42.573	ppb	42.573	2.10	27518	2000	
Cr	52	3	72	0.523	ppb	0.523	29.55	1816	5000	
Mn	55	3	72	10.301	ppb	10.301	3.61	4678	10000	
Fe	56	2	72	10.556	ppb	10.556	1.02	23908	10000	
Co	59	3	72	1.493	ppb	1.493	4.68	1979	2000	
Ni	60	3	72	3.726	ppb	3.726	3.32	1474	5000	
Cu	63	3	72	0.706	ppb	0.706	12.66	1048	5000	
Zn	66	3	72	1.249	ppb	1.249	20.95	455	5000	
As	75	3	72	8.852	ppb	8.852	0.68	1123	2000	
Se	78	2	72	0.947	ppb	0.947	8.38	55	2000	
(Se)	78	3	72	-1.127	ppb	-1.127	-313.85	27	2000	
Sr	88	3	72	4510.075	ppb	4510.075	0.91	2556111	4000	
Mo	95	3	115	1.480	ppb	1.480	17.97	781	2000	
Ag	107	3	115	0.008	ppb	0.008	123.20	30	100	
Cd	111	3	115	0.007	ppb	0.007	5.45	5	2000	
Sn	120	3	115	0.384	ppb	0.384	20.27	795	2000	
Sb	121	3	115	0.050	ppb	0.050	112.86	158	1000	
Ba	137	3	115	34.879	ppb	34.879	0.88	8567	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-318.21	100	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1248.80	143	100	
(Pb)	207	3	193	0.012	ppb	0.012	433.00	320	100	
Pb	208	3	193	0.032	ppb	0.032	33.23	836	5000	
Th	232	3	193	0.129	ppb	0.129	12.93	4660	2000	
U	238	3	193	33.483	ppb	33.483	2.82	165630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3857005	0.50	4331237	89.05	60	120	
Sc (IS)	45	3	HMI He	637059	0.63	654817	97.29	60	120	
Ge Internal standard	72	2	HMI H2	2138771	0.78	2307933	92.67	60	120	
Ge Internal standard	72	3	HMI He	759329	2.72	744678	101.97	60	120	
In Internal Standard	115	3	HMI He	2506875	1.97	2599142	96.45	60	120	
Ir (IS)	193	3	HMI He	5218869	1.35	5525410	94.45	60	120	

Sample Report

Sample Table

Sample Name	280-171524-a-3-a
Data File Name	246SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:07:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	189.757	ppb	189.757	6.61	70961	400000	
Mg	24	3	45	18.590	ppb	18.590	9.73	1328	400000	
Al	27	3	45	13.316	ppb	13.316	69.09	384	400000	
K	39	3	45	-15.001	ppb	-15.001	-267.58	24446	400000	
Ca	40	2	45	25.476	ppb	25.476	2.91	27030	400000	
V	51	3	72	0.182	ppb	0.182	44.38	342	2000	
Cr	52	3	72	0.515	ppb	0.515	50.35	1689	5000	
Mn	55	3	72	0.283	ppb	0.283	40.19	277	10000	
Fe	56	2	72	6.922	ppb	6.922	9.23	18381	10000	
Co	59	3	72	0.004	ppb	0.004	153.86	28	2000	
Ni	60	3	72	0.098	ppb	0.098	100.78	147	5000	
Cu	63	3	72	0.192	ppb	0.192	60.40	505	5000	
Zn	66	3	72	0.615	ppb	0.615	23.94	322	5000	
As	75	3	72	0.006	ppb	0.006	3920.35	48	2000	
Se	78	2	72	0.041	ppb	0.041	134.93	5	2000	
(Se)	78	3	72	-2.439	ppb	-2.439	-68.66	17	2000	
Sr	88	3	72	0.488	ppb	0.488	4.95	300	4000	
Mo	95	3	115	0.054	ppb	0.054	80.72	62	2000	
Ag	107	3	115	0.010	ppb	0.010	98.23	33	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.341	ppb	0.341	7.71	756	2000	
Sb	121	3	115	-0.006	ppb	-0.006	-262.31	115	1000	
Ba	137	3	115	0.088	ppb	0.088	64.88	87	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-24.37	78	2000	
(Pb)	206	3	193	0.009	ppb	0.009	131.87	155	100	
(Pb)	207	3	193	0.005	ppb	0.005	791.37	312	100	
Pb	208	3	193	0.019	ppb	0.019	85.59	771	5000	
Th	232	3	193	0.042	ppb	0.042	120.73	4247	2000	
U	238	3	193	0.011	ppb	0.011	59.29	1531	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3965467	1.96	4331237	91.56	60	120	
Sc (IS)	45	3	HMI He	626901	2.05	654817	95.74	60	120	
Ge Internal standard	72	2	HMI H2	2101183	1.38	2307933	91.04	60	120	
Ge Internal standard	72	3	HMI He	708777	4.08	744678	95.18	60	120	
In Internal Standard	115	3	HMI He	2484976	1.45	2599142	95.61	60	120	
Ir (IS)	193	3	HMI He	5208761	1.83	5525410	94.27	60	120	

Sample Report

Sample Table

Sample Name	280-171425-n-1-b
Data File Name	247SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:09:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	1936599.495	ppb	1936599.495	0.54	238475574	400000	
Mg	24	3	45	265035.409	ppb	265035.409	1.27	16891716	400000	
Al	27	3	45	70.729	ppb	70.729	6.28	1725	400000	
K	39	3	45	644439.331	ppb	644439.331	0.50	32311784	400000	
Ca	40	2	45	63780.721	ppb	63780.721	2.31	38832844	400000	
V	51	3	72	40.297	ppb	40.297	2.30	25312	2000	
Cr	52	3	72	65.704	ppb	65.704	0.93	52937	5000	
Mn	55	3	72	306.066	ppb	306.066	1.70	130160	10000	
Fe	56	2	72	6331.070	ppb	6331.070	0.73	10117904	10000	
Co	59	3	72	16.764	ppb	16.764	1.63	21352	2000	
Ni	60	3	72	334.649	ppb	334.649	1.27	118133	5000	
Cu	63	3	72	11.337	ppb	11.337	1.99	11139	5000	
Zn	66	3	72	167.963	ppb	167.963	1.87	28604	5000	
As	75	3	72	92.644	ppb	92.644	2.46	10947	2000	
Se	78	2	72	1.646	ppb	1.646	10.64	105	2000	
(Se)	78	3	72	1.294	ppb	1.294	125.08	42	2000	
Sr	88	3	72	1137.751	ppb	1137.751	0.98	626707	4000	
Mo	95	3	115	11.190	ppb	11.190	2.95	5523	2000	
Ag	107	3	115	0.025	ppb	0.025	54.79	58	100	
Cd	111	3	115	0.300	ppb	0.300	43.02	75	2000	
Sn	120	3	115	6.216	ppb	6.216	4.71	5010	2000	
Sb	121	3	115	8.668	ppb	8.668	2.67	6483	1000	
Ba	137	3	115	1026.741	ppb	1026.741	0.50	243364	5000	
Tl	205	3	193	0.000	ppb	0.000	3590.69	103	2000	
(Pb)	206	3	193	15.725	ppb	15.725	2.68	17612	100	
(Pb)	207	3	193	14.184	ppb	14.184	3.21	14281	100	
Pb	208	3	193	14.862	ppb	14.862	1.14	67199	5000	
Th	232	3	193	0.131	ppb	0.131	12.41	4470	2000	
U	238	3	193	0.719	ppb	0.719	2.77	4792	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4433401	1.78	4331237	102.36	60	120	
Sc (IS)	45	3	HMI He	648921	1.02	654817	99.10	60	120	
Ge Internal standard	72	2	HMI H2	2389855	2.23	2307933	103.55	60	120	
Ge Internal standard	72	3	HMI He	737888	1.00	744678	99.09	60	120	
In Internal Standard	115	3	HMI He	2437620	0.93	2599142	93.79	60	120	
Ir (IS)	193	3	HMI He	4996626	1.01	5525410	90.43	60	120	

Sample Report

Sample Table

Sample Name	280-171425-n-2-b
Data File Name	248SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:10:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.309	ppb	0.309	33.84	15	2000	
Na	23	3	45	1880818.828	ppb	1880818.828	0.46	222359847	400000	
Mg	24	3	45	135156.560	ppb	135156.560	0.50	8270418	400000	
Al	27	3	45	151.419	ppb	151.419	8.37	3451	400000	
K	39	3	45	489519.345	ppb	489519.345	0.83	23569278	400000	
Ca	40	2	45	119182.562	ppb	119182.562	3.02	67967731	400000	
V	51	3	72	107.427	ppb	107.427	4.13	66066	2000	
Cr	52	3	72	127.786	ppb	127.786	3.67	100146	5000	
Mn	55	3	72	553.817	ppb	553.817	3.41	231856	10000	
Fe	56	2	72	12584.432	ppb	12584.432	2.89	18754831	10000	
Co	59	3	72	38.772	ppb	38.772	3.91	48607	2000	
Ni	60	3	72	216.647	ppb	216.647	3.57	75365	5000	
Cu	63	3	72	2.054	ppb	2.054	8.57	2264	5000	
Zn	66	3	72	1102.816	ppb	1102.816	4.33	183692	5000	
As	75	3	72	115.167	ppb	115.167	3.89	13393	2000	
Se	78	2	72	2.393	ppb	2.393	14.76	142	2000	
(Se)	78	3	72	2.607	ppb	2.607	95.82	50	2000	
Sr	88	3	72	1308.442	ppb	1308.442	3.72	709853	4000	
Mo	95	3	115	7.522	ppb	7.522	0.98	3595	2000	
Ag	107	3	115	0.005	ppb	0.005	57.49	25	100	
Cd	111	3	115	0.030	ppb	0.030	71.82	10	2000	
Sn	120	3	115	6.585	ppb	6.585	6.97	5097	2000	
Sb	121	3	115	2.639	ppb	2.639	1.84	1984	1000	
Ba	137	3	115	1448.563	ppb	1448.563	0.85	331441	5000	
Tl	205	3	193	0.004	ppb	0.004	67.28	113	2000	
(Pb)	206	3	193	0.473	ppb	0.473	13.40	646	100	
(Pb)	207	3	193	0.526	ppb	0.526	17.02	791	100	
Pb	208	3	193	0.535	ppb	0.535	3.67	2969	5000	
Th	232	3	193	0.084	ppb	0.084	56.28	4144	2000	
U	238	3	193	0.141	ppb	0.141	7.26	2022	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4155085	2.67	4331237	95.93	60	120	
Sc (IS)	45	3	HMI He	622997	1.02	654817	95.14	60	120	
Ge Internal standard	72	2	HMI H2	2230485	1.65	2307933	96.64	60	120	
Ge Internal standard	72	3	HMI He	727349	3.52	744678	97.67	60	120	
In Internal Standard	115	3	HMI He	2353267	0.52	2599142	90.54	60	120	
Ir (IS)	193	3	HMI He	4862682	1.64	5525410	88.01	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-3-d
Data File Name	249SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:12:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	6823.706	ppb	6823.706	3.07	851951	400000	
Mg	24	3	45	24866.824	ppb	24866.824	1.20	1516668	400000	
Al	27	3	45	18.721	ppb	18.721	0.78	497	400000	
K	39	3	45	1766.227	ppb	1766.227	1.83	109631	400000	
Ca	40	2	45	64488.146	ppb	64488.146	2.05	35795586	400000	
V	51	3	72	0.145	ppb	0.145	23.95	322	2000	
Cr	52	3	72	0.360	ppb	0.360	11.51	1588	5000	
Mn	55	3	72	4.906	ppb	4.906	4.55	2184	10000	
Fe	56	2	72	485.445	ppb	485.445	3.72	708592	10000	
Co	59	3	72	0.032	ppb	0.032	32.93	63	2000	
Ni	60	3	72	0.579	ppb	0.579	17.31	313	5000	
Cu	63	3	72	2.109	ppb	2.109	5.60	2282	5000	
Zn	66	3	72	4.603	ppb	4.603	6.43	978	5000	
As	75	3	72	0.117	ppb	0.117	213.35	62	2000	
Se	78	2	72	0.170	ppb	0.170	64.01	12	2000	
(Se)	78	3	72	0.190	ppb	0.190	1268.84	33	2000	
Sr	88	3	72	349.189	ppb	349.189	0.84	186541	4000	
Mo	95	3	115	0.337	ppb	0.337	29.08	200	2000	
Ag	107	3	115	0.003	ppb	0.003	127.92	22	100	
Cd	111	3	115	0.022	ppb	0.022	55.21	8	2000	
Sn	120	3	115	0.957	ppb	0.957	2.15	1191	2000	
Sb	121	3	115	0.126	ppb	0.126	13.20	210	1000	
Ba	137	3	115	84.172	ppb	84.172	2.18	20039	5000	
Tl	205	3	193	0.001	ppb	0.001	463.68	107	2000	
(Pb)	206	3	193	0.125	ppb	0.125	35.70	282	100	
(Pb)	207	3	193	0.074	ppb	0.074	95.44	371	100	
Pb	208	3	193	0.113	ppb	0.113	50.72	1179	5000	
Th	232	3	193	0.010	ppb	0.010	386.94	3979	2000	
U	238	3	193	3.495	ppb	3.495	3.40	18049	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4041912	1.09	4331237	93.32	60	120	
Sc (IS)	45	3	HMI He	620933	1.19	654817	94.83	60	120	
Ge Internal standard	72	2	HMI H2	2158101	1.16	2307933	93.51	60	120	
Ge Internal standard	72	3	HMI He	715460	0.69	744678	96.08	60	120	
In Internal Standard	115	3	HMI He	2440968	0.45	2599142	93.91	60	120	
Ir (IS)	193	3	HMI He	5060969	0.93	5525410	91.59	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	250_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:14:40-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.966	ppb	0.972	2574	50	101.9	90	110	
Na	23	3	45	49723.783	ppb	0.521	6016724	51000	97.5	90	110	
Mg	24	3	45	10746.572	ppb	2.845	667836	11000	97.7	90	110	
Al	27	3	45	1034.391	ppb	1.721	23446	1000	103.4	90	110	
K	39	3	45	10681.384	ppb	0.722	547080	11000	97.1	90	110	
Ca	40	2	45	11259.786	ppb	1.141	6380061	11000	102.4	90	110	
V	51	3	72	51.420	ppb	1.567	31153	50	102.8	90	110	
Cr	52	3	72	50.902	ppb	1.623	39932	50	101.8	90	110	
Mn	55	3	72	51.619	ppb	4.509	21351	50	103.2	90	110	
Fe	56	2	72	1085.240	ppb	3.601	1580928	1000	108.5	90	110	
Co	59	3	72	50.391	ppb	0.444	61989	50	100.8	90	110	
Ni	60	3	72	49.768	ppb	1.872	17075	50	99.5	90	110	
Cu	63	3	72	49.430	ppb	1.271	45816	50	98.9	90	110	
Zn	66	3	72	51.773	ppb	3.770	8675	50	103.5	90	110	
As	75	3	72	50.551	ppb	4.409	5797	50	101.1	90	110	
Se	78	2	72	51.512	ppb	1.061	2918	50	103.0	90	110	
(Se)	78	3	72	53.225	ppb	22.914	371	50	106.4	90	110	
Sr	88	3	72	104.589	ppb	1.561	55714	100	104.6	90	110	
Mo	95	3	115	49.496	ppb	1.075	24899	50	99.0	90	110	
Ag	107	3	115	49.643	ppb	0.964	82688	50	99.3	90	110	
Cd	111	3	115	49.994	ppb	0.273	12251	50	100.0	90	110	
Sn	120	3	115	51.266	ppb	2.361	38658	50	102.5	90	110	
Sb	121	3	115	51.460	ppb	3.188	38822	50	102.9	90	110	
Ba	137	3	115	49.623	ppb	2.729	12106	50	99.2	90	110	
Tl	205	3	193	52.018	ppb	1.449	176543	50	104.0	90	110	
(Pb)	206	3	193	51.196	ppb	1.940	58514	50	102.4	90	110	
(Pb)	207	3	193	50.868	ppb	0.894	51763	50	101.7	90	110	
Pb	208	3	193	51.165	ppb	1.064	235716	50	102.3	90	110	
Th	232	3	193	51.484	ppb	1.784	240445	50	103.0	90	110	
U	238	3	193	51.157	ppb	1.426	247850	50	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4118251	0.07	4331237	95.08	60	120	
Sc (IS)	45	3	HMI He	632590	0.65	654817	96.61	60	120	
Ge Internal standard	72	2	HMI H2	2168954	2.01	2307933	93.98	60	120	
Ge Internal standard	72	3	HMI He	713122	0.77	744678	95.76	60	120	
In Internal Standard	115	3	HMI He	2496395	1.05	2599142	96.05	60	120	
Ir (IS)	193	3	HMI He	5126471	0.87	5525410	92.78	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	251_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:16:33-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.035	ppb	173.2	2	0.5	
Na	23	3	45	274.055	ppb	8.6	78243	25	>RL
Mg	24	3	45	10.815	ppb	13.4	821	25	
Al	27	3	45	5.806	ppb	86.6	207	15	
K	39	3	45	40.114	ppb	154.7	26171	50	
V	51	3	72	0.014	ppb	120.9	235	1	
Cr	52	3	72	0.076	ppb	55.3	1329	1	
Mn	55	3	72	0.098	ppb	61.7	198	0.5	
Co	59	3	72	0.006	ppb	264.5	30	0.5	
Ni	60	3	72	-0.020	ppb	-262.0	105	1	
Cu	63	3	72	0.100	ppb	25.3	415	1	
Zn	66	3	72	0.598	ppb	49.0	312	5	
As	75	3	72	-0.031	ppb	-354.4	43	1	
Se	78	2	72	0.003	ppb	2702.8	3	1	
(Se)	78	3	72	-0.168	ppb	-1683.9	30	1	
Sr	88	3	72	0.102	ppb	26.4	93	0.5	
Mo	95	3	115	0.038	ppb	82.2	53	0.5	
Ag	107	3	115	0.003	ppb	175.7	22	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.277	ppb	25.8	698	1	
Sb	121	3	115	-0.033	ppb	-59.1	93	0.6	
Ba	137	3	115	-0.019	ppb	-377.7	60	0.5	
Tl	205	3	193	0.008	ppb	33.2	130	0.1	
(Pb)	206	3	193	-0.031	ppb	-125.4	105	1	
(Pb)	207	3	193	-0.020	ppb	-62.8	277	1	
Pb	208	3	193	0.007	ppb	185.7	696	0.5	
Th	232	3	193	0.603	ppb	26.0	6655	1	
U	238	3	193	0.014	ppb	157.2	1496	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3976207	4.96	4331237	91.80	60	120	
Sc (IS)	45	3	HMI He	605841	2.44	654817	92.52	60	120	
Ge Internal standard	72	2	HMI H2	2119752	3.71	2307933	91.85	60	120	
Ge Internal standard	72	3	HMI He	693586	2.63	744678	93.14	60	120	
In Internal Standard	115	3	HMI He	2446897	2.34	2599142	94.14	60	120	
Ir (IS)	193	3	HMI He	5045531	1.81	5525410	91.32	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-d
Data File Name	252SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:18:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	85966.136	ppb	85966.136	0.45	10139108	400000	
Mg	24	3	45	26708.715	ppb	26708.715	1.03	1623218	400000	
Al	27	3	45	9.882	ppb	9.882	24.89	300	400000	
K	39	3	45	3516.165	ppb	3516.165	0.76	192806	400000	
Ca	40	2	45	130303.670	ppb	130303.670	0.75	72746836	400000	
V	51	3	72	0.127	ppb	0.127	42.36	312	2000	
Cr	52	3	72	6.681	ppb	6.681	2.84	6408	5000	
Mn	55	3	72	343.916	ppb	343.916	1.39	141992	10000	
Fe	56	2	72	322.217	ppb	322.217	0.85	479471	10000	
Co	59	3	72	0.982	ppb	0.982	15.56	1241	2000	
Ni	60	3	72	63.384	ppb	63.384	0.68	21825	5000	
Cu	63	3	72	0.499	ppb	0.499	9.26	798	5000	
Zn	66	3	72	3.443	ppb	3.443	2.57	790	5000	
As	75	3	72	0.131	ppb	0.131	109.14	63	2000	
Se	78	2	72	0.646	ppb	0.646	20.33	39	2000	
(Se)	78	3	72	-1.399	ppb	-1.399	-135.87	23	2000	
Sr	88	3	72	296.425	ppb	296.425	1.54	158565	4000	
Mo	95	3	115	0.475	ppb	0.475	12.78	263	2000	
Ag	107	3	115	0.010	ppb	0.010	193.39	33	100	
Cd	111	3	115	0.044	ppb	0.044	103.47	13	2000	
Sn	120	3	115	0.828	ppb	0.828	9.40	1076	2000	
Sb	121	3	115	0.042	ppb	0.042	87.54	145	1000	
Ba	137	3	115	93.106	ppb	93.106	2.36	21750	5000	
Tl	205	3	193	0.076	ppb	0.076	40.34	363	2000	
(Pb)	206	3	193	0.048	ppb	0.048	20.18	197	100	
(Pb)	207	3	193	0.031	ppb	0.031	72.59	332	100	
Pb	208	3	193	0.068	ppb	0.068	10.13	983	5000	
Th	232	3	193	0.186	ppb	0.186	29.84	4822	2000	
U	238	3	193	287.260	ppb	287.260	3.11	1378217	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4065474	1.73	4331237	93.86	60	120	
Sc (IS)	45	3	HMI He	618700	1.19	654817	94.48	60	120	
Ge Internal standard	72	2	HMI H2	2185551	1.30	2307933	94.70	60	120	
Ge Internal standard	72	3	HMI He	716580	2.51	744678	96.23	60	120	
In Internal Standard	115	3	HMI He	2396217	2.18	2599142	92.19	60	120	
Ir (IS)	193	3	HMI He	5102299	2.76	5525410	92.34	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-e ms
Data File Name	253SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:20:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.387	ppb	41.387	2.40	2066	2000	
Na	23	3	45	86316.771	ppb	86316.771	1.02	10226201	400000	
Mg	24	3	45	27174.100	ppb	27174.100	2.66	1658854	400000	
Al	27	3	45	800.787	ppb	800.787	0.76	17853	400000	
K	39	3	45	4263.086	ppb	4263.086	0.34	229530	400000	
Ca	40	2	45	132265.684	ppb	132265.684	2.86	73732598	400000	
V	51	3	72	39.927	ppb	39.927	1.77	24554	2000	
Cr	52	3	72	46.170	ppb	46.170	1.52	36809	5000	
Mn	55	3	72	382.923	ppb	382.923	0.71	159372	10000	
Fe	56	2	72	1143.491	ppb	1143.491	0.83	1694521	10000	
Co	59	3	72	40.713	ppb	40.713	1.13	50732	2000	
Ni	60	3	72	100.216	ppb	100.216	2.37	34711	5000	
Cu	63	3	72	39.823	ppb	39.823	0.68	37454	5000	
Zn	66	3	72	42.187	ppb	42.187	3.23	7203	5000	
As	75	3	72	41.234	ppb	41.234	2.17	4797	2000	
Se	78	2	72	42.961	ppb	42.961	5.21	2476	2000	
(Se)	78	3	72	46.775	ppb	46.775	9.38	335	2000	
Sr	88	3	72	379.126	ppb	379.126	0.77	204455	4000	
Mo	95	3	115	39.851	ppb	39.851	2.21	19770	2000	
Ag	107	3	115	39.711	ppb	39.711	1.88	65210	100	
Cd	111	3	115	39.405	ppb	39.405	3.45	9520	2000	
Sn	120	3	115	39.778	ppb	39.778	2.79	29683	2000	
Sb	121	3	115	40.644	ppb	40.644	0.80	30258	1000	
Ba	137	3	115	132.319	ppb	132.319	3.41	31717	5000	
Tl	205	3	193	41.205	ppb	41.205	1.28	140248	2000	
(Pb)	206	3	193	41.245	ppb	41.245	1.79	47295	100	
(Pb)	207	3	193	40.314	ppb	40.314	0.85	41200	100	
Pb	208	3	193	40.833	ppb	40.833	0.53	188768	5000	
Th	232	3	193	42.115	ppb	42.115	0.59	197960	2000	
U	238	3	193	321.423	ppb	321.423	1.22	1553767	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4060678	1.74	4331237	93.75	60	120	
Sc (IS)	45	3	HMI He	621504	0.63	654817	94.91	60	120	
Ge Internal standard	72	2	HMI H2	2206415	0.55	2307933	95.60	60	120	
Ge Internal standard	72	3	HMI He	722266	0.56	744678	96.99	60	120	
In Internal Standard	115	3	HMI He	2460940	0.69	2599142	94.68	60	120	
Ir (IS)	193	3	HMI He	5140295	1.17	5525410	93.03	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-6-f msd
Data File Name	254SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:22:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.528	ppb	41.528	0.90	2071	2000	
Na	23	3	45	84591.810	ppb	84591.810	1.96	10172848	400000	
Mg	24	3	45	26752.434	ppb	26752.434	4.61	1658015	400000	
Al	27	3	45	799.290	ppb	799.290	4.54	18090	400000	
K	39	3	45	4182.270	ppb	4182.270	1.63	229028	400000	
Ca	40	2	45	129777.639	ppb	129777.639	2.55	70601699	400000	
V	51	3	72	41.706	ppb	41.706	1.00	25335	2000	
Cr	52	3	72	47.895	ppb	47.895	1.31	37674	5000	
Mn	55	3	72	391.160	ppb	391.160	1.43	160832	10000	
Fe	56	2	72	1136.867	ppb	1136.867	2.37	1634854	10000	
Co	59	3	72	40.771	ppb	40.771	0.66	50197	2000	
Ni	60	3	72	102.319	ppb	102.319	2.34	35005	5000	
Cu	63	3	72	40.971	ppb	40.971	0.91	38062	5000	
Zn	66	3	72	42.555	ppb	42.555	4.74	7180	5000	
As	75	3	72	41.228	ppb	41.228	5.26	4738	2000	
Se	78	2	72	41.088	ppb	41.088	4.41	2298	2000	
(Se)	78	3	72	43.704	ppb	43.704	8.45	312	2000	
Sr	88	3	72	380.254	ppb	380.254	1.16	202610	4000	
Mo	95	3	115	40.714	ppb	40.714	0.84	20128	2000	
Ag	107	3	115	40.058	ppb	40.058	0.34	65555	100	
Cd	111	3	115	40.483	ppb	40.483	2.72	9747	2000	
Sn	120	3	115	40.482	ppb	40.482	1.46	30097	2000	
Sb	121	3	115	41.036	ppb	41.036	1.12	30443	1000	
Ba	137	3	115	130.627	ppb	130.627	2.24	31210	5000	
Tl	205	3	193	41.840	ppb	41.840	1.17	142045	2000	
(Pb)	206	3	193	41.806	ppb	41.806	2.04	47813	100	
(Pb)	207	3	193	41.263	ppb	41.263	2.24	42047	100	
Pb	208	3	193	41.539	ppb	41.539	1.23	191525	5000	
Th	232	3	193	42.857	ppb	42.857	2.21	200845	2000	
U	238	3	193	334.183	ppb	334.183	2.20	1611152	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3962977	1.88	4331237	91.50	60	120	
Sc (IS)	45	3	HMI He	630788	0.74	654817	96.33	60	120	
Ge Internal standard	72	2	HMI H2	2141516	1.38	2307933	92.79	60	120	
Ge Internal standard	72	3	HMI He	713694	2.19	744678	95.84	60	120	
In Internal Standard	115	3	HMI He	2452423	0.54	2599142	94.36	60	120	
Ir (IS)	193	3	HMI He	5127702	1.87	5525410	92.80	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-9-b
Data File Name	255SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:23:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	84777.259	ppb	84777.259	1.48	9559439	400000	
Mg	24	3	45	26622.152	ppb	26622.152	1.36	1546811	400000	
Al	27	3	45	6.556	ppb	6.556	35.37	217	400000	
K	39	3	45	3451.229	ppb	3451.229	2.66	181361	400000	
Ca	40	2	45	130780.254	ppb	130780.254	0.92	72099299	400000	
V	51	3	72	0.148	ppb	0.148	29.99	308	2000	
Cr	52	3	72	5.702	ppb	5.702	2.46	5395	5000	
Mn	55	3	72	343.506	ppb	343.506	0.28	135129	10000	
Fe	56	2	72	300.615	ppb	300.615	2.32	449945	10000	
Co	59	3	72	0.975	ppb	0.975	10.53	1171	2000	
Ni	60	3	72	63.109	ppb	63.109	0.70	20698	5000	
Cu	63	3	72	0.477	ppb	0.477	11.84	740	5000	
Zn	66	3	72	2.234	ppb	2.234	7.42	563	5000	
As	75	3	72	0.113	ppb	0.113	85.75	58	2000	
Se	78	2	72	0.564	ppb	0.564	45.13	35	2000	
(Se)	78	3	72	-0.388	ppb	-0.388	-239.64	28	2000	
Sr	88	3	72	295.642	ppb	295.642	0.47	150685	4000	
Mo	95	3	115	0.564	ppb	0.564	16.82	297	2000	
Ag	107	3	115	0.011	ppb	0.011	72.75	33	100	
Cd	111	3	115	0.075	ppb	0.075	28.58	20	2000	
Sn	120	3	115	0.369	ppb	0.369	23.41	726	2000	
Sb	121	3	115	0.014	ppb	0.014	197.57	122	1000	
Ba	137	3	115	90.165	ppb	90.165	2.05	20429	5000	
Tl	205	3	193	0.068	ppb	0.068	21.33	322	2000	
(Pb)	206	3	193	0.005	ppb	0.005	269.08	142	100	
(Pb)	207	3	193	0.031	ppb	0.031	180.48	318	100	
Pb	208	3	193	0.040	ppb	0.040	45.59	821	5000	
Th	232	3	193	0.485	ppb	0.485	11.33	5952	2000	
U	238	3	193	282.853	ppb	282.853	3.03	1306965	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4014821	1.00	4331237	92.69	60	120	
Sc (IS)	45	3	HMI He	591508	0.64	654817	90.33	60	120	
Ge Internal standard	72	2	HMI H2	2196069	1.82	2307933	95.15	60	120	
Ge Internal standard	72	3	HMI He	682605	0.29	744678	91.66	60	120	
In Internal Standard	115	3	HMI He	2323763	0.71	2599142	89.40	60	120	
Ir (IS)	193	3	HMI He	4914061	1.66	5525410	88.94	60	120	

Sample Report

Sample Table

Sample Name	160-48458-a-12-b
Data File Name	256SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:25:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	9638.142	ppb	9638.142	0.79	1137078	400000	
Mg	24	3	45	37801.728	ppb	37801.728	1.96	2215391	400000	
Al	27	3	45	16.512	ppb	16.512	22.77	430	400000	
K	39	3	45	3555.350	ppb	3555.350	1.41	187743	400000	
Ca	40	2	45	85146.265	ppb	85146.265	0.28	44953458	400000	
V	51	3	72	0.151	ppb	0.151	42.85	317	2000	
Cr	52	3	72	0.295	ppb	0.295	33.05	1498	5000	
Mn	55	3	72	9.911	ppb	9.911	2.79	4134	10000	
Fe	56	2	72	7.672	ppb	7.672	4.15	19062	10000	
Co	59	3	72	0.408	ppb	0.408	3.29	513	2000	
Ni	60	3	72	2.721	ppb	2.721	4.71	1018	5000	
Cu	63	3	72	0.160	ppb	0.160	62.72	470	5000	
Zn	66	3	72	17.255	ppb	17.255	5.26	2971	5000	
As	75	3	72	0.177	ppb	0.177	59.37	67	2000	
Se	78	2	72	0.265	ppb	0.265	41.40	17	2000	
(Se)	78	3	72	-1.010	ppb	-1.010	-160.43	25	2000	
Sr	88	3	72	460.604	ppb	460.604	1.38	239518	4000	
Mo	95	3	115	1.545	ppb	1.545	4.56	768	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-90.64	13	100	
Cd	111	3	115	0.044	ppb	0.044	55.53	13	2000	
Sn	120	3	115	0.406	ppb	0.406	25.88	765	2000	
Sb	121	3	115	0.196	ppb	0.196	25.77	253	1000	
Ba	137	3	115	161.099	ppb	161.099	1.10	37094	5000	
Tl	205	3	193	0.218	ppb	0.218	3.87	810	2000	
(Pb)	206	3	193	-0.006	ppb	-0.006	-255.64	130	100	
(Pb)	207	3	193	-0.013	ppb	-0.013	-188.28	277	100	
Pb	208	3	193	0.008	ppb	0.008	50.66	683	5000	
Th	232	3	193	0.053	ppb	0.053	51.00	4054	2000	
U	238	3	193	4.990	ppb	4.990	1.85	24442	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3844355	0.34	4331237	88.76	60	120	
Sc (IS)	45	3	HMI He	596612	0.40	654817	91.11	60	120	
Ge Internal standard	72	2	HMI H2	2060735	1.49	2307933	89.29	60	120	
Ge Internal standard	72	3	HMI He	696538	0.79	744678	93.54	60	120	
In Internal Standard	115	3	HMI He	2364743	1.59	2599142	90.98	60	120	
Ir (IS)	193	3	HMI He	4915220	0.76	5525410	88.96	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-2-b
Data File Name	257SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:27:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	26745.707	ppb	26745.707	1.86	3118483	400000	
Mg	24	3	45	13095.722	ppb	13095.722	2.09	778813	400000	
Al	27	3	45	22.839	ppb	22.839	3.78	574	400000	
K	39	3	45	7786.858	ppb	7786.858	2.00	388245	400000	
Ca	40	2	45	51825.534	ppb	51825.534	2.19	27728589	400000	
V	51	3	72	10.160	ppb	10.160	2.86	6320	2000	
Cr	52	3	72	3.052	ppb	3.052	5.90	3612	5000	
Mn	55	3	72	0.694	ppb	0.694	13.35	446	10000	
Fe	56	2	72	25.183	ppb	25.183	2.20	45724	10000	
Co	59	3	72	0.053	ppb	0.053	18.63	88	2000	
Ni	60	3	72	0.501	ppb	0.501	10.68	285	5000	
Cu	63	3	72	0.664	ppb	0.664	17.44	941	5000	
Zn	66	3	72	1.285	ppb	1.285	18.77	431	5000	
As	75	3	72	3.592	ppb	3.592	4.50	455	2000	
Se	78	2	72	2.534	ppb	2.534	12.52	147	2000	
(Se)	78	3	72	2.826	ppb	2.826	137.48	50	2000	
Sr	88	3	72	249.141	ppb	249.141	0.81	132174	4000	
Mo	95	3	115	4.642	ppb	4.642	4.99	2274	2000	
Ag	107	3	115	0.006	ppb	0.006	162.25	27	100	
Cd	111	3	115	0.001	ppb	0.001	2942.44	3	2000	
Sn	120	3	115	0.247	ppb	0.247	14.58	663	2000	
Sb	121	3	115	0.226	ppb	0.226	9.93	278	1000	
Ba	137	3	115	29.790	ppb	29.790	5.77	7003	5000	
Tl	205	3	193	0.003	ppb	0.003	112.70	115	2000	
(Pb)	206	3	193	0.028	ppb	0.028	145.61	172	100	
(Pb)	207	3	193	0.001	ppb	0.001	7987.30	298	100	
Pb	208	3	193	0.037	ppb	0.037	71.09	833	5000	
Th	232	3	193	0.053	ppb	0.053	33.72	4177	2000	
U	238	3	193	60.807	ppb	60.807	1.24	290856	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3895844	1.09	4331237	89.95	60	120	
Sc (IS)	45	3	HMI He	605454	1.64	654817	92.46	60	120	
Ge Internal standard	72	2	HMI H2	2182391	1.30	2307933	94.56	60	120	
Ge Internal standard	72	3	HMI He	710485	0.60	744678	95.41	60	120	
In Internal Standard	115	3	HMI He	2398784	2.54	2599142	92.29	60	120	
Ir (IS)	193	3	HMI He	5066106	1.20	5525410	91.69	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-4-b
Data File Name	258SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:29:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	52163.877	ppb	52163.877	1.51	6026467	400000	
Mg	24	3	45	8620.330	ppb	8620.330	0.61	511739	400000	
Al	27	3	45	6.046	ppb	6.046	43.09	210	400000	
K	39	3	45	5839.411	ppb	5839.411	0.39	296648	400000	
Ca	40	2	45	61434.109	ppb	61434.109	0.54	33268367	400000	
V	51	3	72	12.436	ppb	12.436	3.17	7678	2000	
Cr	52	3	72	4.063	ppb	4.063	1.86	4374	5000	
Mn	55	3	72	0.266	ppb	0.266	24.37	272	10000	
Fe	56	2	72	10.017	ppb	10.017	0.93	23326	10000	
Co	59	3	72	0.021	ppb	0.021	51.24	50	2000	
Ni	60	3	72	0.340	ppb	0.340	11.14	230	5000	
Cu	63	3	72	0.496	ppb	0.496	11.78	786	5000	
Zn	66	3	72	0.710	ppb	0.710	24.01	338	5000	
As	75	3	72	8.611	ppb	8.611	0.81	1023	2000	
Se	78	2	72	2.503	ppb	2.503	5.54	143	2000	
(Se)	78	3	72	1.545	ppb	1.545	265.30	42	2000	
Sr	88	3	72	215.011	ppb	215.011	2.41	114006	4000	
Mo	95	3	115	5.286	ppb	5.286	6.01	2547	2000	
Ag	107	3	115	0.020	ppb	0.020	25.29	48	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.168	ppb	0.168	84.25	596	2000	
Sb	121	3	115	0.168	ppb	0.168	23.07	233	1000	
Ba	137	3	115	58.373	ppb	58.373	3.10	13475	5000	
Tl	205	3	193	0.000	ppb	0.000	3751.49	103	2000	
(Pb)	206	3	193	-0.004	ppb	-0.004	-373.22	135	100	
(Pb)	207	3	193	0.014	ppb	0.014	395.33	308	100	
Pb	208	3	193	0.023	ppb	0.023	35.44	763	5000	
Th	232	3	193	0.050	ppb	0.050	46.55	4119	2000	
U	238	3	193	1476.126	ppb	1476.126	0.88	6949837	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3942903	1.03	4331237	91.03	60	120	
Sc (IS)	45	3	HMI He	604164	0.84	654817	92.26	60	120	
Ge Internal standard	72	2	HMI H2	2156187	0.23	2307933	93.43	60	120	
Ge Internal standard	72	3	HMI He	710192	1.33	744678	95.37	60	120	
In Internal Standard	115	3	HMI He	2363737	1.08	2599142	90.94	60	120	
Ir (IS)	193	3	HMI He	5009876	0.42	5525410	90.67	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-5-b
Data File Name	259SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:31:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	115.252	ppb	115.252	0.57	58964	400000	
Mg	24	3	45	2.367	ppb	2.367	52.50	314	400000	
Al	27	3	45	3.818	ppb	3.818	66.75	160	400000	
K	39	3	45	4.194	ppb	4.194	774.72	24095	400000	
Ca	40	2	45	19.429	ppb	19.429	9.19	23019	400000	
V	51	3	72	0.071	ppb	0.071	103.14	262	2000	
Cr	52	3	72	0.511	ppb	0.511	17.26	1611	5000	
Mn	55	3	72	0.056	ppb	0.056	237.96	177	10000	
Fe	56	2	72	2.111	ppb	2.111	3.72	11416	10000	
Co	59	3	72	-0.001	ppb	-0.001	-1452.06	22	2000	
Ni	60	3	72	0.054	ppb	0.054	120.06	127	5000	
Cu	63	3	72	0.087	ppb	0.087	36.96	393	5000	
Zn	66	3	72	0.083	ppb	0.083	117.24	225	5000	
As	75	3	72	-0.069	ppb	-0.069	-247.60	38	2000	
Se	78	2	72	0.030	ppb	0.030	213.55	4	2000	
(Se)	78	3	72	-0.913	ppb	-0.913	-320.57	25	2000	
Sr	88	3	72	0.064	ppb	0.064	39.95	72	4000	
Mo	95	3	115	0.000	ppb	0.000	9219.61	33	2000	
Ag	107	3	115	0.002	ppb	0.002	140.16	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-214.26	2	2000	
Sn	120	3	115	0.112	ppb	0.112	35.60	561	2000	
Sb	121	3	115	-0.003	ppb	-0.003	-1686.04	112	1000	
Ba	137	3	115	0.053	ppb	0.053	92.76	75	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-53.71	70	2000	
(Pb)	206	3	193	-0.049	ppb	-0.049	-41.21	85	100	
(Pb)	207	3	193	-0.036	ppb	-0.036	-60.55	262	100	
Pb	208	3	193	-0.014	ppb	-0.014	-59.79	600	5000	
Th	232	3	193	0.009	ppb	0.009	251.02	3970	2000	
U	238	3	193	0.323	ppb	0.323	9.24	2969	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3845632	1.92	4331237	88.79	60	120	
Sc (IS)	45	3	HMI He	595057	1.16	654817	90.87	60	120	
Ge Internal standard	72	2	HMI H2	2061981	1.36	2307933	89.34	60	120	
Ge Internal standard	72	3	HMI He	676997	0.85	744678	90.91	60	120	
In Internal Standard	115	3	HMI He	2377708	2.70	2599142	91.48	60	120	
Ir (IS)	193	3	HMI He	5055938	0.38	5525410	91.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-7-b
Data File Name	260SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:33:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.067	ppb	0.067	173.21	3	2000	
Na	23	3	45	24575.795	ppb	24575.795	1.01	2805917	400000	
Mg	24	3	45	14715.205	ppb	14715.205	1.84	855690	400000	
Al	27	3	45	11.943	ppb	11.943	45.20	330	400000	
K	39	3	45	6777.397	ppb	6777.397	1.00	333526	400000	
Ca	40	2	45	49658.413	ppb	49658.413	1.38	26755084	400000	
V	51	3	72	12.698	ppb	12.698	4.43	7667	2000	
Cr	52	3	72	3.526	ppb	3.526	4.77	3882	5000	
Mn	55	3	72	2.089	ppb	2.089	17.06	995	10000	
Fe	56	2	72	337.130	ppb	337.130	2.38	490225	10000	
Co	59	3	72	0.034	ppb	0.034	95.16	63	2000	
Ni	60	3	72	0.254	ppb	0.254	50.58	197	5000	
Cu	63	3	72	2.994	ppb	2.994	1.87	3011	5000	
Zn	66	3	72	10.360	ppb	10.360	2.08	1866	5000	
As	75	3	72	6.074	ppb	6.074	3.98	720	2000	
Se	78	2	72	3.214	ppb	3.214	7.64	182	2000	
(Se)	78	3	72	2.476	ppb	2.476	129.98	47	2000	
Sr	88	3	72	273.109	ppb	273.109	1.88	141694	4000	
Mo	95	3	115	4.874	ppb	4.874	3.17	2367	2000	
Ag	107	3	115	0.002	ppb	0.002	152.22	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-215.06	2	2000	
Sn	120	3	115	0.135	ppb	0.135	16.18	578	2000	
Sb	121	3	115	0.117	ppb	0.117	48.65	198	1000	
Ba	137	3	115	53.422	ppb	53.422	1.00	12423	5000	
Tl	205	3	193	-0.005	ppb	-0.005	-197.61	85	2000	
(Pb)	206	3	193	0.047	ppb	0.047	25.71	190	100	
(Pb)	207	3	193	0.053	ppb	0.053	85.77	343	100	
Pb	208	3	193	0.079	ppb	0.079	16.45	1001	5000	
Th	232	3	193	0.013	ppb	0.013	31.45	3907	2000	
U	238	3	193	6.381	ppb	6.381	2.14	31090	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3923236	2.30	4331237	90.58	60	120	
Sc (IS)	45	3	HMI He	591956	0.73	654817	90.40	60	120	
Ge Internal standard	72	2	HMI H2	2138091	1.97	2307933	92.64	60	120	
Ge Internal standard	72	3	HMI He	694913	1.28	744678	93.32	60	120	
In Internal Standard	115	3	HMI He	2380132	1.01	2599142	91.57	60	120	
Ir (IS)	193	3	HMI He	4952511	0.96	5525410	89.63	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	261_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:35:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.770	ppb	1.990	2452	50	99.5	90	110	
Na	23	3	45	50766.804	ppb	1.796	5880810	51000	99.5	90	110	
Mg	24	3	45	11091.724	ppb	0.965	660050	11000	100.8	90	110	
Al	27	3	45	1021.695	ppb	0.920	22176	1000	102.2	90	110	
K	39	3	45	10631.355	ppb	1.111	521494	11000	96.6	90	110	
Ca	40	2	45	10955.334	ppb	0.491	5974749	11000	99.6	90	110	
V	51	3	72	51.749	ppb	0.436	29802	50	103.5	90	110	
Cr	52	3	72	51.549	ppb	1.506	38422	50	103.1	90	110	
Mn	55	3	72	50.933	ppb	1.762	20029	50	101.9	90	110	
Fe	56	2	72	1069.559	ppb	1.574	1475912	1000	107.0	90	110	
Co	59	3	72	51.575	ppb	0.828	60306	50	103.2	90	110	
Ni	60	3	72	51.022	ppb	2.106	16638	50	102.0	90	110	
Cu	63	3	72	50.586	ppb	0.459	44563	50	101.2	90	110	
Zn	66	3	72	51.556	ppb	1.426	8213	50	103.1	90	110	
As	75	3	72	51.716	ppb	1.808	5635	50	103.4	90	110	
Se	78	2	72	51.600	ppb	3.236	2768	50	103.2	90	110	
(Se)	78	3	72	52.073	ppb	18.941	347	50	104.1	90	110	
Sr	88	3	72	104.314	ppb	0.454	52822	100	104.3	90	110	
Mo	95	3	115	50.207	ppb	1.528	24472	50	100.4	90	110	
Ag	107	3	115	49.092	ppb	1.220	79231	50	98.2	90	110	
Cd	111	3	115	50.106	ppb	1.006	11898	50	100.2	90	110	
Sn	120	3	115	51.516	ppb	0.149	37641	50	103.0	90	110	
Sb	121	3	115	49.506	ppb	0.630	36199	50	99.0	90	110	
Ba	137	3	115	48.991	ppb	2.037	11584	50	98.0	90	110	
Tl	205	3	193	50.759	ppb	0.932	169734	50	101.5	90	110	
(Pb)	206	3	193	50.801	ppb	1.661	57205	50	101.6	90	110	
(Pb)	207	3	193	50.029	ppb	1.039	50162	50	100.1	90	110	
Pb	208	3	193	50.443	ppb	0.964	228977	50	100.9	90	110	
Th	232	3	193	50.678	ppb	1.741	233244	50	101.4	90	110	
U	238	3	193	50.707	ppb	0.905	242066	50	101.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3963632	1.17	4331237	91.51	60	120	
Sc (IS)	45	3	HMI He	605690	0.17	654817	92.50	60	120	
Ge Internal standard	72	2	HMI H2	2054138	1.81	2307933	89.00	60	120	
Ge Internal standard	72	3	HMI He	677840	0.31	744678	91.02	60	120	
In Internal Standard	115	3	HMI He	2418859	0.95	2599142	93.06	60	120	
Ir (IS)	193	3	HMI He	5050979	1.36	5525410	91.41	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	262_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:36:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	82.307	ppb	7.7	56113	25	>RL
Mg	24	3	45	1.662	ppb	55.6	277	25	
Al	27	3	45	11.452	ppb	22.6	327	15	
K	39	3	45	-3.814	ppb	-1031.5	24108	50	
V	51	3	72	-0.069	ppb	-47.5	185	1	
Cr	52	3	72	-0.073	ppb	-112.1	1211	1	
Mn	55	3	72	0.132	ppb	55.4	210	0.5	
Co	59	3	72	0.013	ppb	77.5	38	0.5	
Ni	60	3	72	0.027	ppb	71.2	120	1	
Cu	63	3	72	0.074	ppb	99.0	388	1	
Zn	66	3	72	0.331	ppb	49.6	268	5	
As	75	3	72	-0.151	ppb	-28.3	30	1	
Se	78	2	72	0.042	ppb	103.3	5	1	
(Se)	78	3	72	-1.504	ppb	-135.6	22	1	
Sr	88	3	72	0.026	ppb	172.2	53	0.5	
Mo	95	3	115	0.043	ppb	65.6	55	0.5	
Ag	107	3	115	0.007	ppb	141.8	28	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.341	ppb	20.4	736	1	
Sb	121	3	115	-0.002	ppb	-427.5	115	0.6	
Ba	137	3	115	0.076	ppb	29.3	82	0.5	
Tl	205	3	193	0.000	ppb	1509.2	105	0.1	
(Pb)	206	3	193	-0.001	ppb	-940.3	140	1	
(Pb)	207	3	193	0.003	ppb	267.0	302	1	
Pb	208	3	193	0.025	ppb	18.4	780	0.5	
Th	232	3	193	0.599	ppb	25.9	6662	1	
U	238	3	193	0.027	ppb	41.4	1564	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3969673	0.73	4331237	91.65	60	120	
Sc (IS)	45	3	HMI He	604403	0.30	654817	92.30	60	120	
Ge Internal standard	72	2	HMI H2	2094436	1.55	2307933	90.75	60	120	
Ge Internal standard	72	3	HMI He	688883	1.09	744678	92.51	60	120	
In Internal Standard	115	3	HMI He	2421975	1.33	2599142	93.18	60	120	
Ir (IS)	193	3	HMI He	5069930	0.54	5525410	91.76	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-a
Data File Name	263SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:38:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	24506.881	ppb	24506.881	0.71	2870740	400000	
Mg	24	3	45	14746.065	ppb	14746.065	1.01	879829	400000	
Al	27	3	45	4.141	ppb	4.141	61.64	170	400000	
K	39	3	45	6631.883	ppb	6631.883	1.05	335358	400000	
Ca	40	2	45	50919.232	ppb	50919.232	1.98	27691974	400000	
V	51	3	72	12.340	ppb	12.340	4.32	7735	2000	
Cr	52	3	72	3.030	ppb	3.030	3.55	3647	5000	
Mn	55	3	72	1.679	ppb	1.679	16.63	861	10000	
Fe	56	2	72	69.101	ppb	69.101	2.36	110514	10000	
Co	59	3	72	0.036	ppb	0.036	57.21	68	2000	
Ni	60	3	72	0.262	ppb	0.262	6.15	207	5000	
Cu	63	3	72	0.991	ppb	0.991	6.30	1259	5000	
Zn	66	3	72	4.638	ppb	4.638	14.45	991	5000	
As	75	3	72	5.536	ppb	5.536	13.75	685	2000	
Se	78	2	72	3.428	ppb	3.428	4.14	199	2000	
(Se)	78	3	72	1.185	ppb	1.185	118.88	40	2000	
Sr	88	3	72	264.652	ppb	264.652	2.35	142403	4000	
Mo	95	3	115	5.202	ppb	5.202	4.14	2549	2000	
Ag	107	3	115	0.039	ppb	0.039	22.77	80	100	
Cd	111	3	115	0.008	ppb	0.008	461.95	5	2000	
Sn	120	3	115	0.332	ppb	0.332	25.53	725	2000	
Sb	121	3	115	0.143	ppb	0.143	34.34	218	1000	
Ba	137	3	115	53.108	ppb	53.108	2.38	12471	5000	
Tl	205	3	193	0.003	ppb	0.003	246.32	113	2000	
(Pb)	206	3	193	0.065	ppb	0.065	33.80	210	100	
(Pb)	207	3	193	0.089	ppb	0.089	82.68	380	100	
Pb	208	3	193	0.105	ppb	0.105	10.76	1121	5000	
Th	232	3	193	0.268	ppb	0.268	25.51	5060	2000	
U	238	3	193	6.353	ppb	6.353	0.56	31098	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3960166	2.47	4331237	91.43	60	120	
Sc (IS)	45	3	HMI He	607331	0.48	654817	92.75	60	120	
Ge Internal standard	72	2	HMI H2	2198122	1.97	2307933	95.24	60	120	
Ge Internal standard	72	3	HMI He	720712	1.05	744678	96.78	60	120	
In Internal Standard	115	3	HMI He	2404141	2.42	2599142	92.50	60	120	
Ir (IS)	193	3	HMI He	4973684	1.02	5525410	90.01	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-aSD@5
Data File Name	264SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:40:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	4946.550	ppb	4946.550	3.19	626399	400000	
Mg	24	3	45	2913.368	ppb	2913.368	0.36	176684	400000	
Al	27	3	45	0.995	ppb	0.995	94.73	103	400000	
K	39	3	45	1312.754	ppb	1312.754	3.17	87257	400000	
Ca	40	2	45	10044.367	ppb	10044.367	0.85	5627373	400000	
V	51	3	72	2.533	ppb	2.533	7.65	1794	2000	
Cr	52	3	72	0.788	ppb	0.788	9.13	1948	5000	
Mn	55	3	72	0.459	ppb	0.459	23.88	360	10000	
Fe	56	2	72	16.186	ppb	16.186	2.41	33149	10000	
Co	59	3	72	0.007	ppb	0.007	39.45	33	2000	
Ni	60	3	72	0.111	ppb	0.111	75.07	157	5000	
Cu	63	3	72	0.328	ppb	0.328	32.30	650	5000	
Zn	66	3	72	2.288	ppb	2.288	20.35	610	5000	
As	75	3	72	1.057	ppb	1.057	15.88	172	2000	
Se	78	2	72	0.658	ppb	0.658	3.76	41	2000	
(Se)	78	3	72	-0.406	ppb	-0.406	-212.84	30	2000	
Sr	88	3	72	53.152	ppb	53.152	2.32	28926	4000	
Mo	95	3	115	1.059	ppb	1.059	7.44	551	2000	
Ag	107	3	115	0.006	ppb	0.006	158.90	27	100	
Cd	111	3	115	-0.006	ppb	-0.006	-204.22	2	2000	
Sn	120	3	115	0.510	ppb	0.510	11.50	860	2000	
Sb	121	3	115	-0.013	ppb	-0.013	-217.58	107	1000	
Ba	137	3	115	10.715	ppb	10.715	4.72	2592	5000	
Tl	205	3	193	0.002	ppb	0.002	233.52	112	2000	
(Pb)	206	3	193	-0.014	ppb	-0.014	-166.11	127	100	
(Pb)	207	3	193	-0.001	ppb	-0.001	-3493.70	302	100	
Pb	208	3	193	0.022	ppb	0.022	68.61	778	5000	
Th	232	3	193	0.046	ppb	0.046	33.20	4214	2000	
U	238	3	193	1.249	ppb	1.249	2.61	7500	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4071128	1.01	4331237	93.99	60	120	
Sc (IS)	45	3	HMI He	616823	3.24	654817	94.20	60	120	
Ge Internal standard	72	2	HMI H2	2218652	1.10	2307933	96.13	60	120	
Ge Internal standard	72	3	HMI He	727852	2.16	744678	97.74	60	120	
In Internal Standard	115	3	HMI He	2426231	1.84	2599142	93.35	60	120	
Ir (IS)	193	3	HMI He	5145433	2.89	5525410	93.12	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-b ms
Data File Name	265SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:42:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.183	ppb	42.183	9.78	2102	2000	
Na	23	3	45	25458.482	ppb	25458.482	1.37	2973107	400000	
Mg	24	3	45	15560.230	ppb	15560.230	0.61	926133	400000	
Al	27	3	45	818.755	ppb	818.755	0.14	17792	400000	
K	39	3	45	7415.741	ppb	7415.741	0.27	371221	400000	
Ca	40	2	45	50797.377	ppb	50797.377	2.01	28017875	400000	
V	51	3	72	52.312	ppb	52.312	0.90	31839	2000	
Cr	52	3	72	43.071	ppb	43.071	1.58	34146	5000	
Mn	55	3	72	41.653	ppb	41.653	1.33	17342	10000	
Fe	56	2	72	883.311	ppb	883.311	2.70	1312045	10000	
Co	59	3	72	38.966	ppb	38.966	1.89	48158	2000	
Ni	60	3	72	39.503	ppb	39.503	0.58	13642	5000	
Cu	63	3	72	40.547	ppb	40.547	0.57	37819	5000	
Zn	66	3	72	45.184	ppb	45.184	2.48	7635	5000	
As	75	3	72	45.057	ppb	45.057	0.99	5195	2000	
Se	78	2	72	44.421	ppb	44.421	3.51	2562	2000	
(Se)	78	3	72	43.287	ppb	43.287	1.04	310	2000	
Sr	88	3	72	350.584	ppb	350.584	0.32	187546	4000	
Mo	95	3	115	45.771	ppb	45.771	1.08	21960	2000	
Ag	107	3	115	40.278	ppb	40.278	1.47	63985	100	
Cd	111	3	115	41.021	ppb	41.021	2.59	9587	2000	
Sn	120	3	115	40.498	ppb	40.498	1.33	29226	2000	
Sb	121	3	115	41.512	ppb	41.512	0.74	29890	1000	
Ba	137	3	115	95.094	ppb	95.094	2.28	22066	5000	
Tl	205	3	193	42.191	ppb	42.191	0.75	139696	2000	
(Pb)	206	3	193	41.684	ppb	41.684	2.44	46497	100	
(Pb)	207	3	193	41.017	ppb	41.017	2.66	40768	100	
Pb	208	3	193	41.905	ppb	41.905	1.57	188427	5000	
Th	232	3	193	42.067	ppb	42.067	0.59	192359	2000	
U	238	3	193	47.943	ppb	47.943	1.30	226658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4015379	0.51	4331237	92.71	60	120	
Sc (IS)	45	3	HMI He	605864	0.94	654817	92.52	60	120	
Ge Internal standard	72	2	HMI H2	2208618	1.35	2307933	95.70	60	120	
Ge Internal standard	72	3	HMI He	716453	0.93	744678	96.21	60	120	
In Internal Standard	115	3	HMI He	2380457	0.86	2599142	91.59	60	120	
Ir (IS)	193	3	HMI He	5000234	0.30	5525410	90.50	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-c msd
Data File Name	266SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:44:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.146	ppb	39.146	3.30	1933	2000	
Na	23	3	45	25146.464	ppb	25146.464	1.56	2818018	400000	
Mg	24	3	45	15508.215	ppb	15508.215	1.54	885559	400000	
Al	27	3	45	819.192	ppb	819.192	0.09	17077	400000	
K	39	3	45	7431.970	ppb	7431.970	0.96	356843	400000	
Ca	40	2	45	50965.142	ppb	50965.142	2.05	27447850	400000	
V	51	3	72	51.865	ppb	51.865	1.68	30248	2000	
Cr	52	3	72	43.005	ppb	43.005	1.59	32674	5000	
Mn	55	3	72	40.882	ppb	40.882	0.90	16311	10000	
Fe	56	2	72	870.636	ppb	870.636	2.86	1279888	10000	
Co	59	3	72	39.372	ppb	39.372	0.59	46628	2000	
Ni	60	3	72	38.685	ppb	38.685	1.44	12803	5000	
Cu	63	3	72	40.380	ppb	40.380	1.15	36089	5000	
Zn	66	3	72	44.535	ppb	44.535	3.31	7215	5000	
As	75	3	72	45.686	ppb	45.686	1.96	5047	2000	
Se	78	2	72	43.254	ppb	43.254	3.91	2469	2000	
(Se)	78	3	72	44.013	ppb	44.013	14.17	302	2000	
Sr	88	3	72	346.274	ppb	346.274	0.63	177489	4000	
Mo	95	3	115	45.265	ppb	45.265	2.22	21049	2000	
Ag	107	3	115	40.451	ppb	40.451	1.61	62284	100	
Cd	111	3	115	41.023	ppb	41.023	4.21	9290	2000	
Sn	120	3	115	40.784	ppb	40.784	2.72	28520	2000	
Sb	121	3	115	41.067	ppb	41.067	3.51	28656	1000	
Ba	137	3	115	94.484	ppb	94.484	2.31	21253	5000	
Tl	205	3	193	42.080	ppb	42.080	1.20	135573	2000	
(Pb)	206	3	193	41.631	ppb	41.631	1.83	45186	100	
(Pb)	207	3	193	40.958	ppb	40.958	0.70	39615	100	
Pb	208	3	193	41.486	ppb	41.486	1.55	181523	5000	
Th	232	3	193	42.498	ppb	42.498	1.37	189056	2000	
U	238	3	193	48.130	ppb	48.130	2.27	221401	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3921208	1.07	4331237	90.53	60	120	
Sc (IS)	45	3	HMI He	581212	0.74	654817	88.76	60	120	
Ge Internal standard	72	2	HMI H2	2185366	0.99	2307933	94.69	60	120	
Ge Internal standard	72	3	HMI He	686475	0.59	744678	92.18	60	120	
In Internal Standard	115	3	HMI He	2307955	2.20	2599142	88.80	60	120	
Ir (IS)	193	3	HMI He	4865609	0.53	5525410	88.06	60	120	

Sample Report

Sample Table

Sample Name	280-170988-a-10-a PDS
Data File Name	267SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:46:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600021 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	194.251	ppb	194.251	2.79	9188	2000	
Na	23	3	45	34648.863	ppb	34648.863	0.68	3930050	400000	
Mg	24	3	45	16658.221	ppb	16658.221	2.99	966834	400000	
Al	27	3	45	2062.325	ppb	2062.325	1.18	43591	400000	
K	39	3	45	8509.186	ppb	8509.186	0.71	411918	400000	
Ca	40	2	45	50930.702	ppb	50930.702	2.85	26359248	400000	
V	51	3	72	205.973	ppb	205.973	1.06	122152	2000	
Cr	52	3	72	194.912	ppb	194.912	0.44	146859	5000	
Mn	55	3	72	193.396	ppb	193.396	1.19	78299	10000	
Fe	56	2	72	86.031	ppb	86.031	1.88	128125	10000	
Co	59	3	72	191.395	ppb	191.395	0.79	231687	2000	
Ni	60	3	72	188.191	ppb	188.191	0.66	63245	5000	
Cu	63	3	72	191.557	ppb	191.557	1.47	173844	5000	
Zn	66	3	72	202.586	ppb	202.586	2.32	32781	5000	
As	75	3	72	194.657	ppb	194.657	1.78	21833	2000	
Se	78	2	72	196.568	ppb	196.568	1.05	10673	2000	
(Se)	78	3	72	194.285	ppb	194.285	2.87	1253	2000	
Sr	88	3	72	456.767	ppb	456.767	1.66	239401	4000	
Mo	95	3	115	206.507	ppb	206.507	2.64	97320	2000	
Ag	107	3	115	49.355	ppb	49.355	4.40	77063	100	
Cd	111	3	115	199.136	ppb	199.136	2.74	45747	2000	
Sn	120	3	115	204.441	ppb	204.441	2.07	143167	2000	
Sb	121	3	115	203.850	ppb	203.850	3.28	143907	1000	
Ba	137	3	115	253.922	ppb	253.922	3.49	57837	5000	
Tl	205	3	193	201.199	ppb	201.199	2.66	664181	2000	
(Pb)	206	3	193	201.853	ppb	201.853	2.25	224088	100	
(Pb)	207	3	193	198.893	ppb	198.893	2.06	196091	100	
Pb	208	3	193	200.866	ppb	200.866	2.55	898528	5000	
Th	232	3	193	404.046	ppb	404.046	2.71	1809650	2000	
U	238	3	193	218.201	ppb	218.201	2.21	1024181	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3768499	1.22	4331237	87.01	60	120	
Sc (IS)	45	3	HMI He	590887	1.61	654817	90.24	60	120	
Ge Internal standard	72	2	HMI H2	2080296	1.22	2307933	90.14	60	120	
Ge Internal standard	72	3	HMI He	701907	1.13	744678	94.26	60	120	
In Internal Standard	115	3	HMI He	2342048	3.22	2599142	90.11	60	120	
Ir (IS)	193	3	HMI He	4988692	0.87	5525410	90.29	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	268_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:48:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.999	ppb	3.537	2392	50	100.0	90	110	
Na	23	3	45	49204.597	ppb	0.214	5844924	51000	96.5	90	110	
Mg	24	3	45	10872.196	ppb	0.765	663275	11000	98.8	90	110	
Al	27	3	45	1026.344	ppb	4.178	22835	1000	102.6	90	110	
K	39	3	45	10472.034	ppb	2.489	526949	11000	95.2	90	110	
Ca	40	2	45	11049.688	ppb	1.244	5827658	11000	100.5	90	110	
V	51	3	72	52.728	ppb	2.293	31104	50	105.5	90	110	
Cr	52	3	72	51.508	ppb	2.492	39334	50	103.0	90	110	
Mn	55	3	72	51.494	ppb	2.408	20745	50	103.0	90	110	
Fe	56	2	72	1042.836	ppb	0.256	1435033	1000	104.3	90	110	
Co	59	3	72	50.868	ppb	1.952	60935	50	101.7	90	110	
Ni	60	3	72	49.497	ppb	1.348	16540	50	99.0	90	110	
Cu	63	3	72	50.357	ppb	0.665	45452	50	100.7	90	110	
Zn	66	3	72	52.617	ppb	3.501	8583	50	105.2	90	110	
As	75	3	72	51.314	ppb	1.456	5728	50	102.6	90	110	
Se	78	2	72	50.592	ppb	3.215	2704	50	101.2	90	110	
(Se)	78	3	72	53.089	ppb	12.952	361	50	106.2	90	110	
Sr	88	3	72	104.043	ppb	1.984	53975	100	104.0	90	110	
Mo	95	3	115	50.642	ppb	1.872	24592	50	101.3	90	110	
Ag	107	3	115	50.795	ppb	1.583	81669	50	101.6	90	110	
Cd	111	3	115	50.571	ppb	1.629	11963	50	101.1	90	110	
Sn	120	3	115	52.564	ppb	1.815	38249	50	105.1	90	110	
Sb	121	3	115	51.618	ppb	1.630	37594	50	103.2	90	110	
Ba	137	3	115	50.900	ppb	2.765	11986	50	101.8	90	110	
Tl	205	3	193	51.394	ppb	1.655	173472	50	102.8	90	110	
(Pb)	206	3	193	51.268	ppb	1.912	58276	50	102.5	90	110	
(Pb)	207	3	193	49.882	ppb	0.986	50488	50	99.8	90	110	
Pb	208	3	193	50.900	ppb	0.961	233222	50	101.8	90	110	
Th	232	3	193	52.783	ppb	0.924	245081	50	105.6	90	110	
U	238	3	193	51.517	ppb	1.614	248223	50	103.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3833872	2.87	4331237	88.52	60	120	
Sc (IS)	45	3	HMI He	620953	0.54	654817	94.83	60	120	
Ge Internal standard	72	2	HMI H2	2047795	3.80	2307933	88.73	60	120	
Ge Internal standard	72	3	HMI He	694488	0.61	744678	93.26	60	120	
In Internal Standard	115	3	HMI He	2409721	0.59	2599142	92.71	60	120	
Ir (IS)	193	3	HMI He	5098619	1.04	5525410	92.28	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	269_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:49:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	40.464	ppb	31.8	51632	25	>RL
Mg	24	3	45	1.182	ppb	98.2	250	25	
Al	27	3	45	9.055	ppb	28.7	277	15	
K	39	3	45	-21.036	ppb	-142.2	23467	50	
V	51	3	72	-0.076	ppb	-33.1	182	1	
Cr	52	3	72	-0.008	ppb	-1965.2	1263	1	
Mn	55	3	72	0.000	ppb	21731.0	158	0.5	
Co	59	3	72	0.011	ppb	57.5	37	0.5	
Ni	60	3	72	0.025	ppb	39.5	120	1	
Cu	63	3	72	0.100	ppb	38.5	413	1	
Zn	66	3	72	0.906	ppb	30.1	360	5	
As	75	3	72	0.105	ppb	43.7	58	1	
Se	78	2	72	0.028	ppb	258.2	4	1	
(Se)	78	3	72	-1.521	ppb	-61.6	22	1	
Sr	88	3	72	0.032	ppb	67.4	57	0.5	
Mo	95	3	115	0.110	ppb	38.1	87	0.5	
Ag	107	3	115	0.003	ppb	429.3	22	1	
Cd	111	3	115	0.008	ppb	259.2	5	0.5	
Sn	120	3	115	0.392	ppb	21.2	765	1	
Sb	121	3	115	-0.002	ppb	-483.5	113	0.6	
Ba	137	3	115	0.037	ppb	368.6	72	0.5	
Tl	205	3	193	0.023	ppb	34.0	182	0.1	
(Pb)	206	3	193	0.018	ppb	214.7	162	1	
(Pb)	207	3	193	0.003	ppb	1021.9	302	1	
Pb	208	3	193	0.029	ppb	44.6	800	0.5	
Th	232	3	193	0.864	ppb	38.0	7846	1	
U	238	3	193	0.046	ppb	76.4	1653	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3912840	2.53	4331237	90.34	60	120	
Sc (IS)	45	3	HMI He	608339	1.65	654817	92.90	60	120	
Ge Internal standard	72	2	HMI H2	2119418	1.30	2307933	91.83	60	120	
Ge Internal standard	72	3	HMI He	691682	1.44	744678	92.88	60	120	
In Internal Standard	115	3	HMI He	2394697	0.82	2599142	92.13	60	120	
Ir (IS)	193	3	HMI He	5066692	1.63	5525410	91.70	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	270LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:51:47-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	1	0.0	70	130	>+/-30%
Na	23	3	45	-83.524	ppb	-23.020	68517	50	-167.0	70	130	>+/-30%
Mg	24	3	45	2.991	ppb	110.191	657	50	6.0	70	130	>+/-30%
Al	27	3	45	-2.119	ppb	-59.826	63	50	-4.2	70	130	>+/-30%
K	39	3	45	-247.231	ppb	-8.470	23533	100	-247.2	70	130	>+/-30%
V	51	3	72	-0.309	ppb	-7.996	85	5	-6.2	70	130	>+/-30%
Cr	52	3	72	-1.215	ppb	-1.057	693	2	-60.7	70	130	>+/-30%
Mn	55	3	72	-0.146	ppb	-17.302	185	1	-14.6	70	130	>+/-30%
Co	59	3	72	0.001	ppb	5.035	45	1	0.1	70	130	>+/-30%
Ni	60	3	72	-0.231	ppb	-7.001	65	2	-11.5	70	130	>+/-30%
Cu	63	3	72	-0.084	ppb	-13.268	458	2	-4.2	70	130	>+/-30%
Zn	66	3	72	-0.569	ppb	-22.926	233	10	-5.7	70	130	>+/-30%
As	75	3	72	-0.235	ppb	-33.786	38	5	-4.7	70	130	>+/-30%
Se	78	2	72	-0.003	ppb	-713.443	4	5	-0.1	70	130	>+/-30%
(Se)	78	3	72	-3.851	ppb	-17.423	13	5	-77.0	70	130	>+/-30%
Sr	88	3	72	0.008	ppb	743.661	82	1	0.8	70	130	>+/-30%
Mo	95	3	115	-0.043	ppb	-41.666	23	2	-2.1	70	130	>+/-30%
Ag	107	3	115	0.012	ppb	27.556	65	1	1.2	70	130	>+/-30%
Cd	111	3	115	0.034	ppb	150.660	20	1	3.4	70	130	>+/-30%
Sn	120	3	115	-0.427	ppb	-17.224	327	10	-4.3	70	130	>+/-30%
Sb	121	3	115	-0.112	ppb	-21.121	62	2	-5.6	70	130	>+/-30%
Ba	137	3	115	-0.136	ppb	-10.843	57	1	-13.6	70	130	>+/-30%
Tl	205	3	193	0.014	ppb	31.587	275	1	1.4	70	130	>+/-30%
(Pb)	206	3	193	0.071	ppb	14.996	400	1	7.1	70	130	>+/-30%
(Pb)	207	3	193	0.063	ppb	40.789	655	1	6.3	70	130	>+/-30%
Pb	208	3	193	0.072	ppb	15.775	1804	1	7.2	70	130	>+/-30%
Th	232	3	193	0.041	ppb	14.892	7490	2	2.1	70	130	>+/-30%
U	238	3	193	0.022	ppb	46.863	2794	1	2.2	70	130	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6950848	2.12	4331237	160.48	60	120	IS Failed
Sc (IS)	45	3	HMI He	1116679	2.00	654817	170.53	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3716138	1.26	2307933	161.02	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1274428	0.25	744678	171.14	60	120	IS Failed
In Internal Standard	115	3	HMI He	4332513	1.15	2599142	166.69	60	120	IS Failed
Ir (IS)	193	3	HMI He	9197845	0.84	5525410	166.46	60	120	IS Failed

Blank Report

Sample Table

Sample Name	mb 280-600040/1-a
Data File Name	271_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:53:38-07:00
Sample Type	Blank
Dilution	1
Comment	600040 6020
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	27.453	ppb	29.92055448	50463	25
Mg	24	3	45	14.926	ppb	11.29359744	1078	25
Al	27	3	45	19.049	ppb	12.73908124	497	15
K	39	3	45	-21.705	ppb	-161.8513588	23574	50
V	51	3	72	0.004	ppb	876.088293	230	1
Cr	52	3	72	0.163	ppb	98.86515795	1398	1
Mn	55	3	72	0.685	ppb	18.05149879	433	0.5
Co	59	3	72	0.026	ppb	83.24997057	55	0.5
Ni	60	3	72	0.078	ppb	138.9326491	138	1
Cu	63	3	72	0.430	ppb	3.129732998	711	1
Zn	66	3	72	0.325	ppb	69.18205923	270	5
As	75	3	72	0.074	ppb	481.6638874	55	1
(Se)	78	3	72	-0.463	ppb	-404.9064747	28	1
Sr	88	3	72	0.064	ppb	104.0194866	73	0.5
Mo	95	3	115	0.015	ppb	284.064948	42	0.5
Ag	107	3	115	0.001	ppb	1510.684607	18	1
Cd	111	3	115	-0.006	ppb	-204.6256454	2	0.5
Sn	120	3	115	0.437	ppb	21.76169015	811	1
Sb	121	3	115	0.004	ppb	490.9893609	120	0.6
Ba	137	3	115	0.200	ppb	86.06775194	112	0.5
Tl	205	3	193	0.004	ppb	167.6538885	118	0.1
(Pb)	206	3	193	0.000	ppb	-128033.0615	142	1
(Pb)	207	3	193	-0.001	ppb	-2876.778833	298	1
Pb	208	3	193	0.017	ppb	145.4049214	750	0.5
Th	232	3	193	0.221	ppb	34.66733066	4974	1
U	238	3	193	0.025	ppb	85.24021267	1564	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3938525	2.01	4331237	90.93	60	120	
Sc (IS)	45	3	HMI He	612215	0.53	654817	93.49	60	120	
Ge Internal standard	72	2	HMI H2	2093306	0.99	2307933	90.70	60	120	
Ge Internal standard	72	3	HMI He	695439	0.73	744678	93.39	60	120	
In Internal Standard	115	3	HMI He	2438445	1.34	2599142	93.82	60	120	
Ir (IS)	193	3	HMI He	5097472	0.47	5525410	92.26	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600040/2-a
Data File Name	272_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:55:31-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600040 6020
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.037	37.037	ppb	8.842	1806	40	92.6	80	120	
Na	23	3	45	782.251	782.251	ppb	4.211	135453	40	1955.6	80	120	>+/-20%
Mg	24	3	45	707.543	707.543	ppb	1.896	41904	40	1768.9	80	120	>+/-20%
Al	27	3	45	750.544	750.544	ppb	2.055	16169	40	1876.4	80	120	>+/-20%
K	39	3	45	711.373	711.373	ppb	10.413	57069	40	1778.4	80	120	>+/-20%
Ca	40	2	45	823.689	823.689	ppb	2.444	451758	40	2059.2	80	120	>+/-20%
V	51	3	72	38.388	38.388	ppb	0.577	22567	40	96.0	80	120	
Cr	52	3	72	38.274	38.274	ppb	2.103	29370	40	95.7	80	120	
Mn	55	3	72	38.560	38.560	ppb	1.834	15478	40	96.4	80	120	
Fe	56	2	72	801.752	801.752	ppb	3.438	1125394	40	2004.4	80	120	>+/-20%
(Fe)	56	3	72	762.227	762.227	ppb	0.584	472974	40	1905.6	80	120	>+/-20%
Co	59	3	72	38.478	38.478	ppb	1.020	45813	40	96.2	80	120	
Ni	60	3	72	37.925	37.925	ppb	1.756	12619	40	94.8	80	120	
Cu	63	3	72	38.759	38.759	ppb	0.925	34840	40	96.9	80	120	
Zn	66	3	72	39.077	39.077	ppb	2.845	6390	40	97.7	80	120	
As	75	3	72	37.256	37.256	ppb	2.674	4147	40	93.1	80	120	
Se	78	2	72	39.567	39.567	ppb	6.738	2154	40	98.9	80	120	
(Se)	78	3	72	41.635	41.635	ppb	24.324	288	40	104.1	80	120	
Sr	88	3	72	77.266	77.266	ppb	2.311	39843	40	193.2	80	120	>+/-20%
Mo	95	3	115	37.604	37.604	ppb	1.706	18090	40	94.0	80	120	
Ag	107	3	115	37.787	37.787	ppb	1.432	60169	40	94.5	80	120	
Cd	111	3	115	37.797	37.797	ppb	1.861	8854	40	94.5	80	120	
Sn	120	3	115	36.329	36.329	ppb	2.470	26324	40	90.8	80	120	
Sb	121	3	115	38.832	38.832	ppb	3.085	28032	40	97.1	80	120	
Ba	137	3	115	38.916	38.916	ppb	0.823	9092	40	97.3	80	120	
Tl	205	3	193	38.559	38.559	ppb	1.047	129847	40	96.4	80	120	
(Pb)	206	3	193	38.487	38.487	ppb	1.219	43677	40	96.2	80	120	
(Pb)	207	3	193	37.781	37.781	ppb	0.070	38219	40	94.5	80	120	
Pb	208	3	193	38.248	38.248	ppb	0.287	174977	40	95.6	80	120	
Th	232	3	193	38.607	38.607	ppb	1.501	179865	40	96.5	80	120	
U	238	3	193	38.429	38.429	ppb	0.499	185071	40	96.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882454	2.85	4331237	89.64	60	120	
Sc (IS)	45	3	HMI He	600507	1.80	654817	91.71	60	120	
Ge Internal standard	72	2	HMI H2	2085579	2.43	2307933	90.37	60	120	
Ge Internal standard	72	3	HMI He	690173	1.04	744678	92.68	60	120	
In Internal Standard	115	3	HMI He	2386561	1.84	2599142	91.82	60	120	
Ir (IS)	193	3	HMI He	5085618	1.15	5525410	92.04	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-a
Data File Name	273SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:57:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.729	ppb	1.729	13.11	83	2000	
Na	23	3	45	35613.320	ppb	35613.320	3.77	4008381	400000	
Mg	24	3	45	5380.630	ppb	5380.630	1.21	310171	400000	
Al	27	3	45	13511.061	ppb	13511.061	1.42	283053	400000	
K	39	3	45	2339.435	ppb	2339.435	2.59	129508	400000	
Ca	40	2	45	22664.984	ppb	22664.984	1.26	11839570	400000	
V	51	3	72	23.828	ppb	23.828	4.14	14108	2000	
Cr	52	3	72	17.022	ppb	17.022	4.33	13785	5000	
Mn	55	3	72	226.649	ppb	226.649	1.87	90318	10000	
Fe	56	2	72	14203.545	ppb	14203.545	3.32	20203277	10000	
Co	59	3	72	7.063	ppb	7.063	2.03	8440	2000	
Ni	60	3	72	20.835	ppb	20.835	0.92	6993	5000	
Cu	63	3	72	8.997	ppb	8.997	3.01	8345	5000	
Zn	66	3	72	30.874	ppb	30.874	8.13	5098	5000	
As	75	3	72	4.312	ppb	4.312	8.43	521	2000	
Se	78	2	72	0.268	ppb	0.268	33.24	17	2000	
(Se)	78	3	72	4.146	ppb	4.146	32.89	57	2000	
Sr	88	3	72	93.657	ppb	93.657	0.92	48360	4000	
Mo	95	3	115	0.272	ppb	0.272	22.85	162	2000	
Ag	107	3	115	0.018	ppb	0.018	55.40	45	100	
Cd	111	3	115	0.044	ppb	0.044	72.85	13	2000	
Sn	120	3	115	0.675	ppb	0.675	2.67	951	2000	
Sb	121	3	115	0.169	ppb	0.169	20.53	233	1000	
Ba	137	3	115	485.514	ppb	485.514	2.34	111222	5000	
Tl	205	3	193	0.190	ppb	0.190	6.28	726	2000	
(Pb)	206	3	193	8.312	ppb	8.312	1.70	9320	100	
(Pb)	207	3	193	7.581	ppb	7.581	4.05	7722	100	
Pb	208	3	193	8.024	ppb	8.024	1.04	36364	5000	
Th	232	3	193	6.089	ppb	6.089	1.99	30961	2000	
U	238	3	193	0.669	ppb	0.669	4.40	4530	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3801116	1.20	4331237	87.76	60	120	
Sc (IS)	45	3	HMI He	586586	0.45	654817	89.58	60	120	
Ge Internal standard	72	2	HMI H2	2128933	1.19	2307933	92.24	60	120	
Ge Internal standard	72	3	HMI He	691175	1.47	744678	92.82	60	120	
In Internal Standard	115	3	HMI He	2355817	1.99	2599142	90.64	60	120	
Ir (IS)	193	3	HMI He	4966539	0.88	5525410	89.89	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-aSD@5
Data File Name	274SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T20:59:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.349	ppb	0.349	62.15	17	2000	
Na	23	3	45	7599.747	ppb	7599.747	0.90	882202	400000	
Mg	24	3	45	1130.622	ppb	1130.622	1.56	64658	400000	
Al	27	3	45	2851.933	ppb	2851.933	1.60	59210	400000	
K	39	3	45	476.468	ppb	476.468	4.05	44696	400000	
Ca	40	2	45	4802.654	ppb	4802.654	0.80	2505618	400000	
V	51	3	72	5.016	ppb	5.016	1.50	3140	2000	
Cr	52	3	72	3.796	ppb	3.796	1.54	4049	5000	
Mn	55	3	72	46.918	ppb	46.918	3.23	18765	10000	
Fe	56	2	72	2976.230	ppb	2976.230	0.77	4193063	10000	
Co	59	3	72	1.559	ppb	1.559	3.10	1876	2000	
Ni	60	3	72	4.363	ppb	4.363	6.72	1548	5000	
Cu	63	3	72	1.829	ppb	1.829	2.47	1949	5000	
Zn	66	3	72	7.360	ppb	7.360	10.48	1378	5000	
As	75	3	72	0.807	ppb	0.807	35.49	135	2000	
Se	78	2	72	0.053	ppb	0.053	197.78	5	2000	
(Se)	78	3	72	-1.782	ppb	-1.782	-45.11	20	2000	
Sr	88	3	72	19.149	ppb	19.149	1.39	9892	4000	
Mo	95	3	115	0.093	ppb	0.093	34.16	77	2000	
Ag	107	3	115	0.008	ppb	0.008	123.35	28	100	
Cd	111	3	115	0.031	ppb	0.031	69.52	10	2000	
Sn	120	3	115	0.458	ppb	0.458	7.62	790	2000	
Sb	121	3	115	0.014	ppb	0.014	59.19	122	1000	
Ba	137	3	115	99.175	ppb	99.175	2.62	22513	5000	
Tl	205	3	193	0.046	ppb	0.046	41.40	250	2000	
(Pb)	206	3	193	1.716	ppb	1.716	8.15	2016	100	
(Pb)	207	3	193	1.650	ppb	1.650	7.11	1894	100	
Pb	208	3	193	1.713	ppb	1.713	0.90	8209	5000	
Th	232	3	193	1.387	ppb	1.387	2.02	9954	2000	
U	238	3	193	0.149	ppb	0.149	20.45	2084	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3781160	1.05	4331237	87.30	60	120	
Sc (IS)	45	3	HMI He	580710	0.64	654817	88.68	60	120	
Ge Internal standard	72	2	HMI H2	2104724	0.89	2307933	91.20	60	120	
Ge Internal standard	72	3	HMI He	689129	1.15	744678	92.54	60	120	
In Internal Standard	115	3	HMI He	2328924	1.62	2599142	89.60	60	120	
Ir (IS)	193	3	HMI He	4926200	1.16	5525410	89.16	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-b ms
Data File Name	275SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:01:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.193	ppb	37.193	5.40	1793	2000	
Na	23	3	45	34383.491	ppb	34383.491	2.10	3901549	400000	
Mg	24	3	45	5950.278	ppb	5950.278	1.84	345632	400000	
Al	27	3	45	16282.559	ppb	16282.559	1.44	343728	400000	
K	39	3	45	2970.574	ppb	2970.574	1.71	159325	400000	
Ca	40	2	45	22178.155	ppb	22178.155	0.43	11887078	400000	
V	51	3	72	60.578	ppb	60.578	0.83	36010	2000	
Cr	52	3	72	52.733	ppb	52.733	0.19	40585	5000	
Mn	55	3	72	250.988	ppb	250.988	1.57	101350	10000	
Fe	56	2	72	15634.054	ppb	15634.054	2.15	22174927	10000	
Co	59	3	72	41.891	ppb	41.891	0.96	50617	2000	
Ni	60	3	72	54.196	ppb	54.196	3.81	18253	5000	
Cu	63	3	72	44.859	ppb	44.859	1.58	40870	5000	
Zn	66	3	72	67.867	ppb	67.867	3.57	11104	5000	
As	75	3	72	37.577	ppb	37.577	5.92	4244	2000	
Se	78	2	72	35.341	ppb	35.341	3.10	1960	2000	
(Se)	78	3	72	45.454	ppb	45.454	3.80	317	2000	
Sr	88	3	72	160.106	ppb	160.106	0.16	83754	4000	
Mo	95	3	115	34.800	ppb	34.800	0.64	16527	2000	
Ag	107	3	115	35.391	ppb	35.391	0.54	55625	100	
Cd	111	3	115	35.128	ppb	35.128	0.93	8122	2000	
Sn	120	3	115	29.994	ppb	29.994	0.57	21540	2000	
Sb	121	3	115	26.445	ppb	26.445	0.63	18881	1000	
Ba	137	3	115	497.975	ppb	497.975	1.42	114066	5000	
Tl	205	3	193	36.294	ppb	36.294	0.28	120840	2000	
(Pb)	206	3	193	43.736	ppb	43.736	1.74	49043	100	
(Pb)	207	3	193	43.274	ppb	43.274	1.92	43230	100	
Pb	208	3	193	43.849	ppb	43.849	0.82	198213	5000	
Th	232	3	193	42.215	ppb	42.215	1.42	194068	2000	
U	238	3	193	37.147	ppb	37.147	0.47	176901	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899632	0.32	4331237	90.04	60	120	
Sc (IS)	45	3	HMI He	591129	0.92	654817	90.27	60	120	
Ge Internal standard	72	2	HMI H2	2123039	2.14	2307933	91.99	60	120	
Ge Internal standard	72	3	HMI He	700426	0.56	744678	94.06	60	120	
In Internal Standard	115	3	HMI He	2355287	1.50	2599142	90.62	60	120	
Ir (IS)	193	3	HMI He	5027584	0.77	5525410	90.99	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-c msd
Data File Name	276SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:02:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.192	ppb	42.192	1.29	1974	2000	
Na	23	3	45	37979.322	ppb	37979.322	1.20	4250331	400000	
Mg	24	3	45	6701.624	ppb	6701.624	0.97	384322	400000	
Al	27	3	45	18591.090	ppb	18591.090	1.32	387477	400000	
K	39	3	45	3350.166	ppb	3350.166	2.63	174394	400000	
Ca	40	2	45	25335.590	ppb	25335.590	2.94	13140652	400000	
V	51	3	72	65.658	ppb	65.658	1.63	38552	2000	
Cr	52	3	72	58.600	ppb	58.600	0.57	44432	5000	
Mn	55	3	72	280.089	ppb	280.089	1.35	111766	10000	
Fe	56	2	72	17501.519	ppb	17501.519	1.10	24436699	10000	
Co	59	3	72	46.538	ppb	46.538	0.25	55573	2000	
Ni	60	3	72	61.621	ppb	61.621	1.08	20498	5000	
Cu	63	3	72	49.338	ppb	49.338	1.09	44394	5000	
Zn	66	3	72	72.779	ppb	72.779	2.77	11751	5000	
As	75	3	72	41.408	ppb	41.408	0.68	4617	2000	
Se	78	2	72	39.014	ppb	39.014	5.04	2129	2000	
(Se)	78	3	72	42.284	ppb	42.284	13.45	293	2000	
Sr	88	3	72	177.600	ppb	177.600	0.73	91816	4000	
Mo	95	3	115	38.190	ppb	38.190	1.39	17798	2000	
Ag	107	3	115	39.368	ppb	39.368	2.55	60721	100	
Cd	111	3	115	39.654	ppb	39.654	0.68	8999	2000	
Sn	120	3	115	33.940	ppb	33.940	2.72	23854	2000	
Sb	121	3	115	30.031	ppb	30.031	2.07	21026	1000	
Ba	137	3	115	563.160	ppb	563.160	2.87	126588	5000	
Tl	205	3	193	40.148	ppb	40.148	1.71	131976	2000	
(Pb)	206	3	193	49.121	ppb	49.121	0.71	54383	100	
(Pb)	207	3	193	47.789	ppb	47.789	1.01	47114	100	
Pb	208	3	193	48.701	ppb	48.701	1.81	217293	5000	
Th	232	3	193	47.416	ppb	47.416	2.24	214738	2000	
U	238	3	193	41.430	ppb	41.430	2.77	194613	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3775988	2.45	4331237	87.18	60	120	
Sc (IS)	45	3	HMI He	583595	0.07	654817	89.12	60	120	
Ge Internal standard	72	2	HMI H2	2089592	1.30	2307933	90.54	60	120	
Ge Internal standard	72	3	HMI He	692233	0.32	744678	92.96	60	120	
In Internal Standard	115	3	HMI He	2311755	1.45	2599142	88.94	60	120	
Ir (IS)	193	3	HMI He	4965344	2.50	5525410	89.86	60	120	

Sample Report

Sample Table

Sample Name	280-171508-a-9-a PDS
Data File Name	277SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:04:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	199.719	ppb	199.719	0.52	9475	2000	
Na	23	3	45	44088.939	ppb	44088.939	2.48	5107332	400000	
Mg	24	3	45	7204.488	ppb	7204.488	1.73	428332	400000	
Al	27	3	45	15361.511	ppb	15361.511	1.15	331950	400000	
K	39	3	45	4277.988	ppb	4277.988	0.35	224139	400000	
Ca	40	2	45	24684.807	ppb	24684.807	2.73	13168370	400000	
V	51	3	72	216.906	ppb	216.906	3.30	129343	2000	
Cr	52	3	72	209.466	ppb	209.466	2.59	158625	5000	
Mn	55	3	72	416.173	ppb	416.173	2.34	169293	10000	
Fe	56	2	72	14300.006	ppb	14300.006	3.02	20452972	10000	
Co	59	3	72	200.051	ppb	200.051	1.65	243567	2000	
Ni	60	3	72	208.546	ppb	208.546	2.48	70485	5000	
Cu	63	3	72	205.017	ppb	205.017	1.42	187112	5000	
Zn	66	3	72	227.988	ppb	227.988	2.45	37070	5000	
As	75	3	72	194.668	ppb	194.668	3.83	21953	2000	
Se	78	2	72	200.180	ppb	200.180	3.87	11181	2000	
(Se)	78	3	72	212.206	ppb	212.206	7.61	1373	2000	
Sr	88	3	72	289.091	ppb	289.091	0.35	152434	4000	
Mo	95	3	115	200.470	ppb	200.470	2.20	96289	2000	
Ag	107	3	115	49.707	ppb	49.707	3.54	79121	100	
Cd	111	3	115	196.295	ppb	196.295	3.42	45957	2000	
Sn	120	3	115	205.445	ppb	205.445	2.67	146614	2000	
Sb	121	3	115	203.886	ppb	203.886	1.78	146714	1000	
Ba	137	3	115	688.727	ppb	688.727	3.12	159783	5000	
Tl	205	3	193	203.701	ppb	203.701	1.73	681358	2000	
(Pb)	206	3	193	212.929	ppb	212.929	2.39	239498	100	
(Pb)	207	3	193	207.901	ppb	207.901	1.00	207698	100	
Pb	208	3	193	211.011	ppb	211.011	1.86	956404	5000	
Th	232	3	193	196.722	ppb	196.722	1.36	895189	2000	
U	238	3	193	211.440	ppb	211.440	0.50	1005867	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3883398	2.33	4331237	89.66	60	120	
Sc (IS)	45	3	HMI He	605009	1.23	654817	92.39	60	120	
Ge Internal standard	72	2	HMI H2	2140893	1.93	2307933	92.76	60	120	
Ge Internal standard	72	3	HMI He	706179	2.20	744678	94.83	60	120	
In Internal Standard	115	3	HMI He	2386927	2.82	2599142	91.84	60	120	
Ir (IS)	193	3	HMI He	5055616	2.21	5525410	91.50	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-1-a
Data File Name	278SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:06:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	299770.616	ppb	299770.616	1.56	32410189	400000	
Mg	24	3	45	78985.660	ppb	78985.660	0.54	4415490	400000	
Al	27	3	45	35.058	ppb	35.058	5.73	787	400000	
K	39	3	45	6813.589	ppb	6813.589	1.19	322232	400000	
Ca	40	2	45	352375.773	ppb	352375.773	1.42	183550217	400000	
V	51	3	72	0.434	ppb	0.434	10.52	460	2000	
Cr	52	3	72	0.167	ppb	0.167	59.66	1336	5000	
Mn	55	3	72	5.795	ppb	5.795	5.82	2366	10000	
Fe	56	2	72	39.258	ppb	39.258	3.34	62731	10000	
Co	59	3	72	0.024	ppb	0.024	63.45	50	2000	
Ni	60	3	72	1.376	ppb	1.376	14.41	543	5000	
Cu	63	3	72	0.706	ppb	0.706	20.17	915	5000	
Zn	66	3	72	2.809	ppb	2.809	8.65	635	5000	
As	75	3	72	0.379	ppb	0.379	23.89	85	2000	
Se	78	2	72	7.000	ppb	7.000	2.80	380	2000	
(Se)	78	3	72	7.607	ppb	7.607	30.18	75	2000	
Sr	88	3	72	7516.991	ppb	7516.991	0.13	3723290	4000	
Mo	95	3	115	1.986	ppb	1.986	7.55	943	2000	
Ag	107	3	115	0.016	ppb	0.016	19.46	40	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	0.330	ppb	0.330	31.66	686	2000	
Sb	121	3	115	0.081	ppb	0.081	46.23	165	1000	
Ba	137	3	115	14.690	ppb	14.690	4.85	3317	5000	
Tl	205	3	193	0.061	ppb	0.061	24.64	287	2000	
(Pb)	206	3	193	0.179	ppb	0.179	21.88	320	100	
(Pb)	207	3	193	0.150	ppb	0.150	25.20	418	100	
Pb	208	3	193	0.158	ppb	0.158	10.18	1289	5000	
Th	232	3	193	1.178	ppb	1.178	18.47	8667	2000	
U	238	3	193	27.978	ppb	27.978	0.63	125659	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3794056	0.87	4331237	87.60	60	120	
Sc (IS)	45	3	HMI He	569120	0.83	654817	86.91	60	120	
Ge Internal standard	72	2	HMI H2	2066906	0.50	2307933	89.56	60	120	
Ge Internal standard	72	3	HMI He	663523	0.51	744678	89.10	60	120	
In Internal Standard	115	3	HMI He	2282369	2.49	2599142	87.81	60	120	
Ir (IS)	193	3	HMI He	4729001	0.94	5525410	85.59	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-2-a
Data File Name	279SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:08:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	503404.980	ppb	503404.980	2.70	62388686	400000	
Mg	24	3	45	134040.097	ppb	134040.097	2.71	8592872	400000	
Al	27	3	45	131.650	ppb	131.650	4.49	3154	400000	
K	39	3	45	9340.803	ppb	9340.803	2.56	496950	400000	
Ca	40	2	45	491095.263	ppb	491095.263	1.08	257086406	400000	
V	51	3	72	0.314	ppb	0.314	18.51	435	2000	
Cr	52	3	72	0.397	ppb	0.397	30.16	1659	5000	
Mn	55	3	72	756.503	ppb	756.503	2.67	320258	10000	
Fe	56	2	72	229.274	ppb	229.274	2.75	330107	10000	
Co	59	3	72	2.059	ppb	2.059	4.67	2634	2000	
Ni	60	3	72	7.159	ppb	7.159	5.48	2632	5000	
Cu	63	3	72	1.135	ppb	1.135	4.69	1421	5000	
Zn	66	3	72	6.334	ppb	6.334	4.24	1296	5000	
As	75	3	72	0.840	ppb	0.840	12.10	148	2000	
Se	78	2	72	0.163	ppb	0.163	68.51	11	2000	
(Se)	78	3	72	-1.198	ppb	-1.198	-120.39	25	2000	
Sr	88	3	72	9071.744	ppb	9071.744	0.99	4979276	4000	
Mo	95	3	115	0.479	ppb	0.479	4.99	278	2000	
Ag	107	3	115	0.008	ppb	0.008	76.28	32	100	
Cd	111	3	115	0.048	ppb	0.048	112.95	15	2000	
Sn	120	3	115	0.366	ppb	0.366	12.73	785	2000	
Sb	121	3	115	0.073	ppb	0.073	40.32	177	1000	
Ba	137	3	115	10.038	ppb	10.038	1.91	2524	5000	
Tl	205	3	193	0.050	ppb	0.050	7.43	283	2000	
(Pb)	206	3	193	0.157	ppb	0.157	34.82	332	100	
(Pb)	207	3	193	0.133	ppb	0.133	18.64	450	100	
Pb	208	3	193	0.160	ppb	0.160	2.76	1451	5000	
Th	232	3	193	0.301	ppb	0.301	20.67	5532	2000	
U	238	3	193	1.779	ppb	1.779	1.73	10334	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3813111	2.17	4331237	88.04	60	120	
Sc (IS)	45	3	HMI He	652980	2.78	654817	99.72	60	120	
Ge Internal standard	72	2	HMI H2	2099707	2.53	2307933	90.98	60	120	
Ge Internal standard	72	3	HMI He	735402	2.79	744678	98.75	60	120	
In Internal Standard	115	3	HMI He	2518959	1.32	2599142	96.92	60	120	
Ir (IS)	193	3	HMI He	5286020	1.74	5525410	95.67	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-3-a
Data File Name	280SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:10:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	173201.088	ppb	173201.088	0.49	20778681	400000	
Mg	24	3	45	75889.791	ppb	75889.791	1.21	4702068	400000	
Al	27	3	45	9.453	ppb	9.453	18.91	297	400000	
K	39	3	45	5497.210	ppb	5497.210	0.76	293091	400000	
Ca	40	2	45	531164.999	ppb	531164.999	1.90	283745482	400000	
V	51	3	72	0.005	ppb	0.005	910.64	245	2000	
Cr	52	3	72	0.059	ppb	0.059	21.26	1408	5000	
Mn	55	3	72	584.342	ppb	584.342	1.36	249449	10000	
Fe	56	2	72	323.198	ppb	323.198	1.01	471883	10000	
Co	59	3	72	3.410	ppb	3.410	2.62	4382	2000	
Ni	60	3	72	5.280	ppb	5.280	9.30	1989	5000	
Cu	63	3	72	0.207	ppb	0.207	47.42	545	5000	
Zn	66	3	72	5.639	ppb	5.639	6.18	1189	5000	
As	75	3	72	0.503	ppb	0.503	70.47	110	2000	
Se	78	2	72	0.182	ppb	0.182	63.02	13	2000	
(Se)	78	3	72	0.025	ppb	0.025	14294.60	33	2000	
Sr	88	3	72	7621.457	ppb	7621.457	1.47	4216233	4000	
Mo	95	3	115	0.909	ppb	0.909	5.17	485	2000	
Ag	107	3	115	0.000	ppb	0.000	-354.58	17	100	
Cd	111	3	115	0.036	ppb	0.036	92.13	12	2000	
Sn	120	3	115	0.429	ppb	0.429	34.42	811	2000	
Sb	121	3	115	0.002	ppb	0.002	3171.54	118	1000	
Ba	137	3	115	36.310	ppb	36.310	3.44	8744	5000	
Tl	205	3	193	0.025	ppb	0.025	10.71	192	2000	
(Pb)	206	3	193	0.000	ppb	0.000	3940.63	143	100	
(Pb)	207	3	193	0.035	ppb	0.035	136.02	338	100	
Pb	208	3	193	0.040	ppb	0.040	26.47	861	5000	
Th	232	3	193	0.102	ppb	0.102	40.68	4472	2000	
U	238	3	193	57.583	ppb	57.583	1.60	280059	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891371	1.36	4331237	89.84	60	120	
Sc (IS)	45	3	HMI He	630876	2.27	654817	96.34	60	120	
Ge Internal standard	72	2	HMI H2	2144619	0.13	2307933	92.92	60	120	
Ge Internal standard	72	3	HMI He	741227	2.36	744678	99.54	60	120	
In Internal Standard	115	3	HMI He	2460712	3.60	2599142	94.67	60	120	
Ir (IS)	193	3	HMI He	5149436	0.64	5525410	93.20	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	281_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:12:08-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.965	ppb	7.180	2654	50	103.9	90	110	
Na	23	3	45	50516.511	ppb	1.327	6017268	51000	99.1	90	110	
Mg	24	3	45	11091.282	ppb	0.771	678668	11000	100.8	90	110	
Al	27	3	45	1027.480	ppb	3.842	22932	1000	102.7	90	110	
K	39	3	45	10632.357	ppb	1.346	536256	11000	96.7	90	110	
Ca	40	2	45	11311.219	ppb	1.779	6395822	11000	102.8	90	110	
V	51	3	72	51.027	ppb	0.735	31011	50	102.1	90	110	
Cr	52	3	72	50.535	ppb	0.783	39772	50	101.1	90	110	
Mn	55	3	72	50.241	ppb	2.443	20849	50	100.5	90	110	
Fe	56	2	72	1042.482	ppb	1.793	1548219	1000	104.2	90	110	
Co	59	3	72	49.810	ppb	0.610	61457	50	99.6	90	110	
Ni	60	3	72	49.088	ppb	1.982	16895	50	98.2	90	110	
Cu	63	3	72	49.962	ppb	0.603	46446	50	99.9	90	110	
Zn	66	3	72	52.747	ppb	1.991	8862	50	105.5	90	110	
As	75	3	72	50.716	ppb	3.964	5832	50	101.4	90	110	
Se	78	2	72	51.803	ppb	1.298	2990	50	103.6	90	110	
(Se)	78	3	72	48.568	ppb	8.241	343	50	97.1	90	110	
Sr	88	3	72	103.412	ppb	1.029	55256	100	103.4	90	110	
Mo	95	3	115	50.029	ppb	2.595	25157	50	100.1	90	110	
Ag	107	3	115	48.911	ppb	2.282	81446	50	97.8	90	110	
Cd	111	3	115	51.070	ppb	1.811	12511	50	102.1	90	110	
Sn	120	3	115	51.734	ppb	3.715	38987	50	103.5	90	110	
Sb	121	3	115	51.716	ppb	1.313	39014	50	103.4	90	110	
Ba	137	3	115	50.316	ppb	3.048	12273	50	100.6	90	110	
Tl	205	3	193	50.992	ppb	1.112	176972	50	102.0	90	110	
(Pb)	206	3	193	50.336	ppb	2.142	58833	50	100.7	90	110	
(Pb)	207	3	193	50.454	ppb	2.068	52497	50	100.9	90	110	
Pb	208	3	193	50.358	ppb	1.377	237239	50	100.7	90	110	
Th	232	3	193	50.897	ppb	0.555	243139	50	101.8	90	110	
U	238	3	193	50.789	ppb	1.294	251632	50	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110022	0.79	4331237	94.89	60	120	
Sc (IS)	45	3	HMI He	622814	0.51	654817	95.11	60	120	
Ge Internal standard	72	2	HMI H2	2210059	0.92	2307933	95.76	60	120	
Ge Internal standard	72	3	HMI He	715246	0.05	744678	96.05	60	120	
In Internal Standard	115	3	HMI He	2496280	2.22	2599142	96.04	60	120	
Ir (IS)	193	3	HMI He	5242408	1.46	5525410	94.88	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	282_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:14:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	57.775	ppb	8.0	55825	25	>RL
Mg	24	3	45	2.358	ppb	20.6	334	25	
Al	27	3	45	10.747	ppb	29.4	327	15	
K	39	3	45	-46.457	ppb	-84.9	23179	50	
V	51	3	72	-0.033	ppb	-182.0	215	1	
Cr	52	3	72	0.026	ppb	298.4	1338	1	
Mn	55	3	72	0.158	ppb	38.6	230	0.5	
Co	59	3	72	0.017	ppb	22.5	45	0.5	
Ni	60	3	72	0.091	ppb	187.7	147	1	
Cu	63	3	72	0.145	ppb	78.8	470	1	
Zn	66	3	72	0.211	ppb	167.6	260	5	
As	75	3	72	-0.074	ppb	-97.7	40	1	
Se	78	2	72	0.024	ppb	3.0	4	1	
(Se)	78	3	72	-1.644	ppb	-74.3	22	1	
Sr	88	3	72	0.193	ppb	8.7	145	0.5	
Mo	95	3	115	0.039	ppb	30.2	55	0.5	
Ag	107	3	115	0.001	ppb	218.6	20	1	
Cd	111	3	115	0.000	ppb	3401.7	3	0.5	
Sn	120	3	115	0.334	ppb	21.4	760	1	
Sb	121	3	115	-0.003	ppb	-656.3	118	0.6	
Ba	137	3	115	-0.046	ppb	-39.3	55	0.5	
Tl	205	3	193	0.010	ppb	68.7	142	0.1	
(Pb)	206	3	193	0.015	ppb	163.0	163	1	
(Pb)	207	3	193	0.045	ppb	31.5	356	1	
Pb	208	3	193	0.037	ppb	60.7	865	0.5	
Th	232	3	193	0.528	ppb	20.5	6587	1	
U	238	3	193	0.022	ppb	102.0	1601	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4236874	1.51	4331237	97.82	60	120	
Sc (IS)	45	3	HMI He	633119	1.60	654817	96.69	60	120	
Ge Internal standard	72	2	HMI H2	2256609	1.06	2307933	97.78	60	120	
Ge Internal standard	72	3	HMI He	717741	1.20	744678	96.38	60	120	
In Internal Standard	115	3	HMI He	2511145	2.53	2599142	96.61	60	120	
Ir (IS)	193	3	HMI He	5276246	2.96	5525410	95.49	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-4-a
Data File Name	283SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:15:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	952454.087	ppb	952454.087	1.64	114441428	400000	
Mg	24	3	45	125977.164	ppb	125977.164	1.42	7833035	400000	
Al	27	3	45	65.391	ppb	65.391	2.66	1562	400000	
K	39	3	45	7002.710	ppb	7002.710	1.80	367686	400000	
Ca	40	2	45	415768.259	ppb	415768.259	2.14	232559016	400000	
V	51	3	72	0.058	ppb	0.058	170.73	273	2000	
Cr	52	3	72	0.325	ppb	0.325	29.58	1594	5000	
Mn	55	3	72	563.435	ppb	563.435	2.62	236867	10000	
Fe	56	2	72	2104.050	ppb	2104.050	3.55	3045999	10000	
Co	59	3	72	0.808	ppb	0.808	7.66	1041	2000	
Ni	60	3	72	5.891	ppb	5.891	10.68	2171	5000	
Cu	63	3	72	1.237	ppb	1.237	15.40	1506	5000	
Zn	66	3	72	3.543	ppb	3.543	22.26	823	5000	
As	75	3	72	1.280	ppb	1.280	19.60	198	2000	
Se	78	2	72	0.144	ppb	0.144	48.69	11	2000	
(Se)	78	3	72	-1.462	ppb	-1.462	-54.93	23	2000	
Sr	88	3	72	9481.355	ppb	9481.355	3.12	5164895	4000	
Mo	95	3	115	1.190	ppb	1.190	1.00	620	2000	
Ag	107	3	115	0.002	ppb	0.002	346.47	20	100	
Cd	111	3	115	-0.006	ppb	-0.006	-201.93	2	2000	
Sn	120	3	115	0.388	ppb	0.388	7.11	778	2000	
Sb	121	3	115	0.092	ppb	0.092	37.50	185	1000	
Ba	137	3	115	11.961	ppb	11.961	4.29	2907	5000	
Tl	205	3	193	0.007	ppb	0.007	114.06	127	2000	
(Pb)	206	3	193	0.217	ppb	0.217	10.89	381	100	
(Pb)	207	3	193	0.265	ppb	0.265	25.49	558	100	
Pb	208	3	193	0.256	ppb	0.256	5.43	1812	5000	
Th	232	3	193	0.213	ppb	0.213	36.14	4862	2000	
U	238	3	193	34.661	ppb	34.661	1.77	164936	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4074637	1.69	4331237	94.08	60	120	
Sc (IS)	45	3	HMI He	633098	1.30	654817	96.68	60	120	
Ge Internal standard	72	2	HMI H2	2161953	2.51	2307933	93.67	60	120	
Ge Internal standard	72	3	HMI He	730102	2.44	744678	98.04	60	120	
In Internal Standard	115	3	HMI He	2444427	0.72	2599142	94.05	60	120	
Ir (IS)	193	3	HMI He	5021968	2.30	5525410	90.89	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-5-a
Data File Name	284SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:17:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	1042987.242	ppb	1042987.242	0.14	126019780	400000	
Mg	24	3	45	187579.310	ppb	187579.310	1.88	11729092	400000	
Al	27	3	45	228.114	ppb	228.114	4.06	5270	400000	
K	39	3	45	12025.886	ppb	12025.886	0.69	616630	400000	
Ca	40	2	45	591699.125	ppb	591699.125	1.24	333921710	400000	
V	51	3	72	0.350	ppb	0.350	17.69	445	2000	
Cr	52	3	72	0.422	ppb	0.422	20.59	1634	5000	
Mn	55	3	72	2430.499	ppb	2430.499	1.41	1000829	10000	
Fe	56	2	72	643.213	ppb	643.213	0.71	956024	10000	
Co	59	3	72	7.573	ppb	7.573	2.44	9364	2000	
Ni	60	3	72	41.666	ppb	41.666	2.11	14359	5000	
Cu	63	3	72	1.338	ppb	1.338	2.90	1569	5000	
Zn	66	3	72	12.642	ppb	12.642	6.74	2294	5000	
As	75	3	72	0.892	ppb	0.892	51.67	150	2000	
Se	78	2	72	0.419	ppb	0.419	8.00	27	2000	
(Se)	78	3	72	-2.677	ppb	-2.677	-29.36	15	2000	
Sr	88	3	72	13900.673	ppb	13900.673	0.89	7421930	4000	
Mo	95	3	115	0.932	ppb	0.932	10.54	498	2000	
Ag	107	3	115	0.003	ppb	0.003	67.95	22	100	
Cd	111	3	115	0.145	ppb	0.145	59.00	38	2000	
Sn	120	3	115	0.306	ppb	0.306	9.99	726	2000	
Sb	121	3	115	0.051	ppb	0.051	124.31	157	1000	
Ba	137	3	115	20.246	ppb	20.246	3.31	4930	5000	
Tl	205	3	193	0.107	ppb	0.107	17.56	461	2000	
(Pb)	206	3	193	0.604	ppb	0.604	6.89	821	100	
(Pb)	207	3	193	0.551	ppb	0.551	5.15	850	100	
Pb	208	3	193	0.580	ppb	0.580	3.09	3302	5000	
Th	232	3	193	0.116	ppb	0.116	41.70	4472	2000	
U	238	3	193	117.639	ppb	117.639	0.54	561872	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110312	1.08	4331237	94.90	60	120	
Sc (IS)	45	3	HMI He	636580	0.35	654817	97.21	60	120	
Ge Internal standard	72	2	HMI H2	2203797	1.59	2307933	95.49	60	120	
Ge Internal standard	72	3	HMI He	715245	0.25	744678	96.05	60	120	
In Internal Standard	115	3	HMI He	2471876	0.40	2599142	95.10	60	120	
Ir (IS)	193	3	HMI He	5070563	1.76	5525410	91.77	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-6-a
Data File Name	285SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:19:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	672424.243	ppb	672424.243	1.30	81840850	400000	
Mg	24	3	45	128680.180	ppb	128680.180	0.23	8103253	400000	
Al	27	3	45	117.745	ppb	117.745	4.93	2780	400000	
K	39	3	45	7675.677	ppb	7675.677	0.74	405676	400000	
Ca	40	2	45	415941.523	ppb	415941.523	0.88	234200242	400000	
V	51	3	72	-0.045	ppb	-0.045	-29.28	213	2000	
Cr	52	3	72	0.077	ppb	0.077	144.61	1416	5000	
Mn	55	3	72	412.729	ppb	412.729	0.42	175556	10000	
Fe	56	2	72	2942.837	ppb	2942.837	0.87	4460510	10000	
Co	59	3	72	0.089	ppb	0.089	15.77	138	2000	
Ni	60	3	72	0.309	ppb	0.309	23.54	228	5000	
Cu	63	3	72	2.222	ppb	2.222	0.72	2462	5000	
Zn	66	3	72	4.546	ppb	4.546	8.82	1000	5000	
As	75	3	72	0.185	ppb	0.185	105.58	72	2000	
Se	78	2	72	0.046	ppb	0.046	41.25	5	2000	
(Se)	78	3	72	-1.489	ppb	-1.489	-147.02	23	2000	
Sr	88	3	72	9543.548	ppb	9543.548	0.78	5259311	4000	
Mo	95	3	115	0.105	ppb	0.105	71.68	88	2000	
Ag	107	3	115	0.002	ppb	0.002	186.73	22	100	
Cd	111	3	115	0.014	ppb	0.014	222.60	7	2000	
Sn	120	3	115	0.164	ppb	0.164	51.26	631	2000	
Sb	121	3	115	-0.036	ppb	-0.036	-82.12	93	1000	
Ba	137	3	115	7.274	ppb	7.274	4.49	1844	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-181.59	100	2000	
(Pb)	206	3	193	0.310	ppb	0.310	10.56	503	100	
(Pb)	207	3	193	0.257	ppb	0.257	19.67	570	100	
Pb	208	3	193	0.289	ppb	0.289	3.47	2032	5000	
Th	232	3	193	0.063	ppb	0.063	30.21	4339	2000	
U	238	3	193	0.087	ppb	0.087	17.51	1901	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4100988	0.31	4331237	94.68	60	120	
Sc (IS)	45	3	HMI He	641105	0.44	654817	97.91	60	120	
Ge Internal standard	72	2	HMI H2	2264290	0.63	2307933	98.11	60	120	
Ge Internal standard	72	3	HMI He	738222	0.30	744678	99.13	60	120	
In Internal Standard	115	3	HMI He	2514539	1.26	2599142	96.74	60	120	
Ir (IS)	193	3	HMI He	5204268	1.39	5525410	94.19	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-8-a
Data File Name	286SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:21:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	846496.396	ppb	846496.396	1.29	102597003	400000	
Mg	24	3	45	240693.272	ppb	240693.272	3.90	15092114	400000	
Al	27	3	45	22.917	ppb	22.917	8.63	607	400000	
K	39	3	45	15279.855	ppb	15279.855	1.47	779002	400000	
Ca	40	2	45	486679.879	ppb	486679.879	1.77	270132863	400000	
V	51	3	72	-0.059	ppb	-0.059	-39.09	203	2000	
Cr	52	3	72	0.085	ppb	0.085	134.08	1409	5000	
Mn	55	3	72	3355.494	ppb	3355.494	5.21	1413039	10000	
Fe	56	2	72	1907.491	ppb	1907.491	1.24	2876138	10000	
Co	59	3	72	8.968	ppb	8.968	2.62	11342	2000	
Ni	60	3	72	7.248	ppb	7.248	4.88	2654	5000	
Cu	63	3	72	0.452	ppb	0.452	7.98	770	5000	
Zn	66	3	72	11.345	ppb	11.345	8.67	2131	5000	
As	75	3	72	1.804	ppb	1.804	12.95	260	2000	
Se	78	2	72	0.059	ppb	0.059	60.29	6	2000	
(Se)	78	3	72	-0.470	ppb	-0.470	-411.76	30	2000	
Sr	88	3	72	9123.952	ppb	9123.952	4.25	4983187	4000	
Mo	95	3	115	0.513	ppb	0.513	24.36	292	2000	
Ag	107	3	115	0.000	ppb	0.000	-377.23	17	100	
Cd	111	3	115	0.042	ppb	0.042	74.69	13	2000	
Sn	120	3	115	0.194	ppb	0.194	9.09	646	2000	
Sb	121	3	115	0.012	ppb	0.012	215.94	128	1000	
Ba	137	3	115	10.823	ppb	10.823	5.73	2679	5000	
Tl	205	3	193	0.030	ppb	0.030	46.76	205	2000	
(Pb)	206	3	193	0.151	ppb	0.151	15.52	313	100	
(Pb)	207	3	193	0.118	ppb	0.118	25.98	418	100	
Pb	208	3	193	0.143	ppb	0.143	18.60	1324	5000	
Th	232	3	193	0.049	ppb	0.049	57.09	4195	2000	
U	238	3	193	5.283	ppb	5.283	2.43	26779	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4043543	2.92	4331237	93.36	60	120	
Sc (IS)	45	3	HMI He	638570	1.27	654817	97.52	60	120	
Ge Internal standard	72	2	HMI H2	2249977	1.78	2307933	97.49	60	120	
Ge Internal standard	72	3	HMI He	732323	3.32	744678	98.34	60	120	
In Internal Standard	115	3	HMI He	2483316	0.84	2599142	95.54	60	120	
Ir (IS)	193	3	HMI He	5106170	2.93	5525410	92.41	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-9-a
Data File Name	287SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:23:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1447860.225	ppb	1447860.225	1.81	173802016	400000	
Mg	24	3	45	185728.324	ppb	185728.324	2.60	11538147	400000	
Al	27	3	45	269.227	ppb	269.227	6.39	6168	400000	
K	39	3	45	8742.006	ppb	8742.006	1.95	452328	400000	
Ca	40	2	45	660717.702	ppb	660717.702	0.61	370232596	400000	
V	51	3	72	0.522	ppb	0.522	10.54	540	2000	
Cr	52	3	72	0.398	ppb	0.398	14.28	1591	5000	
Mn	55	3	72	290.995	ppb	290.995	1.76	118074	10000	
Fe	56	2	72	211.825	ppb	211.825	2.69	315448	10000	
Co	59	3	72	1.622	ppb	1.622	4.88	1992	2000	
Ni	60	3	72	2.469	ppb	2.469	5.70	945	5000	
Cu	63	3	72	1.842	ppb	1.842	5.80	2002	5000	
Zn	66	3	72	5.888	ppb	5.888	9.73	1169	5000	
As	75	3	72	0.898	ppb	0.898	23.70	148	2000	
Se	78	2	72	0.050	ppb	0.050	109.09	5	2000	
(Se)	78	3	72	-2.912	ppb	-2.912	-56.01	13	2000	
Sr	88	3	72	12031.782	ppb	12031.782	0.42	6322886	4000	
Mo	95	3	115	1.402	ppb	1.402	2.62	720	2000	
Ag	107	3	115	0.001	ppb	0.001	238.37	18	100	
Cd	111	3	115	0.036	ppb	0.036	30.61	12	2000	
Sn	120	3	115	0.127	ppb	0.127	70.39	585	2000	
Sb	121	3	115	0.014	ppb	0.014	206.09	127	1000	
Ba	137	3	115	16.061	ppb	16.061	1.65	3855	5000	
Tl	205	3	193	0.025	ppb	0.025	66.95	180	2000	
(Pb)	206	3	193	0.196	ppb	0.196	16.97	350	100	
(Pb)	207	3	193	0.272	ppb	0.272	19.70	551	100	
Pb	208	3	193	0.239	ppb	0.239	9.83	1696	5000	
Th	232	3	193	0.094	ppb	0.094	53.28	4225	2000	
U	238	3	193	32.529	ppb	32.529	1.94	151268	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4081332	1.53	4331237	94.23	60	120	
Sc (IS)	45	3	HMI He	632602	1.19	654817	96.61	60	120	
Ge Internal standard	72	2	HMI H2	2167097	2.79	2307933	93.90	60	120	
Ge Internal standard	72	3	HMI He	703990	0.71	744678	94.54	60	120	
In Internal Standard	115	3	HMI He	2428809	2.18	2599142	93.45	60	120	
Ir (IS)	193	3	HMI He	4904645	1.46	5525410	88.77	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-10-a
Data File Name	288SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:25:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1146396.734	ppb	1146396.734	0.45	137202097	400000	
Mg	24	3	45	216953.908	ppb	216953.908	1.22	13437066	400000	
Al	27	3	45	158.453	ppb	158.453	6.10	3654	400000	
K	39	3	45	6868.022	ppb	6868.022	0.70	359697	400000	
Ca	40	2	45	584990.760	ppb	584990.760	0.84	328990022	400000	
V	51	3	72	0.520	ppb	0.520	9.10	545	2000	
Cr	52	3	72	0.435	ppb	0.435	21.83	1636	5000	
Mn	55	3	72	687.529	ppb	687.529	0.26	281716	10000	
Fe	56	2	72	450.206	ppb	450.206	1.65	670942	10000	
Co	59	3	72	7.533	ppb	7.533	2.77	9263	2000	
Ni	60	3	72	16.657	ppb	16.657	0.26	5778	5000	
Cu	63	3	72	1.500	ppb	1.500	5.97	1709	5000	
Zn	66	3	72	30.919	ppb	30.919	1.59	5258	5000	
As	75	3	72	0.849	ppb	0.849	65.51	145	2000	
Se	78	2	72	0.177	ppb	0.177	41.30	13	2000	
(Se)	78	3	72	0.734	ppb	0.734	59.61	37	2000	
Sr	88	3	72	11530.351	ppb	11530.351	2.04	6124443	4000	
Mo	95	3	115	0.712	ppb	0.712	21.93	383	2000	
Ag	107	3	115	0.010	ppb	0.010	49.07	33	100	
Cd	111	3	115	0.147	ppb	0.147	55.57	38	2000	
Sn	120	3	115	0.232	ppb	0.232	31.98	661	2000	
Sb	121	3	115	0.015	ppb	0.015	98.35	128	1000	
Ba	137	3	115	13.703	ppb	13.703	3.24	3309	5000	
Tl	205	3	193	0.084	ppb	0.084	17.50	373	2000	
(Pb)	206	3	193	0.103	ppb	0.103	44.82	248	100	
(Pb)	207	3	193	0.093	ppb	0.093	22.30	378	100	
Pb	208	3	193	0.102	ppb	0.102	3.29	1091	5000	
Th	232	3	193	0.103	ppb	0.103	24.49	4255	2000	
U	238	3	193	22.302	ppb	22.302	1.47	103941	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4096331	1.20	4331237	94.58	60	120	
Sc (IS)	45	3	HMI He	630583	2.14	654817	96.30	60	120	
Ge Internal standard	72	2	HMI H2	2200879	0.80	2307933	95.36	60	120	
Ge Internal standard	72	3	HMI He	711401	1.43	744678	95.53	60	120	
In Internal Standard	115	3	HMI He	2436462	2.19	2599142	93.74	60	120	
Ir (IS)	193	3	HMI He	4895158	2.33	5525410	88.59	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-11-a
Data File Name	289SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:26:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	837045.300	ppb	837045.300	1.50	99062361	400000	
Mg	24	3	45	318250.861	ppb	318250.861	0.56	19488339	400000	
Al	27	3	45	55.385	ppb	55.385	5.76	1315	400000	
K	39	3	45	15497.004	ppb	15497.004	0.37	770965	400000	
Ca	40	2	45	899324.353	ppb	899324.353	1.07	496741157	400000	
V	51	3	72	-0.031	ppb	-0.031	-247.11	208	2000	
Cr	52	3	72	0.285	ppb	0.285	46.40	1483	5000	
Mn	55	3	72	4144.799	ppb	4144.799	2.25	1653395	10000	
Fe	56	2	72	132.995	ppb	132.995	2.93	199077	10000	
Co	59	3	72	6.023	ppb	6.023	1.40	7220	2000	
Ni	60	3	72	50.265	ppb	50.265	3.52	16755	5000	
Cu	63	3	72	0.992	ppb	0.992	7.90	1211	5000	
Zn	66	3	72	12.409	ppb	12.409	2.18	2186	5000	
As	75	3	72	0.406	ppb	0.406	62.17	92	2000	
Se	78	2	72	0.136	ppb	0.136	80.56	10	2000	
(Se)	78	3	72	-0.200	ppb	-0.200	-1037.02	30	2000	
Sr	88	3	72	19267.156	ppb	19267.156	2.55	9965343	4000	
Mo	95	3	115	0.370	ppb	0.370	15.68	210	2000	
Ag	107	3	115	0.000	ppb	0.000	-4928.61	17	100	
Cd	111	3	115	0.108	ppb	0.108	20.63	28	2000	
Sn	120	3	115	0.038	ppb	0.038	187.68	510	2000	
Sb	121	3	115	0.039	ppb	0.039	93.57	142	1000	
Ba	137	3	115	17.224	ppb	17.224	4.87	4045	5000	
Tl	205	3	193	0.144	ppb	0.144	10.08	546	2000	
(Pb)	206	3	193	0.198	ppb	0.198	26.50	340	100	
(Pb)	207	3	193	0.134	ppb	0.134	34.69	403	100	
Pb	208	3	193	0.188	ppb	0.188	13.95	1419	5000	
Th	232	3	193	0.058	ppb	0.058	22.65	3924	2000	
U	238	3	193	67.378	ppb	67.378	0.60	300794	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4023061	1.34	4331237	92.88	60	120	
Sc (IS)	45	3	HMI He	623421	1.25	654817	95.21	60	120	
Ge Internal standard	72	2	HMI H2	2141839	1.36	2307933	92.80	60	120	
Ge Internal standard	72	3	HMI He	692940	1.05	744678	93.05	60	120	
In Internal Standard	115	3	HMI He	2379290	3.99	2599142	91.54	60	120	
Ir (IS)	193	3	HMI He	4730028	0.64	5525410	85.61	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-12-a
Data File Name	290SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:28:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.62	3	2000	
Na	23	3	45	173442.812	ppb	173442.812	1.07	19011366	400000	
Mg	24	3	45	75866.995	ppb	75866.995	0.56	4295917	400000	
Al	27	3	45	219.581	ppb	219.581	26.89	4595	400000	
K	39	3	45	5096.402	ppb	5096.402	1.48	249931	400000	
Ca	40	2	45	413744.601	ppb	413744.601	2.09	220448656	400000	
V	51	3	72	1.011	ppb	1.011	15.00	781	2000	
Cr	52	3	72	0.319	ppb	0.319	38.21	1441	5000	
Mn	55	3	72	415.773	ppb	415.773	2.58	158797	10000	
Fe	56	2	72	335.828	ppb	335.828	2.07	481884	10000	
Co	59	3	72	1.351	ppb	1.351	8.77	1566	2000	
Ni	60	3	72	6.239	ppb	6.239	5.37	2082	5000	
Cu	63	3	72	1.537	ppb	1.537	4.92	1624	5000	
Zn	66	3	72	6.823	ppb	6.823	5.87	1244	5000	
As	75	3	72	2.885	ppb	2.885	5.52	350	2000	
Se	78	2	72	0.162	ppb	0.162	32.95	11	2000	
(Se)	78	3	72	-1.644	ppb	-1.644	-53.53	20	2000	
Sr	88	3	72	6054.919	ppb	6054.919	3.17	2995703	4000	
Mo	95	3	115	4.269	ppb	4.269	3.03	1964	2000	
Ag	107	3	115	0.003	ppb	0.003	114.87	20	100	
Cd	111	3	115	0.032	ppb	0.032	1.48	10	2000	
Sn	120	3	115	0.197	ppb	0.197	59.96	588	2000	
Sb	121	3	115	0.109	ppb	0.109	56.16	182	1000	
Ba	137	3	115	51.090	ppb	51.090	1.24	11233	5000	
Tl	205	3	193	0.019	ppb	0.019	47.28	155	2000	
(Pb)	206	3	193	0.195	ppb	0.195	17.11	333	100	
(Pb)	207	3	193	0.194	ppb	0.194	40.23	453	100	
Pb	208	3	193	0.226	ppb	0.226	8.90	1559	5000	
Th	232	3	193	0.052	ppb	0.052	76.80	3850	2000	
U	238	3	193	20.885	ppb	20.885	1.75	93014	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882068	2.68	4331237	89.63	60	120	
Sc (IS)	45	3	HMI He	576444	1.97	654817	88.03	60	120	
Ge Internal standard	72	2	HMI H2	2109857	2.57	2307933	91.42	60	120	
Ge Internal standard	72	3	HMI He	663114	2.52	744678	89.05	60	120	
In Internal Standard	115	3	HMI He	2249740	1.06	2599142	86.56	60	120	
Ir (IS)	193	3	HMI He	4672962	0.99	5525410	84.57	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	291_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:30:35-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.002	ppb	3.954	2202	50	96.0	90	110	
Na	23	3	45	50885.414	ppb	1.588	5464003	51000	99.8	90	110	
Mg	24	3	45	10920.610	ppb	1.184	602400	11000	99.3	90	110	
Al	27	3	45	1054.488	ppb	2.995	21204	1000	105.4	90	110	
K	39	3	45	10788.983	ppb	1.295	490098	11000	98.1	90	110	
Ca	40	2	45	11259.353	ppb	0.783	5763635	11000	102.4	90	110	
V	51	3	72	51.722	ppb	2.566	27710	50	103.4	90	110	
Cr	52	3	72	50.638	ppb	1.473	35113	50	101.3	90	110	
Mn	55	3	72	51.745	ppb	2.025	18920	50	103.5	90	110	
Fe	56	2	72	1079.705	ppb	2.489	1411001	1000	108.0	90	110	
Co	59	3	72	51.078	ppb	0.527	55542	50	102.2	90	110	
Ni	60	3	72	50.087	ppb	1.240	15191	50	100.2	90	110	
Cu	63	3	72	50.874	ppb	1.020	41673	50	101.7	90	110	
Zn	66	3	72	50.407	ppb	3.534	7472	50	100.8	90	110	
As	75	3	72	54.617	ppb	4.765	5532	50	109.2	90	110	
Se	78	2	72	51.951	ppb	1.897	2639	50	103.9	90	110	
(Se)	78	3	72	55.221	ppb	16.003	340	50	110.4	90	110	>+\-10%
Sr	88	3	72	108.127	ppb	1.043	50910	100	108.1	90	110	
Mo	95	3	115	51.143	ppb	2.080	22995	50	102.3	90	110	
Ag	107	3	115	49.157	ppb	1.972	73207	50	98.3	90	110	
Cd	111	3	115	50.199	ppb	3.488	10992	50	100.4	90	110	
Sn	120	3	115	52.223	ppb	2.385	35209	50	104.4	90	110	
Sb	121	3	115	51.322	ppb	1.415	34624	50	102.6	90	110	
Ba	137	3	115	49.396	ppb	2.525	10776	50	98.8	90	110	
Tl	205	3	193	52.185	ppb	2.065	158606	50	104.4	90	110	
(Pb)	206	3	193	52.026	ppb	0.968	53267	50	104.1	90	110	
(Pb)	207	3	193	51.531	ppb	2.434	46947	50	103.1	90	110	
Pb	208	3	193	51.811	ppb	1.859	213741	50	103.6	90	110	
Th	232	3	193	52.330	ppb	1.189	218899	50	104.7	90	110	
U	238	3	193	52.057	ppb	2.784	225778	50	104.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3720550	0.45	4331237	85.90	60	120	
Sc (IS)	45	3	HMI He	561435	3.09	654817	85.74	60	120	
Ge Internal standard	72	2	HMI H2	1944951	0.81	2307933	84.27	60	120	
Ge Internal standard	72	3	HMI He	630404	3.02	744678	84.65	60	120	
In Internal Standard	115	3	HMI He	2231732	1.92	2599142	85.86	60	120	
Ir (IS)	193	3	HMI He	4592727	3.98	5525410	83.12	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	292_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:32:27-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	408.268	ppb	4.1	82468	25	>RL
Mg	24	3	45	9.619	ppb	11.6	661	25	
Al	27	3	45	8.943	ppb	38.3	240	15	
K	39	3	45	41.943	ppb	72.2	23159	50	
V	51	3	72	-0.148	ppb	-16.1	122	1	
Cr	52	3	72	0.120	ppb	108.3	1179	1	
Mn	55	3	72	0.483	ppb	9.7	305	0.5	
Co	59	3	72	0.001	ppb	696.9	22	0.5	
Ni	60	3	72	0.074	ppb	82.2	118	1	
Cu	63	3	72	0.073	ppb	19.9	338	1	
Zn	66	3	72	0.887	ppb	55.0	310	5	
As	75	3	72	-0.059	ppb	-225.7	35	1	
Se	78	2	72	0.022	ppb	365.0	3	1	
(Se)	78	3	72	-0.093	ppb	-2834.3	27	1	
Sr	88	3	72	0.682	ppb	13.4	342	0.5	>RL
Mo	95	3	115	0.054	ppb	65.4	53	0.5	
Ag	107	3	115	-0.002	ppb	-344.3	12	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.308	ppb	24.3	631	1	
Sb	121	3	115	-0.025	ppb	-100.0	87	0.6	
Ba	137	3	115	-0.039	ppb	-174.4	48	0.5	
Tl	205	3	193	0.000	ppb	2571.2	93	0.1	
(Pb)	206	3	193	0.019	ppb	58.3	143	1	
(Pb)	207	3	193	0.044	ppb	50.9	302	1	
Pb	208	3	193	0.039	ppb	27.9	743	0.5	
Th	232	3	193	0.651	ppb	20.9	6088	1	
U	238	3	193	0.008	ppb	317.1	1299	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3535170	2.49	4331237	81.62	60	120	
Sc (IS)	45	3	HMI He	533207	1.39	654817	81.43	60	120	
Ge Internal standard	72	2	HMI H2	1888840	2.28	2307933	81.84	60	120	
Ge Internal standard	72	3	HMI He	601122	1.52	744678	80.72	60	120	
In Internal Standard	115	3	HMI He	2144880	0.24	2599142	82.52	60	120	
Ir (IS)	193	3	HMI He	4474221	1.10	5525410	80.98	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-13-a
Data File Name	293SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:34:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.041	ppb	0.041	173.21	2	2000	
Na	23	3	45	928960.113	ppb	928960.113	1.18	93923342	400000	
Mg	24	3	45	233068.999	ppb	233068.999	2.03	12194811	400000	
Al	27	3	45	92.642	ppb	92.642	4.46	1832	400000	
K	39	3	45	12642.716	ppb	12642.716	0.57	541334	400000	
Ca	40	2	45	413190.873	ppb	413190.873	2.23	181202259	400000	
V	51	3	72	0.536	ppb	0.536	7.42	473	2000	
Cr	52	3	72	0.590	ppb	0.590	27.32	1498	5000	
Mn	55	3	72	1884.311	ppb	1884.311	1.89	659337	10000	
Fe	56	2	72	473.200	ppb	473.200	0.62	571988	10000	
Co	59	3	72	13.445	ppb	13.445	2.53	14110	2000	
Ni	60	3	72	10.795	ppb	10.795	6.13	3234	5000	
Cu	63	3	72	1.819	ppb	1.819	1.96	1711	5000	
Zn	66	3	72	20.612	ppb	20.612	3.03	3059	5000	
As	75	3	72	2.225	ppb	2.225	5.46	257	2000	
Se	78	2	72	1.085	ppb	1.085	35.70	53	2000	
(Se)	78	3	72	3.862	ppb	3.862	60.08	48	2000	
Sr	88	3	72	7925.358	ppb	7925.358	2.46	3595656	4000	
Mo	95	3	115	0.522	ppb	0.522	23.13	247	2000	
Ag	107	3	115	0.009	ppb	0.009	45.34	27	100	
Cd	111	3	115	0.281	ppb	0.281	2.67	60	2000	
Sn	120	3	115	0.236	ppb	0.236	17.23	566	2000	
Sb	121	3	115	0.298	ppb	0.298	29.73	287	1000	
Ba	137	3	115	7.419	ppb	7.419	8.46	1551	5000	
Tl	205	3	193	0.071	ppb	0.071	14.25	290	2000	
(Pb)	206	3	193	0.077	ppb	0.077	30.49	193	100	
(Pb)	207	3	193	0.024	ppb	0.024	122.58	273	100	
Pb	208	3	193	0.072	ppb	0.072	19.44	843	5000	
Th	232	3	193	0.203	ppb	0.203	20.36	4124	2000	
U	238	3	193	1.131	ppb	1.131	4.81	5787	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3194506	1.09	4331237	73.76	60	120	
Sc (IS)	45	3	HMI He	532663	0.91	654817	81.35	60	120	
Ge Internal standard	72	2	HMI H2	1786181	0.82	2307933	77.39	60	120	
Ge Internal standard	72	3	HMI He	607763	0.64	744678	81.61	60	120	
In Internal Standard	115	3	HMI He	2076637	2.59	2599142	79.90	60	120	
Ir (IS)	193	3	HMI He	4299210	0.76	5525410	77.81	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-14-a
Data File Name	294SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:36:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.074	ppb	0.074	86.60	3	2000	
Na	23	3	45	825224.943	ppb	825224.943	0.60	86876029	400000	
Mg	24	3	45	226669.126	ppb	226669.126	1.27	12348253	400000	
Al	27	3	45	16.719	ppb	16.719	24.35	404	400000	
K	39	3	45	17816.014	ppb	17816.014	2.60	785005	400000	
Ca	40	2	45	460001.774	ppb	460001.774	1.31	227506632	400000	
V	51	3	72	0.105	ppb	0.105	60.73	263	2000	
Cr	52	3	72	0.066	ppb	0.066	135.91	1208	5000	
Mn	55	3	72	4560.005	ppb	4560.005	0.72	1662996	10000	
Fe	56	2	72	40.769	ppb	40.769	4.09	61718	10000	
Co	59	3	72	7.498	ppb	7.498	4.10	8210	2000	
Ni	60	3	72	8.265	ppb	8.265	5.85	2604	5000	
Cu	63	3	72	0.416	ppb	0.416	18.49	636	5000	
Zn	66	3	72	4.971	ppb	4.971	4.29	920	5000	
As	75	3	72	0.484	ppb	0.484	24.74	92	2000	
Se	78	2	72	0.099	ppb	0.099	60.55	7	2000	
(Se)	78	3	72	-0.025	ppb	-0.025	-2085.54	28	2000	
Sr	88	3	72	9116.469	ppb	9116.469	1.45	4310901	4000	
Mo	95	3	115	0.249	ppb	0.249	24.98	138	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-48.35	3	100	
Cd	111	3	115	0.066	ppb	0.066	20.25	17	2000	
Sn	120	3	115	0.153	ppb	0.153	6.88	535	2000	
Sb	121	3	115	-0.003	ppb	-0.003	-370.38	102	1000	
Ba	137	3	115	10.491	ppb	10.491	8.02	2256	5000	
Tl	205	3	193	0.064	ppb	0.064	27.68	277	2000	
(Pb)	206	3	193	0.114	ppb	0.114	18.98	235	100	
(Pb)	207	3	193	0.106	ppb	0.106	28.86	353	100	
Pb	208	3	193	0.129	ppb	0.129	8.66	1091	5000	
Th	232	3	193	0.074	ppb	0.074	17.22	3732	2000	
U	238	3	193	3.848	ppb	3.848	2.72	17242	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3602861	2.37	4331237	83.18	60	120	
Sc (IS)	45	3	HMI He	554626	1.35	654817	84.70	60	120	
Ge Internal standard	72	2	HMI H2	1968087	0.77	2307933	85.27	60	120	
Ge Internal standard	72	3	HMI He	633482	0.57	744678	85.07	60	120	
In Internal Standard	115	3	HMI He	2155755	1.47	2599142	82.94	60	120	
Ir (IS)	193	3	HMI He	4422627	2.18	5525410	80.04	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-15-a
Data File Name	295SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:38:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	598567.662	ppb	598567.662	0.59	66340077	400000	
Mg	24	3	45	136133.813	ppb	136133.813	1.95	7802723	400000	
Al	27	3	45	104.659	ppb	104.659	3.44	2259	400000	
K	39	3	45	10551.981	ppb	10551.981	0.79	498949	400000	
Ca	40	2	45	443348.272	ppb	443348.272	2.22	229023943	400000	
V	51	3	72	0.709	ppb	0.709	3.44	618	2000	
Cr	52	3	72	0.232	ppb	0.232	60.84	1393	5000	
Mn	55	3	72	1619.840	ppb	1619.840	0.64	623577	10000	
Fe	56	2	72	260.824	ppb	260.824	1.38	363410	10000	
Co	59	3	72	5.386	ppb	5.386	2.49	6230	2000	
Ni	60	3	72	2.806	ppb	2.806	1.24	1005	5000	
Cu	63	3	72	0.809	ppb	0.809	6.81	1011	5000	
Zn	66	3	72	7.442	ppb	7.442	5.85	1348	5000	
As	75	3	72	2.619	ppb	2.619	12.69	325	2000	
Se	78	2	72	0.083	ppb	0.083	140.73	7	2000	
(Se)	78	3	72	-1.667	ppb	-1.667	-54.36	20	2000	
Sr	88	3	72	9867.623	ppb	9867.623	1.05	4925662	4000	
Mo	95	3	115	0.418	ppb	0.418	12.46	227	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-28.29	7	100	
Cd	111	3	115	-0.006	ppb	-0.006	-212.64	2	2000	
Sn	120	3	115	0.105	ppb	0.105	116.41	540	2000	
Sb	121	3	115	0.014	ppb	0.014	376.96	120	1000	
Ba	137	3	115	11.602	ppb	11.602	10.27	2659	5000	
Tl	205	3	193	0.017	ppb	0.017	31.08	148	2000	
(Pb)	206	3	193	0.107	ppb	0.107	19.99	243	100	
(Pb)	207	3	193	0.026	ppb	0.026	37.90	302	100	
Pb	208	3	193	0.089	ppb	0.089	19.26	995	5000	
Th	232	3	193	0.079	ppb	0.079	13.18	4002	2000	
U	238	3	193	4.146	ppb	4.146	2.95	19696	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3763478	1.96	4331237	86.89	60	120	
Sc (IS)	45	3	HMI He	583737	2.85	654817	89.15	60	120	
Ge Internal standard	72	2	HMI H2	2037807	1.74	2307933	88.30	60	120	
Ge Internal standard	72	3	HMI He	668648	2.38	744678	89.79	60	120	
In Internal Standard	115	3	HMI He	2306128	2.40	2599142	88.73	60	120	
Ir (IS)	193	3	HMI He	4715523	2.42	5525410	85.34	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-16-a
Data File Name	296SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:39:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.075	ppb	0.075	86.61	3	2000	
Na	23	3	45	125561.300	ppb	125561.300	1.19	12905170	400000	
Mg	24	3	45	21219.575	ppb	21219.575	1.40	1125738	400000	
Al	27	3	45	170.398	ppb	170.398	4.35	3357	400000	
K	39	3	45	4290.340	ppb	4290.340	2.77	200536	400000	
Ca	40	2	45	68845.580	ppb	68845.580	0.97	33530876	400000	
V	51	3	72	4.849	ppb	4.849	5.76	2801	2000	
Cr	52	3	72	0.203	ppb	0.203	51.10	1303	5000	
Mn	55	3	72	129.257	ppb	129.257	1.79	47328	10000	
Fe	56	2	72	159.305	ppb	159.305	3.72	221247	10000	
Co	59	3	72	0.798	ppb	0.798	2.62	895	2000	
Ni	60	3	72	1.497	ppb	1.497	4.43	556	5000	
Cu	63	3	72	1.314	ppb	1.314	8.20	1371	5000	
Zn	66	3	72	2.141	ppb	2.141	0.79	510	5000	
As	75	3	72	4.238	ppb	4.238	0.68	471	2000	
Se	78	2	72	0.964	ppb	0.964	0.38	53	2000	
(Se)	78	3	72	0.276	ppb	0.276	653.05	30	2000	
Sr	88	3	72	1667.800	ppb	1667.800	1.63	789852	4000	
Mo	95	3	115	0.800	ppb	0.800	23.96	378	2000	
Ag	107	3	115	0.001	ppb	0.001	517.07	17	100	
Cd	111	3	115	0.011	ppb	0.011	224.73	5	2000	
Sn	120	3	115	0.120	ppb	0.120	49.28	516	2000	
Sb	121	3	115	0.084	ppb	0.084	51.75	158	1000	
Ba	137	3	115	31.996	ppb	31.996	3.74	6793	5000	
Tl	205	3	193	0.017	ppb	0.017	74.02	142	2000	
(Pb)	206	3	193	0.281	ppb	0.281	24.24	401	100	
(Pb)	207	3	193	0.273	ppb	0.273	19.94	501	100	
Pb	208	3	193	0.269	ppb	0.269	4.22	1659	5000	
Th	232	3	193	0.097	ppb	0.097	3.90	3854	2000	
U	238	3	193	0.922	ppb	0.922	1.07	5124	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3546414	1.05	4331237	81.88	60	120	
Sc (IS)	45	3	HMI He	540034	1.69	654817	82.47	60	120	
Ge Internal standard	72	2	HMI H2	2002318	1.94	2307933	86.76	60	120	
Ge Internal standard	72	3	HMI He	634324	2.47	744678	85.18	60	120	
In Internal Standard	115	3	HMI He	2165161	1.82	2599142	83.30	60	120	
Ir (IS)	193	3	HMI He	4456537	1.84	5525410	80.66	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-17-a
Data File Name	297SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:41:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	106427.983	ppb	106427.983	1.02	12065006	400000	
Mg	24	3	45	18717.424	ppb	18717.424	3.57	1094427	400000	
Al	27	3	45	15.608	ppb	15.608	13.19	410	400000	
K	39	3	45	2689.040	ppb	2689.040	0.68	147489	400000	
Ca	40	2	45	78376.243	ppb	78376.243	1.42	43320367	400000	
V	51	3	72	1.637	ppb	1.637	17.68	1193	2000	
Cr	52	3	72	0.122	ppb	0.122	151.62	1374	5000	
Mn	55	3	72	3.160	ppb	3.160	5.08	1431	10000	
Fe	56	2	72	15.260	ppb	15.260	4.56	31153	10000	
Co	59	3	72	0.018	ppb	0.018	46.45	45	2000	
Ni	60	3	72	0.206	ppb	0.206	10.09	182	5000	
Cu	63	3	72	0.319	ppb	0.319	12.05	615	5000	
Zn	66	3	72	1.931	ppb	1.931	8.85	528	5000	
As	75	3	72	0.849	ppb	0.849	40.71	142	2000	
Se	78	2	72	0.552	ppb	0.552	32.87	34	2000	
(Se)	78	3	72	-1.292	ppb	-1.292	-36.40	23	2000	
Sr	88	3	72	1505.433	ppb	1505.433	0.95	785535	4000	
Mo	95	3	115	4.354	ppb	4.354	3.48	2107	2000	
Ag	107	3	115	0.000	ppb	0.000	4854.28	17	100	
Cd	111	3	115	0.001	ppb	0.001	1760.92	3	2000	
Sn	120	3	115	0.536	ppb	0.536	2.88	858	2000	
Sb	121	3	115	-0.007	ppb	-0.007	-564.82	108	1000	
Ba	137	3	115	59.746	ppb	59.746	0.83	13810	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-616.12	95	2000	
(Pb)	206	3	193	0.021	ppb	0.021	81.00	158	100	
(Pb)	207	3	193	0.001	ppb	0.001	2905.14	287	100	
Pb	208	3	193	0.022	ppb	0.022	67.35	733	5000	
Th	232	3	193	0.014	ppb	0.014	82.18	3839	2000	
U	238	3	193	16.824	ppb	16.824	1.02	78175	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4025229	1.73	4331237	92.93	60	120	
Sc (IS)	45	3	HMI He	595227	0.21	654817	90.90	60	120	
Ge Internal standard	72	2	HMI H2	2176601	2.80	2307933	94.31	60	120	
Ge Internal standard	72	3	HMI He	698942	0.61	744678	93.86	60	120	
In Internal Standard	115	3	HMI He	2367015	1.06	2599142	91.07	60	120	
Ir (IS)	193	3	HMI He	4858524	1.11	5525410	87.93	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-18-a
Data File Name	298SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:43:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.61	3	2000	
Na	23	3	45	648831.122	ppb	648831.122	1.05	76029654	400000	
Mg	24	3	45	78241.863	ppb	78241.863	1.24	4743478	400000	
Al	27	3	45	159.331	ppb	159.331	11.31	3591	400000	
K	39	3	45	5611.240	ppb	5611.240	1.44	292183	400000	
Ca	40	2	45	336240.423	ppb	336240.423	3.63	178530594	400000	
V	51	3	72	1.246	ppb	1.246	4.62	978	2000	
Cr	52	3	72	0.508	ppb	0.508	30.15	1688	5000	
Mn	55	3	72	142.504	ppb	142.504	1.31	58363	10000	
Fe	56	2	72	164.353	ppb	164.353	9.02	244793	10000	
Co	59	3	72	0.424	ppb	0.424	8.12	543	2000	
Ni	60	3	72	2.855	ppb	2.855	4.79	1083	5000	
Cu	63	3	72	1.156	ppb	1.156	4.59	1391	5000	
Zn	66	3	72	5.627	ppb	5.627	17.52	1136	5000	
As	75	3	72	1.239	ppb	1.239	25.24	188	2000	
Se	78	2	72	0.394	ppb	0.394	26.00	25	2000	
(Se)	78	3	72	-1.357	ppb	-1.357	-85.91	23	2000	
Sr	88	3	72	6306.662	ppb	6306.662	1.56	3340283	4000	
Mo	95	3	115	4.280	ppb	4.280	11.04	2081	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-34.69	8	100	
Cd	111	3	115	0.016	ppb	0.016	209.68	7	2000	
Sn	120	3	115	0.236	ppb	0.236	63.38	648	2000	
Sb	121	3	115	0.061	ppb	0.061	101.24	158	1000	
Ba	137	3	115	17.844	ppb	17.844	4.35	4187	5000	
Tl	205	3	193	0.051	ppb	0.051	12.81	262	2000	
(Pb)	206	3	193	0.125	ppb	0.125	14.17	270	100	
(Pb)	207	3	193	0.161	ppb	0.161	28.06	438	100	
Pb	208	3	193	0.138	ppb	0.138	9.84	1234	5000	
Th	232	3	193	0.098	ppb	0.098	30.75	4194	2000	
U	238	3	193	33.526	ppb	33.526	2.22	153942	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3868388	1.40	4331237	89.31	60	120	
Sc (IS)	45	3	HMI He	617258	1.03	654817	94.26	60	120	
Ge Internal standard	72	2	HMI H2	2150501	1.56	2307933	93.18	60	120	
Ge Internal standard	72	3	HMI He	709578	1.21	744678	95.29	60	120	
In Internal Standard	115	3	HMI He	2378341	1.20	2599142	91.50	60	120	
Ir (IS)	193	3	HMI He	4844568	1.96	5525410	87.68	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-19-a
Data File Name	299SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:45:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600040 6020
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.61	3	2000	
Na	23	3	45	282705.751	ppb	282705.751	0.54	32436961	400000	
Mg	24	3	45	83597.159	ppb	83597.159	1.16	4958723	400000	
Al	27	3	45	55.409	ppb	55.409	7.02	1275	400000	
K	39	3	45	6484.380	ppb	6484.380	1.42	326583	400000	
Ca	40	2	45	388503.354	ppb	388503.354	3.32	206023730	400000	
V	51	3	72	0.506	ppb	0.506	19.48	525	2000	
Cr	52	3	72	0.148	ppb	0.148	84.65	1388	5000	
Mn	55	3	72	599.531	ppb	599.531	1.52	240252	10000	
Fe	56	2	72	64.862	ppb	64.862	2.76	101695	10000	
Co	59	3	72	1.607	ppb	1.607	3.28	1951	2000	
Ni	60	3	72	3.153	ppb	3.153	11.73	1161	5000	
Cu	63	3	72	2.502	ppb	2.502	6.00	2572	5000	
Zn	66	3	72	11.511	ppb	11.511	9.26	2051	5000	
As	75	3	72	0.898	ppb	0.898	15.30	147	2000	
Se	78	2	72	0.087	ppb	0.087	63.36	7	2000	
(Se)	78	3	72	-3.146	ppb	-3.146	-39.13	12	2000	
Sr	88	3	72	7242.657	ppb	7242.657	1.95	3761006	4000	
Mo	95	3	115	2.478	ppb	2.478	5.25	1229	2000	
Ag	107	3	115	0.007	ppb	0.007	64.93	28	100	
Cd	111	3	115	0.001	ppb	0.001	1099.16	3	2000	
Sn	120	3	115	0.680	ppb	0.680	11.38	971	2000	
Sb	121	3	115	-0.012	ppb	-0.012	-277.70	107	1000	
Ba	137	3	115	32.663	ppb	32.663	1.21	7677	5000	
Tl	205	3	193	0.025	ppb	0.025	32.82	180	2000	
(Pb)	206	3	193	0.313	ppb	0.313	20.85	471	100	
(Pb)	207	3	193	0.277	ppb	0.277	25.84	550	100	
Pb	208	3	193	0.296	ppb	0.296	13.71	1921	5000	
Th	232	3	193	0.043	ppb	0.043	66.28	3950	2000	
U	238	3	193	30.869	ppb	30.869	2.20	141852	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3864773	3.06	4331237	89.23	60	120	
Sc (IS)	45	3	HMI He	603849	1.06	654817	92.22	60	120	
Ge Internal standard	72	2	HMI H2	2143557	1.75	2307933	92.88	60	120	
Ge Internal standard	72	3	HMI He	695687	0.70	744678	93.42	60	120	
In Internal Standard	115	3	HMI He	2397940	0.84	2599142	92.26	60	120	
Ir (IS)	193	3	HMI He	4843552	0.94	5525410	87.66	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	300_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:47:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.560	ppb	5.698	2439	50	103.1	90	110	
Na	23	3	45	50030.408	ppb	2.382	5479413	51000	98.1	90	110	
Mg	24	3	45	10812.978	ppb	1.463	608239	11000	98.3	90	110	
Al	27	3	45	1034.962	ppb	2.256	21237	1000	103.5	90	110	
K	39	3	45	10611.809	ppb	0.894	492120	11000	96.5	90	110	
Ca	40	2	45	11258.792	ppb	3.679	5948087	11000	102.4	90	110	
V	51	3	72	51.232	ppb	1.115	28001	50	102.5	90	110	
Cr	52	3	72	50.730	ppb	3.271	35900	50	101.5	90	110	
Mn	55	3	72	52.620	ppb	2.322	19627	50	105.2	90	110	
Fe	56	2	72	1046.361	ppb	3.177	1436778	1000	104.6	90	110	
Co	59	3	72	50.681	ppb	1.884	56229	50	101.4	90	110	
Ni	60	3	72	49.110	ppb	3.004	15197	50	98.2	90	110	
Cu	63	3	72	50.600	ppb	2.078	42292	50	101.2	90	110	
Zn	66	3	72	50.370	ppb	4.698	7617	50	100.7	90	110	
As	75	3	72	50.728	ppb	5.154	5243	50	101.5	90	110	
Se	78	2	72	51.069	ppb	1.876	2726	50	102.1	90	110	
(Se)	78	3	72	57.708	ppb	17.097	361	50	115.4	90	110	>+\-10%
Sr	88	3	72	105.367	ppb	2.456	50620	100	105.4	90	110	
Mo	95	3	115	49.338	ppb	4.467	22696	50	98.7	90	110	
Ag	107	3	115	48.887	ppb	1.192	74488	50	97.8	90	110	
Cd	111	3	115	49.363	ppb	2.403	11062	50	98.7	90	110	
Sn	120	3	115	51.071	ppb	1.477	35236	50	102.1	90	110	
Sb	121	3	115	50.483	ppb	0.924	34846	50	101.0	90	110	
Ba	137	3	115	49.533	ppb	1.946	11054	50	99.1	90	110	
Tl	205	3	193	51.387	ppb	0.875	160741	50	102.8	90	110	
(Pb)	206	3	193	50.951	ppb	2.910	53662	50	101.9	90	110	
(Pb)	207	3	193	50.431	ppb	2.655	47293	50	100.9	90	110	
Pb	208	3	193	51.074	ppb	2.972	216812	50	102.1	90	110	
Th	232	3	193	51.438	ppb	1.738	221403	50	102.9	90	110	
U	238	3	193	50.935	ppb	2.138	227423	50	101.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3841072	1.62	4331237	88.68	60	120	
Sc (IS)	45	3	HMI He	572638	2.13	654817	87.45	60	120	
Ge Internal standard	72	2	HMI H2	2043700	1.23	2307933	88.55	60	120	
Ge Internal standard	72	3	HMI He	643231	1.33	744678	86.38	60	120	
In Internal Standard	115	3	HMI He	2283503	1.28	2599142	87.86	60	120	
Ir (IS)	193	3	HMI He	4725094	1.79	5525410	85.52	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	301_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:49:08-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.037	ppb	173.2	2	0.5	
Na	23	3	45	286.351	ppb	1.9	71910	25	>RL
Mg	24	3	45	6.695	ppb	23.1	521	25	
Al	27	3	45	10.485	ppb	10.0	277	15	
K	39	3	45	5.053	ppb	1028.8	22177	50	
V	51	3	72	-0.195	ppb	-14.5	100	1	
Cr	52	3	72	-0.031	ppb	-104.7	1111	1	
Mn	55	3	72	0.424	ppb	34.0	292	0.5	
Co	59	3	72	0.007	ppb	100.8	28	0.5	
Ni	60	3	72	0.053	ppb	200.6	115	1	
Cu	63	3	72	0.063	ppb	73.6	338	1	
Zn	66	3	72	0.320	ppb	63.0	238	5	
As	75	3	72	-0.033	ppb	-749.6	38	1	
Se	78	2	72	0.047	ppb	130.6	5	1	
(Se)	78	3	72	-2.911	ppb	-78.3	12	1	
Sr	88	3	72	0.567	ppb	34.0	297	0.5	>RL
Mo	95	3	115	0.037	ppb	96.0	47	0.5	
Ag	107	3	115	0.004	ppb	249.3	22	1	
Cd	111	3	115	-0.013	ppb	0.0	0	0.5	
Sn	120	3	115	0.353	ppb	27.4	670	1	
Sb	121	3	115	-0.050	ppb	-21.8	72	0.6	
Ba	137	3	115	-0.027	ppb	-119.8	52	0.5	
Tl	205	3	193	0.003	ppb	368.7	102	0.1	
(Pb)	206	3	193	-0.022	ppb	-35.7	103	1	
(Pb)	207	3	193	0.004	ppb	317.2	270	1	
Pb	208	3	193	0.012	ppb	45.5	645	0.5	
Th	232	3	193	0.568	ppb	21.8	5818	1	
U	238	3	193	0.005	ppb	104.9	1304	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3624759	3.66	4331237	83.69	60	120	
Sc (IS)	45	3	HMI He	546624	0.29	654817	83.48	60	120	
Ge Internal standard	72	2	HMI H2	1978536	2.56	2307933	85.73	60	120	
Ge Internal standard	72	3	HMI He	616397	0.63	744678	82.77	60	120	
In Internal Standard	115	3	HMI He	2176831	1.53	2599142	83.75	60	120	
Ir (IS)	193	3	HMI He	4523449	0.39	5525410	81.87	60	120	

Sample Report

Sample Table

Sample Name	280-171270-i-4-b
Data File Name	302SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:51:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020B
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.042	ppb	0.042	173.21	2	2000	
Na	23	3	45	13886866.218	ppb	13886866.218	0.83	1476111286	400000	>LDR
Mg	24	3	45	858643.440	ppb	858643.440	0.44	47249892	400000	
Al	27	3	45	362.111	ppb	362.111	7.41	7319	400000	
K	39	3	45	5576912.640	ppb	5576912.640	1.43	241244171	400000	>LDR
Ca	40	2	45	799885.009	ppb	799885.009	2.29	390296009	400000	
V	51	3	72	246.055	ppb	246.055	1.36	125443	2000	
Cr	52	3	72	438.938	ppb	438.938	1.28	283015	5000	
Mn	55	3	72	9025.324	ppb	9025.324	0.53	3136215	10000	
Fe	56	2	72	753.602	ppb	753.602	1.80	960652	10000	
Co	59	3	72	1.590	ppb	1.590	12.83	1676	2000	
Ni	60	3	72	8.505	ppb	8.505	3.43	2551	5000	
Cu	63	3	72	0.797	ppb	0.797	20.82	903	5000	
Zn	66	3	72	4.454	ppb	4.454	15.02	805	5000	
As	75	3	72	227.614	ppb	227.614	1.38	21948	2000	
Se	78	2	72	2.103	ppb	2.103	18.93	106	2000	
(Se)	78	3	72	4.228	ppb	4.228	57.89	50	2000	
Sr	88	3	72	5118.356	ppb	5118.356	1.84	2306290	4000	
Mo	95	3	115	1.660	ppb	1.660	5.12	665	2000	
Ag	107	3	115	0.022	ppb	0.022	26.80	42	100	
Cd	111	3	115	0.014	ppb	0.014	2.53	5	2000	
Sn	120	3	115	1.817	ppb	1.817	10.06	1421	2000	
Sb	121	3	115	162.667	ppb	162.667	1.05	93645	1000	
Ba	137	3	115	2229.593	ppb	2229.593	2.14	413696	5000	
Tl	205	3	193	0.003	ppb	0.003	280.73	78	2000	
(Pb)	206	3	193	0.236	ppb	0.236	32.49	278	100	
(Pb)	207	3	193	0.294	ppb	0.294	11.87	405	100	
Pb	208	3	193	0.277	ppb	0.277	9.34	1316	5000	
Th	232	3	193	0.226	ppb	0.226	8.29	3397	2000	
U	238	3	193	0.079	ppb	0.079	25.88	1238	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3554247	1.54	4331237	82.06	60	120	
Sc (IS)	45	3	HMI He	560248	0.87	654817	85.56	60	120	
Ge Internal standard	72	2	HMI H2	1893177	2.04	2307933	82.03	60	120	
Ge Internal standard	72	3	HMI He	603646	0.62	744678	81.06	60	120	
In Internal Standard	115	3	HMI He	1908776	1.30	2599142	73.44	60	120	
Ir (IS)	193	3	HMI He	3466752	0.31	5525410	62.74	60	120	

Sample Report

Sample Table

Sample Name	RINSE
Data File Name	303SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:52:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2067.205	ppb	2067.205	13.59	502587	400000	
Mg	24	3	45	49.913	ppb	49.913	18.01	5567	400000	
Al	27	3	45	-1.971	ppb	-1.971	-60.64	67	400000	
K	39	3	45	445.684	ppb	445.684	39.44	79903	400000	
Ca	40	2	45	175.282	ppb	175.282	6.75	201905	400000	
V	51	3	72	-0.297	ppb	-0.297	-9.63	93	2000	
Cr	52	3	72	-1.224	ppb	-1.224	-2.00	650	5000	
Mn	55	3	72	0.618	ppb	0.618	12.34	711	10000	
Fe	56	2	72	-2.679	ppb	-2.679	-12.06	9346	10000	
Co	59	3	72	-0.012	ppb	-0.012	-23.31	17	2000	
Ni	60	3	72	-0.252	ppb	-0.252	-12.16	50	5000	
Cu	63	3	72	-0.093	ppb	-0.093	-32.22	423	5000	
Zn	66	3	72	-0.713	ppb	-0.713	-16.82	183	5000	
As	75	3	72	-0.045	ppb	-0.045	-100.06	73	2000	
Se	78	2	72	0.007	ppb	0.007	422.35	5	2000	
(Se)	78	3	72	-2.886	ppb	-2.886	-16.90	23	2000	
Sr	88	3	72	0.686	ppb	0.686	24.72	695	4000	
Mo	95	3	115	-0.021	ppb	-0.021	-73.85	40	2000	
Ag	107	3	115	0.010	ppb	0.010	113.61	53	100	
Cd	111	3	115	0.008	ppb	0.008	232.11	8	2000	
Sn	120	3	115	-0.417	ppb	-0.417	-12.71	313	2000	
Sb	121	3	115	0.561	ppb	0.561	7.85	871	1000	
Ba	137	3	115	0.039	ppb	0.039	231.86	122	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-61.63	147	2000	
(Pb)	206	3	193	-0.021	ppb	-0.021	-141.53	180	100	
(Pb)	207	3	193	0.000	ppb	0.000	8438.58	458	100	
Pb	208	3	193	-0.005	ppb	-0.005	-254.44	990	5000	
Th	232	3	193	0.029	ppb	0.029	106.66	6247	2000	
U	238	3	193	0.012	ppb	0.012	32.15	2294	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	7370405	1.77	4331237	170.17	60	120	IS Failed
Sc (IS)	45	3	HMI He	1069394	1.93	654817	163.31	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3998812	1.73	2307933	173.26	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1217626	1.73	744678	163.51	60	120	IS Failed
In Internal Standard	115	3	HMI He	4020454	3.05	2599142	154.68	60	120	IS Failed
Ir (IS)	193	3	HMI He	7781722	1.89	5525410	140.84	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	304_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:54:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.278	ppb	5.988	2179	50	94.6	90	110	
Na	23	3	45	51308.073	ppb	1.093	5529951	51000	100.6	90	110	
Mg	24	3	45	10704.058	ppb	1.131	592868	11000	97.3	90	110	
Al	27	3	45	1040.555	ppb	2.170	21023	1000	104.1	90	110	
K	39	3	45	11427.916	ppb	0.127	519983	11000	103.9	90	110	
Ca	40	2	45	11186.941	ppb	1.416	5712252	11000	101.7	90	110	
V	51	3	72	51.065	ppb	2.909	26844	50	102.1	90	110	
Cr	52	3	72	51.208	ppb	0.877	34850	50	102.4	90	110	
Mn	55	3	72	53.105	ppb	1.892	19052	50	106.2	90	110	
Fe	56	2	72	1036.189	ppb	0.752	1374858	1000	103.6	90	110	
Co	59	3	72	50.793	ppb	0.528	54209	50	101.6	90	110	
Ni	60	3	72	49.234	ppb	1.974	14659	50	98.5	90	110	
Cu	63	3	72	50.086	ppb	2.687	40292	50	100.2	90	110	
Zn	66	3	72	51.294	ppb	1.833	7462	50	102.6	90	110	
As	75	3	72	50.974	ppb	3.216	5072	50	101.9	90	110	
Se	78	2	72	49.514	ppb	4.052	2553	50	99.0	90	110	
(Se)	78	3	72	48.855	ppb	8.321	298	50	97.7	90	110	
Sr	88	3	72	106.414	ppb	0.170	49186	100	106.4	90	110	
Mo	95	3	115	48.269	ppb	1.330	21581	50	96.5	90	110	
Ag	107	3	115	46.652	ppb	1.410	69064	50	93.3	90	110	
Cd	111	3	115	48.150	ppb	2.234	10486	50	96.3	90	110	
Sn	120	3	115	49.485	ppb	2.324	33183	50	99.0	90	110	
Sb	121	3	115	49.273	ppb	1.026	33046	50	98.5	90	110	
Ba	137	3	115	50.316	ppb	5.116	10912	50	100.6	90	110	
Tl	205	3	193	53.523	ppb	0.870	146460	50	107.0	90	110	
(Pb)	206	3	193	53.125	ppb	0.197	48962	50	106.2	90	110	
(Pb)	207	3	193	52.586	ppb	0.582	43139	50	105.2	90	110	
Pb	208	3	193	53.312	ppb	0.793	198050	50	106.6	90	110	
Th	232	3	193	52.707	ppb	0.672	198424	50	105.4	90	110	
U	238	3	193	52.906	ppb	0.492	206674	50	105.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3712085	3.24	4331237	85.70	60	120	
Sc (IS)	45	3	HMI He	563673	2.05	654817	86.08	60	120	
Ge Internal standard	72	2	HMI H2	1974534	1.78	2307933	85.55	60	120	
Ge Internal standard	72	3	HMI He	618733	1.90	744678	83.09	60	120	
In Internal Standard	115	3	HMI He	2218343	1.20	2599142	85.35	60	120	
Ir (IS)	193	3	HMI He	4133698	2.66	5525410	74.81	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	305_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-24T21:56:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	164CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	1196.009	ppb	2.1	176864	25	>RL
Mg	24	3	45	17.972	ppb	8.1	1198	25	
Al	27	3	45	13.645	ppb	24.1	360	15	
K	39	3	45	405.953	ppb	7.8	41593	50	>RL
V	51	3	72	-0.180	ppb	-16.4	113	1	
Cr	52	3	72	-0.062	ppb	-318.6	1144	1	
Mn	55	3	72	0.806	ppb	21.0	448	0.5	>RL
Co	59	3	72	0.003	ppb	263.1	25	0.5	
Ni	60	3	72	-0.019	ppb	-349.9	98	1	
Cu	63	3	72	0.079	ppb	33.2	368	1	
Zn	66	3	72	0.962	ppb	27.8	345	5	
As	75	3	72	-0.084	ppb	-202.0	35	1	
Se	78	2	72	0.005	ppb	384.8	3	1	
(Se)	78	3	72	-0.993	ppb	-304.2	23	1	
Sr	88	3	72	0.395	ppb	12.1	228	0.5	
Mo	95	3	115	0.046	ppb	87.0	53	0.5	
Ag	107	3	115	0.009	ppb	124.6	30	1	
Cd	111	3	115	0.002	ppb	724.7	3	0.5	
Sn	120	3	115	0.260	ppb	8.2	641	1	
Sb	121	3	115	0.133	ppb	19.0	202	0.6	
Ba	137	3	115	-0.009	ppb	-1080.3	58	0.5	
Tl	205	3	193	0.008	ppb	134.4	118	0.1	
(Pb)	206	3	193	0.002	ppb	1327.1	128	1	
(Pb)	207	3	193	0.026	ppb	360.7	290	1	
Pb	208	3	193	0.026	ppb	123.0	701	0.5	
Th	232	3	193	0.642	ppb	23.9	6150	1	
U	238	3	193	0.020	ppb	62.8	1373	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891993	0.42	4331237	89.86	60	120	
Sc (IS)	45	3	HMI He	581533	0.31	654817	88.81	60	120	
Ge Internal standard	72	2	HMI H2	2062189	1.89	2307933	89.35	60	120	
Ge Internal standard	72	3	HMI He	646652	0.53	744678	86.84	60	120	
In Internal Standard	115	3	HMI He	2289297	1.01	2599142	88.08	60	120	
Ir (IS)	193	3	HMI He	4550023	1.71	5525410	82.35	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	306SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:20:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-210.745	ppb	-210.745	-7.47	24907	400000	
Mg	24	3	45	-1.548	ppb	-1.548	-24.62	97	400000	
Al	27	3	45	0.601	ppb	0.601	66.96	103	400000	
K	39	3	45	-100.586	ppb	-100.586	-40.64	21702	400000	
Ca	40	2	45	-4.417	ppb	-4.417	-16.52	11837	400000	
V	51	3	72	-0.299	ppb	-0.299	-10.08	57	2000	
Cr	52	3	72	-0.569	ppb	-0.569	-14.08	928	5000	
Mn	55	3	72	0.142	ppb	0.142	22.44	235	10000	
Fe	56	2	72	0.875	ppb	0.875	24.78	11169	10000	
Co	59	3	72	-0.002	ppb	-0.002	-234.46	23	2000	
Ni	60	3	72	-0.091	ppb	-0.091	-86.52	90	5000	
Cu	63	3	72	-0.025	ppb	-0.025	-83.69	328	5000	
Zn	66	3	72	0.691	ppb	0.691	36.89	355	5000	
As	75	3	72	-0.217	ppb	-0.217	-14.23	25	2000	
Se	78	2	72	-0.033	ppb	-0.033	-56.58	1	2000	
(Se)	78	3	72	-0.839	ppb	-0.839	-89.83	28	2000	
Sr	88	3	72	0.023	ppb	0.023	158.47	57	4000	
Mo	95	3	115	0.169	ppb	0.169	18.79	132	2000	
Ag	107	3	115	0.001	ppb	0.001	507.83	22	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	-0.357	ppb	-0.357	-8.83	263	2000	
Sb	121	3	115	-0.135	ppb	-0.135	-4.55	20	1000	
Ba	137	3	115	-0.196	ppb	-0.196	-0.15	20	5000	
Tl	205	3	193	0.007	ppb	0.007	96.99	130	2000	
(Pb)	206	3	193	-0.047	ppb	-0.047	-16.41	88	100	
(Pb)	207	3	193	0.664	ppb	0.664	13.31	971	100	
Pb	208	3	193	0.130	ppb	0.130	12.97	1266	5000	
Th	232	3	193	-0.024	ppb	-0.024	-25.14	3867	2000	
U	238	3	193	-0.014	ppb	-0.014	-196.21	1379	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4365362	2.54	4331237	100.79	60	120	
Sc (IS)	45	3	HMI He	670825	5.64	654817	102.44	60	120	
Ge Internal standard	72	2	HMI H2	2371106	0.50	2307933	102.74	60	120	
Ge Internal standard	72	3	HMI He	755708	6.07	744678	101.48	60	120	
In Internal Standard	115	3	HMI He	2740531	0.39	2599142	105.44	60	120	
Ir (IS)	193	3	HMI He	5117457	2.16	5525410	92.62	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	307SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:22:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-211.502	ppb	-211.502	-3.78	25585	400000	
Mg	24	3	45	-1.869	ppb	-1.869	-23.96	77	400000	
Al	27	3	45	0.080	ppb	0.080	1195.57	93	400000	
K	39	3	45	-90.846	ppb	-90.846	-38.25	22909	400000	
Ca	40	2	45	-5.001	ppb	-5.001	-14.00	11339	400000	
V	51	3	72	-0.342	ppb	-0.342	-3.38	32	2000	
Cr	52	3	72	-0.611	ppb	-0.611	-11.54	966	5000	
Mn	55	3	72	0.003	ppb	0.003	1651.32	188	10000	
Fe	56	2	72	-0.444	ppb	-0.444	-24.62	8992	10000	
Co	59	3	72	0.000	ppb	0.000	-3793.90	27	2000	
Ni	60	3	72	-0.179	ppb	-0.179	-33.53	62	5000	
Cu	63	3	72	-0.037	ppb	-0.037	-128.68	343	5000	
Zn	66	3	72	0.186	ppb	0.186	27.72	290	5000	
As	75	3	72	-0.230	ppb	-0.230	-17.76	25	2000	
Se	78	2	72	0.032	ppb	0.032	56.88	5	2000	
(Se)	78	3	72	-1.131	ppb	-1.131	-127.37	28	2000	
Sr	88	3	72	0.004	ppb	0.004	369.47	50	4000	
Mo	95	3	115	0.003	ppb	0.003	212.69	42	2000	
Ag	107	3	115	0.001	ppb	0.001	849.00	22	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	-0.249	ppb	-0.249	-32.27	366	2000	
Sb	121	3	115	-0.122	ppb	-0.122	-2.48	32	1000	
Ba	137	3	115	-0.163	ppb	-0.163	-28.61	30	5000	
Tl	205	3	193	0.003	ppb	0.003	215.05	120	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-24.69	120	100	
(Pb)	207	3	193	0.282	ppb	0.282	12.73	601	100	
Pb	208	3	193	0.052	ppb	0.052	17.65	936	5000	
Th	232	3	193	0.018	ppb	0.018	164.54	4174	2000	
U	238	3	193	-0.011	ppb	-0.011	-52.11	1436	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4307019	2.00	4331237	99.44	60	120	
Sc (IS)	45	3	HMI He	690463	4.00	654817	105.44	60	120	
Ge Internal standard	72	2	HMI H2	2347571	0.82	2307933	101.72	60	120	
Ge Internal standard	72	3	HMI He	814281	1.27	744678	109.35	60	120	
In Internal Standard	115	3	HMI He	2852769	1.17	2599142	109.76	60	120	
Ir (IS)	193	3	HMI He	5259568	1.99	5525410	95.19	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	308SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:24:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-201.584	ppb	-201.584	-4.17	25405	400000	
Mg	24	3	45	-1.388	ppb	-1.388	-45.07	103	400000	
Al	27	3	45	0.172	ppb	0.172	677.84	90	400000	
K	39	3	45	-70.563	ppb	-70.563	-34.85	22631	400000	
Ca	40	2	45	-6.264	ppb	-6.264	-18.10	10979	400000	
V	51	3	72	-0.327	ppb	-0.327	-10.00	40	2000	
Cr	52	3	72	-0.598	ppb	-0.598	-17.31	930	5000	
Mn	55	3	72	-0.013	ppb	-0.013	-499.08	172	10000	
Fe	56	2	72	-1.151	ppb	-1.151	-10.67	8221	10000	
Co	59	3	72	-0.006	ppb	-0.006	-40.58	18	2000	
Ni	60	3	72	-0.122	ppb	-0.122	-21.49	80	5000	
Cu	63	3	72	-0.019	ppb	-0.019	-172.76	343	5000	
Zn	66	3	72	-0.149	ppb	-0.149	-72.32	217	5000	
As	75	3	72	-0.168	ppb	-0.168	-67.93	32	2000	
Se	78	2	72	0.019	ppb	0.019	167.67	4	2000	
(Se)	78	3	72	-3.103	ppb	-3.103	-12.68	13	2000	
Sr	88	3	72	0.023	ppb	0.023	37.75	58	4000	
Mo	95	3	115	-0.019	ppb	-0.019	-69.87	28	2000	
Ag	107	3	115	0.002	ppb	0.002	290.55	23	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	-0.244	ppb	-0.244	-13.40	358	2000	
Sb	121	3	115	-0.135	ppb	-0.135	-7.40	20	1000	
Ba	137	3	115	-0.153	ppb	-0.153	-37.30	32	5000	
Tl	205	3	193	0.000	ppb	0.000	1414.18	108	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-66.35	120	100	
(Pb)	207	3	193	0.101	ppb	0.101	28.06	413	100	
Pb	208	3	193	0.007	ppb	0.007	87.94	726	5000	
Th	232	3	193	-0.039	ppb	-0.039	-164.00	3899	2000	
U	238	3	193	0.002	ppb	0.002	1394.34	1496	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4469545	3.15	4331237	103.19	60	120	
Sc (IS)	45	3	HMI He	651764	0.76	654817	99.53	60	120	
Ge Internal standard	72	2	HMI H2	2448843	1.95	2307933	106.11	60	120	
Ge Internal standard	72	3	HMI He	775252	1.53	744678	104.11	60	120	
In Internal Standard	115	3	HMI He	2761196	1.35	2599142	106.23	60	120	
Ir (IS)	193	3	HMI He	5258285	1.99	5525410	95.17	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	309SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:26:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	-204.590	ppb	-204.590	-2.52	25933	400000	
Mg	24	3	45	-1.240	ppb	-1.240	-21.03	117	400000	
Al	27	3	45	1.562	ppb	1.562	38.65	127	400000	
K	39	3	45	-83.252	ppb	-83.252	-63.23	22758	400000	
Ca	40	2	45	-5.458	ppb	-5.458	-11.95	11109	400000	
V	51	3	72	-0.322	ppb	-0.322	-4.41	45	2000	
Cr	52	3	72	-0.707	ppb	-0.707	-11.81	876	5000	
Mn	55	3	72	-0.069	ppb	-0.069	-11.87	153	10000	
Fe	56	2	72	0.561	ppb	0.561	12.55	10675	10000	
Co	59	3	72	0.003	ppb	0.003	153.65	32	2000	
Ni	60	3	72	-0.130	ppb	-0.130	-44.19	80	5000	
Cu	63	3	72	-0.039	ppb	-0.039	-34.11	338	5000	
Zn	66	3	72	0.036	ppb	0.036	739.60	260	5000	
As	75	3	72	-0.178	ppb	-0.178	-25.25	32	2000	
Se	78	2	72	0.010	ppb	0.010	378.89	3	2000	
(Se)	78	3	72	-1.112	ppb	-1.112	-128.83	28	2000	
Sr	88	3	72	-0.006	ppb	-0.006	-623.78	43	4000	
Mo	95	3	115	-0.022	ppb	-0.022	-49.05	28	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-24.15	8	100	
Cd	111	3	115	-0.013	ppb	-0.013	0.00	0	2000	
Sn	120	3	115	-0.279	ppb	-0.279	-13.15	348	2000	
Sb	121	3	115	-0.121	ppb	-0.121	-15.29	33	1000	
Ba	137	3	115	-0.171	ppb	-0.171	-11.32	28	5000	
Tl	205	3	193	0.013	ppb	0.013	16.30	153	2000	
(Pb)	206	3	193	-0.033	ppb	-0.033	-20.11	108	100	
(Pb)	207	3	193	0.007	ppb	0.007	648.54	318	100	
Pb	208	3	193	0.005	ppb	0.005	198.87	721	5000	
Th	232	3	193	-0.013	ppb	-0.013	-148.43	4064	2000	
U	238	3	193	0.018	ppb	0.018	169.54	1591	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4322577	0.61	4331237	99.80	60	120	
Sc (IS)	45	3	HMI He	675489	2.23	654817	103.16	60	120	
Ge Internal standard	72	2	HMI H2	2371389	1.07	2307933	102.75	60	120	
Ge Internal standard	72	3	HMI He	809052	2.75	744678	108.64	60	120	
In Internal Standard	115	3	HMI He	2918804	1.37	2599142	112.30	60	120	
Ir (IS)	193	3	HMI He	5303178	2.50	5525410	95.98	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	310SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:28:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	164CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-203.711	ppb	-203.711	-5.82	25706	400000	
Mg	24	3	45	-0.961	ppb	-0.961	-79.95	133	400000	
Al	27	3	45	0.227	ppb	0.227	308.77	93	400000	
K	39	3	45	-72.430	ppb	-72.430	-69.35	23019	400000	
Ca	40	2	45	-4.806	ppb	-4.806	-7.41	11870	400000	
V	51	3	72	-0.332	ppb	-0.332	-6.26	37	2000	
Cr	52	3	72	-0.702	ppb	-0.702	-16.18	856	5000	
Mn	55	3	72	-0.115	ppb	-0.115	-58.04	128	10000	
Fe	56	2	72	0.699	ppb	0.699	13.48	11029	10000	
Co	59	3	72	0.000	ppb	0.000	2546.54	27	2000	
Ni	60	3	72	-0.187	ppb	-0.187	-10.85	57	5000	
Cu	63	3	72	-0.061	ppb	-0.061	-86.67	305	5000	
Zn	66	3	72	0.065	ppb	0.065	136.54	258	5000	
As	75	3	72	-0.196	ppb	-0.196	-27.51	28	2000	
Se	78	2	72	-0.012	ppb	-0.012	-274.22	2	2000	
(Se)	78	3	72	-1.961	ppb	-1.961	-51.20	22	2000	
Sr	88	3	72	0.005	ppb	0.005	452.37	48	4000	
Mo	95	3	115	-0.026	ppb	-0.026	-89.25	25	2000	
Ag	107	3	115	0.001	ppb	0.001	174.84	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-143.14	2	2000	
Sn	120	3	115	-0.298	ppb	-0.298	-14.35	322	2000	
Sb	121	3	115	-0.126	ppb	-0.126	-14.32	28	1000	
Ba	137	3	115	-0.168	ppb	-0.168	-24.96	28	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-348.57	105	2000	
(Pb)	206	3	193	-0.043	ppb	-0.043	-30.24	98	100	
(Pb)	207	3	193	-0.024	ppb	-0.024	-155.30	292	100	
Pb	208	3	193	-0.022	ppb	-0.022	-20.47	600	5000	
Th	232	3	193	-0.026	ppb	-0.026	-131.24	4060	2000	
U	238	3	193	-0.009	ppb	-0.009	-325.72	1478	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4463513	1.47	4331237	103.05	60	120	
Sc (IS)	45	3	HMI He	667228	3.42	654817	101.90	60	120	
Ge Internal standard	72	2	HMI H2	2400546	1.30	2307933	104.01	60	120	
Ge Internal standard	72	3	HMI He	786405	3.13	744678	105.60	60	120	
In Internal Standard	115	3	HMI He	2831427	1.81	2599142	108.94	60	120	
Ir (IS)	193	3	HMI He	5384156	1.13	5525410	97.44	60	120	

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	311CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-25T08:30:38-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	25499	0.00
Mg	24	45	3	HMI He	117	34.69
Al	27	45	3	HMI He	110	43.69
K	39	45	3	HMI He	22838	0.03
Ca	40	45	2	HMI H2	13881	0.03
V	51	72	3	HMI He	133	4.30
Cr	52	72	3	HMI He	1286	0.23
Mn	55	72	3	HMI He	197	7.47
Fe	56	72	2	HMI H2	14726	0.03
Co	59	72	3	HMI He	30	111.15
Ni	60	72	3	HMI He	140	11.70
Cu	63	72	3	HMI He	468	0.53
Zn	66	72	3	HMI He	233	9.83
As	75	72	3	HMI He	37	56.83
Se	78	72	2	HMI H2	1	12990.38
(Se)	78	72	3	HMI He	28	190.39
Sr	88	72	3	HMI He	57	54.71
Mo	95	115	3	HMI He	73	14.21
Ag	107	115	3	HMI He	15	222.20
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	678	1.31
Sb	121	115	3	HMI He	47	47.82
Ba	137	115	3	HMI He	38	109.44
Tl	205	193	3	HMI He	78	26.21
(Pb)	206	193	3	HMI He	132	8.33
(Pb)	207	193	3	HMI He	312	2.08
Pb	208	193	3	HMI He	703	0.50
Th	232	193	3	HMI He	4920	0.09
U	238	193	3	HMI He	1383	0.33

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	3941599	2.20
Sc (IS)	45	3	HMI He	622112	1.72
Ge Internal standard	72	2	HMI H2	2131249	1.81
Ge Internal standard	72	3	HMI He	722676	3.99
In Internal Standard	115	3	HMI He	2669667	0.61
Ir (IS)	193	3	HMI He	5050577	0.75

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	312CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-25T08:32:32-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	11276290	0.00
Mg	24	45	3	HMI He	1178683	0.00
Al	27	45	3	HMI He	290	6.17
K	39	45	3	HMI He	953298	0.00
V	51	72	3	HMI He	173	23.62
Cr	52	72	3	HMI He	1796	0.35
Mn	55	72	3	HMI He	285	11.80
Co	59	72	3	HMI He	42	133.10
Ni	60	72	3	HMI He	172	8.54
Cu	63	72	3	HMI He	2027	0.24
Zn	66	72	3	HMI He	576	0.57
As	75	72	3	HMI He	38	128.86
Se	78	72	2	HMI H2	3	3247.60
(Se)	78	72	3	HMI He	15	222.20
Sr	88	72	3	HMI He	461	3.91
Mo	95	115	3	HMI He	77	27.35
Ag	107	115	3	HMI He	43	55.46
Cd	111	115	3	HMI He	8	415.69
Sn	120	115	3	HMI He	1174	0.53
Sb	121	115	3	HMI He	92	39.64
Ba	137	115	3	HMI He	132	6.01
Tl	205	193	3	HMI He	105	12.01
(Pb)	206	193	3	HMI He	275	7.37
(Pb)	207	193	3	HMI He	411	0.90
Pb	208	193	3	HMI He	1326	0.23
Th	232	193	3	HMI He	4029	0.08
U	238	193	3	HMI He	1376	0.50

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4103202	1.82	3941599	104.10	60	120	
Sc (IS)	45	3	HMI He	578604	0.74	622112	93.01	60	120	
Ge Internal standard	72	2	HMI H2	2099947	0.36	2131249	98.53	60	120	
Ge Internal standard	72	3	HMI He	605695	0.61	722676	83.81	60	120	
In Internal Standard	115	3	HMI He	2485511	1.02	2669667	93.10	60	120	
Ir (IS)	193	3	HMI He	4743401	0.62	5050577	93.92	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	313CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-25T08:34:23-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	4785	0.05
Na	23	45	3	HMI He	267274	0.00
Mg	24	45	3	HMI He	123235	0.00
Al	27	45	3	HMI He	45652	0.01
K	39	45	3	HMI He	117909	0.00
V	51	72	3	HMI He	60295	0.00
Cr	52	72	3	HMI He	77359	0.00
Mn	55	72	3	HMI He	41260	0.00
Co	59	72	3	HMI He	121686	0.00
Ni	60	72	3	HMI He	33841	0.00
Cu	63	72	3	HMI He	89671	0.00
Zn	66	72	3	HMI He	16193	0.02
As	75	72	3	HMI He	11341	0.03
Se	78	72	2	HMI H2	5654	0.03
(Se)	78	72	3	HMI He	761	0.65
Sr	88	72	3	HMI He	108645	0.00
Mo	95	115	3	HMI He	48484	0.00
Ag	107	115	3	HMI He	159584	0.00
Cd	111	115	3	HMI He	23492	0.00
Sn	120	115	3	HMI He	74230	0.00
Sb	121	115	3	HMI He	74537	0.00
Ba	137	115	3	HMI He	23694	0.00
Tl	205	193	3	HMI He	334456	0.00
(Pb)	206	193	3	HMI He	113129	0.00
(Pb)	207	193	3	HMI He	98038	0.00
Pb	208	193	3	HMI He	451146	0.00
Th	232	193	3	HMI He	455771	0.00
U	238	193	3	HMI He	471064	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4043705	2.40	3941599	102.59	60	120	
Sc (IS)	45	3	HMI He	616974	0.95	622112	99.17	60	120	
Ge Internal standard	72	2	HMI H2	2239864	0.97	2131249	105.10	60	120	
Ge Internal standard	72	3	HMI He	739968	4.59	722676	102.39	60	120	
In Internal Standard	115	3	HMI He	2667972	1.42	2669667	99.94	60	120	
Ir (IS)	193	3	HMI He	5101218	1.56	5050577	101.00	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	314_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:36:15-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.248	ppb	7.365	1956	40	103.1	90	110	
Na	23	3	45	13466.095	ppb	2.320	1593757	12800	105.2	90	110	
Mg	24	3	45	4670.981	ppb	1.050	285195	4800	97.3	90	110	
Al	27	3	45	801.396	ppb	1.143	17829	800	100.2	90	110	
K	39	3	45	4608.696	ppb	1.998	244469	4800	96.0	90	110	
Ca	40	2	45	5170.516	ppb	3.404	2880146	4800	107.7	90	110	
V	51	3	72	42.441	ppb	2.462	24154	40	106.1	90	110	
Cr	52	3	72	41.909	ppb	2.256	31241	40	104.8	90	110	
Mn	55	3	72	42.289	ppb	2.505	16535	40	105.7	90	110	
Fe	56	2	72	840.470	ppb	2.748	1234536	800	105.1	90	110	
Co	59	3	72	42.031	ppb	2.233	48156	40	105.1	90	110	
Ni	60	3	72	41.927	ppb	3.803	13423	40	104.8	90	110	
Cu	63	3	72	43.502	ppb	3.885	36959	40	108.8	90	110	
Zn	66	3	72	82.517	ppb	5.575	12620	80	103.1	90	110	
As	75	3	72	42.564	ppb	3.921	4562	40	106.4	90	110	
Se	78	2	72	43.714	ppb	3.607	2375	40	109.3	90	110	
(Se)	78	3	72	36.575	ppb	7.314	280	40	91.4	90	110	
Sr	88	3	72	125.682	ppb	1.490	64304	120	104.7	90	110	
Mo	95	3	115	41.337	ppb	1.898	19669	40	103.3	90	110	
Ag	107	3	115	79.674	ppb	1.230	124509	80	99.6	90	110	
Cd	111	3	115	41.759	ppb	3.656	9605	40	104.4	90	110	
Sn	120	3	115	39.296	ppb	1.386	28970	40	98.2	90	110	
Sb	121	3	115	40.007	ppb	1.274	29229	40	100.0	90	110	
Ba	137	3	115	40.973	ppb	3.410	9527	40	102.4	90	110	
Tl	205	3	193	40.766	ppb	2.060	135003	40	101.9	90	110	
(Pb)	206	3	193	40.029	ppb	1.479	44909	40	100.1	90	110	
(Pb)	207	3	193	40.666	ppb	2.033	39644	40	101.7	90	110	
Pb	208	3	193	40.328	ppb	0.738	180516	40	100.8	90	110	
Th	232	3	193	81.663	ppb	0.706	369333	80	102.1	90	110	
U	238	3	193	40.463	ppb	1.705	189496	40	101.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3993416	1.56	3941599	101.31	60	120	
Sc (IS)	45	3	HMI He	599260	0.62	622112	96.33	60	120	
Ge Internal standard	72	2	HMI H2	2151662	0.41	2131249	100.96	60	120	
Ge Internal standard	72	3	HMI He	695720	2.27	722676	96.27	60	120	
In Internal Standard	115	3	HMI He	2612514	1.06	2669667	97.86	60	120	
Ir (IS)	193	3	HMI He	5048677	0.92	5050577	99.96	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	315_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:44:23-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.363	ppb	1.411	2519	50	100.7	90	110	
Na	23	3	45	50959.745	ppb	1.942	5894687	51000	99.9	90	110	
Mg	24	3	45	10828.936	ppb	3.537	653419	11000	98.4	90	110	
Al	27	3	45	991.532	ppb	1.137	21789	1000	99.2	90	110	
K	39	3	45	10380.503	ppb	0.846	517138	11000	94.4	90	110	
Ca	40	2	45	11491.669	ppb	2.713	6613141	11000	104.5	90	110	
V	51	3	72	53.871	ppb	0.282	29049	50	107.7	90	110	
Cr	52	3	72	53.816	ppb	1.818	37716	50	107.6	90	110	
Mn	55	3	72	54.722	ppb	1.153	20241	50	109.4	90	110	
Fe	56	2	72	1049.144	ppb	1.022	1628297	1000	104.9	90	110	
Co	59	3	72	54.477	ppb	1.485	59192	50	109.0	90	110	
Ni	60	3	72	52.103	ppb	0.801	15798	50	104.2	90	110	
Cu	63	3	72	54.718	ppb	1.447	43998	50	109.4	90	110	
Zn	66	3	72	56.308	ppb	2.955	8238	50	112.6	90	110	>+\-10%
As	75	3	72	55.808	ppb	1.374	5665	50	111.6	90	110	>+\-10%
Se	78	2	72	51.832	ppb	2.596	2982	50	103.7	90	110	
(Se)	78	3	72	53.614	ppb	4.745	376	50	107.2	90	110	
Sr	88	3	72	109.244	ppb	2.016	53015	100	109.2	90	110	
Mo	95	3	115	49.854	ppb	3.477	23130	50	99.7	90	110	
Ag	107	3	115	50.107	ppb	1.227	76391	50	100.2	90	110	
Cd	111	3	115	50.276	ppb	3.314	11284	50	100.6	90	110	
Sn	120	3	115	50.967	ppb	0.415	36462	50	101.9	90	110	
Sb	121	3	115	50.045	ppb	0.715	35660	50	100.1	90	110	
Ba	137	3	115	50.538	ppb	0.985	11458	50	101.1	90	110	
Tl	205	3	193	50.769	ppb	2.737	160786	50	101.5	90	110	
(Pb)	206	3	193	51.630	ppb	2.274	55363	50	103.3	90	110	
(Pb)	207	3	193	51.263	ppb	2.931	47723	50	102.5	90	110	
Pb	208	3	193	51.220	ppb	2.532	219098	50	102.4	90	110	
Th	232	3	193	51.653	ppb	2.353	225147	50	103.3	90	110	
U	238	3	193	51.576	ppb	3.199	230644	50	103.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4137494	2.89	3941599	104.97	60	120	
Sc (IS)	45	3	HMI He	592485	1.80	622112	95.24	60	120	
Ge Internal standard	72	2	HMI H2	2279121	2.39	2131249	106.94	60	120	
Ge Internal standard	72	3	HMI He	659797	1.72	722676	91.30	60	120	
In Internal Standard	115	3	HMI He	2548496	1.31	2669667	95.46	60	120	
Ir (IS)	193	3	HMI He	4829740	1.72	5050577	95.63	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	316_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:46:17-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	28.836	ppb	16.3	27942	25	>RL
Mg	24	3	45	1.652	ppb	35.2	214	25	
Al	27	3	45	48.145	ppb	4.1	1171	15	>RL
K	39	3	45	1.521	ppb	2227.8	22110	50	
V	51	3	72	0.022	ppb	101.5	137	1	
Cr	52	3	72	0.084	ppb	25.3	1261	1	
Mn	55	3	72	0.032	ppb	41.8	197	0.5	
Co	59	3	72	0.000	ppb	916.0	28	0.5	
Ni	60	3	72	-0.075	ppb	-71.9	108	1	
Cu	63	3	72	0.113	ppb	7.7	530	1	
Zn	66	3	72	3.986	ppb	13.3	800	5	
As	75	3	72	-0.046	ppb	-579.8	30	1	
Se	78	2	72	0.011	ppb	326.4	2	1	
(Se)	78	3	72	-1.515	ppb	-125.9	17	1	
Sr	88	3	72	0.077	ppb	71.0	92	0.5	
Mo	95	3	115	-0.045	ppb	-84.5	50	0.5	
Ag	107	3	115	0.015	ppb	11.9	38	1	
Cd	111	3	115	0.014	ppb	86.6	3	0.5	
Sn	120	3	115	0.545	ppb	14.0	1050	1	
Sb	121	3	115	0.046	ppb	70.2	78	0.6	
Ba	137	3	115	0.172	ppb	47.1	77	0.5	
Tl	205	3	193	0.015	ppb	21.9	125	0.1	
(Pb)	206	3	193	0.002	ppb	1014.3	130	1	
(Pb)	207	3	193	-0.004	ppb	-524.7	298	1	
Pb	208	3	193	0.016	ppb	79.3	750	0.5	
Th	232	3	193	0.473	ppb	26.2	6817	1	
U	238	3	193	0.024	ppb	14.4	1451	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4156184	1.07	3941599	105.44	60	120	
Sc (IS)	45	3	HMI He	599638	0.21	622112	96.39	60	120	
Ge Internal standard	72	2	HMI H2	2253134	3.55	2131249	105.72	60	120	
Ge Internal standard	72	3	HMI He	675258	1.34	722676	93.44	60	120	
In Internal Standard	115	3	HMI He	2596889	1.46	2669667	97.27	60	120	
Ir (IS)	193	3	HMI He	4901945	1.98	5050577	97.06	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	317LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:48:10-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.849	ppb	37.614	40	1	84.9	70	130	
Na	23	3	45	79.941	ppb	1.984	33342	50	159.9	70	130	>+/-30%
Mg	24	3	45	50.817	ppb	4.752	3164	50	101.6	70	130	
Al	27	3	45	53.654	ppb	10.436	1271	50	107.3	70	130	
K	39	3	45	111.042	ppb	31.339	26946	100	111.0	70	130	
V	51	3	72	5.233	ppb	1.483	2966	5	104.7	70	130	
Cr	52	3	72	2.208	ppb	8.783	2706	2	110.4	70	130	
Mn	55	3	72	1.084	ppb	34.062	583	1	108.4	70	130	
Co	59	3	72	1.110	ppb	4.055	1248	1	111.0	70	130	
Ni	60	3	72	1.980	ppb	13.010	731	2	99.0	70	130	
Cu	63	3	72	2.388	ppb	10.014	2356	2	119.4	70	130	
Zn	66	3	72	14.825	ppb	4.578	2352	10	148.3	70	130	>+/-30%
As	75	3	72	5.490	ppb	6.618	595	5	109.8	70	130	
Se	78	2	72	5.125	ppb	15.012	275	5	102.5	70	130	
(Se)	78	3	72	4.322	ppb	54.329	55	5	86.4	70	130	
Sr	88	3	72	1.113	ppb	12.210	598	1	111.3	70	130	
Mo	95	3	115	2.040	ppb	10.732	1006	2	102.0	70	130	
Ag	107	3	115	1.130	ppb	10.287	1724	1	113.0	70	130	
Cd	111	3	115	0.995	ppb	24.280	222	1	99.5	70	130	
Sn	120	3	115	10.535	ppb	2.507	7987	10	105.4	70	130	
Sb	121	3	115	2.257	ppb	3.857	1638	2	112.9	70	130	
Ba	137	3	115	1.213	ppb	5.747	308	1	121.3	70	130	
Tl	205	3	193	1.072	ppb	3.194	3505	1	107.2	70	130	
(Pb)	206	3	193	1.086	ppb	4.175	1303	1	108.6	70	130	
(Pb)	207	3	193	1.067	ppb	7.413	1299	1	106.7	70	130	
Pb	208	3	193	1.087	ppb	2.278	5366	1	108.7	70	130	
Th	232	3	193	1.964	ppb	2.773	13232	2	98.2	70	130	
U	238	3	193	1.055	ppb	3.238	6075	1	105.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3930996	1.95	3941599	99.73	60	120	
Sc (IS)	45	3	HMI He	589727	0.53	622112	94.79	60	120	
Ge Internal standard	72	2	HMI H2	2111945	2.75	2131249	99.09	60	120	
Ge Internal standard	72	3	HMI He	667473	1.87	722676	92.36	60	120	
In Internal Standard	115	3	HMI He	2529137	1.65	2669667	94.74	60	120	
Ir (IS)	193	3	HMI He	4881664	2.52	5050577	96.66	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	318ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:50:02-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.036	ppb	173.2	2	0.5	
Na	23	3	45	95581.472	ppb	1.6	11160348	100000	
Mg	24	3	45	92432.312	ppb	1.4	5640192	100000	
Al	27	3	45	97107.471	ppb	1.8	2147271	100000	
K	39	3	45	90658.527	ppb	1.2	4396862	100000	
Ca	40	2	45	97481.197	ppb	0.4	52852620	100000	
V	51	3	72	0.008	ppb	691.1	137	1	
Cr	52	3	72	1.418	ppb	9.7	2326	1	>RL or LOD
Mn	55	3	72	10.737	ppb	0.6	4478	0.95	>RL or LOD
Fe	56	2	72	94573.556	ppb	3.1	135574928	100000	
Co	59	3	72	0.167	ppb	15.6	227	0.5	
Ni	60	3	72	0.315	ppb	27.9	243	1	
Cu	63	3	72	0.220	ppb	5.0	656	1	
Zn	66	3	72	0.798	ppb	16.7	355	1	
As	75	3	72	0.228	ppb	5.4	62	1	
Se	78	2	72	0.099	ppb	22.2	7	1	
(Se)	78	3	72	-2.824	ppb	-38.4	8	1	
Sr	88	3	72	0.854	ppb	11.7	506	1	
Mo	95	3	115	1996.654	ppb	2.5	919994	2000	
Ag	107	3	115	0.025	ppb	28.3	52	1	
Cd	111	3	115	0.282	ppb	34.4	63	1	
Sn	120	3	115	0.956	ppb	10.5	1314	1	
Sb	121	3	115	0.144	ppb	31.6	147	1	
Ba	137	3	115	1.771	ppb	9.3	435	0.95	>RL or LOD
Tl	205	3	193	0.014	ppb	51.0	125	1	
(Pb)	206	3	193	0.145	ppb	26.1	293	1	
(Pb)	207	3	193	0.204	ppb	22.8	506	1	
Pb	208	3	193	0.181	ppb	13.7	1504	1	
Th	232	3	193	-0.058	ppb	-96.1	4635	1	
U	238	3	193	0.027	ppb	47.3	1499	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3903879	1.66	3941599	99.04	60	120	
Sc (IS)	45	3	HMI He	599165	1.39	622112	96.31	60	120	
Ge Internal standard	72	2	HMI H2	2126193	1.94	2131249	99.76	60	120	
Ge Internal standard	72	3	HMI He	717752	2.63	722676	99.32	60	120	
In Internal Standard	115	3	HMI He	2539200	1.80	2669667	95.11	60	120	
Ir (IS)	193	3	HMI He	5025129	2.16	5050577	99.50	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7558071
Data File Name	319ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T08:51:53-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	95.830	ppb	5.750	4560	100	95.8	80	120	
Na	23	3	45	103066.240	ppb	1.333	11894812	100	103066.2	80	120	>+\-20%
Mg	24	3	45	101560.935	ppb	2.035	6125776	100	101560.9	80	120	
Al	27	3	45	99848.495	ppb	0.108	2182779	100	99848.5	80	120	>+\-20%
K	39	3	45	99106.196	ppb	2.060	4749763	100	99106.2	80	120	>+\-20%
Ca	40	2	45	104738.448	ppb	3.099	58158703	100	104738.4	80	120	>+\-20%
V	51	3	72	98.189	ppb	2.745	56523	100	98.2	80	120	
Cr	52	3	72	96.476	ppb	3.367	71329	100	96.5	80	120	
Mn	55	3	72	97.578	ppb	3.327	38451	100	97.6	80	120	
Fe	56	2	72	95669.292	ppb	1.216	142491595	100	95669.3	80	120	>+\-20%
Co	59	3	72	96.764	ppb	3.800	112435	100	96.8	80	120	
Ni	60	3	72	93.617	ppb	2.661	30251	100	93.6	80	120	
Cu	63	3	72	97.217	ppb	3.987	83250	100	97.2	80	120	
Zn	66	3	72	93.828	ppb	5.195	14534	100	93.8	80	120	
As	75	3	72	99.500	ppb	2.747	10776	100	99.5	80	120	
Se	78	2	72	97.569	ppb	2.643	5439	100	97.6	80	120	
(Se)	78	3	72	86.677	ppb	10.134	635	100	86.7	80	120	
Sr	88	3	72	195.668	ppb	3.516	101527	100	195.7	80	120	>+\-20%
Mo	95	3	115	2130.037	ppb	1.825	965171	100	2130.0	80	120	>+\-20%
Ag	107	3	115	99.470	ppb	2.023	148531	100	99.5	80	120	
Cd	111	3	115	101.054	ppb	2.688	22211	100	101.1	80	120	
Sn	120	3	115	100.597	ppb	1.375	69879	100	100.6	80	120	
Sb	121	3	115	102.319	ppb	2.022	71361	100	102.3	80	120	
Ba	137	3	115	104.996	ppb	1.995	23276	100	105.0	80	120	
Tl	205	3	193	98.262	ppb	0.561	323012	100	98.3	80	120	
(Pb)	206	3	193	97.000	ppb	1.323	107863	100	97.0	80	120	
(Pb)	207	3	193	98.351	ppb	1.707	94770	100	98.4	80	120	
Pb	208	3	193	98.122	ppb	1.361	435098	100	98.1	80	120	
Th	232	3	193	100.485	ppb	0.605	450110	100	100.5	80	120	
U	238	3	193	101.663	ppb	1.137	470678	100	101.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4000030	2.52	3941599	101.48	60	120	
Sc (IS)	45	3	HMI He	592297	1.37	622112	95.21	60	120	
Ge Internal standard	72	2	HMI H2	2208444	1.28	2131249	103.62	60	120	
Ge Internal standard	72	3	HMI He	706050	2.62	722676	97.70	60	120	
In Internal Standard	115	3	HMI He	2496913	2.46	2669667	93.53	60	120	
Ir (IS)	193	3	HMI He	5013041	1.11	5050577	99.26	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	320SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:16:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.019	ppb	0.019	173.21	2	2000	
Na	23	3	45	-95.640	ppb	-95.640	-2.89	24252	400000	
Mg	24	3	45	-0.570	ppb	-0.570	-141.41	140	400000	
Al	27	3	45	-0.771	ppb	-0.771	-149.06	160	400000	
K	39	3	45	-240.055	ppb	-240.055	-7.67	18862	400000	
Ca	40	2	45	-11.776	ppb	-11.776	-2.84	13210	400000	
V	51	3	72	-0.211	ppb	-0.211	-3.66	17	2000	
Cr	52	3	72	-1.225	ppb	-1.225	-2.31	651	5000	
Mn	55	3	72	-0.351	ppb	-0.351	-14.49	98	10000	
Fe	56	2	72	-6.525	ppb	-6.525	-0.89	9683	10000	
Co	59	3	72	-0.015	ppb	-0.015	-41.94	20	2000	
Ni	60	3	72	-0.334	ppb	-0.334	-4.30	53	5000	
Cu	63	3	72	-0.205	ppb	-0.205	-23.06	501	5000	
Zn	66	3	72	-0.578	ppb	-0.578	-26.94	247	5000	
As	75	3	72	-0.141	ppb	-0.141	-85.98	37	2000	
Se	78	2	72	-0.018	ppb	-0.018	-66.31	1	2000	
(Se)	78	3	72	-1.858	ppb	-1.858	-13.97	27	2000	
Sr	88	3	72	-0.050	ppb	-0.050	-32.33	53	4000	
Mo	95	3	115	-0.119	ppb	-0.119	-19.43	27	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-67.07	13	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.671	ppb	-0.671	-2.32	307	2000	
Sb	121	3	115	-0.029	ppb	-0.029	-74.74	42	1000	
Ba	137	3	115	-0.018	ppb	-0.018	-382.51	57	5000	
Tl	205	3	193	0.005	ppb	0.005	98.36	163	2000	
(Pb)	206	3	193	-0.008	ppb	-0.008	-124.32	212	100	
(Pb)	207	3	193	0.047	ppb	0.047	97.31	615	100	
Pb	208	3	193	0.003	ppb	0.003	515.79	1234	5000	
Th	232	3	193	-0.223	ppb	-0.223	-12.26	6750	2000	
U	238	3	193	0.010	ppb	0.010	114.10	2456	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	7004248	1.85	3941599	177.70	60	120	IS Failed
Sc (IS)	45	3	HMI He	1083229	1.19	622112	174.12	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3861182	0.38	2131249	181.17	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1250832	1.17	722676	173.08	60	120	IS Failed
In Internal Standard	115	3	HMI He	4452280	1.80	2669667	166.77	60	120	IS Failed
Ir (IS)	193	3	HMI He	8689260	2.22	5050577	172.04	60	120	IS Failed

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7558070
Data File Name	321ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:18:19-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	93901.826	ppb	1.7	10670871	100000	
Mg	24	3	45	92228.858	ppb	0.3	5477820	100000	
Al	27	3	45	94660.269	ppb	3.6	2037418	100000	
K	39	3	45	90569.746	ppb	1.4	4274989	100000	
Ca	40	2	45	96122.784	ppb	1.6	52153718	100000	
V	51	3	72	0.091	ppb	94.2	175	1	
Cr	52	3	72	1.694	ppb	6.4	2389	1	>RL or LOD
Mn	55	3	72	0.428	ppb	14.0	347	0.95	
Fe	56	2	72	91592.385	ppb	1.6	132379233	100000	
Co	59	3	72	0.224	ppb	20.4	278	0.5	
Ni	60	3	72	0.279	ppb	12.5	218	1	
Cu	63	3	72	0.247	ppb	9.0	641	1	
Zn	66	3	72	0.877	ppb	39.2	346	1	
As	75	3	72	0.116	ppb	167.9	47	1	
Se	78	2	72	0.111	ppb	52.0	7	1	
(Se)	78	3	72	-2.518	ppb	-30.0	10	1	
Sr	88	3	72	0.889	ppb	10.1	496	1	
Mo	95	3	115	1973.447	ppb	1.9	886229	2000	
Ag	107	3	115	0.025	ppb	31.2	52	1	
Cd	111	3	115	0.245	ppb	24.1	53	1	
Sn	120	3	115	0.310	ppb	7.5	840	1	
Sb	121	3	115	0.183	ppb	22.3	170	1	
Ba	137	3	115	1.799	ppb	11.3	430	0.95	>RL or LOD
Tl	205	3	193	0.016	ppb	28.8	125	1	
(Pb)	206	3	193	0.182	ppb	6.5	318	1	
(Pb)	207	3	193	0.223	ppb	19.8	501	1	
Pb	208	3	193	0.209	ppb	2.0	1553	1	
Th	232	3	193	0.219	ppb	44.8	5603	1	
U	238	3	193	0.053	ppb	50.4	1546	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3906395	1.52	3941599	99.11	60	120	
Sc (IS)	45	3	HMI He	583158	2.14	622112	93.74	60	120	
Ge Internal standard	72	2	HMI H2	2142893	1.12	2131249	100.55	60	120	
Ge Internal standard	72	3	HMI He	677699	1.08	722676	93.78	60	120	
In Internal Standard	115	3	HMI He	2474222	1.68	2669667	92.68	60	120	
Ir (IS)	193	3	HMI He	4798968	1.29	5050577	95.02	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	322SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:20:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-83.655	ppb	-83.655	-3.87	27735	400000	
Mg	24	3	45	6.216	ppb	6.216	12.38	921	400000	
Al	27	3	45	3.365	ppb	3.365	47.01	337	400000	
K	39	3	45	-241.938	ppb	-241.938	-8.02	19360	400000	
Ca	40	2	45	4.954	ppb	4.954	16.68	30527	400000	
V	51	3	72	-0.194	ppb	-0.194	-8.49	35	2000	
Cr	52	3	72	-1.245	ppb	-1.245	-2.12	656	5000	
Mn	55	3	72	-0.318	ppb	-0.318	-3.49	127	10000	
Fe	56	2	72	8.947	ppb	8.947	17.05	50660	10000	
Co	59	3	72	-0.007	ppb	-0.007	-65.38	40	2000	
Ni	60	3	72	-0.182	ppb	-0.182	-9.23	147	5000	
Cu	63	3	72	-0.204	ppb	-0.204	-34.63	528	5000	
Zn	66	3	72	-0.622	ppb	-0.622	-12.34	247	5000	
As	75	3	72	-0.134	ppb	-0.134	-19.70	40	2000	
Se	78	2	72	0.002	ppb	0.002	2465.70	3	2000	
(Se)	78	3	72	-2.734	ppb	-2.734	-15.82	17	2000	
Sr	88	3	72	0.019	ppb	0.019	133.08	122	4000	
Mo	95	3	115	0.086	ppb	0.086	30.94	200	2000	
Ag	107	3	115	0.003	ppb	0.003	172.09	33	100	
Cd	111	3	115	0.012	ppb	0.012	100.59	5	2000	
Sn	120	3	115	-0.591	ppb	-0.591	-9.66	421	2000	
Sb	121	3	115	-0.050	ppb	-0.050	-11.36	17	1000	
Ba	137	3	115	-0.040	ppb	-0.040	-62.42	50	5000	
Tl	205	3	193	0.007	ppb	0.007	163.46	190	2000	
(Pb)	206	3	193	-0.010	ppb	-0.010	-286.72	223	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-71.90	495	100	
Pb	208	3	193	-0.012	ppb	-0.012	-40.57	1204	5000	
Th	232	3	193	-0.259	ppb	-0.259	-9.56	6989	2000	
U	238	3	193	-0.010	ppb	-0.010	-126.51	2479	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	7252663	0.51	3941599	184.00	60	120	IS Failed
Sc (IS)	45	3	HMI He	1122059	1.31	622112	180.36	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3915407	1.10	2131249	183.71	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1313071	1.20	722676	181.70	60	120	IS Failed
In Internal Standard	115	3	HMI He	4643484	2.22	2669667	173.93	60	120	IS Failed
Ir (IS)	193	3	HMI He	9382447	2.24	5050577	185.77	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-170847-b-1
Data File Name	323SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:22:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	3695456.384	ppb	3695456.384	1.18	509300089	400000	>LDR
Mg	24	3	45	2600145.659	ppb	2600145.659	2.57	187668519	400000	>LDR
Al	27	3	45	490.223	ppb	490.223	2.06	12946	400000	
K	39	3	45	5671.943	ppb	5671.943	0.76	349776	400000	
Ca	40	2	45	2614974.730	ppb	2614974.730	1.86	1533783890	400000	>LDR
V	51	3	72	2.839	ppb	2.839	4.59	1913	2000	
Cr	52	3	72	1.574	ppb	1.574	13.66	2607	5000	
Mn	55	3	72	67234.159	ppb	67234.159	2.11	28644698	10000	>LDR
Fe	56	2	72	1330.976	ppb	1330.976	1.57	2030619	10000	
Co	59	3	72	74.563	ppb	74.563	3.02	94164	2000	
Ni	60	3	72	61.587	ppb	61.587	1.69	21676	5000	
Cu	63	3	72	6.385	ppb	6.385	4.97	6407	5000	
Zn	66	3	72	8.223	ppb	8.223	6.09	1609	5000	
As	75	3	72	0.349	ppb	0.349	26.63	80	2000	
Se	78	2	72	0.081	ppb	0.081	43.90	6	2000	
(Se)	78	3	72	-1.170	ppb	-1.170	-81.85	22	2000	
Sr	88	3	72	57394.828	ppb	57394.828	1.73	32347684	4000	>LDR
Mo	95	3	115	0.481	ppb	0.481	11.34	303	2000	
Ag	107	3	115	4.569	ppb	4.569	1.61	7228	100	
Cd	111	3	115	16.102	ppb	16.102	3.95	3742	2000	
Sn	120	3	115	-0.200	ppb	-0.200	-6.00	525	2000	
Sb	121	3	115	0.078	ppb	0.078	43.04	103	1000	
Ba	137	3	115	78.728	ppb	78.728	0.63	18465	5000	
Tl	205	3	193	0.014	ppb	0.014	36.31	118	2000	
(Pb)	206	3	193	2.852	ppb	2.852	3.70	3175	100	
(Pb)	207	3	193	2.735	ppb	2.735	9.05	2822	100	
Pb	208	3	193	2.808	ppb	2.808	3.61	12625	5000	
Th	232	3	193	-0.072	ppb	-0.072	-46.63	4389	2000	
U	238	3	193	33.502	ppb	33.502	2.56	150068	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4224756	1.21	3941599	107.18	60	120	
Sc (IS)	45	3	HMI He	708607	0.75	622112	113.90	60	120	
Ge Internal standard	72	2	HMI H2	2245226	1.89	2131249	105.35	60	120	
Ge Internal standard	72	3	HMI He	766929	1.72	722676	106.12	60	120	
In Internal Standard	115	3	HMI He	2639778	1.20	2669667	98.88	60	120	
Ir (IS)	193	3	HMI He	4823000	2.23	5050577	95.49	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	324_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:23:55-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.063	ppb	2.138	2507	50	102.1	90	110	
Na	23	3	45	50924.630	ppb	0.990	6251300	51000	99.9	90	110	
Mg	24	3	45	11301.933	ppb	0.812	723729	11000	102.7	90	110	
Al	27	3	45	1049.976	ppb	0.783	24473	1000	105.0	90	110	
K	39	3	45	10458.368	ppb	1.488	552581	11000	95.1	90	110	
Ca	40	2	45	11721.014	ppb	0.839	6779786	11000	106.6	90	110	
V	51	3	72	53.298	ppb	3.668	31066	50	106.6	90	110	
Cr	52	3	72	51.970	ppb	2.852	39433	50	103.9	90	110	
Mn	55	3	72	63.023	ppb	2.681	25175	50	126.0	90	110	>+\-10%
Fe	56	2	72	1049.587	ppb	3.331	1621314	1000	105.0	90	110	
Co	59	3	72	51.797	ppb	2.482	60864	50	103.6	90	110	
Ni	60	3	72	51.629	ppb	3.535	16922	50	103.3	90	110	
Cu	63	3	72	52.267	ppb	3.336	45460	50	104.5	90	110	
Zn	66	3	72	57.108	ppb	0.872	9038	50	114.2	90	110	>+\-10%
As	75	3	72	54.455	ppb	7.476	5973	50	108.9	90	110	
Se	78	2	72	51.170	ppb	4.735	2930	50	102.3	90	110	
(Se)	78	3	72	56.729	ppb	4.281	430	50	113.5	90	110	>+\-10%
Sr	88	3	72	115.031	ppb	3.923	60345	100	115.0	90	110	>+\-10%
Mo	95	3	115	50.558	ppb	3.007	24670	50	101.1	90	110	
Ag	107	3	115	50.035	ppb	1.973	80250	50	100.1	90	110	
Cd	111	3	115	50.462	ppb	1.697	11916	50	100.9	90	110	
Sn	120	3	115	50.350	ppb	3.496	37892	50	100.7	90	110	
Sb	121	3	115	50.595	ppb	2.507	37920	50	101.2	90	110	
Ba	137	3	115	50.420	ppb	2.004	12028	50	100.8	90	110	
Tl	205	3	193	52.032	ppb	1.413	168222	50	104.1	90	110	
(Pb)	206	3	193	51.184	ppb	1.363	56029	50	102.4	90	110	
(Pb)	207	3	193	52.062	ppb	3.154	49458	50	104.1	90	110	
Pb	208	3	193	51.774	ppb	2.637	226038	50	103.5	90	110	
Th	232	3	193	51.815	ppb	1.928	230522	50	103.6	90	110	
U	238	3	193	51.832	ppb	2.946	236572	50	103.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4156920	1.44	3941599	105.46	60	120	
Sc (IS)	45	3	HMI He	628709	2.62	622112	101.06	60	120	
Ge Internal standard	72	2	HMI H2	2269528	2.44	2131249	106.49	60	120	
Ge Internal standard	72	3	HMI He	713879	4.04	722676	98.78	60	120	
In Internal Standard	115	3	HMI He	2681736	2.42	2669667	100.45	60	120	
Ir (IS)	193	3	HMI He	4930139	2.35	5050577	97.62	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	325_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:29:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	167.804	ppb	5.1	43396	25	>RL
Mg	24	3	45	20.019	ppb	9.1	1311	25	
Al	27	3	45	145.333	ppb	2.0	3267	15	>RL
K	39	3	45	8.729	ppb	294.5	22096	50	
V	51	3	72	-0.014	ppb	-453.4	115	1	
Cr	52	3	72	0.235	ppb	27.3	1339	1	
Mn	55	3	72	2.153	ppb	12.9	971	0.5	>RL
Co	59	3	72	-0.005	ppb	-137.0	22	0.5	
Ni	60	3	72	-0.079	ppb	-77.7	105	1	
Cu	63	3	72	0.017	ppb	314.4	443	1	
Zn	66	3	72	4.937	ppb	5.0	920	5	
As	75	3	72	0.092	ppb	206.5	43	1	
Se	78	2	72	-0.012	ppb	-175.0	1	1	
(Se)	78	3	72	-1.237	ppb	-122.6	18	1	
Sr	88	3	72	0.409	ppb	10.5	252	0.5	
Mo	95	3	115	0.000	ppb	-127873.8	70	0.5	
Ag	107	3	115	0.007	ppb	81.3	25	1	
Cd	111	3	115	0.015	ppb	173.2	3	0.5	
Sn	120	3	115	0.320	ppb	27.0	868	1	
Sb	121	3	115	0.006	ppb	330.4	48	0.6	
Ba	137	3	115	0.103	ppb	84.7	60	0.5	
Tl	205	3	193	0.005	ppb	240.0	92	0.1	
(Pb)	206	3	193	-0.004	ppb	-405.8	122	1	
(Pb)	207	3	193	-0.016	ppb	-123.0	283	1	
Pb	208	3	193	0.003	ppb	221.7	683	0.5	
Th	232	3	193	0.298	ppb	60.0	5960	1	
U	238	3	193	0.021	ppb	138.3	1413	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3994822	2.92	3941599	101.35	60	120	
Sc (IS)	45	3	HMI He	589627	2.32	622112	94.78	60	120	
Ge Internal standard	72	2	HMI H2	2122410	3.18	2131249	99.59	60	120	
Ge Internal standard	72	3	HMI He	661759	2.06	722676	91.57	60	120	
In Internal Standard	115	3	HMI He	2536559	3.30	2669667	95.01	60	120	
Ir (IS)	193	3	HMI He	4824851	2.71	5050577	95.53	60	120	

Sample Report

Sample Table

Sample Name	07556182
Data File Name	326SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:31:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	4.068	ppb	4.068	20.94	190	2000	
Na	23	3	45	473.905	ppb	473.905	2.05	80216	400000	
Mg	24	3	45	5723.810	ppb	5723.810	0.86	351255	400000	
Al	27	3	45	217625.140	ppb	217625.140	0.72	4838346	400000	
K	39	3	45	1816.594	ppb	1816.594	3.08	110243	400000	
Ca	40	2	45	21650.034	ppb	21650.034	2.85	11937302	400000	
V	51	3	72	454.998	ppb	454.998	1.26	251709	2000	
Cr	52	3	72	244.478	ppb	244.478	1.81	172167	5000	
Mn	55	3	72	2275.124	ppb	2275.124	2.46	858844	10000	
Fe	56	2	72	168239.866	ppb	168239.866	3.15	235197619	10000	>LDR
Co	59	3	72	17.382	ppb	17.382	0.75	19471	2000	
Ni	60	3	72	73.562	ppb	73.562	3.56	22901	5000	
Cu	63	3	72	155.604	ppb	155.604	0.73	128048	5000	
Zn	66	3	72	286.202	ppb	286.202	1.27	42232	5000	
As	75	3	72	47.727	ppb	47.727	1.95	4995	2000	
Se	78	2	72	3.061	ppb	3.061	9.45	161	2000	
(Se)	78	3	72	8.766	ppb	8.766	66.30	87	2000	
Sr	88	3	72	93.831	ppb	93.831	0.85	46907	4000	
Mo	95	3	115	8.526	ppb	8.526	4.17	4052	2000	
Ag	107	3	115	0.207	ppb	0.207	8.28	333	100	
Cd	111	3	115	2.913	ppb	2.913	15.13	661	2000	
Sn	120	3	115	20.608	ppb	20.608	3.29	15274	2000	
Sb	121	3	115	3.295	ppb	3.295	1.65	2414	1000	
Ba	137	3	115	347.382	ppb	347.382	1.58	79328	5000	
Tl	205	3	193	1.020	ppb	1.020	0.77	3367	2000	
(Pb)	206	3	193	289.220	ppb	289.220	1.49	315595	100	
(Pb)	207	3	193	277.039	ppb	277.039	1.54	261619	100	
Pb	208	3	193	282.140	ppb	282.140	1.28	1227414	5000	
Th	232	3	193	85.164	ppb	85.164	1.69	375366	2000	
U	238	3	193	12.290	ppb	12.290	1.75	57065	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3967859	2.18	3941599	100.67	60	120	
Sc (IS)	45	3	HMI He	602362	1.91	622112	96.83	60	120	
Ge Internal standard	72	2	HMI H2	2073678	2.13	2131249	97.30	60	120	
Ge Internal standard	72	3	HMI He	679460	2.45	722676	94.02	60	120	
In Internal Standard	115	3	HMI He	2574785	3.14	2669667	96.45	60	120	
Ir (IS)	193	3	HMI He	4923242	1.95	5050577	97.48	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	327_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T09:41:47-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.148	ppb	4.394	2427	50	102.3	90	110	
Na	23	3	45	49925.918	ppb	1.177	5897656	51000	97.9	90	110	
Mg	24	3	45	10840.688	ppb	0.808	667943	11000	98.6	90	110	
Al	27	3	45	1063.966	ppb	2.524	23857	1000	106.4	90	110	
K	39	3	45	10470.225	ppb	0.566	532275	11000	95.2	90	110	
Ca	40	2	45	11232.036	ppb	2.659	6223903	11000	102.1	90	110	
V	51	3	72	53.278	ppb	1.022	29555	50	106.6	90	110	
Cr	52	3	72	53.435	ppb	1.020	38541	50	106.9	90	110	
Mn	55	3	72	54.595	ppb	3.484	20775	50	109.2	90	110	
Fe	56	2	72	1082.144	ppb	3.566	1547993	1000	108.2	90	110	
Co	59	3	72	53.315	ppb	0.563	59600	50	106.6	90	110	
Ni	60	3	72	51.898	ppb	1.053	16188	50	103.8	90	110	
Cu	63	3	72	53.778	ppb	1.679	44498	50	107.6	90	110	
Zn	66	3	72	58.217	ppb	0.500	8757	50	116.4	90	110	>+\-10%
As	75	3	72	53.868	ppb	4.413	5625	50	107.7	90	110	
Se	78	2	72	53.416	ppb	4.666	2834	50	106.8	90	110	
(Se)	78	3	72	49.494	ppb	4.119	360	50	99.0	90	110	
Sr	88	3	72	107.571	ppb	0.572	53710	100	107.6	90	110	
Mo	95	3	115	50.124	ppb	3.876	23714	50	100.2	90	110	
Ag	107	3	115	49.129	ppb	2.818	76389	50	98.3	90	110	
Cd	111	3	115	51.398	ppb	4.542	11761	50	102.8	90	110	
Sn	120	3	115	50.890	ppb	2.465	37133	50	101.8	90	110	
Sb	121	3	115	50.250	ppb	3.638	36510	50	100.5	90	110	
Ba	137	3	115	50.387	ppb	2.549	11649	50	100.8	90	110	
Tl	205	3	193	51.793	ppb	1.001	166261	50	103.6	90	110	
(Pb)	206	3	193	50.612	ppb	0.454	55010	50	101.2	90	110	
(Pb)	207	3	193	52.065	ppb	2.087	49119	50	104.1	90	110	
Pb	208	3	193	51.479	ppb	0.279	223194	50	103.0	90	110	
Th	232	3	193	52.098	ppb	1.363	230148	50	104.2	90	110	
U	238	3	193	52.226	ppb	0.285	236717	50	104.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3982099	1.00	3941599	101.03	60	120	
Sc (IS)	45	3	HMI He	604796	1.85	622112	97.22	60	120	
Ge Internal standard	72	2	HMI H2	2102057	2.05	2131249	98.63	60	120	
Ge Internal standard	72	3	HMI He	678709	1.19	722676	93.92	60	120	
In Internal Standard	115	3	HMI He	2599952	2.11	2669667	97.39	60	120	
Ir (IS)	193	3	HMI He	4894043	1.10	5050577	96.90	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	328_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:37:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	311CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	18.538	ppb	45.8	26354	25	
Mg	24	3	45	13.613	ppb	27.4	931	25	
Al	27	3	45	46.940	ppb	3.0	1128	15	>RL
K	39	3	45	-15.175	ppb	-221.8	20987	50	
V	51	3	72	-0.044	ppb	-71.4	100	1	
Cr	52	3	72	-0.117	ppb	-43.0	1116	1	
Mn	55	3	72	0.923	ppb	4.6	528	0.5	>RL
Co	59	3	72	-0.007	ppb	-126.7	20	0.5	
Ni	60	3	72	-0.090	ppb	-73.7	103	1	
Cu	63	3	72	-0.061	ppb	-38.2	386	1	
Zn	66	3	72	0.850	ppb	10.7	340	5	
As	75	3	72	-0.009	ppb	-1668.7	33	1	
Se	78	2	72	0.001	ppb	3120.1	1	1	
(Se)	78	3	72	-1.007	ppb	-149.3	20	1	
Sr	88	3	72	0.334	ppb	14.9	218	0.5	
Mo	95	3	115	0.030	ppb	79.6	83	0.5	
Ag	107	3	115	0.005	ppb	79.6	22	1	
Cd	111	3	115	0.007	ppb	173.2	2	0.5	
Sn	120	3	115	0.463	ppb	33.7	968	1	
Sb	121	3	115	0.008	ppb	85.1	50	0.6	
Ba	137	3	115	0.120	ppb	60.2	63	0.5	
Tl	205	3	193	0.002	ppb	286.0	82	0.1	
(Pb)	206	3	193	0.016	ppb	166.0	147	1	
(Pb)	207	3	193	0.197	ppb	25.6	491	1	
Pb	208	3	193	0.065	ppb	28.6	971	0.5	
Th	232	3	193	0.195	ppb	47.5	5663	1	
U	238	3	193	-0.002	ppb	-505.3	1341	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3860962	0.85	3941599	97.95	60	120	
Sc (IS)	45	3	HMI He	590897	0.47	622112	94.98	60	120	
Ge Internal standard	72	2	HMI H2	2079853	1.30	2131249	97.59	60	120	
Ge Internal standard	72	3	HMI He	671784	0.07	722676	92.96	60	120	
In Internal Standard	115	3	HMI He	2533137	2.24	2669667	94.89	60	120	
Ir (IS)	193	3	HMI He	4938367	0.78	5050577	97.78	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	329SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:39:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-5.904	ppb	-5.904	-144.74	25672	400000	
Mg	24	3	45	5.798	ppb	5.798	44.34	501	400000	
Al	27	3	45	2.371	ppb	2.371	43.48	170	400000	
K	39	3	45	-54.077	ppb	-54.077	-75.41	20890	400000	
Ca	40	2	45	-0.422	ppb	-0.422	-64.38	14866	400000	
V	51	3	72	-0.159	ppb	-0.159	-2.94	43	2000	
Cr	52	3	72	-0.718	ppb	-0.718	-6.95	816	5000	
Mn	55	3	72	0.492	ppb	0.492	20.74	428	10000	
Fe	56	2	72	-3.551	ppb	-3.551	-5.31	10641	10000	
Co	59	3	72	-0.008	ppb	-0.008	-53.55	22	2000	
Ni	60	3	72	-0.208	ppb	-0.208	-17.91	78	5000	
Cu	63	3	72	-0.180	ppb	-0.180	-12.33	338	5000	
Zn	66	3	72	-0.518	ppb	-0.518	-18.84	165	5000	
As	75	3	72	0.014	ppb	0.014	1131.94	42	2000	
Se	78	2	72	-0.014	ppb	-0.014	-142.22	1	2000	
(Se)	78	3	72	-2.082	ppb	-2.082	-30.46	15	2000	
Sr	88	3	72	0.063	ppb	0.063	22.36	98	4000	
Mo	95	3	115	-0.102	ppb	-0.102	-9.96	25	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-177.67	10	100	
Cd	111	3	115	0.007	ppb	0.007	173.21	2	2000	
Sn	120	3	115	-0.547	ppb	-0.547	-7.57	288	2000	
Sb	121	3	115	-0.039	ppb	-0.039	-49.67	18	1000	
Ba	137	3	115	-0.074	ppb	-0.074	-15.26	22	5000	
Tl	205	3	193	0.004	ppb	0.004	151.39	98	2000	
(Pb)	206	3	193	-0.006	ppb	-0.006	-420.27	132	100	
(Pb)	207	3	193	-0.014	ppb	-0.014	-267.03	315	100	
Pb	208	3	193	-0.015	ppb	-0.015	-17.71	670	5000	
Th	232	3	193	-0.234	ppb	-0.234	-13.17	4084	2000	
U	238	3	193	0.012	ppb	0.012	182.58	1514	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4293131	1.44	3941599	108.92	60	120	
Sc (IS)	45	3	HMI He	644527	1.14	622112	103.60	60	120	
Ge Internal standard	72	2	HMI H2	2357671	0.35	2131249	110.62	60	120	
Ge Internal standard	72	3	HMI He	783618	0.94	722676	108.43	60	120	
In Internal Standard	115	3	HMI He	2794043	0.64	2669667	104.66	60	120	
Ir (IS)	193	3	HMI He	5322225	2.06	5050577	105.38	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	330SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:41:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	-19.661	ppb	-19.661	-12.87	24533	400000	
Mg	24	3	45	2.380	ppb	2.380	38.79	284	400000	
Al	27	3	45	-1.223	ppb	-1.223	-99.40	87	400000	
K	39	3	45	-59.482	ppb	-59.482	-48.10	21084	400000	
Ca	40	2	45	-4.406	ppb	-4.406	-15.98	12515	400000	
V	51	3	72	-0.188	ppb	-0.188	-3.87	25	2000	
Cr	52	3	72	-0.807	ppb	-0.807	-3.35	756	5000	
Mn	55	3	72	0.341	ppb	0.341	18.59	368	10000	
Fe	56	2	72	-4.652	ppb	-4.652	-5.58	8899	10000	
Co	59	3	72	-0.011	ppb	-0.011	-17.82	18	2000	
Ni	60	3	72	-0.271	ppb	-0.271	-8.68	57	5000	
Cu	63	3	72	-0.190	ppb	-0.190	-6.11	333	5000	
Zn	66	3	72	-0.540	ppb	-0.540	-54.33	163	5000	
As	75	3	72	-0.033	ppb	-0.033	-764.96	37	2000	
Se	78	2	72	-0.003	ppb	-0.003	-741.25	1	2000	
(Se)	78	3	72	-2.115	ppb	-2.115	-29.01	15	2000	
Sr	88	3	72	0.079	ppb	0.079	176.88	108	4000	
Mo	95	3	115	-0.077	ppb	-0.077	-28.19	38	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-308.23	13	100	
Cd	111	3	115	0.007	ppb	0.007	173.21	2	2000	
Sn	120	3	115	-0.589	ppb	-0.589	-3.48	262	2000	
Sb	121	3	115	-0.042	ppb	-0.042	-6.98	17	1000	
Ba	137	3	115	-0.070	ppb	-0.070	-72.01	23	5000	
Tl	205	3	193	0.008	ppb	0.008	143.88	115	2000	
(Pb)	206	3	193	-0.024	ppb	-0.024	-52.21	113	100	
(Pb)	207	3	193	0.002	ppb	0.002	1298.72	340	100	
Pb	208	3	193	-0.011	ppb	-0.011	-128.11	706	5000	
Th	232	3	193	-0.237	ppb	-0.237	-3.89	4182	2000	
U	238	3	193	0.019	ppb	0.019	104.07	1596	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4301987	0.21	3941599	109.14	60	120	
Sc (IS)	45	3	HMI He	660071	1.12	622112	106.10	60	120	
Ge Internal standard	72	2	HMI H2	2359686	1.31	2131249	110.72	60	120	
Ge Internal standard	72	3	HMI He	795664	1.60	722676	110.10	60	120	
In Internal Standard	115	3	HMI He	2856355	3.12	2669667	106.99	60	120	
Ir (IS)	193	3	HMI He	5470373	0.71	5050577	108.31	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	331SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:43:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-18.753	ppb	-18.753	-12.83	25064	400000	
Mg	24	3	45	1.528	ppb	1.528	46.82	230	400000	
Al	27	3	45	0.090	ppb	0.090	1710.88	120	400000	
K	39	3	45	-60.680	ppb	-60.680	-38.19	21378	400000	
Ca	40	2	45	-5.586	ppb	-5.586	-3.31	12131	400000	
V	51	3	72	-0.184	ppb	-0.184	-6.41	28	2000	
Cr	52	3	72	-0.749	ppb	-0.749	-13.59	811	5000	
Mn	55	3	72	0.340	ppb	0.340	40.57	371	10000	
Fe	56	2	72	-4.959	ppb	-4.959	-4.52	8581	10000	
Co	59	3	72	-0.006	ppb	-0.006	-62.46	25	2000	
Ni	60	3	72	-0.281	ppb	-0.281	-7.55	53	5000	
Cu	63	3	72	-0.255	ppb	-0.255	-9.44	273	5000	
Zn	66	3	72	-0.589	ppb	-0.589	-10.81	157	5000	
As	75	3	72	-0.117	ppb	-0.117	-51.77	27	2000	
Se	78	2	72	0.008	ppb	0.008	2.41	2	2000	
(Se)	78	3	72	-0.459	ppb	-0.459	-340.65	28	2000	
Sr	88	3	72	0.034	ppb	0.034	55.81	83	4000	
Mo	95	3	115	-0.096	ppb	-0.096	-21.51	28	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-106.52	13	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.553	ppb	-0.553	-13.36	288	2000	
Sb	121	3	115	-0.012	ppb	-0.012	-3.03	40	1000	
Ba	137	3	115	-0.010	ppb	-0.010	-501.89	38	5000	
Tl	205	3	193	0.006	ppb	0.006	133.54	103	2000	
(Pb)	206	3	193	-0.037	ppb	-0.037	-83.18	97	100	
(Pb)	207	3	193	-0.027	ppb	-0.027	-103.74	303	100	
Pb	208	3	193	-0.024	ppb	-0.024	-15.85	633	5000	
Th	232	3	193	-0.222	ppb	-0.222	-10.46	4177	2000	
U	238	3	193	0.002	ppb	0.002	1067.75	1479	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4418058	1.81	3941599	112.09	60	120	
Sc (IS)	45	3	HMI He	671138	1.66	622112	107.88	60	120	
Ge Internal standard	72	2	HMI H2	2408572	0.59	2131249	113.01	60	120	
Ge Internal standard	72	3	HMI He	802967	0.86	722676	111.11	60	120	
In Internal Standard	115	3	HMI He	2836491	0.73	2669667	106.25	60	120	
Ir (IS)	193	3	HMI He	5372600	1.75	5050577	106.38	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	332SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:45:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-18.928	ppb	-18.928	-23.25	25201	400000	
Mg	24	3	45	1.205	ppb	1.205	60.67	210	400000	
Al	27	3	45	0.178	ppb	0.178	269.57	123	400000	
K	39	3	45	-62.072	ppb	-62.072	-62.05	21455	400000	
Ca	40	2	45	-5.629	ppb	-5.629	-9.84	11914	400000	
V	51	3	72	-0.189	ppb	-0.189	-4.20	25	2000	
Cr	52	3	72	-0.861	ppb	-0.861	-0.44	728	5000	
Mn	55	3	72	0.205	ppb	0.205	35.80	315	10000	
Fe	56	2	72	-5.211	ppb	-5.211	-2.11	8184	10000	
Co	59	3	72	-0.015	ppb	-0.015	-74.01	13	2000	
Ni	60	3	72	-0.274	ppb	-0.274	-10.97	57	5000	
Cu	63	3	72	-0.201	ppb	-0.201	-5.24	330	5000	
Zn	66	3	72	-0.629	ppb	-0.629	-21.52	152	5000	
As	75	3	72	-0.160	ppb	-0.160	-13.85	22	2000	
Se	78	2	72	-0.025	ppb	-0.025	0.00	0	2000	
(Se)	78	3	72	-2.766	ppb	-2.766	-22.94	10	2000	
Sr	88	3	72	-0.002	ppb	-0.002	-1407.38	63	4000	
Mo	95	3	115	-0.101	ppb	-0.101	-28.71	27	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-129.88	8	100	
Cd	111	3	115	0.007	ppb	0.007	173.21	2	2000	
Sn	120	3	115	-0.593	ppb	-0.593	-8.80	263	2000	
Sb	121	3	115	-0.034	ppb	-0.034	-68.62	23	1000	
Ba	137	3	115	-0.033	ppb	-0.033	-89.89	33	5000	
Tl	205	3	193	0.004	ppb	0.004	216.07	98	2000	
(Pb)	206	3	193	-0.039	ppb	-0.039	-35.15	95	100	
(Pb)	207	3	193	-0.011	ppb	-0.011	-419.95	323	100	
Pb	208	3	193	-0.013	ppb	-0.013	-159.06	696	5000	
Th	232	3	193	-0.222	ppb	-0.222	-13.28	4229	2000	
U	238	3	193	0.014	ppb	0.014	112.74	1558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4348903	1.16	3941599	110.33	60	120	
Sc (IS)	45	3	HMI He	675432	0.97	622112	108.57	60	120	
Ge Internal standard	72	2	HMI H2	2411153	1.53	2131249	113.13	60	120	
Ge Internal standard	72	3	HMI He	812911	1.11	722676	112.49	60	120	
In Internal Standard	115	3	HMI He	2910909	0.13	2669667	109.04	60	120	
Ir (IS)	193	3	HMI He	5437835	1.72	5050577	107.67	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	333SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:47:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	311CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-13.443	ppb	-13.443	-23.54	25475	400000	
Mg	24	3	45	0.523	ppb	0.523	123.05	160	400000	
Al	27	3	45	0.811	ppb	0.811	82.53	137	400000	
K	39	3	45	-57.613	ppb	-57.613	-61.01	21324	400000	
Ca	40	2	45	-5.844	ppb	-5.844	-10.50	11994	400000	
V	51	3	72	-0.163	ppb	-0.163	-10.51	42	2000	
Cr	52	3	72	-0.746	ppb	-0.746	-13.32	808	5000	
Mn	55	3	72	0.140	ppb	0.140	37.56	280	10000	
Fe	56	2	72	-5.272	ppb	-5.272	-2.53	8124	10000	
Co	59	3	72	-0.009	ppb	-0.009	-68.25	22	2000	
Ni	60	3	72	-0.235	ppb	-0.235	-5.16	70	5000	
Cu	63	3	72	-0.194	ppb	-0.194	-41.59	330	5000	
Zn	66	3	72	-0.689	ppb	-0.689	-21.38	138	5000	
As	75	3	72	-0.156	ppb	-0.156	-15.92	22	2000	
Se	78	2	72	-0.014	ppb	-0.014	-139.91	1	2000	
(Se)	78	3	72	-0.222	ppb	-0.222	-734.17	30	2000	
Sr	88	3	72	-0.031	ppb	-0.031	-49.20	45	4000	
Mo	95	3	115	-0.103	ppb	-0.103	-25.72	25	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-100.29	8	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.546	ppb	-0.546	-9.85	297	2000	
Sb	121	3	115	-0.038	ppb	-0.038	-34.45	20	1000	
Ba	137	3	115	-0.051	ppb	-0.051	-24.68	28	5000	
Tl	205	3	193	0.004	ppb	0.004	158.74	98	2000	
(Pb)	206	3	193	-0.013	ppb	-0.013	-132.30	127	100	
(Pb)	207	3	193	0.012	ppb	0.012	100.71	348	100	
Pb	208	3	193	-0.002	ppb	-0.002	-178.89	748	5000	
Th	232	3	193	-0.220	ppb	-0.220	-21.52	4237	2000	
U	238	3	193	0.012	ppb	0.012	120.58	1548	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4427442	1.18	3941599	112.33	60	120	
Sc (IS)	45	3	HMI He	663902	1.51	622112	106.72	60	120	
Ge Internal standard	72	2	HMI H2	2423893	1.52	2131249	113.73	60	120	
Ge Internal standard	72	3	HMI He	796863	0.93	722676	110.27	60	120	
In Internal Standard	115	3	HMI He	2872510	1.82	2669667	107.60	60	120	
Ir (IS)	193	3	HMI He	5434725	0.94	5050577	107.61	60	120	

Calibration Blank Report

Sample Table

Sample Name2	icis-7561103
Data File Name	334CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Method	
Acq Date Time	2023-01-25T10:49:02-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	24556	0.01
Mg	24	45	3	HMI He	270	10.88
Al	27	45	3	HMI He	157	13.08
K	39	45	3	HMI He	20967	0.03
Ca	40	45	2	HMI H2	14926	0.01
V	51	72	3	HMI He	98	11.95
Cr	52	72	3	HMI He	1323	0.33
Mn	55	72	3	HMI He	461	4.03
Fe	56	72	2	HMI H2	16329	0.02
Co	59	72	3	HMI He	15	0.00
Ni	60	72	3	HMI He	98	20.91
Cu	63	72	3	HMI He	400	6.81
Zn	66	72	3	HMI He	243	5.16
As	75	72	3	HMI He	45	74.09
Se	78	72	2	HMI H2	2	5000.00
(Se)	78	72	3	HMI He	23	53.07
Sr	88	72	3	HMI He	65	54.26
Mo	95	115	3	HMI He	42	92.61
Ag	107	115	3	HMI He	22	325.48
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	611	1.69
Sb	121	115	3	HMI He	48	32.71
Ba	137	115	3	HMI He	35	163.37
Tl	205	193	3	HMI He	98	7.90
(Pb)	206	193	3	HMI He	130	16.48
(Pb)	207	193	3	HMI He	305	3.73
Pb	208	193	3	HMI He	711	1.77
Th	232	193	3	HMI He	4307	0.13
U	238	193	3	HMI He	1339	0.18

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4069295	0.95
Sc (IS)	45	3	HMI He	607729	1.23
Ge Internal standard	72	2	HMI H2	2193901	0.95
Ge Internal standard	72	3	HMI He	683750	1.18
In Internal Standard	115	3	HMI He	2614112	0.86
Ir (IS)	193	3	HMI He	5065146	0.11

Calibration Standard Report

Sample Table

Sample Name	ic-7561105
Data File Name	335CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-25T10:50:54-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	5196.15
Na	23	45	3	HMI He	11514881	0.00
Mg	24	45	3	HMI He	1216425	0.00
Al	27	45	3	HMI He	707	1.21
K	39	45	3	HMI He	946527	0.00
V	51	72	3	HMI He	163	9.44
Cr	52	72	3	HMI He	1741	0.34
Mn	55	72	3	HMI He	818	1.33
Co	59	72	3	HMI He	43	67.02
Ni	60	72	3	HMI He	190	6.04
Cu	63	72	3	HMI He	1924	0.30
Zn	66	72	3	HMI He	555	1.55
As	75	72	3	HMI He	53	26.86
Se	78	72	2	HMI H2	3	4296.16
(Se)	78	72	3	HMI He	25	160.09
Sr	88	72	3	HMI He	680	0.57
Mo	95	115	3	HMI He	98	10.77
Ag	107	115	3	HMI He	33	51.95
Cd	111	115	3	HMI He	12	561.05
Sn	120	115	3	HMI He	1081	0.84
Sb	121	115	3	HMI He	75	15.40
Ba	137	115	3	HMI He	160	5.17
Tl	205	193	3	HMI He	120	9.19
(Pb)	206	193	3	HMI He	340	1.56
(Pb)	207	193	3	HMI He	475	0.97
Pb	208	193	3	HMI He	1479	0.44
Th	232	193	3	HMI He	4414	0.17
U	238	193	3	HMI He	1479	0.38

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3912153	1.78	4069295	96.14	60	120	
Sc (IS)	45	3	HMI He	596549	3.24	607729	98.16	60	120	
Ge Internal standard	72	2	HMI H2	2026088	1.26	2193901	92.35	60	120	
Ge Internal standard	72	3	HMI He	649397	2.74	683750	94.98	60	120	
In Internal Standard	115	3	HMI He	2612779	3.17	2614112	99.95	60	120	
Ir (IS)	193	3	HMI He	5038053	3.03	5065146	99.47	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7561104
Data File Name	336CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
method	
Acq Date Time	2023-01-25T10:52:45-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5145	0.10
Na	23	45	3	HMI He	273339	0.00
Mg	24	45	3	HMI He	127207	0.00
Al	27	45	3	HMI He	47196	0.00
K	39	45	3	HMI He	120504	0.00
V	51	72	3	HMI He	62672	0.00
Cr	52	72	3	HMI He	79893	0.00
Mn	55	72	3	HMI He	43498	0.00
Co	59	72	3	HMI He	127623	0.00
Ni	60	72	3	HMI He	34701	0.00
Cu	63	72	3	HMI He	94797	0.00
Zn	66	72	3	HMI He	16710	0.00
As	75	72	3	HMI He	12061	0.01
Se	78	72	2	HMI H2	5815	0.08
(Se)	78	72	3	HMI He	725	1.76
Sr	88	72	3	HMI He	113917	0.00
Mo	95	115	3	HMI He	51087	0.00
Ag	107	115	3	HMI He	166631	0.00
Cd	111	115	3	HMI He	24844	0.00
Sn	120	115	3	HMI He	78474	0.00
Sb	121	115	3	HMI He	78628	0.00
Ba	137	115	3	HMI He	25318	0.01
Tl	205	193	3	HMI He	360083	0.00
(Pb)	206	193	3	HMI He	120896	0.00
(Pb)	207	193	3	HMI He	105968	0.00
Pb	208	193	3	HMI He	486535	0.00
Th	232	193	3	HMI He	489421	0.00
U	238	193	3	HMI He	509302	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4138351	0.59	4069295	101.70	60	120	
Sc (IS)	45	3	HMI He	637407	1.18	607729	104.88	60	120	
Ge Internal standard	72	2	HMI H2	2296068	1.13	2193901	104.66	60	120	
Ge Internal standard	72	3	HMI He	785079	1.44	683750	114.82	60	120	
In Internal Standard	115	3	HMI He	2773253	0.96	2614112	106.09	60	120	
Ir (IS)	193	3	HMI He	5369648	0.15	5065146	106.01	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7561107
Data File Name	337_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:54:38-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.748	ppb	7.011	2142	40	101.9	90	110	
Na	23	3	45	13557.839	ppb	1.884	1633587	12800	105.9	90	110	
Mg	24	3	45	4709.135	ppb	1.336	295894	4800	98.1	90	110	
Al	27	3	45	806.151	ppb	2.473	18477	800	100.8	90	110	
K	39	3	45	4781.505	ppb	2.085	249816	4800	99.6	90	110	
Ca	40	2	45	4885.730	ppb	1.306	2955918	4800	101.8	90	110	
V	51	3	72	42.105	ppb	0.559	25070	40	105.3	90	110	
Cr	52	3	72	42.122	ppb	4.417	32705	40	105.3	90	110	
Mn	55	3	72	41.056	ppb	3.474	17215	40	102.6	90	110	
Fe	56	2	72	823.725	ppb	0.933	1270960	800	103.0	90	110	
Co	59	3	72	41.384	ppb	2.072	50050	40	103.5	90	110	
Ni	60	3	72	41.585	ppb	4.664	13732	40	104.0	90	110	
Cu	63	3	72	42.644	ppb	0.652	38563	40	106.6	90	110	
Zn	66	3	72	85.169	ppb	4.316	13522	80	106.5	90	110	
As	75	3	72	40.200	ppb	4.395	4623	40	100.5	90	110	
Se	78	2	72	42.280	ppb	5.437	2420	40	105.7	90	110	
(Se)	78	3	72	40.835	ppb	11.474	295	40	102.1	90	110	
Sr	88	3	72	126.498	ppb	2.630	68288	120	105.4	90	110	
Mo	95	3	115	42.043	ppb	1.491	20786	40	105.1	90	110	
Ag	107	3	115	82.124	ppb	1.178	132276	80	102.7	90	110	
Cd	111	3	115	41.156	ppb	1.507	9884	40	102.9	90	110	
Sn	120	3	115	39.923	ppb	0.279	30658	40	99.8	90	110	
Sb	121	3	115	41.168	ppb	0.466	31314	40	102.9	90	110	
Ba	137	3	115	40.268	ppb	1.079	9877	40	100.7	90	110	
Tl	205	3	193	40.812	ppb	1.336	144564	40	102.0	90	110	
(Pb)	206	3	193	40.273	ppb	0.432	47955	40	100.7	90	110	
(Pb)	207	3	193	40.749	ppb	0.511	42647	40	101.9	90	110	
Pb	208	3	193	40.543	ppb	0.649	194402	40	101.4	90	110	
Th	232	3	193	82.242	ppb	0.336	396568	80	102.8	90	110	
U	238	3	193	40.856	ppb	1.623	205429	40	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4262674	1.13	4069295	104.75	60	120	
Sc (IS)	45	3	HMI He	615900	0.94	607729	101.34	60	120	
Ge Internal standard	72	2	HMI H2	2260323	2.87	2193901	103.03	60	120	
Ge Internal standard	72	3	HMI He	744087	2.95	683750	108.82	60	120	
In Internal Standard	115	3	HMI He	2680337	0.78	2614112	102.53	60	120	
Ir (IS)	193	3	HMI He	5279836	0.71	5065146	104.24	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	338_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:56:31-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.880	ppb	4.438	2317	50	91.8	90	110	
Na	23	3	45	50411.602	ppb	1.506	6050880	51000	98.8	90	110	
Mg	24	3	45	10591.058	ppb	1.151	670229	11000	96.3	90	110	
Al	27	3	45	939.853	ppb	0.534	21682	1000	94.0	90	110	
K	39	3	45	10552.650	ppb	0.370	529679	11000	95.9	90	110	
Ca	40	2	45	10651.788	ppb	1.456	6155682	11000	96.8	90	110	
V	51	3	72	50.115	ppb	2.232	29328	50	100.2	90	110	
Cr	52	3	72	48.806	ppb	2.567	37072	50	97.6	90	110	
Mn	55	3	72	48.100	ppb	2.804	19763	50	96.2	90	110	
Fe	56	2	72	966.703	ppb	2.988	1463612	1000	96.7	90	110	
Co	59	3	72	48.796	ppb	1.366	58061	50	97.6	90	110	
Ni	60	3	72	49.460	ppb	1.209	16055	50	98.9	90	110	
Cu	63	3	72	48.578	ppb	1.188	43152	50	97.2	90	110	
Zn	66	3	72	49.312	ppb	4.925	7813	50	98.6	90	110	
As	75	3	72	47.848	ppb	1.995	5405	50	95.7	90	110	
Se	78	2	72	47.821	ppb	2.222	2693	50	95.6	90	110	
(Se)	78	3	72	48.143	ppb	20.506	338	50	96.3	90	110	
Sr	88	3	72	97.394	ppb	1.104	51754	100	97.4	90	110	
Mo	95	3	115	47.524	ppb	2.077	23258	50	95.0	90	110	
Ag	107	3	115	48.239	ppb	2.208	76936	50	96.5	90	110	
Cd	111	3	115	47.755	ppb	1.678	11358	50	95.5	90	110	
Sn	120	3	115	46.225	ppb	2.215	35047	50	92.4	90	110	
Sb	121	3	115	48.280	ppb	2.545	36350	50	96.6	90	110	
Ba	137	3	115	46.668	ppb	3.331	11326	50	93.3	90	110	
Tl	205	3	193	46.667	ppb	1.288	163569	50	93.3	90	110	
(Pb)	206	3	193	46.259	ppb	1.812	54490	50	92.5	90	110	
(Pb)	207	3	193	46.872	ppb	0.571	48502	50	93.7	90	110	
Pb	208	3	193	46.550	ppb	1.533	220767	50	93.1	90	110	
Th	232	3	193	48.217	ppb	1.038	231934	50	96.4	90	110	
U	238	3	193	47.101	ppb	0.994	234160	50	94.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4084326	2.06	4069295	100.37	60	120	
Sc (IS)	45	3	HMI He	620562	0.90	607729	102.11	60	120	
Ge Internal standard	72	2	HMI H2	2222893	2.30	2193901	101.32	60	120	
Ge Internal standard	72	3	HMI He	731839	0.73	683750	107.03	60	120	
In Internal Standard	115	3	HMI He	2654289	1.62	2614112	101.54	60	120	
Ir (IS)	193	3	HMI He	5225625	1.38	5065146	103.17	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	339_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T10:58:23-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	19.198	ppb	33.3	27220	25	
Mg	24	3	45	-0.958	ppb	-42.8	214	25	
Al	27	3	45	41.646	ppb	10.2	1108	15	>RL
K	39	3	45	-10.436	ppb	-342.2	20806	50	
V	51	3	72	0.025	ppb	79.9	117	1	
Cr	52	3	72	-0.206	ppb	-36.3	1231	1	
Mn	55	3	72	-0.218	ppb	-135.1	396	0.5	
Co	59	3	72	0.017	ppb	77.3	35	0.5	
Ni	60	3	72	0.067	ppb	121.8	123	1	
Cu	63	3	72	0.003	ppb	1794.9	418	1	
Zn	66	3	72	0.658	ppb	32.1	352	5	
As	75	3	72	-0.093	ppb	-246.8	37	1	
Se	78	2	72	0.022	ppb	173.3	3	1	
(Se)	78	3	72	-0.936	ppb	-177.0	18	1	
Sr	88	3	72	0.043	ppb	155.2	90	0.5	
Mo	95	3	115	0.041	ppb	109.1	63	0.5	
Ag	107	3	115	0.017	ppb	79.6	50	1	
Cd	111	3	115	-0.007	ppb	0.0	0	0.5	
Sn	120	3	115	0.761	ppb	11.3	1204	1	
Sb	121	3	115	0.050	ppb	64.7	88	0.6	
Ba	137	3	115	0.064	ppb	132.3	52	0.5	
Tl	205	3	193	0.008	ppb	26.9	130	0.1	
(Pb)	206	3	193	0.056	ppb	18.2	200	1	
(Pb)	207	3	193	0.036	ppb	140.0	352	1	
Pb	208	3	193	0.041	ppb	28.1	930	0.5	
Th	232	3	193	0.546	ppb	27.8	7029	1	
U	238	3	193	0.023	ppb	17.9	1496	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4105993	1.41	4069295	100.90	60	120	
Sc (IS)	45	3	HMI He	617096	0.31	607729	101.54	60	120	
Ge Internal standard	72	2	HMI H2	2227878	2.95	2193901	101.55	60	120	
Ge Internal standard	72	3	HMI He	712244	0.34	683750	104.17	60	120	
In Internal Standard	115	3	HMI He	2692635	0.43	2614112	103.00	60	120	
Ir (IS)	193	3	HMI He	5229740	0.97	5065146	103.25	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	340LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:00:17-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.892	ppb	20.293	45	1	89.2	70	130	
Na	23	3	45	75.034	ppb	11.692	33493	50	150.1	70	130	>+/-30%
Mg	24	3	45	44.508	ppb	3.655	3040	50	89.0	70	130	
Al	27	3	45	59.974	ppb	9.624	1508	50	119.9	70	130	
K	39	3	45	103.197	ppb	25.296	25967	100	103.2	70	130	
V	51	3	72	5.241	ppb	3.326	3002	5	104.8	70	130	
Cr	52	3	72	2.103	ppb	7.612	2804	2	105.2	70	130	
Mn	55	3	72	1.039	ppb	10.240	865	1	103.9	70	130	
Co	59	3	72	1.125	ppb	4.001	1286	1	112.5	70	130	
Ni	60	3	72	2.263	ppb	2.583	793	2	113.2	70	130	
Cu	63	3	72	2.424	ppb	5.062	2429	2	121.2	70	130	
Zn	66	3	72	14.622	ppb	1.879	2374	10	146.2	70	130	>+/-30%
As	75	3	72	5.464	ppb	7.354	626	5	109.3	70	130	
Se	78	2	72	4.854	ppb	17.689	268	5	97.1	70	130	
(Se)	78	3	72	4.254	ppb	37.258	50	5	85.1	70	130	
Sr	88	3	72	1.133	ppb	13.351	636	1	113.3	70	130	
Mo	95	3	115	1.985	ppb	6.365	995	2	99.2	70	130	
Ag	107	3	115	1.036	ppb	5.239	1646	1	103.6	70	130	
Cd	111	3	115	1.155	ppb	3.721	272	1	115.5	70	130	
Sn	120	3	115	10.544	ppb	1.095	8330	10	105.4	70	130	
Sb	121	3	115	2.283	ppb	2.648	1736	2	114.2	70	130	
Ba	137	3	115	0.989	ppb	9.918	270	1	98.9	70	130	
Tl	205	3	193	1.000	ppb	3.175	3539	1	100.0	70	130	
(Pb)	206	3	193	1.082	ppb	5.051	1379	1	108.2	70	130	
(Pb)	207	3	193	1.135	ppb	8.071	1454	1	113.5	70	130	
Pb	208	3	193	1.096	ppb	0.946	5806	1	109.6	70	130	
Th	232	3	193	2.096	ppb	4.856	14074	2	104.8	70	130	
U	238	3	193	1.031	ppb	1.381	6362	1	103.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4023983	0.56	4069295	98.89	60	120	
Sc (IS)	45	3	HMI He	610570	1.16	607729	100.47	60	120	
Ge Internal standard	72	2	HMI H2	2168703	1.77	2193901	98.85	60	120	
Ge Internal standard	72	3	HMI He	694887	0.99	683750	101.63	60	120	
In Internal Standard	115	3	HMI He	2608805	0.91	2614112	99.80	60	120	
Ir (IS)	193	3	HMI He	5130284	0.43	5065146	101.29	60	120	

Blank Report

Sample Table

Sample Name	mb 280-599874/1-a
Data File Name	341_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:05:06-07:00
Sample Type	Blank
Dilution	1
Comment	599874 6020A
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	39.418	ppb	15.26619377	28517	25
Mg	24	3	45	0.048	ppb	2214.71819	267	25
Al	27	3	45	2.581	ppb	52.17623157	210	15
K	39	3	45	4.277	ppb	873.0605051	20696	50
V	51	3	72	0.029	ppb	75.43351522	112	1
Cr	52	3	72	0.167	ppb	134.6301638	1406	1
Mn	55	3	72	0.194	ppb	107.4941446	523	0.5
Co	59	3	72	0.035	ppb	31.34649798	53	0.5
Ni	60	3	72	0.154	ppb	34.33707892	142	1
Cu	63	3	72	11.527	ppb	2.216533739	9667	1
Zn	66	3	72	7.283	ppb	4.100492371	1259	5
As	75	3	72	0.025	ppb	396.6220626	47	1
(Se)	78	3	72	0.907	ppb	276.9978462	28	1
Sr	88	3	72	0.103	ppb	31.48890138	113	0.5
Mo	95	3	115	-0.005	ppb	-723.9650944	38	0.5
Ag	107	3	115	0.005	ppb	176.4590266	28	1
Cd	111	3	115	0.000	ppb	28467.4025	2	0.5
Sn	120	3	115	0.313	ppb	24.79791514	820	1
Sb	121	3	115	-0.005	ppb	-155.5199454	43	0.6
Ba	137	3	115	0.262	ppb	23.37834727	95	0.5
Tl	205	3	193	-0.004	ppb	-64.25023879	85	0.1
(Pb)	206	3	193	0.392	ppb	6.184021169	578	1
(Pb)	207	3	193	0.341	ppb	21.25060864	646	1
Pb	208	3	193	0.342	ppb	3.028500771	2284	0.5
Th	232	3	193	0.048	ppb	153.3730254	4537	1
U	238	3	193	0.029	ppb	102.9987966	1481	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3909472	2.05	4069295	96.07	60	120	
Sc (IS)	45	3	HMI He	594072	1.30	607729	97.75	60	120	
Ge Internal standard	72	2	HMI H2	2047290	1.75	2193901	93.32	60	120	
Ge Internal standard	72	3	HMI He	669672	0.97	683750	97.94	60	120	
In Internal Standard	115	3	HMI He	2548792	0.85	2614112	97.50	60	120	
Ir (IS)	193	3	HMI He	5079994	0.70	5065146	100.29	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599874/2-a
Data File Name	342_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:07:01-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599874 6020A
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.992	37.992	ppb	3.042	1904	40	95.0	80	120	
Na	23	3	45	918.415	918.415	ppb	3.078	133904	40	2296.0	80	120	>+/-20%
Mg	24	3	45	773.109	773.109	ppb	2.208	48823	40	1932.8	80	120	>+/-20%
Al	27	3	45	786.454	786.454	ppb	3.898	18040	40	1966.1	80	120	>+/-20%
K	39	3	45	815.999	815.999	ppb	5.408	60289	40	2040.0	80	120	>+/-20%
Ca	40	2	45	813.523	813.523	ppb	2.048	469328	40	2033.8	80	120	>+/-20%
V	51	3	72	40.404	40.404	ppb	4.803	23922	40	101.0	80	120	
Cr	52	3	72	41.487	41.487	ppb	5.055	32071	40	103.7	80	120	
Mn	55	3	72	40.629	40.629	ppb	2.482	16964	40	101.6	80	120	
Fe	56	2	72	809.589	809.589	ppb	5.414	1195431	40	2024.0	80	120	>+/-20%
(Fe)	56	3	72	781.320	781.320	ppb	2.374	514612	40	1953.3	80	120	>+/-20%
Co	59	3	72	40.883	40.883	ppb	3.378	49189	40	102.2	80	120	
Ni	60	3	72	40.959	40.959	ppb	0.663	13470	40	102.4	80	120	
Cu	63	3	72	40.792	40.792	ppb	3.544	36704	40	102.0	80	120	
Zn	66	3	72	41.692	41.692	ppb	2.939	6727	40	104.2	80	120	
As	75	3	72	41.332	41.332	ppb	2.662	4730	40	103.3	80	120	
Se	78	2	72	39.383	39.383	ppb	1.665	2158	40	98.5	80	120	
(Se)	78	3	72	38.096	38.096	ppb	19.999	275	40	95.2	80	120	
Sr	88	3	72	80.911	80.911	ppb	3.685	43479	40	202.3	80	120	>+/-20%
Mo	95	3	115	39.825	39.825	ppb	1.672	19586	40	99.6	80	120	
Ag	107	3	115	40.288	40.288	ppb	3.144	64540	40	100.7	80	120	
Cd	111	3	115	40.347	40.347	ppb	3.468	9635	40	100.9	80	120	
Sn	120	3	115	38.735	38.735	ppb	2.086	29600	40	96.8	80	120	
Sb	121	3	115	40.162	40.162	ppb	0.377	30386	40	100.4	80	120	
Ba	137	3	115	39.547	39.547	ppb	4.815	9645	40	98.9	80	120	
Tl	205	3	193	40.137	40.137	ppb	1.712	140551	40	100.3	80	120	
(Pb)	206	3	193	39.762	39.762	ppb	1.515	46810	40	99.4	80	120	
(Pb)	207	3	193	40.373	40.373	ppb	1.839	41773	40	100.9	80	120	
Pb	208	3	193	39.758	39.758	ppb	1.983	188466	40	99.4	80	120	
Th	232	3	193	40.060	40.060	ppb	0.560	193270	40	100.1	80	120	
U	238	3	193	39.573	39.573	ppb	2.131	196732	40	98.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3960772	1.40	4069295	97.33	60	120	
Sc (IS)	45	3	HMI He	616117	0.20	607729	101.38	60	120	
Ge Internal standard	72	2	HMI H2	2162881	0.79	2193901	98.59	60	120	
Ge Internal standard	72	3	HMI He	740517	3.57	683750	108.30	60	120	
In Internal Standard	115	3	HMI He	2665791	0.85	2614112	101.98	60	120	
Ir (IS)	193	3	HMI He	5220652	1.89	5065146	103.07	60	120	

Sample Report

Sample Table

Sample Name	280-171373-a-3-a
Data File Name	343SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:08:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599874 6020A
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	353.889	ppb	353.889	1.59	68215	400000	
Mg	24	3	45	11.700	ppb	11.700	5.81	1028	400000	
Al	27	3	45	5.950	ppb	5.950	37.96	300	400000	
K	39	3	45	56.641	ppb	56.641	68.75	24429	400000	
Ca	40	2	45	66.217	ppb	66.217	1.25	51878	400000	
V	51	3	72	0.017	ppb	0.017	226.72	118	2000	
Cr	52	3	72	0.388	ppb	0.388	25.70	1736	5000	
Mn	55	3	72	0.090	ppb	0.090	251.08	540	10000	
Fe	56	2	72	17.534	ppb	17.534	5.46	42334	10000	
Co	59	3	72	0.045	ppb	0.045	20.54	72	2000	
Ni	60	3	72	0.474	ppb	0.474	16.41	263	5000	
Cu	63	3	72	0.543	ppb	0.543	17.80	923	5000	
Zn	66	3	72	1.058	ppb	1.058	25.27	433	5000	
As	75	3	72	-0.106	ppb	-0.106	-161.72	37	2000	
Se	78	2	72	-0.036	ppb	-0.036	0.00	0	2000	
(Se)	78	3	72	-0.628	ppb	-0.628	-228.31	22	2000	
Sr	88	3	72	0.326	ppb	0.326	18.94	247	4000	
Mo	95	3	115	0.145	ppb	0.145	57.50	113	2000	
Ag	107	3	115	0.007	ppb	0.007	136.55	33	100	
Cd	111	3	115	0.021	ppb	0.021	116.32	7	2000	
Sn	120	3	115	0.391	ppb	0.391	18.95	913	2000	
Sb	121	3	115	0.101	ppb	0.101	6.38	125	1000	
Ba	137	3	115	0.507	ppb	0.507	20.01	158	5000	
Tl	205	3	193	0.005	ppb	0.005	170.33	123	2000	
(Pb)	206	3	193	0.030	ppb	0.030	81.27	173	100	
(Pb)	207	3	193	0.016	ppb	0.016	233.73	338	100	
Pb	208	3	193	0.025	ppb	0.025	35.62	870	5000	
Th	232	3	193	0.400	ppb	0.400	30.75	6473	2000	
U	238	3	193	0.013	ppb	0.013	61.27	1479	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3985725	0.49	4069295	97.95	60	120	
Sc (IS)	45	3	HMI He	628170	1.38	607729	103.36	60	120	
Ge Internal standard	72	2	HMI H2	2198697	0.98	2193901	100.22	60	120	
Ge Internal standard	72	3	HMI He	748640	5.07	683750	109.49	60	120	
In Internal Standard	115	3	HMI He	2655943	0.69	2614112	101.60	60	120	
Ir (IS)	193	3	HMI He	5336564	2.39	5065146	105.36	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-599677/2-a
Data File Name	344_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:10:48-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	599677 6020b
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.854	39.854	ppb	0.128	2071	40	99.6	80	120	
Na	23	3	45	1259.994	1259.994	ppb	0.338	181288	40	3150.0	80	120	>+/-20%
Mg	24	3	45	775.971	775.971	ppb	1.358	50925	40	1939.9	80	120	>+/-20%
Al	27	3	45	753.460	753.460	ppb	3.974	17966	40	1883.7	80	120	>+/-20%
K	39	3	45	788.728	788.728	ppb	4.825	61302	40	1971.8	80	120	>+/-20%
Ca	40	2	45	828.627	828.627	ppb	2.525	505791	40	2071.6	80	120	>+/-20%
V	51	3	72	39.646	39.646	ppb	5.672	24728	40	99.1	80	120	
Cr	52	3	72	38.296	38.296	ppb	3.004	31315	40	95.7	80	120	
Mn	55	3	72	38.965	38.965	ppb	2.597	17157	40	97.4	80	120	
Fe	56	2	72	795.347	795.347	ppb	2.677	1240235	40	1988.4	80	120	>+/-20%
(Fe)	56	3	72	753.888	753.888	ppb	3.690	523213	40	1884.7	80	120	>+/-20%
Co	59	3	72	38.533	38.533	ppb	4.128	48830	40	96.3	80	120	
Ni	60	3	72	39.756	39.756	ppb	4.837	13763	40	99.4	80	120	
Cu	63	3	72	38.941	38.941	ppb	4.663	36923	40	97.4	80	120	
Zn	66	3	72	41.235	41.235	ppb	5.680	7003	40	103.1	80	120	
As	75	3	72	38.956	38.956	ppb	5.483	4697	40	97.4	80	120	
Se	78	2	72	38.648	38.648	ppb	4.044	2234	40	96.6	80	120	
(Se)	78	3	72	37.063	37.063	ppb	17.197	283	40	92.7	80	120	
Sr	88	3	72	78.470	78.470	ppb	3.119	44432	40	196.2	80	120	>+/-20%
Mo	95	3	115	39.255	39.255	ppb	1.275	19626	40	98.1	80	120	
Ag	107	3	115	40.759	40.759	ppb	1.855	66378	40	101.9	80	120	
Cd	111	3	115	39.697	39.697	ppb	0.763	9640	40	99.2	80	120	
Sn	120	3	115	39.013	39.013	ppb	3.410	30296	40	97.5	80	120	
Sb	121	3	115	39.141	39.141	ppb	3.555	30094	40	97.9	80	120	
Ba	137	3	115	39.643	39.643	ppb	4.546	9827	40	99.1	80	120	
Tl	205	3	193	38.137	38.137	ppb	1.535	141114	40	95.3	80	120	
(Pb)	206	3	193	37.986	37.986	ppb	2.802	47249	40	95.0	80	120	
(Pb)	207	3	193	38.377	38.377	ppb	2.604	41968	40	95.9	80	120	
Pb	208	3	193	38.143	38.143	ppb	2.070	191068	40	95.4	80	120	
Th	232	3	193	38.918	38.918	ppb	1.656	198498	40	97.3	80	120	
U	238	3	193	38.486	38.486	ppb	1.381	202210	40	96.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4193497	1.90	4069295	103.05	60	120	
Sc (IS)	45	3	HMI He	640295	0.38	607729	105.36	60	120	
Ge Internal standard	72	2	HMI H2	2282539	2.75	2193901	104.04	60	120	
Ge Internal standard	72	3	HMI He	780115	3.70	683750	114.09	60	120	
In Internal Standard	115	3	HMI He	2710176	1.82	2614112	103.67	60	120	
Ir (IS)	193	3	HMI He	5515666	1.31	5065146	108.89	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	345_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:12:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.178	ppb	1.679	2287	50	90.4	90	110	
Na	23	3	45	50236.286	ppb	0.857	5918635	51000	98.5	90	110	
Mg	24	3	45	10626.782	ppb	1.866	660012	11000	96.6	90	110	
Al	27	3	45	922.042	ppb	1.187	20880	1000	92.2	90	110	
K	39	3	45	10383.542	ppb	0.547	511858	11000	94.4	90	110	
Ca	40	2	45	10634.711	ppb	1.584	6157398	11000	96.7	90	110	
V	51	3	72	48.731	ppb	3.235	28178	50	97.5	90	110	
Cr	52	3	72	48.368	ppb	1.970	36323	50	96.7	90	110	
Mn	55	3	72	47.969	ppb	3.403	19481	50	95.9	90	110	
Fe	56	2	72	958.041	ppb	2.500	1445107	1000	95.8	90	110	
Co	59	3	72	48.103	ppb	1.436	56563	50	96.2	90	110	
Ni	60	3	72	48.474	ppb	4.053	15544	50	96.9	90	110	
Cu	63	3	72	47.685	ppb	3.821	41841	50	95.4	90	110	
Zn	66	3	72	48.955	ppb	2.206	7668	50	97.9	90	110	
As	75	3	72	47.707	ppb	3.180	5323	50	95.4	90	110	
Se	78	2	72	47.571	ppb	4.899	2668	50	95.1	90	110	
(Se)	78	3	72	49.108	ppb	10.876	340	50	98.2	90	110	
Sr	88	3	72	96.961	ppb	3.953	50884	100	97.0	90	110	
Mo	95	3	115	48.251	ppb	1.788	23077	50	96.5	90	110	
Ag	107	3	115	48.997	ppb	2.088	76368	50	98.0	90	110	
Cd	111	3	115	48.673	ppb	1.417	11309	50	97.3	90	110	
Sn	120	3	115	47.938	ppb	2.376	35503	50	95.9	90	110	
Sb	121	3	115	48.612	ppb	2.397	35768	50	97.2	90	110	
Ba	137	3	115	46.469	ppb	4.746	11024	50	92.9	90	110	
Tl	205	3	193	47.215	ppb	1.226	163418	50	94.4	90	110	
(Pb)	206	3	193	47.718	ppb	2.221	55495	50	95.4	90	110	
(Pb)	207	3	193	46.780	ppb	1.185	47803	50	93.6	90	110	
Pb	208	3	193	47.163	ppb	2.518	220840	50	94.3	90	110	
Th	232	3	193	47.914	ppb	1.446	227618	50	95.8	90	110	
U	238	3	193	47.580	ppb	2.740	233517	50	95.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4091424	0.98	4069295	100.54	60	120	
Sc (IS)	45	3	HMI He	609027	0.97	607729	100.21	60	120	
Ge Internal standard	72	2	HMI H2	2213747	0.76	2193901	100.90	60	120	
Ge Internal standard	72	3	HMI He	723477	3.90	683750	105.81	60	120	
In Internal Standard	115	3	HMI He	2593567	1.10	2614112	99.21	60	120	
Ir (IS)	193	3	HMI He	5160790	2.33	5065146	101.89	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	346_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:14:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.066	ppb	86.6	3	0.5	
Na	23	3	45	18.545	ppb	15.4	26615	25	
Mg	24	3	45	-1.216	ppb	-68.1	194	25	
Al	27	3	45	39.006	ppb	15.6	1028	15	>RL
K	39	3	45	-6.871	ppb	-641.9	20559	50	
V	51	3	72	0.005	ppb	1072.9	105	1	
Cr	52	3	72	-0.162	ppb	-44.3	1258	1	
Mn	55	3	72	-0.355	ppb	-18.1	342	0.5	
Co	59	3	72	0.014	ppb	66.6	32	0.5	
Ni	60	3	72	0.004	ppb	2512.7	103	1	
Cu	63	3	72	-0.007	ppb	-660.7	408	1	
Zn	66	3	72	0.566	ppb	20.2	337	5	
As	75	3	72	-0.091	ppb	-108.7	37	1	
Se	78	2	72	0.035	ppb	100.3	4	1	
(Se)	78	3	72	-0.677	ppb	-422.6	20	1	
Sr	88	3	72	0.022	ppb	120.5	78	0.5	
Mo	95	3	115	0.060	ppb	21.2	70	0.5	
Ag	107	3	115	0.004	ppb	151.2	28	1	
Cd	111	3	115	-0.007	ppb	0.0	0	0.5	
Sn	120	3	115	0.698	ppb	4.2	1114	1	
Sb	121	3	115	0.025	ppb	49.5	67	0.6	
Ba	137	3	115	0.057	ppb	106.3	48	0.5	
Tl	205	3	193	0.009	ppb	50.5	130	0.1	
(Pb)	206	3	193	0.014	ppb	140.4	148	1	
(Pb)	207	3	193	0.044	ppb	135.5	353	1	
Pb	208	3	193	0.024	ppb	49.0	835	0.5	
Th	232	3	193	0.482	ppb	31.2	6610	1	
U	238	3	193	0.026	ppb	34.6	1486	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4032103	2.07	4069295	99.09	60	120	
Sc (IS)	45	3	HMI He	605092	0.49	607729	99.57	60	120	
Ge Internal standard	72	2	HMI H2	2233830	1.61	2193901	101.82	60	120	
Ge Internal standard	72	3	HMI He	709790	1.43	683750	103.81	60	120	
In Internal Standard	115	3	HMI He	2594117	1.96	2614112	99.24	60	120	
Ir (IS)	193	3	HMI He	5135354	2.18	5065146	101.39	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7561108
Data File Name	347LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:16:29-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.829	ppb	6.788	42	1	82.9	70	130	
Na	23	3	45	76.835	ppb	4.035	33971	50	153.7	70	130	>+/-30%
Mg	24	3	45	50.454	ppb	3.572	3437	50	100.9	70	130	
Al	27	3	45	64.413	ppb	4.636	1622	50	128.8	70	130	
K	39	3	45	94.733	ppb	34.616	25756	100	94.7	70	130	
V	51	3	72	5.222	ppb	0.684	3090	5	104.4	70	130	
Cr	52	3	72	1.962	ppb	10.576	2794	2	98.1	70	130	
Mn	55	3	72	0.797	ppb	19.310	798	1	79.7	70	130	
Co	59	3	72	0.986	ppb	0.412	1166	1	98.6	70	130	
Ni	60	3	72	1.952	ppb	8.582	721	2	97.6	70	130	
Cu	63	3	72	2.255	ppb	6.936	2364	2	112.8	70	130	
Zn	66	3	72	13.935	ppb	4.784	2349	10	139.3	70	130	>+/-30%
As	75	3	72	5.181	ppb	10.663	616	5	103.6	70	130	
Se	78	2	72	5.409	ppb	5.069	307	5	108.2	70	130	
(Se)	78	3	72	3.446	ppb	122.155	47	5	68.9	70	130	>+/-30%
Sr	88	3	72	1.178	ppb	7.723	681	1	117.8	70	130	
Mo	95	3	115	2.090	ppb	5.424	1060	2	104.5	70	130	
Ag	107	3	115	1.062	ppb	4.817	1709	1	106.2	70	130	
Cd	111	3	115	1.005	ppb	13.142	240	1	100.5	70	130	
Sn	120	3	115	10.150	ppb	3.113	8152	10	101.5	70	130	
Sb	121	3	115	2.247	ppb	3.329	1733	2	112.3	70	130	
Ba	137	3	115	1.118	ppb	8.048	305	1	111.8	70	130	
Tl	205	3	193	1.043	ppb	3.827	3734	1	104.3	70	130	
(Pb)	206	3	193	1.022	ppb	2.817	1328	1	102.2	70	130	
(Pb)	207	3	193	1.117	ppb	13.295	1453	1	111.7	70	130	
Pb	208	3	193	1.063	ppb	3.471	5724	1	106.3	70	130	
Th	232	3	193	2.014	ppb	3.511	13867	2	100.7	70	130	
U	238	3	193	1.041	ppb	3.415	6488	1	104.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4078371	0.96	4069295	100.22	60	120	
Sc (IS)	45	3	HMI He	615277	0.73	607729	101.24	60	120	
Ge Internal standard	72	2	HMI H2	2229881	1.19	2193901	101.64	60	120	
Ge Internal standard	72	3	HMI He	717951	1.47	683750	105.00	60	120	
In Internal Standard	115	3	HMI He	2644705	0.22	2614112	101.17	60	120	
Ir (IS)	193	3	HMI He	5199258	3.25	5065146	102.65	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-D
Data File Name	348SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:18:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	18784.744	ppb	18784.744	1.43	2212759	400000	
Mg	24	3	45	11333.027	ppb	11333.027	1.91	698807	400000	
Al	27	3	45	23.956	ppb	23.956	10.10	691	400000	
K	39	3	45	5464.989	ppb	5464.989	0.90	277412	400000	
Ca	40	2	45	48208.468	ppb	48208.468	0.90	28060250	400000	
V	51	3	72	9.802	ppb	9.802	1.17	6043	2000	
Cr	52	3	72	7.940	ppb	7.940	2.27	7493	5000	
Mn	55	3	72	0.381	ppb	0.381	15.88	671	10000	
Fe	56	2	72	49.518	ppb	49.518	3.92	95210	10000	
Co	59	3	72	0.058	ppb	0.058	45.23	88	2000	
Ni	60	3	72	0.788	ppb	0.788	18.25	373	5000	
Cu	63	3	72	1.231	ppb	1.231	8.50	1566	5000	
Zn	66	3	72	1.222	ppb	1.222	28.22	465	5000	
As	75	3	72	3.320	ppb	3.320	14.42	436	2000	
Se	78	2	72	1.546	ppb	1.546	20.13	93	2000	
(Se)	78	3	72	1.349	ppb	1.349	57.10	35	2000	
Sr	88	3	72	234.622	ppb	234.622	1.60	129290	4000	
Mo	95	3	115	2.368	ppb	2.368	9.83	1211	2000	
Ag	107	3	115	0.016	ppb	0.016	29.81	48	100	
Cd	111	3	115	0.007	ppb	0.007	180.48	3	2000	
Sn	120	3	115	0.315	ppb	0.315	38.02	865	2000	
Sb	121	3	115	0.222	ppb	0.222	19.22	218	1000	
Ba	137	3	115	31.007	ppb	31.007	4.13	7617	5000	
Tl	205	3	193	0.002	ppb	0.002	67.84	107	2000	
(Pb)	206	3	193	0.037	ppb	0.037	66.21	175	100	
(Pb)	207	3	193	0.016	ppb	0.016	62.03	327	100	
Pb	208	3	193	0.028	ppb	0.028	6.69	856	5000	
Th	232	3	193	0.024	ppb	0.024	170.23	4492	2000	
U	238	3	193	4.842	ppb	4.842	2.41	24968	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4121156	1.69	4069295	101.27	60	120	
Sc (IS)	45	3	HMI He	604780	0.83	607729	99.51	60	120	
Ge Internal standard	72	2	HMI H2	2334159	1.79	2193901	106.39	60	120	
Ge Internal standard	72	3	HMI He	759689	1.91	683750	111.11	60	120	
In Internal Standard	115	3	HMI He	2682046	0.78	2614112	102.60	60	120	
Ir (IS)	193	3	HMI He	5155768	1.68	5065146	101.79	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-Dsd@5
Data File Name	349SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:20:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3668.182	ppb	3668.182	0.66	442586	400000	
Mg	24	3	45	2238.319	ppb	2238.319	0.35	135433	400000	
Al	27	3	45	3.829	ppb	3.829	67.93	237	400000	
K	39	3	45	1092.012	ppb	1092.012	2.17	70661	400000	
Ca	40	2	45	10064.665	ppb	10064.665	3.49	5724222	400000	
V	51	3	72	2.065	ppb	2.065	6.51	1289	2000	
Cr	52	3	72	1.629	ppb	1.629	11.32	2567	5000	
Mn	55	3	72	-0.146	ppb	-0.146	-46.75	430	10000	
Fe	56	2	72	6.811	ppb	6.811	4.51	27304	10000	
Co	59	3	72	0.023	ppb	0.023	91.53	43	2000	
Ni	60	3	72	0.244	ppb	0.244	32.68	182	5000	
Cu	63	3	72	0.226	ppb	0.226	19.37	616	5000	
Zn	66	3	72	0.990	ppb	0.990	40.79	405	5000	
As	75	3	72	0.861	ppb	0.861	67.37	142	2000	
Se	78	2	72	0.403	ppb	0.403	33.16	25	2000	
(Se)	78	3	72	-1.200	ppb	-1.200	-200.26	17	2000	
Sr	88	3	72	49.189	ppb	49.189	5.08	25758	4000	
Mo	95	3	115	0.572	ppb	0.572	17.53	313	2000	
Ag	107	3	115	0.000	ppb	0.000	6188.68	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	0.683	ppb	0.683	17.69	1100	2000	
Sb	121	3	115	0.066	ppb	0.066	33.98	97	1000	
Ba	137	3	115	6.693	ppb	6.693	9.94	1613	5000	
Tl	205	3	193	0.007	ppb	0.007	26.49	123	2000	
(Pb)	206	3	193	0.016	ppb	0.016	157.79	148	100	
(Pb)	207	3	193	-0.030	ppb	-0.030	-202.06	277	100	
Pb	208	3	193	-0.003	ppb	-0.003	-337.75	700	5000	
Th	232	3	193	-0.024	ppb	-0.024	-293.59	4209	2000	
U	238	3	193	0.950	ppb	0.950	1.96	5907	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4020335	2.54	4069295	98.80	60	120	
Sc (IS)	45	3	HMI He	592489	1.28	607729	97.49	60	120	
Ge Internal standard	72	2	HMI H2	2269669	2.67	2193901	103.45	60	120	
Ge Internal standard	72	3	HMI He	720924	2.78	683750	105.44	60	120	
In Internal Standard	115	3	HMI He	2585545	1.07	2614112	98.91	60	120	
Ir (IS)	193	3	HMI He	5078941	1.15	5065146	100.27	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-E MS
Data File Name	350SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:22:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.564	ppb	37.564	3.40	1956	2000	
Na	23	3	45	19066.728	ppb	19066.728	1.68	2302125	400000	
Mg	24	3	45	12169.372	ppb	12169.372	1.46	769520	400000	
Al	27	3	45	795.793	ppb	795.793	4.70	18364	400000	
K	39	3	45	6085.174	ppb	6085.174	1.01	314219	400000	
Ca	40	2	45	48726.936	ppb	48726.936	1.28	28939181	400000	
V	51	3	72	48.241	ppb	48.241	2.45	29757	2000	
Cr	52	3	72	46.617	ppb	46.617	1.33	37390	5000	
Mn	55	3	72	38.281	ppb	38.281	2.90	16682	10000	
Fe	56	2	72	821.246	ppb	821.246	2.58	1361266	10000	
Co	59	3	72	37.462	ppb	37.462	0.90	46984	2000	
Ni	60	3	72	39.070	ppb	39.070	1.34	13390	5000	
Cu	63	3	72	38.913	ppb	38.913	0.93	36523	5000	
Zn	66	3	72	40.669	ppb	40.669	4.20	6840	5000	
As	75	3	72	41.073	ppb	41.073	7.84	4897	2000	
Se	78	2	72	39.804	ppb	39.804	1.72	2449	2000	
(Se)	78	3	72	43.078	ppb	43.078	6.16	322	2000	
Sr	88	3	72	308.604	ppb	308.604	1.26	172657	4000	
Mo	95	3	115	42.029	ppb	42.029	1.36	20639	2000	
Ag	107	3	115	39.964	ppb	39.964	1.76	63948	100	
Cd	111	3	115	39.352	ppb	39.352	2.70	9387	2000	
Sn	120	3	115	40.007	ppb	40.007	1.48	30526	2000	
Sb	121	3	115	40.086	ppb	40.086	1.83	30284	1000	
Ba	137	3	115	69.246	ppb	69.246	3.90	16836	5000	
Tl	205	3	193	38.964	ppb	38.964	2.06	137228	2000	
(Pb)	206	3	193	38.731	ppb	38.731	3.69	45852	100	
(Pb)	207	3	193	39.175	ppb	39.175	3.81	40770	100	
Pb	208	3	193	38.919	ppb	38.919	3.32	185545	5000	
Th	232	3	193	39.934	ppb	39.934	3.25	193738	2000	
U	238	3	193	44.647	ppb	44.647	3.44	223034	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4205363	1.96	4069295	103.34	60	120	
Sc (IS)	45	3	HMI He	620056	1.76	607729	102.03	60	120	
Ge Internal standard	72	2	HMI H2	2428159	1.21	2193901	110.68	60	120	
Ge Internal standard	72	3	HMI He	771313	1.43	683750	112.81	60	120	
In Internal Standard	115	3	HMI He	2662794	2.88	2614112	101.86	60	120	
Ir (IS)	193	3	HMI He	5250807	1.87	5065146	103.67	60	120	

Sample Report

Sample Table

Sample Name	280-171396-A-1-F MSD
Data File Name	351SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:24:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.477	ppb	40.477	6.83	1986	2000	
Na	23	3	45	19319.637	ppb	19319.637	1.21	2340396	400000	
Mg	24	3	45	11848.776	ppb	11848.776	2.50	751490	400000	
Al	27	3	45	783.481	ppb	783.481	4.11	18140	400000	
K	39	3	45	6086.358	ppb	6086.358	0.86	315360	400000	
Ca	40	2	45	49850.308	ppb	49850.308	1.68	27683815	400000	
V	51	3	72	47.619	ppb	47.619	0.69	29987	2000	
Cr	52	3	72	45.849	ppb	45.849	1.61	37557	5000	
Mn	55	3	72	37.298	ppb	37.298	1.75	16605	10000	
Fe	56	2	72	815.711	ppb	815.711	0.77	1248277	10000	
Co	59	3	72	37.167	ppb	37.167	0.38	47581	2000	
Ni	60	3	72	38.002	ppb	38.002	3.18	13293	5000	
Cu	63	3	72	38.484	ppb	38.484	1.05	36869	5000	
Zn	66	3	72	39.254	ppb	39.254	5.95	6753	5000	
As	75	3	72	41.458	ppb	41.458	3.77	5043	2000	
Se	78	2	72	38.830	ppb	38.830	1.34	2205	2000	
(Se)	78	3	72	39.542	ppb	39.542	18.72	303	2000	
Sr	88	3	72	304.596	ppb	304.596	0.25	173963	4000	
Mo	95	3	115	42.107	ppb	42.107	2.59	20862	2000	
Ag	107	3	115	40.339	ppb	40.339	1.05	65126	100	
Cd	111	3	115	38.732	ppb	38.732	1.30	9322	2000	
Sn	120	3	115	39.695	ppb	39.695	2.53	30551	2000	
Sb	121	3	115	39.191	ppb	39.191	2.02	29875	1000	
Ba	137	3	115	69.055	ppb	69.055	1.51	16949	5000	
Tl	205	3	193	38.930	ppb	38.930	3.06	138631	2000	
(Pb)	206	3	193	38.927	ppb	38.927	2.12	46616	100	
(Pb)	207	3	193	38.446	ppb	38.446	3.95	40469	100	
Pb	208	3	193	38.513	ppb	38.513	2.99	185695	5000	
Th	232	3	193	40.008	ppb	40.008	3.47	196259	2000	
U	238	3	193	44.019	ppb	44.019	3.95	222368	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3931930	0.88	4069295	96.62	60	120	
Sc (IS)	45	3	HMI He	622184	1.69	607729	102.38	60	120	
Ge Internal standard	72	2	HMI H2	2241172	1.17	2193901	102.15	60	120	
Ge Internal standard	72	3	HMI He	787310	1.50	683750	115.15	60	120	
In Internal Standard	115	3	HMI He	2686195	0.83	2614112	102.76	60	120	
Ir (IS)	193	3	HMI He	5310717	2.58	5065146	104.85	60	120	

Sample Report

Sample Table

Sample Name	280-171444-E-1-B
Data File Name	352SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:25:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	133250.095	ppb	133250.095	0.89	15919890	400000	
Mg	24	3	45	7553.720	ppb	7553.720	0.64	477037	400000	
Al	27	3	45	118.310	ppb	118.310	3.45	2863	400000	
K	39	3	45	1706.876	ppb	1706.876	3.42	103402	400000	
Ca	40	2	45	19465.430	ppb	19465.430	2.23	11464879	400000	
V	51	3	72	0.569	ppb	0.569	12.15	460	2000	
Cr	52	3	72	0.090	ppb	0.090	160.20	1559	5000	
Mn	55	3	72	5.600	ppb	5.600	6.09	2882	10000	
Fe	56	2	72	158.409	ppb	158.409	2.83	269917	10000	
Co	59	3	72	0.111	ppb	0.111	14.23	157	2000	
Ni	60	3	72	0.907	ppb	0.907	18.62	418	5000	
Cu	63	3	72	0.786	ppb	0.786	4.55	1178	5000	
Zn	66	3	72	3.000	ppb	3.000	6.30	758	5000	
As	75	3	72	1.097	ppb	1.097	18.29	180	2000	
Se	78	2	72	0.409	ppb	0.409	3.98	27	2000	
(Se)	78	3	72	-1.875	ppb	-1.875	-99.16	13	2000	
Sr	88	3	72	258.620	ppb	258.620	2.01	144534	4000	
Mo	95	3	115	8.758	ppb	8.758	4.97	4405	2000	
Ag	107	3	115	0.021	ppb	0.021	21.72	57	100	
Cd	111	3	115	0.020	ppb	0.020	58.64	7	2000	
Sn	120	3	115	0.492	ppb	0.492	17.87	1006	2000	
Sb	121	3	115	1.124	ppb	1.124	4.71	911	1000	
Ba	137	3	115	38.887	ppb	38.887	3.02	9629	5000	
Tl	205	3	193	0.008	ppb	0.008	19.84	132	2000	
(Pb)	206	3	193	0.212	ppb	0.212	14.33	385	100	
(Pb)	207	3	193	0.297	ppb	0.297	12.30	623	100	
Pb	208	3	193	0.249	ppb	0.249	11.68	1919	5000	
Th	232	3	193	0.446	ppb	0.446	33.46	6585	2000	
U	238	3	193	1.072	ppb	1.072	2.92	6715	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4166501	0.35	4069295	102.39	60	120	
Sc (IS)	45	3	HMI He	619226	0.40	607729	101.89	60	120	
Ge Internal standard	72	2	HMI H2	2364306	0.79	2193901	107.77	60	120	
Ge Internal standard	72	3	HMI He	770461	1.18	683750	112.68	60	120	
In Internal Standard	115	3	HMI He	2706246	1.66	2614112	103.52	60	120	
Ir (IS)	193	3	HMI He	5253892	0.09	5065146	103.73	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-1-A
Data File Name	353SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:27:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	56251.651	ppb	56251.651	1.76	6505693	400000	
Mg	24	3	45	14910.641	ppb	14910.641	2.90	909286	400000	
Al	27	3	45	49.405	ppb	49.405	12.38	1245	400000	
K	39	3	45	2270.103	ppb	2270.103	5.52	126021	400000	
Ca	40	2	45	56400.363	ppb	56400.363	2.31	31502780	400000	
V	51	3	72	0.440	ppb	0.440	26.66	343	2000	
Cr	52	3	72	0.222	ppb	0.222	44.89	1498	5000	
Mn	55	3	72	16.768	ppb	16.768	3.27	6845	10000	
Fe	56	2	72	73.568	ppb	73.568	0.55	123842	10000	
Co	59	3	72	0.105	ppb	0.105	13.31	133	2000	
Ni	60	3	72	0.496	ppb	0.496	30.40	252	5000	
Cu	63	3	72	3.137	ppb	3.137	1.06	3024	5000	
Zn	66	3	72	20.313	ppb	20.313	5.52	3200	5000	
As	75	3	72	0.182	ppb	0.182	93.74	65	2000	
Se	78	2	72	0.255	ppb	0.255	14.09	16	2000	
(Se)	78	3	72	-0.327	ppb	-0.327	-378.89	22	2000	
Sr	88	3	72	168.252	ppb	168.252	1.60	84807	4000	
Mo	95	3	115	9.334	ppb	9.334	6.71	4494	2000	
Ag	107	3	115	0.003	ppb	0.003	203.29	27	100	
Cd	111	3	115	0.093	ppb	0.093	34.32	23	2000	
Sn	120	3	115	0.081	ppb	0.081	75.33	665	2000	
Sb	121	3	115	0.191	ppb	0.191	23.03	188	1000	
Ba	137	3	115	67.733	ppb	67.733	1.88	16028	5000	
Tl	205	3	193	0.006	ppb	0.006	114.20	117	2000	
(Pb)	206	3	193	0.103	ppb	0.103	11.35	247	100	
(Pb)	207	3	193	0.118	ppb	0.118	56.99	420	100	
Pb	208	3	193	0.109	ppb	0.109	22.03	1206	5000	
Th	232	3	193	-0.005	ppb	-0.005	-850.24	4265	2000	
U	238	3	193	23.474	ppb	23.474	1.50	113210	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3956059	2.51	4069295	97.22	60	120	
Sc (IS)	45	3	HMI He	598191	0.66	607729	98.43	60	120	
Ge Internal standard	72	2	HMI H2	2172404	0.92	2193901	99.02	60	120	
Ge Internal standard	72	3	HMI He	694633	0.64	683750	101.59	60	120	
In Internal Standard	115	3	HMI He	2590375	2.23	2614112	99.09	60	120	
Ir (IS)	193	3	HMI He	5039614	1.02	5065146	99.50	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-5-B
Data File Name	354SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:29:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	33542.160	ppb	33542.160	0.49	3861089	400000	
Mg	24	3	45	13744.891	ppb	13744.891	0.81	832205	400000	
Al	27	3	45	431.711	ppb	431.711	0.90	9613	400000	
K	39	3	45	2216.933	ppb	2216.933	1.67	122678	400000	
Ca	40	2	45	49944.475	ppb	49944.475	0.27	28905124	400000	
V	51	3	72	1.115	ppb	1.115	10.57	751	2000	
Cr	52	3	72	1.067	ppb	1.067	16.08	2182	5000	
Mn	55	3	72	55.999	ppb	55.999	1.96	22797	10000	
Fe	56	2	72	396.591	ppb	396.591	1.90	609935	10000	
Co	59	3	72	0.415	ppb	0.415	9.29	506	2000	
Ni	60	3	72	1.107	ppb	1.107	9.31	460	5000	
Cu	63	3	72	18.780	ppb	18.780	2.38	16845	5000	
Zn	66	3	72	31.615	ppb	31.615	3.71	5073	5000	
As	75	3	72	0.379	ppb	0.379	16.21	90	2000	
Se	78	2	72	0.249	ppb	0.249	25.51	16	2000	
(Se)	78	3	72	1.296	ppb	1.296	114.94	33	2000	
Sr	88	3	72	139.398	ppb	139.398	1.50	73620	4000	
Mo	95	3	115	21.016	ppb	21.016	4.06	10142	2000	
Ag	107	3	115	0.011	ppb	0.011	148.67	38	100	
Cd	111	3	115	0.469	ppb	0.469	11.70	112	2000	
Sn	120	3	115	0.005	ppb	0.005	888.35	615	2000	
Sb	121	3	115	0.200	ppb	0.200	33.82	197	1000	
Ba	137	3	115	60.611	ppb	60.611	2.71	14466	5000	
Tl	205	3	193	0.017	ppb	0.017	18.41	158	2000	
(Pb)	206	3	193	1.191	ppb	1.191	7.18	1503	100	
(Pb)	207	3	193	1.035	ppb	1.035	4.99	1351	100	
Pb	208	3	193	1.080	ppb	1.080	2.10	5724	5000	
Th	232	3	193	0.065	ppb	0.065	55.62	4657	2000	
U	238	3	193	45.956	ppb	45.956	0.86	223951	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4097313	1.04	4069295	100.69	60	120	
Sc (IS)	45	3	HMI He	593841	0.52	607729	97.71	60	120	
Ge Internal standard	72	2	HMI H2	2221031	0.60	2193901	101.24	60	120	
Ge Internal standard	72	3	HMI He	727796	2.09	683750	106.44	60	120	
In Internal Standard	115	3	HMI He	2611957	1.69	2614112	99.92	60	120	
Ir (IS)	193	3	HMI He	5121281	0.48	5065146	101.11	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-D
Data File Name	355SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:31:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.068	ppb	0.068	86.60	3	2000	
Na	23	3	45	31401.852	ppb	31401.852	1.65	3673752	400000	
Mg	24	3	45	12783.826	ppb	12783.826	3.16	786380	400000	
Al	27	3	45	35.720	ppb	35.720	14.45	951	400000	
K	39	3	45	2005.772	ppb	2005.772	2.37	114747	400000	
Ca	40	2	45	47102.761	ppb	47102.761	0.85	26076298	400000	
V	51	3	72	0.373	ppb	0.373	21.26	320	2000	
Cr	52	3	72	0.436	ppb	0.436	31.90	1716	5000	
Mn	55	3	72	13.740	ppb	13.740	3.83	5932	10000	
Fe	56	2	72	23.711	ppb	23.711	5.25	52934	10000	
Co	59	3	72	0.080	ppb	0.080	35.01	110	2000	
Ni	60	3	72	0.588	ppb	0.588	7.51	292	5000	
Cu	63	3	72	6.290	ppb	6.290	5.08	5890	5000	
Zn	66	3	72	11.755	ppb	11.755	2.64	2039	5000	
As	75	3	72	0.156	ppb	0.156	18.39	65	2000	
Se	78	2	72	0.129	ppb	0.129	70.90	9	2000	
(Se)	78	3	72	-0.964	ppb	-0.964	-130.87	18	2000	
Sr	88	3	72	132.529	ppb	132.529	3.31	69602	4000	
Mo	95	3	115	21.761	ppb	21.761	1.78	10370	2000	
Ag	107	3	115	0.008	ppb	0.008	49.10	33	100	
Cd	111	3	115	0.390	ppb	0.390	17.33	92	2000	
Sn	120	3	115	0.244	ppb	0.244	16.00	780	2000	
Sb	121	3	115	0.170	ppb	0.170	13.26	172	1000	
Ba	137	3	115	51.678	ppb	51.678	3.04	12185	5000	
Tl	205	3	193	0.006	ppb	0.006	18.90	117	2000	
(Pb)	206	3	193	0.096	ppb	0.096	39.88	238	100	
(Pb)	207	3	193	0.058	ppb	0.058	32.67	360	100	
Pb	208	3	193	0.081	ppb	0.081	9.04	1076	5000	
Th	232	3	193	-0.052	ppb	-0.052	-79.99	4039	2000	
U	238	3	193	44.653	ppb	44.653	3.02	213658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3919426	2.48	4069295	96.32	60	120	
Sc (IS)	45	3	HMI He	603317	0.38	607729	99.27	60	120	
Ge Internal standard	72	2	HMI H2	2262185	3.51	2193901	103.11	60	120	
Ge Internal standard	72	3	HMI He	724017	2.90	683750	105.89	60	120	
In Internal Standard	115	3	HMI He	2578669	0.39	2614112	98.64	60	120	
Ir (IS)	193	3	HMI He	5029280	1.88	5065146	99.29	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-E MS
Data File Name	356SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:33:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.897	ppb	37.897	3.38	1854	2000	
Na	23	3	45	33057.446	ppb	33057.446	1.89	3830155	400000	
Mg	24	3	45	13861.833	ppb	13861.833	0.58	844835	400000	
Al	27	3	45	789.891	ppb	789.891	4.09	17572	400000	
K	39	3	45	2839.090	ppb	2839.090	2.63	152324	400000	
Ca	40	2	45	48282.769	ppb	48282.769	1.42	26953387	400000	
V	51	3	72	40.359	ppb	40.359	1.10	22942	2000	
Cr	52	3	72	40.030	ppb	40.030	1.54	29760	5000	
Mn	55	3	72	53.250	ppb	53.250	1.88	21182	10000	
Fe	56	2	72	807.918	ppb	807.918	0.89	1227587	10000	
Co	59	3	72	38.998	ppb	38.998	1.59	45034	2000	
Ni	60	3	72	40.380	ppb	40.380	0.49	12740	5000	
Cu	63	3	72	45.435	ppb	45.435	1.89	39193	5000	
Zn	66	3	72	52.136	ppb	52.136	1.99	8003	5000	
As	75	3	72	39.217	ppb	39.217	5.10	4307	2000	
Se	78	2	72	38.117	ppb	38.117	0.86	2149	2000	
(Se)	78	3	72	34.415	ppb	34.415	11.40	242	2000	
Sr	88	3	72	215.241	ppb	215.241	0.71	110912	4000	
Mo	95	3	115	61.063	ppb	61.063	1.51	28920	2000	
Ag	107	3	115	39.523	ppb	39.523	0.99	61032	100	
Cd	111	3	115	39.498	ppb	39.498	2.50	9092	2000	
Sn	120	3	115	38.609	ppb	38.609	0.77	28439	2000	
Sb	121	3	115	38.915	ppb	38.915	0.71	28376	1000	
Ba	137	3	115	92.374	ppb	92.374	0.30	21674	5000	
Tl	205	3	193	38.394	ppb	38.394	0.87	130961	2000	
(Pb)	206	3	193	38.427	ppb	38.427	2.72	44058	100	
(Pb)	207	3	193	38.482	ppb	38.482	1.86	38795	100	
Pb	208	3	193	38.441	ppb	38.441	1.26	177518	5000	
Th	232	3	193	39.814	ppb	39.814	1.96	187080	2000	
U	238	3	193	83.400	ppb	83.400	1.83	402360	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3952092	1.05	4069295	97.12	60	120	
Sc (IS)	45	3	HMI He	597735	0.98	607729	98.36	60	120	
Ge Internal standard	72	2	HMI H2	2225073	0.97	2193901	101.42	60	120	
Ge Internal standard	72	3	HMI He	710220	0.56	683750	103.87	60	120	
In Internal Standard	115	3	HMI He	2569199	0.25	2614112	98.28	60	120	
Ir (IS)	193	3	HMI He	5084773	1.79	5065146	100.39	60	120	

Sample Report

Sample Table

Sample Name	160-48425-A-6-F MSD
Data File Name	357SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:35:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	599677 6020b
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.737	ppb	37.737	2.60	1873	2000	
Na	23	3	45	33643.327	ppb	33643.327	1.50	3907246	400000	
Mg	24	3	45	14101.830	ppb	14101.830	1.67	861523	400000	
Al	27	3	45	813.184	ppb	813.184	0.59	18137	400000	
K	39	3	45	2864.383	ppb	2864.383	1.85	153883	400000	
Ca	40	2	45	50157.991	ppb	50157.991	2.45	28230018	400000	
V	51	3	72	40.256	ppb	40.256	2.87	23421	2000	
Cr	52	3	72	39.877	ppb	39.877	3.11	30343	5000	
Mn	55	3	72	53.206	ppb	53.206	4.27	21653	10000	
Fe	56	2	72	804.671	ppb	804.671	2.99	1239401	10000	
Co	59	3	72	39.102	ppb	39.102	2.78	46214	2000	
Ni	60	3	72	39.697	ppb	39.697	4.31	12813	5000	
Cu	63	3	72	45.127	ppb	45.127	2.59	39851	5000	
Zn	66	3	72	52.472	ppb	52.472	3.21	8243	5000	
As	75	3	72	39.771	ppb	39.771	3.79	4479	2000	
Se	78	2	72	39.388	ppb	39.388	2.47	2251	2000	
(Se)	78	3	72	39.000	ppb	39.000	16.51	278	2000	
Sr	88	3	72	215.604	ppb	215.604	2.78	113707	4000	
Mo	95	3	115	61.547	ppb	61.547	2.27	29574	2000	
Ag	107	3	115	39.193	ppb	39.193	0.46	61399	100	
Cd	111	3	115	39.952	ppb	39.952	1.40	9330	2000	
Sn	120	3	115	38.452	ppb	38.452	1.41	28738	2000	
Sb	121	3	115	39.248	ppb	39.248	1.26	29034	1000	
Ba	137	3	115	93.635	ppb	93.635	1.62	22288	5000	
Tl	205	3	193	39.258	ppb	39.258	3.09	133892	2000	
(Pb)	206	3	193	39.195	ppb	39.195	2.20	44947	100	
(Pb)	207	3	193	39.309	ppb	39.309	2.97	39621	100	
Pb	208	3	193	39.169	ppb	39.169	2.57	180854	5000	
Th	232	3	193	40.661	ppb	40.661	1.42	191023	2000	
U	238	3	193	86.253	ppb	86.253	1.96	416200	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3985197	1.40	4069295	97.93	60	120	
Sc (IS)	45	3	HMI He	599268	1.94	607729	98.61	60	120	
Ge Internal standard	72	2	HMI H2	2255762	1.11	2193901	102.82	60	120	
Ge Internal standard	72	3	HMI He	727444	4.64	683750	106.39	60	120	
In Internal Standard	115	3	HMI He	2606354	0.75	2614112	99.70	60	120	
Ir (IS)	193	3	HMI He	5086214	3.41	5065146	100.42	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	358_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:37:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.268	ppb	4.819	2417	50	94.5	90	110	
Na	23	3	45	50190.151	ppb	0.632	5984143	51000	98.4	90	110	
Mg	24	3	45	10849.055	ppb	2.286	681800	11000	98.6	90	110	
Al	27	3	45	931.596	ppb	5.161	21348	1000	93.2	90	110	
K	39	3	45	10455.433	ppb	0.393	521477	11000	95.0	90	110	
Ca	40	2	45	11003.292	ppb	0.609	6459913	11000	100.0	90	110	
V	51	3	72	48.604	ppb	1.774	28887	50	97.2	90	110	
Cr	52	3	72	48.251	ppb	4.750	37204	50	96.5	90	110	
Mn	55	3	72	47.003	ppb	2.504	19619	50	94.0	90	110	
Fe	56	2	72	974.990	ppb	2.495	1493593	1000	97.5	90	110	
Co	59	3	72	47.922	ppb	4.641	57851	50	95.8	90	110	
Ni	60	3	72	48.106	ppb	4.083	15850	50	96.2	90	110	
Cu	63	3	72	47.932	ppb	1.640	43238	50	95.9	90	110	
Zn	66	3	72	47.394	ppb	4.138	7637	50	94.8	90	110	
As	75	3	72	46.898	ppb	5.353	5375	50	93.8	90	110	
Se	78	2	72	48.041	ppb	1.313	2737	50	96.1	90	110	
(Se)	78	3	72	41.534	ppb	5.369	300	50	83.1	90	110	>+\-10%
Sr	88	3	72	95.326	ppb	2.448	51425	100	95.3	90	110	
Mo	95	3	115	47.872	ppb	0.906	23379	50	95.7	90	110	
Ag	107	3	115	47.899	ppb	1.886	76222	50	95.8	90	110	
Cd	111	3	115	48.688	ppb	0.652	11551	50	97.4	90	110	
Sn	120	3	115	46.994	ppb	1.075	35541	50	94.0	90	110	
Sb	121	3	115	48.017	ppb	0.566	36076	50	96.0	90	110	
Ba	137	3	115	47.442	ppb	1.234	11491	50	94.9	90	110	
Tl	205	3	193	47.608	ppb	2.178	165874	50	95.2	90	110	
(Pb)	206	3	193	47.667	ppb	2.594	55806	50	95.3	90	110	
(Pb)	207	3	193	47.561	ppb	2.908	48910	50	95.1	90	110	
Pb	208	3	193	47.401	ppb	2.340	223450	50	94.8	90	110	
Th	232	3	193	48.191	ppb	1.784	230440	50	96.4	90	110	
U	238	3	193	47.921	ppb	2.021	236796	50	95.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4148965	1.46	4069295	101.96	60	120	
Sc (IS)	45	3	HMI He	616401	1.41	607729	101.43	60	120	
Ge Internal standard	72	2	HMI H2	2248997	2.01	2193901	102.51	60	120	
Ge Internal standard	72	3	HMI He	743375	3.95	683750	108.72	60	120	
In Internal Standard	115	3	HMI He	2648018	1.17	2614112	101.30	60	120	
Ir (IS)	193	3	HMI He	5195603	2.41	5065146	102.58	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	359_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:39:10-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	28.169	ppb	16.7	28297	25	>RL
Mg	24	3	45	0.417	ppb	132.4	300	25	
Al	27	3	45	37.826	ppb	4.2	1021	15	>RL
K	39	3	45	-22.425	ppb	-153.0	20232	50	
V	51	3	72	0.027	ppb	282.9	118	1	
Cr	52	3	72	-0.054	ppb	-347.5	1343	1	
Mn	55	3	72	-0.426	ppb	-14.3	317	0.5	
Co	59	3	72	0.021	ppb	38.8	40	0.5	
Ni	60	3	72	0.007	ppb	1261.4	105	1	
Cu	63	3	72	0.007	ppb	1502.7	423	1	
Zn	66	3	72	0.759	ppb	34.9	368	5	
As	75	3	72	-0.154	ppb	-80.4	30	1	
Se	78	2	72	0.012	ppb	344.0	3	1	
(Se)	78	3	72	1.121	ppb	238.4	32	1	>RL
Sr	88	3	72	0.059	ppb	28.8	98	0.5	
Mo	95	3	115	0.049	ppb	26.6	67	0.5	
Ag	107	3	115	0.007	ppb	66.3	33	1	
Cd	111	3	115	-0.007	ppb	0.0	0	0.5	
Sn	120	3	115	0.770	ppb	12.7	1201	1	
Sb	121	3	115	0.047	ppb	60.7	85	0.6	
Ba	137	3	115	0.004	ppb	2129.4	37	0.5	
Tl	205	3	193	0.008	ppb	135.5	130	0.1	
(Pb)	206	3	193	0.036	ppb	93.2	175	1	
(Pb)	207	3	193	0.009	ppb	707.1	322	1	
Pb	208	3	193	0.012	ppb	110.1	785	0.5	
Th	232	3	193	0.496	ppb	24.3	6733	1	
U	238	3	193	0.036	ppb	35.4	1546	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4113355	2.30	4069295	101.08	60	120	
Sc (IS)	45	3	HMI He	617330	0.62	607729	101.58	60	120	
Ge Internal standard	72	2	HMI H2	2207701	2.37	2193901	100.63	60	120	
Ge Internal standard	72	3	HMI He	714975	1.71	683750	104.57	60	120	
In Internal Standard	115	3	HMI He	2669097	1.07	2614112	102.10	60	120	
Ir (IS)	193	3	HMI He	5186298	0.58	5065146	102.39	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	360SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:41:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	70.149	ppb	70.149	5.06	30467	400000	
Mg	24	3	45	5.323	ppb	5.323	7.95	557	400000	
Al	27	3	45	2.929	ppb	2.929	106.30	207	400000	
K	39	3	45	-0.429	ppb	-0.429	-8798.30	19483	400000	
Ca	40	2	45	24.096	ppb	24.096	14.56	27585	400000	
V	51	3	72	0.109	ppb	0.109	71.62	147	2000	
Cr	52	3	72	0.756	ppb	0.756	2.02	1706	5000	
Mn	55	3	72	0.013	ppb	0.013	866.52	433	10000	
Fe	56	2	72	4.579	ppb	4.579	10.55	21762	10000	
Co	59	3	72	0.040	ppb	0.040	36.11	55	2000	
Ni	60	3	72	0.264	ppb	0.264	22.30	165	5000	
Cu	63	3	72	0.336	ppb	0.336	38.36	626	5000	
Zn	66	3	72	1.775	ppb	1.775	22.82	461	5000	
As	75	3	72	0.102	ppb	0.102	58.73	52	2000	
Se	78	2	72	0.028	ppb	0.028	77.76	3	2000	
(Se)	78	3	72	-0.583	ppb	-0.583	-90.47	18	2000	
Sr	88	3	72	0.275	ppb	0.275	27.48	187	4000	
Mo	95	3	115	0.228	ppb	0.228	13.70	140	2000	
Ag	107	3	115	0.010	ppb	0.010	57.53	35	100	
Cd	111	3	115	0.016	ppb	0.016	251.10	5	2000	
Sn	120	3	115	1.189	ppb	1.189	7.27	1373	2000	
Sb	121	3	115	0.090	ppb	0.090	29.98	107	1000	
Ba	137	3	115	0.209	ppb	0.209	24.63	78	5000	
Tl	205	3	193	0.014	ppb	0.014	73.20	140	2000	
(Pb)	206	3	193	0.057	ppb	0.057	44.24	188	100	
(Pb)	207	3	193	0.010	ppb	0.010	397.22	305	100	
Pb	208	3	193	0.047	ppb	0.047	30.10	896	5000	
Th	232	3	193	0.117	ppb	0.117	29.30	4695	2000	
U	238	3	193	0.057	ppb	0.057	39.17	1564	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3904626	1.68	4069295	95.95	60	120	
Sc (IS)	45	3	HMI He	564981	0.60	607729	92.97	60	120	
Ge Internal standard	72	2	HMI H2	2067773	2.45	2193901	94.25	60	120	
Ge Internal standard	72	3	HMI He	634352	0.66	683750	92.78	60	120	
In Internal Standard	115	3	HMI He	2418749	0.69	2614112	92.53	60	120	
Ir (IS)	193	3	HMI He	4913912	1.74	5065146	97.01	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	361SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:42:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	58.948	ppb	58.948	17.41	29510	400000	
Mg	24	3	45	6.446	ppb	6.446	10.42	627	400000	
Al	27	3	45	4.911	ppb	4.911	42.92	250	400000	
K	39	3	45	-7.588	ppb	-7.588	-441.51	19363	400000	
Ca	40	2	45	28.650	ppb	28.650	9.07	28839	400000	
V	51	3	72	0.059	ppb	0.059	92.24	123	2000	
Cr	52	3	72	0.656	ppb	0.656	15.78	1676	5000	
Mn	55	3	72	-0.086	ppb	-0.086	-176.64	406	10000	
Fe	56	2	72	4.455	ppb	4.455	7.46	21051	10000	
Co	59	3	72	0.036	ppb	0.036	51.20	52	2000	
Ni	60	3	72	0.294	ppb	0.294	43.56	177	5000	
Cu	63	3	72	0.298	ppb	0.298	34.80	610	5000	
Zn	66	3	72	1.154	ppb	1.154	20.81	386	5000	
As	75	3	72	0.025	ppb	0.025	916.04	45	2000	
Se	78	2	72	0.043	ppb	0.043	95.21	4	2000	
(Se)	78	3	72	-0.935	ppb	-0.935	-143.81	17	2000	
Sr	88	3	72	0.157	ppb	0.157	12.23	135	4000	
Mo	95	3	115	0.192	ppb	0.192	14.57	125	2000	
Ag	107	3	115	0.011	ppb	0.011	77.46	37	100	
Cd	111	3	115	0.000	ppb	0.000	2758.52	2	2000	
Sn	120	3	115	1.136	ppb	1.136	24.12	1353	2000	
Sb	121	3	115	0.122	ppb	0.122	20.45	130	1000	
Ba	137	3	115	0.161	ppb	0.161	25.25	68	5000	
Tl	205	3	193	0.013	ppb	0.013	11.56	140	2000	
(Pb)	206	3	193	0.040	ppb	0.040	27.92	173	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-80.81	277	100	
Pb	208	3	193	0.023	ppb	0.023	33.91	806	5000	
Th	232	3	193	-0.039	ppb	-0.039	-85.52	4080	2000	
U	238	3	193	0.047	ppb	0.047	25.31	1548	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3740254	0.98	4069295	91.91	60	120	
Sc (IS)	45	3	HMI He	570278	1.70	607729	93.84	60	120	
Ge Internal standard	72	2	HMI H2	2015965	2.92	2193901	91.89	60	120	
Ge Internal standard	72	3	HMI He	647216	0.84	683750	94.66	60	120	
In Internal Standard	115	3	HMI He	2445417	2.18	2614112	93.55	60	120	
Ir (IS)	193	3	HMI He	5007256	0.04	5065146	98.86	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	362SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:44:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	3.170	ppb	3.170	139.63	27735	400000	
Mg	24	3	45	0.060	ppb	0.060	1414.12	304	400000	
Al	27	3	45	-2.200	ppb	-2.200	-26.72	120	400000	
K	39	3	45	-54.261	ppb	-54.261	-39.59	20512	400000	
Ca	40	2	45	0.119	ppb	0.119	378.21	16399	400000	
V	51	3	72	-0.108	ppb	-0.108	-25.54	47	2000	
Cr	52	3	72	-0.945	ppb	-0.945	-0.58	806	5000	
Mn	55	3	72	-0.816	ppb	-0.816	-14.18	187	10000	
Fe	56	2	72	-6.357	ppb	-6.357	-2.47	7987	10000	
Co	59	3	72	-0.001	ppb	-0.001	-460.12	17	2000	
Ni	60	3	72	-0.061	ppb	-0.061	-68.53	95	5000	
Cu	63	3	72	-0.172	ppb	-0.172	-27.64	307	5000	
Zn	66	3	72	-0.721	ppb	-0.721	-35.52	167	5000	
As	75	3	72	-0.242	ppb	-0.242	-35.50	23	2000	
Se	78	2	72	-0.005	ppb	-0.005	-7.66	2	2000	
(Se)	78	3	72	0.778	ppb	0.778	107.71	33	2000	
Sr	88	3	72	-0.035	ppb	-0.035	-8.70	57	4000	
Mo	95	3	115	-0.025	ppb	-0.025	-132.53	33	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-41.53	18	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	-0.456	ppb	-0.456	-6.22	313	2000	
Sb	121	3	115	-0.014	ppb	-0.014	-277.51	43	1000	
Ba	137	3	115	-0.004	ppb	-0.004	-941.35	38	5000	
Tl	205	3	193	0.002	ppb	0.002	334.79	118	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-66.61	113	100	
(Pb)	207	3	193	-0.015	ppb	-0.015	-102.62	327	100	
Pb	208	3	193	-0.019	ppb	-0.019	-30.38	705	5000	
Th	232	3	193	-0.106	ppb	-0.106	-19.52	4304	2000	
U	238	3	193	0.021	ppb	0.021	10.45	1621	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4449713	2.21	4069295	109.35	60	120	
Sc (IS)	45	3	HMI He	676213	2.26	607729	111.27	60	120	
Ge Internal standard	72	2	HMI H2	2526768	1.15	2193901	115.17	60	120	
Ge Internal standard	72	3	HMI He	813690	1.94	683750	119.00	60	120	
In Internal Standard	115	3	HMI He	2958380	1.93	2614112	113.17	60	120	
Ir (IS)	193	3	HMI He	5703626	0.90	5065146	112.61	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	363SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:46:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-3.243	ppb	-3.243	-81.90	26147	400000	
Mg	24	3	45	-2.162	ppb	-2.162	-10.52	147	400000	
Al	27	3	45	-3.013	ppb	-3.013	-69.16	97	400000	
K	39	3	45	-41.207	ppb	-41.207	-78.43	20583	400000	
Ca	40	2	45	-6.533	ppb	-6.533	-6.86	12051	400000	
V	51	3	72	-0.139	ppb	-0.139	-8.50	27	2000	
Cr	52	3	72	-0.995	ppb	-0.995	-9.99	755	5000	
Mn	55	3	72	-0.688	ppb	-0.688	-13.91	240	10000	
Fe	56	2	72	-6.475	ppb	-6.475	-3.76	7556	10000	
Co	59	3	72	0.003	ppb	0.003	479.41	22	2000	
Ni	60	3	72	-0.138	ppb	-0.138	-29.78	67	5000	
Cu	63	3	72	-0.139	ppb	-0.139	-26.01	335	5000	
Zn	66	3	72	-0.737	ppb	-0.737	-27.73	162	5000	
As	75	3	72	-0.212	ppb	-0.212	-23.15	27	2000	
Se	78	2	72	-0.025	ppb	-0.025	-72.36	1	2000	
(Se)	78	3	72	-1.025	ppb	-1.025	-71.98	20	2000	
Sr	88	3	72	-0.025	ppb	-0.025	-80.05	62	4000	
Mo	95	3	115	-0.016	ppb	-0.016	-212.12	37	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-855.18	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	-0.418	ppb	-0.418	-5.29	332	2000	
Sb	121	3	115	-0.016	ppb	-0.016	-154.51	40	1000	
Ba	137	3	115	-0.011	ppb	-0.011	-311.55	35	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-82.19	98	2000	
(Pb)	206	3	193	-0.007	ppb	-0.007	-367.02	133	100	
(Pb)	207	3	193	-0.031	ppb	-0.031	-86.64	300	100	
Pb	208	3	193	-0.016	ppb	-0.016	-61.46	700	5000	
Th	232	3	193	-0.101	ppb	-0.101	-63.60	4202	2000	
U	238	3	193	0.014	ppb	0.014	76.21	1543	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4388458	1.43	4069295	107.84	60	120	
Sc (IS)	45	3	HMI He	657149	0.23	607729	108.13	60	120	
Ge Internal standard	72	2	HMI H2	2451801	1.14	2193901	111.76	60	120	
Ge Internal standard	72	3	HMI He	802340	1.30	683750	117.34	60	120	
In Internal Standard	115	3	HMI He	2840902	0.94	2614112	108.68	60	120	
Ir (IS)	193	3	HMI He	5543595	2.62	5065146	109.45	60	120	

Sample Report

Sample Table

Sample Name	160-48426-a-2-a
Data File Name	364SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:48:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	57311.863	ppb	57311.863	1.71	6603085	400000	
Mg	24	3	45	16629.655	ppb	16629.655	1.08	1010403	400000	
Al	27	3	45	54.136	ppb	54.136	7.09	1345	400000	
K	39	3	45	3156.977	ppb	3156.977	1.09	166598	400000	
Ca	40	2	45	70969.400	ppb	70969.400	1.99	39982016	400000	
V	51	3	72	0.513	ppb	0.513	23.38	385	2000	
Cr	52	3	72	0.488	ppb	0.488	24.19	1686	5000	
Mn	55	3	72	37.078	ppb	37.078	1.42	14605	10000	
Fe	56	2	72	88.943	ppb	88.943	1.47	147279	10000	
Co	59	3	72	0.206	ppb	0.206	10.36	248	2000	
Ni	60	3	72	1.944	ppb	1.944	10.91	696	5000	
Cu	63	3	72	11.434	ppb	11.434	1.89	9975	5000	
Zn	66	3	72	31.810	ppb	31.810	2.45	4885	5000	
As	75	3	72	0.180	ppb	0.180	69.68	65	2000	
Se	78	2	72	0.279	ppb	0.279	55.74	17	2000	
(Se)	78	3	72	2.347	ppb	2.347	172.12	38	2000	
Sr	88	3	72	224.444	ppb	224.444	0.59	113399	4000	
Mo	95	3	115	26.160	ppb	26.160	0.29	12405	2000	
Ag	107	3	115	0.019	ppb	0.019	81.05	50	100	
Cd	111	3	115	0.689	ppb	0.689	23.15	160	2000	
Sn	120	3	115	0.360	ppb	0.360	14.40	860	2000	
Sb	121	3	115	0.283	ppb	0.283	24.96	253	1000	
Ba	137	3	115	71.276	ppb	71.276	2.70	16717	5000	
Tl	205	3	193	0.006	ppb	0.006	104.44	118	2000	
(Pb)	206	3	193	0.255	ppb	0.255	13.81	420	100	
(Pb)	207	3	193	0.282	ppb	0.282	23.33	585	100	
Pb	208	3	193	0.279	ppb	0.279	1.93	1987	5000	
Th	232	3	193	-0.051	ppb	-0.051	-75.62	4065	2000	
U	238	3	193	91.930	ppb	91.930	0.88	441127	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3989933	1.55	4069295	98.05	60	120	
Sc (IS)	45	3	HMI He	595937	0.65	607729	98.06	60	120	
Ge Internal standard	72	2	HMI H2	2186700	2.20	2193901	99.67	60	120	
Ge Internal standard	72	3	HMI He	696382	0.32	683750	101.85	60	120	
In Internal Standard	115	3	HMI He	2567425	1.01	2614112	98.21	60	120	
Ir (IS)	193	3	HMI He	5058091	0.66	5065146	99.86	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7561106
Data File Name	365_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:50:37-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.871	ppb	4.355	2387	50	95.7	90	110	
Na	23	3	45	49713.788	ppb	0.686	5883983	51000	97.5	90	110	
Mg	24	3	45	10522.661	ppb	2.069	656644	11000	95.7	90	110	
Al	27	3	45	910.153	ppb	0.983	20706	1000	91.0	90	110	
K	39	3	45	10405.812	ppb	0.690	515257	11000	94.6	90	110	
Ca	40	2	45	10812.234	ppb	1.411	6059651	11000	98.3	90	110	
V	51	3	72	49.967	ppb	0.699	28468	50	99.9	90	110	
Cr	52	3	72	48.941	ppb	1.710	36181	50	97.9	90	110	
Mn	55	3	72	47.966	ppb	1.686	19184	50	95.9	90	110	
Fe	56	2	72	975.555	ppb	2.079	1434812	1000	97.6	90	110	
Co	59	3	72	48.750	ppb	1.911	56451	50	97.5	90	110	
Ni	60	3	72	49.297	ppb	2.333	15576	50	98.6	90	110	
Cu	63	3	72	48.979	ppb	1.649	42339	50	98.0	90	110	
Zn	66	3	72	48.604	ppb	1.584	7500	50	97.2	90	110	
As	75	3	72	48.462	ppb	4.832	5327	50	96.9	90	110	
Se	78	2	72	47.571	ppb	0.404	2602	50	95.1	90	110	
(Se)	78	3	72	49.319	ppb	11.025	337	50	98.6	90	110	
Sr	88	3	72	98.210	ppb	2.100	50787	100	98.2	90	110	
Mo	95	3	115	46.958	ppb	1.280	22811	50	93.9	90	110	
Ag	107	3	115	47.608	ppb	1.607	75368	50	95.2	90	110	
Cd	111	3	115	48.378	ppb	2.167	11416	50	96.8	90	110	
Sn	120	3	115	46.163	ppb	1.465	34739	50	92.3	90	110	
Sb	121	3	115	47.400	ppb	0.545	35426	50	94.8	90	110	
Ba	137	3	115	47.731	ppb	3.499	11498	50	95.5	90	110	
Tl	205	3	193	47.137	ppb	1.189	164679	50	94.3	90	110	
(Pb)	206	3	193	46.419	ppb	0.446	54510	50	92.8	90	110	
(Pb)	207	3	193	46.821	ppb	2.535	48288	50	93.6	90	110	
Pb	208	3	193	46.956	ppb	1.198	221975	50	93.9	90	110	
Th	232	3	193	47.217	ppb	1.150	226482	50	94.4	90	110	
U	238	3	193	47.228	ppb	1.430	234023	50	94.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3961102	2.26	4069295	97.34	60	120	
Sc (IS)	45	3	HMI He	611867	1.30	607729	100.68	60	120	
Ge Internal standard	72	2	HMI H2	2159358	2.30	2193901	98.43	60	120	
Ge Internal standard	72	3	HMI He	712369	1.97	683750	104.19	60	120	
In Internal Standard	115	3	HMI He	2634043	0.76	2614112	100.76	60	120	
Ir (IS)	193	3	HMI He	5208709	1.24	5065146	102.83	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7561103
Data File Name	366_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012423.b
Acq Date Time	2023-01-25T11:52:35-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	334CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	21.435	ppb	10.1	27581	25	
Mg	24	3	45	-0.652	ppb	-57.7	234	25	
Al	27	3	45	39.297	ppb	5.4	1058	15	>RL
K	39	3	45	-18.744	ppb	-225.9	20459	50	
V	51	3	72	0.019	ppb	217.7	117	1	
Cr	52	3	72	-0.224	ppb	-19.5	1254	1	
Mn	55	3	72	-0.445	ppb	-14.5	317	0.5	
Co	59	3	72	0.023	ppb	52.6	43	0.5	
Ni	60	3	72	-0.031	ppb	-335.6	95	1	
Cu	63	3	72	-0.038	ppb	-55.2	395	1	
Zn	66	3	72	0.897	ppb	15.1	398	5	
As	75	3	72	-0.103	ppb	-221.1	37	1	
Se	78	2	72	0.024	ppb	87.0	3	1	
(Se)	78	3	72	-0.762	ppb	-102.9	20	1	
Sr	88	3	72	0.020	ppb	257.7	80	0.5	
Mo	95	3	115	0.033	ppb	71.1	58	0.5	
Ag	107	3	115	0.004	ppb	281.5	28	1	
Cd	111	3	115	0.021	ppb	116.7	7	0.5	
Sn	120	3	115	0.753	ppb	11.8	1183	1	
Sb	121	3	115	0.030	ppb	43.8	72	0.6	
Ba	137	3	115	0.019	ppb	495.0	40	0.5	
Tl	205	3	193	0.009	ppb	88.5	132	0.1	
(Pb)	206	3	193	0.021	ppb	142.2	158	1	
(Pb)	207	3	193	-0.032	ppb	-15.3	282	1	
Pb	208	3	193	0.003	ppb	622.5	750	0.5	
Th	232	3	193	0.427	ppb	29.2	6468	1	
U	238	3	193	0.023	ppb	113.5	1499	0.5	

QC ISTD Table

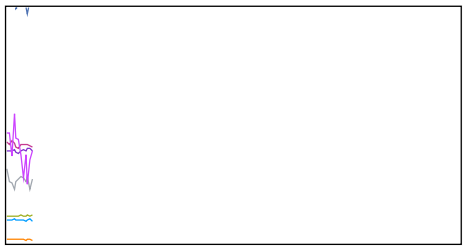
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3989362	1.44	4069295	98.04	60	120	
Sc (IS)	45	3	HMI He	619178	1.50	607729	101.88	60	120	
Ge Internal standard	72	2	HMI H2	2197837	0.42	2193901	100.18	60	120	
Ge Internal standard	72	3	HMI He	733255	2.57	683750	107.24	60	120	
In Internal Standard	115	3	HMI He	2657219	1.01	2614112	101.65	60	120	
Ir (IS)	193	3	HMI He	5230889	0.92	5065146	103.27	60	120	

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/27/2023 5:26:20 PM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012723.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	20000	4964	4902	1.947
2	59	50000	5038	4883	2 192
3	63	20000	401	425	4 168
4	70	1000	221	221	9.736
5	80	2000000	554551	557441	0.359
6	89	20000	7729	7587	1.269
7	115	20000	7808	7831	1.272
8	118	10000	116	124	6 310
9	137	10000	920	956	2.654
10	140	20000	8177	8326	2.238
11	205	50000	5764	5678	1.708
12	6	5000	5074	5061	1.673
13	70/140	10	2.703 %	2.659 %	9.084
14	156/140	1	0 391 %	0 395 %	20.997

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-50 V
Extract 2	175 0 V	Q1 Exit		Def ect	11 8 V
Omega Bias	90 V	Cel Focus		P ate Bias	35 V
Omega Lens	7.7 V	Cel Entrance	30 V		

Cell Parameters

Use Gas	No	3rd Gas F ow		Axia Acce eration	
He F ow	0.0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0 0 mL/min	OctP Bias	8 0 V	Energy Discrimination	5 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	-3 0 V
Mass Offset	123	Axis Offset	0.06		

Torch

Current Signal

Torch H	0 2 mm	Torch V	0 2 mm		

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

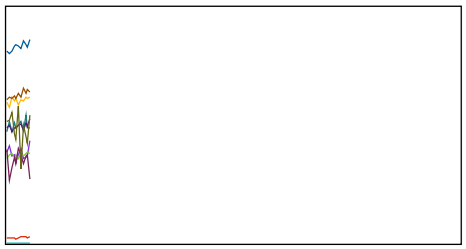
Name	Value	Unit
F/BK Press	2.54E+2	Pa
Ana yzer Press	8 41E 5	Pa
Reflected Power	1	W
Forward Power	1600	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/27/2023 5:27:11 PM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012723.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	200	161	135	10 435
2	9	500	217	190	7 015
3	59	1000	847	804	3 867
4	63	500	11	11	25 089
5	70	200	71	85	13 140
6	78	20	0	0	0.000
7	89	10000	6181	6051	2.388
8	115	20000	7557	7456	2 626
9	118	5000	116	105	9.904
10	137	2000	981	993	4.407
11	140	10000	5251	4949	3.140
12	205	10000	6399	6285	2.535
13	238	10000	8620	8332	2.181
14	70/140	5	1 352 %	1 728 %	13.165
15	156/140	2	1.085 %	0.965 %	15 436

Integration Time [sec] 0 1

Tune Parameters

Plasma Parameters

P asma Mode		Nebulizer Gas	0.64 L/min	Dilution Gas	0.26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1 40 V	Nebulizer Pump	0 10 rps	P asma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance		Cel Exit	60 V
Extract 2	175 0 V	Q1 Exit		Def ect	1 4 V
Omega Bias	90 V	Cel Focus		P ate Bias	60 V
Omega Lens	8 2 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	0 0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	5 0 mL/min	OctP Bias	18.0 V	Energy Discrimination	3 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Current Signal

Torch

Torch H	0 2 mm	Torch V	-0 2 mm		

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

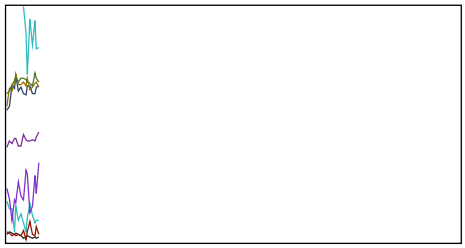
Name	Value	Unit
F/BK Press	2.61E+2	Pa
Ana yzer Press	4.80E 4	Pa
Reflected Power	1	W
Forward Power	1600	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/27/2023 5:27:53 PM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012723.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	53	100	9	11	37 444
2	59	5000	2427	2401	6 393
3	66	500	25	31	23.624
4	70	100	109	146	25 722
5	78	20	4	1	99 363
6	115	5000	3302	3201	5.718
7	118	1000	20	25	34 183
8	137	1000	464	431	4 146
9	140	10000	6595	6628	4.474
10	205	10000	6802	6792	3.360
11	51/59	5	0.165 %	0.184 %	49 384
12	70/140	2	1.653 %	2.201 %	26 015
13	156/140	1	0.334 %	0.211 %	32 661

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas	---	Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-60 V
Extract 2	175 0 V	Q1 Exit		Def ect	1 0 V
Omega Bias	90 V	Cel Focus		P ate Bias	55 V
Omega Lens	8.4 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	4.3 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0.0 mL/min	OctP Bias	18 0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0.06		

Torch

Torch H	0.2 mm	Torch V	0.2 mm		

Current Signal

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

Name	Value	Unit
F/BK Press	2 55E+2	Pa
Ana yzer Press	2 29E-4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012723.b
Acq. Date-Time	1/27/2023 5:36:04 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

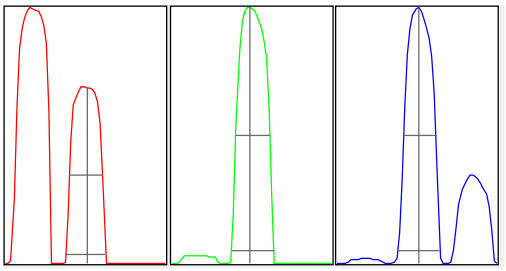
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		4861	48610 84	2.625	5 000	
89		7095	70952 41	1.171	5 000	
205		5497	54967 80	1.652	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	4692	4779	4870	4973	4992
89	7123	7155	7183	7004	7011
205	5406	5487	5432	5522	5637

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	8011.17	7.05	6 90 7 10	
89	11840.17	89.00	88 90 89.10	
205	9514 04	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.781	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 7 V	Def ect	11 8 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	90 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

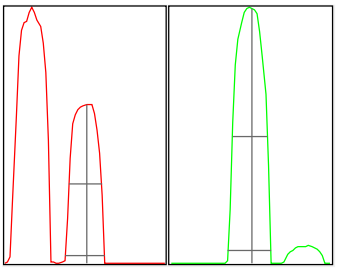
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		132	1318.70	3 731	5.000	
9		192	1917 99	2.199	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	138	128	134	133	126
9	187	197	188	195	191

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	223 62	7 05	6.90 - 7.10	
9	313 44	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.738	0.900	
9	0.64	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 2 V	Def ect	-1 4 V
Extract 2	-175 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		562	5620.37	6 695	5.000	Fai
25		83	832 54	9 336	5.000	Fai
26		104	1041 76	5.659	5 000	Fai
59		1452	14515 15	1.441	5 000	
103		4045	40454.27	1 356	5.000	
115		3603	36031.05	4 734	5.000	
205		4383	43825.04	3 878	5.000	
206		1300	13002 85	1.346	5 000	
207		1130	11298 42	0.562	5 000	

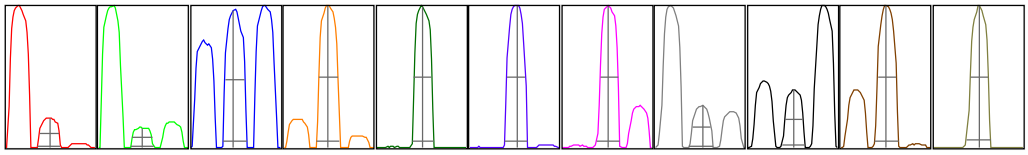
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		2730	27302.27	1 459	5.000	
238		6229	62288.33	1 534	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	516	546	551	584	614
25	78	79	77	89	94
26	97	104	100	107	113
59	1456	1437	1429	1452	1483
103	4078	3988	3991	4057	4113
115	3447	3452	3560	3720	3835
205	4212	4245	4356	4475	4624
206	1280	1288	1300	1324	1310
207	1132	1119	1133	1129	1136
208	2696	2735	2721	2703	2796
238	6096	6200	6237	6249	6362

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	916.75	24.00	23 90 24.10	
25	128.41	25.00	24 90 25.10	
26	167 76	25 95	25.90 - 26 10	
59	2349 89	59 00	58.90 - 59 10	
103	7045.60	103.05	102.90 103.10	
115	6084.74	115.10	114.90 115.10	
205	7498.57	205.05	204.90 205.10	
206	2217 05	206 10	205 90 - 206 10	
207	1905 99	207 05	206 90 - 207 10	
208	4690.39	208.05	207.90 208.10	
238	10733.54	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 767	0 900	
25	0.66	0.782	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.786	0.900	
59	0.65	0.781	0.900	
103	0 59	0 737	0 900	
115	0 61	0 740	0 900	
205	0.60	0.776	0.900	
206	0.61	0.775	0.900	
207	0.61	0.785	0.900	
208	0 60	0 782	0 900	
238	0 61	0 817	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.4 V	Def ect	1.0 V
Extract 2	175.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012723.b
Acq. Date-Time	1/27/2023 5:47:04 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

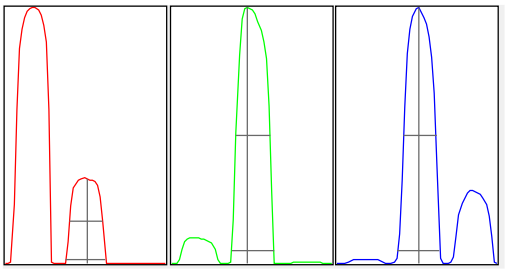
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		5221	52213 05	0.729	5 000	
89		6916	69158 20	0.965	5 000	
205		6646	66464 99	1.084	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	5215	5249	5158	5234	5251
89	6877	6845	6886	6968	7003
205	6554	6669	6743	6665	6601

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	8640.87	7.05	6 90 7 10	
89	11603.52	88.95	88 90 89.10	
205	11500 63	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.778	0.900	
205	0.60	0.780	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 7 V	Def ect	11 8 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	90 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

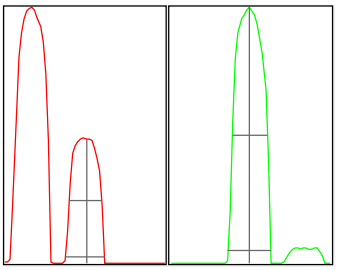
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		136	1360.50	3 415	5.000	
9		185	1852 48	1.198	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	138	135	129	136	142
9	188	182	184	185	187

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	229 77	7 05	6.90 - 7.10	
9	304 93	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.737	0.900	
9	0.64	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 2 V	Def ect	-1 4 V
Extract 2	-175 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		713	7132.18	1 744	5.000	
25		105	1047.16	2 742	5.000	
26		132	1321 19	3.867	5 000	
59		1481	14810 11	0.295	5 000	
103		4105	41048.69	0 570	5.000	
115		4293	42928.87	1 742	5.000	
205		4905	49051.36	1 298	5.000	
206		1321	13209 52	0.635	5 000	
207		1149	11489 70	0.984	5 000	

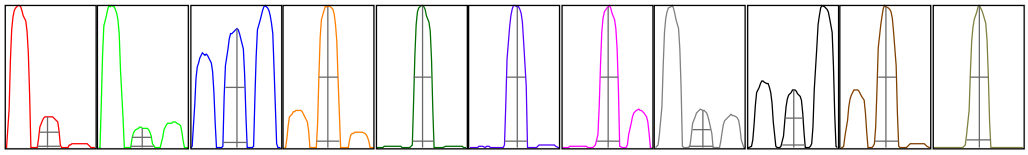
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		2791	27910.24	1 069	5.000	
238		6470	64696.12	0 689	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	697	706	728	713	723
25	105	100	104	108	107
26	124	130	135	134	137
59	1486	1484	1483	1478	1475
103	4075	4120	4133	4089	4106
115	4218	4225	4284	4353	4385
205	4816	4871	4910	4965	4964
206	1308	1330	1325	1321	1321
207	1129	1156	1151	1152	1156
208	2751	2810	2825	2798	2771
238	6429	6426	6534	6473	6485

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	1166.13	23.95	23 90 24.10	
25	164.11	25.00	24 90 25.10	
26	212 27	26 05	25.90 - 26 10	
59	2370 53	59 00	58.90 - 59 10	
103	7186.54	103.05	102.90 103.10	
115	7188.61	115.10	114.90 115.10	
205	8443.23	205.05	204.90 205.10	
206	2222 50	206 10	205 90 - 206 10	
207	1974 99	207 05	206 90 - 207 10	
208	4771.89	208.05	207.90 208.10	
238	11145.15	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 764	0 900	
25	0.66	0.783	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.786	0.900	
59	0.65	0.781	0.900	
103	0 59	0 736	0 900	
115	0 61	0 739	0 900	
205	0.60	0.775	0.900	
206	0.61	0.771	0.900	
207	0.61	0.784	0.900	
208	0 60	0 781	0 900	
238	0 61	0 814	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.3 V	Def ect	1.2 V
Extract 2	180.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	85 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
6		0.077740	☑
9		0.085585	☑
23		0.087008	☑
24		0.089795	☑
27		0.092436	☑
39		0.095582	☑
45		0.096086	☑
48		0.097708	☑
51		0.098706	☑
52		0.099063	☑
55		0.099486	☑
59		0.101185	☑
60		0.102622	☑
63		0.103847	☑
66		0.103371	☑
72		0.103435	☑
75		0.102943	☑
88		0.102697	☑
98		0.103306	☑
102		0.103545	☑
106		0.105218	☑
114		0.103609	☑
115		0.103132	☑

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
118		0.105665	☑
121		0.104774	☑
138		0.105057	☑
175		0.111800	☑
193		0.106403	☑
205		0.112662	☑
208		0.113004	☑
209		0.104878	☑
232		0.109157	☑
238		0.113202	☑

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7564185
Data File Name	001_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:34:11-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:36:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:40:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:42:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:44:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:46:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	007SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:50:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	008SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:52:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	009SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:54:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	010SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:56:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	011SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T19:58:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	012SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:00:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	013SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:02:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	014SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:04:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	icis-7567575
Data File Name	015CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Method	
Acq Date Time	2023-01-27T20:06:01-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	22724	0.01
Mg	24	45	3	HMI He	127	19.02
Al	27	45	3	HMI He	117	25.78
K	39	45	3	HMI He	16032	0.06
Ca	40	45	2	HMI H2	11884	0.04
V	51	72	3	HMI He	481	2.07
Cr	52	72	3	HMI He	1531	0.18
Mn	55	72	3	HMI He	188	7.24
Fe	56	72	2	HMI H2	8328	0.05
Co	59	72	3	HMI He	27	40.63
Ni	60	72	3	HMI He	128	24.55
Cu	63	72	3	HMI He	262	6.63
Zn	66	72	3	HMI He	223	9.10
As	75	72	3	HMI He	30	166.76
Se	78	72	2	HMI H2	3	2078.46
(Se)	78	72	3	HMI He	12	561.05
Sr	88	72	3	HMI He	37	175.80
Mo	95	115	3	HMI He	85	36.64
Ag	107	115	3	HMI He	23	140.40
Cd	111	115	3	HMI He	5	2000.00
Sn	120	115	3	HMI He	976	0.89
Sb	121	115	3	HMI He	82	8.67
Ba	137	115	3	HMI He	53	36.60
Tl	205	193	3	HMI He	686	1.52
(Pb)	206	193	3	HMI He	222	9.18
(Pb)	207	193	3	HMI He	440	1.37
Pb	208	193	3	HMI He	1188	0.48
Th	232	193	3	HMI He	4340	0.06
U	238	193	3	HMI He	1579	0.64

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4160703	1.18
Sc (IS)	45	3	HMI He	620569	1.48
Ge Internal standard	72	2	HMI H2	2172040	1.38
Ge Internal standard	72	3	HMI He	684400	1.23
In Internal Standard	115	3	HMI He	2522161	1.91
Ir (IS)	193	3	HMI He	5572879	2.23

Calibration Standard Report

Sample Table

Sample Name	ic-7567579
Data File Name	016CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
method	
Acq Date Time	2023-01-27T20:07:53-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	5196.15
Na	23	45	3	HMI He	11949053	0.00
Mg	24	45	3	HMI He	1249551	0.00
Al	27	45	3	HMI He	460	0.82
K	39	45	3	HMI He	921431	0.00
V	51	72	3	HMI He	368	3.78
Cr	52	72	3	HMI He	1504	0.31
Mn	55	72	3	HMI He	188	11.40
Co	59	72	3	HMI He	53	56.54
Ni	60	72	3	HMI He	170	0.00
Cu	63	72	3	HMI He	277	0.75
Zn	66	72	3	HMI He	342	1.08
As	75	72	3	HMI He	53	61.78
Se	78	72	2	HMI H2	4	1250.00
(Se)	78	72	3	HMI He	12	211.78
Sr	88	72	3	HMI He	480	1.30
Mo	95	115	3	HMI He	88	43.63
Ag	107	115	3	HMI He	52	47.16
Cd	111	115	3	HMI He	3	5196.15
Sn	120	115	3	HMI He	988	0.24
Sb	121	115	3	HMI He	98	15.80
Ba	137	115	3	HMI He	108	24.61
Tl	205	193	3	HMI He	465	1.60
(Pb)	206	193	3	HMI He	275	3.31
(Pb)	207	193	3	HMI He	455	1.47
Pb	208	193	3	HMI He	1331	0.11
Th	232	193	3	HMI He	4662	0.10
U	238	193	3	HMI He	1616	0.44

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4237273	1.99	4160703	101.84	60	120	
Sc (IS)	45	3	HMI He	628845	1.20	620569	101.33	60	120	
Ge Internal standard	72	2	HMI H2	2110761	1.64	2172040	97.18	60	120	
Ge Internal standard	72	3	HMI He	681351	1.47	684400	99.55	60	120	
In Internal Standard	115	3	HMI He	2534033	0.29	2522161	100.47	60	120	
Ir (IS)	193	3	HMI He	5734233	0.73	5572879	102.90	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7567578
Data File Name	017CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
method	
Acq Date Time	2023-01-27T20:09:44-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5358	0.07
Na	23	45	3	HMI He	266308	0.00
Mg	24	45	3	HMI He	124060	0.00
Al	27	45	3	HMI He	44715	0.01
K	39	45	3	HMI He	108400	0.00
V	51	72	3	HMI He	60962	0.00
Cr	52	72	3	HMI He	79389	0.00
Mn	55	72	3	HMI He	41687	0.00
Co	59	72	3	HMI He	126763	0.00
Ni	60	72	3	HMI He	35058	0.01
Cu	63	72	3	HMI He	95093	0.00
Zn	66	72	3	HMI He	16790	0.02
As	75	72	3	HMI He	11607	0.01
Se	78	72	2	HMI H2	5618	0.01
(Se)	78	72	3	HMI He	720	0.97
Sr	88	72	3	HMI He	107015	0.00
Mo	95	115	3	HMI He	51433	0.00
Ag	107	115	3	HMI He	167418	0.00
Cd	111	115	3	HMI He	24876	0.00
Sn	120	115	3	HMI He	74947	0.00
Sb	121	115	3	HMI He	75180	0.00
Ba	137	115	3	HMI He	23881	0.01
Tl	205	193	3	HMI He	369480	0.00
(Pb)	206	193	3	HMI He	122051	0.00
(Pb)	207	193	3	HMI He	108016	0.00
Pb	208	193	3	HMI He	492794	0.00
Th	232	193	3	HMI He	512800	0.00
U	238	193	3	HMI He	532942	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4177507	2.14	4160703	100.40	60	120	
Sc (IS)	45	3	HMI He	635850	1.26	620569	102.46	60	120	
Ge Internal standard	72	2	HMI H2	2254846	1.87	2172040	103.81	60	120	
Ge Internal standard	72	3	HMI He	742917	2.03	684400	108.55	60	120	
In Internal Standard	115	3	HMI He	2569082	0.08	2522161	101.86	60	120	
Ir (IS)	193	3	HMI He	5650659	2.20	5572879	101.40	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7567581
Data File Name	018_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:11:39-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.108	ppb	5.051	2129	40	100.3	90	110	
Na	23	3	45	12759.425	ppb	1.225	1555082	12800	99.7	90	110	
Mg	24	3	45	4696.751	ppb	0.746	295479	4800	97.8	90	110	
Al	27	3	45	799.498	ppb	2.146	17873	800	99.9	90	110	
K	39	3	45	4766.280	ppb	0.615	233606	4800	99.3	90	110	
Ca	40	2	45	5001.718	ppb	1.496	2753172	4800	104.2	90	110	
V	51	3	72	42.457	ppb	3.516	24861	40	106.1	90	110	
Cr	52	3	72	42.538	ppb	1.931	32971	40	106.3	90	110	
Mn	55	3	72	41.633	ppb	1.447	16597	40	104.1	90	110	
Fe	56	2	72	849.890	ppb	1.150	1229047	800	106.2	90	110	
Co	59	3	72	41.191	ppb	0.192	49602	40	103.0	90	110	
Ni	60	3	72	41.752	ppb	3.351	13978	40	104.4	90	110	
Cu	63	3	72	42.235	ppb	1.203	38297	40	105.6	90	110	
Zn	66	3	72	83.333	ppb	1.359	13333	80	104.2	90	110	
As	75	3	72	41.285	ppb	3.619	4569	40	103.2	90	110	
Se	78	2	72	42.445	ppb	4.222	2296	40	106.1	90	110	
(Se)	78	3	72	37.166	ppb	13.366	262	40	92.9	90	110	
Sr	88	3	72	127.200	ppb	1.538	64644	120	106.0	90	110	
Mo	95	3	115	41.636	ppb	3.176	21044	40	104.1	90	110	
Ag	107	3	115	84.022	ppb	1.907	137896	80	105.0	90	110	
Cd	111	3	115	41.109	ppb	2.051	10027	40	102.8	90	110	
Sn	120	3	115	40.618	ppb	5.018	30411	40	101.5	90	110	
Sb	121	3	115	41.183	ppb	1.873	30399	40	103.0	90	110	
Ba	137	3	115	41.330	ppb	2.854	9705	40	103.3	90	110	
Tl	205	3	193	39.547	ppb	1.372	149107	40	98.9	90	110	
(Pb)	206	3	193	40.586	ppb	2.758	50519	40	101.5	90	110	
(Pb)	207	3	193	39.961	ppb	0.913	44192	40	99.9	90	110	
Pb	208	3	193	40.286	ppb	1.359	202686	40	100.7	90	110	
Th	232	3	193	79.978	ppb	0.635	418124	80	100.0	90	110	
U	238	3	193	40.977	ppb	1.234	223154	40	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4138774	2.83	4160703	99.47	60	120	
Sc (IS)	45	3	HMI He	633108	0.77	620569	102.02	60	120	
Ge Internal standard	72	2	HMI H2	2168707	1.04	2172040	99.85	60	120	
Ge Internal standard	72	3	HMI He	705393	1.40	684400	103.07	60	120	
In Internal Standard	115	3	HMI He	2519004	1.96	2522161	99.87	60	120	
Ir (IS)	193	3	HMI He	5747557	1.27	5572879	103.13	60	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	icb-7567575
Data File Name	019_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:13:39-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	0.063	ppb	173.2	3	0.5	
Na	23	3	24.109	ppb	8.0	26187	25	
Mg	24	3	4.655	ppb	19.7	424	25	
Al	27	3	-1.031	ppb	-87.1	97	15	
K	39	3	-15.964	ppb	-164.4	15711	50	
V	51	3	-0.074	ppb	-89.6	453	1	
Cr	52	3	-0.074	ppb	-175.0	1519	1	
Mn	55	3	-0.026	ppb	-209.8	183	0.5	
Co	59	3	0.024	ppb	26.5	57	0.5	
Ni	60	3	0.226	ppb	43.5	207	1	
Cu	63	3	0.027	ppb	182.1	293	1	
Zn	66	3	-0.358	ppb	-34.0	173	5	
As	75	3	0.144	ppb	48.8	47	1	
Se	78	2	0.037	ppb	59.2	5	1	
(Se)	78	3	-0.552	ppb	-206.9	8	1	
Sr	88	3	0.031	ppb	95.3	53	0.5	
Mo	95	3	0.029	ppb	198.8	102	0.5	
Ag	107	3	0.037	ppb	31.3	85	1	
Cd	111	3	-0.013	ppb	-86.7	2	0.5	
Sn	120	3	-0.034	ppb	-346.5	965	1	
Sb	121	3	0.081	ppb	56.3	143	0.6	
Ba	137	3	-0.037	ppb	-176.5	45	0.5	
Tl	205	3	-0.035	ppb	-29.0	576	0.1	
(Pb)	206	3	0.034	ppb	47.0	272	1	
(Pb)	207	3	-0.044	ppb	-51.4	406	1	
Pb	208	3	-0.001	ppb	-2463.3	1224	0.5	
Th	232	3	1.498	ppb	20.5	12285	1	>RL
U	238	3	0.027	ppb	86.9	1778	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4107759	1.06	4160703	98.73	60	120	
Sc (IS)	45	3	HMI He	635654	0.81	620569	102.43	60	120	
Ge Internal standard	72	2	HMI H2	2169443	1.55	2172040	99.88	60	120	
Ge Internal standard	72	3	HMI He	703962	0.91	684400	102.86	60	120	
In Internal Standard	115	3	HMI He	2559139	1.53	2522161	101.47	60	120	
Ir (IS)	193	3	HMI He	5766922	2.76	5572879	103.48	60	120	

CRI Report

Sample Table

Sample Name	cri-7567582
Data File Name	020LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:15:31-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.998	ppb	24.267	53	1	99.8	80	120	
Na	23	3	45	58.834	ppb	14.062	30517	50	117.7	80	120	
Mg	24	3	45	53.014	ppb	10.972	3494	50	106.0	80	120	
Al	27	3	45	50.765	ppb	13.039	1258	50	101.5	80	120	
K	39	3	45	78.823	ppb	35.545	20141	100	78.8	80	120	>+/-30%
Ca	40	2	45	60.897	ppb	4.176	45717	50	121.8	80	120	>+/-30%
V	51	3	72	5.196	ppb	3.230	3479	5	103.9	80	120	
Cr	52	3	72	1.998	ppb	6.574	3052	2	99.9	80	120	
Mn	55	3	72	1.055	ppb	11.981	610	1	105.5	80	120	
Fe	56	2	72	53.643	ppb	1.812	86786	50	107.3	80	120	
Co	59	3	72	1.057	ppb	15.013	1299	1	105.7	80	120	
Ni	60	3	72	2.185	ppb	6.470	856	2	109.2	80	120	
Cu	63	3	72	2.098	ppb	9.515	2157	2	104.9	80	120	
Zn	66	3	72	11.054	ppb	1.307	1967	10	110.5	80	120	
As	75	3	72	5.721	ppb	6.531	660	5	114.4	80	120	
Se	78	2	72	5.767	ppb	5.399	320	5	115.3	80	120	
Sr	88	3	72	1.117	ppb	22.747	605	1	111.7	80	120	
Mo	95	3	115	1.962	ppb	0.225	1098	2	98.1	80	120	
Ag	107	3	115	1.013	ppb	5.204	1724	1	101.3	80	120	
Cd	111	3	115	0.962	ppb	16.619	245	1	96.2	80	120	
Sn	120	3	115	9.670	ppb	0.618	8170	10	96.7	80	120	
Sb	121	3	115	2.198	ppb	6.272	1739	2	109.9	80	120	
Ba	137	3	115	1.125	ppb	0.625	323	1	112.5	80	120	
Tl	205	3	193	0.947	ppb	5.475	4299	1	94.7	80	120	
(Pb)	206	3	193	0.963	ppb	2.003	1434	1	96.3	80	120	
(Pb)	207	3	193	0.911	ppb	5.322	1463	1	91.1	80	120	
Pb	208	3	193	0.990	ppb	6.574	6228	1	99.0	80	120	
Th	232	3	193	2.082	ppb	3.445	15379	2	104.1	80	120	
U	238	3	193	1.063	ppb	3.596	7439	1	106.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4187084	2.35	4160703	100.63	60	120	
Sc (IS)	45	3	HMI He	638737	0.47	620569	102.93	60	120	
Ge Internal standard	72	2	HMI H2	2205013	1.91	2172040	101.52	60	120	
Ge Internal standard	72	3	HMI He	705201	0.39	684400	103.04	60	120	
In Internal Standard	115	3	HMI He	2577152	1.32	2522161	102.18	60	120	
Ir (IS)	193	3	HMI He	5798004	1.14	5572879	104.04	60	120	

CRI Report

Sample Table

Sample Name	cri-
Data File Name	021LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:22:45-07:00
Sample Type	LLICV
Dilution	1
Comment	K-110/Ca-100
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.063	ppb	173.205	3	1	6.3	80	120	>+/-30%
Na	23	3	45	5.651	ppb	50.874	23613	50	11.3	80	120	>+/-30%
Mg	24	3	45	1.589	ppb	14.148	227	50	3.2	80	120	>+/-30%
Al	27	3	45	-0.203	ppb	-1649.664	113	50	-0.4	80	120	>+/-30%
K	39	3	45	103.587	ppb	27.042	20863	100	103.6	80	120	
Ca	40	2	45	181.650	ppb	0.955	113035	50	363.3	80	120	>+/-30%
V	51	3	72	-0.135	ppb	-47.798	415	5	-2.7	80	120	>+/-30%
Cr	52	3	72	-0.187	ppb	-93.043	1424	2	-9.4	80	120	>+/-30%
Mn	55	3	72	-0.031	ppb	-156.244	180	1	-3.1	80	120	>+/-30%
Fe	56	2	72	0.223	ppb	92.547	8708	50	0.4	80	120	>+/-30%
Co	59	3	72	0.002	ppb	180.497	30	1	0.2	80	120	>+/-30%
Ni	60	3	72	0.192	ppb	81.865	193	2	9.6	80	120	>+/-30%
Cu	63	3	72	0.011	ppb	245.343	277	2	0.5	80	120	>+/-30%
Zn	66	3	72	-0.339	ppb	-71.357	175	10	-3.4	80	120	>+/-30%
As	75	3	72	0.210	ppb	90.218	53	5	4.2	80	120	>+/-30%
Se	78	2	72	-0.037	ppb	-57.517	1	5	-0.7	80	120	>+/-30%
Sr	88	3	72	-0.022	ppb	-114.080	27	1	-2.2	80	120	>+/-30%
Mo	95	3	115	-0.045	ppb	-78.285	63	2	-2.2	80	120	>+/-30%
Ag	107	3	115	0.004	ppb	272.726	30	1	0.4	80	120	>+/-30%
Cd	111	3	115	-0.013	ppb	-88.378	2	1	-1.3	80	120	>+/-30%
Sn	120	3	115	-0.122	ppb	-150.372	898	10	-1.2	80	120	>+/-30%
Sb	121	3	115	0.003	ppb	574.658	85	2	0.2	80	120	>+/-30%
Ba	137	3	115	0.040	ppb	116.461	63	1	4.0	80	120	>+/-30%
Tl	205	3	193	-0.070	ppb	-9.943	440	1	-7.0	80	120	>+/-30%
(Pb)	206	3	193	0.002	ppb	2120.568	228	1	0.2	80	120	>+/-30%
(Pb)	207	3	193	-0.072	ppb	-38.301	370	1	-7.2	80	120	>+/-30%
Pb	208	3	193	-0.027	ppb	-48.798	1076	1	-2.7	80	120	>+/-30%
Th	232	3	193	0.093	ppb	35.921	4895	2	4.6	80	120	>+/-30%
U	238	3	193	0.005	ppb	265.943	1638	1	0.5	80	120	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4198998	0.40	4160703	100.92	60	120	
Sc (IS)	45	3	HMI He	626406	0.80	620569	100.94	60	120	
Ge Internal standard	72	2	HMI H2	2186739	1.26	2172040	100.68	60	120	
Ge Internal standard	72	3	HMI He	697945	0.85	684400	101.98	60	120	
In Internal Standard	115	3	HMI He	2549689	1.36	2522161	101.09	60	120	
Ir (IS)	193	3	HMI He	5676089	1.59	5572879	101.85	60	120	

CRI Report

Sample Table

Sample Name	cri-
Data File Name	022LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:31:06-07:00
Sample Type	LLICV
Dilution	1
Comment	Ca-100
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.031	ppb	173.205	2	1	3.1	80	120	>+/-30%
Na	23	3	45	-0.117	ppb	-1265.837	23092	50	-0.2	80	120	>+/-30%
Mg	24	3	45	0.605	ppb	132.271	167	50	1.2	80	120	>+/-30%
Al	27	3	45	-0.538	ppb	-492.855	107	50	-1.1	80	120	>+/-30%
K	39	3	45	-20.574	ppb	-159.453	15381	100	-20.6	80	120	>+/-30%
Ca	40	2	45	103.687	ppb	1.118	68730	50	207.4	80	120	>+/-30%
V	51	3	72	-0.181	ppb	-57.901	395	5	-3.6	80	120	>+/-30%
Cr	52	3	72	-0.155	ppb	-94.868	1471	2	-7.8	80	120	>+/-30%
Mn	55	3	72	-0.110	ppb	-59.185	152	1	-11.0	80	120	>+/-30%
Fe	56	2	72	0.115	ppb	272.054	8548	50	0.2	80	120	>+/-30%
Co	59	3	72	0.009	ppb	167.760	38	1	0.9	80	120	>+/-30%
Ni	60	3	72	0.126	ppb	25.921	175	2	6.3	80	120	>+/-30%
Cu	63	3	72	-0.024	ppb	-58.806	250	2	-1.2	80	120	>+/-30%
Zn	66	3	72	-0.227	ppb	-107.100	195	10	-2.3	80	120	>+/-30%
As	75	3	72	0.097	ppb	157.694	42	5	1.9	80	120	>+/-30%
Se	78	2	72	-0.037	ppb	-111.639	1	5	-0.7	80	120	>+/-30%
Sr	88	3	72	0.004	ppb	693.831	40	1	0.4	80	120	>+/-30%
Mo	95	3	115	-0.054	ppb	-61.195	58	2	-2.7	80	120	>+/-30%
Ag	107	3	115	0.000	ppb	-5782.723	23	1	0.0	80	120	>+/-30%
Cd	111	3	115	-0.013	ppb	-91.375	2	1	-1.3	80	120	>+/-30%
Sn	120	3	115	-0.223	ppb	-27.125	816	10	-2.2	80	120	>+/-30%
Sb	121	3	115	-0.018	ppb	-63.415	68	2	-0.9	80	120	>+/-30%
Ba	137	3	115	-0.086	ppb	-15.605	33	1	-8.6	80	120	>+/-30%
Tl	205	3	193	-0.062	ppb	-31.798	466	1	-6.2	80	120	>+/-30%
(Pb)	206	3	193	-0.004	ppb	-257.341	220	1	-0.4	80	120	>+/-30%
(Pb)	207	3	193	-0.066	ppb	-24.941	375	1	-6.6	80	120	>+/-30%
Pb	208	3	193	-0.043	ppb	-15.582	991	1	-4.3	80	120	>+/-30%
Th	232	3	193	0.030	ppb	65.280	4557	2	1.5	80	120	>+/-30%
U	238	3	193	-0.013	ppb	-85.460	1533	1	-1.3	80	120	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4142500	0.57	4160703	99.56	60	120	
Sc (IS)	45	3	HMI He	630888	0.40	620569	101.66	60	120	
Ge Internal standard	72	2	HMI H2	2186153	1.60	2172040	100.65	60	120	
Ge Internal standard	72	3	HMI He	710025	3.57	684400	103.74	60	120	
In Internal Standard	115	3	HMI He	2531962	2.45	2522161	100.39	60	120	
Ir (IS)	193	3	HMI He	5653272	0.11	5572879	101.44	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	icsa-7567583
Data File Name	023ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:33:11-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	95397.262	ppb	1.3	11657451	100000	
Mg	24	3	45	94649.003	ppb	1.0	6046033	100000	
Al	27	3	45	96842.419	ppb	0.8	2184668	100000	
K	39	3	45	95631.692	ppb	1.2	4443794	100000	
Ca	40	2	45	100214.116	ppb	1.1	55795438	100000	>RL or LOD
V	51	3	72	-0.513	ppb	-4.2	217	1	
Cr	52	3	72	0.964	ppb	14.1	2447	1	
Mn	55	3	72	0.406	ppb	16.6	378	0.95	
Fe	56	2	72	95572.474	ppb	1.2	143697379	100000	
Co	59	3	72	0.195	ppb	8.5	280	0.5	
Ni	60	3	72	0.390	ppb	21.5	280	1	
Cu	63	3	72	0.164	ppb	23.2	446	1	
Zn	66	3	72	1.192	ppb	60.3	445	1	>RL or LOD
As	75	3	72	0.138	ppb	178.7	50	1	
Se	78	2	72	-0.026	ppb	-132.8	2	1	
(Se)	78	3	72	0.524	ppb	80.8	17	1	
Sr	88	3	72	0.817	ppb	3.6	485	1	
Mo	95	3	115	2037.724	ppb	2.2	1011558	2000	>RL or LOD
Ag	107	3	115	0.022	ppb	94.0	58	1	
Cd	111	3	115	0.139	ppb	32.2	38	1	
Sn	120	3	115	0.206	ppb	30.5	1108	1	
Sb	121	3	115	0.192	ppb	15.6	220	1	
Ba	137	3	115	1.812	ppb	16.0	470	0.95	>RL or LOD
Tl	205	3	193	-0.066	ppb	-24.6	446	1	
(Pb)	206	3	193	0.157	ppb	10.7	411	1	
(Pb)	207	3	193	0.130	ppb	63.8	580	1	
Pb	208	3	193	0.157	ppb	15.2	1952	1	
Th	232	3	193	0.023	ppb	80.5	4469	1	
U	238	3	193	0.028	ppb	35.6	1733	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4202778	1.97	4160703	101.01	60	120	
Sc (IS)	45	3	HMI He	643080	0.30	620569	103.63	60	120	
Ge Internal standard	72	2	HMI H2	2270188	1.75	2172040	104.52	60	120	
Ge Internal standard	72	3	HMI He	754787	3.65	684400	110.28	60	120	
In Internal Standard	115	3	HMI He	2483934	1.00	2522161	98.48	60	120	
Ir (IS)	193	3	HMI He	5588496	0.27	5572879	100.28	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	icsab-7567584
Data File Name	024ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:35:00-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	104.758	ppb	11.886	5123	100	104.8	80	120	
Na	23	3	45	102536.403	ppb	1.375	12648983	100	102536.4	80	120	>+\-20%
Mg	24	3	45	100263.190	ppb	0.691	6466175	100	100263.2	80	120	>+\-20%
Al	27	3	45	99262.841	ppb	1.682	2261154	100	99262.8	80	120	>+\-20%
K	39	3	45	103903.977	ppb	0.599	4873192	100	103904.0	80	120	>+\-20%
Ca	40	2	45	113982.595	ppb	9.008	59830169	100	113982.6	80	120	>+\-20%
V	51	3	72	99.305	ppb	1.124	61650	100	99.3	80	120	
Cr	52	3	72	98.378	ppb	2.693	79533	100	98.4	80	120	
Mn	55	3	72	99.326	ppb	1.621	42164	100	99.3	80	120	
Fe	56	2	72	104937.541	ppb	9.583	146277853	100	104937.5	80	120	>+\-20%
Co	59	3	72	96.270	ppb	1.532	124244	100	96.3	80	120	
Ni	60	3	72	95.704	ppb	0.365	34182	100	95.7	80	120	
Cu	63	3	72	97.216	ppb	2.196	94128	100	97.2	80	120	
Zn	66	3	72	94.893	ppb	2.321	16241	100	94.9	80	120	
As	75	3	72	96.376	ppb	3.266	11391	100	96.4	80	120	
Se	78	2	72	111.541	ppb	10.983	5843	100	111.5	80	120	
(Se)	78	3	72	90.872	ppb	5.347	666	100	90.9	80	120	
Sr	88	3	72	200.172	ppb	0.653	109058	100	200.2	80	120	>+\-20%
Mo	95	3	115	2109.080	ppb	0.734	1060448	100	2109.1	80	120	>+\-20%
Ag	107	3	115	100.385	ppb	1.200	164557	100	100.4	80	120	
Cd	111	3	115	99.144	ppb	1.174	24148	100	99.1	80	120	
Sn	120	3	115	102.264	ppb	1.406	75026	100	102.3	80	120	
Sb	121	3	115	104.460	ppb	0.529	76894	100	104.5	80	120	
Ba	137	3	115	107.273	ppb	1.482	25081	100	107.3	80	120	
Tl	205	3	193	98.389	ppb	0.636	360264	100	98.4	80	120	
(Pb)	206	3	193	100.323	ppb	0.950	121317	100	100.3	80	120	
(Pb)	207	3	193	98.733	ppb	1.059	105685	100	98.7	80	120	
Pb	208	3	193	99.951	ppb	1.100	488046	100	100.0	80	120	
Th	232	3	193	101.245	ppb	1.192	514380	100	101.2	80	120	
U	238	3	193	102.610	ppb	0.916	541858	100	102.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3984790	9.88	4160703	95.77	60	120	
Sc (IS)	45	3	HMI He	649286	1.23	620569	104.63	60	120	
Ge Internal standard	72	2	HMI H2	2117277	9.55	2172040	97.48	60	120	
Ge Internal standard	72	3	HMI He	756331	1.14	684400	110.51	60	120	
In Internal Standard	115	3	HMI He	2515618	0.83	2522161	99.74	60	120	
Ir (IS)	193	3	HMI He	5597860	0.37	5572879	100.45	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	025SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:36:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	35.992	ppb	35.992	24.23	28497	400000	
Mg	24	3	45	16.840	ppb	16.840	2.55	1231	400000	
Al	27	3	45	14.616	ppb	14.616	24.74	460	400000	
K	39	3	45	15.718	ppb	15.718	155.88	17706	400000	
Ca	40	2	45	11.385	ppb	11.385	9.73	18875	400000	
V	51	3	72	-0.447	ppb	-0.447	-5.70	255	2000	
Cr	52	3	72	-0.050	ppb	-0.050	-370.98	1636	5000	
Mn	55	3	72	-0.062	ppb	-0.062	-161.21	180	10000	
Fe	56	2	72	11.062	ppb	11.062	3.39	24978	10000	
Co	59	3	72	0.006	ppb	0.006	73.57	37	2000	
Ni	60	3	72	0.151	ppb	0.151	77.32	193	5000	
Cu	63	3	72	-0.009	ppb	-0.009	-299.56	278	5000	
Zn	66	3	72	-0.386	ppb	-0.386	-31.37	180	5000	
As	75	3	72	0.077	ppb	0.077	227.63	42	2000	
Se	78	2	72	-0.002	ppb	-0.002	-2560.14	3	2000	
(Se)	78	3	72	2.410	ppb	2.410	1.87	30	2000	
Sr	88	3	72	0.037	ppb	0.037	84.25	60	4000	
Mo	95	3	115	2.128	ppb	2.128	19.32	1199	2000	
Ag	107	3	115	0.014	ppb	0.014	28.90	48	100	
Cd	111	3	115	-0.001	ppb	-0.001	-3095.32	5	2000	
Sn	120	3	115	-0.305	ppb	-0.305	-37.30	781	2000	
Sb	121	3	115	0.133	ppb	0.133	17.03	187	1000	
Ba	137	3	115	0.150	ppb	0.150	92.41	92	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-22.37	500	2000	
(Pb)	206	3	193	0.024	ppb	0.024	31.35	262	100	
(Pb)	207	3	193	-0.038	ppb	-0.038	-140.90	416	100	
Pb	208	3	193	-0.013	ppb	-0.013	-45.62	1173	5000	
Th	232	3	193	0.537	ppb	0.537	32.56	7352	2000	
U	238	3	193	0.034	ppb	0.034	77.00	1829	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4324562	0.69	4160703	103.94	60	120	
Sc (IS)	45	3	HMI He	656078	1.26	620569	105.72	60	120	
Ge Internal standard	72	2	HMI H2	2237664	0.96	2172040	103.02	60	120	
Ge Internal standard	72	3	HMI He	749095	1.07	684400	109.45	60	120	
In Internal Standard	115	3	HMI He	2615499	1.58	2522161	103.70	60	120	
Ir (IS)	193	3	HMI He	5814851	1.97	5572879	104.34	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	026_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:38:43-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	2061.516	ppb	1.634	118657	2000	103.1	90	110	
Al	27	3	45	23.769	ppb	15.812	697	50000	0.0	90	110	LRS Main CR1 Failed
V	51	3	72	2081.286	ppb	0.358	1356160	2000	104.1	90	110	
Cr	52	3	72	4864.334	ppb	1.820	4075328	5000	97.3	90	110	
Mn	55	3	72	9813.697	ppb	0.961	4387137	10000	98.1	90	110	
Co	59	3	72	2000.659	ppb	0.691	2731962	2000	100.0	90	110	
Ni	60	3	72	4986.642	ppb	1.582	1877102	5000	99.7	90	110	
Cu	63	3	72	5157.989	ppb	0.980	5269769	5000	103.2	90	110	
Zn	66	3	72	5201.580	ppb	0.990	928168	5000	104.0	90	110	
As	75	3	72	2017.217	ppb	0.997	251648	2000	100.9	90	110	
Se	78	2	72	2092.509	ppb	0.411	129358	2000	104.6	90	110	
(Se)	78	3	72	1984.117	ppb	0.830	15114	2000	99.2	90	110	
Sr	88	3	72	5003.628	ppb	1.901	2883863	2000	250.2	90	110	LRS Main CR1 Failed
Mo	95	3	115	2018.167	ppb	2.028	1097508	2000	100.9	90	110	
Cd	111	3	115	2034.267	ppb	0.886	535816	2000	101.7	90	110	
Sn	120	3	115	2113.945	ppb	0.638	1656754	2000	105.7	90	110	
Sb	121	3	115	1010.850	ppb	1.138	804032	1000	101.1	90	110	
Ba	137	3	115	5184.702	ppb	1.317	1308456	5000	103.7	90	110	
Tl	205	3	193	1030.471	ppb	0.555	4108166	1000	103.0	90	110	
(Pb)	206	3	193	4972.987	ppb	2.066	6546732	5000	99.5	90	110	
(Pb)	207	3	193	5054.664	ppb	1.190	5876664	5000	101.1	90	110	
Pb	208	3	193	5102.231	ppb	1.306	27106675	5000	102.0	90	110	
Th	232	3	193	998.307	ppb	0.913	5490493	1000	99.8	90	110	
U	238	3	193	2071.270	ppb	0.444	11896538	2000	103.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4551998	0.89	4160703	109.40	60	120	
Sc (IS)	45	3	HMI He	682033	1.26	620569	109.90	60	120	
Ge Internal standard	72	2	HMI H2	2482287	0.66	2172040	114.28	60	120	
Ge Internal standard	72	3	HMI He	800339	0.32	684400	116.94	60	120	
In Internal Standard	115	3	HMI He	2720855	0.38	2522161	107.88	60	120	
Ir (IS)	193	3	HMI He	6105650	1.53	5572879	109.56	60	120	

Sample Report

Sample Table

Sample Name	AI 300
Data File Name	027SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:40:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.631	ppb	0.631	13.72	35	2000	
Na	23	3	45	15.671	ppb	15.671	34.76	27588	400000	
Mg	24	3	45	10.569	ppb	10.569	4.57	874	400000	
Al	27	3	45	293678.417	ppb	293678.417	2.65	7177476	400000	
K	39	3	45	-7.213	ppb	-7.213	-394.06	17672	400000	
Ca	40	2	45	8.640	ppb	8.640	11.65	17408	400000	
V	51	3	72	0.018	ppb	0.018	271.35	543	2000	
Cr	52	3	72	1.769	ppb	1.769	9.75	3085	5000	
Mn	55	3	72	3.282	ppb	3.282	10.41	1591	10000	
Fe	56	2	72	8.925	ppb	8.925	4.60	21254	10000	
Co	59	3	72	0.595	ppb	0.595	0.60	796	2000	
Ni	60	3	72	1.572	ppb	1.572	7.54	700	5000	
Cu	63	3	72	2.190	ppb	2.190	3.21	2399	5000	
Zn	66	3	72	1.865	ppb	1.865	19.92	560	5000	
As	75	3	72	0.669	ppb	0.669	75.49	112	2000	
Se	78	2	72	0.554	ppb	0.554	41.42	33	2000	
(Se)	78	3	72	0.985	ppb	0.985	72.26	20	2000	
Sr	88	3	72	3.065	ppb	3.065	4.47	1708	4000	
Mo	95	3	115	5.840	ppb	5.840	14.40	3215	2000	
Ag	107	3	115	0.028	ppb	0.028	13.11	73	100	
Cd	111	3	115	0.379	ppb	0.379	29.96	103	2000	
Sn	120	3	115	5.601	ppb	5.601	14.04	5350	2000	
Sb	121	3	115	1.414	ppb	1.414	3.21	1191	1000	
Ba	137	3	115	2.007	ppb	2.007	11.64	553	5000	
Tl	205	3	193	0.313	ppb	0.313	13.11	1869	2000	
(Pb)	206	3	193	1.750	ppb	1.750	3.56	2381	100	
(Pb)	207	3	193	1.682	ppb	1.682	12.34	2274	100	
Pb	208	3	193	1.703	ppb	1.703	4.23	9667	5000	
Th	232	3	193	7.001	ppb	7.001	31.88	40501	2000	
U	238	3	193	1.565	ppb	1.565	1.13	10016	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4351370	1.21	4160703	104.58	60	120	
Sc (IS)	45	3	HMI He	696904	1.46	620569	112.30	60	120	
Ge Internal standard	72	2	HMI H2	2181120	1.41	2172040	100.42	60	120	
Ge Internal standard	72	3	HMI He	755124	1.44	684400	110.33	60	120	
In Internal Standard	115	3	HMI He	2672679	2.07	2522161	105.97	60	120	
Ir (IS)	193	3	HMI He	5706568	2.94	5572879	102.40	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	028SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:42:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.086	ppb	0.086	99.90	5	2000	
Na	23	3	45	-2.113	ppb	-2.113	-82.76	25261	400000	
Mg	24	3	45	2.286	ppb	2.286	51.78	300	400000	
Al	27	3	45	55.901	ppb	55.901	10.37	1498	400000	
K	39	3	45	-25.554	ppb	-25.554	-86.70	16757	400000	
Ca	40	2	45	0.307	ppb	0.307	113.50	12845	400000	
V	51	3	72	-0.401	ppb	-0.401	-12.44	287	2000	
Cr	52	3	72	-0.128	ppb	-0.128	-60.08	1591	5000	
Mn	55	3	72	0.311	ppb	0.311	9.38	340	10000	
Fe	56	2	72	0.646	ppb	0.646	8.12	10014	10000	
Co	59	3	72	0.028	ppb	0.028	51.23	65	2000	
Ni	60	3	72	0.183	ppb	0.183	45.76	207	5000	
Cu	63	3	72	0.221	ppb	0.221	3.91	503	5000	
Zn	66	3	72	-0.168	ppb	-0.168	-195.10	218	5000	
As	75	3	72	-0.040	ppb	-0.040	-176.09	28	2000	
Se	78	2	72	0.052	ppb	0.052	73.61	7	2000	
(Se)	78	3	72	-0.644	ppb	-0.644	-61.71	8	2000	
Sr	88	3	72	0.105	ppb	0.105	56.27	98	4000	
Mo	95	3	115	0.614	ppb	0.614	27.83	426	2000	
Ag	107	3	115	0.004	ppb	0.004	93.82	32	100	
Cd	111	3	115	0.055	ppb	0.055	57.63	20	2000	
Sn	120	3	115	0.192	ppb	0.192	50.02	1203	2000	
Sb	121	3	115	0.217	ppb	0.217	5.77	262	1000	
Ba	137	3	115	0.037	ppb	0.037	303.92	67	5000	
Tl	205	3	193	-0.019	ppb	-0.019	-98.36	640	2000	
(Pb)	206	3	193	0.257	ppb	0.257	21.02	551	100	
(Pb)	207	3	193	0.279	ppb	0.279	34.46	766	100	
Pb	208	3	193	0.259	ppb	0.259	5.27	2542	5000	
Th	232	3	193	0.727	ppb	0.727	42.23	8290	2000	
U	238	3	193	0.169	ppb	0.169	22.55	2562	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4432616	0.67	4160703	106.54	60	120	
Sc (IS)	45	3	HMI He	697374	1.14	620569	112.38	60	120	
Ge Internal standard	72	2	HMI H2	2348362	1.17	2172040	108.12	60	120	
Ge Internal standard	72	3	HMI He	756910	2.39	684400	110.59	60	120	
In Internal Standard	115	3	HMI He	2723965	1.76	2522161	108.00	60	120	
Ir (IS)	193	3	HMI He	5796774	1.87	5572879	104.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	029_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:44:08-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.866	ppb	6.733	2819	50	101.7	90	110	
Na	23	3	45	50581.687	ppb	0.942	6395224	51000	99.2	90	110	
Mg	24	3	45	10910.715	ppb	2.331	719891	11000	99.2	90	110	
Al	27	3	45	1025.065	ppb	2.522	24005	1000	102.5	90	110	
K	39	3	45	11143.510	ppb	1.265	549955	11000	101.3	90	110	
Ca	40	2	45	11449.858	ppb	0.301	6622596	11000	104.1	90	110	
V	51	3	72	51.764	ppb	0.776	31857	50	103.5	90	110	
Cr	52	3	72	51.301	ppb	3.406	41579	50	102.6	90	110	
Mn	55	3	72	51.841	ppb	1.776	21739	50	103.7	90	110	
Fe	56	2	72	1030.622	ppb	3.055	1549593	1000	103.1	90	110	
Co	59	3	72	50.791	ppb	1.262	64481	50	101.6	90	110	
Ni	60	3	72	51.854	ppb	4.382	18271	50	103.7	90	110	
Cu	63	3	72	51.364	ppb	1.848	49046	50	102.7	90	110	
Zn	66	3	72	51.877	ppb	2.167	8845	50	103.8	90	110	
As	75	3	72	53.346	ppb	2.752	6218	50	106.7	90	110	
Se	78	2	72	53.061	ppb	1.421	2987	50	106.1	90	110	
(Se)	78	3	72	52.122	ppb	9.225	381	50	104.2	90	110	
Sr	88	3	72	103.234	ppb	1.656	55328	100	103.2	90	110	
Mo	95	3	115	49.710	ppb	1.312	26266	50	99.4	90	110	
Ag	107	3	115	49.701	ppb	2.177	85342	50	99.4	90	110	
Cd	111	3	115	49.793	ppb	0.821	12708	50	99.6	90	110	
Sn	120	3	115	49.112	ppb	1.194	38267	50	98.2	90	110	
Sb	121	3	115	50.054	ppb	1.621	38633	50	100.1	90	110	
Ba	137	3	115	50.804	ppb	1.897	12473	50	101.6	90	110	
Tl	205	3	193	49.431	ppb	0.966	184665	50	98.9	90	110	
(Pb)	206	3	193	49.919	ppb	0.329	61585	50	99.8	90	110	
(Pb)	207	3	193	50.495	ppb	1.069	55259	50	101.0	90	110	
Pb	208	3	193	50.029	ppb	1.054	249362	50	100.1	90	110	
Th	232	3	193	49.836	ppb	1.055	260084	50	99.7	90	110	
U	238	3	193	50.359	ppb	1.515	271632	50	100.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4358416	1.43	4160703	104.75	60	120	
Sc (IS)	45	3	HMI He	664165	0.37	620569	107.03	60	120	
Ge Internal standard	72	2	HMI H2	2258133	2.80	2172040	103.96	60	120	
Ge Internal standard	72	3	HMI He	743875	1.91	684400	108.69	60	120	
In Internal Standard	115	3	HMI He	2635053	1.62	2522161	104.48	60	120	
Ir (IS)	193	3	HMI He	5700349	0.43	5572879	102.29	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	030_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:48:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.151	ppb	70.4	8	0.5	
Na	23	3	45	1.139	ppb	207.5	25041	25	
Mg	24	3	45	2.439	ppb	40.5	304	25	
Al	27	3	45	0.808	ppb	245.2	147	15	
K	39	3	45	-16.469	ppb	-229.6	16754	50	
V	51	3	72	-0.418	ppb	-14.4	275	1	
Cr	52	3	72	-0.191	ppb	-72.8	1539	1	
Mn	55	3	72	0.011	ppb	769.7	213	0.5	
Co	59	3	72	-0.006	ppb	-98.8	22	0.5	
Ni	60	3	72	0.066	ppb	191.1	165	1	
Cu	63	3	72	0.027	ppb	72.5	315	1	
Zn	66	3	72	-0.315	ppb	-64.4	193	5	
As	75	3	72	0.004	ppb	3760.1	33	1	
Se	78	2	72	0.022	ppb	253.6	5	1	
(Se)	78	3	72	-0.409	ppb	-8.3	10	1	
Sr	88	3	72	-0.032	ppb	-17.7	23	0.5	
Mo	95	3	115	0.018	ppb	140.7	100	0.5	
Ag	107	3	115	0.000	ppb	10217.0	25	1	
Cd	111	3	115	-0.014	ppb	-81.6	2	0.5	
Sn	120	3	115	-0.080	ppb	-85.4	971	1	
Sb	121	3	115	0.083	ppb	12.9	152	0.6	
Ba	137	3	115	-0.046	ppb	-85.4	45	0.5	
Tl	205	3	193	-0.074	ppb	-14.9	428	0.1	
(Pb)	206	3	193	0.067	ppb	42.6	310	1	
(Pb)	207	3	193	0.050	ppb	50.6	505	1	
Pb	208	3	193	0.056	ppb	12.1	1493	0.5	
Th	232	3	193	0.601	ppb	20.5	7544	1	
U	238	3	193	0.022	ppb	46.0	1734	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4357092	0.90	4160703	104.72	60	120	
Sc (IS)	45	3	HMI He	679792	1.63	620569	109.54	60	120	
Ge Internal standard	72	2	HMI H2	2265741	2.43	2172040	104.31	60	120	
Ge Internal standard	72	3	HMI He	756146	2.42	684400	110.48	60	120	
In Internal Standard	115	3	HMI He	2669457	0.65	2522161	105.84	60	120	
Ir (IS)	193	3	HMI He	5711380	1.74	5572879	102.49	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	031LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:50:02-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.743	ppb	18.841	97	1	174.3	70	130	>+/-30%
Na	23	3	45	52.556	ppb	2.116	31186	50	105.1	70	130	
Mg	24	3	45	53.408	ppb	8.020	3688	50	106.8	70	130	
Al	27	3	45	57.022	ppb	6.204	1465	50	114.0	70	130	
K	39	3	45	88.199	ppb	32.403	21562	100	88.2	70	130	
V	51	3	72	4.868	ppb	2.172	3504	5	97.4	70	130	
Cr	52	3	72	2.150	ppb	3.120	3370	2	107.5	70	130	
Mn	55	3	72	1.077	ppb	8.468	658	1	107.7	70	130	
Co	59	3	72	1.099	ppb	5.121	1436	1	109.9	70	130	
Ni	60	3	72	2.077	ppb	4.791	875	2	103.8	70	130	
Cu	63	3	72	2.072	ppb	1.819	2274	2	103.6	70	130	
Zn	66	3	72	9.718	ppb	7.144	1873	10	97.2	70	130	
As	75	3	72	5.038	ppb	23.312	625	5	100.8	70	130	
Se	78	2	72	5.259	ppb	2.883	305	5	105.2	70	130	
(Se)	78	3	72	3.089	ppb	36.911	35	5	61.8	70	130	>+/-30%
Sr	88	3	72	1.070	ppb	6.797	620	1	107.0	70	130	
Mo	95	3	115	2.015	ppb	9.696	1143	2	100.7	70	130	
Ag	107	3	115	1.036	ppb	1.108	1793	1	103.6	70	130	
Cd	111	3	115	0.966	ppb	3.849	250	1	96.6	70	130	
Sn	120	3	115	10.157	ppb	2.469	8669	10	101.6	70	130	
Sb	121	3	115	2.070	ppb	6.820	1669	2	103.5	70	130	
Ba	137	3	115	1.014	ppb	6.633	302	1	101.4	70	130	
Tl	205	3	193	0.911	ppb	4.391	4165	1	91.1	70	130	
(Pb)	206	3	193	1.050	ppb	3.785	1546	1	105.0	70	130	
(Pb)	207	3	193	1.055	ppb	7.049	1624	1	105.5	70	130	
Pb	208	3	193	1.078	ppb	3.517	6682	1	107.8	70	130	
Th	232	3	193	2.075	ppb	3.950	15359	2	103.7	70	130	
U	238	3	193	0.989	ppb	4.732	7044	1	98.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4369274	1.77	4160703	105.01	60	120	
Sc (IS)	45	3	HMI He	669353	0.26	620569	107.86	60	120	
Ge Internal standard	72	2	HMI H2	2303540	0.88	2172040	106.05	60	120	
Ge Internal standard	72	3	HMI He	751181	2.55	684400	109.76	60	120	
In Internal Standard	115	3	HMI He	2618381	0.49	2522161	103.81	60	120	
Ir (IS)	193	3	HMI He	5807237	2.16	5572879	104.21	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600256/1-a
Data File Name	032_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:54:21-07:00
Sample Type	Blank
Dilution	1
Comment	600256 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.094	ppb	100.2254279	5	0.5
Na	23	3	45	-10.356	ppb	-34.2787431	22644	25
Mg	24	3	45	2.261	ppb	17.3959971	280	25
Al	27	3	45	9.630	ppb	9.29349697	344	15
K	39	3	45	-34.895	ppb	-81.63415844	15250	50
V	51	3	72	-0.743	ppb	-5.288318344	77	1
Cr	52	3	72	0.706	ppb	1.714197112	2289	1
Mn	55	3	72	0.404	ppb	35.38912217	385	0.5
Co	59	3	72	0.005	ppb	303.3427729	37	0.5
Ni	60	3	72	0.225	ppb	30.4620118	225	1
Cu	63	3	72	-0.006	ppb	-50.86547526	288	1
Zn	66	3	72	0.802	ppb	34.89224223	388	5
As	75	3	72	-0.017	ppb	-117.3069072	32	1
(Se)	78	3	72	0.936	ppb	74.9735429	20	1
Sr	88	3	72	0.010	ppb	327.701506	47	0.5
Mo	95	3	115	0.045	ppb	85.51999851	113	0.5
Ag	107	3	115	-0.002	ppb	-260.334126	22	1
Cd	111	3	115	-0.014	ppb	-82.47415265	2	0.5
Sn	120	3	115	-0.827	ppb	-7.273706521	393	1
Sb	121	3	115	-0.022	ppb	-32.24497977	68	0.6
Ba	137	3	115	0.133	ppb	123.5351673	88	0.5
Tl	205	3	193	-0.115	ppb	-16.13846809	270	0.1
(Pb)	206	3	193	-0.045	ppb	-24.01999381	170	1
(Pb)	207	3	193	-0.046	ppb	-118.4588354	395	1
Pb	208	3	193	-0.043	ppb	-60.51196164	991	0.5
Th	232	3	193	0.101	ppb	25.60586209	4917	1
U	238	3	193	-0.004	ppb	-110.2121389	1581	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4213251	0.82	4160703	101.26	60	120	
Sc (IS)	45	3	HMI He	653362	0.48	620569	105.28	60	120	
Ge Internal standard	72	2	HMI H2	2273280	2.77	2172040	104.66	60	120	
Ge Internal standard	72	3	HMI He	769455	1.70	684400	112.43	60	120	
In Internal Standard	115	3	HMI He	2643968	0.24	2522161	104.83	60	120	
Ir (IS)	193	3	HMI He	5650612	2.55	5572879	101.39	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600256/2-a
Data File Name	033_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:56:13-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600256 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.697	39.697	ppb	5.898	2142	40	99.2	80	120	
Na	23	3	45	772.264	772.264	ppb	2.375	120781	40	1930.7	80	120	>+/-20%
Mg	24	3	45	727.880	727.880	ppb	2.669	47839	40	1819.7	80	120	>+/-20%
Al	27	3	45	809.711	809.711	ppb	2.726	18862	40	2024.3	80	120	>+/-20%
K	39	3	45	760.270	760.270	ppb	6.554	53160	40	1900.7	80	120	>+/-20%
Ca	40	2	45	874.471	874.471	ppb	1.163	501671	40	2186.2	80	120	>+/-20%
V	51	3	72	39.306	39.306	ppb	0.672	25200	40	98.3	80	120	
Cr	52	3	72	40.931	40.931	ppb	0.618	34739	40	102.3	80	120	
Mn	55	3	72	41.270	41.270	ppb	1.011	17981	40	103.2	80	120	
Fe	56	2	72	794.621	794.621	ppb	2.671	1233705	40	1986.6	80	120	>+/-20%
(Fe)	56	3	72	789.560	789.560	ppb	0.405	550706	40	1973.9	80	120	>+/-20%
Co	59	3	72	39.763	39.763	ppb	1.298	52327	40	99.4	80	120	
Ni	60	3	72	39.324	39.324	ppb	3.091	14399	40	98.3	80	120	
Cu	63	3	72	40.834	40.834	ppb	1.792	40472	40	102.1	80	120	
Zn	66	3	72	40.680	40.680	ppb	3.560	7242	40	101.7	80	120	
As	75	3	72	37.907	37.907	ppb	3.548	4588	40	94.8	80	120	
Se	78	2	72	41.537	41.537	ppb	3.466	2410	40	103.8	80	120	
(Se)	78	3	72	33.905	33.905	ppb	22.663	262	40	84.8	80	120	
Sr	88	3	72	81.281	81.281	ppb	0.982	45159	40	203.2	80	120	>+/-20%
Mo	95	3	115	39.186	39.186	ppb	3.493	20717	40	98.0	80	120	
Ag	107	3	115	39.567	39.567	ppb	2.469	67937	40	98.9	80	120	
Cd	111	3	115	38.478	38.478	ppb	2.665	9817	40	96.2	80	120	
Sn	120	3	115	38.694	38.694	ppb	2.156	30361	40	96.7	80	120	
Sb	121	3	115	38.653	38.653	ppb	0.747	29855	40	96.6	80	120	
Ba	137	3	115	41.157	41.157	ppb	3.644	10112	40	102.9	80	120	
Tl	205	3	193	40.095	40.095	ppb	0.722	150248	40	100.2	80	120	
(Pb)	206	3	193	40.960	40.960	ppb	1.654	50677	40	102.4	80	120	
(Pb)	207	3	193	40.151	40.151	ppb	0.839	44126	40	100.4	80	120	
Pb	208	3	193	40.505	40.505	ppb	0.951	202554	40	101.3	80	120	
Th	232	3	193	39.887	39.887	ppb	1.061	209495	40	99.7	80	120	
U	238	3	193	40.024	40.024	ppb	0.795	216678	40	100.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4226671	1.18	4160703	101.59	60	120	
Sc (IS)	45	3	HMI He	659799	0.93	620569	106.32	60	120	
Ge Internal standard	72	2	HMI H2	2327641	1.62	2172040	107.16	60	120	
Ge Internal standard	72	3	HMI He	770861	0.54	684400	112.63	60	120	
In Internal Standard	115	3	HMI He	2635018	1.89	2522161	104.47	60	120	
Ir (IS)	193	3	HMI He	5712751	0.97	5572879	102.51	60	120	

Sample Report

Sample Table

Sample Name	280-171347-e-1-a@10
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:58:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	16988.661	ppb	16988.661	0.78	2140636	400000	
Mg	24	3	45	6575.838	ppb	6575.838	1.24	429192	400000	
Al	27	3	45	0.871	ppb	0.871	182.24	143	400000	
K	39	3	45	1067.259	ppb	1067.259	1.33	67465	400000	
Ca	40	2	45	32625.413	ppb	32625.413	2.16	19172980	400000	
V	51	3	72	-0.257	ppb	-0.257	-29.82	386	2000	
Cr	52	3	72	0.078	ppb	0.078	43.05	1811	5000	
Mn	55	3	72	0.137	ppb	0.137	69.38	275	10000	
Fe	56	2	72	3.251	ppb	3.251	4.49	13968	10000	
Co	59	3	72	0.017	ppb	0.017	41.29	53	2000	
Ni	60	3	72	0.283	ppb	0.283	25.49	250	5000	
Cu	63	3	72	0.183	ppb	0.183	31.83	481	5000	
Zn	66	3	72	1.606	ppb	1.606	12.93	535	5000	
As	75	3	72	0.061	ppb	0.061	103.62	42	2000	
Se	78	2	72	0.489	ppb	0.489	30.31	32	2000	
(Se)	78	3	72	-0.475	ppb	-0.475	-366.62	10	2000	
Sr	88	3	72	274.798	ppb	274.798	2.59	154622	4000	
Mo	95	3	115	0.170	ppb	0.170	28.57	180	2000	
Ag	107	3	115	0.014	ppb	0.014	73.88	48	100	
Cd	111	3	115	-0.007	ppb	-0.007	-151.87	3	2000	
Sn	120	3	115	0.210	ppb	0.210	55.46	1188	2000	
Sb	121	3	115	0.327	ppb	0.327	20.67	340	1000	
Ba	137	3	115	8.087	ppb	8.087	2.38	2047	5000	
Tl	205	3	193	-0.074	ppb	-0.074	-2.37	428	2000	
(Pb)	206	3	193	0.023	ppb	0.023	203.11	257	100	
(Pb)	207	3	193	-0.048	ppb	-0.048	-58.97	398	100	
Pb	208	3	193	-0.005	ppb	-0.005	-188.69	1189	5000	
Th	232	3	193	0.553	ppb	0.553	21.05	7284	2000	
U	238	3	193	10.973	ppb	10.973	3.61	60501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4432979	1.02	4160703	106.54	60	120	
Sc (IS)	45	3	HMI He	656937	1.01	620569	105.86	60	120	
Ge Internal standard	72	2	HMI H2	2332318	1.17	2172040	107.38	60	120	
Ge Internal standard	72	3	HMI He	781397	1.74	684400	114.17	60	120	
In Internal Standard	115	3	HMI He	2654591	1.76	2522161	105.25	60	120	
Ir (IS)	193	3	HMI He	5707880	2.12	5572879	102.42	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-2-a@10
Data File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T20:59:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	10842.036	ppb	10842.036	1.06	1397559	400000	
Mg	24	3	45	3504.157	ppb	3504.157	1.48	232543	400000	
Al	27	3	45	2.040	ppb	2.040	66.33	174	400000	
K	39	3	45	623.044	ppb	623.044	5.32	47216	400000	
Ca	40	2	45	9893.147	ppb	9893.147	1.20	5558343	400000	
V	51	3	72	-0.303	ppb	-0.303	-13.83	356	2000	
Cr	52	3	72	-0.004	ppb	-0.004	-1648.36	1739	5000	
Mn	55	3	72	0.709	ppb	0.709	17.67	523	10000	
Fe	56	2	72	3.058	ppb	3.058	16.62	13667	10000	
Co	59	3	72	0.022	ppb	0.022	45.94	60	2000	
Ni	60	3	72	0.393	ppb	0.393	23.88	290	5000	
Cu	63	3	72	0.150	ppb	0.150	50.41	446	5000	
Zn	66	3	72	1.914	ppb	1.914	12.41	586	5000	
As	75	3	72	-0.032	ppb	-0.032	-470.00	30	2000	
Se	78	2	72	0.340	ppb	0.340	23.84	23	2000	
(Se)	78	3	72	0.231	ppb	0.231	774.51	15	2000	
Sr	88	3	72	99.715	ppb	99.715	2.08	55972	4000	
Mo	95	3	115	0.066	ppb	0.066	66.04	123	2000	
Ag	107	3	115	0.001	ppb	0.001	728.29	27	100	
Cd	111	3	115	-0.014	ppb	-0.014	-84.02	2	2000	
Sn	120	3	115	-0.045	ppb	-0.045	-77.87	981	2000	
Sb	121	3	115	0.109	ppb	0.109	46.61	168	1000	
Ba	137	3	115	2.453	ppb	2.453	7.27	653	5000	
Tl	205	3	193	-0.099	ppb	-0.099	-4.50	332	2000	
(Pb)	206	3	193	-0.021	ppb	-0.021	-123.27	202	100	
(Pb)	207	3	193	-0.106	ppb	-0.106	-26.16	335	100	
Pb	208	3	193	-0.037	ppb	-0.037	-11.15	1031	5000	
Th	232	3	193	0.112	ppb	0.112	27.96	5022	2000	
U	238	3	193	1.243	ppb	1.243	2.02	8292	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4232159	0.85	4160703	101.72	60	120	
Sc (IS)	45	3	HMI He	667773	0.90	620569	107.61	60	120	
Ge Internal standard	72	2	HMI H2	2332123	0.55	2172040	107.37	60	120	
Ge Internal standard	72	3	HMI He	779167	2.47	684400	113.85	60	120	
In Internal Standard	115	3	HMI He	2625936	1.09	2522161	104.11	60	120	
Ir (IS)	193	3	HMI He	5710020	3.02	5572879	102.46	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-3-a@10
Data File Name	036SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:01:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.060	ppb	0.060	173.21	3	2000	
Na	23	3	45	10544.372	ppb	10544.372	0.45	1334817	400000	
Mg	24	3	45	3538.667	ppb	3538.667	1.48	230525	400000	
Al	27	3	45	2.333	ppb	2.333	73.19	177	400000	
K	39	3	45	655.348	ppb	655.348	3.65	47873	400000	
Ca	40	2	45	9047.864	ppb	9047.864	2.00	5112141	400000	
V	51	3	72	-0.215	ppb	-0.215	-21.60	408	2000	
Cr	52	3	72	0.087	ppb	0.087	31.40	1798	5000	
Mn	55	3	72	7.684	ppb	7.684	6.78	3524	10000	
Fe	56	2	72	3.251	ppb	3.251	2.98	13851	10000	
Co	59	3	72	0.092	ppb	0.092	16.55	152	2000	
Ni	60	3	72	0.535	ppb	0.535	19.24	338	5000	
Cu	63	3	72	0.062	ppb	0.062	33.89	356	5000	
Zn	66	3	72	1.674	ppb	1.674	5.88	540	5000	
As	75	3	72	-0.016	ppb	-0.016	-817.16	32	2000	
Se	78	2	72	0.135	ppb	0.135	15.87	11	2000	
(Se)	78	3	72	2.079	ppb	2.079	73.20	28	2000	
Sr	88	3	72	98.252	ppb	98.252	3.15	54652	4000	
Mo	95	3	115	0.709	ppb	0.709	31.23	458	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-381.67	23	100	
Cd	111	3	115	0.006	ppb	0.006	398.22	7	2000	
Sn	120	3	115	-0.067	ppb	-0.067	-102.13	963	2000	
Sb	121	3	115	0.082	ppb	0.082	12.91	148	1000	
Ba	137	3	115	2.961	ppb	2.961	9.18	775	5000	
Tl	205	3	193	-0.106	ppb	-0.106	-10.92	307	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1030.18	225	100	
(Pb)	207	3	193	-0.053	ppb	-0.053	-21.26	393	100	
Pb	208	3	193	-0.032	ppb	-0.032	-22.76	1061	5000	
Th	232	3	193	0.037	ppb	0.037	92.95	4644	2000	
U	238	3	193	1.675	ppb	1.675	4.90	10634	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4256095	1.44	4160703	102.29	60	120	
Sc (IS)	45	3	HMI He	655507	0.70	620569	105.63	60	120	
Ge Internal standard	72	2	HMI H2	2312907	0.95	2172040	106.49	60	120	
Ge Internal standard	72	3	HMI He	772225	2.30	684400	112.83	60	120	
In Internal Standard	115	3	HMI He	2622179	3.60	2522161	103.97	60	120	
Ir (IS)	193	3	HMI He	5720897	0.97	5572879	102.66	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-4-a@10
Data File Name	037SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:05:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	11815.349	ppb	11815.349	1.75	1504811	400000	
Mg	24	3	45	4166.021	ppb	4166.021	0.66	273600	400000	
Al	27	3	45	-0.027	ppb	-0.027	-5193.26	123	400000	
K	39	3	45	665.873	ppb	665.873	3.54	48760	400000	
Ca	40	2	45	12401.064	ppb	12401.064	1.06	6954000	400000	
V	51	3	72	-0.246	ppb	-0.246	-21.09	381	2000	
Cr	52	3	72	-0.030	ppb	-0.030	-185.47	1669	5000	
Mn	55	3	72	12.060	ppb	12.060	3.57	5307	10000	
Fe	56	2	72	2.245	ppb	2.245	5.46	12231	10000	
Co	59	3	72	0.019	ppb	0.019	116.51	53	2000	
Ni	60	3	72	0.295	ppb	0.295	25.13	247	5000	
Cu	63	3	72	0.121	ppb	0.121	53.70	406	5000	
Zn	66	3	72	1.754	ppb	1.754	18.75	543	5000	
As	75	3	72	0.086	ppb	0.086	76.42	43	2000	
Se	78	2	72	0.217	ppb	0.217	25.92	16	2000	
(Se)	78	3	72	-0.408	ppb	-0.408	-343.44	10	2000	
Sr	88	3	72	129.251	ppb	129.251	1.10	70502	4000	
Mo	95	3	115	0.203	ppb	0.203	14.30	195	2000	
Ag	107	3	115	0.007	ppb	0.007	84.19	37	100	
Cd	111	3	115	-0.007	ppb	-0.007	-159.48	3	2000	
Sn	120	3	115	-0.042	ppb	-0.042	-266.76	981	2000	
Sb	121	3	115	0.046	ppb	0.046	91.44	120	1000	
Ba	137	3	115	3.229	ppb	3.229	1.91	840	5000	
Tl	205	3	193	-0.107	ppb	-0.107	-8.25	300	2000	
(Pb)	206	3	193	-0.025	ppb	-0.025	-96.50	193	100	
(Pb)	207	3	193	-0.061	ppb	-0.061	-59.30	378	100	
Pb	208	3	193	-0.027	ppb	-0.027	-19.83	1066	5000	
Th	232	3	193	0.032	ppb	0.032	45.39	4542	2000	
U	238	3	193	3.290	ppb	3.290	3.53	19008	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4226447	1.72	4160703	101.58	60	120	
Sc (IS)	45	3	HMI He	660893	1.47	620569	106.50	60	120	
Ge Internal standard	72	2	HMI H2	2298185	1.85	2172040	105.81	60	120	
Ge Internal standard	72	3	HMI He	757004	0.83	684400	110.61	60	120	
In Internal Standard	115	3	HMI He	2619188	1.08	2522161	103.85	60	120	
Ir (IS)	193	3	HMI He	5627215	0.47	5572879	100.98	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-5-a@10
Data File Name	038SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:09:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	11953.135	ppb	11953.135	2.52	1523073	400000	
Mg	24	3	45	3670.946	ppb	3670.946	0.70	241257	400000	
Al	27	3	45	1.967	ppb	1.967	74.79	170	400000	
K	39	3	45	659.011	ppb	659.011	5.64	48465	400000	
Ca	40	2	45	10335.757	ppb	10335.757	1.60	5821578	400000	
V	51	3	72	-0.177	ppb	-0.177	-8.93	436	2000	
Cr	52	3	72	0.012	ppb	0.012	562.43	1753	5000	
Mn	55	3	72	1.887	ppb	1.887	12.40	1036	10000	
Fe	56	2	72	1.785	ppb	1.785	19.43	11673	10000	
Co	59	3	72	0.020	ppb	0.020	91.95	57	2000	
Ni	60	3	72	0.230	ppb	0.230	31.84	230	5000	
Cu	63	3	72	0.084	ppb	0.084	42.26	381	5000	
Zn	66	3	72	2.039	ppb	2.039	9.60	608	5000	
As	75	3	72	0.048	ppb	0.048	142.18	40	2000	
Se	78	2	72	0.168	ppb	0.168	71.62	13	2000	
(Se)	78	3	72	1.132	ppb	1.132	126.05	22	2000	
Sr	88	3	72	101.502	ppb	101.502	1.28	56997	4000	
Mo	95	3	115	0.325	ppb	0.325	37.59	260	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-52.25	15	100	
Cd	111	3	115	0.006	ppb	0.006	500.33	7	2000	
Sn	120	3	115	-0.079	ppb	-0.079	-32.12	958	2000	
Sb	121	3	115	0.026	ppb	0.026	89.36	105	1000	
Ba	137	3	115	2.844	ppb	2.844	1.55	750	5000	
Tl	205	3	193	-0.110	ppb	-0.110	-10.93	290	2000	
(Pb)	206	3	193	-0.009	ppb	-0.009	-182.80	213	100	
(Pb)	207	3	193	-0.017	ppb	-0.017	-439.69	426	100	
Pb	208	3	193	-0.021	ppb	-0.021	-61.41	1096	5000	
Th	232	3	193	0.051	ppb	0.051	88.33	4650	2000	
U	238	3	193	2.384	ppb	2.384	0.76	14244	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4243657	1.17	4160703	101.99	60	120	
Sc (IS)	45	3	HMI He	661295	0.76	620569	106.56	60	120	
Ge Internal standard	72	2	HMI H2	2326170	0.74	2172040	107.10	60	120	
Ge Internal standard	72	3	HMI He	779243	0.94	684400	113.86	60	120	
In Internal Standard	115	3	HMI He	2631276	0.49	2522161	104.33	60	120	
Ir (IS)	193	3	HMI He	5640445	1.33	5572879	101.21	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-6-a@10
Data File Name	039SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:11:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	11599.411	ppb	11599.411	0.86	1468229	400000	
Mg	24	3	45	3805.988	ppb	3805.988	1.68	248284	400000	
Al	27	3	45	2.320	ppb	2.320	50.12	177	400000	
K	39	3	45	565.398	ppb	565.398	4.19	43688	400000	
Ca	40	2	45	11765.089	ppb	11765.089	1.07	6635012	400000	
V	51	3	72	-0.224	ppb	-0.224	-20.15	396	2000	
Cr	52	3	72	0.306	ppb	0.306	36.54	1943	5000	
Mn	55	3	72	6.862	ppb	6.862	2.52	3120	10000	
Fe	56	2	72	3.359	ppb	3.359	13.27	14095	10000	
Co	59	3	72	0.014	ppb	0.014	54.09	48	2000	
Ni	60	3	72	0.419	ppb	0.419	13.70	292	5000	
Cu	63	3	72	0.102	ppb	0.102	25.19	390	5000	
Zn	66	3	72	1.853	ppb	1.853	14.32	561	5000	
As	75	3	72	0.070	ppb	0.070	239.38	42	2000	
Se	78	2	72	0.240	ppb	0.240	95.56	17	2000	
(Se)	78	3	72	1.894	ppb	1.894	57.34	27	2000	
Sr	88	3	72	121.759	ppb	121.759	1.01	66649	4000	
Mo	95	3	115	0.186	ppb	0.186	2.53	187	2000	
Ag	107	3	115	0.000	ppb	0.000	4102.49	25	100	
Cd	111	3	115	-0.007	ppb	-0.007	-156.10	3	2000	
Sn	120	3	115	-0.062	ppb	-0.062	-171.57	970	2000	
Sb	121	3	115	0.043	ppb	0.043	87.24	118	1000	
Ba	137	3	115	2.682	ppb	2.682	1.32	710	5000	
Tl	205	3	193	-0.106	ppb	-0.106	-3.86	310	2000	
(Pb)	206	3	193	0.004	ppb	0.004	515.36	233	100	
(Pb)	207	3	193	-0.088	ppb	-0.088	-41.85	356	100	
Pb	208	3	193	-0.029	ppb	-0.029	-37.70	1074	5000	
Th	232	3	193	-0.010	ppb	-0.010	-344.65	4415	2000	
U	238	3	193	1.791	ppb	1.791	4.80	11285	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4249689	0.43	4160703	102.14	60	120	
Sc (IS)	45	3	HMI He	656506	1.39	620569	105.79	60	120	
Ge Internal standard	72	2	HMI H2	2326457	1.53	2172040	107.11	60	120	
Ge Internal standard	72	3	HMI He	759698	0.73	684400	111.00	60	120	
In Internal Standard	115	3	HMI He	2630267	1.12	2522161	104.29	60	120	
Ir (IS)	193	3	HMI He	5736136	1.77	5572879	102.93	60	120	

Sample Report

Sample Table

Sample Name	280-171348-c-7-a@10
Data File Name	040SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:13:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	12936.619	ppb	12936.619	0.74	1632336	400000	
Mg	24	3	45	3517.962	ppb	3517.962	0.73	229206	400000	
Al	27	3	45	5.078	ppb	5.078	42.16	240	400000	
K	39	3	45	1243.474	ppb	1243.474	1.59	75635	400000	
Ca	40	2	45	9287.214	ppb	9287.214	3.40	5270935	400000	
V	51	3	72	-0.164	ppb	-0.164	-13.24	426	2000	
Cr	52	3	72	0.429	ppb	0.429	27.17	2007	5000	
Mn	55	3	72	1.942	ppb	1.942	7.51	1016	10000	
Fe	56	2	72	6.008	ppb	6.008	2.71	18050	10000	
Co	59	3	72	0.047	ppb	0.047	52.53	88	2000	
Ni	60	3	72	1.065	ppb	1.065	8.49	515	5000	
Cu	63	3	72	0.230	ppb	0.230	17.06	505	5000	
Zn	66	3	72	2.137	ppb	2.137	5.27	600	5000	
As	75	3	72	0.063	ppb	0.063	79.45	40	2000	
Se	78	2	72	0.123	ppb	0.123	115.45	11	2000	
(Se)	78	3	72	0.792	ppb	0.792	189.05	18	2000	
Sr	88	3	72	98.877	ppb	98.877	2.77	53262	4000	
Mo	95	3	115	0.099	ppb	0.099	26.28	140	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-76.53	17	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-0.006	ppb	-0.006	-839.24	1006	2000	
Sb	121	3	115	0.035	ppb	0.035	72.68	112	1000	
Ba	137	3	115	12.898	ppb	12.898	0.65	3180	5000	
Tl	205	3	193	-0.119	ppb	-0.119	-8.34	255	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1109.16	223	100	
(Pb)	207	3	193	-0.012	ppb	-0.012	-286.55	433	100	
Pb	208	3	193	-0.021	ppb	-0.021	-44.53	1101	5000	
Th	232	3	193	0.006	ppb	0.006	278.99	4439	2000	
U	238	3	193	0.399	ppb	0.399	3.97	3727	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4274864	0.58	4160703	102.74	60	120	
Sc (IS)	45	3	HMI He	655572	0.75	620569	105.64	60	120	
Ge Internal standard	72	2	HMI H2	2309367	1.50	2172040	106.32	60	120	
Ge Internal standard	72	3	HMI He	747874	2.87	684400	109.27	60	120	
In Internal Standard	115	3	HMI He	2612519	0.67	2522161	103.58	60	120	
Ir (IS)	193	3	HMI He	5658604	0.84	5572879	101.54	60	120	

Sample Report

Sample Table

Sample Name	280-171630-d-1-a@10
Data File Name	041SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:15:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.092	ppb	0.092	99.33	5	2000	
Na	23	3	45	75067.793	ppb	75067.793	1.61	9376820	400000	
Mg	24	3	45	5585.849	ppb	5585.849	1.52	364649	400000	
Al	27	3	45	3338.021	ppb	3338.021	1.07	77053	400000	
K	39	3	45	1117.360	ppb	1117.360	2.34	69843	400000	
Ca	40	2	45	10339.562	ppb	10339.562	3.12	5832204	400000	
V	51	3	72	7.621	ppb	7.621	2.53	5255	2000	
Cr	52	3	72	4.943	ppb	4.943	5.20	5638	5000	
Mn	55	3	72	53.685	ppb	53.685	1.67	23026	10000	
Fe	56	2	72	4218.952	ppb	4218.952	1.74	6492409	10000	
Co	59	3	72	1.692	ppb	1.692	9.84	2224	2000	
Ni	60	3	72	4.560	ppb	4.560	1.43	1774	5000	
Cu	63	3	72	3.580	ppb	3.580	2.97	3769	5000	
Zn	66	3	72	16.883	ppb	16.883	4.74	3110	5000	
As	75	3	72	1.475	ppb	1.475	9.37	208	2000	
Se	78	2	72	1.047	ppb	1.047	16.46	64	2000	
(Se)	78	3	72	2.561	ppb	2.561	54.44	32	2000	
Sr	88	3	72	219.387	ppb	219.387	1.90	120249	4000	
Mo	95	3	115	0.785	ppb	0.785	9.42	496	2000	
Ag	107	3	115	0.016	ppb	0.016	13.50	52	100	
Cd	111	3	115	0.040	ppb	0.040	102.42	15	2000	
Sn	120	3	115	0.099	ppb	0.099	22.73	1080	2000	
Sb	121	3	115	0.136	ppb	0.136	53.17	188	1000	
Ba	137	3	115	15.393	ppb	15.393	8.09	3770	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-11.86	408	2000	
(Pb)	206	3	193	3.683	ppb	3.683	3.46	4764	100	
(Pb)	207	3	193	3.445	ppb	3.445	3.81	4197	100	
Pb	208	3	193	3.564	ppb	3.564	1.61	18929	5000	
Th	232	3	193	1.482	ppb	1.482	2.45	12067	2000	
U	238	3	193	0.571	ppb	0.571	5.26	4685	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4249871	0.56	4160703	102.14	60	120	
Sc (IS)	45	3	HMI He	657050	1.07	620569	105.88	60	120	
Ge Internal standard	72	2	HMI H2	2320481	1.64	2172040	106.83	60	120	
Ge Internal standard	72	3	HMI He	761030	1.71	684400	111.20	60	120	
In Internal Standard	115	3	HMI He	2600600	1.68	2522161	103.11	60	120	
Ir (IS)	193	3	HMI He	5711545	0.94	5572879	102.49	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	042_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:17:17-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.524	ppb	3.444	2702	50	101.0	90	110	
Na	23	3	45	50485.351	ppb	3.238	6303653	51000	99.0	90	110	
Mg	24	3	45	10948.233	ppb	3.080	713396	11000	99.5	90	110	
Al	27	3	45	1004.996	ppb	4.334	23242	1000	100.5	90	110	
K	39	3	45	11186.345	ppb	1.674	545223	11000	101.7	90	110	
Ca	40	2	45	11500.509	ppb	1.223	6494580	11000	104.6	90	110	
V	51	3	72	51.848	ppb	1.398	31872	50	103.7	90	110	
Cr	52	3	72	51.350	ppb	0.736	41585	50	102.7	90	110	
Mn	55	3	72	51.330	ppb	3.201	21504	50	102.7	90	110	
Fe	56	2	72	1033.662	ppb	0.451	1541683	1000	103.4	90	110	
Co	59	3	72	50.343	ppb	2.898	63843	50	100.7	90	110	
Ni	60	3	72	50.476	ppb	1.189	17776	50	101.0	90	110	
Cu	63	3	72	51.095	ppb	0.629	48741	50	102.2	90	110	
Zn	66	3	72	51.044	ppb	2.814	8695	50	102.1	90	110	
As	75	3	72	51.740	ppb	3.457	6023	50	103.5	90	110	
Se	78	2	72	52.583	ppb	4.836	2936	50	105.2	90	110	
(Se)	78	3	72	47.251	ppb	9.938	347	50	94.5	90	110	
Sr	88	3	72	103.986	ppb	1.193	55674	100	104.0	90	110	
Mo	95	3	115	49.759	ppb	2.008	25974	50	99.5	90	110	
Ag	107	3	115	50.633	ppb	2.841	85885	50	101.3	90	110	
Cd	111	3	115	49.784	ppb	3.758	12546	50	99.6	90	110	
Sn	120	3	115	49.936	ppb	3.715	38413	50	99.9	90	110	
Sb	121	3	115	50.421	ppb	2.543	38446	50	100.8	90	110	
Ba	137	3	115	50.751	ppb	4.031	12303	50	101.5	90	110	
Tl	205	3	193	49.462	ppb	2.134	184707	50	98.9	90	110	
(Pb)	206	3	193	50.131	ppb	1.512	61824	50	100.3	90	110	
(Pb)	207	3	193	49.548	ppb	1.989	54214	50	99.1	90	110	
Pb	208	3	193	50.119	ppb	1.981	249724	50	100.2	90	110	
Th	232	3	193	49.946	ppb	2.318	260557	50	99.9	90	110	
U	238	3	193	50.157	ppb	1.497	270456	50	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4255732	1.39	4160703	102.28	60	120	
Sc (IS)	45	3	HMI He	656091	1.50	620569	105.72	60	120	
Ge Internal standard	72	2	HMI H2	2239284	0.90	2172040	103.10	60	120	
Ge Internal standard	72	3	HMI He	742991	0.39	684400	108.56	60	120	
In Internal Standard	115	3	HMI He	2603664	2.25	2522161	103.23	60	120	
Ir (IS)	193	3	HMI He	5698682	0.61	5572879	102.26	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	043_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:19:08-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	15.958	ppb	52.9	26180	25	
Mg	24	3	45	1.353	ppb	26.6	224	25	
Al	27	3	45	0.826	ppb	105.3	143	15	
K	39	3	45	-12.893	ppb	-274.7	16466	50	
V	51	3	72	-0.211	ppb	-7.9	401	1	
Cr	52	3	72	-0.114	ppb	-126.7	1598	1	
Mn	55	3	72	-0.101	ppb	-37.7	165	0.5	
Co	59	3	72	0.004	ppb	322.9	35	0.5	
Ni	60	3	72	0.086	ppb	49.4	172	1	
Cu	63	3	72	-0.037	ppb	-56.1	253	1	
Zn	66	3	72	-0.326	ppb	-103.3	192	5	
As	75	3	72	0.003	ppb	3315.1	33	1	
Se	78	2	72	-0.025	ppb	-144.4	2	1	
(Se)	78	3	72	-0.408	ppb	-171.4	10	1	
Sr	88	3	72	-0.004	ppb	-676.3	38	0.5	
Mo	95	3	115	0.002	ppb	3566.3	92	0.5	
Ag	107	3	115	0.007	ppb	45.7	37	1	
Cd	111	3	115	-0.014	ppb	-80.9	2	0.5	
Sn	120	3	115	-0.329	ppb	-17.7	778	1	
Sb	121	3	115	0.062	ppb	34.3	135	0.6	
Ba	137	3	115	-0.099	ppb	-23.9	32	0.5	
Tl	205	3	193	-0.106	ppb	-3.2	310	0.1	
(Pb)	206	3	193	-0.025	ppb	-56.4	198	1	
(Pb)	207	3	193	-0.027	ppb	-53.4	425	1	
Pb	208	3	193	-0.032	ppb	-17.4	1069	0.5	
Th	232	3	193	0.613	ppb	28.4	7667	1	
U	238	3	193	0.012	ppb	101.9	1696	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4230226	0.89	4160703	101.67	60	120	
Sc (IS)	45	3	HMI He	660243	0.60	620569	106.39	60	120	
Ge Internal standard	72	2	HMI H2	2228401	1.13	2172040	102.59	60	120	
Ge Internal standard	72	3	HMI He	754797	0.85	684400	110.29	60	120	
In Internal Standard	115	3	HMI He	2665771	1.08	2522161	105.69	60	120	
Ir (IS)	193	3	HMI He	5763907	0.72	5572879	103.43	60	120	

Sample Report

Sample Table

Sample Name	160-48512-a-2-a
Data File Name	044SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:21:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	7786.150	ppb	7786.150	0.88	971733	400000	
Mg	24	3	45	10589.577	ppb	10589.577	2.13	675610	400000	
Al	27	3	45	133.169	ppb	133.169	9.52	3120	400000	
K	39	3	45	1711.883	ppb	1711.883	1.08	95744	400000	
Ca	40	2	45	54844.251	ppb	54844.251	1.06	30677027	400000	
V	51	3	72	-0.454	ppb	-0.454	-16.50	250	2000	
Cr	52	3	72	1.019	ppb	1.019	12.99	2469	5000	
Mn	55	3	72	13.739	ppb	13.739	4.00	5942	10000	
Fe	56	2	72	137.486	ppb	137.486	1.39	219180	10000	
Co	59	3	72	0.122	ppb	0.122	8.00	185	2000	
Ni	60	3	72	0.665	ppb	0.665	18.35	373	5000	
Cu	63	3	72	0.374	ppb	0.374	22.78	641	5000	
Zn	66	3	72	2.613	ppb	2.613	33.03	680	5000	
As	75	3	72	0.179	ppb	0.179	136.71	53	2000	
Se	78	2	72	0.089	ppb	0.089	42.77	9	2000	
(Se)	78	3	72	0.325	ppb	0.325	391.35	15	2000	
Sr	88	3	72	115.346	ppb	115.346	1.65	62139	4000	
Mo	95	3	115	0.359	ppb	0.359	29.65	278	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-121.33	18	100	
Cd	111	3	115	0.039	ppb	0.039	49.79	15	2000	
Sn	120	3	115	-0.833	ppb	-0.833	-4.66	386	2000	
Sb	121	3	115	0.017	ppb	0.017	253.48	98	1000	
Ba	137	3	115	67.190	ppb	67.190	2.52	16460	5000	
Tl	205	3	193	-0.115	ppb	-0.115	-5.29	270	2000	
(Pb)	206	3	193	0.128	ppb	0.128	25.65	380	100	
(Pb)	207	3	193	0.066	ppb	0.066	25.60	515	100	
Pb	208	3	193	0.088	ppb	0.088	16.70	1631	5000	
Th	232	3	193	0.188	ppb	0.188	5.15	5339	2000	
U	238	3	193	63.343	ppb	63.343	1.56	337099	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4221098	1.14	4160703	101.45	60	120	
Sc (IS)	45	3	HMI He	642173	0.26	620569	103.48	60	120	
Ge Internal standard	72	2	HMI H2	2309896	1.71	2172040	106.35	60	120	
Ge Internal standard	72	3	HMI He	747783	2.05	684400	109.26	60	120	
In Internal Standard	115	3	HMI He	2632691	1.00	2522161	104.38	60	120	
Ir (IS)	193	3	HMI He	5631235	0.75	5572879	101.05	60	120	

Sample Report

Sample Table

Sample Name	160-48512-a-5-a
Data File Name	045SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:22:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2995.923	ppb	2995.923	1.23	391479	400000	
Mg	24	3	45	12635.475	ppb	12635.475	1.76	812605	400000	
Al	27	3	45	46.655	ppb	46.655	8.30	1181	400000	
K	39	3	45	632.645	ppb	632.645	5.53	46216	400000	
Ca	40	2	45	32274.032	ppb	32274.032	1.02	18096948	400000	
V	51	3	72	-0.340	ppb	-0.340	-15.08	322	2000	
Cr	52	3	72	0.789	ppb	0.789	5.14	2302	5000	
Mn	55	3	72	4.988	ppb	4.988	6.11	2301	10000	
Fe	56	2	72	39.587	ppb	39.587	2.36	69161	10000	
Co	59	3	72	0.050	ppb	0.050	28.10	93	2000	
Ni	60	3	72	0.150	ppb	0.150	57.13	193	5000	
Cu	63	3	72	21.185	ppb	21.185	2.13	20618	5000	
Zn	66	3	72	10.374	ppb	10.374	9.79	1983	5000	
As	75	3	72	0.159	ppb	0.159	79.75	52	2000	
Se	78	2	72	0.066	ppb	0.066	107.72	7	2000	
(Se)	78	3	72	0.772	ppb	0.772	142.27	18	2000	
Sr	88	3	72	37.929	ppb	37.929	1.06	20577	4000	
Mo	95	3	115	0.081	ppb	0.081	42.13	132	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-181.44	20	100	
Cd	111	3	115	0.012	ppb	0.012	179.52	8	2000	
Sn	120	3	115	-0.377	ppb	-0.377	-18.55	733	2000	
Sb	121	3	115	-0.029	ppb	-0.029	-65.53	63	1000	
Ba	137	3	115	53.676	ppb	53.676	2.20	13167	5000	
Tl	205	3	193	-0.138	ppb	-0.138	-4.65	188	2000	
(Pb)	206	3	193	0.153	ppb	0.153	12.75	415	100	
(Pb)	207	3	193	0.110	ppb	0.110	50.86	568	100	
Pb	208	3	193	0.143	ppb	0.143	17.04	1921	5000	
Th	232	3	193	0.036	ppb	0.036	112.88	4619	2000	
U	238	3	193	1.655	ppb	1.655	0.59	10483	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4230322	0.29	4160703	101.67	60	120	
Sc (IS)	45	3	HMI He	647346	0.91	620569	104.31	60	120	
Ge Internal standard	72	2	HMI H2	2301023	1.28	2172040	105.94	60	120	
Ge Internal standard	72	3	HMI He	751962	1.34	684400	109.87	60	120	
In Internal Standard	115	3	HMI He	2634511	2.19	2522161	104.45	60	120	
Ir (IS)	193	3	HMI He	5696885	0.86	5572879	102.23	60	120	

Sample Report

Sample Table

Sample Name	160-48513-a-2-a
Data File Name	046SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:24:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.160	ppb	0.160	173.21	8	2000	
Na	23	3	45	28959.658	ppb	28959.658	1.82	3621568	400000	
Mg	24	3	45	14287.662	ppb	14287.662	2.16	929750	400000	
Al	27	3	45	67.996	ppb	67.996	9.51	1685	400000	
K	39	3	45	2431.003	ppb	2431.003	2.71	131567	400000	
Ca	40	2	45	106576.853	ppb	106576.853	1.53	58715488	400000	
V	51	3	72	-0.667	ppb	-0.667	-3.40	123	2000	
Cr	52	3	72	0.615	ppb	0.615	17.07	2206	5000	
Mn	55	3	72	337.606	ppb	337.606	2.14	144619	10000	
Fe	56	2	72	165.675	ppb	165.675	2.81	259902	10000	
Co	59	3	72	0.399	ppb	0.399	2.51	551	2000	
Ni	60	3	72	3.422	ppb	3.422	10.33	1376	5000	
Cu	63	3	72	0.374	ppb	0.374	16.21	658	5000	
Zn	66	3	72	3.426	ppb	3.426	8.67	835	5000	
As	75	3	72	0.040	ppb	0.040	150.62	38	2000	
Se	78	2	72	0.126	ppb	0.126	65.67	11	2000	
(Se)	78	3	72	0.245	ppb	0.245	729.20	15	2000	
Sr	88	3	72	267.836	ppb	267.836	2.20	147746	4000	
Mo	95	3	115	0.339	ppb	0.339	23.64	265	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-556.13	20	100	
Cd	111	3	115	1.123	ppb	1.123	13.14	288	2000	
Sn	120	3	115	-0.901	ppb	-0.901	-6.49	332	2000	
Sb	121	3	115	0.082	ppb	0.082	40.66	147	1000	
Ba	137	3	115	127.827	ppb	127.827	1.77	30931	5000	
Tl	205	3	193	-0.141	ppb	-0.141	-3.95	177	2000	
(Pb)	206	3	193	-0.015	ppb	-0.015	-61.51	208	100	
(Pb)	207	3	193	-0.020	ppb	-0.020	-138.09	426	100	
Pb	208	3	193	-0.023	ppb	-0.023	-73.93	1098	5000	
Th	232	3	193	0.051	ppb	0.051	10.10	4690	2000	
U	238	3	193	134.018	ppb	134.018	0.94	718372	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4158941	2.16	4160703	99.96	60	120	
Sc (IS)	45	3	HMI He	655171	1.62	620569	105.58	60	120	
Ge Internal standard	72	2	HMI H2	2288749	0.85	2172040	105.37	60	120	
Ge Internal standard	72	3	HMI He	765984	1.56	684400	111.92	60	120	
In Internal Standard	115	3	HMI He	2604755	1.37	2522161	103.27	60	120	
Ir (IS)	193	3	HMI He	5685985	0.69	5572879	102.03	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-a@50
Data File Name	047SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:26:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.184	ppb	0.184	50.35	10	2000	
Na	23	3	45	1769.870	ppb	1769.870	2.32	244405	400000	
Mg	24	3	45	1943.844	ppb	1943.844	2.09	126897	400000	
Al	27	3	45	33.493	ppb	33.493	18.27	894	400000	
K	39	3	45	128.321	ppb	128.321	22.53	23042	400000	
Ca	40	2	45	8383.310	ppb	8383.310	0.61	4801042	400000	
V	51	3	72	-0.178	ppb	-0.178	-52.24	413	2000	
Cr	52	3	72	-0.065	ppb	-0.065	-175.20	1603	5000	
Mn	55	3	72	776.726	ppb	776.726	1.75	320666	10000	
Fe	56	2	72	4.711	ppb	4.711	5.99	15798	10000	
Co	59	3	72	3.770	ppb	3.770	3.11	4780	2000	
Ni	60	3	72	30.596	ppb	30.596	0.47	10769	5000	
Cu	63	3	72	563.542	ppb	563.542	1.53	531635	5000	
Zn	66	3	72	78.162	ppb	78.162	0.86	13111	5000	
As	75	3	72	0.109	ppb	0.109	100.99	45	2000	
Se	78	2	72	0.103	ppb	0.103	18.76	9	2000	
(Se)	78	3	72	1.760	ppb	1.760	80.97	25	2000	
Sr	88	3	72	14.037	ppb	14.037	1.33	7507	4000	
Mo	95	3	115	-0.059	ppb	-0.059	-32.76	58	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-102.79	22	100	
Cd	111	3	115	51.150	ppb	51.150	1.98	13117	2000	
Sn	120	3	115	-0.004	ppb	-0.004	-1499.36	1021	2000	
Sb	121	3	115	0.220	ppb	0.220	15.41	257	1000	
Ba	137	3	115	3.612	ppb	3.612	5.14	943	5000	
Tl	205	3	193	0.032	ppb	0.032	46.41	830	2000	
(Pb)	206	3	193	0.159	ppb	0.159	14.03	426	100	
(Pb)	207	3	193	0.038	ppb	0.038	120.43	495	100	
Pb	208	3	193	0.126	ppb	0.126	8.17	1856	5000	
Th	232	3	193	0.018	ppb	0.018	135.67	4577	2000	
U	238	3	193	0.120	ppb	0.120	26.72	2281	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4312252	0.97	4160703	103.64	60	120	
Sc (IS)	45	3	HMI He	656609	0.86	620569	105.81	60	120	
Ge Internal standard	72	2	HMI H2	2271568	1.35	2172040	104.58	60	120	
Ge Internal standard	72	3	HMI He	738787	1.49	684400	107.95	60	120	
In Internal Standard	115	3	HMI He	2647994	0.53	2522161	104.99	60	120	
Ir (IS)	193	3	HMI He	5755773	1.14	5572879	103.28	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aSD@250
Data File Name	048SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:28:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	369.625	ppb	369.625	4.17	69573	400000	
Mg	24	3	45	408.291	ppb	408.291	1.28	26578	400000	
Al	27	3	45	9.688	ppb	9.688	32.40	344	400000	
K	39	3	45	10.241	ppb	10.241	261.44	17352	400000	
Ca	40	2	45	1704.241	ppb	1704.241	2.99	987752	400000	
V	51	3	72	-0.152	ppb	-0.152	-25.44	435	2000	
Cr	52	3	72	-0.084	ppb	-0.084	-82.39	1609	5000	
Mn	55	3	72	150.760	ppb	150.760	2.07	63238	10000	
Fe	56	2	72	3.684	ppb	3.684	9.96	13854	10000	
Co	59	3	72	0.765	ppb	0.765	3.19	1006	2000	
Ni	60	3	72	6.048	ppb	6.048	1.67	2269	5000	
Cu	63	3	72	111.561	ppb	111.561	1.08	106892	5000	
Zn	66	3	72	17.385	ppb	17.385	4.91	3145	5000	
As	75	3	72	0.118	ppb	0.118	183.09	47	2000	
Se	78	2	72	0.023	ppb	0.023	179.31	5	2000	
(Se)	78	3	72	0.309	ppb	0.309	453.94	15	2000	
Sr	88	3	72	2.847	ppb	2.847	7.29	1574	4000	
Mo	95	3	115	-0.061	ppb	-0.061	-58.41	57	2000	
Ag	107	3	115	0.000	ppb	0.000	1408.20	25	100	
Cd	111	3	115	10.044	ppb	10.044	3.31	2561	2000	
Sn	120	3	115	-0.108	ppb	-0.108	-66.88	935	2000	
Sb	121	3	115	0.167	ppb	0.167	22.20	213	1000	
Ba	137	3	115	0.797	ppb	0.797	12.41	250	5000	
Tl	205	3	193	-0.079	ppb	-0.079	-8.21	416	2000	
(Pb)	206	3	193	0.028	ppb	0.028	36.65	267	100	
(Pb)	207	3	193	-0.049	ppb	-0.049	-66.05	403	100	
Pb	208	3	193	-0.016	ppb	-0.016	-121.27	1153	5000	
Th	232	3	193	-0.027	ppb	-0.027	-191.76	4372	2000	
U	238	3	193	0.021	ppb	0.021	55.67	1756	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4320889	2.67	4160703	103.85	60	120	
Sc (IS)	45	3	HMI He	652077	1.48	620569	105.08	60	120	
Ge Internal standard	72	2	HMI H2	2207576	0.43	2172040	101.64	60	120	
Ge Internal standard	72	3	HMI He	748651	1.05	684400	109.39	60	120	
In Internal Standard	115	3	HMI He	2627885	0.79	2522161	104.19	60	120	
Ir (IS)	193	3	HMI He	5800735	1.92	5572879	104.09	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-b ms@50
Data File Name	049SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:30:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.910	ppb	0.910	27.42	48	2000	
Na	23	3	45	1822.682	ppb	1822.682	3.51	242406	400000	
Mg	24	3	45	2044.075	ppb	2044.075	2.94	128880	400000	
Al	27	3	45	52.638	ppb	52.638	13.86	1288	400000	
K	39	3	45	155.970	ppb	155.970	25.17	23500	400000	
Ca	40	2	45	8360.748	ppb	8360.748	1.50	4781518	400000	
V	51	3	72	0.660	ppb	0.660	49.39	891	2000	
Cr	52	3	72	0.824	ppb	0.824	22.28	2229	5000	
Mn	55	3	72	789.160	ppb	789.160	0.91	317422	10000	
Fe	56	2	72	21.367	ppb	21.367	3.65	40041	10000	
Co	59	3	72	4.663	ppb	4.663	0.86	5753	2000	
Ni	60	3	72	31.492	ppb	31.492	4.22	10794	5000	
Cu	63	3	72	573.676	ppb	573.676	0.65	527279	5000	
Zn	66	3	72	82.784	ppb	82.784	1.61	13517	5000	
As	75	3	72	0.981	ppb	0.981	37.79	142	2000	
Se	78	2	72	0.985	ppb	0.985	13.92	58	2000	
(Se)	78	3	72	1.605	ppb	1.605	24.70	23	2000	
Sr	88	3	72	16.252	ppb	16.252	2.09	8460	4000	
Mo	95	3	115	0.823	ppb	0.823	11.56	506	2000	
Ag	107	3	115	0.844	ppb	0.844	1.35	1426	100	
Cd	111	3	115	51.601	ppb	51.601	2.14	12735	2000	
Sn	120	3	115	0.613	ppb	0.613	29.76	1433	2000	
Sb	121	3	115	0.978	ppb	0.978	1.56	811	1000	
Ba	137	3	115	5.533	ppb	5.533	7.80	1361	5000	
Tl	205	3	193	0.879	ppb	0.879	4.20	3964	2000	
(Pb)	206	3	193	0.997	ppb	0.997	6.85	1451	100	
(Pb)	207	3	193	0.892	ppb	0.892	9.05	1414	100	
Pb	208	3	193	0.975	ppb	0.975	2.93	6041	5000	
Th	232	3	193	0.858	ppb	0.858	2.03	8829	2000	
U	238	3	193	0.954	ppb	0.954	1.89	6717	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4306113	0.67	4160703	103.49	60	120	
Sc (IS)	45	3	HMI He	634541	3.34	620569	102.25	60	120	
Ge Internal standard	72	2	HMI H2	2226390	1.09	2172040	102.50	60	120	
Ge Internal standard	72	3	HMI He	719735	1.51	684400	105.16	60	120	
In Internal Standard	115	3	HMI He	2549350	3.31	2522161	101.08	60	120	
Ir (IS)	193	3	HMI He	5691731	1.61	5572879	102.13	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-c msd@50
Data File Name	050SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:32:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.911	ppb	0.911	62.79	48	2000	
Na	23	3	45	1790.059	ppb	1790.059	1.32	241420	400000	
Mg	24	3	45	2013.204	ppb	2013.204	1.75	128486	400000	
Al	27	3	45	54.214	ppb	54.214	2.76	1341	400000	
K	39	3	45	137.191	ppb	137.191	23.77	22945	400000	
Ca	40	2	45	8372.105	ppb	8372.105	1.24	4713359	400000	
V	51	3	72	0.827	ppb	0.827	22.80	995	2000	
Cr	52	3	72	0.938	ppb	0.938	4.29	2327	5000	
Mn	55	3	72	787.485	ppb	787.485	2.30	318180	10000	
Fe	56	2	72	21.779	ppb	21.779	1.17	40386	10000	
Co	59	3	72	4.622	ppb	4.622	1.07	5732	2000	
Ni	60	3	72	31.200	ppb	31.200	1.42	10744	5000	
Cu	63	3	72	576.742	ppb	576.742	2.44	532471	5000	
Zn	66	3	72	82.286	ppb	82.286	4.63	13492	5000	
As	75	3	72	0.859	ppb	0.859	15.12	128	2000	
Se	78	2	72	1.270	ppb	1.270	29.49	73	2000	
(Se)	78	3	72	3.066	ppb	3.066	62.01	33	2000	
Sr	88	3	72	16.689	ppb	16.689	1.50	8728	4000	
Mo	95	3	115	0.715	ppb	0.715	22.68	461	2000	
Ag	107	3	115	0.912	ppb	0.912	1.47	1576	100	
Cd	111	3	115	51.873	ppb	51.873	2.92	13123	2000	
Sn	120	3	115	0.722	ppb	0.722	19.67	1553	2000	
Sb	121	3	115	0.927	ppb	0.927	14.89	793	1000	
Ba	137	3	115	4.805	ppb	4.805	9.08	1219	5000	
Tl	205	3	193	0.914	ppb	0.914	5.91	4077	2000	
(Pb)	206	3	193	1.039	ppb	1.039	8.04	1493	100	
(Pb)	207	3	193	1.014	ppb	1.014	9.67	1539	100	
Pb	208	3	193	1.019	ppb	1.019	5.79	6224	5000	
Th	232	3	193	0.915	ppb	0.915	1.13	9072	2000	
U	238	3	193	1.005	ppb	1.005	0.77	6955	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4240604	4.05	4160703	101.92	60	120	
Sc (IS)	45	3	HMI He	641924	0.66	620569	103.44	60	120	
Ge Internal standard	72	2	HMI H2	2211541	0.27	2172040	101.82	60	120	
Ge Internal standard	72	3	HMI He	723107	1.67	684400	105.66	60	120	
In Internal Standard	115	3	HMI He	2612614	0.65	2522161	103.59	60	120	
Ir (IS)	193	3	HMI He	5661855	1.53	5572879	101.60	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aPDS@50
Data File Name	051SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:33:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	210.604	ppb	210.604	2.98	11084	2000	
Na	23	3	45	1884.619	ppb	1884.619	1.05	250096	400000	
Mg	24	3	45	2028.951	ppb	2028.951	1.14	128042	400000	
Al	27	3	45	2142.624	ppb	2142.624	0.61	47822	400000	
K	39	3	45	182.372	ppb	182.372	15.23	24737	400000	
Ca	40	2	45	8414.195	ppb	8414.195	1.74	4620131	400000	
V	51	3	72	204.706	ppb	204.706	1.26	126102	2000	
Cr	52	3	72	202.972	ppb	202.972	0.94	161768	5000	
Mn	55	3	72	943.819	ppb	943.819	0.42	397551	10000	
Fe	56	2	72	23.710	ppb	23.710	2.22	45182	10000	
Co	59	3	72	204.809	ppb	204.809	0.73	263392	2000	
Ni	60	3	72	229.898	ppb	229.898	0.80	81632	5000	
Cu	63	3	72	745.799	ppb	745.799	0.78	717786	5000	
Zn	66	3	72	286.375	ppb	286.375	0.43	48357	5000	
As	75	3	72	198.814	ppb	198.814	1.44	23387	2000	
Se	78	2	72	213.396	ppb	213.396	1.43	12294	2000	
(Se)	78	3	72	196.434	ppb	196.434	6.80	1421	2000	
Sr	88	3	72	219.598	ppb	219.598	0.49	119226	4000	
Mo	95	3	115	210.175	ppb	210.175	2.21	107265	2000	
Ag	107	3	115	46.500	ppb	46.500	1.14	77355	100	
Cd	111	3	115	259.025	ppb	259.025	1.88	63988	2000	
Sn	120	3	115	208.619	ppb	208.619	1.37	154230	2000	
Sb	121	3	115	212.752	ppb	212.752	1.07	158787	1000	
Ba	137	3	115	215.655	ppb	215.655	2.15	51086	5000	
Tl	205	3	193	212.953	ppb	212.953	0.63	793895	2000	
(Pb)	206	3	193	211.698	ppb	211.698	0.62	260647	100	
(Pb)	207	3	193	208.231	ppb	208.231	0.71	226664	100	
Pb	208	3	193	209.265	ppb	209.265	0.34	1040083	5000	
Th	232	3	193	262.582	ppb	262.582	1.34	1352472	2000	
U	238	3	193	220.665	ppb	220.665	0.69	1185711	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4135133	1.15	4160703	99.39	60	120	
Sc (IS)	45	3	HMI He	634674	1.04	620569	102.27	60	120	
Ge Internal standard	72	2	HMI H2	2312735	1.96	2172040	106.48	60	120	
Ge Internal standard	72	3	HMI He	753716	1.00	684400	110.13	60	120	
In Internal Standard	115	3	HMI He	2552350	2.41	2522161	101.20	60	120	
Ir (IS)	193	3	HMI He	5705043	0.84	5572879	102.37	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	052_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:35:49-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.294	ppb	5.402	2614	50	98.6	90	110	
Na	23	3	45	50248.503	ppb	1.089	6101031	51000	98.5	90	110	
Mg	24	3	45	11011.888	ppb	0.622	697753	11000	100.1	90	110	
Al	27	3	45	1017.250	ppb	1.932	22878	1000	101.7	90	110	
K	39	3	45	11103.292	ppb	0.950	526290	11000	100.9	90	110	
Ca	40	2	45	11528.793	ppb	1.761	6390736	11000	104.8	90	110	
V	51	3	72	52.547	ppb	0.762	31271	50	105.1	90	110	
Cr	52	3	72	52.462	ppb	0.387	41103	50	104.9	90	110	
Mn	55	3	72	51.889	ppb	2.512	21047	50	103.8	90	110	
Fe	56	2	72	1018.193	ppb	1.616	1519953	1000	101.8	90	110	
Co	59	3	72	50.888	ppb	2.163	62486	50	101.8	90	110	
Ni	60	3	72	51.655	ppb	1.557	17611	50	103.3	90	110	
Cu	63	3	72	52.539	ppb	1.649	48524	50	105.1	90	110	
Zn	66	3	72	50.900	ppb	0.275	8397	50	101.8	90	110	
As	75	3	72	51.032	ppb	1.002	5753	50	102.1	90	110	
Se	78	2	72	51.267	ppb	2.033	2864	50	102.5	90	110	
(Se)	78	3	72	54.691	ppb	1.341	386	50	109.4	90	110	
Sr	88	3	72	106.479	ppb	0.676	55201	100	106.5	90	110	
Mo	95	3	115	49.345	ppb	1.736	25922	50	98.7	90	110	
Ag	107	3	115	49.929	ppb	1.205	85241	50	99.9	90	110	
Cd	111	3	115	48.801	ppb	1.614	12380	50	97.6	90	110	
Sn	120	3	115	49.023	ppb	0.722	37982	50	98.0	90	110	
Sb	121	3	115	49.767	ppb	1.261	38194	50	99.5	90	110	
Ba	137	3	115	50.299	ppb	3.992	12275	50	100.6	90	110	
Tl	205	3	193	49.695	ppb	1.200	186598	50	99.4	90	110	
(Pb)	206	3	193	49.748	ppb	2.793	61684	50	99.5	90	110	
(Pb)	207	3	193	49.818	ppb	1.310	54806	50	99.6	90	110	
Pb	208	3	193	50.094	ppb	2.066	250960	50	100.2	90	110	
Th	232	3	193	51.914	ppb	2.205	272137	50	103.8	90	110	
U	238	3	193	50.649	ppb	2.152	274567	50	101.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4177465	1.41	4160703	100.40	60	120	
Sc (IS)	45	3	HMI He	637800	0.21	620569	102.78	60	120	
Ge Internal standard	72	2	HMI H2	2241284	1.65	2172040	103.19	60	120	
Ge Internal standard	72	3	HMI He	719439	0.78	684400	105.12	60	120	
In Internal Standard	115	3	HMI He	2619710	1.47	2522161	103.87	60	120	
Ir (IS)	193	3	HMI He	5730059	1.00	5572879	102.82	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	053_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:37:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	4.178	ppb	57.2	23931	25	
Mg	24	3	45	0.991	ppb	177.4	194	25	
Al	27	3	45	-1.044	ppb	-153.7	97	15	
K	39	3	45	-30.024	ppb	-93.6	15150	50	
V	51	3	72	-0.283	ppb	-16.3	338	1	
Cr	52	3	72	-0.232	ppb	-46.3	1424	1	
Mn	55	3	72	-0.013	ppb	-720.6	192	0.5	
Co	59	3	72	0.006	ppb	72.1	35	0.5	
Ni	60	3	72	0.088	ppb	35.0	163	1	
Cu	63	3	72	0.068	ppb	34.6	335	1	
Zn	66	3	72	-0.259	ppb	-65.3	192	5	
As	75	3	72	0.138	ppb	277.3	47	1	
Se	78	2	72	-0.001	ppb	-4538.5	3	1	
(Se)	78	3	72	-0.328	ppb	-3.8	10	1	
Sr	88	3	72	-0.023	ppb	-51.3	27	0.5	
Mo	95	3	115	-0.006	ppb	-746.3	83	0.5	
Ag	107	3	115	0.007	ppb	42.9	35	1	
Cd	111	3	115	-0.020	ppb	0.0	0	0.5	
Sn	120	3	115	-0.202	ppb	-73.5	840	1	
Sb	121	3	115	0.101	ppb	25.5	158	0.6	
Ba	137	3	115	0.018	ppb	125.9	58	0.5	
Tl	205	3	193	-0.095	ppb	-6.4	353	0.1	
(Pb)	206	3	193	-0.036	ppb	-70.0	185	1	
(Pb)	207	3	193	-0.078	ppb	-7.3	370	1	
Pb	208	3	193	-0.056	ppb	-14.5	948	0.5	
Th	232	3	193	0.673	ppb	9.8	8002	1	
U	238	3	193	0.024	ppb	57.5	1766	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4142703	1.64	4160703	99.57	60	120	
Sc (IS)	45	3	HMI He	639606	0.88	620569	103.07	60	120	
Ge Internal standard	72	2	HMI H2	2215460	0.48	2172040	102.00	60	120	
Ge Internal standard	72	3	HMI He	714445	0.86	684400	104.39	60	120	
In Internal Standard	115	3	HMI He	2556197	0.51	2522161	101.35	60	120	
Ir (IS)	193	3	HMI He	5776759	1.12	5572879	103.66	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600416/1-b
Data File Name	054_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:39:32-07:00
Sample Type	Blank
Dilution	1
Comment	600476 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	8.137	ppb	49.50537987	24275	25
Mg	24	3	45	1.167	ppb	23.53851654	204	25
Al	27	3	45	1.221	ppb	89.74960174	147	15
K	39	3	45	-14.406	ppb	-183.1239512	15795	50
V	51	3	72	-0.237	ppb	-25.11331232	363	1
Cr	52	3	72	0.013	ppb	1076.358538	1599	1
Mn	55	3	72	0.091	ppb	114.8107026	232	0.5
Co	59	3	72	-0.001	ppb	-317.070931	27	0.5
Ni	60	3	72	0.070	ppb	148.4902991	157	1
Cu	63	3	72	0.119	ppb	63.28121733	380	1
Zn	66	3	72	0.438	ppb	125.4467458	302	5
As	75	3	72	0.020	ppb	140.3948056	33	1
(Se)	78	3	72	0.426	ppb	306.336583	15	1
Sr	88	3	72	0.010	ppb	288.056689	43	0.5
Mo	95	3	115	-0.046	ppb	-36.2648992	63	0.5
Ag	107	3	115	0.004	ppb	248.5212493	30	1
Cd	111	3	115	-0.013	ppb	-86.95712618	2	0.5
Sn	120	3	115	-0.128	ppb	-119.3201517	900	1
Sb	121	3	115	0.090	ppb	39.07690019	152	0.6
Ba	137	3	115	0.108	ppb	43.17673191	80	0.5
Tl	205	3	193	-0.108	ppb	-7.570033741	303	0.1
(Pb)	206	3	193	-0.028	ppb	-22.82991665	195	1
(Pb)	207	3	193	-0.096	ppb	-29.08454358	350	1
Pb	208	3	193	-0.049	ppb	-16.55440646	983	0.5
Th	232	3	193	0.151	ppb	20.3121223	5277	1
U	238	3	193	-0.001	ppb	-3457.236171	1629	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4205789	1.90	4160703	101.08	60	120	
Sc (IS)	45	3	HMI He	636084	1.07	620569	102.50	60	120	
Ge Internal standard	72	2	HMI H2	2248053	0.45	2172040	103.50	60	120	
Ge Internal standard	72	3	HMI He	710616	0.94	684400	103.83	60	120	
In Internal Standard	115	3	HMI He	2573065	1.67	2522161	102.02	60	120	
Ir (IS)	193	3	HMI He	5772112	1.26	5572879	103.58	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600416/2-b
Data File Name	055_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:41:25-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600476 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.672	40.672	ppb	7.200	2077	40	101.7	80	120	
Na	23	3	45	785.712	785.712	ppb	1.518	115334	40	1964.3	80	120	>+/-20%
Mg	24	3	45	756.485	756.485	ppb	1.739	46817	40	1891.2	80	120	>+/-20%
Al	27	3	45	835.350	835.350	ppb	4.576	18324	40	2088.4	80	120	>+/-20%
K	39	3	45	774.478	774.478	ppb	6.563	50709	40	1936.2	80	120	>+/-20%
Ca	40	2	45	895.524	895.524	ppb	0.203	488064	40	2238.8	80	120	>+/-20%
V	51	3	72	40.007	40.007	ppb	0.880	24663	40	100.0	80	120	
Cr	52	3	72	41.291	41.291	ppb	2.573	33689	40	103.2	80	120	
Mn	55	3	72	42.304	42.304	ppb	2.400	17721	40	105.8	80	120	
Fe	56	2	72	840.880	840.880	ppb	3.466	1243899	40	2102.2	80	120	>+/-20%
(Fe)	56	3	72	809.797	809.797	ppb	0.802	543155	40	2024.5	80	120	>+/-20%
Co	59	3	72	40.390	40.390	ppb	0.553	51125	40	101.0	80	120	
Ni	60	3	72	40.204	40.204	ppb	2.087	14159	40	100.5	80	120	
Cu	63	3	72	41.387	41.387	ppb	0.562	39453	40	103.5	80	120	
Zn	66	3	72	41.142	41.142	ppb	2.907	7040	40	102.9	80	120	
As	75	3	72	39.730	39.730	ppb	4.097	4623	40	99.3	80	120	
Se	78	2	72	42.020	42.020	ppb	3.917	2324	40	105.0	80	120	
(Se)	78	3	72	36.005	36.005	ppb	20.636	267	40	90.0	80	120	
Sr	88	3	72	83.091	83.091	ppb	2.052	44398	40	207.7	80	120	>+/-20%
Mo	95	3	115	39.922	39.922	ppb	2.688	20660	40	99.8	80	120	
Ag	107	3	115	40.487	40.487	ppb	1.637	68052	40	101.2	80	120	
Cd	111	3	115	40.680	40.680	ppb	3.123	10159	40	101.7	80	120	
Sn	120	3	115	39.058	39.058	ppb	2.110	29990	40	97.6	80	120	
Sb	121	3	115	39.987	39.987	ppb	1.671	30231	40	100.0	80	120	
Ba	137	3	115	42.307	42.307	ppb	4.236	10171	40	105.8	80	120	
Tl	205	3	193	41.267	41.267	ppb	0.305	153446	40	103.2	80	120	
(Pb)	206	3	193	41.711	41.711	ppb	1.923	51206	40	104.3	80	120	
(Pb)	207	3	193	41.459	41.459	ppb	0.246	45205	40	103.6	80	120	
Pb	208	3	193	41.823	41.823	ppb	1.646	207491	40	104.6	80	120	
Th	232	3	193	41.473	41.473	ppb	1.145	215983	40	103.7	80	120	
U	238	3	193	41.820	41.820	ppb	1.488	224579	40	104.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4017641	1.38	4160703	96.56	60	120	
Sc (IS)	45	3	HMI He	621334	0.61	620569	100.12	60	120	
Ge Internal standard	72	2	HMI H2	2219046	1.97	2172040	102.16	60	120	
Ge Internal standard	72	3	HMI He	741471	1.21	684400	108.34	60	120	
In Internal Standard	115	3	HMI He	2579234	1.70	2522161	102.26	60	120	
Ir (IS)	193	3	HMI He	5669351	1.71	5572879	101.73	60	120	

Sample Report

Sample Table

Sample Name	280-171348-a-1-b
Data File Name	056SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:43:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.130	ppb	0.130	113.88	7	2000	
Na	23	3	45	364549.037	ppb	364549.037	1.39	44314640	400000	
Mg	24	3	45	120448.024	ppb	120448.024	1.28	7665091	400000	
Al	27	3	45	53.452	ppb	53.452	8.02	1321	400000	
K	39	3	45	82835.791	ppb	82835.791	0.29	3837293	400000	
Ca	40	2	45	13332.675	ppb	13332.675	1.70	7378663	400000	
V	51	3	72	-0.283	ppb	-0.283	-1.86	351	2000	
Cr	52	3	72	2.740	ppb	2.740	6.86	3784	5000	
Mn	55	3	72	240.092	ppb	240.092	0.95	99645	10000	
Fe	56	2	72	335.723	ppb	335.723	1.48	517940	10000	
Co	59	3	72	0.421	ppb	0.421	10.74	561	2000	
Ni	60	3	72	0.820	ppb	0.820	11.91	425	5000	
Cu	63	3	72	12.448	ppb	12.448	3.44	12064	5000	
Zn	66	3	72	39.885	ppb	39.885	2.31	6833	5000	
As	75	3	72	0.813	ppb	0.813	18.46	127	2000	
Se	78	2	72	0.607	ppb	0.607	37.71	38	2000	
(Se)	78	3	72	1.514	ppb	1.514	57.29	23	2000	
Sr	88	3	72	152.447	ppb	152.447	1.67	81438	4000	
Mo	95	3	115	0.582	ppb	0.582	32.59	383	2000	
Ag	107	3	115	0.018	ppb	0.018	18.85	53	100	
Cd	111	3	115	0.007	ppb	0.007	171.66	7	2000	
Sn	120	3	115	-0.890	ppb	-0.890	-2.67	333	2000	
Sb	121	3	115	0.191	ppb	0.191	22.41	225	1000	
Ba	137	3	115	37.150	ppb	37.150	2.57	8854	5000	
Tl	205	3	193	-0.093	ppb	-0.093	-3.40	348	2000	
(Pb)	206	3	193	0.159	ppb	0.159	34.09	415	100	
(Pb)	207	3	193	0.109	ppb	0.109	27.14	558	100	
Pb	208	3	193	0.139	ppb	0.139	10.63	1869	5000	
Th	232	3	193	0.446	ppb	0.446	10.93	6615	2000	
U	238	3	193	0.213	ppb	0.213	9.81	2707	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4171956	1.55	4160703	100.27	60	120	
Sc (IS)	45	3	HMI He	640711	0.93	620569	103.25	60	120	
Ge Internal standard	72	2	HMI H2	2289990	1.77	2172040	105.43	60	120	
Ge Internal standard	72	3	HMI He	741595	1.37	684400	108.36	60	120	
In Internal Standard	115	3	HMI He	2554106	0.88	2522161	101.27	60	120	
Ir (IS)	193	3	HMI He	5601738	2.24	5572879	100.52	60	120	

Sample Report

Sample Table

Sample Name	280-171348-a-2-b
Data File Name	057SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:45:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.100	ppb	0.100	99.74	5	2000	
Na	23	3	45	4956763.396	ppb	4956763.396	2.21	640331275	400000	>LDR
Mg	24	3	45	21109.619	ppb	21109.619	1.80	1428493	400000	
Al	27	3	45	893.549	ppb	893.549	0.96	21485	400000	
K	39	3	45	120854.262	ppb	120854.262	1.63	5944529	400000	
Ca	40	2	45	15123.622	ppb	15123.622	0.60	8386227	400000	
V	51	3	72	2.668	ppb	2.668	4.82	2179	2000	
Cr	52	3	72	4.418	ppb	4.418	7.40	5198	5000	
Mn	55	3	72	223.750	ppb	223.750	2.60	94938	10000	
Fe	56	2	72	1487.875	ppb	1487.875	1.66	2264533	10000	
Co	59	3	72	2.702	ppb	2.702	1.15	3525	2000	
Ni	60	3	72	4.537	ppb	4.537	12.19	1758	5000	
Cu	63	3	72	49.045	ppb	49.045	2.53	47743	5000	
Zn	66	3	72	264.573	ppb	264.573	1.75	44951	5000	
As	75	3	72	1.678	ppb	1.678	4.12	232	2000	
Se	78	2	72	1.647	ppb	1.647	24.04	97	2000	
(Se)	78	3	72	3.295	ppb	3.295	54.82	37	2000	
Sr	88	3	72	160.015	ppb	160.015	1.57	87392	4000	
Mo	95	3	115	2.493	ppb	2.493	5.42	1343	2000	
Ag	107	3	115	0.077	ppb	0.077	44.96	150	100	
Cd	111	3	115	0.136	ppb	0.136	66.94	38	2000	
Sn	120	3	115	0.060	ppb	0.060	177.46	1020	2000	
Sb	121	3	115	0.460	ppb	0.460	18.55	421	1000	
Ba	137	3	115	131.410	ppb	131.410	1.06	30817	5000	
Tl	205	3	193	-0.113	ppb	-0.113	-8.05	248	2000	
(Pb)	206	3	193	1.715	ppb	1.715	7.13	2067	100	
(Pb)	207	3	193	1.543	ppb	1.543	7.22	1881	100	
Pb	208	3	193	1.655	ppb	1.655	5.20	8344	5000	
Th	232	3	193	0.350	ppb	0.350	15.76	5520	2000	
U	238	3	193	0.412	ppb	0.412	2.17	3389	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4180326	1.05	4160703	100.47	60	120	
Sc (IS)	45	3	HMI He	681320	1.53	620569	109.79	60	120	
Ge Internal standard	72	2	HMI H2	2289071	0.60	2172040	105.39	60	120	
Ge Internal standard	72	3	HMI He	758168	1.35	684400	110.78	60	120	
In Internal Standard	115	3	HMI He	2524043	0.70	2522161	100.07	60	120	
Ir (IS)	193	3	HMI He	5049778	1.24	5572879	90.61	60	120	

Sample Report

Sample Table

Sample Name	280-171348-a-2-b@50
Data File Name	058SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:47:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	100481.048	ppb	100481.048	2.23	12821124	400000	
Mg	24	3	45	436.772	ppb	436.772	2.94	29270	400000	
Al	27	3	45	16.042	ppb	16.042	10.46	504	400000	
K	39	3	45	2431.715	ppb	2431.715	2.27	134938	400000	
Ca	40	2	45	329.679	ppb	329.679	1.31	202000	400000	
V	51	3	72	-0.382	ppb	-0.382	-17.86	288	2000	
Cr	52	3	72	0.066	ppb	0.066	35.67	1693	5000	
Mn	55	3	72	4.765	ppb	4.765	4.41	2156	10000	
Fe	56	2	72	33.229	ppb	33.229	3.95	59574	10000	
Co	59	3	72	0.057	ppb	0.057	13.43	100	2000	
Ni	60	3	72	0.085	ppb	0.085	38.85	167	5000	
Cu	63	3	72	1.225	ppb	1.225	6.86	1429	5000	
Zn	66	3	72	7.992	ppb	7.992	5.23	1548	5000	
As	75	3	72	0.069	ppb	0.069	253.58	40	2000	
Se	78	2	72	0.054	ppb	0.054	197.41	7	2000	
(Se)	78	3	72	-0.850	ppb	-0.850	-193.62	7	2000	
Sr	88	3	72	3.239	ppb	3.239	6.89	1751	4000	
Mo	95	3	115	0.022	ppb	0.022	222.91	100	2000	
Ag	107	3	115	0.001	ppb	0.001	793.97	27	100	
Cd	111	3	115	-0.001	ppb	-0.001	-2667.17	5	2000	
Sn	120	3	115	0.052	ppb	0.052	152.52	1051	2000	
Sb	121	3	115	0.194	ppb	0.194	19.55	233	1000	
Ba	137	3	115	2.394	ppb	2.394	4.00	636	5000	
Tl	205	3	193	-0.118	ppb	-0.118	-9.72	255	2000	
(Pb)	206	3	193	0.001	ppb	0.001	3300.02	222	100	
(Pb)	207	3	193	-0.055	ppb	-0.055	-37.52	378	100	
Pb	208	3	193	-0.017	ppb	-0.017	-132.39	1096	5000	
Th	232	3	193	0.034	ppb	0.034	43.84	4472	2000	
U	238	3	193	0.018	ppb	0.018	111.40	1656	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4342113	2.06	4160703	104.36	60	120	
Sc (IS)	45	3	HMI He	671752	2.24	620569	108.25	60	120	
Ge Internal standard	72	2	HMI H2	2306253	2.43	2172040	106.18	60	120	
Ge Internal standard	72	3	HMI He	734142	0.88	684400	107.27	60	120	
In Internal Standard	115	3	HMI He	2617730	2.03	2522161	103.79	60	120	
Ir (IS)	193	3	HMI He	5528781	2.45	5572879	99.21	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-b
Data File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:48:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	304557.461	ppb	304557.461	2.07	36502861	400000	
Mg	24	3	45	20492.815	ppb	20492.815	3.18	1285638	400000	
Al	27	3	45	10.304	ppb	10.304	9.07	347	400000	
K	39	3	45	7932.290	ppb	7932.290	2.59	376994	400000	
Ca	40	2	45	82573.722	ppb	82573.722	1.20	44952664	400000	
V	51	3	72	-0.011	ppb	-0.011	-691.70	506	2000	
Cr	52	3	72	1.023	ppb	1.023	25.39	2409	5000	
Mn	55	3	72	46.117	ppb	46.117	0.82	18990	10000	
Fe	56	2	72	7.048	ppb	7.048	2.94	19183	10000	
Co	59	3	72	0.235	ppb	0.235	8.94	322	2000	
Ni	60	3	72	3.320	ppb	3.320	8.98	1276	5000	
Cu	63	3	72	2.425	ppb	2.425	3.86	2537	5000	
Zn	66	3	72	3.888	ppb	3.888	7.29	870	5000	
As	75	3	72	1.524	ppb	1.524	26.30	205	2000	
Se	78	2	72	2.109	ppb	2.109	8.45	122	2000	
(Se)	78	3	72	1.549	ppb	1.549	94.02	23	2000	
Sr	88	3	72	1059.847	ppb	1059.847	2.52	556452	4000	
Mo	95	3	115	32.887	ppb	32.887	2.04	16874	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-1024.01	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-354.51	3	2000	
Sn	120	3	115	-0.950	ppb	-0.950	-1.18	290	2000	
Sb	121	3	115	0.281	ppb	0.281	23.56	292	1000	
Ba	137	3	115	155.897	ppb	155.897	2.25	36983	5000	
Tl	205	3	193	-0.102	ppb	-0.102	-9.51	300	2000	
(Pb)	206	3	193	-0.010	ppb	-0.010	-321.16	198	100	
(Pb)	207	3	193	-0.084	ppb	-0.084	-12.33	332	100	
Pb	208	3	193	-0.056	ppb	-0.056	-24.77	868	5000	
Th	232	3	193	0.037	ppb	0.037	52.61	4289	2000	
U	238	3	193	0.536	ppb	0.536	2.31	4155	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4108934	1.06	4160703	98.76	60	120	
Sc (IS)	45	3	HMI He	631762	1.79	620569	101.80	60	120	
Ge Internal standard	72	2	HMI H2	2255857	1.13	2172040	103.86	60	120	
Ge Internal standard	72	3	HMI He	729348	2.54	684400	106.57	60	120	
In Internal Standard	115	3	HMI He	2554897	2.52	2522161	101.30	60	120	
Ir (IS)	193	3	HMI He	5278284	2.30	5572879	94.71	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bSD@5
Data File Name	060SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:50:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	67325.990	ppb	67325.990	0.71	8173607	400000	
Mg	24	3	45	4413.745	ppb	4413.745	0.32	279984	400000	
Al	27	3	45	2.531	ppb	2.531	40.49	177	400000	
K	39	3	45	1755.466	ppb	1755.466	2.07	97178	400000	
Ca	40	2	45	17699.996	ppb	17699.996	1.55	9969687	400000	
V	51	3	72	-0.219	ppb	-0.219	-15.84	391	2000	
Cr	52	3	72	0.110	ppb	0.110	86.63	1751	5000	
Mn	55	3	72	9.788	ppb	9.788	3.81	4275	10000	
Fe	56	2	72	3.490	ppb	3.490	14.11	14008	10000	
Co	59	3	72	0.053	ppb	0.053	24.18	97	2000	
Ni	60	3	72	0.743	ppb	0.743	15.87	400	5000	
Cu	63	3	72	0.572	ppb	0.572	8.37	828	5000	
Zn	66	3	72	2.370	ppb	2.370	15.96	635	5000	
As	75	3	72	0.384	ppb	0.384	43.69	77	2000	
Se	78	2	72	0.454	ppb	0.454	24.19	29	2000	
(Se)	78	3	72	0.595	ppb	0.595	294.71	17	2000	
Sr	88	3	72	225.685	ppb	225.685	5.16	120935	4000	
Mo	95	3	115	7.052	ppb	7.052	3.50	3694	2000	
Ag	107	3	115	0.006	ppb	0.006	199.70	33	100	
Cd	111	3	115	-0.007	ppb	-0.007	-354.19	3	2000	
Sn	120	3	115	-0.181	ppb	-0.181	-18.11	856	2000	
Sb	121	3	115	0.247	ppb	0.247	15.37	268	1000	
Ba	137	3	115	33.445	ppb	33.445	2.12	7992	5000	
Tl	205	3	193	-0.128	ppb	-0.128	-3.98	215	2000	
(Pb)	206	3	193	-0.033	ppb	-0.033	-137.64	178	100	
(Pb)	207	3	193	-0.053	ppb	-0.053	-59.97	376	100	
Pb	208	3	193	-0.062	ppb	-0.062	-13.59	868	5000	
Th	232	3	193	0.049	ppb	0.049	21.65	4494	2000	
U	238	3	193	0.137	ppb	0.137	12.04	2252	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4247842	2.43	4160703	102.09	60	120	
Sc (IS)	45	3	HMI He	638334	0.24	620569	102.86	60	120	
Ge Internal standard	72	2	HMI H2	2279923	1.97	2172040	104.97	60	120	
Ge Internal standard	72	3	HMI He	744997	4.33	684400	108.85	60	120	
In Internal Standard	115	3	HMI He	2559624	1.78	2522161	101.49	60	120	
Ir (IS)	193	3	HMI He	5462326	1.27	5572879	98.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	061_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:52:38-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.957	ppb	5.447	2512	50	97.9	90	110	
Na	23	3	45	50032.657	ppb	0.311	5960968	51000	98.1	90	110	
Mg	24	3	45	10727.528	ppb	2.119	666966	11000	97.5	90	110	
Al	27	3	45	1011.264	ppb	2.200	22317	1000	101.1	90	110	
K	39	3	45	11228.739	ppb	0.503	522062	11000	102.1	90	110	
Ca	40	2	45	11529.559	ppb	1.841	6339344	11000	104.8	90	110	
V	51	3	72	51.482	ppb	1.788	30269	50	103.0	90	110	
Cr	52	3	72	50.869	ppb	0.973	39414	50	101.7	90	110	
Mn	55	3	72	51.620	ppb	1.832	20682	50	103.2	90	110	
Fe	56	2	72	1042.070	ppb	2.533	1502672	1000	104.2	90	110	
Co	59	3	72	49.966	ppb	0.740	60605	50	99.9	90	110	
Ni	60	3	72	49.718	ppb	1.289	16747	50	99.4	90	110	
Cu	63	3	72	50.482	ppb	2.253	46058	50	101.0	90	110	
Zn	66	3	72	50.183	ppb	0.924	8180	50	100.4	90	110	
As	75	3	72	50.793	ppb	4.903	5655	50	101.6	90	110	
Se	78	2	72	51.543	ppb	2.597	2782	50	103.1	90	110	
(Se)	78	3	72	52.198	ppb	4.293	365	50	104.4	90	110	
Sr	88	3	72	105.374	ppb	1.369	53956	100	105.4	90	110	
Mo	95	3	115	49.134	ppb	1.778	25111	50	98.3	90	110	
Ag	107	3	115	49.345	ppb	2.122	81949	50	98.7	90	110	
Cd	111	3	115	48.491	ppb	2.322	11966	50	97.0	90	110	
Sn	120	3	115	49.564	ppb	1.298	37345	50	99.1	90	110	
Sb	121	3	115	50.363	ppb	1.662	37598	50	100.7	90	110	
Ba	137	3	115	49.901	ppb	2.953	11846	50	99.8	90	110	
Tl	205	3	193	49.209	ppb	2.659	179881	50	98.4	90	110	
(Pb)	206	3	193	50.303	ppb	2.103	60726	50	100.6	90	110	
(Pb)	207	3	193	49.636	ppb	2.380	53161	50	99.3	90	110	
Pb	208	3	193	49.774	ppb	2.824	242761	50	99.5	90	110	
Th	232	3	193	49.710	ppb	2.357	253874	50	99.4	90	110	
U	238	3	193	49.596	ppb	3.612	261745	50	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144027	2.42	4160703	99.60	60	120	
Sc (IS)	45	3	HMI He	625825	0.17	620569	100.85	60	120	
Ge Internal standard	72	2	HMI H2	2165076	1.22	2172040	99.68	60	120	
Ge Internal standard	72	3	HMI He	710589	0.68	684400	103.83	60	120	
In Internal Standard	115	3	HMI He	2548857	2.15	2522161	101.06	60	120	
Ir (IS)	193	3	HMI He	5579759	2.11	5572879	100.12	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	062_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:54:30-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	113.813	ppb	5.1	36748	25	>RL
Mg	24	3	45	2.043	ppb	71.6	257	25	
Al	27	3	45	-0.248	ppb	-575.4	113	15	
K	39	3	45	-4.550	ppb	-730.8	16116	50	
V	51	3	72	-0.287	ppb	-52.8	333	1	
Cr	52	3	72	-0.116	ppb	-52.2	1499	1	
Mn	55	3	72	-0.122	ppb	-105.4	147	0.5	
Co	59	3	72	0.003	ppb	146.1	32	0.5	
Ni	60	3	72	0.072	ppb	47.5	157	1	
Cu	63	3	72	0.078	ppb	85.7	342	1	
Zn	66	3	72	-0.188	ppb	-63.4	202	5	
As	75	3	72	-0.009	ppb	-1268.8	30	1	
Se	78	2	72	0.035	ppb	118.6	5	1	
(Se)	78	3	72	0.185	ppb	930.6	13	1	
Sr	88	3	72	0.004	ppb	754.0	40	0.5	
Mo	95	3	115	-0.029	ppb	-76.4	72	0.5	
Ag	107	3	115	0.010	ppb	111.2	40	1	
Cd	111	3	115	-0.007	ppb	-347.8	3	0.5	
Sn	120	3	115	-0.170	ppb	-58.5	866	1	
Sb	121	3	115	0.112	ppb	46.2	167	0.6	
Ba	137	3	115	-0.052	ppb	-104.2	42	0.5	
Tl	205	3	193	-0.108	ppb	-6.8	298	0.1	
(Pb)	206	3	193	-0.024	ppb	-67.7	197	1	
(Pb)	207	3	193	-0.102	ppb	-35.0	338	1	
Pb	208	3	193	-0.066	ppb	-12.9	885	0.5	
Th	232	3	193	0.490	ppb	22.3	6935	1	
U	238	3	193	0.009	ppb	37.9	1658	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4111816	0.96	4160703	98.83	60	120	
Sc (IS)	45	3	HMI He	631365	0.60	620569	101.74	60	120	
Ge Internal standard	72	2	HMI H2	2214552	0.30	2172040	101.96	60	120	
Ge Internal standard	72	3	HMI He	708840	0.73	684400	103.57	60	120	
In Internal Standard	115	3	HMI He	2563017	1.51	2522161	101.62	60	120	
Ir (IS)	193	3	HMI He	5684129	1.42	5572879	102.00	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-c ms
Data File Name	063SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:56:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.443	ppb	41.443	4.96	2034	2000	
Na	23	3	45	289720.431	ppb	289720.431	0.38	34561261	400000	
Mg	24	3	45	20475.869	ppb	20475.869	1.57	1278644	400000	
Al	27	3	45	823.216	ppb	823.216	1.85	18270	400000	
K	39	3	45	8402.669	ppb	8402.669	1.21	396503	400000	
Ca	40	2	45	78995.084	ppb	78995.084	1.96	43490071	400000	
V	51	3	72	42.391	ppb	42.391	3.31	25718	2000	
Cr	52	3	72	42.886	ppb	42.886	2.80	34422	5000	
Mn	55	3	72	85.964	ppb	85.964	4.19	35274	10000	
Fe	56	2	72	824.931	ppb	824.931	1.48	1225015	10000	
Co	59	3	72	41.482	ppb	41.482	1.75	51750	2000	
Ni	60	3	72	43.240	ppb	43.240	3.60	14994	5000	
Cu	63	3	72	42.389	ppb	42.389	1.98	39817	5000	
Zn	66	3	72	44.979	ppb	44.979	2.66	7563	5000	
As	75	3	72	43.255	ppb	43.255	3.51	4957	2000	
Se	78	2	72	43.504	ppb	43.504	6.42	2416	2000	
(Se)	78	3	72	46.447	ppb	46.447	13.70	335	2000	
Sr	88	3	72	1105.657	ppb	1105.657	3.07	581730	4000	
Mo	95	3	115	74.123	ppb	74.123	0.29	37672	2000	
Ag	107	3	115	40.862	ppb	40.862	0.19	67574	100	
Cd	111	3	115	40.038	ppb	40.038	1.15	9839	2000	
Sn	120	3	115	41.266	ppb	41.266	1.75	31119	2000	
Sb	121	3	115	42.294	ppb	42.294	0.71	31448	1000	
Ba	137	3	115	193.108	ppb	193.108	0.24	45494	5000	
Tl	205	3	193	42.251	ppb	42.251	0.16	152173	2000	
(Pb)	206	3	193	43.299	ppb	43.299	1.01	51495	100	
(Pb)	207	3	193	42.861	ppb	42.861	0.60	45258	100	
Pb	208	3	193	42.965	ppb	42.965	0.58	206500	5000	
Th	232	3	193	42.990	ppb	42.990	0.62	216753	2000	
U	238	3	193	43.493	ppb	43.493	0.67	226236	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4155856	1.77	4160703	99.88	60	120	
Sc (IS)	45	3	HMI He	628616	0.10	620569	101.30	60	120	
Ge Internal standard	72	2	HMI H2	2226447	0.54	2172040	102.50	60	120	
Ge Internal standard	72	3	HMI He	730955	2.44	684400	106.80	60	120	
In Internal Standard	115	3	HMI He	2537141	0.46	2522161	100.59	60	120	
Ir (IS)	193	3	HMI He	5492095	0.19	5572879	98.55	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-d msd
Data File Name	064SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T21:58:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.171	ppb	42.171	4.21	2091	2000	
Na	23	3	45	287348.129	ppb	287348.129	0.76	34731448	400000	
Mg	24	3	45	20323.165	ppb	20323.165	0.69	1285848	400000	
Al	27	3	45	827.210	ppb	827.210	0.83	18601	400000	
K	39	3	45	8331.647	ppb	8331.647	1.57	398482	400000	
Ca	40	2	45	79652.976	ppb	79652.976	1.28	43193867	400000	
V	51	3	72	42.852	ppb	42.852	1.89	25883	2000	
Cr	52	3	72	43.110	ppb	43.110	2.23	34442	5000	
Mn	55	3	72	86.821	ppb	86.821	1.25	35479	10000	
Fe	56	2	72	835.091	ppb	835.091	0.54	1272595	10000	
Co	59	3	72	41.698	ppb	41.698	0.27	51789	2000	
Ni	60	3	72	44.248	ppb	44.248	0.21	15276	5000	
Cu	63	3	72	42.473	ppb	42.473	1.60	39719	5000	
Zn	66	3	72	45.690	ppb	45.690	2.12	7647	5000	
As	75	3	72	43.908	ppb	43.908	4.14	5012	2000	
Se	78	2	72	44.443	ppb	44.443	1.57	2532	2000	
(Se)	78	3	72	46.408	ppb	46.408	18.13	333	2000	
Sr	88	3	72	1114.689	ppb	1114.689	1.09	584010	4000	
Mo	95	3	115	71.748	ppb	71.748	1.90	37209	2000	
Ag	107	3	115	39.003	ppb	39.003	1.66	65816	100	
Cd	111	3	115	40.481	ppb	40.481	1.58	10150	2000	
Sn	120	3	115	40.324	ppb	40.324	0.45	31057	2000	
Sb	121	3	115	41.898	ppb	41.898	2.14	31789	1000	
Ba	137	3	115	193.606	ppb	193.606	3.14	46533	5000	
Tl	205	3	193	41.872	ppb	41.872	0.86	151153	2000	
(Pb)	206	3	193	43.142	ppb	43.142	1.35	51423	100	
(Pb)	207	3	193	42.078	ppb	42.078	0.63	44541	100	
Pb	208	3	193	42.979	ppb	42.979	1.34	207025	5000	
Th	232	3	193	43.221	ppb	43.221	1.07	218381	2000	
U	238	3	193	44.051	ppb	44.051	1.18	229630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4092717	0.29	4160703	98.37	60	120	
Sc (IS)	45	3	HMI He	636913	0.33	620569	102.63	60	120	
Ge Internal standard	72	2	HMI H2	2284888	0.26	2172040	105.20	60	120	
Ge Internal standard	72	3	HMI He	727547	0.92	684400	106.30	60	120	
In Internal Standard	115	3	HMI He	2589185	1.41	2522161	102.66	60	120	
Ir (IS)	193	3	HMI He	5504875	1.24	5572879	98.78	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bPDS
Data File Name	065SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:00:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	208.246	ppb	208.246	3.90	10374	2000	
Na	23	3	45	283640.273	ppb	283640.273	1.71	34387980	400000	
Mg	24	3	45	19175.462	ppb	19175.462	2.38	1216885	400000	
Al	27	3	45	2066.940	ppb	2066.940	3.73	46432	400000	
K	39	3	45	7539.286	ppb	7539.286	1.56	363273	400000	
Ca	40	2	45	78532.719	ppb	78532.719	1.41	42581258	400000	
V	51	3	72	201.293	ppb	201.293	2.74	121856	2000	
Cr	52	3	72	198.540	ppb	198.540	3.23	155518	5000	
Mn	55	3	72	246.315	ppb	246.315	1.46	102132	10000	
Fe	56	2	72	25.733	ppb	25.733	1.51	47800	10000	
Co	59	3	72	192.889	ppb	192.889	3.03	243772	2000	
Ni	60	3	72	194.862	ppb	194.862	1.77	68029	5000	
Cu	63	3	72	198.825	ppb	198.825	3.31	188240	5000	
Zn	66	3	72	208.192	ppb	208.192	1.75	34619	5000	
As	75	3	72	196.883	ppb	196.883	1.47	22769	2000	
Se	78	2	72	197.790	ppb	197.790	1.89	11278	2000	
(Se)	78	3	72	188.730	ppb	188.730	4.69	1343	2000	
Sr	88	3	72	1204.033	ppb	1204.033	2.91	642215	4000	
Mo	95	3	115	227.759	ppb	227.759	0.82	117969	2000	
Ag	107	3	115	43.682	ppb	43.682	1.46	73729	100	
Cd	111	3	115	190.590	ppb	190.590	0.99	47786	2000	
Sn	120	3	115	202.255	ppb	202.255	2.07	151768	2000	
Sb	121	3	115	202.074	ppb	202.074	1.63	153046	1000	
Ba	137	3	115	354.312	ppb	354.312	2.44	85147	5000	
Tl	205	3	193	201.504	ppb	201.504	0.39	723236	2000	
(Pb)	206	3	193	206.184	ppb	206.184	0.99	244417	100	
(Pb)	207	3	193	202.809	ppb	202.809	0.31	212550	100	
Pb	208	3	193	205.241	ppb	205.241	0.92	982120	5000	
Th	232	3	193	539.011	ppb	539.011	0.28	2668521	2000	
U	238	3	193	220.138	ppb	220.138	1.95	1138798	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4092546	0.97	4160703	98.36	60	120	
Sc (IS)	45	3	HMI He	638968	1.47	620569	102.96	60	120	
Ge Internal standard	72	2	HMI H2	2289657	2.32	2172040	105.42	60	120	
Ge Internal standard	72	3	HMI He	741088	3.01	684400	108.28	60	120	
In Internal Standard	115	3	HMI He	2589752	0.78	2522161	102.68	60	120	
Ir (IS)	193	3	HMI He	5492521	0.51	5572879	98.56	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-b@20
Data File Name	066SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:05:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.061	ppb	0.061	86.62	3	2000	
Na	23	3	45	15283.322	ppb	15283.322	0.79	1961554	400000	
Mg	24	3	45	1009.713	ppb	1009.713	1.12	67159	400000	
Al	27	3	45	0.323	ppb	0.323	263.28	133	400000	
K	39	3	45	372.449	ppb	372.449	4.92	35199	400000	
Ca	40	2	45	4046.200	ppb	4046.200	2.77	2367619	400000	
V	51	3	72	-0.163	ppb	-0.163	-41.68	435	2000	
Cr	52	3	72	-0.071	ppb	-0.071	-156.52	1644	5000	
Mn	55	3	72	2.190	ppb	2.190	9.68	1139	10000	
Fe	56	2	72	1.951	ppb	1.951	20.84	12198	10000	
Co	59	3	72	0.017	ppb	0.017	57.45	52	2000	
Ni	60	3	72	0.245	ppb	0.245	6.13	230	5000	
Cu	63	3	72	0.178	ppb	0.178	28.80	463	5000	
Zn	66	3	72	2.134	ppb	2.134	7.97	610	5000	
As	75	3	72	0.352	ppb	0.352	32.57	75	2000	
Se	78	2	72	0.130	ppb	0.130	32.34	11	2000	
(Se)	78	3	72	-0.421	ppb	-0.421	-161.70	10	2000	
Sr	88	3	72	50.559	ppb	50.559	0.58	27726	4000	
Mo	95	3	115	1.494	ppb	1.494	12.76	893	2000	
Ag	107	3	115	0.005	ppb	0.005	150.73	33	100	
Cd	111	3	115	-0.014	ppb	-0.014	-80.51	2	2000	
Sn	120	3	115	0.136	ppb	0.136	19.79	1143	2000	
Sb	121	3	115	0.125	ppb	0.125	24.90	185	1000	
Ba	137	3	115	7.309	ppb	7.309	1.05	1876	5000	
Tl	205	3	193	-0.096	ppb	-0.096	-3.70	342	2000	
(Pb)	206	3	193	0.012	ppb	0.012	147.83	242	100	
(Pb)	207	3	193	0.018	ppb	0.018	170.63	468	100	
Pb	208	3	193	-0.002	ppb	-0.002	-307.45	1199	5000	
Th	232	3	193	2.564	ppb	2.564	27.52	17577	2000	
U	238	3	193	0.064	ppb	0.064	27.11	1954	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4394897	1.16	4160703	105.63	60	120	
Sc (IS)	45	3	HMI He	668307	0.88	620569	107.69	60	120	
Ge Internal standard	72	2	HMI H2	2380795	2.74	2172040	109.61	60	120	
Ge Internal standard	72	3	HMI He	760433	0.76	684400	111.11	60	120	
In Internal Standard	115	3	HMI He	2683356	1.38	2522161	106.39	60	120	
Ir (IS)	193	3	HMI He	5688645	0.87	5572879	102.08	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bSD@100
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:07:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3131.549	ppb	3131.549	1.26	407642	400000	
Mg	24	3	45	211.536	ppb	211.536	3.55	13717	400000	
Al	27	3	45	1.844	ppb	1.844	108.31	163	400000	
K	39	3	45	67.413	ppb	67.413	41.75	19857	400000	
Ca	40	2	45	853.885	ppb	853.885	3.07	497601	400000	
V	51	3	72	-0.219	ppb	-0.219	-32.69	391	2000	
Cr	52	3	72	-0.124	ppb	-0.124	-128.43	1568	5000	
Mn	55	3	72	0.501	ppb	0.501	13.34	413	10000	
Fe	56	2	72	1.916	ppb	1.916	8.76	11730	10000	
Co	59	3	72	0.017	ppb	0.017	42.16	50	2000	
Ni	60	3	72	0.045	ppb	0.045	142.77	155	5000	
Cu	63	3	72	0.042	ppb	0.042	18.25	325	5000	
Zn	66	3	72	1.809	ppb	1.809	33.11	543	5000	
As	75	3	72	0.122	ppb	0.122	75.94	47	2000	
Se	78	2	72	0.020	ppb	0.020	201.02	5	2000	
(Se)	78	3	72	1.021	ppb	1.021	67.20	20	2000	
Sr	88	3	72	10.240	ppb	10.240	2.31	5528	4000	
Mo	95	3	115	0.260	ppb	0.260	17.93	225	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-704.90	22	100	
Cd	111	3	115	-0.014	ppb	-0.014	-81.28	2	2000	
Sn	120	3	115	-0.006	ppb	-0.006	-951.50	1008	2000	
Sb	121	3	115	0.094	ppb	0.094	66.62	157	1000	
Ba	137	3	115	1.589	ppb	1.589	3.69	441	5000	
Tl	205	3	193	-0.100	ppb	-0.100	-1.57	333	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-154.06	197	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-152.57	416	100	
Pb	208	3	193	-0.027	ppb	-0.027	-98.38	1088	5000	
Th	232	3	193	0.523	ppb	0.523	19.67	7182	2000	
U	238	3	193	0.033	ppb	0.033	20.75	1806	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4292533	1.90	4160703	103.17	60	120	
Sc (IS)	45	3	HMI He	646536	0.17	620569	104.18	60	120	
Ge Internal standard	72	2	HMI H2	2297805	0.54	2172040	105.79	60	120	
Ge Internal standard	72	3	HMI He	744395	0.80	684400	108.77	60	120	
In Internal Standard	115	3	HMI He	2619197	1.53	2522161	103.85	60	120	
Ir (IS)	193	3	HMI He	5752830	1.90	5572879	103.23	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-c ms@20
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:09:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.673	ppb	2.673	7.24	140	2000	
Na	23	3	45	15177.228	ppb	15177.228	1.03	1862771	400000	
Mg	24	3	45	1017.548	ppb	1017.548	2.88	64715	400000	
Al	27	3	45	45.090	ppb	45.090	6.22	1131	400000	
K	39	3	45	413.692	ppb	413.692	1.60	35561	400000	
Ca	40	2	45	4117.879	ppb	4117.879	2.36	2339249	400000	
V	51	3	72	2.021	ppb	2.021	13.99	1744	2000	
Cr	52	3	72	2.274	ppb	2.274	10.05	3425	5000	
Mn	55	3	72	4.349	ppb	4.349	0.17	2007	10000	
Fe	56	2	72	45.622	ppb	45.622	2.70	76674	10000	
Co	59	3	72	2.181	ppb	2.181	1.35	2791	2000	
Ni	60	3	72	2.200	ppb	2.200	17.84	906	5000	
Cu	63	3	72	2.192	ppb	2.192	5.54	2361	5000	
Zn	66	3	72	4.448	ppb	4.448	10.29	978	5000	
As	75	3	72	2.082	ppb	2.082	11.25	273	2000	
Se	78	2	72	2.079	ppb	2.079	5.62	120	2000	
(Se)	78	3	72	3.397	ppb	3.397	33.00	37	2000	
Sr	88	3	72	55.123	ppb	55.123	2.75	29502	4000	
Mo	95	3	115	3.657	ppb	3.657	8.47	1981	2000	
Ag	107	3	115	2.174	ppb	2.174	5.21	3694	100	
Cd	111	3	115	2.039	ppb	2.039	13.56	516	2000	
Sn	120	3	115	1.828	ppb	1.828	13.28	2366	2000	
Sb	121	3	115	2.230	ppb	2.230	4.86	1773	1000	
Ba	137	3	115	9.693	ppb	9.693	2.46	2384	5000	
Tl	205	3	193	2.023	ppb	2.023	3.37	8250	2000	
(Pb)	206	3	193	2.110	ppb	2.110	5.96	2829	100	
(Pb)	207	3	193	2.157	ppb	2.157	3.75	2799	100	
Pb	208	3	193	2.128	ppb	2.128	1.02	11803	5000	
Th	232	3	193	2.256	ppb	2.256	1.06	16051	2000	
U	238	3	193	2.145	ppb	2.145	1.24	13152	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4266120	1.66	4160703	102.53	60	120	
Sc (IS)	45	3	HMI He	639087	0.76	620569	102.98	60	120	
Ge Internal standard	72	2	HMI H2	2252352	2.16	2172040	103.70	60	120	
Ge Internal standard	72	3	HMI He	742290	0.72	684400	108.46	60	120	
In Internal Standard	115	3	HMI He	2591519	1.12	2522161	102.75	60	120	
Ir (IS)	193	3	HMI He	5715234	1.32	5572879	102.55	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-d msd@20
Data File Name	069SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:11:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.311	ppb	2.311	24.31	120	2000	
Na	23	3	45	15462.206	ppb	15462.206	2.80	1875793	400000	
Mg	24	3	45	1042.606	ppb	1042.606	2.09	65567	400000	
Al	27	3	45	43.257	ppb	43.257	2.05	1078	400000	
K	39	3	45	386.482	ppb	386.482	7.95	33915	400000	
Ca	40	2	45	4082.188	ppb	4082.188	2.41	2258828	400000	
V	51	3	72	2.164	ppb	2.164	6.25	1768	2000	
Cr	52	3	72	2.053	ppb	2.053	5.82	3142	5000	
Mn	55	3	72	4.435	ppb	4.435	2.13	1972	10000	
Fe	56	2	72	44.650	ppb	44.650	1.42	74671	10000	
Co	59	3	72	2.161	ppb	2.161	2.30	2671	2000	
Ni	60	3	72	2.604	ppb	2.604	5.84	1011	5000	
Cu	63	3	72	2.174	ppb	2.174	3.38	2262	5000	
Zn	66	3	72	3.885	ppb	3.885	7.97	855	5000	
As	75	3	72	2.673	ppb	2.673	13.89	330	2000	
Se	78	2	72	2.224	ppb	2.224	10.34	127	2000	
(Se)	78	3	72	3.090	ppb	3.090	27.88	33	2000	
Sr	88	3	72	54.709	ppb	54.709	1.17	28274	4000	
Mo	95	3	115	3.443	ppb	3.443	1.78	1878	2000	
Ag	107	3	115	2.010	ppb	2.010	5.92	3429	100	
Cd	111	3	115	2.101	ppb	2.101	8.77	535	2000	
Sn	120	3	115	1.828	ppb	1.828	3.51	2376	2000	
Sb	121	3	115	2.012	ppb	2.012	3.05	1614	1000	
Ba	137	3	115	9.641	ppb	9.641	6.30	2379	5000	
Tl	205	3	193	2.019	ppb	2.019	1.05	8255	2000	
(Pb)	206	3	193	2.089	ppb	2.089	1.79	2809	100	
(Pb)	207	3	193	2.014	ppb	2.014	3.49	2649	100	
Pb	208	3	193	2.077	ppb	2.077	2.76	11575	5000	
Th	232	3	193	2.223	ppb	2.223	7.24	15922	2000	
U	238	3	193	2.183	ppb	2.183	3.75	13389	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4155984	1.45	4160703	99.89	60	120	
Sc (IS)	45	3	HMI He	632044	2.01	620569	101.85	60	120	
Ge Internal standard	72	2	HMI H2	2234733	1.81	2172040	102.89	60	120	
Ge Internal standard	72	3	HMI He	716699	1.14	684400	104.72	60	120	
In Internal Standard	115	3	HMI He	2601241	1.83	2522161	103.14	60	120	
Ir (IS)	193	3	HMI He	5728877	0.59	5572879	102.80	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bPDS@20
Data File Name	070SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:12:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	201.550	ppb	201.550	1.92	10537	2000	
Na	23	3	45	15140.642	ppb	15140.642	0.87	1861263	400000	
Mg	24	3	45	1048.976	ppb	1048.976	1.25	66820	400000	
Al	27	3	45	2069.860	ppb	2069.860	0.51	46593	400000	
K	39	3	45	435.341	ppb	435.341	7.20	36614	400000	
Ca	40	2	45	4089.153	ppb	4089.153	0.60	2261184	400000	
V	51	3	72	199.898	ppb	199.898	2.78	122142	2000	
Cr	52	3	72	199.876	ppb	199.876	3.25	158015	5000	
Mn	55	3	72	206.369	ppb	206.369	2.94	86377	10000	
Fe	56	2	72	21.343	ppb	21.343	4.36	40560	10000	
Co	59	3	72	197.793	ppb	197.793	2.99	252310	2000	
Ni	60	3	72	196.817	ppb	196.817	2.39	69341	5000	
Cu	63	3	72	201.322	ppb	201.322	1.45	192445	5000	
Zn	66	3	72	210.778	ppb	210.778	2.71	35369	5000	
As	75	3	72	196.579	ppb	196.579	5.04	22928	2000	
Se	78	2	72	209.109	ppb	209.109	1.58	11753	2000	
(Se)	78	3	72	198.819	ppb	198.819	3.70	1428	2000	
Sr	88	3	72	255.966	ppb	255.966	2.04	137852	4000	
Mo	95	3	115	201.198	ppb	201.198	1.07	105234	2000	
Ag	107	3	115	43.642	ppb	43.642	0.41	74379	100	
Cd	111	3	115	199.045	ppb	199.045	1.54	50389	2000	
Sn	120	3	115	200.716	ppb	200.716	0.33	152094	2000	
Sb	121	3	115	200.869	ppb	200.869	0.96	153612	1000	
Ba	137	3	115	213.165	ppb	213.165	1.63	51747	5000	
Tl	205	3	193	208.807	ppb	208.807	0.97	775019	2000	
(Pb)	206	3	193	209.145	ppb	209.145	2.05	256358	100	
(Pb)	207	3	193	204.814	ppb	204.814	0.32	221971	100	
Pb	208	3	193	207.741	ppb	207.741	0.72	1027933	5000	
Th	232	3	193	112.361	ppb	112.361	1.89	578736	2000	
U	238	3	193	222.062	ppb	222.062	1.57	1187942	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4152802	1.27	4160703	99.81	60	120	
Sc (IS)	45	3	HMI He	640101	1.11	620569	103.15	60	120	
Ge Internal standard	72	2	HMI H2	2256512	1.31	2172040	103.89	60	120	
Ge Internal standard	72	3	HMI He	747923	2.56	684400	109.28	60	120	
In Internal Standard	115	3	HMI He	2614860	0.85	2522161	103.68	60	120	
Ir (IS)	193	3	HMI He	5679920	0.54	5572879	101.92	60	120	

Sample Report

Sample Table

Sample Name	280-171571-f-1-b
Data File Name	071SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:14:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.065	ppb	0.065	173.21	3	2000	
Na	23	3	45	1924.465	ppb	1924.465	0.82	253997	400000	
Mg	24	3	45	32160.647	ppb	32160.647	1.65	2020692	400000	
Al	27	3	45	3.805	ppb	3.805	85.55	204	400000	
K	39	3	45	773.118	ppb	773.118	2.58	51560	400000	
Ca	40	2	45	43260.976	ppb	43260.976	2.23	23311492	400000	
V	51	3	72	-0.680	ppb	-0.680	-5.70	112	2000	
Cr	52	3	72	0.586	ppb	0.586	16.46	2111	5000	
Mn	55	3	72	11.752	ppb	11.752	0.98	5068	10000	
Fe	56	2	72	117.136	ppb	117.136	1.69	188488	10000	
Co	59	3	72	0.080	ppb	0.080	10.97	130	2000	
Ni	60	3	72	0.889	ppb	0.889	8.09	448	5000	
Cu	63	3	72	0.217	ppb	0.217	6.85	488	5000	
Zn	66	3	72	117.864	ppb	117.864	3.19	19703	5000	
As	75	3	72	0.338	ppb	0.338	49.51	72	2000	
Se	78	2	72	0.782	ppb	0.782	11.21	49	2000	
(Se)	78	3	72	1.958	ppb	1.958	71.11	27	2000	
Sr	88	3	72	351.144	ppb	351.144	3.18	187360	4000	
Mo	95	3	115	3.361	ppb	3.361	6.44	1846	2000	
Ag	107	3	115	0.003	ppb	0.003	153.43	30	100	
Cd	111	3	115	0.374	ppb	0.374	20.80	100	2000	
Sn	120	3	115	-0.888	ppb	-0.888	-5.44	343	2000	
Sb	121	3	115	0.856	ppb	0.856	4.90	740	1000	
Ba	137	3	115	52.603	ppb	52.603	2.74	12822	5000	
Tl	205	3	193	-0.051	ppb	-0.051	-46.87	515	2000	
(Pb)	206	3	193	0.261	ppb	0.261	17.71	551	100	
(Pb)	207	3	193	0.156	ppb	0.156	22.61	623	100	
Pb	208	3	193	0.200	ppb	0.200	15.12	2222	5000	
Th	232	3	193	0.883	ppb	0.883	17.92	9027	2000	
U	238	3	193	24.487	ppb	24.487	1.60	133806	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4067051	1.83	4160703	97.75	60	120	
Sc (IS)	45	3	HMI He	632496	0.33	620569	101.92	60	120	
Ge Internal standard	72	2	HMI H2	2315079	0.84	2172040	106.59	60	120	
Ge Internal standard	72	3	HMI He	741202	2.71	684400	108.30	60	120	
In Internal Standard	115	3	HMI He	2616581	0.28	2522161	103.74	60	120	
Ir (IS)	193	3	HMI He	5739198	0.85	5572879	102.98	60	120	

Sample Report

Sample Table

Sample Name	280-171645-d-1-c
Data File Name	072SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:16:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.065	ppb	0.065	86.60	3	2000	
Na	23	3	45	1948.101	ppb	1948.101	2.63	258158	400000	
Mg	24	3	45	32617.980	ppb	32617.980	1.67	2060132	400000	
Al	27	3	45	3.167	ppb	3.167	39.54	190	400000	
K	39	3	45	797.431	ppb	797.431	4.45	52936	400000	
Ca	40	2	45	43677.408	ppb	43677.408	2.15	23970412	400000	
V	51	3	72	-0.699	ppb	-0.699	-1.79	103	2000	
Cr	52	3	72	0.449	ppb	0.449	4.53	2071	5000	
Mn	55	3	72	11.214	ppb	11.214	3.29	5002	10000	
Fe	56	2	72	104.984	ppb	104.984	1.89	167053	10000	
Co	59	3	72	0.081	ppb	0.081	25.20	135	2000	
Ni	60	3	72	0.792	ppb	0.792	20.22	428	5000	
Cu	63	3	72	0.093	ppb	0.093	13.10	383	5000	
Zn	66	3	72	105.366	ppb	105.366	1.49	18215	5000	
As	75	3	72	0.139	ppb	0.139	109.59	50	2000	
Se	78	2	72	1.029	ppb	1.029	14.17	62	2000	
(Se)	78	3	72	2.096	ppb	2.096	115.63	28	2000	
Sr	88	3	72	346.608	ppb	346.608	0.74	190974	4000	
Mo	95	3	115	3.663	ppb	3.663	5.03	1994	2000	
Ag	107	3	115	0.005	ppb	0.005	311.94	33	100	
Cd	111	3	115	0.046	ppb	0.046	65.09	17	2000	
Sn	120	3	115	-0.906	ppb	-0.906	-5.61	328	2000	
Sb	121	3	115	0.780	ppb	0.780	10.96	678	1000	
Ba	137	3	115	56.901	ppb	56.901	3.94	13795	5000	
Tl	205	3	193	-0.066	ppb	-0.066	-15.62	460	2000	
(Pb)	206	3	193	0.130	ppb	0.130	33.46	391	100	
(Pb)	207	3	193	-0.002	ppb	-0.002	-3630.31	453	100	
Pb	208	3	193	0.087	ppb	0.087	26.23	1668	5000	
Th	232	3	193	0.165	ppb	0.165	37.19	5350	2000	
U	238	3	193	24.962	ppb	24.962	2.60	137158	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4141956	1.86	4160703	99.55	60	120	
Sc (IS)	45	3	HMI He	635894	1.40	620569	102.47	60	120	
Ge Internal standard	72	2	HMI H2	2277521	3.20	2172040	104.86	60	120	
Ge Internal standard	72	3	HMI He	764983	0.39	684400	111.77	60	120	
In Internal Standard	115	3	HMI He	2603805	0.67	2522161	103.24	60	120	
Ir (IS)	193	3	HMI He	5773555	1.58	5572879	103.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	073_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:18:31-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.884	ppb	6.382	2636	50	101.8	90	110	
Na	23	3	45	49746.867	ppb	0.462	5951059	51000	97.5	90	110	
Mg	24	3	45	10831.733	ppb	0.848	676185	11000	98.5	90	110	
Al	27	3	45	1015.640	ppb	1.240	22504	1000	101.6	90	110	
K	39	3	45	11135.711	ppb	0.497	519971	11000	101.2	90	110	
Ca	40	2	45	11302.063	ppb	1.595	6214063	11000	102.7	90	110	
V	51	3	72	51.790	ppb	0.762	30792	50	103.6	90	110	
Cr	52	3	72	51.442	ppb	1.138	40286	50	102.9	90	110	
Mn	55	3	72	51.163	ppb	1.298	20732	50	102.3	90	110	
Fe	56	2	72	1028.037	ppb	0.471	1515306	1000	102.8	90	110	
Co	59	3	72	51.114	ppb	1.084	62693	50	102.2	90	110	
Ni	60	3	72	50.696	ppb	0.546	17267	50	101.4	90	110	
Cu	63	3	72	50.414	ppb	0.546	46517	50	100.8	90	110	
Zn	66	3	72	50.335	ppb	4.183	8295	50	100.7	90	110	
As	75	3	72	50.713	ppb	4.358	5712	50	101.4	90	110	
Se	78	2	72	51.583	ppb	1.172	2846	50	103.2	90	110	
(Se)	78	3	72	52.085	ppb	8.423	368	50	104.2	90	110	
Sr	88	3	72	105.457	ppb	1.837	54609	100	105.5	90	110	
Mo	95	3	115	48.677	ppb	1.431	25498	50	97.4	90	110	
Ag	107	3	115	49.953	ppb	0.319	85040	50	99.9	90	110	
Cd	111	3	115	49.435	ppb	1.830	12505	50	98.9	90	110	
Sn	120	3	115	49.664	ppb	1.689	38349	50	99.3	90	110	
Sb	121	3	115	49.922	ppb	0.740	38201	50	99.8	90	110	
Ba	137	3	115	50.691	ppb	1.234	12335	50	101.4	90	110	
Tl	205	3	193	49.602	ppb	2.025	188904	50	99.2	90	110	
(Pb)	206	3	193	49.678	ppb	1.114	62487	50	99.4	90	110	
(Pb)	207	3	193	50.347	ppb	1.105	56178	50	100.7	90	110	
Pb	208	3	193	49.909	ppb	0.483	253654	50	99.8	90	110	
Th	232	3	193	49.895	ppb	1.382	265492	50	99.8	90	110	
U	238	3	193	49.713	ppb	1.479	273394	50	99.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4143130	1.27	4160703	99.58	60	120	
Sc (IS)	45	3	HMI He	628363	0.18	620569	101.26	60	120	
Ge Internal standard	72	2	HMI H2	2212863	1.63	2172040	101.88	60	120	
Ge Internal standard	72	3	HMI He	718599	0.68	684400	105.00	60	120	
In Internal Standard	115	3	HMI He	2612066	0.96	2522161	103.56	60	120	
Ir (IS)	193	3	HMI He	5812321	1.45	5572879	104.30	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	074_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:20:23-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.032	ppb	173.2	2	0.5	
Na	23	3	45	35.789	ppb	27.6	27240	25	>RL
Mg	24	3	45	2.544	ppb	50.3	287	25	
Al	27	3	45	0.392	ppb	533.9	127	15	
K	39	3	45	-20.668	ppb	-118.5	15290	50	
V	51	3	72	-0.217	ppb	-66.1	381	1	
Cr	52	3	72	-0.116	ppb	-192.0	1533	1	
Mn	55	3	72	-0.152	ppb	-45.7	138	0.5	
Co	59	3	72	0.011	ppb	78.7	42	0.5	
Ni	60	3	72	0.117	ppb	55.6	175	1	
Cu	63	3	72	-0.028	ppb	-104.5	252	1	
Zn	66	3	72	-0.389	ppb	-31.3	173	5	
As	75	3	72	0.104	ppb	97.2	43	1	
Se	78	2	72	0.035	ppb	59.0	5	1	
(Se)	78	3	72	-1.059	ppb	-121.3	5	1	
Sr	88	3	72	0.015	ppb	135.8	47	0.5	
Mo	95	3	115	-0.043	ppb	-64.7	65	0.5	
Ag	107	3	115	0.010	ppb	52.9	40	1	
Cd	111	3	115	-0.014	ppb	-85.2	2	0.5	
Sn	120	3	115	-0.242	ppb	-40.3	815	1	
Sb	121	3	115	0.135	ppb	24.1	185	0.6	
Ba	137	3	115	-0.003	ppb	-2295.1	53	0.5	
Tl	205	3	193	-0.116	ppb	-9.7	277	0.1	
(Pb)	206	3	193	-0.042	ppb	-16.1	180	1	
(Pb)	207	3	193	-0.092	ppb	-24.8	358	1	
Pb	208	3	193	-0.055	ppb	-13.9	961	0.5	
Th	232	3	193	0.573	ppb	32.0	7545	1	
U	238	3	193	0.009	ppb	221.7	1703	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4150784	1.78	4160703	99.76	60	120	
Sc (IS)	45	3	HMI He	627657	1.04	620569	101.14	60	120	
Ge Internal standard	72	2	HMI H2	2227389	1.49	2172040	102.55	60	120	
Ge Internal standard	72	3	HMI He	724587	2.48	684400	105.87	60	120	
In Internal Standard	115	3	HMI He	2570625	1.28	2522161	101.92	60	120	
Ir (IS)	193	3	HMI He	5830752	0.19	5572879	104.63	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	075LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:22:15-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.951	ppb	18.952	50	1	95.1	70	130	
Na	23	3	45	74.623	ppb	2.705	31841	50	149.2	70	130	>+/-30%
Mg	24	3	45	50.768	ppb	7.324	3290	50	101.5	70	130	
Al	27	3	45	47.586	ppb	3.541	1165	50	95.2	70	130	
K	39	3	45	76.910	ppb	20.229	19694	100	76.9	70	130	
V	51	3	72	4.997	ppb	4.302	3377	5	99.9	70	130	
Cr	52	3	72	2.014	ppb	14.666	3075	2	100.7	70	130	
Mn	55	3	72	0.965	ppb	1.920	576	1	96.5	70	130	
Co	59	3	72	1.039	ppb	5.926	1283	1	103.9	70	130	
Ni	60	3	72	2.155	ppb	7.995	850	2	107.8	70	130	
Cu	63	3	72	1.968	ppb	2.717	2049	2	98.4	70	130	
Zn	66	3	72	10.433	ppb	1.523	1878	10	104.3	70	130	
As	75	3	72	5.139	ppb	5.237	598	5	102.8	70	130	
Se	78	2	72	5.449	ppb	8.958	303	5	109.0	70	130	
(Se)	78	3	72	5.111	ppb	58.966	47	5	102.2	70	130	
Sr	88	3	72	1.019	ppb	19.936	558	1	101.9	70	130	
Mo	95	3	115	2.140	ppb	7.120	1181	2	107.0	70	130	
Ag	107	3	115	1.027	ppb	5.066	1738	1	102.7	70	130	
Cd	111	3	115	1.015	ppb	5.216	257	1	101.5	70	130	
Sn	120	3	115	9.585	ppb	5.924	8053	10	95.9	70	130	
Sb	121	3	115	2.267	ppb	10.203	1779	2	113.4	70	130	
Ba	137	3	115	1.113	ppb	10.111	318	1	111.3	70	130	
Tl	205	3	193	0.904	ppb	6.715	4195	1	90.4	70	130	
(Pb)	206	3	193	1.042	ppb	5.299	1556	1	104.2	70	130	
(Pb)	207	3	193	0.924	ppb	6.351	1499	1	92.4	70	130	
Pb	208	3	193	1.002	ppb	2.665	6382	1	100.2	70	130	
Th	232	3	193	2.125	ppb	6.758	15826	2	106.2	70	130	
U	238	3	193	1.072	ppb	6.641	7597	1	107.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4154244	1.31	4160703	99.84	60	120	
Sc (IS)	45	3	HMI He	627121	1.13	620569	101.06	60	120	
Ge Internal standard	72	2	HMI H2	2203910	2.25	2172040	101.47	60	120	
Ge Internal standard	72	3	HMI He	708094	1.14	684400	103.46	60	120	
In Internal Standard	115	3	HMI He	2560228	0.53	2522161	101.51	60	120	
Ir (IS)	193	3	HMI He	5883315	1.21	5572879	105.57	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600236/1-a
Data File Name	076_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:24:11-07:00
Sample Type	Blank
Dilution	1
Comment	600236 6020B-A
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	8.308	ppb	60.05074464	23757	25
Mg	24	3	45	3.236	ppb	11.47626806	327	25
Al	27	3	45	4.863	ppb	55.21459522	224	15
K	39	3	45	-45.571	ppb	-31.02274325	14041	50
V	51	3	72	-0.720	ppb	-2.93193647	87	1
Cr	52	3	72	0.726	ppb	18.8488001	2197	1
Mn	55	3	72	0.155	ppb	59.94561891	265	0.5
Co	59	3	72	0.014	ppb	101.4401228	47	0.5
Ni	60	3	72	0.086	ppb	12.45961296	167	1
Cu	63	3	72	0.615	ppb	19.7741277	855	1
Zn	66	3	72	1.048	ppb	35.07974768	410	5
As	75	3	72	0.012	ppb	943.1744798	33	1
(Se)	78	3	72	1.337	ppb	168.6026614	22	1
Sr	88	3	72	0.064	ppb	69.14322438	73	0.5
Mo	95	3	115	-0.028	ppb	-74.07656635	73	0.5
Ag	107	3	115	-0.004	ppb	-103.8137863	17	1
Cd	111	3	115	0.020	ppb	177.5895325	10	0.5
Sn	120	3	115	-0.748	ppb	-12.89766512	446	1
Sb	121	3	115	-0.041	ppb	-58.81675681	53	0.6
Ba	137	3	115	0.103	ppb	51.55945429	80	0.5
Tl	205	3	193	-0.125	ppb	-12.15459945	238	0.1
(Pb)	206	3	193	-0.003	ppb	-1329.463165	225	1
(Pb)	207	3	193	-0.054	ppb	-50.93584641	393	1
Pb	208	3	193	-0.026	ppb	-53.40003235	1093	0.5
Th	232	3	193	0.139	ppb	18.47004811	5182	1
U	238	3	193	0.024	ppb	50.90996633	1753	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4127681	1.12	4160703	99.21	60	120	
Sc (IS)	45	3	HMI He	622029	1.29	620569	100.24	60	120	
Ge Internal standard	72	2	HMI H2	2247996	2.19	2172040	103.50	60	120	
Ge Internal standard	72	3	HMI He	732691	2.32	684400	107.06	60	120	
In Internal Standard	115	3	HMI He	2605522	1.42	2522161	103.31	60	120	
Ir (IS)	193	3	HMI He	5733630	0.98	5572879	102.88	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600236/2-a
Data File Name	077_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:26:06-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600236 6020B-A
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.728	40.728	ppb	6.374	2036	40	101.8	80	120	
Na	23	3	45	807.640	807.640	ppb	1.222	120562	40	2019.1	80	120	>+/-20%
Mg	24	3	45	726.963	726.963	ppb	0.264	46001	40	1817.4	80	120	>+/-20%
Al	27	3	45	782.331	782.331	ppb	1.923	17552	40	1955.8	80	120	>+/-20%
K	39	3	45	773.698	773.698	ppb	1.985	51811	40	1934.2	80	120	>+/-20%
Ca	40	2	45	903.320	903.320	ppb	0.321	490839	40	2258.3	80	120	>+/-20%
V	51	3	72	40.408	40.408	ppb	1.635	24728	40	101.0	80	120	
Cr	52	3	72	41.309	41.309	ppb	2.337	33465	40	103.3	80	120	
Mn	55	3	72	42.507	42.507	ppb	4.823	17671	40	106.3	80	120	
Fe	56	2	72	850.368	850.368	ppb	1.981	1239956	40	2125.9	80	120	>+/-20%
(Fe)	56	3	72	821.817	821.817	ppb	2.716	547160	40	2054.5	80	120	>+/-20%
Co	59	3	72	40.293	40.293	ppb	2.248	50635	40	100.7	80	120	
Ni	60	3	72	40.888	40.888	ppb	3.920	14289	40	102.2	80	120	
Cu	63	3	72	40.674	40.674	ppb	3.004	38498	40	101.7	80	120	
Zn	66	3	72	41.758	41.758	ppb	2.992	7092	40	104.4	80	120	
As	75	3	72	40.036	40.036	ppb	5.571	4625	40	100.1	80	120	
Se	78	2	72	41.567	41.567	ppb	3.397	2266	40	103.9	80	120	
(Se)	78	3	72	41.997	41.997	ppb	13.440	307	40	105.0	80	120	
Sr	88	3	72	86.409	86.409	ppb	3.692	45831	40	216.0	80	120	>+/-20%
Mo	95	3	115	39.609	39.609	ppb	2.486	20781	40	99.0	80	120	
Ag	107	3	115	40.185	40.185	ppb	1.857	68469	40	100.5	80	120	
Cd	111	3	115	40.440	40.440	ppb	1.749	10240	40	101.1	80	120	
Sn	120	3	115	40.614	40.614	ppb	0.452	31577	40	101.5	80	120	
Sb	121	3	115	39.778	39.778	ppb	1.764	30481	40	99.4	80	120	
Ba	137	3	115	42.354	42.354	ppb	0.365	10326	40	105.9	80	120	
Tl	205	3	193	40.773	40.773	ppb	0.644	156447	40	101.9	80	120	
(Pb)	206	3	193	41.698	41.698	ppb	1.757	52838	40	104.2	80	120	
(Pb)	207	3	193	41.444	41.444	ppb	1.476	46631	40	103.6	80	120	
Pb	208	3	193	41.296	41.296	ppb	0.081	211477	40	103.2	80	120	
Th	232	3	193	40.789	40.789	ppb	1.336	219288	40	102.0	80	120	
U	238	3	193	41.339	41.339	ppb	0.327	229151	40	103.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4006474	0.93	4160703	96.29	60	120	
Sc (IS)	45	3	HMI He	635261	0.24	620569	102.37	60	120	
Ge Internal standard	72	2	HMI H2	2186418	0.53	2172040	100.66	60	120	
Ge Internal standard	72	3	HMI He	736446	2.97	684400	107.60	60	120	
In Internal Standard	115	3	HMI He	2614480	1.44	2522161	103.66	60	120	
Ir (IS)	193	3	HMI He	5850496	1.20	5572879	104.98	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-1-a
Data File Name	078SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:28:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	38831.014	ppb	38831.014	1.69	4690566	400000	
Mg	24	3	45	31581.268	ppb	31581.268	1.84	1988396	400000	
Al	27	3	45	9.943	ppb	9.943	16.35	340	400000	
K	39	3	45	3871.707	ppb	3871.707	0.67	193043	400000	
Ca	40	2	45	69490.911	ppb	69490.911	3.22	38405499	400000	
V	51	3	72	0.928	ppb	0.928	8.38	1088	2000	
Cr	52	3	72	0.515	ppb	0.515	22.43	2067	5000	
Mn	55	3	72	657.206	ppb	657.206	1.47	273715	10000	
Fe	56	2	72	38.368	ppb	38.368	1.63	66636	10000	
Co	59	3	72	2.738	ppb	2.738	8.40	3509	2000	
Ni	60	3	72	6.271	ppb	6.271	3.33	2337	5000	
Cu	63	3	72	0.182	ppb	0.182	20.55	458	5000	
Zn	66	3	72	2.929	ppb	2.929	9.23	730	5000	
As	75	3	72	0.464	ppb	0.464	40.75	87	2000	
Se	78	2	72	0.009	ppb	0.009	755.65	4	2000	
(Se)	78	3	72	-0.147	ppb	-0.147	-746.80	12	2000	
Sr	88	3	72	637.504	ppb	637.504	1.56	342091	4000	
Mo	95	3	115	1.984	ppb	1.984	9.16	1134	2000	
Ag	107	3	115	0.004	ppb	0.004	144.18	32	100	
Cd	111	3	115	0.006	ppb	0.006	499.73	7	2000	
Sn	120	3	115	-0.802	ppb	-0.802	-10.49	411	2000	
Sb	121	3	115	0.332	ppb	0.332	18.55	342	1000	
Ba	137	3	115	140.613	ppb	140.613	2.37	34439	5000	
Tl	205	3	193	-0.119	ppb	-0.119	-6.54	260	2000	
(Pb)	206	3	193	-0.010	ppb	-0.010	-488.69	217	100	
(Pb)	207	3	193	-0.074	ppb	-0.074	-26.97	373	100	
Pb	208	3	193	-0.026	ppb	-0.026	-95.83	1098	5000	
Th	232	3	193	0.616	ppb	0.616	17.92	7680	2000	
U	238	3	193	0.396	ppb	0.396	5.26	3780	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4171123	0.86	4160703	100.25	60	120	
Sc (IS)	45	3	HMI He	633810	0.23	620569	102.13	60	120	
Ge Internal standard	72	2	HMI H2	2278486	1.60	2172040	104.90	60	120	
Ge Internal standard	72	3	HMI He	745169	1.02	684400	108.88	60	120	
In Internal Standard	115	3	HMI He	2636840	0.78	2522161	104.55	60	120	
Ir (IS)	193	3	HMI He	5762394	0.74	5572879	103.40	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-1-aSD@5
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:29:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	8122.788	ppb	8122.788	1.36	991271	400000	
Mg	24	3	45	6533.794	ppb	6533.794	1.34	408028	400000	
Al	27	3	45	3.265	ppb	3.265	51.38	190	400000	
K	39	3	45	762.434	ppb	762.434	5.13	50746	400000	
Ca	40	2	45	14178.654	ppb	14178.654	1.39	7817233	400000	
V	51	3	72	-0.044	ppb	-0.044	-64.79	495	2000	
Cr	52	3	72	-0.040	ppb	-0.040	-108.22	1626	5000	
Mn	55	3	72	131.941	ppb	131.941	1.01	54783	10000	
Fe	56	2	72	9.607	ppb	9.607	2.33	22972	10000	
Co	59	3	72	0.653	ppb	0.653	11.06	853	2000	
Ni	60	3	72	1.147	ppb	1.147	5.96	538	5000	
Cu	63	3	72	0.109	ppb	0.109	11.59	386	5000	
Zn	66	3	72	2.333	ppb	2.333	16.16	626	5000	
As	75	3	72	0.254	ppb	0.254	44.64	62	2000	
Se	78	2	72	-0.014	ppb	-0.014	-299.40	3	2000	
(Se)	78	3	72	-0.619	ppb	-0.619	-65.04	8	2000	
Sr	88	3	72	128.031	ppb	128.031	0.90	68327	4000	
Mo	95	3	115	0.321	ppb	0.321	26.32	252	2000	
Ag	107	3	115	0.012	ppb	0.012	38.92	43	100	
Cd	111	3	115	-0.013	ppb	-0.013	-86.90	2	2000	
Sn	120	3	115	-0.013	ppb	-0.013	-462.15	983	2000	
Sb	121	3	115	0.373	ppb	0.373	12.24	363	1000	
Ba	137	3	115	29.021	ppb	29.021	1.92	6962	5000	
Tl	205	3	193	-0.132	ppb	-0.132	-7.49	213	2000	
(Pb)	206	3	193	-0.055	ppb	-0.055	-68.47	162	100	
(Pb)	207	3	193	-0.084	ppb	-0.084	-43.40	365	100	
Pb	208	3	193	-0.062	ppb	-0.062	-22.70	923	5000	
Th	232	3	193	0.129	ppb	0.129	28.81	5190	2000	
U	238	3	193	0.085	ppb	0.085	15.67	2106	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4155781	2.04	4160703	99.88	60	120	
Sc (IS)	45	3	HMI He	628542	0.57	620569	101.28	60	120	
Ge Internal standard	72	2	HMI H2	2252547	0.55	2172040	103.71	60	120	
Ge Internal standard	72	3	HMI He	740637	0.77	684400	108.22	60	120	
In Internal Standard	115	3	HMI He	2566602	1.12	2522161	101.76	60	120	
Ir (IS)	193	3	HMI He	5799931	0.70	5572879	104.07	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-1-b ms
Data File Name	080SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:31:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.671	ppb	42.671	4.84	2169	2000	
Na	23	3	45	39847.432	ppb	39847.432	1.47	4829595	400000	
Mg	24	3	45	32700.236	ppb	32700.236	1.92	2065859	400000	
Al	27	3	45	844.668	ppb	844.668	0.72	18965	400000	
K	39	3	45	4689.504	ppb	4689.504	0.89	231163	400000	
Ca	40	2	45	71926.717	ppb	71926.717	1.43	39418011	400000	
V	51	3	72	42.206	ppb	42.206	0.39	25901	2000	
Cr	52	3	72	41.687	ppb	41.687	2.05	33884	5000	
Mn	55	3	72	708.068	ppb	708.068	0.79	292443	10000	
Fe	56	2	72	857.497	ppb	857.497	1.09	1315681	10000	
Co	59	3	72	42.451	ppb	42.451	0.81	53548	2000	
Ni	60	3	72	46.075	ppb	46.075	1.68	16150	5000	
Cu	63	3	72	40.536	ppb	40.536	1.54	38516	5000	
Zn	66	3	72	43.677	ppb	43.677	2.53	7435	5000	
As	75	3	72	40.634	ppb	40.634	3.10	4712	2000	
Se	78	2	72	40.181	ppb	40.181	3.04	2306	2000	
(Se)	78	3	72	36.373	ppb	36.373	11.35	268	2000	
Sr	88	3	72	731.441	ppb	731.441	0.62	389248	4000	
Mo	95	3	115	41.876	ppb	41.876	1.21	22077	2000	
Ag	107	3	115	39.802	ppb	39.802	2.75	68148	100	
Cd	111	3	115	40.520	ppb	40.520	3.16	10309	2000	
Sn	120	3	115	39.545	ppb	39.545	2.03	30922	2000	
Sb	121	3	115	40.224	ppb	40.224	1.27	30977	1000	
Ba	137	3	115	186.895	ppb	186.895	0.28	45601	5000	
Tl	205	3	193	41.237	ppb	41.237	0.32	156821	2000	
(Pb)	206	3	193	42.381	ppb	42.381	0.67	53223	100	
(Pb)	207	3	193	41.250	ppb	41.250	0.76	46007	100	
Pb	208	3	193	41.682	ppb	41.682	0.28	211548	5000	
Th	232	3	193	41.584	ppb	41.584	1.00	221515	2000	
U	238	3	193	42.409	ppb	42.409	0.65	232946	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4136244	0.67	4160703	99.41	60	120	
Sc (IS)	45	3	HMI He	636049	0.76	620569	102.49	60	120	
Ge Internal standard	72	2	HMI H2	2301046	0.81	2172040	105.94	60	120	
Ge Internal standard	72	3	HMI He	738937	0.24	684400	107.97	60	120	
In Internal Standard	115	3	HMI He	2627473	1.32	2522161	104.18	60	120	
Ir (IS)	193	3	HMI He	5798560	0.99	5572879	104.05	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-1-c msd
Data File Name	081SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:33:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.051	ppb	43.051	3.24	2192	2000	
Na	23	3	45	40516.530	ppb	40516.530	2.80	4884932	400000	
Mg	24	3	45	33045.332	ppb	33045.332	2.04	2076625	400000	
Al	27	3	45	832.108	ppb	832.108	2.75	18588	400000	
K	39	3	45	4742.593	ppb	4742.593	0.50	232381	400000	
Ca	40	2	45	72354.915	ppb	72354.915	1.27	39658933	400000	
V	51	3	72	42.542	ppb	42.542	2.37	26143	2000	
Cr	52	3	72	42.857	ppb	42.857	1.33	34850	5000	
Mn	55	3	72	714.208	ppb	714.208	1.53	295455	10000	
Fe	56	2	72	865.342	ppb	865.342	1.33	1320131	10000	
Co	59	3	72	43.250	ppb	43.250	1.32	54648	2000	
Ni	60	3	72	47.063	ppb	47.063	2.47	16518	5000	
Cu	63	3	72	41.197	ppb	41.197	1.65	39204	5000	
Zn	66	3	72	43.852	ppb	43.852	2.08	7477	5000	
As	75	3	72	41.373	ppb	41.373	1.93	4805	2000	
Se	78	2	72	41.517	ppb	41.517	1.09	2369	2000	
(Se)	78	3	72	47.226	ppb	47.226	9.70	345	2000	
Sr	88	3	72	745.190	ppb	745.190	2.50	397163	4000	
Mo	95	3	115	42.316	ppb	42.316	0.40	22282	2000	
Ag	107	3	115	40.450	ppb	40.450	2.46	69174	100	
Cd	111	3	115	41.574	ppb	41.574	4.02	10564	2000	
Sn	120	3	115	39.904	ppb	39.904	0.76	31156	2000	
Sb	121	3	115	40.636	ppb	40.636	0.87	31254	1000	
Ba	137	3	115	185.629	ppb	185.629	1.04	45230	5000	
Tl	205	3	193	41.545	ppb	41.545	1.31	157326	2000	
(Pb)	206	3	193	43.141	ppb	43.141	0.31	53948	100	
(Pb)	207	3	193	41.582	ppb	41.582	0.74	46179	100	
Pb	208	3	193	42.366	ppb	42.366	0.68	214105	5000	
Th	232	3	193	42.259	ppb	42.259	1.56	224088	2000	
U	238	3	193	42.906	ppb	42.906	1.42	234667	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4136916	1.05	4160703	99.43	60	120	
Sc (IS)	45	3	HMI He	632735	1.34	620569	101.96	60	120	
Ge Internal standard	72	2	HMI H2	2287922	0.66	2172040	105.34	60	120	
Ge Internal standard	72	3	HMI He	740251	1.70	684400	108.16	60	120	
In Internal Standard	115	3	HMI He	2624094	1.03	2522161	104.04	60	120	
Ir (IS)	193	3	HMI He	5774500	0.56	5572879	103.62	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-1-aPDS
Data File Name	082SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:39:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	204.412	ppb	204.412	3.25	10170	2000	
Na	23	3	45	38407.690	ppb	38407.690	2.23	4515438	400000	
Mg	24	3	45	30917.684	ppb	30917.684	3.69	1894241	400000	
Al	27	3	45	2093.785	ppb	2093.785	1.33	45422	400000	
K	39	3	45	3860.797	ppb	3860.797	0.32	187401	400000	
Ca	40	2	45	69484.127	ppb	69484.127	1.16	35946782	400000	
V	51	3	72	203.039	ppb	203.039	1.08	117813	2000	
Cr	52	3	72	200.348	ppb	200.348	0.80	150430	5000	
Mn	55	3	72	860.815	ppb	860.815	1.52	341542	10000	
Fe	56	2	72	54.921	ppb	54.921	0.75	90017	10000	
Co	59	3	72	197.618	ppb	197.618	0.31	239424	2000	
Ni	60	3	72	200.555	ppb	200.555	3.02	67088	5000	
Cu	63	3	72	196.941	ppb	196.941	0.54	178759	5000	
Zn	66	3	72	210.423	ppb	210.423	2.97	33526	5000	
As	75	3	72	199.119	ppb	199.119	1.46	22063	2000	
Se	78	2	72	198.414	ppb	198.414	2.51	11061	2000	
(Se)	78	3	72	196.119	ppb	196.119	9.29	1336	2000	
Sr	88	3	72	842.124	ppb	842.124	0.60	430605	4000	
Mo	95	3	115	199.121	ppb	199.121	1.11	100616	2000	
Ag	107	3	115	45.503	ppb	45.503	1.92	74914	100	
Cd	111	3	115	194.085	ppb	194.085	1.84	47463	2000	
Sn	120	3	115	203.871	ppb	203.871	1.20	149223	2000	
Sb	121	3	115	198.195	ppb	198.195	2.20	146409	1000	
Ba	137	3	115	348.394	ppb	348.394	2.06	81671	5000	
Tl	205	3	193	200.476	ppb	200.476	2.67	722924	2000	
(Pb)	206	3	193	205.163	ppb	205.163	3.91	244279	100	
(Pb)	207	3	193	203.148	ppb	203.148	1.90	213897	100	
Pb	208	3	193	204.461	ppb	204.461	2.89	982806	5000	
Th	232	3	193	440.714	ppb	440.714	2.30	2192765	2000	
U	238	3	193	219.710	ppb	219.710	2.16	1141926	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3904526	1.02	4160703	93.84	60	120	
Sc (IS)	45	3	HMI He	616872	0.66	620569	99.40	60	120	
Ge Internal standard	72	2	HMI H2	2238514	1.89	2172040	103.06	60	120	
Ge Internal standard	72	3	HMI He	710033	1.20	684400	103.75	60	120	
In Internal Standard	115	3	HMI He	2526445	1.92	2522161	100.17	60	120	
Ir (IS)	193	3	HMI He	5519251	1.68	5572879	99.04	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	083_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:41:34-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.715	ppb	2.218	2494	50	97.4	90	110	
Na	23	3	45	50043.789	ppb	0.963	5843459	51000	98.1	90	110	
Mg	24	3	45	10828.487	ppb	2.081	659781	11000	98.4	90	110	
Al	27	3	45	1026.489	ppb	1.505	22200	1000	102.6	90	110	
K	39	3	45	11069.473	ppb	1.245	504627	11000	100.6	90	110	
Ca	40	2	45	11419.538	ppb	1.341	6112853	11000	103.8	90	110	
V	51	3	72	51.342	ppb	1.540	29383	50	102.7	90	110	
Cr	52	3	72	51.691	ppb	1.085	38955	50	103.4	90	110	
Mn	55	3	72	51.179	ppb	1.442	19961	50	102.4	90	110	
Fe	56	2	72	1021.781	ppb	1.177	1464991	1000	102.2	90	110	
Co	59	3	72	51.365	ppb	2.007	60635	50	102.7	90	110	
Ni	60	3	72	51.408	ppb	1.016	16850	50	102.8	90	110	
Cu	63	3	72	50.994	ppb	2.927	45275	50	102.0	90	110	
Zn	66	3	72	51.101	ppb	2.859	8102	50	102.2	90	110	
As	75	3	72	53.277	ppb	1.693	5773	50	106.6	90	110	
Se	78	2	72	51.909	ppb	2.648	2785	50	103.8	90	110	
(Se)	78	3	72	46.099	ppb	7.914	315	50	92.2	90	110	
Sr	88	3	72	106.563	ppb	1.272	53110	100	106.6	90	110	
Mo	95	3	115	48.040	ppb	1.046	24633	50	96.1	90	110	
Ag	107	3	115	49.020	ppb	0.819	81683	50	98.0	90	110	
Cd	111	3	115	48.462	ppb	0.908	11999	50	96.9	90	110	
Sn	120	3	115	49.445	ppb	1.785	37379	50	98.9	90	110	
Sb	121	3	115	50.979	ppb	2.114	38181	50	102.0	90	110	
Ba	137	3	115	50.240	ppb	1.948	11968	50	100.5	90	110	
Tl	205	3	193	49.701	ppb	2.417	183705	50	99.4	90	110	
(Pb)	206	3	193	49.862	ppb	4.426	60844	50	99.7	90	110	
(Pb)	207	3	193	49.698	ppb	2.963	53816	50	99.4	90	110	
Pb	208	3	193	49.960	ppb	2.909	246374	50	99.9	90	110	
Th	232	3	193	52.033	ppb	2.027	268523	50	104.1	90	110	
U	238	3	193	50.245	ppb	2.558	268144	50	100.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4033485	1.16	4160703	96.94	60	120	
Sc (IS)	45	3	HMI He	613397	1.12	620569	98.84	60	120	
Ge Internal standard	72	2	HMI H2	2152732	2.63	2172040	99.11	60	120	
Ge Internal standard	72	3	HMI He	691669	1.35	684400	101.06	60	120	
In Internal Standard	115	3	HMI He	2556687	0.59	2522161	101.37	60	120	
Ir (IS)	193	3	HMI He	5642537	2.72	5572879	101.25	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	084_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:44:01-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	33.579	ppb	33.9	25512	25	>RL
Mg	24	3	45	1.570	ppb	36.4	214	25	
Al	27	3	45	-0.221	ppb	-708.8	107	15	
K	39	3	45	-17.114	ppb	-166.8	14609	50	
V	51	3	72	-0.212	ppb	-24.5	358	1	
Cr	52	3	72	-0.210	ppb	-119.0	1358	1	
Mn	55	3	72	0.140	ppb	35.0	238	0.5	
Co	59	3	72	-0.001	ppb	-1092.3	25	0.5	
Ni	60	3	72	0.070	ppb	145.1	148	1	
Cu	63	3	72	-0.044	ppb	-91.3	220	1	
Zn	66	3	72	-0.353	ppb	-40.4	167	5	
As	75	3	72	0.258	ppb	8.3	57	1	
Se	78	2	72	0.002	ppb	1976.8	3	1	
(Se)	78	3	72	2.636	ppb	88.0	28	1	>RL
Sr	88	3	72	0.035	ppb	94.4	53	0.5	
Mo	95	3	115	-0.033	ppb	-161.6	67	0.5	
Ag	107	3	115	0.001	ppb	223.7	25	1	
Cd	111	3	115	-0.013	ppb	-93.3	2	0.5	
Sn	120	3	115	-0.197	ppb	-53.1	808	1	
Sb	121	3	115	0.315	ppb	16.7	305	0.6	
Ba	137	3	115	-0.029	ppb	-208.1	45	0.5	
Tl	205	3	193	-0.113	ppb	-10.7	277	0.1	
(Pb)	206	3	193	-0.001	ppb	-2412.1	222	1	
(Pb)	207	3	193	-0.089	ppb	-9.9	346	1	
Pb	208	3	193	-0.047	ppb	-5.4	965	0.5	
Th	232	3	193	0.777	ppb	22.1	8287	1	
U	238	3	193	0.005	ppb	340.3	1611	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3992264	1.99	4160703	95.95	60	120	
Sc (IS)	45	3	HMI He	593763	1.80	620569	95.68	60	120	
Ge Internal standard	72	2	HMI H2	2110784	2.95	2172040	97.18	60	120	
Ge Internal standard	72	3	HMI He	674048	1.34	684400	98.49	60	120	
In Internal Standard	115	3	HMI He	2447977	1.22	2522161	97.06	60	120	
Ir (IS)	193	3	HMI He	5599491	2.09	5572879	100.48	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	085LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:45:53-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.628	ppb	63.150	32	1	62.8	70	130	>+/-30%
Na	23	3	45	78.982	ppb	4.432	31273	50	158.0	70	130	>+/-30%
Mg	24	3	45	49.441	ppb	3.434	3100	50	98.9	70	130	
Al	27	3	45	51.816	ppb	16.876	1215	50	103.6	70	130	
K	39	3	45	88.243	ppb	18.542	19520	100	88.2	70	130	
V	51	3	72	5.122	ppb	3.890	3337	5	102.4	70	130	
Cr	52	3	72	2.025	ppb	11.585	2984	2	101.3	70	130	
Mn	55	3	72	1.022	ppb	4.062	580	1	102.2	70	130	
Co	59	3	72	1.091	ppb	4.353	1301	1	109.1	70	130	
Ni	60	3	72	2.147	ppb	6.739	820	2	107.3	70	130	
Cu	63	3	72	2.242	ppb	4.516	2222	2	112.1	70	130	
Zn	66	3	72	10.102	ppb	5.992	1766	10	101.0	70	130	
As	75	3	72	5.337	ppb	4.055	600	5	106.7	70	130	
Se	78	2	72	5.093	ppb	7.773	275	5	101.9	70	130	
(Se)	78	3	72	5.868	ppb	22.109	50	5	117.4	70	130	
Sr	88	3	72	1.236	ppb	2.623	646	1	123.6	70	130	
Mo	95	3	115	1.823	ppb	7.915	998	2	91.2	70	130	
Ag	107	3	115	1.043	ppb	8.671	1726	1	104.3	70	130	
Cd	111	3	115	1.079	ppb	18.342	267	1	107.9	70	130	
Sn	120	3	115	9.439	ppb	5.194	7780	10	94.4	70	130	
Sb	121	3	115	2.347	ppb	3.776	1801	2	117.3	70	130	
Ba	137	3	115	1.011	ppb	11.471	288	1	101.1	70	130	
Tl	205	3	193	0.918	ppb	3.643	4084	1	91.8	70	130	
(Pb)	206	3	193	1.080	ppb	1.244	1541	1	108.0	70	130	
(Pb)	207	3	193	0.946	ppb	4.369	1464	1	94.6	70	130	
Pb	208	3	193	1.004	ppb	2.365	6143	1	100.4	70	130	
Th	232	3	193	2.154	ppb	3.833	15355	2	107.7	70	130	
U	238	3	193	1.037	ppb	3.446	7115	1	103.7	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3945288	2.25	4160703	94.82	60	120	
Sc (IS)	45	3	HMI He	605994	0.73	620569	97.65	60	120	
Ge Internal standard	72	2	HMI H2	2139263	0.31	2172040	98.49	60	120	
Ge Internal standard	72	3	HMI He	684965	0.46	684400	100.08	60	120	
In Internal Standard	115	3	HMI He	2507278	1.34	2522161	99.41	60	120	
Ir (IS)	193	3	HMI He	5651936	0.63	5572879	101.42	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-4-a
Data File Name	086SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:47:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	24312.906	ppb	24312.906	2.36	2796346	400000	
Mg	24	3	45	11810.067	ppb	11810.067	1.62	705981	400000	
Al	27	3	45	7.115	ppb	7.115	56.23	264	400000	
K	39	3	45	5883.913	ppb	5883.913	1.50	270436	400000	
Ca	40	2	45	55799.239	ppb	55799.239	2.40	28824677	400000	
V	51	3	72	9.065	ppb	9.065	3.92	5695	2000	
Cr	52	3	72	2.991	ppb	2.991	1.70	3782	5000	
Mn	55	3	72	0.399	ppb	0.399	60.83	352	10000	
Fe	56	2	72	13.769	ppb	13.769	6.26	27893	10000	
Co	59	3	72	0.080	ppb	0.080	28.59	123	2000	
Ni	60	3	72	1.190	ppb	1.190	6.16	526	5000	
Cu	63	3	72	0.161	ppb	0.161	48.11	415	5000	
Zn	66	3	72	0.987	ppb	0.987	27.83	385	5000	
As	75	3	72	5.953	ppb	5.953	3.54	685	2000	
Se	78	2	72	2.594	ppb	2.594	6.80	143	2000	
(Se)	78	3	72	2.178	ppb	2.178	85.52	27	2000	
Sr	88	3	72	251.020	ppb	251.020	1.50	127417	4000	
Mo	95	3	115	4.867	ppb	4.867	2.78	2511	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-195.81	17	100	
Cd	111	3	115	0.007	ppb	0.007	427.05	7	2000	
Sn	120	3	115	-0.810	ppb	-0.810	-6.30	383	2000	
Sb	121	3	115	0.207	ppb	0.207	13.28	232	1000	
Ba	137	3	115	63.855	ppb	63.855	0.90	14824	5000	
Tl	205	3	193	-0.127	ppb	-0.127	-4.27	222	2000	
(Pb)	206	3	193	-0.030	ppb	-0.030	-102.06	183	100	
(Pb)	207	3	193	-0.067	ppb	-0.067	-49.79	363	100	
Pb	208	3	193	-0.052	ppb	-0.052	-28.27	921	5000	
Th	232	3	193	0.186	ppb	0.186	3.60	5200	2000	
U	238	3	193	33.977	ppb	33.977	1.90	177196	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899220	1.52	4160703	93.72	60	120	
Sc (IS)	45	3	HMI He	601764	0.76	620569	96.97	60	120	
Ge Internal standard	72	2	HMI H2	2154744	3.01	2172040	99.20	60	120	
Ge Internal standard	72	3	HMI He	704765	1.76	684400	102.98	60	120	
In Internal Standard	115	3	HMI He	2494278	0.52	2522161	98.89	60	120	
Ir (IS)	193	3	HMI He	5496800	1.52	5572879	98.63	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-11-b
Data File Name	087SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:49:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.64	3	2000	
Na	23	3	45	13176.399	ppb	13176.399	2.00	1517649	400000	
Mg	24	3	45	24653.428	ppb	24653.428	1.15	1466067	400000	
Al	27	3	45	2.577	ppb	2.577	18.98	167	400000	
K	39	3	45	5123.251	ppb	5123.251	1.32	236254	400000	
Ca	40	2	45	81133.239	ppb	81133.239	0.38	41885512	400000	
V	51	3	72	19.310	ppb	19.310	1.22	11429	2000	
Cr	52	3	72	5.202	ppb	5.202	4.62	5347	5000	
Mn	55	3	72	35.229	ppb	35.229	1.25	13888	10000	
Fe	56	2	72	7.871	ppb	7.871	2.73	19784	10000	
Co	59	3	72	0.221	ppb	0.221	11.07	290	2000	
Ni	60	3	72	1.843	ppb	1.843	15.47	733	5000	
Cu	63	3	72	0.893	ppb	0.893	4.21	1060	5000	
Zn	66	3	72	0.941	ppb	0.941	19.29	373	5000	
As	75	3	72	1.453	ppb	1.453	17.72	188	2000	
Se	78	2	72	8.939	ppb	8.939	10.49	490	2000	
(Se)	78	3	72	7.774	ppb	7.774	30.51	63	2000	
Sr	88	3	72	321.079	ppb	321.079	0.31	160982	4000	
Mo	95	3	115	6.229	ppb	6.229	1.00	3174	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-167.37	20	100	
Cd	111	3	115	-0.013	ppb	-0.013	-90.25	2	2000	
Sn	120	3	115	-0.896	ppb	-0.896	-4.80	320	2000	
Sb	121	3	115	11.945	ppb	11.945	4.05	8747	1000	
Ba	137	3	115	61.522	ppb	61.522	2.49	14214	5000	
Tl	205	3	193	-0.126	ppb	-0.126	-5.80	223	2000	
(Pb)	206	3	193	-0.069	ppb	-0.069	-3.06	137	100	
(Pb)	207	3	193	-0.092	ppb	-0.092	-21.05	337	100	
Pb	208	3	193	-0.073	ppb	-0.073	-5.87	818	5000	
Th	232	3	193	0.088	ppb	0.088	27.88	4705	2000	
U	238	3	193	1.526	ppb	1.526	3.17	9424	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3896380	0.84	4160703	93.65	60	120	
Sc (IS)	45	3	HMI He	598646	0.89	620569	96.47	60	120	
Ge Internal standard	72	2	HMI H2	2185671	2.48	2172040	100.63	60	120	
Ge Internal standard	72	3	HMI He	696082	0.71	684400	101.71	60	120	
In Internal Standard	115	3	HMI He	2482132	0.67	2522161	98.41	60	120	
Ir (IS)	193	3	HMI He	5482578	0.51	5572879	98.38	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-11-c ms
Data File Name	088SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:51:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.525	ppb	40.525	4.20	1971	2000	
Na	23	3	45	14068.706	ppb	14068.706	2.07	1616858	400000	
Mg	24	3	45	25322.336	ppb	25322.336	2.48	1503611	400000	
Al	27	3	45	808.982	ppb	808.982	4.33	17074	400000	
K	39	3	45	5879.589	ppb	5879.589	0.61	268477	400000	
Ca	40	2	45	84217.112	ppb	84217.112	2.00	42949118	400000	
V	51	3	72	60.890	ppb	60.890	1.71	34719	2000	
Cr	52	3	72	45.908	ppb	45.908	2.60	34729	5000	
Mn	55	3	72	77.968	ppb	77.968	1.84	30275	10000	
Fe	56	2	72	820.474	ppb	820.474	2.32	1181631	10000	
Co	59	3	72	39.926	ppb	39.926	1.28	47088	2000	
Ni	60	3	72	40.611	ppb	40.611	2.44	13323	5000	
Cu	63	3	72	42.135	ppb	42.135	2.15	37419	5000	
Zn	66	3	72	40.728	ppb	40.728	1.59	6497	5000	
As	75	3	72	41.511	ppb	41.511	0.43	4500	2000	
Se	78	2	72	49.360	ppb	49.360	5.73	2657	2000	
(Se)	78	3	72	54.042	ppb	54.042	17.29	366	2000	
Sr	88	3	72	409.767	ppb	409.767	2.02	203879	4000	
Mo	95	3	115	45.551	ppb	45.551	1.37	22676	2000	
Ag	107	3	115	39.420	ppb	39.420	1.53	63762	100	
Cd	111	3	115	39.370	ppb	39.370	2.98	9462	2000	
Sn	120	3	115	39.402	ppb	39.402	1.09	29109	2000	
Sb	121	3	115	52.270	ppb	52.270	1.90	37995	1000	
Ba	137	3	115	102.568	ppb	102.568	0.77	23661	5000	
Tl	205	3	193	41.364	ppb	41.364	0.12	147656	2000	
(Pb)	206	3	193	42.693	ppb	42.693	0.76	50323	100	
(Pb)	207	3	193	41.936	ppb	41.936	1.22	43894	100	
Pb	208	3	193	42.251	ppb	42.251	0.66	201268	5000	
Th	232	3	193	41.851	ppb	41.851	1.10	209232	2000	
U	238	3	193	43.823	ppb	43.823	0.29	225900	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3849416	1.24	4160703	92.52	60	120	
Sc (IS)	45	3	HMI He	597783	0.31	620569	96.33	60	120	
Ge Internal standard	72	2	HMI H2	2159237	1.30	2172040	99.41	60	120	
Ge Internal standard	72	3	HMI He	690902	0.98	684400	100.95	60	120	
In Internal Standard	115	3	HMI He	2481676	0.77	2522161	98.39	60	120	
Ir (IS)	193	3	HMI He	5442854	0.22	5572879	97.67	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-11-d msd
Data File Name	089SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:53:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	44.802	ppb	44.802	8.61	2096	2000	
Na	23	3	45	14351.731	ppb	14351.731	1.00	1651970	400000	
Mg	24	3	45	26507.437	ppb	26507.437	0.69	1577024	400000	
Al	27	3	45	837.627	ppb	837.627	4.18	17712	400000	
K	39	3	45	6101.268	ppb	6101.268	0.33	278543	400000	
Ca	40	2	45	87826.890	ppb	87826.890	3.80	44562986	400000	
V	51	3	72	61.468	ppb	61.468	2.20	35255	2000	
Cr	52	3	72	46.368	ppb	46.368	0.77	35275	5000	
Mn	55	3	72	78.821	ppb	78.821	2.07	30789	10000	
Fe	56	2	72	844.267	ppb	844.267	5.39	1176040	10000	
Co	59	3	72	40.385	ppb	40.385	1.52	47915	2000	
Ni	60	3	72	42.635	ppb	42.635	2.04	14065	5000	
Cu	63	3	72	41.684	ppb	41.684	2.71	37245	5000	
Zn	66	3	72	41.270	ppb	41.270	1.08	6620	5000	
As	75	3	72	41.497	ppb	41.497	4.38	4525	2000	
Se	78	2	72	51.232	ppb	51.232	5.01	2668	2000	
(Se)	78	3	72	55.652	ppb	55.652	16.21	380	2000	
Sr	88	3	72	421.081	ppb	421.081	0.40	210784	4000	
Mo	95	3	115	46.572	ppb	46.572	1.75	23165	2000	
Ag	107	3	115	40.023	ppb	40.023	1.01	64689	100	
Cd	111	3	115	40.545	ppb	40.545	2.53	9737	2000	
Sn	120	3	115	39.750	ppb	39.750	1.39	29333	2000	
Sb	121	3	115	53.206	ppb	53.206	0.87	38647	1000	
Ba	137	3	115	107.125	ppb	107.125	2.57	24687	5000	
Tl	205	3	193	41.537	ppb	41.537	0.96	149673	2000	
(Pb)	206	3	193	42.546	ppb	42.546	1.36	50622	100	
(Pb)	207	3	193	41.316	ppb	41.316	2.53	43655	100	
Pb	208	3	193	41.979	ppb	41.979	1.96	201846	5000	
Th	232	3	193	42.129	ppb	42.129	0.83	212603	2000	
U	238	3	193	43.763	ppb	43.763	1.98	227702	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3831469	2.37	4160703	92.09	60	120	
Sc (IS)	45	3	HMI He	598919	0.49	620569	96.51	60	120	
Ge Internal standard	72	2	HMI H2	2090798	2.85	2172040	96.26	60	120	
Ge Internal standard	72	3	HMI He	695023	0.26	684400	101.55	60	120	
In Internal Standard	115	3	HMI He	2479797	0.69	2522161	98.32	60	120	
Ir (IS)	193	3	HMI He	5494779	1.49	5572879	98.60	60	120	

Sample Report

Sample Table

Sample Name	160-48481-a-3-d
Data File Name	090SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:55:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	7501.751	ppb	7501.751	0.77	851420	400000	
Mg	24	3	45	32642.100	ppb	32642.100	2.96	1891786	400000	
Al	27	3	45	5.227	ppb	5.227	55.82	217	400000	
K	39	3	45	1933.689	ppb	1933.689	1.49	96305	400000	
Ca	40	2	45	57211.821	ppb	57211.821	0.37	28664575	400000	
V	51	3	72	-0.684	ppb	-0.684	-12.68	100	2000	
Cr	52	3	72	2.901	ppb	2.901	3.41	3570	5000	
Mn	55	3	72	185.679	ppb	185.679	0.49	70431	10000	
Fe	56	2	72	749.321	ppb	749.321	0.58	1034915	10000	
Co	59	3	72	0.045	ppb	0.045	4.11	78	2000	
Ni	60	3	72	0.366	ppb	0.366	11.19	243	5000	
Cu	63	3	72	0.200	ppb	0.200	14.25	431	5000	
Zn	66	3	72	1.649	ppb	1.649	1.69	470	5000	
As	75	3	72	0.287	ppb	0.287	71.39	60	2000	
Se	78	2	72	-0.009	ppb	-0.009	-677.09	3	2000	
(Se)	78	3	72	-0.260	ppb	-0.260	-783.47	10	2000	
Sr	88	3	72	687.474	ppb	687.474	1.22	335311	4000	
Mo	95	3	115	1.425	ppb	1.425	3.20	775	2000	
Ag	107	3	115	0.009	ppb	0.009	146.62	37	100	
Cd	111	3	115	0.029	ppb	0.029	84.08	12	2000	
Sn	120	3	115	0.497	ppb	0.497	37.95	1288	2000	
Sb	121	3	115	0.104	ppb	0.104	67.20	153	1000	
Ba	137	3	115	34.920	ppb	34.920	0.54	7927	5000	
Tl	205	3	193	-0.117	ppb	-0.117	-8.81	250	2000	
(Pb)	206	3	193	0.003	ppb	0.003	1270.92	217	100	
(Pb)	207	3	193	-0.029	ppb	-0.029	-63.14	393	100	
Pb	208	3	193	-0.005	ppb	-0.005	-215.34	1116	5000	
Th	232	3	193	0.487	ppb	0.487	30.31	6524	2000	
U	238	3	193	0.260	ppb	0.260	15.54	2829	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3780938	0.88	4160703	90.87	60	120	
Sc (IS)	45	3	HMI He	583460	0.45	620569	94.02	60	120	
Ge Internal standard	72	2	HMI H2	2069283	2.60	2172040	95.27	60	120	
Ge Internal standard	72	3	HMI He	677296	1.03	684400	98.96	60	120	
In Internal Standard	115	3	HMI He	2431576	0.95	2522161	96.41	60	120	
Ir (IS)	193	3	HMI He	5359978	0.61	5572879	96.18	60	120	

Sample Report

Sample Table

Sample Name	160-48481-a-3-e ms
Data File Name	091SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:57:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	77.298	ppb	77.298	3.64	3685	2000	
Na	23	3	45	9079.018	ppb	9079.018	2.40	1034524	400000	
Mg	24	3	45	33608.080	ppb	33608.080	1.93	1964401	400000	
Al	27	3	45	1529.895	ppb	1529.895	0.39	31687	400000	
K	39	3	45	3467.343	ppb	3467.343	2.05	162086	400000	
Ca	40	2	45	58921.073	ppb	58921.073	0.24	29804600	400000	
V	51	3	72	75.306	ppb	75.306	1.01	43052	2000	
Cr	52	3	72	78.757	ppb	78.757	1.53	58786	5000	
Mn	55	3	72	260.351	ppb	260.351	0.82	101185	10000	
Fe	56	2	72	2299.192	ppb	2299.192	2.66	3251450	10000	
Co	59	3	72	74.855	ppb	74.855	0.24	88730	2000	
Ni	60	3	72	74.747	ppb	74.747	2.07	24548	5000	
Cu	63	3	72	75.838	ppb	75.838	1.62	67506	5000	
Zn	66	3	72	77.813	ppb	77.813	5.00	12276	5000	
As	75	3	72	75.575	ppb	75.575	2.49	8210	2000	
Se	78	2	72	75.821	ppb	75.821	4.97	4024	2000	
(Se)	78	3	72	73.906	ppb	73.906	9.72	500	2000	
Sr	88	3	72	832.800	ppb	832.800	1.03	416540	4000	
Mo	95	3	115	74.406	ppb	74.406	2.26	37291	2000	
Ag	107	3	115	73.548	ppb	73.548	1.72	119923	100	
Cd	111	3	115	73.199	ppb	73.199	3.93	17736	2000	
Sn	120	3	115	75.093	ppb	75.093	2.37	55052	2000	
Sb	121	3	115	73.669	ppb	73.669	0.82	53963	1000	
Ba	137	3	115	113.562	ppb	113.562	0.97	26407	5000	
Tl	205	3	193	78.421	ppb	78.421	2.30	276555	2000	
(Pb)	206	3	193	78.666	ppb	78.666	2.46	91620	100	
(Pb)	207	3	193	78.210	ppb	78.210	2.91	80672	100	
Pb	208	3	193	78.992	ppb	78.992	2.56	371528	5000	
Th	232	3	193	78.931	ppb	78.931	2.38	386960	2000	
U	238	3	193	79.869	ppb	79.869	2.41	406354	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3817312	0.37	4160703	91.75	60	120	
Sc (IS)	45	3	HMI He	588411	0.83	620569	94.82	60	120	
Ge Internal standard	72	2	HMI H2	2130436	1.95	2172040	98.08	60	120	
Ge Internal standard	72	3	HMI He	694545	0.88	684400	101.48	60	120	
In Internal Standard	115	3	HMI He	2502171	0.59	2522161	99.21	60	120	
Ir (IS)	193	3	HMI He	5389960	1.61	5572879	96.72	60	120	

Sample Report

Sample Table

Sample Name	160-48481-a-3-f msd
Data File Name	092SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T22:59:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	80.008	ppb	80.008	8.01	3845	2000	
Na	23	3	45	9388.223	ppb	9388.223	1.73	1081779	400000	
Mg	24	3	45	34979.750	ppb	34979.750	0.99	2068673	400000	
Al	27	3	45	1578.049	ppb	1578.049	0.53	33065	400000	
K	39	3	45	3570.631	ppb	3570.631	0.91	168415	400000	
Ca	40	2	45	60913.499	ppb	60913.499	0.73	31098276	400000	
V	51	3	72	80.482	ppb	80.482	2.15	45216	2000	
Cr	52	3	72	82.903	ppb	82.903	0.99	60777	5000	
Mn	55	3	72	278.127	ppb	278.127	0.91	106292	10000	
Fe	56	2	72	2353.529	ppb	2353.529	1.23	3319684	10000	
Co	59	3	72	79.165	ppb	79.165	1.17	92279	2000	
Ni	60	3	72	78.913	ppb	78.913	0.95	25476	5000	
Cu	63	3	72	79.856	ppb	79.856	1.08	69883	5000	
Zn	66	3	72	81.865	ppb	81.865	3.61	12686	5000	
As	75	3	72	79.244	ppb	79.244	2.91	8465	2000	
Se	78	2	72	78.311	ppb	78.311	4.15	4144	2000	
(Se)	78	3	72	77.186	ppb	77.186	8.45	513	2000	
Sr	88	3	72	884.036	ppb	884.036	0.70	434847	4000	
Mo	95	3	115	78.925	ppb	78.925	1.24	38848	2000	
Ag	107	3	115	77.826	ppb	77.826	0.62	124646	100	
Cd	111	3	115	76.904	ppb	76.904	2.20	18300	2000	
Sn	120	3	115	79.640	ppb	79.640	0.52	57296	2000	
Sb	121	3	115	77.581	ppb	77.581	0.55	55814	1000	
Ba	137	3	115	118.033	ppb	118.033	2.18	26957	5000	
Tl	205	3	193	81.357	ppb	81.357	0.78	288367	2000	
(Pb)	206	3	193	83.158	ppb	83.158	0.64	97335	100	
(Pb)	207	3	193	81.086	ppb	81.086	1.93	84052	100	
Pb	208	3	193	82.392	ppb	82.392	1.14	389458	5000	
Th	232	3	193	82.629	ppb	82.629	0.31	406977	2000	
U	238	3	193	83.387	ppb	83.387	0.53	426357	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3853035	1.58	4160703	92.61	60	120	
Sc (IS)	45	3	HMI He	595319	1.03	620569	95.93	60	120	
Ge Internal standard	72	2	HMI H2	2124736	2.82	2172040	97.82	60	120	
Ge Internal standard	72	3	HMI He	683008	0.31	684400	99.80	60	120	
In Internal Standard	115	3	HMI He	2457690	0.95	2522161	97.44	60	120	
Ir (IS)	193	3	HMI He	5416490	1.10	5572879	97.19	60	120	

Sample Report

Sample Table

Sample Name	160-48482-a-4-b@50
Data File Name	093SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:01:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.032	ppb	0.032	173.21	2	2000	
Na	23	3	45	5437.850	ppb	5437.850	2.18	651471	400000	
Mg	24	3	45	10867.538	ppb	10867.538	0.94	658692	400000	
Al	27	3	45	2.431	ppb	2.431	49.27	167	400000	
K	39	3	45	344.778	ppb	344.778	7.13	30918	400000	
Ca	40	2	45	95555.423	ppb	95555.423	1.66	50748935	400000	
V	51	3	72	-0.215	ppb	-0.215	-22.38	356	2000	
Cr	52	3	72	-0.062	ppb	-0.062	-203.74	1464	5000	
Mn	55	3	72	1938.567	ppb	1938.567	1.26	730181	10000	
Fe	56	2	72	2.958	ppb	2.958	9.95	12024	10000	
Co	59	3	72	1.650	ppb	1.650	5.60	1924	2000	
Ni	60	3	72	1.904	ppb	1.904	16.31	730	5000	
Cu	63	3	72	0.109	ppb	0.109	27.55	352	5000	
Zn	66	3	72	2.396	ppb	2.396	12.90	580	5000	
As	75	3	72	0.274	ppb	0.274	26.67	58	2000	
Se	78	2	72	0.054	ppb	0.054	121.30	6	2000	
(Se)	78	3	72	0.533	ppb	0.533	289.44	15	2000	
Sr	88	3	72	314.155	ppb	314.155	1.04	152555	4000	
Mo	95	3	115	-0.002	ppb	-0.002	-2467.44	83	2000	
Ag	107	3	115	0.020	ppb	0.020	57.15	55	100	
Cd	111	3	115	0.007	ppb	0.007	320.40	7	2000	
Sn	120	3	115	0.458	ppb	0.458	12.82	1293	2000	
Sb	121	3	115	0.532	ppb	0.532	20.65	468	1000	
Ba	137	3	115	604.338	ppb	604.338	0.87	139757	5000	
Tl	205	3	193	-0.126	ppb	-0.126	-7.43	232	2000	
(Pb)	206	3	193	0.009	ppb	0.009	352.03	238	100	
(Pb)	207	3	193	-0.106	ppb	-0.106	-54.57	337	100	
Pb	208	3	193	-0.037	ppb	-0.037	-32.85	1033	5000	
Th	232	3	193	0.582	ppb	0.582	23.00	7459	2000	
U	238	3	193	0.172	ppb	0.172	2.95	2544	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4008620	1.54	4160703	96.34	60	120	
Sc (IS)	45	3	HMI He	610117	0.67	620569	98.32	60	120	
Ge Internal standard	72	2	HMI H2	2075122	1.07	2172040	95.54	60	120	
Ge Internal standard	72	3	HMI He	674193	0.76	684400	98.51	60	120	
In Internal Standard	115	3	HMI He	2492539	0.57	2522161	98.83	60	120	
Ir (IS)	193	3	HMI He	5719183	1.51	5572879	102.63	60	120	

Sample Report

Sample Table

Sample Name	160-48482-a-9-b@50
Data File Name	094SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:02:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	5054.579	ppb	5054.579	0.90	600358	400000	
Mg	24	3	45	10124.574	ppb	10124.574	0.78	606818	400000	
Al	27	3	45	1.097	ppb	1.097	215.48	137	400000	
K	39	3	45	309.363	ppb	309.363	11.04	29043	400000	
Ca	40	2	45	90167.714	ppb	90167.714	0.95	46842963	400000	
V	51	3	72	-0.129	ppb	-0.129	-62.31	403	2000	
Cr	52	3	72	-0.021	ppb	-0.021	-441.88	1491	5000	
Mn	55	3	72	1768.193	ppb	1768.193	0.45	664951	10000	
Fe	56	2	72	2.578	ppb	2.578	12.85	11406	10000	
Co	59	3	72	1.501	ppb	1.501	6.26	1749	2000	
Ni	60	3	72	1.765	ppb	1.765	7.17	685	5000	
Cu	63	3	72	0.133	ppb	0.133	44.15	371	5000	
Zn	66	3	72	2.391	ppb	2.391	14.60	578	5000	
As	75	3	72	0.132	ppb	0.132	115.45	43	2000	
Se	78	2	72	0.004	ppb	0.004	620.18	3	2000	
(Se)	78	3	72	0.800	ppb	0.800	54.24	17	2000	
Sr	88	3	72	292.766	ppb	292.766	0.89	141938	4000	
Mo	95	3	115	-0.056	ppb	-0.056	-24.88	57	2000	
Ag	107	3	115	0.006	ppb	0.006	35.26	33	100	
Cd	111	3	115	0.007	ppb	0.007	156.58	7	2000	
Sn	120	3	115	-0.120	ppb	-0.120	-56.09	881	2000	
Sb	121	3	115	0.279	ppb	0.279	29.29	285	1000	
Ba	137	3	115	558.394	ppb	558.394	1.71	129602	5000	
Tl	205	3	193	-0.120	ppb	-0.120	-4.24	250	2000	
(Pb)	206	3	193	-0.019	ppb	-0.019	-116.18	202	100	
(Pb)	207	3	193	-0.118	ppb	-0.118	-20.36	318	100	
Pb	208	3	193	-0.068	ppb	-0.068	-14.21	865	5000	
Th	232	3	193	0.110	ppb	0.110	9.54	4944	2000	
U	238	3	193	0.126	ppb	0.126	16.38	2264	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3921288	1.30	4160703	94.25	60	120	
Sc (IS)	45	3	HMI He	603284	0.66	620569	97.21	60	120	
Ge Internal standard	72	2	HMI H2	2058342	1.85	2172040	94.77	60	120	
Ge Internal standard	72	3	HMI He	673109	0.62	684400	98.35	60	120	
In Internal Standard	115	3	HMI He	2502075	2.23	2522161	99.20	60	120	
Ir (IS)	193	3	HMI He	5633611	0.89	5572879	101.09	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	095_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:04:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.578	ppb	0.649	2459	50	99.2	90	110	
Na	23	3	45	49975.799	ppb	2.390	5677274	51000	98.0	90	110	
Mg	24	3	45	11030.297	ppb	2.037	653875	11000	100.3	90	110	
Al	27	3	45	1026.712	ppb	3.249	21602	1000	102.7	90	110	
K	39	3	45	11039.891	ppb	0.499	489658	11000	100.4	90	110	
Ca	40	2	45	11496.614	ppb	1.787	5995627	11000	104.5	90	110	
V	51	3	72	51.390	ppb	0.972	29101	50	102.8	90	110	
Cr	52	3	72	51.519	ppb	2.128	38419	50	103.0	90	110	
Mn	55	3	72	53.099	ppb	1.243	20483	50	106.2	90	110	
Fe	56	2	72	1053.196	ppb	1.493	1440591	1000	105.3	90	110	
Co	59	3	72	50.850	ppb	1.653	59394	50	101.7	90	110	
Ni	60	3	72	51.207	ppb	1.968	16607	50	102.4	90	110	
Cu	63	3	72	51.233	ppb	1.429	45016	50	102.5	90	110	
Zn	66	3	72	51.741	ppb	1.490	8115	50	103.5	90	110	
As	75	3	72	53.285	ppb	2.979	5713	50	106.6	90	110	
Se	78	2	72	53.968	ppb	0.530	2764	50	107.9	90	110	
(Se)	78	3	72	49.397	ppb	6.917	333	50	98.8	90	110	
Sr	88	3	72	106.634	ppb	1.405	52583	100	106.6	90	110	
Mo	95	3	115	50.064	ppb	0.843	24740	50	100.1	90	110	
Ag	107	3	115	50.319	ppb	1.977	80811	50	100.6	90	110	
Cd	111	3	115	49.694	ppb	1.476	11859	50	99.4	90	110	
Sn	120	3	115	50.590	ppb	2.398	36836	50	101.2	90	110	
Sb	121	3	115	50.653	ppb	3.177	36562	50	101.3	90	110	
Ba	137	3	115	52.493	ppb	0.715	12050	50	105.0	90	110	
Tl	205	3	193	50.040	ppb	2.379	182521	50	100.1	90	110	
(Pb)	206	3	193	51.038	ppb	2.357	61480	50	102.1	90	110	
(Pb)	207	3	193	50.569	ppb	3.373	54031	50	101.1	90	110	
Pb	208	3	193	50.650	ppb	2.008	246500	50	101.3	90	110	
Th	232	3	193	50.583	ppb	2.765	257697	50	101.2	90	110	
U	238	3	193	50.674	ppb	2.502	266868	50	101.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3930427	1.62	4160703	94.47	60	120	
Sc (IS)	45	3	HMI He	596707	0.14	620569	96.15	60	120	
Ge Internal standard	72	2	HMI H2	2054090	1.80	2172040	94.57	60	120	
Ge Internal standard	72	3	HMI He	684318	0.47	684400	99.99	60	120	
In Internal Standard	115	3	HMI He	2464218	0.58	2522161	97.70	60	120	
Ir (IS)	193	3	HMI He	5566920	1.21	5572879	99.89	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	096_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:06:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.033	ppb	173.2	2	0.5	
Na	23	3	45	22.668	ppb	15.7	24442	25	
Mg	24	3	45	1.489	ppb	22.0	210	25	
Al	27	3	45	0.061	ppb	3331.6	113	15	
K	39	3	45	3.708	ppb	738.2	15601	50	
V	51	3	72	-0.216	ppb	-24.6	358	1	
Cr	52	3	72	-0.129	ppb	-80.8	1426	1	
Mn	55	3	72	0.052	ppb	75.9	207	0.5	
Co	59	3	72	0.003	ppb	240.6	30	0.5	
Ni	60	3	72	0.072	ppb	53.3	150	1	
Cu	63	3	72	0.024	ppb	136.5	280	1	
Zn	66	3	72	-0.261	ppb	-163.8	182	5	
As	75	3	72	0.285	ppb	108.6	60	1	
Se	78	2	72	0.015	ppb	503.8	4	1	
(Se)	78	3	72	0.245	ppb	946.4	13	1	
Sr	88	3	72	0.045	ppb	112.2	58	0.5	
Mo	95	3	115	-0.041	ppb	-30.4	63	0.5	
Ag	107	3	115	0.012	ppb	80.4	42	1	
Cd	111	3	115	-0.020	ppb	0.0	0	0.5	
Sn	120	3	115	-0.312	ppb	-55.9	733	1	
Sb	121	3	115	0.270	ppb	22.3	275	0.6	
Ba	137	3	115	0.005	ppb	1318.3	53	0.5	
Tl	205	3	193	-0.121	ppb	-1.6	245	0.1	
(Pb)	206	3	193	-0.056	ppb	-45.5	155	1	
(Pb)	207	3	193	-0.112	ppb	-57.0	322	1	
Pb	208	3	193	-0.065	ppb	-26.9	873	0.5	
Th	232	3	193	0.609	ppb	28.1	7410	1	
U	238	3	193	0.026	ppb	38.1	1718	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3948673	1.69	4160703	94.90	60	120	
Sc (IS)	45	3	HMI He	597216	0.97	620569	96.24	60	120	
Ge Internal standard	72	2	HMI H2	2102601	1.56	2172040	96.80	60	120	
Ge Internal standard	72	3	HMI He	678341	1.60	684400	99.11	60	120	
In Internal Standard	115	3	HMI He	2468193	0.69	2522161	97.86	60	120	
Ir (IS)	193	3	HMI He	5582750	0.68	5572879	100.18	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	097LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:08:33-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.030	ppb	45.237	52	1	103.0	70	130	
Na	23	3	45	68.292	ppb	5.842	29848	50	136.6	70	130	>+/-30%
Mg	24	3	45	49.726	ppb	1.285	3097	50	99.5	70	130	
Al	27	3	45	46.759	ppb	12.285	1101	50	93.5	70	130	
K	39	3	45	89.279	ppb	38.736	19446	100	89.3	70	130	
V	51	3	72	5.248	ppb	7.083	3412	5	105.0	70	130	
Cr	52	3	72	2.071	ppb	11.235	3020	2	103.6	70	130	
Mn	55	3	72	0.976	ppb	12.113	563	1	97.6	70	130	
Co	59	3	72	1.065	ppb	3.384	1273	1	106.5	70	130	
Ni	60	3	72	1.963	ppb	10.701	761	2	98.2	70	130	
Cu	63	3	72	2.122	ppb	6.303	2121	2	106.1	70	130	
Zn	66	3	72	9.804	ppb	8.031	1723	10	98.0	70	130	
As	75	3	72	5.496	ppb	13.015	618	5	109.9	70	130	
Se	78	2	72	5.327	ppb	13.298	287	5	106.5	70	130	
(Se)	78	3	72	5.100	ppb	27.046	45	5	102.0	70	130	
Sr	88	3	72	1.086	ppb	6.215	573	1	108.6	70	130	
Mo	95	3	115	1.915	ppb	7.070	1025	2	95.8	70	130	
Ag	107	3	115	1.022	ppb	3.150	1661	1	102.2	70	130	
Cd	111	3	115	1.042	ppb	7.683	253	1	104.2	70	130	
Sn	120	3	115	9.574	ppb	4.149	7732	10	95.7	70	130	
Sb	121	3	115	2.281	ppb	9.345	1719	2	114.1	70	130	
Ba	137	3	115	1.172	ppb	14.097	320	1	117.2	70	130	
Tl	205	3	193	0.880	ppb	3.247	3980	1	88.0	70	130	
(Pb)	206	3	193	1.027	ppb	8.145	1491	1	102.7	70	130	
(Pb)	207	3	193	0.837	ppb	7.939	1359	1	83.7	70	130	
Pb	208	3	193	0.967	ppb	6.099	6018	1	96.7	70	130	
Th	232	3	193	2.039	ppb	5.255	14910	2	102.0	70	130	
U	238	3	193	1.054	ppb	1.764	7272	1	105.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3951299	1.48	4160703	94.97	60	120	
Sc (IS)	45	3	HMI He	602111	0.69	620569	97.03	60	120	
Ge Internal standard	72	2	HMI H2	2143791	2.40	2172040	98.70	60	120	
Ge Internal standard	72	3	HMI He	686021	0.82	684400	100.24	60	120	
In Internal Standard	115	3	HMI He	2461168	1.93	2522161	97.58	60	120	
Ir (IS)	193	3	HMI He	5704807	0.59	5572879	102.37	60	120	

Sample Report

Sample Table

Sample Name	160-48484-a-1-a
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:10:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	16919.523	ppb	16919.523	0.21	1972507	400000	
Mg	24	3	45	10096.511	ppb	10096.511	1.51	609624	400000	
Al	27	3	45	50.623	ppb	50.623	14.03	1195	400000	
K	39	3	45	1915.108	ppb	1915.108	0.98	99510	400000	
Ca	40	2	45	42635.153	ppb	42635.153	0.64	22120693	400000	
V	51	3	72	-0.470	ppb	-0.470	-27.21	228	2000	
Cr	52	3	72	1.061	ppb	1.061	17.01	2371	5000	
Mn	55	3	72	3.648	ppb	3.648	4.91	1639	10000	
Fe	56	2	72	21.584	ppb	21.584	3.10	40500	10000	
Co	59	3	72	0.043	ppb	0.043	26.77	80	2000	
Ni	60	3	72	0.498	ppb	0.498	36.37	298	5000	
Cu	63	3	72	1.629	ppb	1.629	5.63	1744	5000	
Zn	66	3	72	37.862	ppb	37.862	4.65	6213	5000	
As	75	3	72	0.247	ppb	0.247	21.24	58	2000	
Se	78	2	72	0.202	ppb	0.202	21.05	15	2000	
(Se)	78	3	72	0.667	ppb	0.667	166.04	17	2000	
Sr	88	3	72	129.711	ppb	129.711	0.63	66229	4000	
Mo	95	3	115	6.203	ppb	6.203	2.33	3224	2000	
Ag	107	3	115	0.002	ppb	0.002	756.42	27	100	
Cd	111	3	115	-0.007	ppb	-0.007	-174.40	3	2000	
Sn	120	3	115	-0.847	ppb	-0.847	-5.25	361	2000	
Sb	121	3	115	0.173	ppb	0.173	17.10	210	1000	
Ba	137	3	115	47.396	ppb	47.396	2.06	11181	5000	
Tl	205	3	193	-0.145	ppb	-0.145	-6.19	158	2000	
(Pb)	206	3	193	0.034	ppb	0.034	57.61	263	100	
(Pb)	207	3	193	-0.002	ppb	-0.002	-131.02	438	100	
Pb	208	3	193	0.014	ppb	0.014	105.91	1256	5000	
Th	232	3	193	0.123	ppb	0.123	29.90	4970	2000	
U	238	3	193	7.012	ppb	7.012	3.15	38412	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3915021	1.16	4160703	94.10	60	120	
Sc (IS)	45	3	HMI He	607815	1.00	620569	97.94	60	120	
Ge Internal standard	72	2	HMI H2	2233802	0.65	2172040	102.84	60	120	
Ge Internal standard	72	3	HMI He	708604	1.18	684400	103.54	60	120	
In Internal Standard	115	3	HMI He	2531772	1.20	2522161	100.38	60	120	
Ir (IS)	193	3	HMI He	5585966	1.62	5572879	100.23	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-1-a
Data File Name	099SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:12:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.60	3	2000	
Na	23	3	45	23614.985	ppb	23614.985	1.21	2722680	400000	
Mg	24	3	45	11583.890	ppb	11583.890	0.92	693961	400000	
Al	27	3	45	7.897	ppb	7.897	34.43	280	400000	
K	39	3	45	6168.578	ppb	6168.578	0.67	283371	400000	
Ca	40	2	45	51137.967	ppb	51137.967	1.90	26912856	400000	
V	51	3	72	9.550	ppb	9.550	2.97	5980	2000	
Cr	52	3	72	4.505	ppb	4.505	1.82	4903	5000	
Mn	55	3	72	0.175	ppb	0.175	14.47	263	10000	
Fe	56	2	72	12.576	ppb	12.576	0.94	26271	10000	
Co	59	3	72	0.028	ppb	0.028	21.70	62	2000	
Ni	60	3	72	0.908	ppb	0.908	2.47	433	5000	
Cu	63	3	72	0.132	ppb	0.132	46.34	388	5000	
Zn	66	3	72	4.935	ppb	4.935	7.54	1006	5000	
As	75	3	72	6.024	ppb	6.024	11.27	693	2000	
Se	78	2	72	2.504	ppb	2.504	6.18	138	2000	
(Se)	78	3	72	2.174	ppb	2.174	20.53	27	2000	
Sr	88	3	72	235.286	ppb	235.286	1.63	119567	4000	
Mo	95	3	115	4.416	ppb	4.416	7.09	2357	2000	
Ag	107	3	115	0.019	ppb	0.019	14.58	55	100	
Cd	111	3	115	0.000	ppb	0.000	-7569.81	5	2000	
Sn	120	3	115	-0.954	ppb	-0.954	-3.37	288	2000	
Sb	121	3	115	0.088	ppb	0.088	5.69	150	1000	
Ba	137	3	115	53.866	ppb	53.866	2.78	12912	5000	
Tl	205	3	193	-0.149	ppb	-0.149	-3.24	143	2000	
(Pb)	206	3	193	0.095	ppb	0.095	15.49	335	100	
(Pb)	207	3	193	0.095	ppb	0.095	52.90	538	100	
Pb	208	3	193	0.101	ppb	0.101	17.38	1669	5000	
Th	232	3	193	0.091	ppb	0.091	42.08	4774	2000	
U	238	3	193	21.339	ppb	21.339	2.04	112871	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3972278	2.23	4160703	95.47	60	120	
Sc (IS)	45	3	HMI He	602995	0.66	620569	97.17	60	120	
Ge Internal standard	72	2	HMI H2	2159548	1.23	2172040	99.42	60	120	
Ge Internal standard	72	3	HMI He	705499	0.40	684400	103.08	60	120	
In Internal Standard	115	3	HMI He	2573175	0.96	2522161	102.02	60	120	
Ir (IS)	193	3	HMI He	5547058	2.46	5572879	99.54	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-5-a
Data File Name	100SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:14:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	23863.714	ppb	23863.714	1.08	2744354	400000	
Mg	24	3	45	11599.583	ppb	11599.583	0.08	693227	400000	
Al	27	3	45	6.179	ppb	6.179	52.50	244	400000	
K	39	3	45	5789.570	ppb	5789.570	1.10	266272	400000	
Ca	40	2	45	54918.639	ppb	54918.639	2.13	28773171	400000	
V	51	3	72	8.998	ppb	8.998	8.07	5638	2000	
Cr	52	3	72	5.781	ppb	5.781	2.38	5820	5000	
Mn	55	3	72	0.178	ppb	0.178	40.68	263	10000	
Fe	56	2	72	17.720	ppb	17.720	2.63	34130	10000	
Co	59	3	72	0.022	ppb	0.022	109.32	53	2000	
Ni	60	3	72	1.494	ppb	1.494	8.90	625	5000	
Cu	63	3	72	0.219	ppb	0.219	20.75	465	5000	
Zn	66	3	72	0.718	ppb	0.718	26.66	342	5000	
As	75	3	72	5.913	ppb	5.913	4.31	678	2000	
Se	78	2	72	2.715	ppb	2.715	16.66	151	2000	
(Se)	78	3	72	2.439	ppb	2.439	93.61	28	2000	
Sr	88	3	72	249.847	ppb	249.847	0.79	126413	4000	
Mo	95	3	115	4.789	ppb	4.789	3.37	2506	2000	
Ag	107	3	115	0.021	ppb	0.021	49.81	58	100	
Cd	111	3	115	-0.007	ppb	-0.007	-360.50	3	2000	
Sn	120	3	115	-0.863	ppb	-0.863	-7.62	350	2000	
Sb	121	3	115	0.162	ppb	0.162	16.56	202	1000	
Ba	137	3	115	62.982	ppb	62.982	0.65	14824	5000	
Tl	205	3	193	-0.146	ppb	-0.146	-13.51	150	2000	
(Pb)	206	3	193	-0.010	ppb	-0.010	-235.26	203	100	
(Pb)	207	3	193	-0.124	ppb	-0.124	-29.88	298	100	
Pb	208	3	193	-0.059	ppb	-0.059	-16.53	873	5000	
Th	232	3	193	0.076	ppb	0.076	55.55	4569	2000	
U	238	3	193	34.613	ppb	34.613	0.40	177156	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3954587	1.96	4160703	95.05	60	120	
Sc (IS)	45	3	HMI He	601565	0.53	620569	96.94	60	120	
Ge Internal standard	72	2	HMI H2	2192141	2.10	2172040	100.93	60	120	
Ge Internal standard	72	3	HMI He	702406	0.07	684400	102.63	60	120	
In Internal Standard	115	3	HMI He	2528737	0.47	2522161	100.26	60	120	
Ir (IS)	193	3	HMI He	5394476	0.64	5572879	96.80	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-8-a
Data File Name	101SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:16:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	18537.626	ppb	18537.626	2.59	2181655	400000	
Mg	24	3	45	11175.847	ppb	11175.847	0.80	682010	400000	
Al	27	3	45	7.327	ppb	7.327	13.00	274	400000	
K	39	3	45	5968.727	ppb	5968.727	0.19	279829	400000	
Ca	40	2	45	59686.590	ppb	59686.590	1.04	30796108	400000	
V	51	3	72	8.131	ppb	8.131	3.89	5213	2000	
Cr	52	3	72	3.730	ppb	3.730	9.75	4372	5000	
Mn	55	3	72	5.866	ppb	5.866	3.58	2529	10000	
Fe	56	2	72	208.530	ppb	208.530	1.69	315623	10000	
Co	59	3	72	0.044	ppb	0.044	28.77	82	2000	
Ni	60	3	72	0.637	ppb	0.637	8.64	347	5000	
Cu	63	3	72	0.993	ppb	0.993	2.37	1174	5000	
Zn	66	3	72	11.384	ppb	11.384	3.67	2039	5000	
As	75	3	72	4.100	ppb	4.100	11.10	486	2000	
Se	78	2	72	1.840	ppb	1.840	21.28	105	2000	
(Se)	78	3	72	2.391	ppb	2.391	78.91	28	2000	
Sr	88	3	72	248.221	ppb	248.221	1.25	127321	4000	
Mo	95	3	115	4.600	ppb	4.600	1.82	2507	2000	
Ag	107	3	115	0.027	ppb	0.027	19.00	70	100	
Cd	111	3	115	-0.014	ppb	-0.014	-82.68	2	2000	
Sn	120	3	115	-0.901	ppb	-0.901	-1.38	335	2000	
Sb	121	3	115	0.076	ppb	0.076	41.02	143	1000	
Ba	137	3	115	50.744	ppb	50.744	1.65	12435	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-5.80	143	2000	
(Pb)	206	3	193	0.050	ppb	0.050	34.98	287	100	
(Pb)	207	3	193	-0.028	ppb	-0.028	-146.34	416	100	
Pb	208	3	193	0.016	ppb	0.016	121.73	1284	5000	
Th	232	3	193	0.044	ppb	0.044	81.65	4634	2000	
U	238	3	193	23.393	ppb	23.393	1.32	126172	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3893882	0.69	4160703	93.59	60	120	
Sc (IS)	45	3	HMI He	614275	0.91	620569	98.99	60	120	
Ge Internal standard	72	2	HMI H2	2223286	0.48	2172040	102.36	60	120	
Ge Internal standard	72	3	HMI He	712128	0.74	684400	104.05	60	120	
In Internal Standard	115	3	HMI He	2630322	0.17	2522161	104.29	60	120	
Ir (IS)	193	3	HMI He	5662104	1.62	5572879	101.60	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	102_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:18:01-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.978	ppb	6.689	2549	50	100.0	90	110	
Na	23	3	45	49546.125	ppb	0.180	5813460	51000	97.1	90	110	
Mg	24	3	45	11016.874	ppb	1.025	674510	11000	100.2	90	110	
Al	27	3	45	1011.184	ppb	1.041	21976	1000	101.1	90	110	
K	39	3	45	11147.080	ppb	0.614	510484	11000	101.3	90	110	
Ca	40	2	45	11472.876	ppb	0.822	6100962	11000	104.3	90	110	
V	51	3	72	51.496	ppb	1.948	29974	50	103.0	90	110	
Cr	52	3	72	50.548	ppb	1.288	38776	50	101.1	90	110	
Mn	55	3	72	52.064	ppb	1.535	20648	50	104.1	90	110	
Fe	56	2	72	1019.888	ppb	0.169	1476767	1000	102.0	90	110	
Co	59	3	72	50.333	ppb	1.097	60434	50	100.7	90	110	
Ni	60	3	72	51.240	ppb	4.899	17080	50	102.5	90	110	
Cu	63	3	72	51.798	ppb	0.716	46776	50	103.6	90	110	
Zn	66	3	72	51.147	ppb	1.342	8248	50	102.3	90	110	
As	75	3	72	52.658	ppb	1.170	5803	50	105.3	90	110	
Se	78	2	72	52.815	ppb	0.621	2862	50	105.6	90	110	
(Se)	78	3	72	50.993	ppb	5.741	353	50	102.0	90	110	
Sr	88	3	72	105.930	ppb	2.002	53695	100	105.9	90	110	
Mo	95	3	115	49.116	ppb	1.591	25433	50	98.2	90	110	
Ag	107	3	115	50.063	ppb	1.718	84244	50	100.1	90	110	
Cd	111	3	115	49.741	ppb	2.123	12440	50	99.5	90	110	
Sn	120	3	115	49.267	ppb	2.342	37612	50	98.5	90	110	
Sb	121	3	115	49.979	ppb	1.410	37805	50	100.0	90	110	
Ba	137	3	115	51.389	ppb	0.690	12361	50	102.8	90	110	
Tl	205	3	193	50.230	ppb	1.382	188649	50	100.5	90	110	
(Pb)	206	3	193	51.096	ppb	2.240	63366	50	102.2	90	110	
(Pb)	207	3	193	50.962	ppb	0.653	56077	50	101.9	90	110	
Pb	208	3	193	50.698	ppb	1.726	254050	50	101.4	90	110	
Th	232	3	193	50.623	ppb	2.122	265532	50	101.2	90	110	
U	238	3	193	51.333	ppb	2.307	278317	50	102.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4007072	0.64	4160703	96.31	60	120	
Sc (IS)	45	3	HMI He	616305	0.74	620569	99.31	60	120	
Ge Internal standard	72	2	HMI H2	2173764	0.51	2172040	100.08	60	120	
Ge Internal standard	72	3	HMI He	703384	0.70	684400	102.77	60	120	
In Internal Standard	115	3	HMI He	2582313	1.51	2522161	102.38	60	120	
Ir (IS)	193	3	HMI He	5732140	1.90	5572879	102.86	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	103_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:19:53-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	21.163	ppb	18.4	24747	25	
Mg	24	3	45	1.471	ppb	34.5	214	25	
Al	27	3	45	-1.151	ppb	-37.7	90	15	
K	39	3	45	-8.175	ppb	-161.7	15394	50	
V	51	3	72	-0.179	ppb	-33.7	393	1	
Cr	52	3	72	-0.161	ppb	-24.7	1456	1	
Mn	55	3	72	-0.124	ppb	-34.6	145	0.5	
Co	59	3	72	-0.003	ppb	-189.9	23	0.5	
Ni	60	3	72	0.030	ppb	161.5	142	1	
Cu	63	3	72	-0.018	ppb	-385.8	253	1	
Zn	66	3	72	-0.263	ppb	-14.1	188	5	
As	75	3	72	0.251	ppb	55.4	58	1	
Se	78	2	72	-0.012	ppb	-199.7	3	1	
(Se)	78	3	72	-0.309	ppb	-240.1	10	1	
Sr	88	3	72	0.037	ppb	85.8	57	0.5	
Mo	95	3	115	-0.018	ppb	-123.7	77	0.5	
Ag	107	3	115	0.019	ppb	41.1	55	1	
Cd	111	3	115	-0.020	ppb	0.0	0	0.5	
Sn	120	3	115	-0.392	ppb	-24.0	695	1	
Sb	121	3	115	0.224	ppb	11.1	248	0.6	
Ba	137	3	115	-0.022	ppb	-209.4	48	0.5	
Tl	205	3	193	-0.125	ppb	-4.0	238	0.1	
(Pb)	206	3	193	-0.054	ppb	-43.1	162	1	
(Pb)	207	3	193	-0.118	ppb	-25.4	325	1	
Pb	208	3	193	-0.080	ppb	-13.7	823	0.5	
Th	232	3	193	0.625	ppb	24.2	7715	1	
U	238	3	193	0.013	ppb	57.1	1699	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4026460	0.89	4160703	96.77	60	120	
Sc (IS)	45	3	HMI He	609021	0.90	620569	98.14	60	120	
Ge Internal standard	72	2	HMI H2	2160375	2.49	2172040	99.46	60	120	
Ge Internal standard	72	3	HMI He	703892	0.35	684400	102.85	60	120	
In Internal Standard	115	3	HMI He	2536260	0.79	2522161	100.56	60	120	
Ir (IS)	193	3	HMI He	5748278	2.33	5572879	103.15	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	104LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:21:45-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.026	ppb	36.239	52	1	102.6	70	130	
Na	23	3	45	62.623	ppb	11.555	29574	50	125.2	70	130	
Mg	24	3	45	51.845	ppb	9.966	3264	50	103.7	70	130	
Al	27	3	45	50.517	ppb	16.955	1195	50	101.0	70	130	
K	39	3	45	85.868	ppb	36.637	19543	100	85.9	70	130	
V	51	3	72	4.901	ppb	2.473	3274	5	98.0	70	130	
Cr	52	3	72	1.870	ppb	8.639	2926	2	93.5	70	130	
Mn	55	3	72	0.914	ppb	6.235	548	1	91.4	70	130	
Co	59	3	72	1.038	ppb	4.920	1263	1	103.8	70	130	
Ni	60	3	72	2.055	ppb	2.739	805	2	102.8	70	130	
Cu	63	3	72	2.185	ppb	1.156	2212	2	109.2	70	130	
Zn	66	3	72	10.558	ppb	6.519	1869	10	105.6	70	130	
As	75	3	72	5.574	ppb	10.197	636	5	111.5	70	130	
Se	78	2	72	5.110	ppb	11.026	279	5	102.2	70	130	
(Se)	78	3	72	3.975	ppb	39.464	38	5	79.5	70	130	
Sr	88	3	72	1.030	ppb	5.405	555	1	103.0	70	130	
Mo	95	3	115	2.000	ppb	12.756	1090	2	100.0	70	130	
Ag	107	3	115	1.110	ppb	8.369	1841	1	111.0	70	130	
Cd	111	3	115	0.959	ppb	9.653	238	1	95.9	70	130	
Sn	120	3	115	9.727	ppb	3.829	8017	10	97.3	70	130	
Sb	121	3	115	2.298	ppb	3.603	1771	2	114.9	70	130	
Ba	137	3	115	1.108	ppb	4.778	312	1	110.8	70	130	
Tl	205	3	193	0.883	ppb	4.801	4065	1	88.3	70	130	
(Pb)	206	3	193	1.054	ppb	5.167	1553	1	105.4	70	130	
(Pb)	207	3	193	0.900	ppb	3.652	1454	1	90.0	70	130	
Pb	208	3	193	0.994	ppb	4.167	6268	1	99.4	70	130	
Th	232	3	193	2.058	ppb	4.420	15290	2	102.9	70	130	
U	238	3	193	1.035	ppb	7.423	7300	1	103.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4032257	1.58	4160703	96.91	60	120	
Sc (IS)	45	3	HMI He	609792	0.75	620569	98.26	60	120	
Ge Internal standard	72	2	HMI H2	2165030	1.11	2172040	99.68	60	120	
Ge Internal standard	72	3	HMI He	697679	0.67	684400	101.94	60	120	
In Internal Standard	115	3	HMI He	2515256	0.96	2522161	99.73	60	120	
Ir (IS)	193	3	HMI He	5813799	1.92	5572879	104.32	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-10-d
Data File Name	105SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:23:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	13651.982	ppb	13651.982	0.65	1580334	400000	
Mg	24	3	45	25313.968	ppb	25313.968	0.12	1513429	400000	
Al	27	3	45	273.932	ppb	273.932	4.09	5894	400000	
K	39	3	45	5265.187	ppb	5265.187	1.15	243656	400000	
Ca	40	2	45	84614.139	ppb	84614.139	2.14	43749478	400000	
V	51	3	72	20.790	ppb	20.790	1.07	12398	2000	
Cr	52	3	72	10.278	ppb	10.278	1.49	9138	5000	
Mn	55	3	72	58.105	ppb	58.105	1.01	23023	10000	
Fe	56	2	72	857.441	ppb	857.441	1.72	1253798	10000	
Co	59	3	72	0.589	ppb	0.589	21.57	735	2000	
Ni	60	3	72	2.347	ppb	2.347	11.12	908	5000	
Cu	63	3	72	0.636	ppb	0.636	14.59	840	5000	
Zn	66	3	72	1.864	ppb	1.864	18.01	521	5000	
As	75	3	72	1.513	ppb	1.513	14.39	197	2000	
Se	78	2	72	9.900	ppb	9.900	5.86	545	2000	
(Se)	78	3	72	8.915	ppb	8.915	26.07	72	2000	
Sr	88	3	72	330.764	ppb	330.764	1.21	167586	4000	
Mo	95	3	115	6.509	ppb	6.509	1.72	3387	2000	
Ag	107	3	115	0.005	ppb	0.005	98.83	32	100	
Cd	111	3	115	-0.013	ppb	-0.013	-86.63	2	2000	
Sn	120	3	115	-0.876	ppb	-0.876	-0.55	342	2000	
Sb	121	3	115	-0.005	ppb	-0.005	-376.44	78	1000	
Ba	137	3	115	63.664	ppb	63.664	0.53	15038	5000	
Tl	205	3	193	-0.122	ppb	-0.122	-9.19	247	2000	
(Pb)	206	3	193	0.040	ppb	0.040	60.02	273	100	
(Pb)	207	3	193	0.009	ppb	0.009	682.95	455	100	
Pb	208	3	193	0.024	ppb	0.024	65.47	1323	5000	
Th	232	3	193	0.185	ppb	0.185	20.93	5340	2000	
U	238	3	193	1.529	ppb	1.529	5.73	9719	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3903021	1.32	4160703	93.81	60	120	
Sc (IS)	45	3	HMI He	601856	1.87	620569	96.98	60	120	
Ge Internal standard	72	2	HMI H2	2193313	2.14	2172040	100.98	60	120	
Ge Internal standard	72	3	HMI He	703455	0.67	684400	102.78	60	120	
In Internal Standard	115	3	HMI He	2537628	1.23	2522161	100.61	60	120	
Ir (IS)	193	3	HMI He	5648011	1.08	5572879	101.35	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-12-a
Data File Name	106SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:25:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	25182.920	ppb	25182.920	2.32	2963140	400000	
Mg	24	3	45	12207.895	ppb	12207.895	0.84	746810	400000	
Al	27	3	45	11.354	ppb	11.354	35.70	360	400000	
K	39	3	45	5676.018	ppb	5676.018	1.80	267518	400000	
Ca	40	2	45	55376.377	ppb	55376.377	1.41	29477506	400000	
V	51	3	72	8.992	ppb	8.992	1.37	5757	2000	
Cr	52	3	72	2.977	ppb	2.977	6.10	3839	5000	
Mn	55	3	72	5.615	ppb	5.615	2.61	2449	10000	
Fe	56	2	72	16.880	ppb	16.880	2.67	33420	10000	
Co	59	3	72	0.066	ppb	0.066	31.44	108	2000	
Ni	60	3	72	0.906	ppb	0.906	10.51	440	5000	
Cu	63	3	72	0.420	ppb	0.420	3.05	660	5000	
Zn	66	3	72	3.022	ppb	3.022	13.34	716	5000	
As	75	3	72	5.566	ppb	5.566	9.53	653	2000	
Se	78	2	72	2.573	ppb	2.573	4.55	146	2000	
(Se)	78	3	72	3.876	ppb	3.876	116.08	38	2000	
Sr	88	3	72	250.944	ppb	250.944	2.96	129671	4000	
Mo	95	3	115	4.892	ppb	4.892	1.05	2607	2000	
Ag	107	3	115	0.011	ppb	0.011	58.81	42	100	
Cd	111	3	115	0.000	ppb	0.000	-11961.76	5	2000	
Sn	120	3	115	-0.735	ppb	-0.735	-10.02	451	2000	
Sb	121	3	115	0.112	ppb	0.112	52.78	168	1000	
Ba	137	3	115	68.229	ppb	68.229	1.26	16364	5000	
Tl	205	3	193	-0.144	ppb	-0.144	-7.76	162	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-21.51	198	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-88.61	396	100	
Pb	208	3	193	-0.017	ppb	-0.017	-119.61	1119	5000	
Th	232	3	193	0.065	ppb	0.065	110.25	4729	2000	
U	238	3	193	33.211	ppb	33.211	2.29	178150	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4016958	1.32	4160703	96.55	60	120	
Sc (IS)	45	3	HMI He	615826	1.54	620569	99.24	60	120	
Ge Internal standard	72	2	HMI H2	2225550	0.81	2172040	102.46	60	120	
Ge Internal standard	72	3	HMI He	717743	2.80	684400	104.87	60	120	
In Internal Standard	115	3	HMI He	2577287	0.12	2522161	102.19	60	120	
Ir (IS)	193	3	HMI He	5653449	2.32	5572879	101.45	60	120	

Sample Report

Sample Table

Sample Name	280-171180-a-13-a
Data File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:27:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	24726.175	ppb	24726.175	0.42	2886477	400000	
Mg	24	3	45	12001.095	ppb	12001.095	1.09	728192	400000	
Al	27	3	45	3.813	ppb	3.813	70.52	197	400000	
K	39	3	45	5619.011	ppb	5619.011	1.97	262839	400000	
Ca	40	2	45	54781.439	ppb	54781.439	2.00	28889071	400000	
V	51	3	72	8.818	ppb	8.818	2.36	5567	2000	
Cr	52	3	72	2.953	ppb	2.953	4.20	3762	5000	
Mn	55	3	72	4.073	ppb	4.073	13.03	1801	10000	
Fe	56	2	72	4.915	ppb	4.915	4.73	15808	10000	
Co	59	3	72	0.097	ppb	0.097	24.73	145	2000	
Ni	60	3	72	0.715	ppb	0.715	17.43	370	5000	
Cu	63	3	72	0.209	ppb	0.209	8.90	458	5000	
Zn	66	3	72	1.456	ppb	1.456	16.86	460	5000	
As	75	3	72	5.288	ppb	5.288	5.66	613	2000	
Se	78	2	72	2.789	ppb	2.789	18.61	158	2000	
(Se)	78	3	72	1.921	ppb	1.921	102.85	25	2000	
Sr	88	3	72	250.982	ppb	250.982	1.19	127693	4000	
Mo	95	3	115	5.075	ppb	5.075	3.06	2687	2000	
Ag	107	3	115	0.009	ppb	0.009	55.41	38	100	
Cd	111	3	115	-0.007	ppb	-0.007	-174.35	3	2000	
Sn	120	3	115	-1.039	ppb	-1.039	-6.02	225	2000	
Sb	121	3	115	0.149	ppb	0.149	25.65	195	1000	
Ba	137	3	115	65.227	ppb	65.227	1.61	15560	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-3.84	142	2000	
(Pb)	206	3	193	-0.047	ppb	-0.047	-23.86	167	100	
(Pb)	207	3	193	-0.108	ppb	-0.108	-41.91	327	100	
Pb	208	3	193	-0.083	ppb	-0.083	-8.67	788	5000	
Th	232	3	193	0.343	ppb	0.343	156.41	6097	2000	
U	238	3	193	32.656	ppb	32.656	2.01	173459	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3979185	0.75	4160703	95.64	60	120	
Sc (IS)	45	3	HMI He	610809	0.98	620569	98.43	60	120	
Ge Internal standard	72	2	HMI H2	2229849	2.64	2172040	102.66	60	120	
Ge Internal standard	72	3	HMI He	706360	0.92	684400	103.21	60	120	
In Internal Standard	115	3	HMI He	2563537	1.59	2522161	101.64	60	120	
Ir (IS)	193	3	HMI He	5595247	0.67	5572879	100.40	60	120	

Sample Report

Sample Table

Sample Name	280-171339-v-27-a
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:29:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-5.606	ppb	-5.606	-25.75	21735	400000	
Mg	24	3	45	1.737	ppb	1.737	26.27	230	400000	
Al	27	3	45	1.641	ppb	1.641	200.53	150	400000	
K	39	3	45	-12.793	ppb	-12.793	-183.25	15247	400000	
Ca	40	2	45	12.629	ppb	12.629	15.45	18046	400000	
V	51	3	72	-0.742	ppb	-0.742	-2.16	72	2000	
Cr	52	3	72	0.701	ppb	0.701	16.74	2134	5000	
Mn	55	3	72	-0.029	ppb	-0.029	-147.88	187	10000	
Fe	56	2	72	4.745	ppb	4.745	9.51	15240	10000	
Co	59	3	72	-0.001	ppb	-0.001	-458.44	27	2000	
Ni	60	3	72	-0.053	ppb	-0.053	-73.11	117	5000	
Cu	63	3	72	-0.012	ppb	-0.012	-433.93	263	5000	
Zn	66	3	72	0.599	ppb	0.599	43.02	330	5000	
As	75	3	72	-0.089	ppb	-0.089	-69.26	22	2000	
Se	78	2	72	-0.049	ppb	-0.049	-42.62	1	2000	
(Se)	78	3	72	0.132	ppb	0.132	807.93	13	2000	
Sr	88	3	72	0.061	ppb	0.061	64.88	70	4000	
Mo	95	3	115	-0.055	ppb	-0.055	-77.29	58	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-216.34	18	100	
Cd	111	3	115	-0.014	ppb	-0.014	-81.81	2	2000	
Sn	120	3	115	-0.927	ppb	-0.927	-8.42	307	2000	
Sb	121	3	115	-0.049	ppb	-0.049	-51.20	47	1000	
Ba	137	3	115	0.052	ppb	0.052	108.97	67	5000	
Tl	205	3	193	-0.158	ppb	-0.158	-2.12	113	2000	
(Pb)	206	3	193	-0.041	ppb	-0.041	-77.97	175	100	
(Pb)	207	3	193	-0.109	ppb	-0.109	-61.70	327	100	
Pb	208	3	193	-0.066	ppb	-0.066	-19.68	873	5000	
Th	232	3	193	0.046	ppb	0.046	23.87	4610	2000	
U	238	3	193	0.007	ppb	0.007	154.91	1629	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3986787	1.99	4160703	95.82	60	120	
Sc (IS)	45	3	HMI He	611214	0.62	620569	98.49	60	120	
Ge Internal standard	72	2	HMI H2	2185360	2.57	2172040	100.61	60	120	
Ge Internal standard	72	3	HMI He	719181	3.17	684400	105.08	60	120	
In Internal Standard	115	3	HMI He	2564351	3.23	2522161	101.67	60	120	
Ir (IS)	193	3	HMI He	5623680	0.37	5572879	100.91	60	120	

Sample Report

Sample Table

Sample Name	280-171339-v-27-b ms
Data File Name	109SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:31:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.131	ppb	38.131	4.71	1893	2000	
Na	23	3	45	784.717	ppb	784.717	0.71	111904	400000	
Mg	24	3	45	739.335	ppb	739.335	2.72	44434	400000	
Al	27	3	45	868.733	ppb	868.733	2.45	18501	400000	
K	39	3	45	815.656	ppb	815.656	1.43	51040	400000	
Ca	40	2	45	897.183	ppb	897.183	0.54	484104	400000	
V	51	3	72	41.135	ppb	41.135	1.63	23914	2000	
Cr	52	3	72	42.683	ppb	42.683	0.85	32814	5000	
Mn	55	3	72	42.629	ppb	42.629	2.68	16850	10000	
Fe	56	2	72	829.882	ppb	829.882	3.38	1202878	10000	
Co	59	3	72	41.107	ppb	41.107	1.50	49095	2000	
Ni	60	3	72	41.746	ppb	41.746	0.34	13867	5000	
Cu	63	3	72	42.423	ppb	42.423	2.14	38155	5000	
Zn	66	3	72	42.806	ppb	42.806	2.23	6903	5000	
As	75	3	72	40.360	ppb	40.360	3.14	4432	2000	
Se	78	2	72	42.012	ppb	42.012	2.34	2277	2000	
(Se)	78	3	72	37.762	ppb	37.762	17.88	263	2000	
Sr	88	3	72	86.911	ppb	86.911	1.84	43829	4000	
Mo	95	3	115	38.725	ppb	38.725	0.46	19916	2000	
Ag	107	3	115	40.433	ppb	40.433	0.77	67517	100	
Cd	111	3	115	39.877	ppb	39.877	2.36	9894	2000	
Sn	120	3	115	40.216	ppb	40.216	1.62	30655	2000	
Sb	121	3	115	39.604	ppb	39.604	2.26	29742	1000	
Ba	137	3	115	43.207	ppb	43.207	3.80	10322	5000	
Tl	205	3	193	41.396	ppb	41.396	0.66	154222	2000	
(Pb)	206	3	193	42.717	ppb	42.717	0.93	52547	100	
(Pb)	207	3	193	41.840	ppb	41.840	0.65	45706	100	
Pb	208	3	193	42.402	ppb	42.402	0.66	210798	5000	
Th	232	3	193	41.556	ppb	41.556	0.92	216855	2000	
U	238	3	193	42.677	ppb	42.677	1.15	229624	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3977733	0.70	4160703	95.60	60	120	
Sc (IS)	45	3	HMI He	603457	0.97	620569	97.24	60	120	
Ge Internal standard	72	2	HMI H2	2173557	0.92	2172040	100.07	60	120	
Ge Internal standard	72	3	HMI He	699660	0.48	684400	102.23	60	120	
In Internal Standard	115	3	HMI He	2562078	1.38	2522161	101.58	60	120	
Ir (IS)	193	3	HMI He	5680393	0.82	5572879	101.93	60	120	

Sample Report

Sample Table

Sample Name	280-171339-v-27-c msd
Data File Name	110SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:33:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600236 6020B-A
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	38.933	ppb	38.933	3.48	1903	2000	
Na	23	3	45	771.686	ppb	771.686	1.83	110535	400000	
Mg	24	3	45	727.890	ppb	727.890	0.53	43805	400000	
Al	27	3	45	823.226	ppb	823.226	3.06	17559	400000	
K	39	3	45	800.902	ppb	800.902	1.78	50458	400000	
Ca	40	2	45	886.618	ppb	886.618	1.76	475131	400000	
V	51	3	72	39.800	ppb	39.800	2.22	23333	2000	
Cr	52	3	72	41.817	ppb	41.817	1.31	32425	5000	
Mn	55	3	72	41.414	ppb	41.414	1.74	16502	10000	
Fe	56	2	72	823.748	ppb	823.748	0.45	1192793	10000	
Co	59	3	72	40.008	ppb	40.008	1.71	48151	2000	
Ni	60	3	72	40.310	ppb	40.310	2.03	13497	5000	
Cu	63	3	72	41.507	ppb	41.507	1.39	37621	5000	
Zn	66	3	72	42.823	ppb	42.823	4.92	6958	5000	
As	75	3	72	38.095	ppb	38.095	2.42	4217	2000	
Se	78	2	72	40.902	ppb	40.902	2.38	2214	2000	
(Se)	78	3	72	43.183	ppb	43.183	11.38	302	2000	
Sr	88	3	72	85.155	ppb	85.155	0.19	43270	4000	
Mo	95	3	115	39.325	ppb	39.325	0.75	20097	2000	
Ag	107	3	115	39.397	ppb	39.397	0.75	65379	100	
Cd	111	3	115	39.914	ppb	39.914	3.23	9842	2000	
Sn	120	3	115	38.979	ppb	38.979	0.26	29553	2000	
Sb	121	3	115	38.505	ppb	38.505	1.98	28737	1000	
Ba	137	3	115	42.281	ppb	42.281	1.49	10037	5000	
Tl	205	3	193	40.459	ppb	40.459	2.55	150602	2000	
(Pb)	206	3	193	41.076	ppb	41.076	0.58	50505	100	
(Pb)	207	3	193	40.305	ppb	40.305	0.92	44014	100	
Pb	208	3	193	41.037	ppb	41.037	1.15	203899	5000	
Th	232	3	193	41.151	ppb	41.151	1.84	214602	2000	
U	238	3	193	41.690	ppb	41.690	1.24	224193	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3950317	2.14	4160703	94.94	60	120	
Sc (IS)	45	3	HMI He	604153	0.61	620569	97.35	60	120	
Ge Internal standard	72	2	HMI H2	2171075	2.70	2172040	99.96	60	120	
Ge Internal standard	72	3	HMI He	705024	0.48	684400	103.01	60	120	
In Internal Standard	115	3	HMI He	2546076	0.92	2522161	100.95	60	120	
Ir (IS)	193	3	HMI He	5677071	2.08	5572879	101.87	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	111_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:35:02-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.748	ppb	2.746	2547	50	101.5	90	110	
Na	23	3	45	49603.795	ppb	0.582	5663179	51000	97.3	90	110	
Mg	24	3	45	10807.661	ppb	2.993	643994	11000	98.3	90	110	
Al	27	3	45	997.958	ppb	3.613	21100	1000	99.8	90	110	
K	39	3	45	10971.803	ppb	0.845	489163	11000	99.7	90	110	
Ca	40	2	45	11259.201	ppb	0.914	5971320	11000	102.4	90	110	
V	51	3	72	51.175	ppb	1.915	29089	50	102.4	90	110	
Cr	52	3	72	50.951	ppb	1.929	38153	50	101.9	90	110	
Mn	55	3	72	51.486	ppb	2.934	19938	50	103.0	90	110	
Fe	56	2	72	1027.380	ppb	0.729	1448138	1000	102.7	90	110	
Co	59	3	72	50.098	ppb	2.155	58736	50	100.2	90	110	
Ni	60	3	72	50.436	ppb	1.379	16423	50	100.9	90	110	
Cu	63	3	72	50.437	ppb	2.547	44477	50	100.9	90	110	
Zn	66	3	72	51.265	ppb	3.306	8072	50	102.5	90	110	
As	75	3	72	50.136	ppb	6.006	5395	50	100.3	90	110	
Se	78	2	72	52.511	ppb	5.153	2770	50	105.0	90	110	
(Se)	78	3	72	48.691	ppb	10.767	330	50	97.4	90	110	
Sr	88	3	72	104.759	ppb	1.820	51849	100	104.8	90	110	
Mo	95	3	115	49.700	ppb	2.504	24475	50	99.4	90	110	
Ag	107	3	115	50.421	ppb	0.306	80699	50	100.8	90	110	
Cd	111	3	115	51.213	ppb	1.691	12179	50	102.4	90	110	
Sn	120	3	115	50.396	ppb	1.136	36573	50	100.8	90	110	
Sb	121	3	115	51.433	ppb	0.419	36999	50	102.9	90	110	
Ba	137	3	115	50.607	ppb	2.651	11578	50	101.2	90	110	
Tl	205	3	193	49.127	ppb	1.322	181670	50	98.3	90	110	
(Pb)	206	3	193	50.458	ppb	1.143	61619	50	100.9	90	110	
(Pb)	207	3	193	49.648	ppb	0.746	53794	50	99.3	90	110	
Pb	208	3	193	50.025	ppb	1.471	246819	50	100.0	90	110	
Th	232	3	193	50.947	ppb	0.969	263105	50	101.9	90	110	
U	238	3	193	50.354	ppb	1.558	268846	50	100.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3996417	1.28	4160703	96.05	60	120	
Sc (IS)	45	3	HMI He	599656	1.19	620569	96.63	60	120	
Ge Internal standard	72	2	HMI H2	2116220	0.54	2172040	97.43	60	120	
Ge Internal standard	72	3	HMI He	686924	1.35	684400	100.37	60	120	
In Internal Standard	115	3	HMI He	2455711	0.63	2522161	97.37	60	120	
Ir (IS)	193	3	HMI He	5643400	1.66	5572879	101.27	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	112_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:36:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	18.188	ppb	11.2	23894	25	
Mg	24	3	45	1.265	ppb	66.4	197	25	
Al	27	3	45	0.063	ppb	1812.7	113	15	
K	39	3	45	-8.680	ppb	-297.2	15043	50	
V	51	3	72	-0.123	ppb	-28.4	413	1	
Cr	52	3	72	-0.149	ppb	-57.9	1424	1	
Mn	55	3	72	-0.135	ppb	-62.9	137	0.5	
Co	59	3	72	0.000	ppb	20854.0	27	0.5	
Ni	60	3	72	-0.041	ppb	-226.5	115	1	
Cu	63	3	72	-0.010	ppb	-295.8	253	1	
Zn	66	3	72	-0.316	ppb	-46.3	175	5	
As	75	3	72	0.047	ppb	344.4	35	1	
Se	78	2	72	-0.023	ppb	-290.1	2	1	
(Se)	78	3	72	-0.012	ppb	-13103.5	12	1	
Sr	88	3	72	0.003	ppb	702.6	38	0.5	
Mo	95	3	115	-0.059	ppb	-42.9	55	0.5	
Ag	107	3	115	0.010	ppb	58.6	40	1	
Cd	111	3	115	-0.006	ppb	-185.2	3	0.5	
Sn	120	3	115	-0.261	ppb	-12.1	780	1	
Sb	121	3	115	0.345	ppb	8.8	333	0.6	
Ba	137	3	115	-0.063	ppb	-192.5	38	0.5	
Tl	205	3	193	-0.131	ppb	-3.4	213	0.1	
(Pb)	206	3	193	-0.050	ppb	-37.8	163	1	
(Pb)	207	3	193	-0.098	ppb	-29.7	340	1	
Pb	208	3	193	-0.075	ppb	-11.0	835	0.5	
Th	232	3	193	0.632	ppb	24.8	7600	1	
U	238	3	193	0.024	ppb	54.3	1726	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882992	0.75	4160703	93.33	60	120	
Sc (IS)	45	3	HMI He	596284	0.74	620569	96.09	60	120	
Ge Internal standard	72	2	HMI H2	2086304	0.42	2172040	96.05	60	120	
Ge Internal standard	72	3	HMI He	684396	0.33	684400	100.00	60	120	
In Internal Standard	115	3	HMI He	2501346	0.96	2522161	99.17	60	120	
Ir (IS)	193	3	HMI He	5640078	0.41	5572879	101.21	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	113LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:38:46-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.911	ppb	21.999	45	1	91.1	70	130	
Na	23	3	45	69.074	ppb	1.972	29179	50	138.1	70	130	>+/-30%
Mg	24	3	45	47.684	ppb	5.772	2900	50	95.4	70	130	
Al	27	3	45	48.632	ppb	9.475	1111	50	97.3	70	130	
K	39	3	45	98.368	ppb	21.692	19333	100	98.4	70	130	
V	51	3	72	5.075	ppb	4.450	3250	5	101.5	70	130	
Cr	52	3	72	1.875	ppb	5.469	2824	2	93.8	70	130	
Mn	55	3	72	1.024	ppb	15.464	570	1	102.4	70	130	
Co	59	3	72	0.989	ppb	7.566	1161	1	98.9	70	130	
Ni	60	3	72	2.136	ppb	8.356	801	2	106.8	70	130	
Cu	63	3	72	2.171	ppb	1.905	2121	2	108.6	70	130	
Zn	66	3	72	10.119	ppb	2.631	1736	10	101.2	70	130	
As	75	3	72	5.646	ppb	15.185	621	5	112.9	70	130	
Se	78	2	72	5.541	ppb	13.664	289	5	110.8	70	130	
(Se)	78	3	72	3.148	ppb	13.289	32	5	63.0	70	130	>+/-30%
Sr	88	3	72	1.074	ppb	10.072	556	1	107.4	70	130	
Mo	95	3	115	1.985	ppb	10.259	1053	2	99.2	70	130	
Ag	107	3	115	1.029	ppb	6.582	1664	1	102.9	70	130	
Cd	111	3	115	0.986	ppb	7.617	238	1	98.6	70	130	
Sn	120	3	115	9.458	ppb	3.399	7603	10	94.6	70	130	
Sb	121	3	115	2.238	ppb	5.079	1679	2	111.9	70	130	
Ba	137	3	115	1.125	ppb	17.152	307	1	112.5	70	130	
Tl	205	3	193	0.840	ppb	2.415	3784	1	84.0	70	130	
(Pb)	206	3	193	0.968	ppb	2.031	1401	1	96.8	70	130	
(Pb)	207	3	193	0.870	ppb	13.289	1378	1	87.0	70	130	
Pb	208	3	193	0.959	ppb	3.925	5906	1	95.9	70	130	
Th	232	3	193	2.074	ppb	2.010	14908	2	103.7	70	130	
U	238	3	193	1.066	ppb	1.344	7244	1	106.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3851722	0.54	4160703	92.57	60	120	
Sc (IS)	45	3	HMI He	586831	0.71	620569	94.56	60	120	
Ge Internal standard	72	2	HMI H2	2069640	1.96	2172040	95.29	60	120	
Ge Internal standard	72	3	HMI He	672449	0.63	684400	98.25	60	120	
In Internal Standard	115	3	HMI He	2445934	1.27	2522161	96.98	60	120	
Ir (IS)	193	3	HMI He	5635077	1.28	5572879	101.12	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600156/1-a
Data File Name	114_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:40:40-07:00
Sample Type	Blank
Dilution	1
Comment	600156 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	15.816	ppb	39.28488593	23506	25
Mg	24	3	45	1.446	ppb	61.31963482	207	25
Al	27	3	45	4.605	ppb	70.75458947	207	15
K	39	3	45	-9.510	ppb	-289.6580963	14930	50
V	51	3	72	-0.738	ppb	-4.833097043	72	1
Cr	52	3	72	0.643	ppb	12.23321403	2019	1
Mn	55	3	72	-0.016	ppb	-425.8275441	185	0.5
Co	59	3	72	0.010	ppb	51.93134644	38	0.5
Ni	60	3	72	0.077	ppb	50.49263671	155	1
Cu	63	3	72	0.126	ppb	45.97075308	376	1
Zn	66	3	72	0.454	ppb	18.91755345	297	5
As	75	3	72	-0.127	ppb	-75.70722018	17	1
(Se)	78	3	72	0.475	ppb	320.3177123	15	1
Sr	88	3	72	-0.008	ppb	-72.62058324	33	0.5
Mo	95	3	115	-0.062	ppb	-66.00980304	53	0.5
Ag	107	3	115	-0.002	ppb	-439.2941571	20	1
Cd	111	3	115	-0.020	ppb	-1.62819E-06	0	0.5
Sn	120	3	115	-0.830	ppb	-0.852168037	366	1
Sb	121	3	115	-0.010	ppb	-265.4897582	73	0.6
Ba	137	3	115	-0.039	ppb	-179.353305	43	0.5
Tl	205	3	193	-0.134	ppb	-8.348993628	197	0.1
(Pb)	206	3	193	-0.055	ppb	-24.08231116	157	1
(Pb)	207	3	193	-0.120	ppb	-7.126083201	313	1
Pb	208	3	193	-0.074	ppb	-26.04528734	828	0.5
Th	232	3	193	0.127	ppb	39.10651523	4990	1
U	238	3	193	0.011	ppb	63.41739752	1641	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3861245	1.35	4160703	92.80	60	120	
Sc (IS)	45	3	HMI He	593317	1.49	620569	95.61	60	120	
Ge Internal standard	72	2	HMI H2	2149894	2.43	2172040	98.98	60	120	
Ge Internal standard	72	3	HMI He	694029	0.35	684400	101.41	60	120	
In Internal Standard	115	3	HMI He	2478945	1.04	2522161	98.29	60	120	
Ir (IS)	193	3	HMI He	5584973	0.46	5572879	100.22	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600156/2-a
Data File Name	115_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:42:34-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600156 6020B
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.740	40.740	ppb	1.963	1941	40	101.8	80	120	
Na	23	3	45	775.124	775.124	ppb	3.622	108168	40	1937.8	80	120	>+/-20%
Mg	24	3	45	744.119	744.119	ppb	1.794	43664	40	1860.3	80	120	>+/-20%
Al	27	3	45	841.179	841.179	ppb	1.933	17495	40	2102.9	80	120	>+/-20%
K	39	3	45	795.187	795.187	ppb	2.952	48961	40	1988.0	80	120	>+/-20%
Ca	40	2	45	863.798	863.798	ppb	2.050	455165	40	2159.5	80	120	>+/-20%
V	51	3	72	40.441	40.441	ppb	0.357	23226	40	101.1	80	120	
Cr	52	3	72	41.087	41.087	ppb	1.826	31251	40	102.7	80	120	
Mn	55	3	72	41.724	41.724	ppb	2.389	16293	40	104.3	80	120	
Fe	56	2	72	815.660	815.660	ppb	2.196	1164208	40	2039.1	80	120	>+/-20%
(Fe)	56	3	72	803.305	803.305	ppb	0.312	502143	40	2008.3	80	120	>+/-20%
Co	59	3	72	40.418	40.418	ppb	2.427	47671	40	101.0	80	120	
Ni	60	3	72	40.158	40.158	ppb	0.838	13178	40	100.4	80	120	
Cu	63	3	72	41.494	41.494	ppb	1.082	36861	40	103.7	80	120	
Zn	66	3	72	42.289	42.289	ppb	1.745	6738	40	105.7	80	120	
As	75	3	72	38.461	38.461	ppb	2.544	4172	40	96.2	80	120	
Se	78	2	72	40.881	40.881	ppb	2.742	2182	40	102.2	80	120	
(Se)	78	3	72	38.273	38.273	ppb	15.289	263	40	95.7	80	120	
Sr	88	3	72	85.598	85.598	ppb	0.825	42625	40	214.0	80	120	>+/-20%
Mo	95	3	115	38.773	38.773	ppb	1.616	19302	40	96.9	80	120	
Ag	107	3	115	40.426	40.426	ppb	1.043	65357	40	101.1	80	120	
Cd	111	3	115	39.439	39.439	ppb	2.872	9475	40	98.6	80	120	
Sn	120	3	115	39.497	39.497	ppb	0.835	29162	40	98.7	80	120	
Sb	121	3	115	39.728	39.728	ppb	1.759	28884	40	99.3	80	120	
Ba	137	3	115	42.493	42.493	ppb	1.050	9829	40	106.2	80	120	
Tl	205	3	193	40.649	40.649	ppb	1.047	148123	40	101.6	80	120	
(Pb)	206	3	193	42.331	42.331	ppb	2.992	50918	40	105.8	80	120	
(Pb)	207	3	193	41.043	41.043	ppb	1.813	43854	40	102.6	80	120	
Pb	208	3	193	41.583	41.583	ppb	1.752	202191	40	104.0	80	120	
Th	232	3	193	40.907	40.907	ppb	1.540	208832	40	102.3	80	120	
U	238	3	193	41.533	41.533	ppb	1.869	218593	40	103.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3881455	0.86	4160703	93.29	60	120	
Sc (IS)	45	3	HMI He	589233	1.48	620569	94.95	60	120	
Ge Internal standard	72	2	HMI H2	2139918	0.80	2172040	98.52	60	120	
Ge Internal standard	72	3	HMI He	690939	0.38	684400	100.96	60	120	
In Internal Standard	115	3	HMI He	2480416	1.45	2522161	98.34	60	120	
Ir (IS)	193	3	HMI He	5556611	2.30	5572879	99.71	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-1-b
Data File Name	116SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:44:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.62	3	2000	
Na	23	3	45	1795.440	ppb	1795.440	0.71	220192	400000	
Mg	24	3	45	3129.888	ppb	3129.888	1.80	181633	400000	
Al	27	3	45	29.985	ppb	29.985	8.71	724	400000	
K	39	3	45	688.829	ppb	688.829	1.97	44053	400000	
Ca	40	2	45	9556.578	ppb	9556.578	1.41	4847939	400000	
V	51	3	72	0.605	ppb	0.605	15.76	811	2000	
Cr	52	3	72	1.811	ppb	1.811	14.95	2799	5000	
Mn	55	3	72	163.372	ppb	163.372	1.25	62042	10000	
Fe	56	2	72	1334.461	ppb	1334.461	2.66	1904888	10000	
Co	59	3	72	0.484	ppb	0.484	4.96	586	2000	
Ni	60	3	72	0.821	ppb	0.821	17.41	388	5000	
Cu	63	3	72	3.676	ppb	3.676	4.39	3439	5000	
Zn	66	3	72	2.846	ppb	2.846	12.06	651	5000	
As	75	3	72	0.334	ppb	0.334	16.39	65	2000	
Se	78	2	72	0.076	ppb	0.076	77.98	7	2000	
(Se)	78	3	72	0.000	ppb	0.000	-486640.99	12	2000	
Sr	88	3	72	26.863	ppb	26.863	1.99	13153	4000	
Mo	95	3	115	-0.005	ppb	-0.005	-691.24	82	2000	
Ag	107	3	115	0.004	ppb	0.004	144.25	30	100	
Cd	111	3	115	0.001	ppb	0.001	6799.11	5	2000	
Sn	120	3	115	-0.782	ppb	-0.782	-16.81	401	2000	
Sb	121	3	115	0.059	ppb	0.059	52.75	123	1000	
Ba	137	3	115	22.804	ppb	22.804	5.47	5303	5000	
Tl	205	3	193	-0.141	ppb	-0.141	-8.61	168	2000	
(Pb)	206	3	193	-0.049	ppb	-0.049	-41.55	160	100	
(Pb)	207	3	193	-0.068	ppb	-0.068	-19.33	361	100	
Pb	208	3	193	-0.056	ppb	-0.056	-15.48	901	5000	
Th	232	3	193	0.619	ppb	0.619	20.74	7315	2000	
U	238	3	193	0.059	ppb	0.059	22.25	1854	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3821177	1.03	4160703	91.84	60	120	
Sc (IS)	45	3	HMI He	583878	0.29	620569	94.09	60	120	
Ge Internal standard	72	2	HMI H2	2146549	2.01	2172040	98.83	60	120	
Ge Internal standard	72	3	HMI He	677949	1.50	684400	99.06	60	120	
In Internal Standard	115	3	HMI He	2482669	0.17	2522161	98.43	60	120	
Ir (IS)	193	3	HMI He	5475425	1.72	5572879	98.25	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-3-b
Data File Name	117SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:46:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	6641.931	ppb	6641.931	3.33	760560	400000	
Mg	24	3	45	3631.332	ppb	3631.332	0.75	211781	400000	
Al	27	3	45	21.717	ppb	21.717	17.42	557	400000	
K	39	3	45	2109.763	ppb	2109.763	0.92	104299	400000	
Ca	40	2	45	10934.981	ppb	10934.981	1.89	5658709	400000	
V	51	3	72	-0.217	ppb	-0.217	-25.49	361	2000	
Cr	52	3	72	1.364	ppb	1.364	20.74	2509	5000	
Mn	55	3	72	174.238	ppb	174.238	2.31	66837	10000	
Fe	56	2	72	669.303	ppb	669.303	2.66	979572	10000	
Co	59	3	72	0.404	ppb	0.404	19.74	500	2000	
Ni	60	3	72	0.802	ppb	0.802	12.73	386	5000	
Cu	63	3	72	4.370	ppb	4.370	3.77	4082	5000	
Zn	66	3	72	3.175	ppb	3.175	0.97	708	5000	
As	75	3	72	0.140	ppb	0.140	152.57	45	2000	
Se	78	2	72	0.049	ppb	0.049	227.85	6	2000	
(Se)	78	3	72	0.251	ppb	0.251	469.90	13	2000	
Sr	88	3	72	46.026	ppb	46.026	3.37	22733	4000	
Mo	95	3	115	0.063	ppb	0.063	86.50	115	2000	
Ag	107	3	115	0.001	ppb	0.001	952.60	25	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-0.862	ppb	-0.862	-9.57	343	2000	
Sb	121	3	115	-0.005	ppb	-0.005	-184.86	77	1000	
Ba	137	3	115	28.753	ppb	28.753	6.58	6660	5000	
Tl	205	3	193	-0.149	ppb	-0.149	-5.93	143	2000	
(Pb)	206	3	193	-0.045	ppb	-0.045	-35.43	167	100	
(Pb)	207	3	193	-0.117	ppb	-0.117	-18.34	313	100	
Pb	208	3	193	-0.081	ppb	-0.081	-6.85	791	5000	
Th	232	3	193	0.115	ppb	0.115	57.37	4882	2000	
U	238	3	193	0.026	ppb	0.026	75.14	1703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899402	0.98	4160703	93.72	60	120	
Sc (IS)	45	3	HMI He	586825	0.57	620569	94.56	60	120	
Ge Internal standard	72	2	HMI H2	2191049	0.95	2172040	100.88	60	120	
Ge Internal standard	72	3	HMI He	684929	1.02	684400	100.08	60	120	
In Internal Standard	115	3	HMI He	2477812	1.08	2522161	98.24	60	120	
Ir (IS)	193	3	HMI He	5535756	1.07	5572879	99.33	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-5-b
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:48:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.64	3	2000	
Na	23	3	45	5007.413	ppb	5007.413	1.38	577674	400000	
Mg	24	3	45	3994.169	ppb	3994.169	1.40	232498	400000	
Al	27	3	45	121.099	ppb	121.099	13.92	2600	400000	
K	39	3	45	1975.018	ppb	1975.018	1.82	98425	400000	
Ca	40	2	45	10905.170	ppb	10905.170	1.18	5649873	400000	
V	51	3	72	2.774	ppb	2.774	11.57	2049	2000	
Cr	52	3	72	1.644	ppb	1.644	8.35	2736	5000	
Mn	55	3	72	163.440	ppb	163.440	2.10	63310	10000	
Fe	56	2	72	4718.968	ppb	4718.968	2.78	6606794	10000	
Co	59	3	72	0.641	ppb	0.641	9.27	783	2000	
Ni	60	3	72	0.970	ppb	0.970	15.05	445	5000	
Cu	63	3	72	0.536	ppb	0.536	15.64	738	5000	
Zn	66	3	72	2.502	ppb	2.502	22.81	611	5000	
As	75	3	72	0.801	ppb	0.801	14.85	117	2000	
Se	78	2	72	0.015	ppb	0.015	694.46	4	2000	
(Se)	78	3	72	0.227	ppb	0.227	194.23	13	2000	
Sr	88	3	72	33.947	ppb	33.947	2.07	16940	4000	
Mo	95	3	115	0.053	ppb	0.053	32.59	112	2000	
Ag	107	3	115	0.000	ppb	0.000	-46446.18	23	100	
Cd	111	3	115	-0.013	ppb	-0.013	-88.76	2	2000	
Sn	120	3	115	-0.968	ppb	-0.968	-2.14	272	2000	
Sb	121	3	115	0.001	ppb	0.001	3098.05	82	1000	
Ba	137	3	115	24.447	ppb	24.447	5.78	5743	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-5.71	140	2000	
(Pb)	206	3	193	0.073	ppb	0.073	91.36	310	100	
(Pb)	207	3	193	-0.015	ppb	-0.015	-488.29	425	100	
Pb	208	3	193	0.021	ppb	0.021	240.59	1291	5000	
Th	232	3	193	0.094	ppb	0.094	39.53	4822	2000	
U	238	3	193	0.046	ppb	0.046	21.30	1823	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3904089	2.26	4160703	93.83	60	120	
Sc (IS)	45	3	HMI He	585796	1.28	620569	94.40	60	120	
Ge Internal standard	72	2	HMI H2	2111542	1.00	2172040	97.21	60	120	
Ge Internal standard	72	3	HMI He	691511	0.80	684400	101.04	60	120	
In Internal Standard	115	3	HMI He	2509439	0.97	2522161	99.50	60	120	
Ir (IS)	193	3	HMI He	5582869	0.50	5572879	100.18	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-8-b
Data File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:50:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	5029.208	ppb	5029.208	0.29	583611	400000	
Mg	24	3	45	3968.668	ppb	3968.668	0.31	232417	400000	
Al	27	3	45	118.493	ppb	118.493	4.94	2559	400000	
K	39	3	45	1936.906	ppb	1936.906	2.50	97396	400000	
Ca	40	2	45	10970.721	ppb	10970.721	1.14	5573372	400000	
V	51	3	72	2.971	ppb	2.971	9.89	2131	2000	
Cr	52	3	72	1.695	ppb	1.695	7.32	2737	5000	
Mn	55	3	72	165.103	ppb	165.103	0.93	63130	10000	
Fe	56	2	72	4631.067	ppb	4631.067	0.74	6589425	10000	
Co	59	3	72	0.598	ppb	0.598	4.25	723	2000	
Ni	60	3	72	0.994	ppb	0.994	8.67	446	5000	
Cu	63	3	72	1.272	ppb	1.272	4.56	1369	5000	
Zn	66	3	72	3.443	ppb	3.443	6.36	746	5000	
As	75	3	72	0.909	ppb	0.909	2.98	127	2000	
Se	78	2	72	0.026	ppb	0.026	83.32	5	2000	
(Se)	78	3	72	-0.515	ppb	-0.515	-229.39	8	2000	
Sr	88	3	72	35.441	ppb	35.441	0.73	17456	4000	
Mo	95	3	115	0.010	ppb	0.010	565.54	88	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-470.53	20	100	
Cd	111	3	115	0.001	ppb	0.001	49.05	5	2000	
Sn	120	3	115	-0.726	ppb	-0.726	-15.40	440	2000	
Sb	121	3	115	-0.035	ppb	-0.035	-17.36	55	1000	
Ba	137	3	115	24.577	ppb	24.577	3.32	5677	5000	
Tl	205	3	193	-0.147	ppb	-0.147	-14.50	150	2000	
(Pb)	206	3	193	0.064	ppb	0.064	64.27	295	100	
(Pb)	207	3	193	-0.061	ppb	-0.061	-73.48	370	100	
Pb	208	3	193	0.017	ppb	0.017	105.55	1253	5000	
Th	232	3	193	0.128	ppb	0.128	18.26	4919	2000	
U	238	3	193	0.031	ppb	0.031	57.63	1716	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3827956	1.13	4160703	92.00	60	120	
Sc (IS)	45	3	HMI He	589293	1.02	620569	94.96	60	120	
Ge Internal standard	72	2	HMI H2	2145561	0.35	2172040	98.78	60	120	
Ge Internal standard	72	3	HMI He	682524	0.55	684400	99.73	60	120	
In Internal Standard	115	3	HMI He	2468392	1.64	2522161	97.87	60	120	
Ir (IS)	193	3	HMI He	5500702	1.36	5572879	98.70	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-9-d
Data File Name	120SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:52:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	5242.460	ppb	5242.460	0.40	607755	400000	
Mg	24	3	45	3734.112	ppb	3734.112	1.50	218786	400000	
Al	27	3	45	91.786	ppb	91.786	8.40	2009	400000	
K	39	3	45	1933.664	ppb	1933.664	1.82	97312	400000	
Ca	40	2	45	11695.076	ppb	11695.076	0.90	5952557	400000	
V	51	3	72	2.049	ppb	2.049	3.71	1634	2000	
Cr	52	3	72	1.504	ppb	1.504	14.59	2626	5000	
Mn	55	3	72	203.289	ppb	203.289	1.73	78450	10000	
Fe	56	2	72	5407.143	ppb	5407.143	0.80	7552833	10000	
Co	59	3	72	0.534	ppb	0.534	7.61	655	2000	
Ni	60	3	72	0.842	ppb	0.842	10.87	401	5000	
Cu	63	3	72	0.643	ppb	0.643	11.07	830	5000	
Zn	66	3	72	3.349	ppb	3.349	15.92	740	5000	
As	75	3	72	0.852	ppb	0.852	14.93	122	2000	
Se	78	2	72	0.040	ppb	0.040	51.67	5	2000	
(Se)	78	3	72	-0.023	ppb	-0.023	-1885.22	12	2000	
Sr	88	3	72	45.215	ppb	45.215	1.36	22481	4000	
Mo	95	3	115	-0.007	ppb	-0.007	-504.43	80	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-167.86	18	100	
Cd	111	3	115	0.008	ppb	0.008	154.56	7	2000	
Sn	120	3	115	-0.917	ppb	-0.917	-3.21	302	2000	
Sb	121	3	115	0.003	ppb	0.003	730.39	82	1000	
Ba	137	3	115	33.699	ppb	33.699	2.53	7725	5000	
Tl	205	3	193	-0.148	ppb	-0.148	-6.00	145	2000	
(Pb)	206	3	193	0.046	ppb	0.046	51.47	277	100	
(Pb)	207	3	193	-0.028	ppb	-0.028	-39.14	408	100	
Pb	208	3	193	0.015	ppb	0.015	101.82	1254	5000	
Th	232	3	193	0.118	ppb	0.118	19.30	4919	2000	
U	238	3	193	0.040	ppb	0.040	52.53	1783	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3835739	2.14	4160703	92.19	60	120	
Sc (IS)	45	3	HMI He	589578	0.51	620569	95.01	60	120	
Ge Internal standard	72	2	HMI H2	2106715	1.62	2172040	96.99	60	120	
Ge Internal standard	72	3	HMI He	689311	0.98	684400	100.72	60	120	
In Internal Standard	115	3	HMI He	2455616	1.56	2522161	97.36	60	120	
Ir (IS)	193	3	HMI He	5556303	0.90	5572879	99.70	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-9-dSD@5
Data File Name	121SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:53:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	1112.585	ppb	1112.585	1.06	143237	400000	
Mg	24	3	45	765.275	ppb	765.275	1.36	44089	400000	
Al	27	3	45	20.948	ppb	20.948	14.04	534	400000	
K	39	3	45	391.357	ppb	391.357	4.67	31256	400000	
Ca	40	2	45	2421.303	ppb	2421.303	3.31	1245205	400000	
V	51	3	72	0.325	ppb	0.325	27.62	661	2000	
Cr	52	3	72	0.215	ppb	0.215	78.18	1681	5000	
Mn	55	3	72	39.875	ppb	39.875	2.04	15389	10000	
Fe	56	2	72	1128.414	ppb	1128.414	2.04	1598370	10000	
Co	59	3	72	0.117	ppb	0.117	8.29	163	2000	
Ni	60	3	72	0.293	ppb	0.293	31.16	222	5000	
Cu	63	3	72	0.142	ppb	0.142	52.82	385	5000	
Zn	66	3	72	2.262	ppb	2.262	23.08	566	5000	
As	75	3	72	0.252	ppb	0.252	93.81	57	2000	
Se	78	2	72	0.039	ppb	0.039	54.51	5	2000	
(Se)	78	3	72	1.012	ppb	1.012	230.54	18	2000	
Sr	88	3	72	9.348	ppb	9.348	6.23	4632	4000	
Mo	95	3	115	-0.054	ppb	-0.054	-104.37	57	2000	
Ag	107	3	115	0.001	ppb	0.001	903.57	25	100	
Cd	111	3	115	0.001	ppb	0.001	3752.33	5	2000	
Sn	120	3	115	-0.217	ppb	-0.217	-62.51	800	2000	
Sb	121	3	115	0.292	ppb	0.292	20.80	290	1000	
Ba	137	3	115	7.116	ppb	7.116	2.84	1681	5000	
Tl	205	3	193	-0.143	ppb	-0.143	-10.24	165	2000	
(Pb)	206	3	193	-0.029	ppb	-0.029	-145.84	188	100	
(Pb)	207	3	193	-0.076	ppb	-0.076	-89.49	360	100	
Pb	208	3	193	-0.056	ppb	-0.056	-54.13	918	5000	
Th	232	3	193	0.007	ppb	0.007	549.75	4389	2000	
U	238	3	193	0.021	ppb	0.021	63.57	1698	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3848668	0.98	4160703	92.50	60	120	
Sc (IS)	45	3	HMI He	578481	0.68	620569	93.22	60	120	
Ge Internal standard	72	2	HMI H2	2127770	0.81	2172040	97.96	60	120	
Ge Internal standard	72	3	HMI He	682584	0.83	684400	99.73	60	120	
In Internal Standard	115	3	HMI He	2467459	1.52	2522161	97.83	60	120	
Ir (IS)	193	3	HMI He	5595058	1.55	5572879	100.40	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-9-e ms
Data File Name	122SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:55:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.236	ppb	42.236	1.62	2004	2000	
Na	23	3	45	6014.147	ppb	6014.147	1.58	686238	400000	
Mg	24	3	45	4396.278	ppb	4396.278	2.20	254668	400000	
Al	27	3	45	908.164	ppb	908.164	1.14	18681	400000	
K	39	3	45	2695.317	ppb	2695.317	0.59	128196	400000	
Ca	40	2	45	12301.112	ppb	12301.112	2.24	6229637	400000	
V	51	3	72	42.875	ppb	42.875	0.62	24012	2000	
Cr	52	3	72	41.945	ppb	41.945	0.91	31118	5000	
Mn	55	3	72	242.931	ppb	242.931	1.58	91717	10000	
Fe	56	2	72	6006.632	ppb	6006.632	3.35	8480185	10000	
Co	59	3	72	40.566	ppb	40.566	0.22	46715	2000	
Ni	60	3	72	40.658	ppb	40.658	0.81	13025	5000	
Cu	63	3	72	42.342	ppb	42.342	1.91	36719	5000	
Zn	66	3	72	44.037	ppb	44.037	2.09	6842	5000	
As	75	3	72	41.017	ppb	41.017	0.90	4342	2000	
Se	78	2	72	39.733	ppb	39.733	4.00	2110	2000	
(Se)	78	3	72	36.379	ppb	36.379	19.13	245	2000	
Sr	88	3	72	130.763	ppb	130.763	1.14	63559	4000	
Mo	95	3	115	38.804	ppb	38.804	1.99	19157	2000	
Ag	107	3	115	39.584	ppb	39.584	1.70	63457	100	
Cd	111	3	115	39.585	ppb	39.585	6.85	9427	2000	
Sn	120	3	115	38.938	ppb	38.938	2.41	28521	2000	
Sb	121	3	115	38.373	ppb	38.373	2.32	27667	1000	
Ba	137	3	115	74.047	ppb	74.047	1.83	16944	5000	
Tl	205	3	193	40.240	ppb	40.240	1.86	146623	2000	
(Pb)	206	3	193	40.851	ppb	40.851	0.89	49159	100	
(Pb)	207	3	193	40.715	ppb	40.715	3.53	43498	100	
Pb	208	3	193	41.003	ppb	41.003	2.48	199365	5000	
Th	232	3	193	40.051	ppb	40.051	1.40	204556	2000	
U	238	3	193	40.923	ppb	40.923	1.34	215413	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3816063	0.75	4160703	91.72	60	120	
Sc (IS)	45	3	HMI He	583013	1.29	620569	93.95	60	120	
Ge Internal standard	72	2	HMI H2	2130540	2.49	2172040	98.09	60	120	
Ge Internal standard	72	3	HMI He	674587	0.48	684400	98.57	60	120	
In Internal Standard	115	3	HMI He	2459749	1.01	2522161	97.53	60	120	
Ir (IS)	193	3	HMI He	5556304	1.97	5572879	99.70	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-9-f msd
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:57:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	43.716	ppb	43.716	4.07	2057	2000	
Na	23	3	45	5988.249	ppb	5988.249	2.21	676471	400000	
Mg	24	3	45	4367.747	ppb	4367.747	0.92	250518	400000	
Al	27	3	45	918.499	ppb	918.499	2.22	18711	400000	
K	39	3	45	2728.856	ppb	2728.856	1.41	128343	400000	
Ca	40	2	45	12272.060	ppb	12272.060	0.64	6207418	400000	
V	51	3	72	42.983	ppb	42.983	0.72	24137	2000	
Cr	52	3	72	41.343	ppb	41.343	2.09	30772	5000	
Mn	55	3	72	239.990	ppb	239.990	1.35	90862	10000	
Fe	56	2	72	6184.274	ppb	6184.274	2.05	8396473	10000	
Co	59	3	72	41.006	ppb	41.006	1.40	47349	2000	
Ni	60	3	72	40.580	ppb	40.580	1.63	13035	5000	
Cu	63	3	72	42.150	ppb	42.150	1.04	36650	5000	
Zn	66	3	72	45.347	ppb	45.347	2.67	7057	5000	
As	75	3	72	41.682	ppb	41.682	2.81	4424	2000	
Se	78	2	72	41.781	ppb	41.781	2.34	2134	2000	
(Se)	78	3	72	40.934	ppb	40.934	7.04	275	2000	
Sr	88	3	72	130.358	ppb	130.358	0.68	63534	4000	
Mo	95	3	115	39.550	ppb	39.550	1.22	19491	2000	
Ag	107	3	115	39.849	ppb	39.849	0.90	63774	100	
Cd	111	3	115	40.109	ppb	40.109	4.88	9542	2000	
Sn	120	3	115	39.264	ppb	39.264	3.04	28697	2000	
Sb	121	3	115	39.343	ppb	39.343	2.01	28316	1000	
Ba	137	3	115	74.006	ppb	74.006	2.01	16904	5000	
Tl	205	3	193	41.069	ppb	41.069	0.41	147464	2000	
(Pb)	206	3	193	41.852	ppb	41.852	1.67	49615	100	
(Pb)	207	3	193	41.590	ppb	41.590	1.51	43784	100	
Pb	208	3	193	41.590	ppb	41.590	0.76	199281	5000	
Th	232	3	193	41.250	ppb	41.250	0.41	207485	2000	
U	238	3	193	41.636	ppb	41.636	1.68	215925	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3811686	1.06	4160703	91.61	60	120	
Sc (IS)	45	3	HMI He	577237	2.09	620569	93.02	60	120	
Ge Internal standard	72	2	HMI H2	2048344	2.14	2172040	94.31	60	120	
Ge Internal standard	72	3	HMI He	676454	1.16	684400	98.84	60	120	
In Internal Standard	115	3	HMI He	2455460	1.46	2522161	97.36	60	120	
Ir (IS)	193	3	HMI He	5474763	1.76	5572879	98.24	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	124_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-27T23:59:36-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.789	ppb	3.674	2504	50	103.6	90	110	
Na	23	3	45	50121.618	ppb	1.086	5478664	51000	98.3	90	110	
Mg	24	3	45	10830.420	ppb	1.965	617815	11000	98.5	90	110	
Al	27	3	45	1013.470	ppb	0.753	20519	1000	101.3	90	110	
K	39	3	45	11084.211	ppb	1.097	472991	11000	100.8	90	110	
Ca	40	2	45	11637.095	ppb	0.686	5806076	11000	105.8	90	110	
V	51	3	72	52.035	ppb	1.822	28485	50	104.1	90	110	
Cr	52	3	72	50.878	ppb	1.861	36707	50	101.8	90	110	
Mn	55	3	72	50.233	ppb	1.941	18747	50	100.5	90	110	
Fe	56	2	72	1048.708	ppb	2.605	1424562	1000	104.9	90	110	
Co	59	3	72	50.490	ppb	1.023	57020	50	101.0	90	110	
Ni	60	3	72	49.942	ppb	1.644	15663	50	99.9	90	110	
Cu	63	3	72	51.147	ppb	1.453	43450	50	102.3	90	110	
Zn	66	3	72	51.047	ppb	5.008	7743	50	102.1	90	110	
As	75	3	72	51.360	ppb	2.049	5325	50	102.7	90	110	
Se	78	2	72	53.394	ppb	2.698	2715	50	106.8	90	110	
(Se)	78	3	72	50.349	ppb	11.607	328	50	100.7	90	110	
Sr	88	3	72	105.523	ppb	0.693	50311	100	105.5	90	110	
Mo	95	3	115	50.579	ppb	2.639	24068	50	101.2	90	110	
Ag	107	3	115	50.650	ppb	2.511	78333	50	101.3	90	110	
Cd	111	3	115	50.988	ppb	2.175	11719	50	102.0	90	110	
Sn	120	3	115	50.161	ppb	3.736	35175	50	100.3	90	110	
Sb	121	3	115	52.269	ppb	0.563	36341	50	104.5	90	110	
Ba	137	3	115	51.583	ppb	3.434	11401	50	103.2	90	110	
Tl	205	3	193	50.054	ppb	2.668	178673	50	100.1	90	110	
(Pb)	206	3	193	49.656	ppb	1.742	58544	50	99.3	90	110	
(Pb)	207	3	193	50.541	ppb	2.372	52854	50	101.1	90	110	
Pb	208	3	193	50.188	ppb	2.160	239051	50	100.4	90	110	
Th	232	3	193	50.775	ppb	0.588	253176	50	101.6	90	110	
U	238	3	193	50.468	ppb	2.845	260132	50	100.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3759628	0.29	4160703	90.36	60	120	
Sc (IS)	45	3	HMI He	574153	0.50	620569	92.52	60	120	
Ge Internal standard	72	2	HMI H2	2039839	0.92	2172040	93.91	60	120	
Ge Internal standard	72	3	HMI He	661637	0.60	684400	96.67	60	120	
In Internal Standard	115	3	HMI He	2373699	2.02	2522161	94.11	60	120	
Ir (IS)	193	3	HMI He	5448163	1.20	5572879	97.76	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	125_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:01:27-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.106	ppb	101.3	5	0.5	
Na	23	3	45	23.573	ppb	21.6	23433	25	
Mg	24	3	45	0.712	ppb	51.9	157	25	
Al	27	3	45	0.472	ppb	340.2	117	15	
K	39	3	45	5.629	ppb	569.7	14976	50	
V	51	3	72	-0.323	ppb	-12.6	288	1	
Cr	52	3	72	-0.223	ppb	-14.0	1309	1	
Mn	55	3	72	-0.082	ppb	-106.8	150	0.5	
Co	59	3	72	0.003	ppb	532.2	28	0.5	
Ni	60	3	72	0.031	ppb	301.4	132	1	
Cu	63	3	72	0.014	ppb	309.9	262	1	
Zn	66	3	72	-0.377	ppb	-22.0	158	5	
As	75	3	72	0.194	ppb	106.0	48	1	
Se	78	2	72	0.044	ppb	135.3	5	1	
(Se)	78	3	72	-0.191	ppb	-840.0	10	1	
Sr	88	3	72	-0.007	ppb	-614.2	32	0.5	
Mo	95	3	115	-0.068	ppb	-9.4	48	0.5	
Ag	107	3	115	0.018	ppb	78.5	50	1	
Cd	111	3	115	0.001	ppb	1522.0	5	0.5	
Sn	120	3	115	-0.410	ppb	-24.9	643	1	
Sb	121	3	115	0.266	ppb	19.7	263	0.6	
Ba	137	3	115	0.005	ppb	1782.3	52	0.5	
Tl	205	3	193	-0.111	ppb	-2.2	272	0.1	
(Pb)	206	3	193	-0.043	ppb	-63.2	165	1	
(Pb)	207	3	193	-0.113	ppb	-28.9	310	1	
Pb	208	3	193	-0.060	ppb	-21.0	868	0.5	
Th	232	3	193	0.631	ppb	19.8	7274	1	
U	238	3	193	0.018	ppb	55.5	1624	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3697012	1.54	4160703	88.86	60	120	
Sc (IS)	45	3	HMI He	570212	0.12	620569	91.89	60	120	
Ge Internal standard	72	2	HMI H2	2020198	1.11	2172040	93.01	60	120	
Ge Internal standard	72	3	HMI He	653410	0.40	684400	95.47	60	120	
In Internal Standard	115	3	HMI He	2392563	0.42	2522161	94.86	60	120	
Ir (IS)	193	3	HMI He	5403142	1.18	5572879	96.95	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-9-dPDS
Data File Name	126SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:03:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	204.283	ppb	204.283	0.82	9553	2000	
Na	23	3	45	5354.418	ppb	5354.418	0.98	609816	400000	
Mg	24	3	45	3768.922	ppb	3768.922	0.78	217096	400000	
Al	27	3	45	2150.582	ppb	2150.582	1.87	43828	400000	
K	39	3	45	1963.971	ppb	1963.971	2.51	96923	400000	
Ca	40	2	45	11509.887	ppb	11509.887	1.03	5775699	400000	
V	51	3	72	203.071	ppb	203.071	0.95	110265	2000	
Cr	52	3	72	204.497	ppb	204.497	0.93	143653	5000	
Mn	55	3	72	413.353	ppb	413.353	1.78	153563	10000	
Fe	56	2	72	5280.633	ppb	5280.633	1.53	7282855	10000	
Co	59	3	72	200.308	ppb	200.308	0.72	227092	2000	
Ni	60	3	72	204.006	ppb	204.006	1.47	63865	5000	
Cu	63	3	72	204.685	ppb	204.685	1.00	173847	5000	
Zn	66	3	72	217.821	ppb	217.821	1.58	32472	5000	
As	75	3	72	196.390	ppb	196.390	0.46	20367	2000	
Se	78	2	72	200.346	ppb	200.346	1.77	10381	2000	
(Se)	78	3	72	185.851	ppb	185.851	8.62	1186	2000	
Sr	88	3	72	257.471	ppb	257.471	2.35	123200	4000	
Mo	95	3	115	194.685	ppb	194.685	2.97	95088	2000	
Ag	107	3	115	44.050	ppb	44.050	2.17	70110	100	
Cd	111	3	115	193.430	ppb	193.430	2.56	45728	2000	
Sn	120	3	115	201.435	ppb	201.435	2.74	142531	2000	
Sb	121	3	115	196.405	ppb	196.405	2.66	140264	1000	
Ba	137	3	115	238.745	ppb	238.745	2.14	54124	5000	
Tl	205	3	193	203.031	ppb	203.031	1.07	711870	2000	
(Pb)	206	3	193	209.627	ppb	209.627	0.24	242751	100	
(Pb)	207	3	193	206.887	ppb	206.887	0.89	211805	100	
Pb	208	3	193	207.356	ppb	207.356	0.45	969324	5000	
Th	232	3	193	500.360	ppb	500.360	0.75	2420431	2000	
U	238	3	193	220.862	ppb	220.862	0.64	1116284	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3781280	0.62	4160703	90.88	60	120	
Sc (IS)	45	3	HMI He	579634	1.47	620569	93.40	60	120	
Ge Internal standard	72	2	HMI H2	2080121	0.92	2172040	95.77	60	120	
Ge Internal standard	72	3	HMI He	664451	1.54	684400	97.09	60	120	
In Internal Standard	115	3	HMI He	2442695	2.19	2522161	96.85	60	120	
Ir (IS)	193	3	HMI He	5365795	1.08	5572879	96.28	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-11-b
Data File Name	127SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:05:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.107	ppb	0.107	173.21	5	2000	
Na	23	3	45	1419.176	ppb	1419.176	2.76	174044	400000	
Mg	24	3	45	1948.912	ppb	1948.912	1.03	110317	400000	
Al	27	3	45	31.242	ppb	31.242	10.69	731	400000	
K	39	3	45	533.561	ppb	533.561	5.70	36581	400000	
Ca	40	2	45	6039.074	ppb	6039.074	1.02	3037535	400000	
V	51	3	72	-0.272	ppb	-0.272	-5.41	322	2000	
Cr	52	3	72	1.130	ppb	1.130	19.61	2276	5000	
Mn	55	3	72	63.549	ppb	63.549	1.03	23815	10000	
Fe	56	2	72	875.810	ppb	875.810	1.59	1219115	10000	
Co	59	3	72	0.137	ppb	0.137	10.11	182	2000	
Ni	60	3	72	0.358	ppb	0.358	10.81	237	5000	
Cu	63	3	72	0.430	ppb	0.430	7.26	620	5000	
Zn	66	3	72	19.903	ppb	19.903	5.67	3170	5000	
As	75	3	72	0.137	ppb	0.137	113.76	43	2000	
Se	78	2	72	0.067	ppb	0.067	67.93	7	2000	
(Se)	78	3	72	-0.221	ppb	-0.221	-5.97	10	2000	
Sr	88	3	72	17.396	ppb	17.396	1.21	8377	4000	
Mo	95	3	115	0.082	ppb	0.082	68.74	122	2000	
Ag	107	3	115	0.010	ppb	0.010	16.61	38	100	
Cd	111	3	115	0.044	ppb	0.044	129.09	15	2000	
Sn	120	3	115	-0.606	ppb	-0.606	-5.80	515	2000	
Sb	121	3	115	0.401	ppb	0.401	12.41	363	1000	
Ba	137	3	115	18.120	ppb	18.120	2.16	4127	5000	
Tl	205	3	193	-0.109	ppb	-0.109	-11.25	278	2000	
(Pb)	206	3	193	0.032	ppb	0.032	160.69	252	100	
(Pb)	207	3	193	-0.018	ppb	-0.018	-105.03	406	100	
Pb	208	3	193	0.020	ppb	0.020	90.68	1241	5000	
Th	232	3	193	2.645	ppb	2.645	23.80	17042	2000	
U	238	3	193	0.072	ppb	0.072	24.89	1893	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3783703	0.60	4160703	90.94	60	120	
Sc (IS)	45	3	HMI He	569291	1.00	620569	91.74	60	120	
Ge Internal standard	72	2	HMI H2	2088063	1.30	2172040	96.13	60	120	
Ge Internal standard	72	3	HMI He	665809	0.84	684400	97.28	60	120	
In Internal Standard	115	3	HMI He	2425452	0.74	2522161	96.17	60	120	
Ir (IS)	193	3	HMI He	5389014	1.00	5572879	96.70	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-13-b
Data File Name	128SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:07:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	904.753	ppb	904.753	1.18	118661	400000	
Mg	24	3	45	929.215	ppb	929.215	1.26	52721	400000	
Al	27	3	45	230.839	ppb	230.839	4.30	4722	400000	
K	39	3	45	354.373	ppb	354.373	8.29	29277	400000	
Ca	40	2	45	2511.240	ppb	2511.240	1.47	1238910	400000	
V	51	3	72	0.711	ppb	0.711	36.61	853	2000	
Cr	52	3	72	1.378	ppb	1.378	13.07	2447	5000	
Mn	55	3	72	26.743	ppb	26.743	2.19	10117	10000	
Fe	56	2	72	515.700	ppb	515.700	1.14	705510	10000	
Co	59	3	72	1.024	ppb	1.024	9.12	1188	2000	
Ni	60	3	72	1.845	ppb	1.845	14.53	701	5000	
Cu	63	3	72	0.232	ppb	0.232	10.01	451	5000	
Zn	66	3	72	3.111	ppb	3.111	6.43	678	5000	
As	75	3	72	0.234	ppb	0.234	32.64	53	2000	
Se	78	2	72	0.149	ppb	0.149	41.37	11	2000	
(Se)	78	3	72	-0.217	ppb	-0.217	-366.96	10	2000	
Sr	88	3	72	16.193	ppb	16.193	1.45	7792	4000	
Mo	95	3	115	-0.024	ppb	-0.024	-74.16	70	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-210.25	20	100	
Cd	111	3	115	0.023	ppb	0.023	0.59	10	2000	
Sn	120	3	115	-0.877	ppb	-0.877	-8.09	323	2000	
Sb	121	3	115	0.079	ppb	0.079	49.06	133	1000	
Ba	137	3	115	27.560	ppb	27.560	2.73	6203	5000	
Tl	205	3	193	-0.135	ppb	-0.135	-7.71	190	2000	
(Pb)	206	3	193	-0.040	ppb	-0.040	-72.72	168	100	
(Pb)	207	3	193	-0.100	ppb	-0.100	-14.38	323	100	
Pb	208	3	193	-0.073	ppb	-0.073	-15.87	810	5000	
Th	232	3	193	0.391	ppb	0.391	16.05	6118	2000	
U	238	3	193	0.049	ppb	0.049	30.42	1781	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3692795	0.32	4160703	88.75	60	120	
Sc (IS)	45	3	HMI He	569935	0.27	620569	91.84	60	120	
Ge Internal standard	72	2	HMI H2	2042436	0.89	2172040	94.03	60	120	
Ge Internal standard	72	3	HMI He	665104	0.58	684400	97.18	60	120	
In Internal Standard	115	3	HMI He	2406914	0.31	2522161	95.43	60	120	
Ir (IS)	193	3	HMI He	5408640	1.78	5572879	97.05	60	120	

Sample Report

Sample Table

Sample Name	280-171404-c-15-b
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:08:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.071	ppb	0.071	173.21	3	2000	
Na	23	3	45	1046.522	ppb	1046.522	2.06	132651	400000	
Mg	24	3	45	1802.612	ppb	1802.612	1.75	101143	400000	
Al	27	3	45	243.007	ppb	243.007	1.82	4916	400000	
K	39	3	45	402.115	ppb	402.115	8.17	30922	400000	
Ca	40	2	45	5269.023	ppb	5269.023	0.92	2605755	400000	
V	51	3	72	3.542	ppb	3.542	5.28	2376	2000	
Cr	52	3	72	1.873	ppb	1.873	11.18	2779	5000	
Mn	55	3	72	82.421	ppb	82.421	2.32	30674	10000	
Fe	56	2	72	5876.634	ppb	5876.634	1.58	7884947	10000	
Co	59	3	72	1.050	ppb	1.050	1.14	1213	2000	
Ni	60	3	72	2.646	ppb	2.646	8.06	948	5000	
Cu	63	3	72	0.386	ppb	0.386	23.98	580	5000	
Zn	66	3	72	3.965	ppb	3.965	18.07	801	5000	
As	75	3	72	0.541	ppb	0.541	34.62	85	2000	
Se	78	2	72	0.071	ppb	0.071	84.45	7	2000	
(Se)	78	3	72	2.159	ppb	2.159	72.00	25	2000	
Sr	88	3	72	22.089	ppb	22.089	3.09	10571	4000	
Mo	95	3	115	0.006	ppb	0.006	272.06	83	2000	
Ag	107	3	115	0.002	ppb	0.002	348.72	25	100	
Cd	111	3	115	0.009	ppb	0.009	379.07	7	2000	
Sn	120	3	115	-0.850	ppb	-0.850	-6.27	338	2000	
Sb	121	3	115	0.059	ppb	0.059	72.24	118	1000	
Ba	137	3	115	30.703	ppb	30.703	0.04	6833	5000	
Tl	205	3	193	-0.133	ppb	-0.133	-9.08	192	2000	
(Pb)	206	3	193	0.007	ppb	0.007	854.22	220	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-189.41	376	100	
Pb	208	3	193	-0.015	ppb	-0.015	-80.24	1069	5000	
Th	232	3	193	0.195	ppb	0.195	35.14	5090	2000	
U	238	3	193	0.050	ppb	0.050	37.12	1764	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3718760	2.41	4160703	89.38	60	120	
Sc (IS)	45	3	HMI He	564314	1.16	620569	90.93	60	120	
Ge Internal standard	72	2	HMI H2	2023921	1.64	2172040	93.18	60	120	
Ge Internal standard	72	3	HMI He	662424	0.87	684400	96.79	60	120	
In Internal Standard	115	3	HMI He	2382036	0.47	2522161	94.44	60	120	
Ir (IS)	193	3	HMI He	5337610	0.88	5572879	95.78	60	120	

Sample Report

Sample Table

Sample Name	280-171573-a-17-a
Data File Name	130SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:10:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	453.364	ppb	453.364	1.80	69791	400000	
Mg	24	3	45	987.367	ppb	987.367	1.66	55943	400000	
Al	27	3	45	258.520	ppb	258.520	2.78	5270	400000	
K	39	3	45	477.270	ppb	477.270	6.73	34283	400000	
Ca	40	2	45	7559.326	ppb	7559.326	1.94	3725103	400000	
V	51	3	72	-0.293	ppb	-0.293	-17.19	308	2000	
Cr	52	3	72	1.038	ppb	1.038	19.74	2199	5000	
Mn	55	3	72	13.885	ppb	13.885	2.06	5315	10000	
Fe	56	2	72	146.969	ppb	146.969	0.88	210404	10000	
Co	59	3	72	0.098	ppb	0.098	21.66	137	2000	
Ni	60	3	72	0.287	ppb	0.287	33.52	213	5000	
Cu	63	3	72	0.612	ppb	0.612	17.59	770	5000	
Zn	66	3	72	1.935	ppb	1.935	6.48	501	5000	
As	75	3	72	0.074	ppb	0.074	334.70	37	2000	
Se	78	2	72	0.054	ppb	0.054	70.28	6	2000	
(Se)	78	3	72	0.052	ppb	0.052	2318.40	12	2000	
Sr	88	3	72	24.245	ppb	24.245	3.43	11591	4000	
Mo	95	3	115	0.005	ppb	0.005	322.92	83	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-34.40	13	100	
Cd	111	3	115	-0.006	ppb	-0.006	-217.18	3	2000	
Sn	120	3	115	-0.581	ppb	-0.581	-21.68	523	2000	
Sb	121	3	115	0.025	ppb	0.025	171.28	95	1000	
Ba	137	3	115	14.966	ppb	14.966	0.73	3365	5000	
Tl	205	3	193	-0.137	ppb	-0.137	-5.42	180	2000	
(Pb)	206	3	193	0.157	ppb	0.157	25.64	398	100	
(Pb)	207	3	193	0.086	ppb	0.086	30.79	515	100	
Pb	208	3	193	0.136	ppb	0.136	11.96	1791	5000	
Th	232	3	193	0.142	ppb	0.142	15.67	4904	2000	
U	238	3	193	0.040	ppb	0.040	27.12	1736	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3710272	1.61	4160703	89.17	60	120	
Sc (IS)	45	3	HMI He	569250	0.48	620569	91.73	60	120	
Ge Internal standard	72	2	HMI H2	2079340	1.50	2172040	95.73	60	120	
Ge Internal standard	72	3	HMI He	661863	0.45	684400	96.71	60	120	
In Internal Standard	115	3	HMI He	2388475	1.78	2522161	94.70	60	120	
Ir (IS)	193	3	HMI He	5406843	0.85	5572879	97.02	60	120	

Sample Report

Sample Table

Sample Name	280-171573-a-18-a
Data File Name	131SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:12:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	460.928	ppb	460.928	1.37	70914	400000	
Mg	24	3	45	998.230	ppb	998.230	1.19	56804	400000	
Al	27	3	45	253.012	ppb	253.012	4.05	5183	400000	
K	39	3	45	505.452	ppb	505.452	3.57	35587	400000	
Ca	40	2	45	7655.750	ppb	7655.750	0.91	3766682	400000	
V	51	3	72	-0.337	ppb	-0.337	-3.63	285	2000	
Cr	52	3	72	0.960	ppb	0.960	5.23	2146	5000	
Mn	55	3	72	14.250	ppb	14.250	1.41	5452	10000	
Fe	56	2	72	193.274	ppb	193.274	3.03	274411	10000	
Co	59	3	72	0.100	ppb	0.100	15.89	138	2000	
Ni	60	3	72	0.379	ppb	0.379	35.44	242	5000	
Cu	63	3	72	1.344	ppb	1.344	1.80	1389	5000	
Zn	66	3	72	2.623	ppb	2.623	5.75	603	5000	
As	75	3	72	0.138	ppb	0.138	174.40	43	2000	
Se	78	2	72	0.028	ppb	0.028	76.38	5	2000	
(Se)	78	3	72	1.913	ppb	1.913	105.41	23	2000	
Sr	88	3	72	24.082	ppb	24.082	4.40	11517	4000	
Mo	95	3	115	0.095	ppb	0.095	31.86	127	2000	
Ag	107	3	115	0.004	ppb	0.004	99.77	28	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-0.748	ppb	-0.748	-2.46	410	2000	
Sb	121	3	115	0.035	ppb	0.035	96.75	102	1000	
Ba	137	3	115	15.171	ppb	15.171	5.53	3415	5000	
Tl	205	3	193	-0.149	ppb	-0.149	-5.88	138	2000	
(Pb)	206	3	193	0.183	ppb	0.183	10.19	430	100	
(Pb)	207	3	193	0.105	ppb	0.105	20.76	536	100	
Pb	208	3	193	0.161	ppb	0.161	4.58	1917	5000	
Th	232	3	193	0.106	ppb	0.106	33.55	4742	2000	
U	238	3	193	0.033	ppb	0.033	37.67	1703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3703994	1.23	4160703	89.02	60	120	
Sc (IS)	45	3	HMI He	571735	0.80	620569	92.13	60	120	
Ge Internal standard	72	2	HMI H2	2081742	1.31	2172040	95.84	60	120	
Ge Internal standard	72	3	HMI He	662101	0.72	684400	96.74	60	120	
In Internal Standard	115	3	HMI He	2391890	1.40	2522161	94.83	60	120	
Ir (IS)	193	3	HMI He	5422720	0.94	5572879	97.31	60	120	

Sample Report

Sample Table

Sample Name	280-171573-a-19-a
Data File Name	132SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:14:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.107	ppb	0.107	100.27	5	2000	
Na	23	3	45	460.303	ppb	460.303	2.25	70424	400000	
Mg	24	3	45	951.725	ppb	951.725	1.47	53843	400000	
Al	27	3	45	261.030	ppb	261.030	5.31	5310	400000	
K	39	3	45	462.556	ppb	462.556	7.05	33617	400000	
Ca	40	2	45	7287.750	ppb	7287.750	0.25	3628964	400000	
V	51	3	72	-0.207	ppb	-0.207	-27.87	353	2000	
Cr	52	3	72	0.930	ppb	0.930	9.23	2117	5000	
Mn	55	3	72	13.362	ppb	13.362	3.87	5105	10000	
Fe	56	2	72	148.070	ppb	148.070	1.31	211362	10000	
Co	59	3	72	0.092	ppb	0.092	29.01	130	2000	
Ni	60	3	72	0.327	ppb	0.327	9.71	225	5000	
Cu	63	3	72	0.460	ppb	0.460	9.94	640	5000	
Zn	66	3	72	1.822	ppb	1.822	4.94	483	5000	
As	75	3	72	0.043	ppb	0.043	231.43	33	2000	
Se	78	2	72	0.132	ppb	0.132	31.20	10	2000	
(Se)	78	3	72	0.057	ppb	0.057	783.79	12	2000	
Sr	88	3	72	23.281	ppb	23.281	1.18	11096	4000	
Mo	95	3	115	0.063	ppb	0.063	109.53	112	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-65.93	18	100	
Cd	111	3	115	0.001	ppb	0.001	1753.79	5	2000	
Sn	120	3	115	-0.910	ppb	-0.910	-4.87	302	2000	
Sb	121	3	115	0.026	ppb	0.026	59.33	97	1000	
Ba	137	3	115	14.393	ppb	14.393	7.03	3274	5000	
Tl	205	3	193	-0.143	ppb	-0.143	-7.85	160	2000	
(Pb)	206	3	193	0.171	ppb	0.171	26.56	413	100	
(Pb)	207	3	193	0.114	ppb	0.114	87.52	541	100	
Pb	208	3	193	0.127	ppb	0.127	24.50	1741	5000	
Th	232	3	193	0.093	ppb	0.093	51.93	4639	2000	
U	238	3	193	0.029	ppb	0.029	35.02	1673	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3748141	0.65	4160703	90.08	60	120	
Sc (IS)	45	3	HMI He	568371	0.87	620569	91.59	60	120	
Ge Internal standard	72	2	HMI H2	2074179	2.56	2172040	95.49	60	120	
Ge Internal standard	72	3	HMI He	659760	0.99	684400	96.40	60	120	
In Internal Standard	115	3	HMI He	2414202	1.08	2522161	95.72	60	120	
Ir (IS)	193	3	HMI He	5379284	0.39	5572879	96.53	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-20-a
Data File Name	133SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:16:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.072	ppb	0.072	86.63	3	2000	
Na	23	3	45	494.356	ppb	494.356	1.65	74647	400000	
Mg	24	3	45	866.935	ppb	866.935	1.42	49422	400000	
Al	27	3	45	32.688	ppb	32.688	10.30	764	400000	
K	39	3	45	389.719	ppb	389.719	5.65	30868	400000	
Ca	40	2	45	6916.288	ppb	6916.288	1.19	3438590	400000	
V	51	3	72	-0.587	ppb	-0.587	-11.41	152	2000	
Cr	52	3	72	0.878	ppb	0.878	16.07	2114	5000	
Mn	55	3	72	1.131	ppb	1.131	23.23	608	10000	
Fe	56	2	72	33.165	ppb	33.165	7.04	53939	10000	
Co	59	3	72	0.031	ppb	0.031	7.60	62	2000	
Ni	60	3	72	0.057	ppb	0.057	338.85	143	5000	
Cu	63	3	72	0.451	ppb	0.451	26.37	641	5000	
Zn	66	3	72	2.486	ppb	2.486	15.44	590	5000	
As	75	3	72	0.006	ppb	0.006	759.31	30	2000	
Se	78	2	72	-0.023	ppb	-0.023	-170.83	2	2000	
(Se)	78	3	72	0.027	ppb	0.027	7376.99	12	2000	
Sr	88	3	72	20.035	ppb	20.035	2.81	9704	4000	
Mo	95	3	115	-0.004	ppb	-0.004	-1824.81	80	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-39.98	10	100	
Cd	111	3	115	-0.013	ppb	-0.013	-94.30	2	2000	
Sn	120	3	115	-0.864	ppb	-0.864	-5.49	335	2000	
Sb	121	3	115	0.016	ppb	0.016	149.47	90	1000	
Ba	137	3	115	13.913	ppb	13.913	3.71	3184	5000	
Tl	205	3	193	-0.151	ppb	-0.151	-4.59	132	2000	
(Pb)	206	3	193	-0.023	ppb	-0.023	-150.08	188	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-74.92	380	100	
Pb	208	3	193	-0.029	ppb	-0.029	-36.92	1015	5000	
Th	232	3	193	0.058	ppb	0.058	113.14	4479	2000	
U	238	3	193	0.009	ppb	0.009	156.64	1574	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3741564	0.65	4160703	89.93	60	120	
Sc (IS)	45	3	HMI He	572563	0.33	620569	92.26	60	120	
Ge Internal standard	72	2	HMI H2	2090648	1.16	2172040	96.25	60	120	
Ge Internal standard	72	3	HMI He	670060	0.29	684400	97.90	60	120	
In Internal Standard	115	3	HMI He	2427495	0.54	2522161	96.25	60	120	
Ir (IS)	193	3	HMI He	5391213	1.15	5572879	96.74	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-21-a
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:18:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	541.413	ppb	541.413	1.84	79783	400000	
Mg	24	3	45	352.701	ppb	352.701	4.69	20185	400000	
Al	27	3	45	218.551	ppb	218.551	2.18	4499	400000	
K	39	3	45	379.284	ppb	379.284	8.58	30447	400000	
Ca	40	2	45	3151.259	ppb	3151.259	1.31	1554370	400000	
V	51	3	72	-0.292	ppb	-0.292	-19.55	310	2000	
Cr	52	3	72	1.064	ppb	1.064	4.99	2227	5000	
Mn	55	3	72	3.343	ppb	3.343	2.20	1424	10000	
Fe	56	2	72	89.016	ppb	89.016	4.97	131655	10000	
Co	59	3	72	0.077	ppb	0.077	37.71	113	2000	
Ni	60	3	72	0.300	ppb	0.300	62.63	218	5000	
Cu	63	3	72	3.684	ppb	3.684	1.31	3380	5000	
Zn	66	3	72	3.722	ppb	3.722	8.52	768	5000	
As	75	3	72	0.155	ppb	0.155	198.82	45	2000	
Se	78	2	72	0.040	ppb	0.040	294.16	5	2000	
(Se)	78	3	72	2.423	ppb	2.423	52.04	27	2000	
Sr	88	3	72	13.838	ppb	13.838	4.54	6658	4000	
Mo	95	3	115	-0.020	ppb	-0.020	-239.09	73	2000	
Ag	107	3	115	0.002	ppb	0.002	150.58	27	100	
Cd	111	3	115	-0.006	ppb	-0.006	-197.03	3	2000	
Sn	120	3	115	-0.929	ppb	-0.929	-8.01	293	2000	
Sb	121	3	115	0.008	ppb	0.008	202.96	85	1000	
Ba	137	3	115	16.359	ppb	16.359	1.77	3775	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-6.41	137	2000	
(Pb)	206	3	193	0.180	ppb	0.180	7.02	423	100	
(Pb)	207	3	193	0.123	ppb	0.123	26.67	551	100	
Pb	208	3	193	0.157	ppb	0.157	2.89	1881	5000	
Th	232	3	193	0.160	ppb	0.160	42.35	4967	2000	
U	238	3	193	0.046	ppb	0.046	39.75	1756	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3698389	0.76	4160703	88.89	60	120	
Sc (IS)	45	3	HMI He	572762	0.60	620569	92.30	60	120	
Ge Internal standard	72	2	HMI H2	2098188	2.69	2172040	96.60	60	120	
Ge Internal standard	72	3	HMI He	664933	1.76	684400	97.16	60	120	
In Internal Standard	115	3	HMI He	2454170	1.51	2522161	97.30	60	120	
Ir (IS)	193	3	HMI He	5383753	0.99	5572879	96.61	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-22-a
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:20:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.106	ppb	0.106	173.21	5	2000	
Na	23	3	45	444.123	ppb	444.123	1.96	68601	400000	
Mg	24	3	45	281.445	ppb	281.445	1.29	15985	400000	
Al	27	3	45	86.137	ppb	86.137	10.14	1822	400000	
K	39	3	45	266.324	ppb	266.324	7.84	25562	400000	
Ca	40	2	45	1208.886	ppb	1208.886	1.83	616659	400000	
V	51	3	72	-0.551	ppb	-0.551	-12.44	170	2000	
Cr	52	3	72	0.783	ppb	0.783	8.59	2031	5000	
Mn	55	3	72	12.932	ppb	12.932	5.16	4980	10000	
Fe	56	2	72	41.389	ppb	41.389	2.08	65617	10000	
Co	59	3	72	0.124	ppb	0.124	15.20	167	2000	
Ni	60	3	72	0.157	ppb	0.157	71.91	173	5000	
Cu	63	3	72	0.296	ppb	0.296	3.88	505	5000	
Zn	66	3	72	1.224	ppb	1.224	11.23	398	5000	
As	75	3	72	-0.008	ppb	-0.008	-1387.70	28	2000	
Se	78	2	72	0.015	ppb	0.015	254.29	4	2000	
(Se)	78	3	72	-0.205	ppb	-0.205	-1028.61	10	2000	
Sr	88	3	72	5.099	ppb	5.099	6.35	2474	4000	
Mo	95	3	115	0.005	ppb	0.005	1337.58	83	2000	
Ag	107	3	115	0.000	ppb	0.000	-1874.99	22	100	
Cd	111	3	115	0.001	ppb	0.001	1847.55	5	2000	
Sn	120	3	115	-0.953	ppb	-0.953	-2.45	270	2000	
Sb	121	3	115	-0.035	ppb	-0.035	-13.86	53	1000	
Ba	137	3	115	14.549	ppb	14.549	4.16	3292	5000	
Tl	205	3	193	-0.142	ppb	-0.142	-3.28	163	2000	
(Pb)	206	3	193	0.027	ppb	0.027	92.03	247	100	
(Pb)	207	3	193	-0.021	ppb	-0.021	-144.69	403	100	
Pb	208	3	193	-0.004	ppb	-0.004	-72.71	1128	5000	
Th	232	3	193	0.042	ppb	0.042	17.64	4395	2000	
U	238	3	193	0.048	ppb	0.048	37.23	1768	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3783970	1.28	4160703	90.95	60	120	
Sc (IS)	45	3	HMI He	567651	0.11	620569	91.47	60	120	
Ge Internal standard	72	2	HMI H2	2099716	0.30	2172040	96.67	60	120	
Ge Internal standard	72	3	HMI He	664419	1.26	684400	97.08	60	120	
In Internal Standard	115	3	HMI He	2402766	1.01	2522161	95.27	60	120	
Ir (IS)	193	3	HMI He	5384344	2.27	5572879	96.62	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	136_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:22:15-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.984	ppb	3.224	2376	50	98.0	90	110	
Na	23	3	45	50703.491	ppb	0.650	5414297	51000	99.4	90	110	
Mg	24	3	45	10947.744	ppb	0.534	610080	11000	99.5	90	110	
Al	27	3	45	1039.779	ppb	2.308	20562	1000	104.0	90	110	
K	39	3	45	11197.957	ppb	1.494	466662	11000	101.8	90	110	
Ca	40	2	45	11488.300	ppb	1.005	5723021	11000	104.4	90	110	
V	51	3	72	51.289	ppb	1.608	27335	50	102.6	90	110	
Cr	52	3	72	51.439	ppb	1.764	36104	50	102.9	90	110	
Mn	55	3	72	51.733	ppb	0.815	18787	50	103.5	90	110	
Fe	56	2	72	1017.517	ppb	3.806	1369655	1000	101.8	90	110	
Co	59	3	72	50.803	ppb	2.423	55846	50	101.6	90	110	
Ni	60	3	72	51.882	ppb	1.597	15836	50	103.8	90	110	
Cu	63	3	72	51.392	ppb	1.652	42492	50	102.8	90	110	
Zn	66	3	72	51.929	ppb	2.833	7665	50	103.9	90	110	
As	75	3	72	51.324	ppb	1.926	5180	50	102.6	90	110	
Se	78	2	72	52.272	ppb	0.970	2634	50	104.5	90	110	
(Se)	78	3	72	50.128	ppb	9.036	318	50	100.3	90	110	
Sr	88	3	72	106.051	ppb	2.739	49216	100	106.1	90	110	
Mo	95	3	115	50.155	ppb	1.691	23646	50	100.3	90	110	
Ag	107	3	115	49.903	ppb	0.739	76470	50	99.8	90	110	
Cd	111	3	115	51.398	ppb	0.645	11703	50	102.8	90	110	
Sn	120	3	115	51.045	ppb	2.686	35454	50	102.1	90	110	
Sb	121	3	115	51.167	ppb	0.665	35241	50	102.3	90	110	
Ba	137	3	115	51.370	ppb	1.631	11251	50	102.7	90	110	
Tl	205	3	193	48.650	ppb	0.866	175083	50	97.3	90	110	
(Pb)	206	3	193	48.672	ppb	0.853	57846	50	97.3	90	110	
(Pb)	207	3	193	49.792	ppb	0.138	52496	50	99.6	90	110	
Pb	208	3	193	49.080	ppb	0.416	235676	50	98.2	90	110	
Th	232	3	193	49.922	ppb	1.002	250953	50	99.8	90	110	
U	238	3	193	49.623	ppb	0.367	257855	50	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3753628	0.44	4160703	90.22	60	120	
Sc (IS)	45	3	HMI He	560928	0.55	620569	90.39	60	120	
Ge Internal standard	72	2	HMI H2	2021359	1.34	2172040	93.06	60	120	
Ge Internal standard	72	3	HMI He	644059	0.96	684400	94.11	60	120	
In Internal Standard	115	3	HMI He	2351083	0.64	2522161	93.22	60	120	
Ir (IS)	193	3	HMI He	5490984	0.46	5572879	98.53	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	137_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:24:08-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	12.883	ppb	11.3	21839	25	
Mg	24	3	45	1.126	ppb	50.3	177	25	
Al	27	3	45	-1.116	ppb	-138.6	83	15	
K	39	3	45	-1.721	ppb	-1640.0	14382	50	
V	51	3	72	-0.187	ppb	-56.6	355	1	
Cr	52	3	72	-0.123	ppb	-55.3	1356	1	
Mn	55	3	72	-0.122	ppb	-25.9	133	0.5	
Co	59	3	72	-0.005	ppb	-100.0	20	0.5	
Ni	60	3	72	0.048	ppb	87.3	135	1	
Cu	63	3	72	0.054	ppb	62.7	290	1	
Zn	66	3	72	-0.265	ppb	-69.7	172	5	
As	75	3	72	0.069	ppb	320.1	35	1	
Se	78	2	72	0.045	ppb	184.5	5	1	
(Se)	78	3	72	0.945	ppb	183.6	17	1	
Sr	88	3	72	0.016	ppb	113.8	42	0.5	
Mo	95	3	115	-0.031	ppb	-208.8	65	0.5	
Ag	107	3	115	0.003	ppb	616.1	27	1	
Cd	111	3	115	-0.013	ppb	-97.8	2	0.5	
Sn	120	3	115	-0.319	ppb	-16.5	691	1	
Sb	121	3	115	0.283	ppb	14.5	270	0.6	
Ba	137	3	115	0.002	ppb	879.5	50	0.5	
Tl	205	3	193	-0.116	ppb	-12.2	252	0.1	
(Pb)	206	3	193	-0.028	ppb	-57.8	180	1	
(Pb)	207	3	193	-0.069	ppb	-61.9	350	1	
Pb	208	3	193	-0.058	ppb	-43.2	868	0.5	
Th	232	3	193	0.637	ppb	16.7	7204	1	
U	238	3	193	0.040	ppb	20.5	1711	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3719731	1.58	4160703	89.40	60	120	
Sc (IS)	45	3	HMI He	558992	0.59	620569	90.08	60	120	
Ge Internal standard	72	2	HMI H2	2010475	0.16	2172040	92.56	60	120	
Ge Internal standard	72	3	HMI He	643307	1.94	684400	94.00	60	120	
In Internal Standard	115	3	HMI He	2342969	1.40	2522161	92.90	60	120	
Ir (IS)	193	3	HMI He	5327549	0.58	5572879	95.60	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-23-a
Data File Name	138SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:26:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.215	ppb	0.215	50.40	10	2000	
Na	23	3	45	482.614	ppb	482.614	0.98	73295	400000	
Mg	24	3	45	270.538	ppb	270.538	3.43	15484	400000	
Al	27	3	45	62.677	ppb	62.677	8.31	1365	400000	
K	39	3	45	208.398	ppb	208.398	20.00	23363	400000	
Ca	40	2	45	509.878	ppb	509.878	0.82	263756	400000	
V	51	3	72	-0.678	ppb	-0.678	-5.07	102	2000	
Cr	52	3	72	0.853	ppb	0.853	5.53	2087	5000	
Mn	55	3	72	39.284	ppb	39.284	1.11	14821	10000	
Fe	56	2	72	41.456	ppb	41.456	5.14	64340	10000	
Co	59	3	72	0.362	ppb	0.362	12.65	438	2000	
Ni	60	3	72	0.356	ppb	0.356	32.98	237	5000	
Cu	63	3	72	0.344	ppb	0.344	12.51	548	5000	
Zn	66	3	72	1.818	ppb	1.818	30.90	488	5000	
As	75	3	72	0.104	ppb	0.104	93.47	40	2000	
Se	78	2	72	-0.035	ppb	-0.035	-65.14	1	2000	
(Se)	78	3	72	1.088	ppb	1.088	41.72	18	2000	
Sr	88	3	72	4.046	ppb	4.046	3.81	1979	4000	
Mo	95	3	115	0.029	ppb	0.029	82.40	95	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-45.58	17	100	
Cd	111	3	115	0.022	ppb	0.022	161.13	10	2000	
Sn	120	3	115	-0.923	ppb	-0.923	-3.06	290	2000	
Sb	121	3	115	-0.016	ppb	-0.016	-246.00	67	1000	
Ba	137	3	115	18.580	ppb	18.580	5.98	4175	5000	
Tl	205	3	193	-0.126	ppb	-0.126	-8.44	220	2000	
(Pb)	206	3	193	-0.030	ppb	-0.030	-37.81	178	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-78.54	378	100	
Pb	208	3	193	-0.034	ppb	-0.034	-21.10	983	5000	
Th	232	3	193	0.178	ppb	0.178	32.61	5034	2000	
U	238	3	193	0.055	ppb	0.055	45.07	1794	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3747062	1.93	4160703	90.06	60	120	
Sc (IS)	45	3	HMI He	571961	0.84	620569	92.17	60	120	
Ge Internal standard	72	2	HMI H2	2057411	3.00	2172040	94.72	60	120	
Ge Internal standard	72	3	HMI He	667085	0.44	684400	97.47	60	120	
In Internal Standard	115	3	HMI He	2395306	1.83	2522161	94.97	60	120	
Ir (IS)	193	3	HMI He	5357342	0.67	5572879	96.13	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-24-a
Data File Name	139SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:27:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	909.012	ppb	909.012	1.44	120754	400000	
Mg	24	3	45	946.217	ppb	946.217	0.78	54419	400000	
Al	27	3	45	1505.936	ppb	1505.936	1.21	30627	400000	
K	39	3	45	664.460	ppb	664.460	5.70	42574	400000	
Ca	40	2	45	7509.456	ppb	7509.456	1.05	3711988	400000	
V	51	3	72	3.171	ppb	3.171	7.34	2191	2000	
Cr	52	3	72	2.566	ppb	2.566	8.85	3282	5000	
Mn	55	3	72	43.473	ppb	43.473	0.51	16378	10000	
Fe	56	2	72	868.182	ppb	868.182	3.05	1212425	10000	
Co	59	3	72	0.503	ppb	0.503	6.32	598	2000	
Ni	60	3	72	1.360	ppb	1.360	1.56	551	5000	
Cu	63	3	72	1.724	ppb	1.724	10.05	1723	5000	
Zn	66	3	72	7.456	ppb	7.456	3.84	1326	5000	
As	75	3	72	0.392	ppb	0.392	12.29	70	2000	
Se	78	2	72	0.154	ppb	0.154	54.61	11	2000	
(Se)	78	3	72	1.608	ppb	1.608	100.70	22	2000	
Sr	88	3	72	15.279	ppb	15.279	1.59	7373	4000	
Mo	95	3	115	0.019	ppb	0.019	210.06	90	2000	
Ag	107	3	115	0.001	ppb	0.001	1694.17	23	100	
Cd	111	3	115	0.009	ppb	0.009	147.38	7	2000	
Sn	120	3	115	-0.846	ppb	-0.846	-5.06	343	2000	
Sb	121	3	115	0.053	ppb	0.053	66.18	115	1000	
Ba	137	3	115	24.010	ppb	24.010	3.59	5392	5000	
Tl	205	3	193	-0.127	ppb	-0.127	-2.05	222	2000	
(Pb)	206	3	193	2.288	ppb	2.288	3.64	2926	100	
(Pb)	207	3	193	1.974	ppb	1.974	4.25	2496	100	
Pb	208	3	193	2.118	ppb	2.118	2.26	11281	5000	
Th	232	3	193	0.646	ppb	0.646	5.73	7462	2000	
U	238	3	193	0.128	ppb	0.128	19.49	2217	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3720959	0.35	4160703	89.43	60	120	
Sc (IS)	45	3	HMI He	577757	0.41	620569	93.10	60	120	
Ge Internal standard	72	2	HMI H2	2095533	2.58	2172040	96.48	60	120	
Ge Internal standard	72	3	HMI He	666962	0.88	684400	97.45	60	120	
In Internal Standard	115	3	HMI He	2399201	1.18	2522161	95.12	60	120	
Ir (IS)	193	3	HMI He	5488584	1.20	5572879	98.49	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-25-a
Data File Name	140SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:29:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1683.073	ppb	1683.073	2.28	204844	400000	
Mg	24	3	45	3862.015	ppb	3862.015	1.20	220969	400000	
Al	27	3	45	21.243	ppb	21.243	11.96	537	400000	
K	39	3	45	1526.270	ppb	1526.270	1.64	78144	400000	
Ca	40	2	45	29546.702	ppb	29546.702	0.85	14907840	400000	
V	51	3	72	-0.355	ppb	-0.355	-29.33	280	2000	
Cr	52	3	72	0.738	ppb	0.738	3.35	2026	5000	
Mn	55	3	72	1.368	ppb	1.368	4.19	700	10000	
Fe	56	2	72	32.080	ppb	32.080	0.78	52151	10000	
Co	59	3	72	0.032	ppb	0.032	47.82	63	2000	
Ni	60	3	72	0.523	ppb	0.523	27.98	292	5000	
Cu	63	3	72	0.715	ppb	0.715	19.49	871	5000	
Zn	66	3	72	1.302	ppb	1.302	23.98	415	5000	
As	75	3	72	0.355	ppb	0.355	62.80	67	2000	
Se	78	2	72	0.080	ppb	0.080	73.10	7	2000	
(Se)	78	3	72	1.068	ppb	1.068	113.22	18	2000	
Sr	88	3	72	159.203	ppb	159.203	1.73	77213	4000	
Mo	95	3	115	0.286	ppb	0.286	12.01	222	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-176.71	18	100	
Cd	111	3	115	-0.013	ppb	-0.013	-93.83	2	2000	
Sn	120	3	115	-0.740	ppb	-0.740	-6.99	423	2000	
Sb	121	3	115	-0.001	ppb	-0.001	-2731.88	78	1000	
Ba	137	3	115	20.750	ppb	20.750	2.35	4740	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-2.83	137	2000	
(Pb)	206	3	193	-0.016	ppb	-0.016	-59.66	197	100	
(Pb)	207	3	193	-0.054	ppb	-0.054	-24.57	371	100	
Pb	208	3	193	-0.032	ppb	-0.032	-18.33	1003	5000	
Th	232	3	193	0.034	ppb	0.034	19.12	4379	2000	
U	238	3	193	0.228	ppb	0.228	10.73	2694	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3806380	1.24	4160703	91.48	60	120	
Sc (IS)	45	3	HMI He	575704	0.38	620569	92.77	60	120	
Ge Internal standard	72	2	HMI H2	2079064	0.52	2172040	95.72	60	120	
Ge Internal standard	72	3	HMI He	673229	0.65	684400	98.37	60	120	
In Internal Standard	115	3	HMI He	2436191	0.76	2522161	96.59	60	120	
Ir (IS)	193	3	HMI He	5412624	1.58	5572879	97.12	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-25-b ms
Data File Name	141SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:31:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.439	ppb	39.439	4.91	1846	2000	
Na	23	3	45	2433.352	ppb	2433.352	0.80	288432	400000	
Mg	24	3	45	4656.988	ppb	4656.988	1.27	267972	400000	
Al	27	3	45	844.061	ppb	844.061	1.81	17255	400000	
K	39	3	45	2360.667	ppb	2360.667	2.68	113371	400000	
Ca	40	2	45	31189.046	ppb	31189.046	2.10	15685940	400000	
V	51	3	72	40.893	ppb	40.893	1.34	22964	2000	
Cr	52	3	72	41.048	ppb	41.048	2.45	30535	5000	
Mn	55	3	72	43.709	ppb	43.709	3.22	16682	10000	
Fe	56	2	72	844.657	ppb	844.657	2.51	1194386	10000	
Co	59	3	72	40.418	ppb	40.418	2.15	46630	2000	
Ni	60	3	72	40.120	ppb	40.120	1.85	12876	5000	
Cu	63	3	72	41.115	ppb	41.115	0.88	35723	5000	
Zn	66	3	72	40.476	ppb	40.476	4.44	6317	5000	
As	75	3	72	40.459	ppb	40.459	5.82	4290	2000	
Se	78	2	72	41.075	ppb	41.075	1.58	2172	2000	
(Se)	78	3	72	40.421	ppb	40.421	13.04	272	2000	
Sr	88	3	72	244.132	ppb	244.132	1.59	118831	4000	
Mo	95	3	115	39.994	ppb	39.994	1.87	19469	2000	
Ag	107	3	115	39.775	ppb	39.775	0.64	62887	100	
Cd	111	3	115	39.602	ppb	39.602	2.84	9302	2000	
Sn	120	3	115	39.672	ppb	39.672	3.87	28628	2000	
Sb	121	3	115	39.499	ppb	39.499	1.73	28084	1000	
Ba	137	3	115	62.587	ppb	62.587	4.63	14124	5000	
Tl	205	3	193	41.616	ppb	41.616	1.67	147137	2000	
(Pb)	206	3	193	41.703	ppb	41.703	1.65	48694	100	
(Pb)	207	3	193	41.108	ppb	41.108	0.79	42629	100	
Pb	208	3	193	41.592	ppb	41.592	1.18	196266	5000	
Th	232	3	193	40.981	ppb	40.981	2.07	203012	2000	
U	238	3	193	42.255	ppb	42.255	1.53	215804	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3794636	0.97	4160703	91.20	60	120	
Sc (IS)	45	3	HMI He	579058	0.61	620569	93.31	60	120	
Ge Internal standard	72	2	HMI H2	2120380	1.27	2172040	97.62	60	120	
Ge Internal standard	72	3	HMI He	675799	1.05	684400	98.74	60	120	
In Internal Standard	115	3	HMI He	2425836	1.98	2522161	96.18	60	120	
Ir (IS)	193	3	HMI He	5391875	1.49	5572879	96.75	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-25-c msd
Data File Name	142SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:33:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.538	ppb	39.538	4.71	1859	2000	
Na	23	3	45	2411.972	ppb	2411.972	1.89	285459	400000	
Mg	24	3	45	4625.546	ppb	4625.546	2.18	265596	400000	
Al	27	3	45	822.995	ppb	822.995	1.93	16790	400000	
K	39	3	45	2340.811	ppb	2340.811	2.55	112305	400000	
Ca	40	2	45	30472.051	ppb	30472.051	2.56	15269332	400000	
V	51	3	72	40.416	ppb	40.416	2.00	22757	2000	
Cr	52	3	72	41.415	ppb	41.415	2.70	30870	5000	
Mn	55	3	72	43.347	ppb	43.347	2.24	16587	10000	
Fe	56	2	72	829.131	ppb	829.131	3.04	1152354	10000	
Co	59	3	72	39.761	ppb	39.761	0.96	45983	2000	
Ni	60	3	72	39.842	ppb	39.842	2.71	12823	5000	
Cu	63	3	72	41.758	ppb	41.758	0.85	36370	5000	
Zn	66	3	72	41.222	ppb	41.222	3.65	6445	5000	
As	75	3	72	40.710	ppb	40.710	3.83	4327	2000	
Se	78	2	72	41.297	ppb	41.297	2.26	2146	2000	
(Se)	78	3	72	47.332	ppb	47.332	9.12	317	2000	
Sr	88	3	72	246.359	ppb	246.359	0.85	120222	4000	
Mo	95	3	115	39.629	ppb	39.629	1.30	19211	2000	
Ag	107	3	115	40.001	ppb	40.001	2.45	62964	100	
Cd	111	3	115	39.555	ppb	39.555	2.90	9252	2000	
Sn	120	3	115	38.855	ppb	38.855	1.86	27945	2000	
Sb	121	3	115	39.448	ppb	39.448	2.01	27927	1000	
Ba	137	3	115	62.174	ppb	62.174	3.26	13975	5000	
Tl	205	3	193	41.621	ppb	41.621	1.81	145701	2000	
(Pb)	206	3	193	42.178	ppb	42.178	1.94	48763	100	
(Pb)	207	3	193	41.601	ppb	41.601	3.18	42700	100	
Pb	208	3	193	41.906	ppb	41.906	1.85	195776	5000	
Th	232	3	193	41.683	ppb	41.683	1.45	204387	2000	
U	238	3	193	42.489	ppb	42.489	1.22	214849	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3781643	2.38	4160703	90.89	60	120	
Sc (IS)	45	3	HMI He	577871	1.01	620569	93.12	60	120	
Ge Internal standard	72	2	HMI H2	2084316	2.13	2172040	95.96	60	120	
Ge Internal standard	72	3	HMI He	677506	1.28	684400	98.99	60	120	
In Internal Standard	115	3	HMI He	2415361	1.18	2522161	95.77	60	120	
Ir (IS)	193	3	HMI He	5338496	1.29	5572879	95.79	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-26-a
Data File Name	143SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:35:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	426.557	ppb	426.557	3.04	67816	400000	
Mg	24	3	45	291.916	ppb	291.916	2.19	16850	400000	
Al	27	3	45	219.796	ppb	219.796	5.16	4559	400000	
K	39	3	45	342.368	ppb	342.368	10.27	29140	400000	
Ca	40	2	45	727.006	ppb	727.006	0.67	371983	400000	
V	51	3	72	-0.365	ppb	-0.365	-22.73	272	2000	
Cr	52	3	72	1.007	ppb	1.007	11.33	2197	5000	
Mn	55	3	72	47.411	ppb	47.411	1.49	17864	10000	
Fe	56	2	72	78.074	ppb	78.074	0.88	116089	10000	
Co	59	3	72	0.744	ppb	0.744	5.55	873	2000	
Ni	60	3	72	0.447	ppb	0.447	50.65	265	5000	
Cu	63	3	72	1.682	ppb	1.682	0.89	1689	5000	
Zn	66	3	72	3.730	ppb	3.730	13.29	773	5000	
As	75	3	72	-0.057	ppb	-0.057	-127.95	23	2000	
Se	78	2	72	0.002	ppb	0.002	1922.55	3	2000	
(Se)	78	3	72	-0.222	ppb	-0.222	-360.32	10	2000	
Sr	88	3	72	5.486	ppb	5.486	2.93	2674	4000	
Mo	95	3	115	0.124	ppb	0.124	18.35	142	2000	
Ag	107	3	115	0.005	ppb	0.005	118.32	30	100	
Cd	111	3	115	0.008	ppb	0.008	149.90	7	2000	
Sn	120	3	115	-0.808	ppb	-0.808	-1.74	373	2000	
Sb	121	3	115	0.070	ppb	0.070	13.58	128	1000	
Ba	137	3	115	21.308	ppb	21.308	5.37	4830	5000	
Tl	205	3	193	-0.133	ppb	-0.133	-4.47	198	2000	
(Pb)	206	3	193	0.417	ppb	0.417	19.87	703	100	
(Pb)	207	3	193	0.374	ppb	0.374	27.78	815	100	
Pb	208	3	193	0.385	ppb	0.385	13.14	2972	5000	
Th	232	3	193	0.578	ppb	0.578	14.39	7050	2000	
U	238	3	193	0.050	ppb	0.050	59.31	1791	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3751632	1.71	4160703	90.17	60	120	
Sc (IS)	45	3	HMI He	577159	1.11	620569	93.00	60	120	
Ge Internal standard	72	2	HMI H2	2090085	2.00	2172040	96.23	60	120	
Ge Internal standard	72	3	HMI He	667714	0.82	684400	97.56	60	120	
In Internal Standard	115	3	HMI He	2419554	1.43	2522161	95.93	60	120	
Ir (IS)	193	3	HMI He	5425440	1.30	5572879	97.35	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-27-a
Data File Name	144SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:37:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	475.657	ppb	475.657	0.78	73322	400000	
Mg	24	3	45	321.687	ppb	321.687	2.17	18591	400000	
Al	27	3	45	234.570	ppb	234.570	5.74	4866	400000	
K	39	3	45	396.220	ppb	396.220	4.05	31440	400000	
Ca	40	2	45	1352.132	ppb	1352.132	0.91	680281	400000	
V	51	3	72	-0.443	ppb	-0.443	-15.13	230	2000	
Cr	52	3	72	1.070	ppb	1.070	15.91	2249	5000	
Mn	55	3	72	31.322	ppb	31.322	1.88	11903	10000	
Fe	56	2	72	85.067	ppb	85.067	1.74	124919	10000	
Co	59	3	72	0.296	ppb	0.296	3.31	365	2000	
Ni	60	3	72	0.448	ppb	0.448	47.36	267	5000	
Cu	63	3	72	1.128	ppb	1.128	16.45	1219	5000	
Zn	66	3	72	2.988	ppb	2.988	6.19	665	5000	
As	75	3	72	0.055	ppb	0.055	266.32	35	2000	
Se	78	2	72	0.016	ppb	0.016	245.78	4	2000	
(Se)	78	3	72	-0.234	ppb	-0.234	-332.77	10	2000	
Sr	88	3	72	6.219	ppb	6.219	3.47	3036	4000	
Mo	95	3	115	0.064	ppb	0.064	95.02	113	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-65.13	18	100	
Cd	111	3	115	0.001	ppb	0.001	1753.31	5	2000	
Sn	120	3	115	-0.849	ppb	-0.849	-2.00	347	2000	
Sb	121	3	115	0.002	ppb	0.002	1509.34	80	1000	
Ba	137	3	115	18.678	ppb	18.678	3.81	4270	5000	
Tl	205	3	193	-0.139	ppb	-0.139	-3.54	173	2000	
(Pb)	206	3	193	0.202	ppb	0.202	23.01	445	100	
(Pb)	207	3	193	0.099	ppb	0.099	30.13	521	100	
Pb	208	3	193	0.153	ppb	0.153	15.63	1842	5000	
Th	232	3	193	0.207	ppb	0.207	17.37	5142	2000	
U	238	3	193	0.061	ppb	0.061	16.59	1814	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3738393	1.39	4160703	89.85	60	120	
Sc (IS)	45	3	HMI He	578117	0.23	620569	93.16	60	120	
Ge Internal standard	72	2	HMI H2	2075811	1.62	2172040	95.57	60	120	
Ge Internal standard	72	3	HMI He	669852	0.69	684400	97.87	60	120	
In Internal Standard	115	3	HMI He	2435802	1.82	2522161	96.58	60	120	
Ir (IS)	193	3	HMI He	5328329	1.02	5572879	95.61	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-28-a
Data File Name	145SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:39:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600156 6020B
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.105	ppb	0.105	99.38	5	2000	
Na	23	3	45	1752.359	ppb	1752.359	1.39	211178	400000	
Mg	24	3	45	510.513	ppb	510.513	1.63	29143	400000	
Al	27	3	45	122.117	ppb	122.117	1.18	2559	400000	
K	39	3	45	289.669	ppb	289.669	8.03	26736	400000	
Ca	40	2	45	2976.794	ppb	2976.794	0.37	1496209	400000	
V	51	3	72	-0.566	ppb	-0.566	-6.02	163	2000	
Cr	52	3	72	0.897	ppb	0.897	11.85	2126	5000	
Mn	55	3	72	10.842	ppb	10.842	3.83	4239	10000	
Fe	56	2	72	61.880	ppb	61.880	3.20	95666	10000	
Co	59	3	72	0.224	ppb	0.224	4.68	282	2000	
Ni	60	3	72	0.381	ppb	0.381	32.74	245	5000	
Cu	63	3	72	0.371	ppb	0.371	14.10	573	5000	
Zn	66	3	72	1.742	ppb	1.742	20.81	478	5000	
As	75	3	72	0.150	ppb	0.150	95.04	45	2000	
Se	78	2	72	0.039	ppb	0.039	55.15	5	2000	
(Se)	78	3	72	0.016	ppb	0.016	11168.28	12	2000	
Sr	88	3	72	10.346	ppb	10.346	4.14	5023	4000	
Mo	95	3	115	-0.003	ppb	-0.003	-506.43	80	2000	
Ag	107	3	115	0.000	ppb	0.000	-368.28	22	100	
Cd	111	3	115	-0.013	ppb	-0.013	-95.50	2	2000	
Sn	120	3	115	-0.818	ppb	-0.818	-2.42	365	2000	
Sb	121	3	115	-0.014	ppb	-0.014	-176.22	68	1000	
Ba	137	3	115	22.025	ppb	22.025	2.73	4977	5000	
Tl	205	3	193	-0.151	ppb	-0.151	-7.67	130	2000	
(Pb)	206	3	193	0.033	ppb	0.033	114.42	253	100	
(Pb)	207	3	193	-0.046	ppb	-0.046	-15.92	378	100	
Pb	208	3	193	0.008	ppb	0.008	45.50	1186	5000	
Th	232	3	193	0.070	ppb	0.070	51.88	4537	2000	
U	238	3	193	0.033	ppb	0.033	57.54	1693	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3766995	1.91	4160703	90.54	60	120	
Sc (IS)	45	3	HMI He	572386	0.31	620569	92.24	60	120	
Ge Internal standard	72	2	HMI H2	2134562	0.58	2172040	98.27	60	120	
Ge Internal standard	72	3	HMI He	669695	1.42	684400	97.85	60	120	
In Internal Standard	115	3	HMI He	2411669	0.64	2522161	95.62	60	120	
Ir (IS)	193	3	HMI He	5390244	0.98	5572879	96.72	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	146_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:41:14-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.487	ppb	5.421	2431	50	101.0	90	110	
Na	23	3	45	50181.443	ppb	0.420	5483971	51000	98.4	90	110	
Mg	24	3	45	10972.168	ppb	4.161	625589	11000	99.7	90	110	
Al	27	3	45	1005.210	ppb	3.260	20345	1000	100.5	90	110	
K	39	3	45	11063.875	ppb	2.023	472011	11000	100.6	90	110	
Ca	40	2	45	11281.045	ppb	0.286	5711727	11000	102.6	90	110	
V	51	3	72	50.809	ppb	1.670	27599	50	101.6	90	110	
Cr	52	3	72	50.897	ppb	0.976	36414	50	101.8	90	110	
Mn	55	3	72	51.457	ppb	3.209	19037	50	102.9	90	110	
Fe	56	2	72	1045.120	ppb	2.118	1418103	1000	104.5	90	110	
Co	59	3	72	50.636	ppb	1.241	56719	50	101.3	90	110	
Ni	60	3	72	50.807	ppb	0.881	15801	50	101.6	90	110	
Cu	63	3	72	51.127	ppb	2.789	43069	50	102.3	90	110	
Zn	66	3	72	51.918	ppb	3.491	7807	50	103.8	90	110	
As	75	3	72	52.187	ppb	3.159	5367	50	104.4	90	110	
Se	78	2	72	52.048	ppb	3.976	2644	50	104.1	90	110	
(Se)	78	3	72	50.848	ppb	15.363	328	50	101.7	90	110	
Sr	88	3	72	107.042	ppb	0.824	50620	100	107.0	90	110	
Mo	95	3	115	49.161	ppb	2.510	23727	50	98.3	90	110	
Ag	107	3	115	49.842	ppb	2.023	78182	50	99.7	90	110	
Cd	111	3	115	48.226	ppb	3.533	11239	50	96.5	90	110	
Sn	120	3	115	50.260	ppb	1.599	35750	50	100.5	90	110	
Sb	121	3	115	50.604	ppb	1.474	35677	50	101.2	90	110	
Ba	137	3	115	50.802	ppb	2.539	11389	50	101.6	90	110	
Tl	205	3	193	50.205	ppb	2.148	176060	50	100.4	90	110	
(Pb)	206	3	193	50.446	ppb	1.934	58423	50	100.9	90	110	
(Pb)	207	3	193	51.097	ppb	0.937	52491	50	102.2	90	110	
Pb	208	3	193	50.951	ppb	0.778	238386	50	101.9	90	110	
Th	232	3	193	50.788	ppb	1.247	248736	50	101.6	90	110	
U	238	3	193	51.568	ppb	0.830	261065	50	103.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3814963	0.70	4160703	91.69	60	120	
Sc (IS)	45	3	HMI He	574058	0.99	620569	92.51	60	120	
Ge Internal standard	72	2	HMI H2	2037690	1.52	2172040	93.81	60	120	
Ge Internal standard	72	3	HMI He	656213	1.17	684400	95.88	60	120	
In Internal Standard	115	3	HMI He	2406779	0.83	2522161	95.43	60	120	
Ir (IS)	193	3	HMI He	5351383	1.46	5572879	96.03	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	147_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:43:05-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	22.945	ppb	15.0	23333	25	
Mg	24	3	45	0.951	ppb	63.8	170	25	
Al	27	3	45	-1.355	ppb	-98.5	80	15	
K	39	3	45	3.232	ppb	605.4	14860	50	
V	51	3	72	-0.270	ppb	-39.2	313	1	
Cr	52	3	72	-0.155	ppb	-141.7	1341	1	
Mn	55	3	72	-0.128	ppb	-6.2	132	0.5	
Co	59	3	72	0.003	ppb	399.4	28	0.5	
Ni	60	3	72	0.129	ppb	46.8	160	1	
Cu	63	3	72	-0.049	ppb	-50.3	207	1	
Zn	66	3	72	-0.041	ppb	-451.7	205	5	
As	75	3	72	0.215	ppb	46.5	50	1	
Se	78	2	72	0.005	ppb	2216.2	3	1	
(Se)	78	3	72	-0.715	ppb	-174.0	7	1	
Sr	88	3	72	0.004	ppb	754.1	37	0.5	
Mo	95	3	115	-0.057	ppb	-57.2	53	0.5	
Ag	107	3	115	0.007	ppb	20.8	33	1	
Cd	111	3	115	-0.020	ppb	0.0	0	0.5	
Sn	120	3	115	-0.392	ppb	-23.9	653	1	
Sb	121	3	115	0.295	ppb	9.0	283	0.6	
Ba	137	3	115	-0.040	ppb	-25.1	42	0.5	
Tl	205	3	193	-0.127	ppb	-5.2	220	0.1	
(Pb)	206	3	193	-0.051	ppb	-33.7	157	1	
(Pb)	207	3	193	-0.112	ppb	-10.3	313	1	
Pb	208	3	193	-0.060	ppb	-6.1	875	0.5	
Th	232	3	193	0.643	ppb	14.0	7387	1	
U	238	3	193	0.027	ppb	43.9	1681	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3744970	0.78	4160703	90.01	60	120	
Sc (IS)	45	3	HMI He	569442	0.25	620569	91.76	60	120	
Ge Internal standard	72	2	HMI H2	2019428	0.72	2172040	92.97	60	120	
Ge Internal standard	72	3	HMI He	646475	0.19	684400	94.46	60	120	
In Internal Standard	115	3	HMI He	2388587	2.06	2522161	94.70	60	120	
Ir (IS)	193	3	HMI He	5442322	1.50	5572879	97.66	60	120	

Blank Report

Sample Table

Sample Name	MB 280-600539/1-A
Data File Name	148_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:45:00-07:00
Sample Type	Blank
Dilution	1
Comment	600539 200.8
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	2.968	ppb	60.1246532	22273	25
Mg	24	3	45	0.805	ppb	76.44203661	170	25
Al	27	3	45	1.783	ppb	47.36853835	150	15
K	39	3	45	-23.545	ppb	-85.5214628	14475	50
V	51	3	72	-0.710	ppb	-3.645990389	88	1
Cr	52	3	72	-0.493	ppb	-16.31562415	1204	1
Mn	55	3	72	0.057	ppb	105.0948376	215	0.5
Co	59	3	72	0.013	ppb	202.6187352	43	0.5
Ni	60	3	72	-0.033	ppb	-122.785112	120	1
Cu	63	3	72	-0.040	ppb	-124.7402567	232	1
Zn	66	3	72	0.715	ppb	23.60212733	340	5
As	75	3	72	-0.128	ppb	-89.6346745	17	1
(Se)	78	3	72	-0.046	ppb	-2495.955712	12	1
Sr	88	3	72	0.018	ppb	191.2115188	47	0.5
Mo	95	3	115	-0.100	ppb	-0.523369032	35	0.5
Ag	107	3	115	-0.002	ppb	-247.4798629	20	1
Cd	111	3	115	-0.020	ppb	-1.62819E-06	0	0.5
Sn	120	3	115	-0.990	ppb	-1.40328232	258	1
Sb	121	3	115	-0.030	ppb	-59.15912982	60	0.6
Ba	137	3	115	0.161	ppb	85.84447224	92	0.5
Tl	205	3	193	-0.140	ppb	-3.938691674	178	0.1
(Pb)	206	3	193	-0.080	ppb	-27.31549852	128	1
(Pb)	207	3	193	-0.105	ppb	-27.86767706	333	1
Pb	208	3	193	-0.084	ppb	-18.86404549	791	0.5
Th	232	3	193	0.081	ppb	39.60945334	4819	1
U	238	3	193	0.009	ppb	254.6534396	1649	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3997185	0.56	4160703	96.07	60	120	
Sc (IS)	45	3	HMI He	598946	0.34	620569	96.52	60	120	
Ge Internal standard	72	2	HMI H2	2215161	0.42	2172040	101.99	60	120	
Ge Internal standard	72	3	HMI He	700118	0.34	684400	102.30	60	120	
In Internal Standard	115	3	HMI He	2537779	0.76	2522161	100.62	60	120	
Ir (IS)	193	3	HMI He	5658391	1.37	5572879	101.53	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-600539/2-A
Data File Name	149_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:46:53-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600539 200.8
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	42.354	42.354	ppb	4.444	2099	40	105.9	80	120	
Na	23	3	45	762.380	762.380	ppb	0.535	108847	40	1905.9	80	120	>+/-20%
Mg	24	3	45	737.809	737.809	ppb	1.742	44146	40	1844.5	80	120	>+/-20%
Al	27	3	45	817.222	817.222	ppb	2.427	17331	40	2043.1	80	120	>+/-20%
K	39	3	45	804.470	804.470	ppb	2.721	50320	40	2011.2	80	120	>+/-20%
Ca	40	2	45	875.669	875.669	ppb	0.656	471051	40	2189.2	80	120	>+/-20%
V	51	3	72	39.923	39.923	ppb	2.149	23224	40	99.8	80	120	
Cr	52	3	72	40.648	40.648	ppb	1.556	31325	40	101.6	80	120	
Mn	55	3	72	41.338	41.338	ppb	3.062	16348	40	103.3	80	120	
Fe	56	2	72	815.647	815.647	ppb	2.325	1209371	40	2039.1	80	120	>+/-20%
(Fe)	56	3	72	812.500	812.500	ppb	1.572	514255	40	2031.2	80	120	>+/-20%
Co	59	3	72	40.497	40.497	ppb	0.727	48373	40	101.2	80	120	
Ni	60	3	72	40.377	40.377	ppb	0.373	13418	40	100.9	80	120	
Cu	63	3	72	41.970	41.970	ppb	0.898	37753	40	104.9	80	120	
Zn	66	3	72	40.945	40.945	ppb	1.780	6615	40	102.4	80	120	
As	75	3	72	39.655	39.655	ppb	4.535	4354	40	99.1	80	120	
Se	78	2	72	41.199	41.199	ppb	4.102	2284	40	103.0	80	120	
(Se)	78	3	72	39.466	39.466	ppb	12.053	275	40	98.7	80	120	
Sr	88	3	72	86.237	86.237	ppb	0.950	43491	40	215.6	80	120	>+/-20%
Mo	95	3	115	39.559	39.559	ppb	1.260	20011	40	98.9	80	120	
Ag	107	3	115	39.994	39.994	ppb	2.178	65699	40	100.0	80	120	
Cd	111	3	115	40.284	40.284	ppb	3.126	9832	40	100.7	80	120	
Sn	120	3	115	39.436	39.436	ppb	3.098	29581	40	98.6	80	120	
Sb	121	3	115	39.347	39.347	ppb	0.355	29072	40	98.4	80	120	
Ba	137	3	115	42.349	42.349	ppb	1.256	9954	40	105.9	80	120	
Tl	205	3	193	41.096	41.096	ppb	0.328	151303	40	102.7	80	120	
(Pb)	206	3	193	42.590	42.590	ppb	0.940	51775	40	106.5	80	120	
(Pb)	207	3	193	41.247	41.247	ppb	2.504	44523	40	103.1	80	120	
Pb	208	3	193	42.077	42.077	ppb	1.650	206697	40	105.2	80	120	
Th	232	3	193	39.833	39.833	ppb	1.669	205570	40	99.6	80	120	
U	238	3	193	41.918	41.918	ppb	1.953	222903	40	104.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3963587	1.87	4160703	95.26	60	120	
Sc (IS)	45	3	HMI He	600690	0.36	620569	96.80	60	120	
Ge Internal standard	72	2	HMI H2	2222459	1.33	2172040	102.32	60	120	
Ge Internal standard	72	3	HMI He	699769	1.44	684400	102.25	60	120	
In Internal Standard	115	3	HMI He	2520513	1.17	2522161	99.93	60	120	
Ir (IS)	193	3	HMI He	5613749	1.74	5572879	100.73	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCSD 280-600539/3-A
Data File Name	150_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:48:47-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600539 200.8
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.680	41.680	ppb	4.863	2037	40	104.2	80	120	
Na	23	3	45	747.907	747.907	ppb	1.298	108188	40	1869.8	80	120	>+/-20%
Mg	24	3	45	719.008	719.008	ppb	1.383	43420	40	1797.5	80	120	>+/-20%
Al	27	3	45	811.029	811.029	ppb	0.752	17361	40	2027.6	80	120	>+/-20%
K	39	3	45	777.173	777.173	ppb	3.069	49597	40	1942.9	80	120	>+/-20%
Ca	40	2	45	862.185	862.185	ppb	0.058	460541	40	2155.5	80	120	>+/-20%
V	51	3	72	40.182	40.182	ppb	1.455	23290	40	100.5	80	120	
Cr	52	3	72	40.301	40.301	ppb	2.189	30964	40	100.8	80	120	
Mn	55	3	72	41.595	41.595	ppb	1.181	16390	40	104.0	80	120	
Fe	56	2	72	819.795	819.795	ppb	2.136	1168646	40	2049.5	80	120	>+/-20%
(Fe)	56	3	72	808.467	808.467	ppb	0.281	509935	40	2021.2	80	120	>+/-20%
Co	59	3	72	40.382	40.382	ppb	0.799	48066	40	101.0	80	120	
Ni	60	3	72	40.006	40.006	ppb	1.005	13248	40	100.0	80	120	
Cu	63	3	72	41.433	41.433	ppb	2.188	37143	40	103.6	80	120	
Zn	66	3	72	41.662	41.662	ppb	0.980	6702	40	104.2	80	120	
As	75	3	72	39.284	39.284	ppb	3.643	4299	40	98.2	80	120	
Se	78	2	72	42.611	42.611	ppb	9.041	2268	40	106.5	80	120	
(Se)	78	3	72	44.935	44.935	ppb	1.838	310	40	112.3	80	120	
Sr	88	3	72	86.244	86.244	ppb	1.741	43341	40	215.6	80	120	>+/-20%
Mo	95	3	115	37.977	37.977	ppb	1.757	19152	40	94.9	80	120	
Ag	107	3	115	40.228	40.228	ppb	1.822	65864	40	100.6	80	120	
Cd	111	3	115	39.973	39.973	ppb	3.732	9727	40	99.9	80	120	
Sn	120	3	115	38.954	38.954	ppb	1.781	29144	40	97.4	80	120	
Sb	121	3	115	39.106	39.106	ppb	1.143	28798	40	97.8	80	120	
Ba	137	3	115	42.167	42.167	ppb	2.662	9877	40	105.4	80	120	
Tl	205	3	193	40.862	40.862	ppb	1.130	150266	40	102.2	80	120	
(Pb)	206	3	193	42.050	42.050	ppb	1.284	51062	40	105.1	80	120	
(Pb)	207	3	193	41.406	41.406	ppb	2.498	44645	40	103.5	80	120	
Pb	208	3	193	41.767	41.767	ppb	1.881	204957	40	104.4	80	120	
Th	232	3	193	40.852	40.852	ppb	0.588	210514	40	102.1	80	120	
U	238	3	193	41.506	41.506	ppb	1.736	220483	40	103.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3934089	1.94	4160703	94.55	60	120	
Sc (IS)	45	3	HMI He	606248	0.56	620569	97.69	60	120	
Ge Internal standard	72	2	HMI H2	2137987	3.34	2172040	98.43	60	120	
Ge Internal standard	72	3	HMI He	697214	0.60	684400	101.87	60	120	
In Internal Standard	115	3	HMI He	2512214	1.05	2522161	99.61	60	120	
Ir (IS)	193	3	HMI He	5607507	1.53	5572879	100.62	60	120	

Sample Report

Sample Table

Sample Name	280-171662-A-1-A
Data File Name	151SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:50:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.61	3	2000	
Na	23	3	45	146576.756	ppb	146576.756	0.77	16668699	400000	
Mg	24	3	45	23871.272	ppb	23871.272	0.48	1420152	400000	
Al	27	3	45	28.933	ppb	28.933	7.29	721	400000	
K	39	3	45	5755.530	ppb	5755.530	1.63	263607	400000	
Ca	40	2	45	255575.211	ppb	255575.211	2.20	132019940	400000	
V	51	3	72	-0.489	ppb	-0.489	-6.41	212	2000	
Cr	52	3	72	0.062	ppb	0.062	45.87	1591	5000	
Mn	55	3	72	212.870	ppb	212.870	1.03	82368	10000	
Fe	56	2	72	58.717	ppb	58.717	1.63	94249	10000	
Co	59	3	72	13.109	ppb	13.109	1.74	15488	2000	
Ni	60	3	72	12.266	ppb	12.266	4.65	4115	5000	
Cu	63	3	72	0.139	ppb	0.139	26.35	386	5000	
Zn	66	3	72	14.502	ppb	14.502	5.26	2461	5000	
As	75	3	72	0.616	ppb	0.616	38.24	97	2000	
Se	78	2	72	88.726	ppb	88.726	2.03	4877	2000	
(Se)	78	3	72	86.924	ppb	86.924	12.45	583	2000	
Sr	88	3	72	5019.946	ppb	5019.946	0.96	2498566	4000	
Mo	95	3	115	7779.515	ppb	7779.515	1.66	3851609	2000	
Ag	107	3	115	0.002	ppb	0.002	93.70	27	100	
Cd	111	3	115	0.820	ppb	0.820	22.65	202	2000	
Sn	120	3	115	-0.833	ppb	-0.833	-7.48	363	2000	
Sb	121	3	115	0.244	ppb	0.244	27.49	257	1000	
Ba	137	3	115	30.348	ppb	30.348	4.50	7020	5000	
Tl	205	3	193	-0.126	ppb	-0.126	-8.31	222	2000	
(Pb)	206	3	193	-0.101	ppb	-0.101	-12.50	98	100	
(Pb)	207	3	193	-0.130	ppb	-0.130	-14.30	297	100	
Pb	208	3	193	-0.102	ppb	-0.102	-12.21	678	5000	
Th	232	3	193	1.788	ppb	1.788	19.38	13097	2000	
U	238	3	193	92.197	ppb	92.197	2.99	476478	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3899402	1.01	4160703	93.72	60	120	
Sc (IS)	45	3	HMI He	598878	1.00	620569	96.50	60	120	
Ge Internal standard	72	2	HMI H2	2206070	1.14	2172040	101.57	60	120	
Ge Internal standard	72	3	HMI He	691233	1.38	684400	101.00	60	120	
In Internal Standard	115	3	HMI He	2477262	2.38	2522161	98.22	60	120	
Ir (IS)	193	3	HMI He	5478913	2.46	5572879	98.31	60	120	

Sample Report

Sample Table

Sample Name	280-171662-A-2-A
Data File Name	152SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:52:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.172	ppb	0.172	69.85	8	2000	
Na	23	3	45	144187.194	ppb	144187.194	1.49	16435160	400000	
Mg	24	3	45	23278.424	ppb	23278.424	0.96	1388055	400000	
Al	27	3	45	28.992	ppb	28.992	24.30	724	400000	
K	39	3	45	5665.171	ppb	5665.171	1.38	260335	400000	
Ca	40	2	45	253974.636	ppb	253974.636	2.04	129036231	400000	
V	51	3	72	-0.496	ppb	-0.496	-21.14	208	2000	
Cr	52	3	72	0.086	ppb	0.086	129.91	1613	5000	
Mn	55	3	72	207.709	ppb	207.709	1.41	80579	10000	
Fe	56	2	72	58.438	ppb	58.438	1.21	91391	10000	
Co	59	3	72	12.616	ppb	12.616	2.31	14941	2000	
Ni	60	3	72	12.018	ppb	12.018	6.64	4045	5000	
Cu	63	3	72	0.243	ppb	0.243	29.91	480	5000	
Zn	66	3	72	13.595	ppb	13.595	1.31	2326	5000	
As	75	3	72	0.707	ppb	0.707	21.85	107	2000	
Se	78	2	72	88.330	ppb	88.330	1.83	4728	2000	
(Se)	78	3	72	86.195	ppb	86.195	8.82	580	2000	
Sr	88	3	72	5021.731	ppb	5021.731	0.72	2505869	4000	
Mo	95	3	115	5184.619	ppb	5184.619	1.87	2584099	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-161.36	20	100	
Cd	111	3	115	0.470	ppb	0.470	6.51	118	2000	
Sn	120	3	115	-1.056	ppb	-1.056	-3.27	207	2000	
Sb	121	3	115	0.058	ppb	0.058	87.61	123	1000	
Ba	137	3	115	31.213	ppb	31.213	1.63	7272	5000	
Tl	205	3	193	-0.126	ppb	-0.126	-6.25	222	2000	
(Pb)	206	3	193	-0.064	ppb	-0.064	-54.97	142	100	
(Pb)	207	3	193	-0.102	ppb	-0.102	-22.53	325	100	
Pb	208	3	193	-0.092	ppb	-0.092	-3.38	728	5000	
Th	232	3	193	0.492	ppb	0.492	17.56	6673	2000	
U	238	3	193	105.890	ppb	105.890	1.69	545335	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3835835	1.22	4160703	92.19	60	120	
Sc (IS)	45	3	HMI He	600286	0.89	620569	96.73	60	120	
Ge Internal standard	72	2	HMI H2	2148181	1.47	2172040	98.90	60	120	
Ge Internal standard	72	3	HMI He	692935	0.53	684400	101.25	60	120	
In Internal Standard	115	3	HMI He	2493854	0.48	2522161	98.88	60	120	
Ir (IS)	193	3	HMI He	5460801	1.91	5572879	97.99	60	120	

Sample Report

Sample Table

Sample Name	280-171662-A-3-A
Data File Name	153SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:54:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	145471.783	ppb	145471.783	1.25	16952587	400000	
Mg	24	3	45	24290.255	ppb	24290.255	0.61	1480793	400000	
Al	27	3	45	25.477	ppb	25.477	9.77	664	400000	
K	39	3	45	5739.074	ppb	5739.074	1.49	269408	400000	
Ca	40	2	45	253160.371	ppb	253160.371	4.26	133001358	400000	
V	51	3	72	-0.808	ppb	-0.808	-3.10	33	2000	
Cr	52	3	72	-0.343	ppb	-0.343	-53.90	1338	5000	
Mn	55	3	72	210.080	ppb	210.080	1.47	83846	10000	
Fe	56	2	72	52.858	ppb	52.858	1.87	86404	10000	
Co	59	3	72	12.625	ppb	12.625	2.81	15381	2000	
Ni	60	3	72	11.507	ppb	11.507	7.11	3989	5000	
Cu	63	3	72	0.224	ppb	0.224	44.26	476	5000	
Zn	66	3	72	17.025	ppb	17.025	7.99	2936	5000	
As	75	3	72	0.574	ppb	0.574	34.97	95	2000	
Se	78	2	72	86.979	ppb	86.979	1.51	4821	2000	
(Se)	78	3	72	91.725	ppb	91.725	7.87	635	2000	
Sr	88	3	72	5056.251	ppb	5056.251	2.38	2595364	4000	
Mo	95	3	115	179.569	ppb	179.569	1.13	90675	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-1.53	15	100	
Cd	111	3	115	0.021	ppb	0.021	99.65	10	2000	
Sn	120	3	115	-0.908	ppb	-0.908	-5.92	317	2000	
Sb	121	3	115	0.086	ppb	0.086	27.69	145	1000	
Ba	137	3	115	30.243	ppb	30.243	3.50	7133	5000	
Tl	205	3	193	-0.146	ppb	-0.146	-4.32	153	2000	
(Pb)	206	3	193	-0.059	ppb	-0.059	-62.53	152	100	
(Pb)	207	3	193	-0.096	ppb	-0.096	-86.47	338	100	
Pb	208	3	193	-0.078	ppb	-0.078	-20.38	813	5000	
Th	232	3	193	0.204	ppb	0.204	32.96	5374	2000	
U	238	3	193	101.639	ppb	101.639	1.23	534940	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3967527	1.59	4160703	95.36	60	120	
Sc (IS)	45	3	HMI He	613690	0.24	620569	98.89	60	120	
Ge Internal standard	72	2	HMI H2	2224413	0.94	2172040	102.41	60	120	
Ge Internal standard	72	3	HMI He	713001	1.88	684400	104.18	60	120	
In Internal Standard	115	3	HMI He	2524232	0.87	2522161	100.08	60	120	
Ir (IS)	193	3	HMI He	5579227	1.53	5572879	100.11	60	120	

Sample Report

Sample Table

Sample Name	280-171662-A-4-A
Data File Name	154SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:56:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	147410.518	ppb	147410.518	1.14	17359928	400000	
Mg	24	3	45	24125.004	ppb	24125.004	0.60	1486480	400000	
Al	27	3	45	22.397	ppb	22.397	10.52	604	400000	
K	39	3	45	5795.684	ppb	5795.684	0.82	274800	400000	
Ca	40	2	45	262437.358	ppb	262437.358	0.78	135291478	400000	
V	51	3	72	-0.794	ppb	-0.794	-3.52	42	2000	
Cr	52	3	72	-0.230	ppb	-0.230	-48.80	1429	5000	
Mn	55	3	72	213.067	ppb	213.067	1.78	85405	10000	
Fe	56	2	72	50.075	ppb	50.075	1.28	81849	10000	
Co	59	3	72	12.871	ppb	12.871	0.96	15754	2000	
Ni	60	3	72	12.274	ppb	12.274	2.43	4267	5000	
Cu	63	3	72	0.138	ppb	0.138	27.05	400	5000	
Zn	66	3	72	14.750	ppb	14.750	4.42	2587	5000	
As	75	3	72	0.285	ppb	0.285	45.23	63	2000	
Se	78	2	72	90.723	ppb	90.723	1.56	5001	2000	
(Se)	78	3	72	80.446	ppb	80.446	19.53	560	2000	
Sr	88	3	72	5059.974	ppb	5059.974	0.79	2609399	4000	
Mo	95	3	115	151.130	ppb	151.130	1.79	77356	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-486.03	20	100	
Cd	111	3	115	0.020	ppb	0.020	101.25	10	2000	
Sn	120	3	115	-0.998	ppb	-0.998	-6.53	255	2000	
Sb	121	3	115	0.045	ppb	0.045	103.32	117	1000	
Ba	137	3	115	30.649	ppb	30.649	0.48	7327	5000	
Tl	205	3	193	-0.141	ppb	-0.141	-5.05	173	2000	
(Pb)	206	3	193	-0.084	ppb	-0.084	-15.98	122	100	
(Pb)	207	3	193	-0.108	ppb	-0.108	-36.48	325	100	
Pb	208	3	193	-0.101	ppb	-0.101	-8.02	698	5000	
Th	232	3	193	0.130	ppb	0.130	24.09	5002	2000	
U	238	3	193	80.841	ppb	80.841	1.24	426109	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891683	1.01	4160703	93.53	60	120	
Sc (IS)	45	3	HMI He	620244	1.45	620569	99.95	60	120	
Ge Internal standard	72	2	HMI H2	2212012	0.96	2172040	101.84	60	120	
Ge Internal standard	72	3	HMI He	716073	1.39	684400	104.63	60	120	
In Internal Standard	115	3	HMI He	2558416	1.07	2522161	101.44	60	120	
Ir (IS)	193	3	HMI He	5583093	0.90	5572879	100.18	60	120	

Sample Report

Sample Table

Sample Name	280-171681-A-1-A
Data File Name	155SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T00:58:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3918.436	ppb	3918.436	2.51	481209	400000	
Mg	24	3	45	2265.948	ppb	2265.948	2.11	139045	400000	
Al	27	3	45	29.621	ppb	29.621	5.92	757	400000	
K	39	3	45	642.330	ppb	642.330	3.61	44512	400000	
Ca	40	2	45	7841.731	ppb	7841.731	1.89	4194811	400000	
V	51	3	72	-0.352	ppb	-0.352	-18.38	295	2000	
Cr	52	3	72	-0.281	ppb	-0.281	-68.95	1373	5000	
Mn	55	3	72	4.262	ppb	4.262	5.12	1879	10000	
Fe	56	2	72	61.398	ppb	61.398	1.52	98143	10000	
Co	59	3	72	0.014	ppb	0.014	95.82	45	2000	
Ni	60	3	72	0.089	ppb	0.089	56.23	162	5000	
Cu	63	3	72	1.081	ppb	1.081	8.78	1246	5000	
Zn	66	3	72	4.485	ppb	4.485	5.87	938	5000	
As	75	3	72	-0.025	ppb	-0.025	-265.90	28	2000	
Se	78	2	72	-0.001	ppb	-0.001	-2227.53	3	2000	
(Se)	78	3	72	0.432	ppb	0.432	177.04	15	2000	
Sr	88	3	72	87.861	ppb	87.861	1.82	44788	4000	
Mo	95	3	115	1.009	ppb	1.009	21.30	606	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-79.79	17	100	
Cd	111	3	115	0.007	ppb	0.007	179.78	7	2000	
Sn	120	3	115	-0.841	ppb	-0.841	-10.86	373	2000	
Sb	121	3	115	-0.044	ppb	-0.044	-26.11	50	1000	
Ba	137	3	115	11.025	ppb	11.025	5.33	2689	5000	
Tl	205	3	193	-0.144	ppb	-0.144	-8.90	162	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-120.93	193	100	
(Pb)	207	3	193	-0.146	ppb	-0.146	-25.80	288	100	
Pb	208	3	193	-0.061	ppb	-0.061	-36.78	903	5000	
Th	232	3	193	0.052	ppb	0.052	140.08	4655	2000	
U	238	3	193	0.090	ppb	0.090	14.99	2074	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4028243	2.33	4160703	96.82	60	120	
Sc (IS)	45	3	HMI He	617378	2.31	620569	99.49	60	120	
Ge Internal standard	72	2	HMI H2	2205519	1.01	2172040	101.54	60	120	
Ge Internal standard	72	3	HMI He	707417	1.56	684400	103.36	60	120	
In Internal Standard	115	3	HMI He	2576189	0.67	2522161	102.14	60	120	
Ir (IS)	193	3	HMI He	5643093	2.05	5572879	101.26	60	120	

Sample Report

Sample Table

Sample Name	280-171681-A-2-A
Data File Name	156SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:00:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	6884.563	ppb	6884.563	0.84	814307	400000	
Mg	24	3	45	5753.749	ppb	5753.749	0.50	346844	400000	
Al	27	3	45	9.690	ppb	9.690	35.05	320	400000	
K	39	3	45	1634.652	ppb	1634.652	1.79	87082	400000	
Ca	40	2	45	22190.647	ppb	22190.647	1.52	11820239	400000	
V	51	3	72	-0.703	ppb	-0.703	-8.13	93	2000	
Cr	52	3	72	-0.280	ppb	-0.280	-45.53	1373	5000	
Mn	55	3	72	67.538	ppb	67.538	1.04	26824	10000	
Fe	56	2	72	164.374	ppb	164.374	1.32	249044	10000	
Co	59	3	72	0.185	ppb	0.185	8.20	250	2000	
Ni	60	3	72	1.464	ppb	1.464	2.25	618	5000	
Cu	63	3	72	2.729	ppb	2.729	5.38	2729	5000	
Zn	66	3	72	54.257	ppb	54.257	4.13	8767	5000	
As	75	3	72	-0.069	ppb	-0.069	-162.28	23	2000	
Se	78	2	72	0.048	ppb	0.048	275.75	6	2000	
(Se)	78	3	72	0.922	ppb	0.922	185.22	18	2000	
Sr	88	3	72	193.929	ppb	193.929	0.58	98624	4000	
Mo	95	3	115	0.483	ppb	0.483	22.33	333	2000	
Ag	107	3	115	0.004	ppb	0.004	138.53	30	100	
Cd	111	3	115	0.108	ppb	0.108	43.58	32	2000	
Sn	120	3	115	-1.014	ppb	-1.014	-5.27	242	2000	
Sb	121	3	115	0.034	ppb	0.034	23.76	108	1000	
Ba	137	3	115	21.303	ppb	21.303	1.55	5095	5000	
Tl	205	3	193	-0.139	ppb	-0.139	-4.96	177	2000	
(Pb)	206	3	193	0.328	ppb	0.328	14.36	610	100	
(Pb)	207	3	193	0.332	ppb	0.332	19.81	783	100	
Pb	208	3	193	0.311	ppb	0.311	4.97	2667	5000	
Th	232	3	193	0.095	ppb	0.095	41.50	4764	2000	
U	238	3	193	0.394	ppb	0.394	1.31	3604	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4016915	1.49	4160703	96.54	60	120	
Sc (IS)	45	3	HMI He	606672	0.91	620569	97.76	60	120	
Ge Internal standard	72	2	HMI H2	2209851	1.43	2172040	101.74	60	120	
Ge Internal standard	72	3	HMI He	705981	1.00	684400	103.15	60	120	
In Internal Standard	115	3	HMI He	2551575	1.57	2522161	101.17	60	120	
Ir (IS)	193	3	HMI He	5513825	0.77	5572879	98.94	60	120	

Sample Report

Sample Table

Sample Name	280-171687-A-1-A
Data File Name	157SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:01:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	18205.540	ppb	18205.540	0.32	2131084	400000	
Mg	24	3	45	22718.997	ppb	22718.997	1.32	1378447	400000	
Al	27	3	45	15.983	ppb	15.983	18.41	457	400000	
K	39	3	45	9958.240	ppb	9958.240	1.24	453621	400000	
Ca	40	2	45	119697.693	ppb	119697.693	0.48	62222514	400000	
V	51	3	72	-0.588	ppb	-0.588	-9.28	160	2000	
Cr	52	3	72	-0.359	ppb	-0.359	-23.90	1318	5000	
Mn	55	3	72	3977.271	ppb	3977.271	1.08	1573229	10000	
Fe	56	2	72	10007.213	ppb	10007.213	1.04	14690026	10000	
Co	59	3	72	1.111	ppb	1.111	3.58	1369	2000	
Ni	60	3	72	0.353	ppb	0.353	22.79	250	5000	
Cu	63	3	72	2.770	ppb	2.770	3.56	2774	5000	
Zn	66	3	72	25.804	ppb	25.804	5.41	4304	5000	
As	75	3	72	1.454	ppb	1.454	19.22	192	2000	
Se	78	2	72	0.168	ppb	0.168	15.41	13	2000	
(Se)	78	3	72	0.429	ppb	0.429	175.75	15	2000	
Sr	88	3	72	648.052	ppb	648.052	0.95	330498	4000	
Mo	95	3	115	2.399	ppb	2.399	5.69	1301	2000	
Ag	107	3	115	0.035	ppb	0.035	26.54	82	100	
Cd	111	3	115	0.014	ppb	0.014	169.65	8	2000	
Sn	120	3	115	-0.929	ppb	-0.929	-8.02	303	2000	
Sb	121	3	115	0.015	ppb	0.015	144.09	93	1000	
Ba	137	3	115	18.596	ppb	18.596	1.14	4427	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-5.57	140	2000	
(Pb)	206	3	193	2.476	ppb	2.476	4.56	3207	100	
(Pb)	207	3	193	2.364	ppb	2.364	1.44	2957	100	
Pb	208	3	193	2.437	ppb	2.437	1.10	13045	5000	
Th	232	3	193	0.157	ppb	0.157	3.97	5142	2000	
U	238	3	193	1.682	ppb	1.682	1.20	10424	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3923669	0.59	4160703	94.30	60	120	
Sc (IS)	45	3	HMI He	610776	0.72	620569	98.42	60	120	
Ge Internal standard	72	2	HMI H2	2215276	2.12	2172040	101.99	60	120	
Ge Internal standard	72	3	HMI He	708122	0.52	684400	103.47	60	120	
In Internal Standard	115	3	HMI He	2535532	1.13	2522161	100.53	60	120	
Ir (IS)	193	3	HMI He	5589679	0.51	5572879	100.30	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	158_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:03:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.650	ppb	6.919	2339	50	97.3	90	110	
Na	23	3	45	49460.569	ppb	1.535	5481429	51000	97.0	90	110	
Mg	24	3	45	10673.696	ppb	1.674	617271	11000	97.0	90	110	
Al	27	3	45	1033.585	ppb	4.852	21214	1000	103.4	90	110	
K	39	3	45	11104.504	ppb	0.775	480431	11000	101.0	90	110	
Ca	40	2	45	11446.320	ppb	0.786	5780040	11000	104.1	90	110	
V	51	3	72	51.035	ppb	0.573	28054	50	102.1	90	110	
Cr	52	3	72	50.742	ppb	2.176	36750	50	101.5	90	110	
Mn	55	3	72	51.202	ppb	3.366	19175	50	102.4	90	110	
Fe	56	2	72	1029.268	ppb	0.302	1399910	1000	102.9	90	110	
Co	59	3	72	49.780	ppb	1.200	56436	50	99.6	90	110	
Ni	60	3	72	50.573	ppb	2.155	15921	50	101.1	90	110	
Cu	63	3	72	50.593	ppb	1.368	43149	50	101.2	90	110	
Zn	66	3	72	51.044	ppb	1.852	7773	50	102.1	90	110	
As	75	3	72	51.055	ppb	3.202	5313	50	102.1	90	110	
Se	78	2	72	50.477	ppb	3.189	2570	50	101.0	90	110	
(Se)	78	3	72	54.369	ppb	8.844	355	50	108.7	90	110	
Sr	88	3	72	106.504	ppb	1.739	50973	100	106.5	90	110	
Mo	95	3	115	50.084	ppb	2.251	24291	50	100.2	90	110	
Ag	107	3	115	49.347	ppb	2.531	77783	50	98.7	90	110	
Cd	111	3	115	49.306	ppb	5.050	11548	50	98.6	90	110	
Sn	120	3	115	49.326	ppb	2.842	35276	50	98.7	90	110	
Sb	121	3	115	50.790	ppb	0.802	35987	50	101.6	90	110	
Ba	137	3	115	50.879	ppb	1.858	11464	50	101.8	90	110	
Tl	205	3	193	50.047	ppb	2.156	176636	50	100.1	90	110	
(Pb)	206	3	193	50.418	ppb	3.106	58772	50	100.8	90	110	
(Pb)	207	3	193	50.897	ppb	3.102	52616	50	101.8	90	110	
Pb	208	3	193	50.517	ppb	2.651	237891	50	101.0	90	110	
Th	232	3	193	50.548	ppb	1.712	249202	50	101.1	90	110	
U	238	3	193	50.789	ppb	2.172	258812	50	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3805077	0.62	4160703	91.45	60	120	
Sc (IS)	45	3	HMI He	582161	0.83	620569	93.81	60	120	
Ge Internal standard	72	2	HMI H2	2041954	0.47	2172040	94.01	60	120	
Ge Internal standard	72	3	HMI He	664216	0.76	684400	97.05	60	120	
In Internal Standard	115	3	HMI He	2418701	0.65	2522161	95.90	60	120	
Ir (IS)	193	3	HMI He	5386272	1.17	5572879	96.65	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	159_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:05:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.035	ppb	173.2	2	0.5	
Na	23	3	45	40.887	ppb	13.1	25732	25	>RL
Mg	24	3	45	1.361	ppb	18.9	197	25	
Al	27	3	45	-0.937	ppb	-1.6	90	15	
K	39	3	45	15.784	ppb	152.9	15655	50	
V	51	3	72	-0.426	ppb	-10.4	237	1	
Cr	52	3	72	-0.297	ppb	-23.5	1276	1	
Mn	55	3	72	0.052	ppb	67.9	202	0.5	
Co	59	3	72	0.008	ppb	163.3	35	0.5	
Ni	60	3	72	0.046	ppb	226.9	138	1	
Cu	63	3	72	-0.006	ppb	-553.4	248	1	
Zn	66	3	72	-0.222	ppb	-146.6	183	5	
As	75	3	72	0.220	ppb	46.5	52	1	
Se	78	2	72	0.017	ppb	231.0	4	1	
(Se)	78	3	72	-0.743	ppb	-123.3	7	1	
Sr	88	3	72	0.139	ppb	19.3	102	0.5	
Mo	95	3	115	0.228	ppb	11.1	192	0.5	
Ag	107	3	115	0.022	ppb	44.9	57	1	
Cd	111	3	115	-0.006	ppb	-206.6	3	0.5	
Sn	120	3	115	-0.374	ppb	-17.9	673	1	
Sb	121	3	115	0.246	ppb	14.8	252	0.6	
Ba	137	3	115	0.033	ppb	77.3	58	0.5	
Tl	205	3	193	-0.124	ppb	-8.3	228	0.1	
(Pb)	206	3	193	-0.056	ppb	-55.4	150	1	
(Pb)	207	3	193	-0.122	ppb	-15.3	302	1	
Pb	208	3	193	-0.067	ppb	-5.1	841	0.5	
Th	232	3	193	0.592	ppb	28.3	7114	1	
U	238	3	193	0.008	ppb	97.8	1578	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3821679	0.11	4160703	91.85	60	120	
Sc (IS)	45	3	HMI He	579879	0.35	620569	93.44	60	120	
Ge Internal standard	72	2	HMI H2	2042540	2.17	2172040	94.04	60	120	
Ge Internal standard	72	3	HMI He	662411	0.30	684400	96.79	60	120	
In Internal Standard	115	3	HMI He	2411322	0.40	2522161	95.61	60	120	
Ir (IS)	193	3	HMI He	5425014	1.15	5572879	97.35	60	120	

Sample Report

Sample Table

Sample Name	280-171645-E-1-A
Data File Name	160SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:07:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.136	ppb	0.136	114.98	7	2000	
Na	23	3	45	1919.804	ppb	1919.804	2.23	244107	400000	
Mg	24	3	45	32635.258	ppb	32635.258	1.33	1974956	400000	
Al	27	3	45	1.645	ppb	1.645	168.87	150	400000	
K	39	3	45	808.288	ppb	808.288	4.32	51205	400000	
Ca	40	2	45	43469.749	ppb	43469.749	2.16	22916701	400000	
V	51	3	72	-0.788	ppb	-0.788	-5.53	45	2000	
Cr	52	3	72	-0.395	ppb	-0.395	-24.27	1309	5000	
Mn	55	3	72	11.508	ppb	11.508	4.82	4815	10000	
Fe	56	2	72	106.171	ppb	106.171	0.45	164000	10000	
Co	59	3	72	0.052	ppb	0.052	41.44	92	2000	
Ni	60	3	72	0.845	ppb	0.845	13.98	420	5000	
Cu	63	3	72	0.070	ppb	0.070	80.46	340	5000	
Zn	66	3	72	103.585	ppb	103.585	2.98	16827	5000	
As	75	3	72	0.222	ppb	0.222	74.26	57	2000	
Se	78	2	72	0.724	ppb	0.724	20.93	43	2000	
(Se)	78	3	72	1.138	ppb	1.138	71.00	20	2000	
Sr	88	3	72	354.997	ppb	354.997	2.13	183775	4000	
Mo	95	3	115	3.490	ppb	3.490	2.52	1879	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-99.35	15	100	
Cd	111	3	115	0.060	ppb	0.060	144.56	20	2000	
Sn	120	3	115	-0.970	ppb	-0.970	-5.70	277	2000	
Sb	121	3	115	0.706	ppb	0.706	16.03	613	1000	
Ba	137	3	115	53.571	ppb	53.571	1.78	12822	5000	
Tl	205	3	193	-0.142	ppb	-0.142	-4.72	172	2000	
(Pb)	206	3	193	0.048	ppb	0.048	30.72	283	100	
(Pb)	207	3	193	-0.003	ppb	-0.003	-778.10	441	100	
Pb	208	3	193	0.040	ppb	0.040	23.81	1396	5000	
Th	232	3	193	0.055	ppb	0.055	36.03	4672	2000	
U	238	3	193	24.664	ppb	24.664	2.85	132329	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3978929	2.86	4160703	95.63	60	120	
Sc (IS)	45	3	HMI He	609258	0.87	620569	98.18	60	120	
Ge Internal standard	72	2	HMI H2	2211414	1.96	2172040	101.81	60	120	
Ge Internal standard	72	3	HMI He	718967	2.75	684400	105.05	60	120	
In Internal Standard	115	3	HMI He	2569530	1.75	2522161	101.88	60	120	
Ir (IS)	193	3	HMI He	5636768	1.52	5572879	101.15	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-1-A
Data File Name	161SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:09:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.71	3	2000	
Na	23	3	45	161414.255	ppb	161414.255	1.34	18837632	400000	
Mg	24	3	45	23888.599	ppb	23888.599	1.12	1458734	400000	
Al	27	3	45	261.883	ppb	261.883	2.02	5764	400000	
K	39	3	45	9665.491	ppb	9665.491	1.85	443539	400000	
Ca	40	2	45	119905.410	ppb	119905.410	0.94	63056596	400000	
V	51	3	72	1.727	ppb	1.727	5.79	1511	2000	
Cr	52	3	72	-0.077	ppb	-0.077	-17.48	1544	5000	
Mn	55	3	72	274.376	ppb	274.376	1.18	109979	10000	
Fe	56	2	72	325.200	ppb	325.200	2.02	488287	10000	
Co	59	3	72	0.491	ppb	0.491	10.69	628	2000	
Ni	60	3	72	2.782	ppb	2.782	4.32	1071	5000	
Cu	63	3	72	1.143	ppb	1.143	7.67	1319	5000	
Zn	66	3	72	3.314	ppb	3.314	11.89	763	5000	
As	75	3	72	1.644	ppb	1.644	15.53	215	2000	
Se	78	2	72	1.296	ppb	1.296	8.77	75	2000	
(Se)	78	3	72	3.088	ppb	3.088	59.45	33	2000	
Sr	88	3	72	1334.931	ppb	1334.931	0.20	688678	4000	
Mo	95	3	115	2.672	ppb	2.672	8.56	1463	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-349.24	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-169.85	3	2000	
Sn	120	3	115	-0.928	ppb	-0.928	-4.46	308	2000	
Sb	121	3	115	0.230	ppb	0.230	14.61	257	1000	
Ba	137	3	115	143.670	ppb	143.670	1.30	34374	5000	
Tl	205	3	193	-0.139	ppb	-0.139	-10.66	180	2000	
(Pb)	206	3	193	0.362	ppb	0.362	13.39	663	100	
(Pb)	207	3	193	0.276	ppb	0.276	26.74	740	100	
Pb	208	3	193	0.313	ppb	0.313	1.96	2732	5000	
Th	232	3	193	0.162	ppb	0.162	18.43	5200	2000	
U	238	3	193	23.532	ppb	23.532	0.56	126161	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3969107	1.12	4160703	95.40	60	120	
Sc (IS)	45	3	HMI He	614721	1.62	620569	99.06	60	120	
Ge Internal standard	72	2	HMI H2	2227562	1.10	2172040	102.56	60	120	
Ge Internal standard	72	3	HMI He	716367	0.33	684400	104.67	60	120	
In Internal Standard	115	3	HMI He	2575753	0.67	2522161	102.12	60	120	
Ir (IS)	193	3	HMI He	5627794	1.14	5572879	100.99	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-1-B MS
Data File Name	162SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:11:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.511	ppb	41.511	2.66	2049	2000	
Na	23	3	45	163165.469	ppb	163165.469	0.87	18946498	400000	
Mg	24	3	45	24592.458	ppb	24592.458	0.75	1494023	400000	
Al	27	3	45	1086.080	ppb	1086.080	0.70	23416	400000	
K	39	3	45	10403.058	ppb	10403.058	0.61	473825	400000	
Ca	40	2	45	119745.843	ppb	119745.843	1.47	64202300	400000	
V	51	3	72	43.344	ppb	43.344	1.97	25601	2000	
Cr	52	3	72	40.352	ppb	40.352	1.06	31637	5000	
Mn	55	3	72	316.960	ppb	316.960	0.89	126167	10000	
Fe	56	2	72	1052.803	ppb	1052.803	2.78	1591021	10000	
Co	59	3	72	40.604	ppb	40.604	2.04	49323	2000	
Ni	60	3	72	42.690	ppb	42.690	1.80	14417	5000	
Cu	63	3	72	41.987	ppb	41.987	2.76	38399	5000	
Zn	66	3	72	43.730	ppb	43.730	2.47	7168	5000	
As	75	3	72	43.160	ppb	43.160	2.14	4817	2000	
Se	78	2	72	41.471	ppb	41.471	3.35	2348	2000	
(Se)	78	3	72	38.365	ppb	38.365	9.71	272	2000	
Sr	88	3	72	1415.547	ppb	1415.547	2.23	725288	4000	
Mo	95	3	115	40.928	ppb	40.928	1.87	21331	2000	
Ag	107	3	115	38.464	ppb	38.464	1.42	65114	100	
Cd	111	3	115	38.989	ppb	38.989	1.40	9810	2000	
Sn	120	3	115	38.390	ppb	38.390	1.56	29707	2000	
Sb	121	3	115	39.913	ppb	39.913	3.73	30378	1000	
Ba	137	3	115	183.328	ppb	183.328	1.42	44214	5000	
Tl	205	3	193	41.334	ppb	41.334	1.28	150684	2000	
(Pb)	206	3	193	41.984	ppb	41.984	1.63	50542	100	
(Pb)	207	3	193	41.940	ppb	41.940	1.77	44832	100	
Pb	208	3	193	42.344	ppb	42.344	1.62	205991	5000	
Th	232	3	193	40.484	ppb	40.484	2.47	206818	2000	
U	238	3	193	66.524	ppb	66.524	1.41	349397	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4047033	1.43	4160703	97.27	60	120	
Sc (IS)	45	3	HMI He	611603	1.13	620569	98.56	60	120	
Ge Internal standard	72	2	HMI H2	2269441	0.98	2172040	104.48	60	120	
Ge Internal standard	72	3	HMI He	711609	1.62	684400	103.98	60	120	
In Internal Standard	115	3	HMI He	2597471	1.55	2522161	102.99	60	120	
Ir (IS)	193	3	HMI He	5559046	1.15	5572879	99.75	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-1-C MSD
Data File Name	163SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:13:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.752	ppb	41.752	7.30	2054	2000	
Na	23	3	45	152366.605	ppb	152366.605	1.53	17977491	400000	
Mg	24	3	45	23028.452	ppb	23028.452	1.15	1421479	400000	
Al	27	3	45	1112.523	ppb	1112.523	9.75	24378	400000	
K	39	3	45	9897.277	ppb	9897.277	1.61	458792	400000	
Ca	40	2	45	115494.768	ppb	115494.768	1.72	61407496	400000	
V	51	3	72	43.077	ppb	43.077	1.70	25394	2000	
Cr	52	3	72	40.772	ppb	40.772	1.82	31884	5000	
Mn	55	3	72	299.533	ppb	299.533	1.10	119000	10000	
Fe	56	2	72	1072.600	ppb	1072.600	1.44	1587274	10000	
Co	59	3	72	40.295	ppb	40.295	0.25	48850	2000	
Ni	60	3	72	41.235	ppb	41.235	1.33	13903	5000	
Cu	63	3	72	41.444	ppb	41.444	1.02	37839	5000	
Zn	66	3	72	44.667	ppb	44.667	1.53	7302	5000	
As	75	3	72	41.886	ppb	41.886	0.86	4667	2000	
Se	78	2	72	42.147	ppb	42.147	1.89	2336	2000	
(Se)	78	3	72	43.110	ppb	43.110	9.33	303	2000	
Sr	88	3	72	1359.958	ppb	1359.958	0.98	695476	4000	
Mo	95	3	115	41.418	ppb	41.418	3.14	21266	2000	
Ag	107	3	115	38.947	ppb	38.947	2.22	64959	100	
Cd	111	3	115	40.265	ppb	40.265	2.30	9980	2000	
Sn	120	3	115	38.595	ppb	38.595	1.40	29418	2000	
Sb	121	3	115	40.022	ppb	40.022	1.46	30017	1000	
Ba	137	3	115	178.262	ppb	178.262	1.44	42358	5000	
Tl	205	3	193	40.602	ppb	40.602	1.10	148681	2000	
(Pb)	206	3	193	42.336	ppb	42.336	0.95	51189	100	
(Pb)	207	3	193	41.588	ppb	41.588	1.07	44655	100	
Pb	208	3	193	42.056	ppb	42.056	0.62	205511	5000	
Th	232	3	193	40.533	ppb	40.533	1.39	207991	2000	
U	238	3	193	64.012	ppb	64.012	0.43	337753	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4013702	2.01	4160703	96.47	60	120	
Sc (IS)	45	3	HMI He	621414	0.84	620569	100.14	60	120	
Ge Internal standard	72	2	HMI H2	2222436	1.23	2172040	102.32	60	120	
Ge Internal standard	72	3	HMI He	710149	0.63	684400	103.76	60	120	
In Internal Standard	115	3	HMI He	2558910	0.68	2522161	101.46	60	120	
Ir (IS)	193	3	HMI He	5583448	1.23	5572879	100.19	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-2-A
Data File Name	164SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:15:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	154187.234	ppb	154187.234	0.97	18128769	400000	
Mg	24	3	45	23468.911	ppb	23468.911	1.60	1443568	400000	
Al	27	3	45	287.996	ppb	287.996	7.54	6371	400000	
K	39	3	45	9339.412	ppb	9339.412	0.18	432323	400000	
Ca	40	2	45	118521.427	ppb	118521.427	1.17	63379349	400000	
V	51	3	72	1.722	ppb	1.722	15.03	1521	2000	
Cr	52	3	72	-0.045	ppb	-0.045	-14.69	1583	5000	
Mn	55	3	72	269.215	ppb	269.215	1.32	108854	10000	
Fe	56	2	72	312.490	ppb	312.490	2.92	470321	10000	
Co	59	3	72	0.480	ppb	0.480	12.99	620	2000	
Ni	60	3	72	2.633	ppb	2.633	4.86	1030	5000	
Cu	63	3	72	1.373	ppb	1.373	1.83	1543	5000	
Zn	66	3	72	3.949	ppb	3.949	15.20	871	5000	
As	75	3	72	1.628	ppb	1.628	35.13	215	2000	
Se	78	2	72	1.414	ppb	1.414	5.37	82	2000	
(Se)	78	3	72	1.335	ppb	1.335	217.03	22	2000	
Sr	88	3	72	1301.829	ppb	1301.829	2.39	677404	4000	
Mo	95	3	115	2.578	ppb	2.578	4.28	1411	2000	
Ag	107	3	115	0.001	ppb	0.001	909.61	25	100	
Cd	111	3	115	0.013	ppb	0.013	174.12	8	2000	
Sn	120	3	115	-0.841	ppb	-0.841	-1.60	371	2000	
Sb	121	3	115	0.240	ppb	0.240	6.40	263	1000	
Ba	137	3	115	140.439	ppb	140.439	1.39	33526	5000	
Tl	205	3	193	-0.135	ppb	-0.135	-5.20	193	2000	
(Pb)	206	3	193	0.531	ppb	0.531	17.75	858	100	
(Pb)	207	3	193	0.473	ppb	0.473	14.75	940	100	
Pb	208	3	193	0.481	ppb	0.481	12.86	3510	5000	
Th	232	3	193	1.335	ppb	1.335	19.66	11023	2000	
U	238	3	193	22.893	ppb	22.893	1.10	121391	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4036997	2.44	4160703	97.03	60	120	
Sc (IS)	45	3	HMI He	619207	0.18	620569	99.78	60	120	
Ge Internal standard	72	2	HMI H2	2231033	0.77	2172040	102.72	60	120	
Ge Internal standard	72	3	HMI He	722644	0.88	684400	105.59	60	120	
In Internal Standard	115	3	HMI He	2569874	0.53	2522161	101.89	60	120	
Ir (IS)	193	3	HMI He	5564709	1.30	5572879	99.85	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-3-A
Data File Name	165SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:16:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.100	ppb	0.100	173.21	5	2000	
Na	23	3	45	160512.848	ppb	160512.848	1.44	18997610	400000	
Mg	24	3	45	23373.766	ppb	23373.766	0.96	1447390	400000	
Al	27	3	45	387.535	ppb	387.535	9.31	8595	400000	
K	39	3	45	9495.272	ppb	9495.272	1.36	442210	400000	
Ca	40	2	45	120652.286	ppb	120652.286	1.65	64924304	400000	
V	51	3	72	1.984	ppb	1.984	10.34	1668	2000	
Cr	52	3	72	-0.031	ppb	-0.031	-404.06	1586	5000	
Mn	55	3	72	260.529	ppb	260.529	1.87	104854	10000	
Fe	56	2	72	398.568	ppb	398.568	1.45	596625	10000	
Co	59	3	72	0.540	ppb	0.540	11.07	691	2000	
Ni	60	3	72	3.114	ppb	3.114	12.19	1188	5000	
Cu	63	3	72	1.900	ppb	1.900	7.68	2019	5000	
Zn	66	3	72	5.268	ppb	5.268	9.70	1080	5000	
As	75	3	72	1.549	ppb	1.549	19.73	205	2000	
Se	78	2	72	1.491	ppb	1.491	16.37	86	2000	
(Se)	78	3	72	2.815	ppb	2.815	89.89	32	2000	
Sr	88	3	72	1332.740	ppb	1332.740	1.13	690315	4000	
Mo	95	3	115	2.826	ppb	2.826	5.30	1548	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-107.71	15	100	
Cd	111	3	115	-0.007	ppb	-0.007	-346.31	3	2000	
Sn	120	3	115	-0.934	ppb	-0.934	-5.73	305	2000	
Sb	121	3	115	0.227	ppb	0.227	5.65	255	1000	
Ba	137	3	115	142.730	ppb	142.730	1.90	34262	5000	
Tl	205	3	193	-0.146	ppb	-0.146	-3.63	153	2000	
(Pb)	206	3	193	0.551	ppb	0.551	7.32	876	100	
(Pb)	207	3	193	0.438	ppb	0.438	16.05	896	100	
Pb	208	3	193	0.510	ppb	0.510	2.42	3625	5000	
Th	232	3	193	0.614	ppb	0.614	20.88	7354	2000	
U	238	3	193	23.504	ppb	23.504	1.25	123625	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4062321	1.68	4160703	97.64	60	120	
Sc (IS)	45	3	HMI He	623386	0.85	620569	100.45	60	120	
Ge Internal standard	72	2	HMI H2	2227929	1.95	2172040	102.57	60	120	
Ge Internal standard	72	3	HMI He	719267	0.74	684400	105.09	60	120	
In Internal Standard	115	3	HMI He	2584449	1.29	2522161	102.47	60	120	
Ir (IS)	193	3	HMI He	5520836	0.43	5572879	99.07	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-4-A
Data File Name	166SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:18:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	194975.126	ppb	194975.126	1.81	23280118	400000	
Mg	24	3	45	24169.146	ppb	24169.146	2.19	1510196	400000	
Al	27	3	45	382.326	ppb	382.326	0.88	8555	400000	
K	39	3	45	9462.042	ppb	9462.042	1.12	444724	400000	
Ca	40	2	45	125175.575	ppb	125175.575	1.57	66837575	400000	
V	51	3	72	2.083	ppb	2.083	11.07	1736	2000	
Cr	52	3	72	-0.187	ppb	-0.187	-43.48	1478	5000	
Mn	55	3	72	238.106	ppb	238.106	2.12	96456	10000	
Fe	56	2	72	385.210	ppb	385.210	1.96	571790	10000	
Co	59	3	72	0.576	ppb	0.576	10.35	740	2000	
Ni	60	3	72	2.705	ppb	2.705	1.72	1056	5000	
Cu	63	3	72	1.499	ppb	1.499	4.35	1661	5000	
Zn	66	3	72	5.550	ppb	5.550	16.07	1133	5000	
As	75	3	72	1.641	ppb	1.641	23.09	217	2000	
Se	78	2	72	1.891	ppb	1.891	21.73	107	2000	
(Se)	78	3	72	2.080	ppb	2.080	82.34	27	2000	
Sr	88	3	72	1357.258	ppb	1357.258	3.15	707367	4000	
Mo	95	3	115	2.873	ppb	2.873	7.51	1573	2000	
Ag	107	3	115	0.003	ppb	0.003	465.68	28	100	
Cd	111	3	115	0.006	ppb	0.006	488.13	7	2000	
Sn	120	3	115	-0.956	ppb	-0.956	-3.78	288	2000	
Sb	121	3	115	0.246	ppb	0.246	1.98	270	1000	
Ba	137	3	115	141.410	ppb	141.410	2.10	33955	5000	
Tl	205	3	193	-0.136	ppb	-0.136	-5.56	190	2000	
(Pb)	206	3	193	0.691	ppb	0.691	1.59	1046	100	
(Pb)	207	3	193	0.541	ppb	0.541	6.68	1008	100	
Pb	208	3	193	0.607	ppb	0.607	2.17	4110	5000	
Th	232	3	193	0.387	ppb	0.387	16.69	6250	2000	
U	238	3	193	24.031	ppb	24.031	1.67	126840	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4030602	1.25	4160703	96.87	60	120	
Sc (IS)	45	3	HMI He	629067	1.20	620569	101.37	60	120	
Ge Internal standard	72	2	HMI H2	2207840	0.37	2172040	101.65	60	120	
Ge Internal standard	72	3	HMI He	723909	1.37	684400	105.77	60	120	
In Internal Standard	115	3	HMI He	2585173	1.19	2522161	102.50	60	120	
Ir (IS)	193	3	HMI He	5542956	1.44	5572879	99.46	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-5-A
Data File Name	167SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:20:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	199537.580	ppb	199537.580	0.38	24137706	400000	
Mg	24	3	45	24448.371	ppb	24448.371	1.32	1547631	400000	
Al	27	3	45	495.493	ppb	495.493	8.47	11197	400000	
K	39	3	45	9564.019	ppb	9564.019	1.37	455207	400000	
Ca	40	2	45	128281.259	ppb	128281.259	3.00	68929018	400000	
V	51	3	72	1.958	ppb	1.958	7.48	1676	2000	
Cr	52	3	72	0.069	ppb	0.069	148.18	1684	5000	
Mn	55	3	72	221.458	ppb	221.458	0.60	90452	10000	
Fe	56	2	72	469.313	ppb	469.313	1.37	704600	10000	
Co	59	3	72	0.593	ppb	0.593	6.60	766	2000	
Ni	60	3	72	3.074	ppb	3.074	4.31	1191	5000	
Cu	63	3	72	1.737	ppb	1.737	4.35	1896	5000	
Zn	66	3	72	6.781	ppb	6.781	5.99	1341	5000	
As	75	3	72	1.771	ppb	1.771	25.23	233	2000	
Se	78	2	72	1.779	ppb	1.779	5.31	103	2000	
(Se)	78	3	72	2.993	ppb	2.993	54.55	33	2000	
Sr	88	3	72	1370.724	ppb	1370.724	1.11	720211	4000	
Mo	95	3	115	2.780	ppb	2.780	10.39	1541	2000	
Ag	107	3	115	-0.009	ppb	-0.009	-48.50	8	100	
Cd	111	3	115	0.013	ppb	0.013	178.29	8	2000	
Sn	120	3	115	-0.760	ppb	-0.760	-5.54	440	2000	
Sb	121	3	115	0.223	ppb	0.223	28.17	255	1000	
Ba	137	3	115	143.482	ppb	143.482	1.34	34859	5000	
Tl	205	3	193	-0.152	ppb	-0.152	-6.01	132	2000	
(Pb)	206	3	193	0.746	ppb	0.746	6.30	1126	100	
(Pb)	207	3	193	0.498	ppb	0.498	6.03	975	100	
Pb	208	3	193	0.640	ppb	0.640	3.49	4323	5000	
Th	232	3	193	0.337	ppb	0.337	16.26	6073	2000	
U	238	3	193	24.852	ppb	24.852	1.26	132770	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4056759	1.31	4160703	97.50	60	120	
Sc (IS)	45	3	HMI He	637252	0.49	620569	102.69	60	120	
Ge Internal standard	72	2	HMI H2	2239066	0.86	2172040	103.09	60	120	
Ge Internal standard	72	3	HMI He	729654	0.93	684400	106.61	60	120	
In Internal Standard	115	3	HMI He	2615480	1.33	2522161	103.70	60	120	
Ir (IS)	193	3	HMI He	5611834	0.31	5572879	100.70	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-6-A
Data File Name	168SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:22:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.066	ppb	0.066	86.66	3	2000	
Na	23	3	45	207518.722	ppb	207518.722	1.40	25240183	400000	
Mg	24	3	45	25263.001	ppb	25263.001	0.36	1608043	400000	
Al	27	3	45	329.158	ppb	329.158	4.44	7520	400000	
K	39	3	45	9689.478	ppb	9689.478	1.26	463514	400000	
Ca	40	2	45	133959.452	ppb	133959.452	1.45	73644549	400000	
V	51	3	72	2.067	ppb	2.067	4.36	1773	2000	
Cr	52	3	72	-0.061	ppb	-0.061	-223.28	1614	5000	
Mn	55	3	72	146.035	ppb	146.035	3.97	60784	10000	
Fe	56	2	72	342.493	ppb	342.493	1.54	527688	10000	
Co	59	3	72	0.490	ppb	0.490	6.36	650	2000	
Ni	60	3	72	2.720	ppb	2.720	1.54	1090	5000	
Cu	63	3	72	1.686	ppb	1.686	1.95	1883	5000	
Zn	66	3	72	6.030	ppb	6.030	16.02	1239	5000	
As	75	3	72	1.848	ppb	1.848	14.89	247	2000	
Se	78	2	72	1.891	ppb	1.891	14.31	111	2000	
(Se)	78	3	72	1.754	ppb	1.754	108.44	25	2000	
Sr	88	3	72	1386.497	ppb	1386.497	2.97	741620	4000	
Mo	95	3	115	2.529	ppb	2.529	10.31	1431	2000	
Ag	107	3	115	0.002	ppb	0.002	279.32	28	100	
Cd	111	3	115	0.006	ppb	0.006	501.51	7	2000	
Sn	120	3	115	-0.977	ppb	-0.977	-5.50	280	2000	
Sb	121	3	115	0.207	ppb	0.207	31.91	247	1000	
Ba	137	3	115	142.210	ppb	142.210	1.18	35112	5000	
Tl	205	3	193	-0.153	ppb	-0.153	-3.33	132	2000	
(Pb)	206	3	193	0.662	ppb	0.662	5.09	1038	100	
(Pb)	207	3	193	0.574	ppb	0.574	7.60	1070	100	
Pb	208	3	193	0.585	ppb	0.585	1.63	4103	5000	
Th	232	3	193	0.183	ppb	0.183	30.29	5359	2000	
U	238	3	193	23.621	ppb	23.621	1.54	127850	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4149899	1.06	4160703	99.74	60	120	
Sc (IS)	45	3	HMI He	640766	0.40	620569	103.25	60	120	
Ge Internal standard	72	2	HMI H2	2287565	0.65	2172040	105.32	60	120	
Ge Internal standard	72	3	HMI He	742975	1.55	684400	108.56	60	120	
In Internal Standard	115	3	HMI He	2658316	2.49	2522161	105.40	60	120	
Ir (IS)	193	3	HMI He	5682190	0.53	5572879	101.96	60	120	

Sample Report

Sample Table

Sample Name	280-171678-A-7-A
Data File Name	169SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:24:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	201687.915	ppb	201687.915	0.50	24751740	400000	
Mg	24	3	45	24088.485	ppb	24088.485	0.77	1547022	400000	
Al	27	3	45	329.032	ppb	329.032	1.47	7583	400000	
K	39	3	45	9244.561	ppb	9244.561	1.76	446981	400000	
Ca	40	2	45	126667.346	ppb	126667.346	1.94	70632000	400000	
V	51	3	72	2.015	ppb	2.015	10.77	1766	2000	
Cr	52	3	72	-0.021	ppb	-0.021	-354.59	1669	5000	
Mn	55	3	72	118.837	ppb	118.837	1.66	50256	10000	
Fe	56	2	72	350.376	ppb	350.376	3.30	545476	10000	
Co	59	3	72	0.471	ppb	0.471	4.16	635	2000	
Ni	60	3	72	2.585	ppb	2.585	10.20	1058	5000	
Cu	63	3	72	1.981	ppb	1.981	1.50	2196	5000	
Zn	66	3	72	6.941	ppb	6.941	2.01	1413	5000	
As	75	3	72	1.592	ppb	1.592	11.24	220	2000	
Se	78	2	72	2.000	ppb	2.000	5.07	119	2000	
(Se)	78	3	72	0.978	ppb	0.978	120.88	20	2000	
Sr	88	3	72	1287.209	ppb	1287.209	1.22	698992	4000	
Mo	95	3	115	2.570	ppb	2.570	5.87	1469	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-103.14	20	100	
Cd	111	3	115	0.012	ppb	0.012	188.52	8	2000	
Sn	120	3	115	-0.928	ppb	-0.928	-4.43	322	2000	
Sb	121	3	115	0.233	ppb	0.233	40.60	270	1000	
Ba	137	3	115	136.716	ppb	136.716	1.07	34095	5000	
Tl	205	3	193	-0.145	ppb	-0.145	-6.10	165	2000	
(Pb)	206	3	193	0.655	ppb	0.655	3.24	1043	100	
(Pb)	207	3	193	0.556	ppb	0.556	4.98	1065	100	
Pb	208	3	193	0.611	ppb	0.611	2.32	4291	5000	
Th	232	3	193	0.172	ppb	0.172	28.03	5377	2000	
U	238	3	193	22.287	ppb	22.287	1.15	122378	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4209152	0.47	4160703	101.16	60	120	
Sc (IS)	45	3	HMI He	646508	0.21	620569	104.18	60	120	
Ge Internal standard	72	2	HMI H2	2311792	1.13	2172040	106.43	60	120	
Ge Internal standard	72	3	HMI He	754159	1.82	684400	110.19	60	120	
In Internal Standard	115	3	HMI He	2684361	0.82	2522161	106.43	60	120	
Ir (IS)	193	3	HMI He	5760538	1.50	5572879	103.37	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	170_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:26:21-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	46.960	ppb	7.912	2336	50	93.9	90	110	
Na	23	3	45	49506.592	ppb	1.236	5647024	51000	97.1	90	110	
Mg	24	3	45	10946.006	ppb	3.821	651442	11000	99.5	90	110	
Al	27	3	45	994.299	ppb	1.968	21010	1000	99.4	90	110	
K	39	3	45	11211.325	ppb	1.340	499066	11000	101.9	90	110	
Ca	40	2	45	11399.786	ppb	2.192	5935646	11000	103.6	90	110	
V	51	3	72	50.654	ppb	2.111	28497	50	101.3	90	110	
Cr	52	3	72	50.316	ppb	0.582	37308	50	100.6	90	110	
Mn	55	3	72	51.041	ppb	1.528	19564	50	102.1	90	110	
Fe	56	2	72	1009.702	ppb	3.181	1427375	1000	101.0	90	110	
Co	59	3	72	49.885	ppb	1.665	57875	50	99.8	90	110	
Ni	60	3	72	50.058	ppb	0.628	16130	50	100.1	90	110	
Cu	63	3	72	50.362	ppb	0.980	43956	50	100.7	90	110	
Zn	66	3	72	51.106	ppb	1.389	7965	50	102.2	90	110	
As	75	3	72	50.196	ppb	2.547	5348	50	100.4	90	110	
Se	78	2	72	50.423	ppb	2.895	2668	50	100.8	90	110	
(Se)	78	3	72	42.544	ppb	14.131	287	50	85.1	90	110	>+\-10%
Sr	88	3	72	107.792	ppb	1.380	52796	100	107.8	90	110	
Mo	95	3	115	49.107	ppb	1.569	24385	50	98.2	90	110	
Ag	107	3	115	49.066	ppb	1.161	79171	50	98.1	90	110	
Cd	111	3	115	50.009	ppb	0.676	11991	50	100.0	90	110	
Sn	120	3	115	49.577	ppb	1.674	36288	50	99.2	90	110	
Sb	121	3	115	50.841	ppb	0.497	36874	50	101.7	90	110	
Ba	137	3	115	51.120	ppb	2.205	11789	50	102.2	90	110	
Tl	205	3	193	49.997	ppb	2.183	178546	50	100.0	90	110	
(Pb)	206	3	193	50.682	ppb	2.316	59776	50	101.4	90	110	
(Pb)	207	3	193	50.622	ppb	0.731	52969	50	101.2	90	110	
Pb	208	3	193	50.487	ppb	1.853	240565	50	101.0	90	110	
Th	232	3	193	50.379	ppb	2.608	251284	50	100.8	90	110	
U	238	3	193	51.181	ppb	2.938	263855	50	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3924085	1.61	4160703	94.31	60	120	
Sc (IS)	45	3	HMI He	599184	0.91	620569	96.55	60	120	
Ge Internal standard	72	2	HMI H2	2123127	2.26	2172040	97.75	60	120	
Ge Internal standard	72	3	HMI He	679756	1.02	684400	99.32	60	120	
In Internal Standard	115	3	HMI He	2475821	0.76	2522161	98.16	60	120	
Ir (IS)	193	3	HMI He	5450811	1.95	5572879	97.81	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	171_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:28:14-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	110.636	ppb	5.2	34777	25	>RL
Mg	24	3	45	6.780	ppb	19.8	531	25	
Al	27	3	45	0.606	ppb	346.8	127	15	
K	39	3	45	28.072	ppb	113.8	16824	50	
V	51	3	72	-0.383	ppb	-5.0	268	1	
Cr	52	3	72	-0.182	ppb	-56.2	1399	1	
Mn	55	3	72	0.018	ppb	175.4	195	0.5	
Co	59	3	72	0.013	ppb	80.8	42	0.5	
Ni	60	3	72	0.038	ppb	120.1	140	1	
Cu	63	3	72	0.044	ppb	60.6	300	1	
Zn	66	3	72	-0.435	ppb	-21.6	157	5	
As	75	3	72	0.173	ppb	182.1	48	1	
Se	78	2	72	0.028	ppb	82.1	5	1	
(Se)	78	3	72	0.756	ppb	211.2	17	1	
Sr	88	3	72	0.304	ppb	23.8	187	0.5	
Mo	95	3	115	0.019	ppb	353.1	95	0.5	
Ag	107	3	115	0.020	ppb	44.9	57	1	
Cd	111	3	115	0.041	ppb	2.2	15	0.5	
Sn	120	3	115	-0.370	ppb	-42.9	705	1	
Sb	121	3	115	0.218	ppb	20.0	242	0.6	
Ba	137	3	115	-0.020	ppb	-378.4	48	0.5	
Tl	205	3	193	-0.130	ppb	-3.9	213	0.1	
(Pb)	206	3	193	-0.019	ppb	-162.5	200	1	
(Pb)	207	3	193	-0.085	ppb	-18.1	351	1	
Pb	208	3	193	-0.047	ppb	-25.3	961	0.5	
Th	232	3	193	0.550	ppb	20.9	7132	1	
U	238	3	193	0.016	ppb	20.3	1671	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3943377	2.07	4160703	94.78	60	120	
Sc (IS)	45	3	HMI He	603698	1.38	620569	97.28	60	120	
Ge Internal standard	72	2	HMI H2	2106141	1.02	2172040	96.97	60	120	
Ge Internal standard	72	3	HMI He	683818	1.24	684400	99.92	60	120	
In Internal Standard	115	3	HMI He	2517846	1.45	2522161	99.83	60	120	
Ir (IS)	193	3	HMI He	5598817	1.09	5572879	100.47	60	120	

Sample Report

Sample Table

Sample Name	280-171701-C-1-A
Data File Name	172SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:30:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	581703.184	ppb	581703.184	1.00	69506468	400000	
Mg	24	3	45	887.161	ppb	887.161	0.96	55635	400000	
Al	27	3	45	216.876	ppb	216.876	7.16	4909	400000	
K	39	3	45	2837.212	ppb	2837.212	1.57	144930	400000	
Ca	40	2	45	4084.996	ppb	4084.996	2.37	2204093	400000	
V	51	3	72	-0.465	ppb	-0.465	-12.74	245	2000	
Cr	52	3	72	0.390	ppb	0.390	20.05	1986	5000	
Mn	55	3	72	22.357	ppb	22.357	1.45	9582	10000	
Fe	56	2	72	1635.038	ppb	1635.038	1.58	2516813	10000	
Co	59	3	72	0.078	ppb	0.078	23.37	130	2000	
Ni	60	3	72	0.457	ppb	0.457	16.16	302	5000	
Cu	63	3	72	1.072	ppb	1.072	3.98	1314	5000	
Zn	66	3	72	13.519	ppb	13.519	3.21	2507	5000	
As	75	3	72	0.461	ppb	0.461	52.92	87	2000	
Se	78	2	72	-0.027	ppb	-0.027	-126.77	2	2000	
(Se)	78	3	72	0.070	ppb	0.070	1545.39	13	2000	
Sr	88	3	72	499.271	ppb	499.271	0.09	269931	4000	
Mo	95	3	115	2.339	ppb	2.339	9.78	1288	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-265.09	22	100	
Cd	111	3	115	0.000	ppb	0.000	-18017.28	5	2000	
Sn	120	3	115	-0.832	ppb	-0.832	-3.32	378	2000	
Sb	121	3	115	0.073	ppb	0.073	31.32	138	1000	
Ba	137	3	115	636.488	ppb	636.488	1.26	151718	5000	
Tl	205	3	193	-0.144	ppb	-0.144	-2.05	162	2000	
(Pb)	206	3	193	-0.007	ppb	-0.007	-543.30	215	100	
(Pb)	207	3	193	-0.086	ppb	-0.086	-46.27	350	100	
Pb	208	3	193	-0.031	ppb	-0.031	-48.14	1043	5000	
Th	232	3	193	0.188	ppb	0.188	29.35	5307	2000	
U	238	3	193	0.091	ppb	0.091	26.01	2066	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4052467	1.60	4160703	97.40	60	120	
Sc (IS)	45	3	HMI He	629854	0.97	620569	101.50	60	120	
Ge Internal standard	72	2	HMI H2	2316297	2.10	2172040	106.64	60	120	
Ge Internal standard	72	3	HMI He	750683	1.16	684400	109.68	60	120	
In Internal Standard	115	3	HMI He	2569232	0.26	2522161	101.87	60	120	
Ir (IS)	193	3	HMI He	5600201	0.25	5572879	100.49	60	120	

Sample Report

Sample Table

Sample Name	280-171701-C-2-A
Data File Name	173SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:32:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	621662.009	ppb	621662.009	1.43	74417154	400000	
Mg	24	3	45	689.958	ppb	689.958	0.07	43373	400000	
Al	27	3	45	136.101	ppb	136.101	8.73	3130	400000	
K	39	3	45	2824.152	ppb	2824.152	1.09	144610	400000	
Ca	40	2	45	2696.213	ppb	2696.213	1.60	1460998	400000	
V	51	3	72	-0.374	ppb	-0.374	-9.84	298	2000	
Cr	52	3	72	9.823	ppb	9.823	7.45	9332	5000	
Mn	55	3	72	51.980	ppb	51.980	1.55	21861	10000	
Fe	56	2	72	3722.459	ppb	3722.459	1.77	5681903	10000	
Co	59	3	72	0.701	ppb	0.701	7.83	921	2000	
Ni	60	3	72	4.359	ppb	4.359	7.78	1669	5000	
Cu	63	3	72	6.266	ppb	6.266	2.97	6250	5000	
Zn	66	3	72	4.057	ppb	4.057	11.70	918	5000	
As	75	3	72	0.507	ppb	0.507	66.00	92	2000	
Se	78	2	72	-0.026	ppb	-0.026	-229.08	2	2000	
(Se)	78	3	72	0.316	ppb	0.316	388.38	15	2000	
Sr	88	3	72	744.259	ppb	744.259	2.09	399776	4000	
Mo	95	3	115	1.400	ppb	1.400	5.00	808	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-262.70	20	100	
Cd	111	3	115	0.000	ppb	0.000	-4366.61	5	2000	
Sn	120	3	115	-0.732	ppb	-0.732	-8.00	453	2000	
Sb	121	3	115	0.172	ppb	0.172	13.87	213	1000	
Ba	137	3	115	506.282	ppb	506.282	0.65	121116	5000	
Tl	205	3	193	-0.152	ppb	-0.152	-5.11	132	2000	
(Pb)	206	3	193	2.551	ppb	2.551	3.82	3237	100	
(Pb)	207	3	193	2.354	ppb	2.354	4.75	2894	100	
Pb	208	3	193	2.428	ppb	2.428	2.05	12765	5000	
Th	232	3	193	0.098	ppb	0.098	30.01	4757	2000	
U	238	3	193	0.091	ppb	0.091	11.23	2026	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4058008	0.76	4160703	97.53	60	120	
Sc (IS)	45	3	HMI He	631004	0.76	620569	101.68	60	120	
Ge Internal standard	72	2	HMI H2	2301242	1.58	2172040	105.95	60	120	
Ge Internal standard	72	3	HMI He	745957	1.24	684400	108.99	60	120	
In Internal Standard	115	3	HMI He	2578318	2.01	2522161	102.23	60	120	
Ir (IS)	193	3	HMI He	5489790	0.89	5572879	98.51	60	120	

Sample Report

Sample Table

Sample Name	280-171703-H-1-A
Data File Name	174SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:33:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1122040.570	ppb	1122040.570	2.06	136694340	400000	
Mg	24	3	45	2433.030	ppb	2433.030	0.54	155362	400000	
Al	27	3	45	18.335	ppb	18.335	9.16	534	400000	
K	39	3	45	3218.458	ppb	3218.458	0.36	165431	400000	
Ca	40	2	45	8579.080	ppb	8579.080	2.32	4682057	400000	
V	51	3	72	-0.673	ppb	-0.673	-4.99	120	2000	
Cr	52	3	72	3.273	ppb	3.273	2.93	4354	5000	
Mn	55	3	72	19.666	ppb	19.666	0.80	8658	10000	
Fe	56	2	72	1541.495	ppb	1541.495	1.55	2332579	10000	
Co	59	3	72	0.169	ppb	0.169	21.62	252	2000	
Ni	60	3	72	1.620	ppb	1.620	2.54	730	5000	
Cu	63	3	72	2.716	ppb	2.716	2.67	2961	5000	
Zn	66	3	72	98.970	ppb	98.970	1.51	17212	5000	
As	75	3	72	0.164	ppb	0.164	89.82	53	2000	
Se	78	2	72	-0.015	ppb	-0.015	-347.07	3	2000	
(Se)	78	3	72	1.630	ppb	1.630	112.47	25	2000	
Sr	88	3	72	2610.216	ppb	2610.216	1.61	1445292	4000	
Mo	95	3	115	0.928	ppb	0.928	9.13	563	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-501.25	22	100	
Cd	111	3	115	0.080	ppb	0.080	74.03	25	2000	
Sn	120	3	115	-0.607	ppb	-0.607	-15.21	545	2000	
Sb	121	3	115	0.156	ppb	0.156	15.08	200	1000	
Ba	137	3	115	1354.776	ppb	1354.776	1.95	322453	5000	
Tl	205	3	193	-0.148	ppb	-0.148	-0.34	147	2000	
(Pb)	206	3	193	0.181	ppb	0.181	13.10	433	100	
(Pb)	207	3	193	0.136	ppb	0.136	23.48	575	100	
Pb	208	3	193	0.171	ppb	0.171	9.61	1984	5000	
Th	232	3	193	0.050	ppb	0.050	66.51	4520	2000	
U	238	3	193	0.026	ppb	0.026	30.20	1688	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4110781	1.72	4160703	98.80	60	120	
Sc (IS)	45	3	HMI He	642328	0.50	620569	103.51	60	120	
Ge Internal standard	72	2	HMI H2	2276578	2.54	2172040	104.81	60	120	
Ge Internal standard	72	3	HMI He	768967	1.09	684400	112.36	60	120	
In Internal Standard	115	3	HMI He	2566525	2.17	2522161	101.76	60	120	
Ir (IS)	193	3	HMI He	5489518	0.74	5572879	98.50	60	120	

Sample Report

Sample Table

Sample Name	280-171703-H-2-A
Data File Name	175SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:35:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	628757.341	ppb	628757.341	1.02	78953678	400000	
Mg	24	3	45	938.207	ppb	938.207	1.13	61823	400000	
Al	27	3	45	88.694	ppb	88.694	19.63	2186	400000	
K	39	3	45	2917.906	ppb	2917.906	0.41	156170	400000	
Ca	40	2	45	4689.137	ppb	4689.137	1.67	2599737	400000	
V	51	3	72	-0.501	ppb	-0.501	-14.50	228	2000	
Cr	52	3	72	49.364	ppb	49.364	3.48	41543	5000	
Mn	55	3	72	45.169	ppb	45.169	1.45	19659	10000	
Fe	56	2	72	3354.904	ppb	3354.904	2.25	5159667	10000	
Co	59	3	72	0.246	ppb	0.246	18.99	353	2000	
Ni	60	3	72	2.394	ppb	2.394	13.19	1011	5000	
Cu	63	3	72	3.220	ppb	3.220	3.68	3462	5000	
Zn	66	3	72	133.439	ppb	133.439	1.76	23175	5000	
As	75	3	72	0.746	ppb	0.746	42.75	123	2000	
Se	78	2	72	-0.015	ppb	-0.015	-349.90	3	2000	
(Se)	78	3	72	0.708	ppb	0.708	245.47	18	2000	
Sr	88	3	72	789.032	ppb	789.032	1.34	437976	4000	
Mo	95	3	115	2.322	ppb	2.322	2.78	1324	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-418.67	20	100	
Cd	111	3	115	0.012	ppb	0.012	184.57	8	2000	
Sn	120	3	115	0.271	ppb	0.271	30.77	1236	2000	
Sb	121	3	115	0.326	ppb	0.326	7.66	340	1000	
Ba	137	3	115	954.809	ppb	954.809	0.50	235577	5000	
Tl	205	3	193	-0.158	ppb	-0.158	-4.42	112	2000	
(Pb)	206	3	193	0.424	ppb	0.424	16.20	738	100	
(Pb)	207	3	193	0.391	ppb	0.391	9.16	861	100	
Pb	208	3	193	0.407	ppb	0.407	4.12	3185	5000	
Th	232	3	193	0.062	ppb	0.062	30.32	4689	2000	
U	238	3	193	0.055	ppb	0.055	12.92	1883	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4166916	1.62	4160703	100.15	60	120	
Sc (IS)	45	3	HMI He	661972	0.67	620569	106.67	60	120	
Ge Internal standard	72	2	HMI H2	2317998	0.36	2172040	106.72	60	120	
Ge Internal standard	72	3	HMI He	770799	0.99	684400	112.62	60	120	
In Internal Standard	115	3	HMI He	2659658	0.65	2522161	105.45	60	120	
Ir (IS)	193	3	HMI He	5618656	0.28	5572879	100.82	60	120	

Sample Report

Sample Table

Sample Name	280-171733-A-1-A
Data File Name	176SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:37:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.031	ppb	0.031	173.21	2	2000	
Na	23	3	45	11759.541	ppb	11759.541	3.08	1521197	400000	
Mg	24	3	45	42685.791	ppb	42685.791	0.38	2845571	400000	
Al	27	3	45	126.228	ppb	126.228	12.32	3097	400000	
K	39	3	45	2620.455	ppb	2620.455	1.26	143953	400000	
Ca	40	2	45	109971.696	ppb	109971.696	1.98	63594348	400000	
V	51	3	72	-0.394	ppb	-0.394	-11.94	308	2000	
Cr	52	3	72	2.485	ppb	2.485	1.42	3889	5000	
Mn	55	3	72	9.381	ppb	9.381	3.93	4434	10000	
Fe	56	2	72	398.344	ppb	398.344	0.72	646721	10000	
Co	59	3	72	0.564	ppb	0.564	6.00	805	2000	
Ni	60	3	72	2.453	ppb	2.453	2.73	1078	5000	
Cu	63	3	72	0.616	ppb	0.616	13.45	940	5000	
Zn	66	3	72	2.947	ppb	2.947	18.74	790	5000	
As	75	3	72	1.235	ppb	1.235	12.86	190	2000	
Se	78	2	72	2.123	ppb	2.123	19.33	131	2000	
(Se)	78	3	72	2.113	ppb	2.113	80.81	30	2000	
Sr	88	3	72	172.944	ppb	172.944	0.69	100155	4000	
Mo	95	3	115	46.940	ppb	46.940	2.27	26109	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-47.05	15	100	
Cd	111	3	115	0.011	ppb	0.011	97.98	8	2000	
Sn	120	3	115	-1.035	ppb	-1.035	-3.46	247	2000	
Sb	121	3	115	1.471	ppb	1.471	3.25	1283	1000	
Ba	137	3	115	21.782	ppb	21.782	6.53	5658	5000	
Tl	205	3	193	-0.042	ppb	-0.042	-52.63	568	2000	
(Pb)	206	3	193	0.021	ppb	0.021	23.08	263	100	
(Pb)	207	3	193	-0.070	ppb	-0.070	-4.71	388	100	
Pb	208	3	193	-0.023	ppb	-0.023	-50.40	1143	5000	
Th	232	3	193	0.037	ppb	0.037	50.96	4814	2000	
U	238	3	193	9.360	ppb	9.360	0.40	53844	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4364683	0.65	4160703	104.90	60	120	
Sc (IS)	45	3	HMI He	671101	0.32	620569	108.14	60	120	
Ge Internal standard	72	2	HMI H2	2416124	1.12	2172040	111.24	60	120	
Ge Internal standard	72	3	HMI He	803880	0.76	684400	117.46	60	120	
In Internal Standard	115	3	HMI He	2773285	1.79	2522161	109.96	60	120	
Ir (IS)	193	3	HMI He	5925262	0.24	5572879	106.32	60	120	

Sample Report

Sample Table

Sample Name	280-171733-A-1-A ms
Data File Name	177SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:39:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	42.414	ppb	42.414	1.12	2359	2000	
Na	23	3	45	12033.542	ppb	12033.542	1.59	1576389	400000	
Mg	24	3	45	42875.707	ppb	42875.707	0.61	2895687	400000	
Al	27	3	45	950.816	ppb	950.816	4.29	22809	400000	
K	39	3	45	3435.783	ppb	3435.783	1.75	185738	400000	
Ca	40	2	45	110621.580	ppb	110621.580	1.02	66229835	400000	
V	51	3	72	39.687	ppb	39.687	2.91	26409	2000	
Cr	52	3	72	42.013	ppb	42.013	2.66	36972	5000	
Mn	55	3	72	50.963	ppb	50.963	2.41	23003	10000	
Fe	56	2	72	1188.149	ppb	1188.149	1.16	1978724	10000	
Co	59	3	72	38.679	ppb	38.679	2.30	52849	2000	
Ni	60	3	72	40.939	ppb	40.939	1.79	15563	5000	
Cu	63	3	72	39.931	ppb	39.931	2.84	41094	5000	
Zn	66	3	72	44.059	ppb	44.059	5.73	8115	5000	
As	75	3	72	40.686	ppb	40.686	2.45	5110	2000	
Se	78	2	72	44.347	ppb	44.347	2.96	2766	2000	
(Se)	78	3	72	39.812	ppb	39.812	10.29	317	2000	
Sr	88	3	72	258.677	ppb	258.677	3.13	149099	4000	
Mo	95	3	115	83.971	ppb	83.971	1.47	47294	2000	
Ag	107	3	115	38.276	ppb	38.276	0.92	70169	100	
Cd	111	3	115	38.699	ppb	38.699	2.42	10541	2000	
Sn	120	3	115	38.577	ppb	38.577	1.46	32318	2000	
Sb	121	3	115	41.423	ppb	41.423	1.77	34143	1000	
Ba	137	3	115	64.181	ppb	64.181	3.10	16797	5000	
Tl	205	3	193	42.023	ppb	42.023	1.65	162386	2000	
(Pb)	206	3	193	42.175	ppb	42.175	0.77	53831	100	
(Pb)	207	3	193	41.849	ppb	41.849	2.13	47420	100	
Pb	208	3	193	42.088	ppb	42.088	0.48	217073	5000	
Th	232	3	193	40.912	ppb	40.912	1.98	221529	2000	
U	238	3	193	51.666	ppb	51.666	0.87	288043	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4519051	1.30	4160703	108.61	60	120	
Sc (IS)	45	3	HMI He	679915	0.98	620569	109.56	60	120	
Ge Internal standard	72	2	HMI H2	2501986	1.40	2172040	115.19	60	120	
Ge Internal standard	72	3	HMI He	800716	3.22	684400	117.00	60	120	
In Internal Standard	115	3	HMI He	2812705	1.42	2522161	111.52	60	120	
Ir (IS)	193	3	HMI He	5893175	1.24	5572879	105.75	60	120	

Sample Report

Sample Table

Sample Name	280-171733-A-1-A msd
Data File Name	178SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:41:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.455	ppb	39.455	4.77	2107	2000	
Na	23	3	45	12015.662	ppb	12015.662	2.43	1572706	400000	
Mg	24	3	45	42880.576	ppb	42880.576	2.29	2893153	400000	
Al	27	3	45	948.907	ppb	948.907	2.44	22738	400000	
K	39	3	45	3352.492	ppb	3352.492	3.26	181465	400000	
Ca	40	2	45	107876.540	ppb	107876.540	2.26	62318293	400000	
V	51	3	72	39.439	ppb	39.439	2.74	26298	2000	
Cr	52	3	72	41.712	ppb	41.712	4.26	36775	5000	
Mn	55	3	72	50.067	ppb	50.067	4.36	22632	10000	
Fe	56	2	72	1192.863	ppb	1192.863	2.76	1907239	10000	
Co	59	3	72	39.101	ppb	39.101	3.75	53505	2000	
Ni	60	3	72	40.259	ppb	40.259	3.00	15329	5000	
Cu	63	3	72	39.441	ppb	39.441	3.60	40663	5000	
Zn	66	3	72	42.511	ppb	42.511	7.12	7850	5000	
As	75	3	72	41.076	ppb	41.076	3.54	5167	2000	
Se	78	2	72	44.265	ppb	44.265	1.56	2653	2000	
(Se)	78	3	72	47.201	ppb	47.201	8.89	373	2000	
Sr	88	3	72	254.932	ppb	254.932	3.93	147182	4000	
Mo	95	3	115	85.961	ppb	85.961	1.07	47678	2000	
Ag	107	3	115	38.898	ppb	38.898	1.96	70226	100	
Cd	111	3	115	39.862	ppb	39.862	0.86	10694	2000	
Sn	120	3	115	39.201	ppb	39.201	2.94	32325	2000	
Sb	121	3	115	42.532	ppb	42.532	1.36	34524	1000	
Ba	137	3	115	64.246	ppb	64.246	0.78	16564	5000	
Tl	205	3	193	41.943	ppb	41.943	1.13	160099	2000	
(Pb)	206	3	193	43.512	ppb	43.512	1.89	54836	100	
(Pb)	207	3	193	42.447	ppb	42.447	2.46	47497	100	
Pb	208	3	193	43.051	ppb	43.051	1.58	219266	5000	
Th	232	3	193	42.277	ppb	42.277	1.06	225982	2000	
U	238	3	193	51.755	ppb	51.755	1.88	284965	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4361203	1.51	4160703	104.82	60	120	
Sc (IS)	45	3	HMI He	679532	3.00	620569	109.50	60	120	
Ge Internal standard	72	2	HMI H2	2403194	2.19	2172040	110.64	60	120	
Ge Internal standard	72	3	HMI He	802323	3.89	684400	117.23	60	120	
In Internal Standard	115	3	HMI He	2769907	0.99	2522161	109.82	60	120	
Ir (IS)	193	3	HMI He	5821353	2.14	5572879	104.46	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	179_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:43:15-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.842	ppb	2.961	2696	50	103.7	90	110	
Na	23	3	45	50077.614	ppb	1.418	6061887	51000	98.2	90	110	
Mg	24	3	45	10673.172	ppb	1.730	674205	11000	97.0	90	110	
Al	27	3	45	1006.420	ppb	2.746	22564	1000	100.6	90	110	
K	39	3	45	11161.316	ppb	1.935	527335	11000	101.5	90	110	
Ca	40	2	45	11562.231	ppb	2.192	6342152	11000	105.1	90	110	
V	51	3	72	49.630	ppb	0.518	30423	50	99.3	90	110	
Cr	52	3	72	49.518	ppb	0.554	40019	50	99.0	90	110	
Mn	55	3	72	49.581	ppb	0.959	20707	50	99.2	90	110	
Fe	56	2	72	1040.389	ppb	2.319	1527028	1000	104.0	90	110	
Co	59	3	72	48.622	ppb	1.185	61442	50	97.2	90	110	
Ni	60	3	72	48.796	ppb	1.892	17130	50	97.6	90	110	
Cu	63	3	72	49.013	ppb	1.106	46598	50	98.0	90	110	
Zn	66	3	72	50.348	ppb	2.382	8548	50	100.7	90	110	
As	75	3	72	49.297	ppb	3.023	5722	50	98.6	90	110	
Se	78	2	72	53.360	ppb	2.080	2933	50	106.7	90	110	
(Se)	78	3	72	46.726	ppb	7.714	342	50	93.5	90	110	
Sr	88	3	72	104.604	ppb	1.298	55804	100	104.6	90	110	
Mo	95	3	115	48.214	ppb	2.404	25408	50	96.4	90	110	
Ag	107	3	115	48.603	ppb	2.206	83236	50	97.2	90	110	
Cd	111	3	115	50.562	ppb	3.405	12866	50	101.1	90	110	
Sn	120	3	115	49.967	ppb	2.696	38810	50	99.9	90	110	
Sb	121	3	115	50.943	ppb	1.358	39218	50	101.9	90	110	
Ba	137	3	115	51.231	ppb	1.407	12541	50	102.5	90	110	
Tl	205	3	193	50.251	ppb	1.084	189136	50	100.5	90	110	
(Pb)	206	3	193	50.715	ppb	1.843	63036	50	101.4	90	110	
(Pb)	207	3	193	50.522	ppb	1.542	55708	50	101.0	90	110	
Pb	208	3	193	50.283	ppb	1.097	252526	50	100.6	90	110	
Th	232	3	193	51.560	ppb	0.508	270990	50	103.1	90	110	
U	238	3	193	50.784	ppb	1.479	275970	50	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4134482	2.55	4160703	99.37	60	120	
Sc (IS)	45	3	HMI He	635949	1.63	620569	102.48	60	120	
Ge Internal standard	72	2	HMI H2	2204703	2.99	2172040	101.50	60	120	
Ge Internal standard	72	3	HMI He	740361	1.10	684400	108.18	60	120	
In Internal Standard	115	3	HMI He	2628245	1.76	2522161	104.21	60	120	
Ir (IS)	193	3	HMI He	5744223	1.76	5572879	103.07	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	180_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:45:06-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.031	ppb	173.2	2	0.5	
Na	23	3	45	139.877	ppb	5.3	39046	25	>RL
Mg	24	3	45	5.028	ppb	31.7	437	25	
Al	27	3	45	-0.869	ppb	-233.6	97	15	
K	39	3	45	27.642	ppb	70.4	17241	50	
V	51	3	72	-0.375	ppb	-25.1	283	1	
Cr	52	3	72	-0.159	ppb	-33.4	1468	1	
Mn	55	3	72	-0.117	ppb	-66.6	148	0.5	
Co	59	3	72	0.017	ppb	157.3	48	0.5	
Ni	60	3	72	0.028	ppb	189.3	142	1	
Cu	63	3	72	0.008	ppb	192.9	278	1	
Zn	66	3	72	-0.268	ppb	-63.2	188	5	
As	75	3	72	0.036	ppb	122.8	35	1	
Se	78	2	72	0.036	ppb	61.6	5	1	
(Se)	78	3	72	1.388	ppb	73.8	22	1	>RL
Sr	88	3	72	0.118	ppb	21.1	98	0.5	
Mo	95	3	115	-0.009	ppb	-614.2	80	0.5	
Ag	107	3	115	0.032	ppb	39.7	75	1	
Cd	111	3	115	0.000	ppb	54211.7	5	0.5	
Sn	120	3	115	-0.309	ppb	-20.2	751	1	
Sb	121	3	115	0.211	ppb	19.8	238	0.6	
Ba	137	3	115	0.114	ppb	22.9	80	0.5	
Tl	205	3	193	-0.113	ppb	-11.6	282	0.1	
(Pb)	206	3	193	-0.053	ppb	-19.4	163	1	
(Pb)	207	3	193	-0.080	ppb	-3.7	366	1	
Pb	208	3	193	-0.056	ppb	-23.1	945	0.5	
Th	232	3	193	0.586	ppb	28.9	7494	1	
U	238	3	193	0.039	ppb	71.4	1839	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4100318	0.19	4160703	98.55	60	120	
Sc (IS)	45	3	HMI He	618502	2.90	620569	99.67	60	120	
Ge Internal standard	72	2	HMI H2	2205358	1.24	2172040	101.53	60	120	
Ge Internal standard	72	3	HMI He	709319	3.89	684400	103.64	60	120	
In Internal Standard	115	3	HMI He	2521502	3.87	2522161	99.97	60	120	
Ir (IS)	193	3	HMI He	5748916	2.57	5572879	103.16	60	120	

Blank Report

Sample Table

Sample Name	MB 280-600239/1-A
Data File Name	181_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:47:00-07:00
Sample Type	Blank
Dilution	1
Comment	600239 6020b
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	145.166	ppb	1.602834747	38738	25
Mg	24	3	45	3.838	ppb	15.69907791	354	25
Al	27	3	45	5.018	ppb	83.24287257	220	15
K	39	3	45	18.017	ppb	180.4445028	16386	50
V	51	3	72	-0.339	ppb	-26.06768762	297	1
Cr	52	3	72	-0.005	ppb	-2589.280584	1546	1
Mn	55	3	72	1.130	ppb	13.73304339	628	0.5
Co	59	3	72	-0.003	ppb	-156.0352728	23	0.5
Ni	60	3	72	-0.019	ppb	-132.0554029	123	1
Cu	63	3	72	0.162	ppb	21.22848943	408	1
Zn	66	3	72	3.433	ppb	11.12122352	756	5
As	75	3	72	0.105	ppb	48.9860718	42	1
(Se)	78	3	72	1.489	ppb	30.90956231	22	1
Sr	88	3	72	0.106	ppb	36.98265317	90	0.5
Mo	95	3	115	-0.073	ppb	-22.86082023	48	0.5
Ag	107	3	115	0.010	ppb	27.38755304	40	1
Cd	111	3	115	-0.013	ppb	-88.74930693	2	0.5
Sn	120	3	115	0.171	ppb	84.32448492	1095	1
Sb	121	3	115	0.204	ppb	32.59789546	232	0.6
Ba	137	3	115	0.289	ppb	24.36067002	120	0.5
Tl	205	3	193	-0.135	ppb	-12.17290475	195	0.1
(Pb)	206	3	193	0.023	ppb	70.54297514	250	1
(Pb)	207	3	193	-0.015	ppb	-433.7890714	425	1
Pb	208	3	193	-0.011	ppb	-152.8379431	1138	0.5
Th	232	3	193	0.125	ppb	24.20003909	4985	1
U	238	3	193	0.022	ppb	84.05953915	1701	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4075880	0.56	4160703	97.96	60	120	
Sc (IS)	45	3	HMI He	603835	1.29	620569	97.30	60	120	
Ge Internal standard	72	2	HMI H2	2166547	2.25	2172040	99.75	60	120	
Ge Internal standard	72	3	HMI He	692751	0.62	684400	101.22	60	120	
In Internal Standard	115	3	HMI He	2508549	2.56	2522161	99.46	60	120	
Ir (IS)	193	3	HMI He	5591807	0.81	5572879	100.34	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 280-600239/2-A
Data File Name	182_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:48:54-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600239 6020b
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	38.969	38.969	ppb	7.303	2029	40	97.4	80	120	
Na	23	3	45	858.040	858.040	ppb	0.908	124281	40	2145.1	80	120	>+/-20%
Mg	24	3	45	745.943	745.943	ppb	1.613	46325	40	1864.9	80	120	>+/-20%
Al	27	3	45	796.245	796.245	ppb	3.639	17529	40	1990.6	80	120	>+/-20%
K	39	3	45	803.836	803.836	ppb	4.571	52196	40	2009.6	80	120	>+/-20%
Ca	40	2	45	873.221	873.221	ppb	0.535	490711	40	2183.1	80	120	>+/-20%
V	51	3	72	38.752	38.752	ppb	2.263	23880	40	96.9	80	120	
Cr	52	3	72	38.783	38.783	ppb	1.433	31719	40	97.0	80	120	
Mn	55	3	72	39.883	39.883	ppb	1.201	16705	40	99.7	80	120	
Fe	56	2	72	808.537	808.537	ppb	3.540	1218149	40	2021.3	80	120	>+/-20%
(Fe)	56	3	72	785.754	785.754	ppb	1.661	526646	40	1964.4	80	120	>+/-20%
Co	59	3	72	38.825	38.825	ppb	2.335	49097	40	97.1	80	120	
Ni	60	3	72	38.945	38.945	ppb	2.229	13705	40	97.4	80	120	
Cu	63	3	72	39.928	39.928	ppb	1.232	38035	40	99.8	80	120	
Zn	66	3	72	40.583	40.583	ppb	2.546	6942	40	101.5	80	120	
As	75	3	72	37.945	37.945	ppb	2.392	4414	40	94.9	80	120	
Se	78	2	72	41.647	41.647	ppb	4.757	2346	40	104.1	80	120	
(Se)	78	3	72	41.927	41.927	ppb	8.931	308	40	104.8	80	120	
Sr	88	3	72	81.208	81.208	ppb	0.799	43359	40	203.0	80	120	>+/-20%
Mo	95	3	115	38.386	38.386	ppb	1.322	19955	40	96.0	80	120	
Ag	107	3	115	39.446	39.446	ppb	0.681	66584	40	98.6	80	120	
Cd	111	3	115	38.588	38.588	ppb	5.466	9675	40	96.5	80	120	
Sn	120	3	115	38.640	38.640	ppb	1.237	29807	40	96.6	80	120	
Sb	121	3	115	40.522	40.522	ppb	0.855	30758	40	101.3	80	120	
Ba	137	3	115	40.350	40.350	ppb	2.682	9745	40	100.9	80	120	
Tl	205	3	193	40.411	40.411	ppb	1.741	154059	40	101.0	80	120	
(Pb)	206	3	193	40.725	40.725	ppb	1.240	51273	40	101.8	80	120	
(Pb)	207	3	193	40.018	40.018	ppb	2.107	44748	40	100.0	80	120	
Pb	208	3	193	40.472	40.472	ppb	1.709	205931	40	101.2	80	120	
Th	232	3	193	40.026	40.026	ppb	2.047	213881	40	100.1	80	120	
U	238	3	193	40.735	40.735	ppb	2.187	224337	40	101.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4140226	1.79	4160703	99.51	60	120	
Sc (IS)	45	3	HMI He	623469	0.80	620569	100.47	60	120	
Ge Internal standard	72	2	HMI H2	2259109	1.22	2172040	104.01	60	120	
Ge Internal standard	72	3	HMI He	740781	0.87	684400	108.24	60	120	
In Internal Standard	115	3	HMI He	2589877	1.48	2522161	102.68	60	120	
Ir (IS)	193	3	HMI He	5812865	0.99	5572879	104.31	60	120	

Sample Report

Sample Table

Sample Name	280-171404-B-1-A
Data File Name	183SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:50:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1908.172	ppb	1908.172	1.58	240527	400000	
Mg	24	3	45	3168.811	ppb	3168.811	1.32	190112	400000	
Al	27	3	45	151.599	ppb	151.599	4.05	3324	400000	
K	39	3	45	700.246	ppb	700.246	5.81	46041	400000	
Ca	40	2	45	9385.813	ppb	9385.813	1.32	4978065	400000	
V	51	3	72	4.190	ppb	4.190	2.53	3025	2000	
Cr	52	3	72	1.376	ppb	1.376	4.46	2704	5000	
Mn	55	3	72	156.874	ppb	156.874	2.20	64614	10000	
Fe	56	2	72	5487.742	ppb	5487.742	1.05	7923596	10000	
Co	59	3	72	0.514	ppb	0.514	8.46	673	2000	
Ni	60	3	72	1.207	ppb	1.207	12.59	555	5000	
Cu	63	3	72	0.506	ppb	0.506	8.43	756	5000	
Zn	66	3	72	1.628	ppb	1.628	9.05	506	5000	
As	75	3	72	1.000	ppb	1.000	22.60	147	2000	
Se	78	2	72	0.172	ppb	0.172	32.58	13	2000	
(Se)	78	3	72	-0.370	ppb	-0.370	-8.55	10	2000	
Sr	88	3	72	25.314	ppb	25.314	3.06	13440	4000	
Mo	95	3	115	0.037	ppb	0.037	108.19	105	2000	
Ag	107	3	115	0.016	ppb	0.016	34.71	50	100	
Cd	111	3	115	-0.007	ppb	-0.007	-179.29	3	2000	
Sn	120	3	115	-0.365	ppb	-0.365	-6.92	718	2000	
Sb	121	3	115	0.268	ppb	0.268	27.08	282	1000	
Ba	137	3	115	25.059	ppb	25.059	3.98	5977	5000	
Tl	205	3	193	-0.113	ppb	-0.113	-2.54	282	2000	
(Pb)	206	3	193	0.062	ppb	0.062	35.13	305	100	
(Pb)	207	3	193	-0.002	ppb	-0.002	-424.97	450	100	
Pb	208	3	193	0.028	ppb	0.028	19.33	1361	5000	
Th	232	3	193	0.677	ppb	0.677	20.87	7964	2000	
U	238	3	193	0.087	ppb	0.087	25.62	2096	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3994634	0.62	4160703	96.01	60	120	
Sc (IS)	45	3	HMI He	603629	0.71	620569	97.27	60	120	
Ge Internal standard	72	2	HMI H2	2177603	0.13	2172040	100.26	60	120	
Ge Internal standard	72	3	HMI He	735347	2.18	684400	107.44	60	120	
In Internal Standard	115	3	HMI He	2548843	1.62	2522161	101.06	60	120	
Ir (IS)	193	3	HMI He	5736680	1.13	5572879	102.94	60	120	

Sample Report

Sample Table

Sample Name	280-171404-A-3-B
Data File Name	184SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:52:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	6735.908	ppb	6735.908	1.25	780528	400000	
Mg	24	3	45	3559.801	ppb	3559.801	0.99	210146	400000	
Al	27	3	45	69.429	ppb	69.429	2.84	1558	400000	
K	39	3	45	2104.585	ppb	2104.585	1.77	105355	400000	
Ca	40	2	45	10862.455	ppb	10862.455	3.31	5758099	400000	
V	51	3	72	1.868	ppb	1.868	12.05	1581	2000	
Cr	52	3	72	0.473	ppb	0.473	43.41	1943	5000	
Mn	55	3	72	172.895	ppb	172.895	1.40	68859	10000	
Fe	56	2	72	4649.307	ppb	4649.307	2.71	6789830	10000	
Co	59	3	72	0.431	ppb	0.431	10.01	551	2000	
Ni	60	3	72	0.728	ppb	0.728	13.53	376	5000	
Cu	63	3	72	0.699	ppb	0.699	2.23	906	5000	
Zn	66	3	72	2.225	ppb	2.225	9.54	585	5000	
As	75	3	72	0.921	ppb	0.921	19.05	133	2000	
Se	78	2	72	0.194	ppb	0.194	19.78	14	2000	
(Se)	78	3	72	0.164	ppb	0.164	682.71	13	2000	
Sr	88	3	72	43.432	ppb	43.432	1.98	22274	4000	
Mo	95	3	115	0.004	ppb	0.004	1100.17	85	2000	
Ag	107	3	115	0.004	ppb	0.004	248.97	30	100	
Cd	111	3	115	0.008	ppb	0.008	316.95	7	2000	
Sn	120	3	115	-0.422	ppb	-0.422	-22.96	650	2000	
Sb	121	3	115	0.298	ppb	0.298	25.89	293	1000	
Ba	137	3	115	30.569	ppb	30.569	1.90	6997	5000	
Tl	205	3	193	-0.132	ppb	-0.132	-5.20	207	2000	
(Pb)	206	3	193	0.027	ppb	0.027	206.40	257	100	
(Pb)	207	3	193	-0.012	ppb	-0.012	-268.51	430	100	
Pb	208	3	193	-0.005	ppb	-0.005	-221.00	1171	5000	
Th	232	3	193	0.203	ppb	0.203	16.87	5403	2000	
U	238	3	193	0.049	ppb	0.049	10.75	1848	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3994548	0.76	4160703	96.01	60	120	
Sc (IS)	45	3	HMI He	593986	0.20	620569	95.72	60	120	
Ge Internal standard	72	2	HMI H2	2202622	2.02	2172040	101.41	60	120	
Ge Internal standard	72	3	HMI He	711039	1.20	684400	103.89	60	120	
In Internal Standard	115	3	HMI He	2450133	1.75	2522161	97.14	60	120	
Ir (IS)	193	3	HMI He	5616019	2.63	5572879	100.77	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-5-A
Data File Name	185SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:54:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	5040.560	ppb	5040.560	0.24	584081	400000	
Mg	24	3	45	3903.297	ppb	3903.297	1.16	228263	400000	
Al	27	3	45	122.218	ppb	122.218	6.55	2633	400000	
K	39	3	45	1968.612	ppb	1968.612	1.14	98616	400000	
Ca	40	2	45	10546.599	ppb	10546.599	0.72	5461052	400000	
V	51	3	72	3.041	ppb	3.041	6.40	2239	2000	
Cr	52	3	72	0.765	ppb	0.765	28.59	2139	5000	
Mn	55	3	72	157.675	ppb	157.675	0.98	62223	10000	
Fe	56	2	72	4652.078	ppb	4652.078	0.55	6700415	10000	
Co	59	3	72	0.608	ppb	0.608	8.58	758	2000	
Ni	60	3	72	0.774	ppb	0.774	29.80	388	5000	
Cu	63	3	72	0.576	ppb	0.576	15.10	786	5000	
Zn	66	3	72	2.259	ppb	2.259	21.22	585	5000	
As	75	3	72	0.813	ppb	0.813	41.05	120	2000	
Se	78	2	72	0.112	ppb	0.112	84.37	9	2000	
(Se)	78	3	72	1.682	ppb	1.682	25.58	23	2000	
Sr	88	3	72	33.444	ppb	33.444	1.46	17001	4000	
Mo	95	3	115	-0.027	ppb	-0.027	-131.43	70	2000	
Ag	107	3	115	0.005	ppb	0.005	90.76	32	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-0.536	ppb	-0.536	-15.71	575	2000	
Sb	121	3	115	0.231	ppb	0.231	27.15	247	1000	
Ba	137	3	115	24.132	ppb	24.132	4.67	5583	5000	
Tl	205	3	193	-0.142	ppb	-0.142	-7.38	168	2000	
(Pb)	206	3	193	0.067	ppb	0.067	72.65	303	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-68.16	393	100	
Pb	208	3	193	0.028	ppb	0.028	43.97	1328	5000	
Th	232	3	193	0.105	ppb	0.105	37.89	4877	2000	
U	238	3	193	0.073	ppb	0.073	19.55	1964	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3901057	0.07	4160703	93.76	60	120	
Sc (IS)	45	3	HMI He	588480	1.12	620569	94.83	60	120	
Ge Internal standard	72	2	HMI H2	2171914	1.06	2172040	99.99	60	120	
Ge Internal standard	72	3	HMI He	704349	0.87	684400	102.91	60	120	
In Internal Standard	115	3	HMI He	2471907	1.57	2522161	98.01	60	120	
Ir (IS)	193	3	HMI He	5583081	2.09	5572879	100.18	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-8-A
Data File Name	186SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:56:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	5030.512	ppb	5030.512	3.35	599966	400000	
Mg	24	3	45	3884.059	ppb	3884.059	1.22	233788	400000	
Al	27	3	45	121.597	ppb	121.597	9.59	2696	400000	
K	39	3	45	1918.224	ppb	1918.224	1.91	99302	400000	
Ca	40	2	45	10659.492	ppb	10659.492	1.53	5546555	400000	
V	51	3	72	3.297	ppb	3.297	4.54	2441	2000	
Cr	52	3	72	0.822	ppb	0.822	12.79	2231	5000	
Mn	55	3	72	158.187	ppb	158.187	0.20	63846	10000	
Fe	56	2	72	4489.361	ppb	4489.361	1.58	6518127	10000	
Co	59	3	72	0.551	ppb	0.551	4.75	705	2000	
Ni	60	3	72	0.900	ppb	0.900	26.07	440	5000	
Cu	63	3	72	0.617	ppb	0.617	8.54	843	5000	
Zn	66	3	72	2.590	ppb	2.590	23.00	651	5000	
As	75	3	72	1.143	ppb	1.143	16.86	160	2000	
Se	78	2	72	0.109	ppb	0.109	49.84	9	2000	
(Se)	78	3	72	-0.825	ppb	-0.825	-52.26	7	2000	
Sr	88	3	72	32.728	ppb	32.728	1.54	17014	4000	
Mo	95	3	115	0.041	ppb	0.041	115.47	107	2000	
Ag	107	3	115	0.003	ppb	0.003	384.42	28	100	
Cd	111	3	115	-0.006	ppb	-0.006	-403.05	3	2000	
Sn	120	3	115	-0.493	ppb	-0.493	-21.95	618	2000	
Sb	121	3	115	0.189	ppb	0.189	29.27	222	1000	
Ba	137	3	115	24.738	ppb	24.738	5.62	5845	5000	
Tl	205	3	193	-0.134	ppb	-0.134	-1.52	203	2000	
(Pb)	206	3	193	0.030	ppb	0.030	126.08	265	100	
(Pb)	207	3	193	-0.051	ppb	-0.051	-156.98	396	100	
Pb	208	3	193	0.000	ppb	0.000	-15736.83	1221	5000	
Th	232	3	193	0.125	ppb	0.125	44.86	5112	2000	
U	238	3	193	0.057	ppb	0.057	11.44	1931	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3920391	0.48	4160703	94.22	60	120	
Sc (IS)	45	3	HMI He	605689	0.76	620569	97.60	60	120	
Ge Internal standard	72	2	HMI H2	2189509	2.10	2172040	100.80	60	120	
Ge Internal standard	72	3	HMI He	720359	1.13	684400	105.25	60	120	
In Internal Standard	115	3	HMI He	2527427	3.55	2522161	100.21	60	120	
Ir (IS)	193	3	HMI He	5734978	0.11	5572879	102.91	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-9-A
Data File Name	187SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T01:58:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.099	ppb	0.099	100.22	5	2000	
Na	23	3	45	5228.191	ppb	5228.191	1.76	616515	400000	
Mg	24	3	45	3634.417	ppb	3634.417	0.75	216597	400000	
Al	27	3	45	75.235	ppb	75.235	2.73	1695	400000	
K	39	3	45	1905.536	ppb	1905.536	2.62	97770	400000	
Ca	40	2	45	11435.778	ppb	11435.778	2.82	6014359	400000	
V	51	3	72	2.053	ppb	2.053	8.52	1696	2000	
Cr	52	3	72	0.568	ppb	0.568	23.60	2022	5000	
Mn	55	3	72	192.704	ppb	192.704	1.79	77101	10000	
Fe	56	2	72	5061.239	ppb	5061.239	1.53	7384683	10000	
Co	59	3	72	0.531	ppb	0.531	8.94	675	2000	
Ni	60	3	72	0.802	ppb	0.802	19.22	403	5000	
Cu	63	3	72	0.758	ppb	0.758	9.62	965	5000	
Zn	66	3	72	3.024	ppb	3.024	7.80	715	5000	
As	75	3	72	0.704	ppb	0.704	41.96	110	2000	
Se	78	2	72	0.097	ppb	0.097	57.98	9	2000	
(Se)	78	3	72	-0.080	ppb	-0.080	-2307.22	12	2000	
Sr	88	3	72	42.913	ppb	42.913	2.58	22115	4000	
Mo	95	3	115	0.014	ppb	0.014	179.10	93	2000	
Ag	107	3	115	0.002	ppb	0.002	206.50	27	100	
Cd	111	3	115	0.000	ppb	0.000	-8009.24	5	2000	
Sn	120	3	115	-0.443	ppb	-0.443	-2.83	663	2000	
Sb	121	3	115	0.214	ppb	0.214	24.01	243	1000	
Ba	137	3	115	31.990	ppb	31.990	4.28	7633	5000	
Tl	205	3	193	-0.136	ppb	-0.136	-5.30	197	2000	
(Pb)	206	3	193	0.071	ppb	0.071	67.60	315	100	
(Pb)	207	3	193	-0.007	ppb	-0.007	-449.90	443	100	
Pb	208	3	193	0.042	ppb	0.042	27.05	1426	5000	
Th	232	3	193	0.085	ppb	0.085	43.28	4885	2000	
U	238	3	193	0.063	ppb	0.063	39.27	1961	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3964153	1.72	4160703	95.28	60	120	
Sc (IS)	45	3	HMI He	599640	0.67	620569	96.63	60	120	
Ge Internal standard	72	2	HMI H2	2200381	0.38	2172040	101.30	60	120	
Ge Internal standard	72	3	HMI He	714647	1.86	684400	104.42	60	120	
In Internal Standard	115	3	HMI He	2555924	2.39	2522161	101.34	60	120	
Ir (IS)	193	3	HMI He	5712030	2.20	5572879	102.50	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-9-Asd@5
Data File Name	188SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:00:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	1101.436	ppb	1101.436	2.61	147319	400000	
Mg	24	3	45	745.297	ppb	745.297	1.24	44551	400000	
Al	27	3	45	13.826	ppb	13.826	15.27	404	400000	
K	39	3	45	384.869	ppb	384.869	9.37	32136	400000	
Ca	40	2	45	2402.516	ppb	2402.516	2.76	1264482	400000	
V	51	3	72	0.046	ppb	0.046	168.93	528	2000	
Cr	52	3	72	-0.083	ppb	-0.083	-193.40	1528	5000	
Mn	55	3	72	39.084	ppb	39.084	3.72	15718	10000	
Fe	56	2	72	1024.673	ppb	1024.673	0.74	1502540	10000	
Co	59	3	72	0.119	ppb	0.119	21.84	172	2000	
Ni	60	3	72	0.195	ppb	0.195	36.97	198	5000	
Cu	63	3	72	0.145	ppb	0.145	18.47	403	5000	
Zn	66	3	72	1.858	ppb	1.858	10.86	526	5000	
As	75	3	72	0.367	ppb	0.367	30.38	72	2000	
Se	78	2	72	0.120	ppb	0.120	49.34	10	2000	
(Se)	78	3	72	-0.112	ppb	-0.112	-1452.77	12	2000	
Sr	88	3	72	8.352	ppb	8.352	4.97	4314	4000	
Mo	95	3	115	-0.056	ppb	-0.056	-41.72	57	2000	
Ag	107	3	115	0.006	ppb	0.006	74.12	33	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-0.303	ppb	-0.303	-18.91	750	2000	
Sb	121	3	115	0.106	ppb	0.106	61.80	158	1000	
Ba	137	3	115	7.023	ppb	7.023	0.19	1684	5000	
Tl	205	3	193	-0.138	ppb	-0.138	-6.60	183	2000	
(Pb)	206	3	193	-0.043	ppb	-0.043	-41.16	172	100	
(Pb)	207	3	193	-0.098	ppb	-0.098	-19.04	338	100	
Pb	208	3	193	-0.069	ppb	-0.069	-15.96	860	5000	
Th	232	3	193	0.056	ppb	0.056	38.58	4654	2000	
U	238	3	193	0.014	ppb	0.014	47.81	1666	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3937398	0.77	4160703	94.63	60	120	
Sc (IS)	45	3	HMI He	600165	1.28	620569	96.71	60	120	
Ge Internal standard	72	2	HMI H2	2201600	1.82	2172040	101.36	60	120	
Ge Internal standard	72	3	HMI He	711598	3.26	684400	103.97	60	120	
In Internal Standard	115	3	HMI He	2504793	1.82	2522161	99.31	60	120	
Ir (IS)	193	3	HMI He	5611266	0.66	5572879	100.69	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-9-B MS
Data File Name	189SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:02:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.520	ppb	40.520	1.31	2016	2000	
Na	23	3	45	6314.461	ppb	6314.461	4.10	734318	400000	
Mg	24	3	45	4410.400	ppb	4410.400	0.41	260789	400000	
Al	27	3	45	882.323	ppb	882.323	3.09	18527	400000	
K	39	3	45	2733.744	ppb	2733.744	1.62	132486	400000	
Ca	40	2	45	12105.103	ppb	12105.103	1.31	6370893	400000	
V	51	3	72	42.130	ppb	42.130	2.84	25067	2000	
Cr	52	3	72	40.008	ppb	40.008	2.57	31595	5000	
Mn	55	3	72	231.854	ppb	231.854	3.51	92956	10000	
Fe	56	2	72	5806.716	ppb	5806.716	2.61	8574081	10000	
Co	59	3	72	39.657	ppb	39.657	2.67	48500	2000	
Ni	60	3	72	39.942	ppb	39.942	2.18	13593	5000	
Cu	63	3	72	41.965	ppb	41.965	3.29	38646	5000	
Zn	66	3	72	44.593	ppb	44.593	2.74	7355	5000	
As	75	3	72	39.480	ppb	39.480	2.58	4440	2000	
Se	78	2	72	41.345	ppb	41.345	2.56	2297	2000	
(Se)	78	3	72	42.247	ppb	42.247	20.25	300	2000	
Sr	88	3	72	124.894	ppb	124.894	3.03	64465	4000	
Mo	95	3	115	39.840	ppb	39.840	1.06	19835	2000	
Ag	107	3	115	40.786	ppb	40.786	1.69	65940	100	
Cd	111	3	115	40.292	ppb	40.292	1.63	9680	2000	
Sn	120	3	115	39.548	ppb	39.548	1.95	29197	2000	
Sb	121	3	115	41.315	ppb	41.315	2.37	30035	1000	
Ba	137	3	115	76.004	ppb	76.004	0.67	17538	5000	
Tl	205	3	193	41.004	ppb	41.004	1.83	151715	2000	
(Pb)	206	3	193	41.573	ppb	41.573	1.92	50796	100	
(Pb)	207	3	193	40.815	ppb	40.815	0.52	44300	100	
Pb	208	3	193	41.481	ppb	41.481	0.93	204843	5000	
Th	232	3	193	40.723	ppb	40.723	2.26	211123	2000	
U	238	3	193	41.766	ppb	41.766	1.95	223217	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3966705	1.80	4160703	95.34	60	120	
Sc (IS)	45	3	HMI He	595025	0.14	620569	95.88	60	120	
Ge Internal standard	72	2	HMI H2	2227642	1.53	2172040	102.56	60	120	
Ge Internal standard	72	3	HMI He	716797	3.11	684400	104.73	60	120	
In Internal Standard	115	3	HMI He	2480643	0.93	2522161	98.35	60	120	
Ir (IS)	193	3	HMI He	5642313	1.56	5572879	101.25	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-9-C MSD
Data File Name	190SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:03:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.372	ppb	40.372	6.48	1971	2000	
Na	23	3	45	6216.837	ppb	6216.837	1.78	737213	400000	
Mg	24	3	45	4347.390	ppb	4347.390	0.16	262020	400000	
Al	27	3	45	888.977	ppb	888.977	1.72	19025	400000	
K	39	3	45	2692.208	ppb	2692.208	1.18	133223	400000	
Ca	40	2	45	12293.668	ppb	12293.668	2.06	6331259	400000	
V	51	3	72	42.411	ppb	42.411	1.76	25496	2000	
Cr	52	3	72	40.244	ppb	40.244	0.55	32109	5000	
Mn	55	3	72	230.741	ppb	230.741	1.22	93513	10000	
Fe	56	2	72	6053.905	ppb	6053.905	1.70	8641392	10000	
Co	59	3	72	39.209	ppb	39.209	1.58	48457	2000	
Ni	60	3	72	39.689	ppb	39.689	1.48	13650	5000	
Cu	63	3	72	41.166	ppb	41.166	1.18	38319	5000	
Zn	66	3	72	42.334	ppb	42.334	1.90	7070	5000	
As	75	3	72	40.001	ppb	40.001	4.08	4544	2000	
Se	78	2	72	41.962	ppb	41.962	0.73	2254	2000	
(Se)	78	3	72	40.821	ppb	40.821	20.15	293	2000	
Sr	88	3	72	125.834	ppb	125.834	2.46	65631	4000	
Mo	95	3	115	40.590	ppb	40.590	1.93	20420	2000	
Ag	107	3	115	40.668	ppb	40.668	1.38	66454	100	
Cd	111	3	115	40.673	ppb	40.673	0.95	9875	2000	
Sn	120	3	115	40.777	ppb	40.777	0.23	30396	2000	
Sb	121	3	115	41.433	ppb	41.433	0.53	30443	1000	
Ba	137	3	115	74.889	ppb	74.889	3.10	17466	5000	
Tl	205	3	193	40.911	ppb	40.911	2.01	153100	2000	
(Pb)	206	3	193	42.021	ppb	42.021	0.11	51934	100	
(Pb)	207	3	193	41.101	ppb	41.101	1.31	45109	100	
Pb	208	3	193	41.782	ppb	41.782	0.75	208683	5000	
Th	232	3	193	41.014	ppb	41.014	2.48	215032	2000	
U	238	3	193	41.669	ppb	41.669	1.96	225254	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3882106	1.94	4160703	93.30	60	120	
Sc (IS)	45	3	HMI He	606494	0.55	620569	97.73	60	120	
Ge Internal standard	72	2	HMI H2	2153376	1.62	2172040	99.14	60	120	
Ge Internal standard	72	3	HMI He	724066	1.80	684400	105.80	60	120	
In Internal Standard	115	3	HMI He	2506919	0.59	2522161	99.40	60	120	
Ir (IS)	193	3	HMI He	5706521	1.29	5572879	102.40	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	191_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:05:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.600	ppb	3.445	2377	50	99.2	90	110	
Na	23	3	45	50976.604	ppb	1.725	5819638	51000	100.0	90	110	
Mg	24	3	45	10943.569	ppb	2.451	651983	11000	99.5	90	110	
Al	27	3	45	1015.014	ppb	3.341	21465	1000	101.5	90	110	
K	39	3	45	11241.101	ppb	1.868	500821	11000	102.2	90	110	
Ca	40	2	45	11660.786	ppb	1.482	5944184	11000	106.0	90	110	
V	51	3	72	49.897	ppb	2.872	28824	50	99.8	90	110	
Cr	52	3	72	50.827	ppb	2.659	38674	50	101.7	90	110	
Mn	55	3	72	51.023	ppb	1.570	20083	50	102.0	90	110	
Fe	56	2	72	1027.982	ppb	1.796	1420531	1000	102.8	90	110	
Co	59	3	72	50.213	ppb	1.706	59809	50	100.4	90	110	
Ni	60	3	72	49.244	ppb	1.508	16291	50	98.5	90	110	
Cu	63	3	72	50.984	ppb	0.869	45682	50	102.0	90	110	
Zn	66	3	72	51.977	ppb	1.928	8312	50	104.0	90	110	
As	75	3	72	51.689	ppb	1.603	5653	50	103.4	90	110	
Se	78	2	72	53.357	ppb	2.029	2760	50	106.7	90	110	
(Se)	78	3	72	49.158	ppb	0.988	338	50	98.3	90	110	
Sr	88	3	72	106.646	ppb	1.765	53625	100	106.6	90	110	
Mo	95	3	115	49.340	ppb	0.798	24979	50	98.7	90	110	
Ag	107	3	115	49.606	ppb	1.715	81606	50	99.2	90	110	
Cd	111	3	115	50.172	ppb	1.744	12265	50	100.3	90	110	
Sn	120	3	115	49.440	ppb	1.221	36899	50	98.9	90	110	
Sb	121	3	115	51.216	ppb	0.964	37871	50	102.4	90	110	
Ba	137	3	115	51.455	ppb	1.185	12100	50	102.9	90	110	
Tl	205	3	193	50.063	ppb	2.727	187690	50	100.1	90	110	
(Pb)	206	3	193	50.372	ppb	3.876	62353	50	100.7	90	110	
(Pb)	207	3	193	50.801	ppb	1.796	55808	50	101.6	90	110	
Pb	208	3	193	50.595	ppb	3.226	253059	50	101.2	90	110	
Th	232	3	193	50.772	ppb	3.571	265817	50	101.5	90	110	
U	238	3	193	50.918	ppb	3.612	275565	50	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3841601	1.34	4160703	92.33	60	120	
Sc (IS)	45	3	HMI He	599802	1.23	620569	96.65	60	120	
Ge Internal standard	72	2	HMI H2	2074375	1.10	2172040	95.50	60	120	
Ge Internal standard	72	3	HMI He	697916	1.53	684400	101.97	60	120	
In Internal Standard	115	3	HMI He	2524326	0.95	2522161	100.09	60	120	
Ir (IS)	193	3	HMI He	5724408	3.37	5572879	102.72	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	192_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:07:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	39.256	ppb	10.3	26107	25	>RL
Mg	24	3	45	2.764	ppb	18.0	284	25	
Al	27	3	45	-0.872	ppb	-82.5	93	15	
K	39	3	45	24.225	ppb	127.6	16349	50	
V	51	3	72	-0.474	ppb	-15.7	218	1	
Cr	52	3	72	-0.226	ppb	-24.5	1369	1	
Mn	55	3	72	-0.066	ppb	-136.7	163	0.5	
Co	59	3	72	0.006	ppb	175.9	33	0.5	
Ni	60	3	72	0.042	ppb	105.6	142	1	
Cu	63	3	72	-0.027	ppb	-148.4	238	1	
Zn	66	3	72	-0.402	ppb	-70.4	162	5	
As	75	3	72	0.109	ppb	104.1	42	1	
Se	78	2	72	0.014	ppb	709.0	4	1	
(Se)	78	3	72	2.030	ppb	35.0	25	1	>RL
Sr	88	3	72	-0.010	ppb	-123.7	32	0.5	
Mo	95	3	115	-0.014	ppb	-252.4	77	0.5	
Ag	107	3	115	0.024	ppb	75.5	62	1	
Cd	111	3	115	0.001	ppb	3300.8	5	0.5	
Sn	120	3	115	-0.428	ppb	-6.6	651	1	
Sb	121	3	115	0.212	ppb	17.4	233	0.6	
Ba	137	3	115	-0.031	ppb	-67.3	45	0.5	
Tl	205	3	193	-0.122	ppb	-4.3	247	0.1	
(Pb)	206	3	193	-0.057	ppb	-13.4	157	1	
(Pb)	207	3	193	-0.126	ppb	-26.2	312	1	
Pb	208	3	193	-0.071	ppb	-16.1	858	0.5	
Th	232	3	193	0.471	ppb	37.8	6835	1	
U	238	3	193	0.033	ppb	99.9	1786	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3943132	2.06	4160703	94.77	60	120	
Sc (IS)	45	3	HMI He	592419	0.41	620569	95.46	60	120	
Ge Internal standard	72	2	HMI H2	2100739	1.51	2172040	96.72	60	120	
Ge Internal standard	72	3	HMI He	684752	1.50	684400	100.05	60	120	
In Internal Standard	115	3	HMI He	2471838	0.38	2522161	98.00	60	120	
Ir (IS)	193	3	HMI He	5686316	1.45	5572879	102.04	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-9-Apds
Data File Name	193SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:09:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	193.775	ppb	193.775	3.01	9693	2000	
Na	23	3	45	5292.662	ppb	5292.662	2.23	628975	400000	
Mg	24	3	45	3581.670	ppb	3581.670	0.55	215226	400000	
Al	27	3	45	2051.296	ppb	2051.296	0.73	43621	400000	
K	39	3	45	1923.307	ppb	1923.307	1.07	99352	400000	
Ca	40	2	45	11210.481	ppb	11210.481	0.40	6047441	400000	
V	51	3	72	187.916	ppb	187.916	1.47	112925	2000	
Cr	52	3	72	187.087	ppb	187.087	0.76	145552	5000	
Mn	55	3	72	373.583	ppb	373.583	3.03	153548	10000	
Fe	56	2	72	4963.379	ppb	4963.379	2.85	7367292	10000	
Co	59	3	72	184.818	ppb	184.818	1.36	231822	2000	
Ni	60	3	72	187.815	ppb	187.815	2.33	65056	5000	
Cu	63	3	72	189.277	ppb	189.277	1.58	177866	5000	
Zn	66	3	72	199.189	ppb	199.189	1.99	32873	5000	
As	75	3	72	179.008	ppb	179.008	2.79	20535	2000	
Se	78	2	72	200.097	ppb	200.097	2.94	11158	2000	
(Se)	78	3	72	178.565	ppb	178.565	1.70	1261	2000	
Sr	88	3	72	236.351	ppb	236.351	1.97	125134	4000	
Mo	95	3	115	192.167	ppb	192.167	0.29	96814	2000	
Ag	107	3	115	41.881	ppb	41.881	1.20	68747	100	
Cd	111	3	115	193.316	ppb	193.316	1.13	47137	2000	
Sn	120	3	115	196.257	ppb	196.257	1.51	143253	2000	
Sb	121	3	115	197.230	ppb	197.230	0.87	145279	1000	
Ba	137	3	115	234.616	ppb	234.616	0.41	54856	5000	
Tl	205	3	193	190.672	ppb	190.672	0.52	729629	2000	
(Pb)	206	3	193	193.385	ppb	193.385	0.99	244402	100	
(Pb)	207	3	193	192.540	ppb	192.540	0.30	215146	100	
Pb	208	3	193	192.115	ppb	192.115	0.39	980102	5000	
Th	232	3	193	150.745	ppb	150.745	1.59	798897	2000	
U	238	3	193	211.142	ppb	211.142	1.74	1164542	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4064606	1.49	4160703	97.69	60	120	
Sc (IS)	45	3	HMI He	604635	0.60	620569	97.43	60	120	
Ge Internal standard	72	2	HMI H2	2239066	1.61	2172040	103.09	60	120	
Ge Internal standard	72	3	HMI He	735166	1.87	684400	107.42	60	120	
In Internal Standard	115	3	HMI He	2518518	0.57	2522161	99.86	60	120	
Ir (IS)	193	3	HMI He	5855449	0.16	5572879	105.07	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-11-A
Data File Name	194SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:11:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1443.393	ppb	1443.393	0.54	187729	400000	
Mg	24	3	45	1878.280	ppb	1878.280	0.54	112976	400000	
Al	27	3	45	26.241	ppb	26.241	9.77	671	400000	
K	39	3	45	526.422	ppb	526.422	7.38	38568	400000	
Ca	40	2	45	5951.554	ppb	5951.554	1.60	3091982	400000	
V	51	3	72	-0.026	ppb	-0.026	-428.00	495	2000	
Cr	52	3	72	0.172	ppb	0.172	79.72	1753	5000	
Mn	55	3	72	59.846	ppb	59.846	1.27	24429	10000	
Fe	56	2	72	852.680	ppb	852.680	1.62	1262345	10000	
Co	59	3	72	0.124	ppb	0.124	22.83	182	2000	
Ni	60	3	72	0.315	ppb	0.315	40.79	243	5000	
Cu	63	3	72	0.499	ppb	0.499	12.93	738	5000	
Zn	66	3	72	19.993	ppb	19.993	2.82	3465	5000	
As	75	3	72	0.264	ppb	0.264	48.80	62	2000	
Se	78	2	72	0.132	ppb	0.132	44.47	11	2000	
(Se)	78	3	72	0.375	ppb	0.375	9.69	15	2000	
Sr	88	3	72	15.889	ppb	15.889	4.18	8328	4000	
Mo	95	3	115	0.090	ppb	0.090	37.70	130	2000	
Ag	107	3	115	0.011	ppb	0.011	110.97	42	100	
Cd	111	3	115	0.069	ppb	0.069	69.98	22	2000	
Sn	120	3	115	-0.025	ppb	-0.025	-594.54	953	2000	
Sb	121	3	115	0.318	ppb	0.318	9.26	315	1000	
Ba	137	3	115	18.435	ppb	18.435	5.02	4344	5000	
Tl	205	3	193	-0.086	ppb	-0.086	-8.94	386	2000	
(Pb)	206	3	193	0.170	ppb	0.170	26.23	441	100	
(Pb)	207	3	193	0.072	ppb	0.072	2.39	533	100	
Pb	208	3	193	0.113	ppb	0.113	4.62	1794	5000	
Th	232	3	193	0.874	ppb	0.874	28.53	9009	2000	
U	238	3	193	0.101	ppb	0.101	21.00	2179	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3907953	1.07	4160703	93.93	60	120	
Sc (IS)	45	3	HMI He	604896	0.32	620569	97.47	60	120	
Ge Internal standard	72	2	HMI H2	2220126	2.51	2172040	102.21	60	120	
Ge Internal standard	72	3	HMI He	724768	1.69	684400	105.90	60	120	
In Internal Standard	115	3	HMI He	2508893	0.87	2522161	99.47	60	120	
Ir (IS)	193	3	HMI He	5761413	1.09	5572879	103.38	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-13-A
Data File Name	195SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:13:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.201	ppb	0.201	86.60	10	2000	
Na	23	3	45	985.141	ppb	985.141	1.55	132577	400000	
Mg	24	3	45	917.454	ppb	917.454	0.55	54194	400000	
Al	27	3	45	221.328	ppb	221.328	1.71	4719	400000	
K	39	3	45	359.977	ppb	359.977	8.74	30721	400000	
Ca	40	2	45	2454.325	ppb	2454.325	1.36	1303242	400000	
V	51	3	72	1.020	ppb	1.020	15.09	1090	2000	
Cr	52	3	72	0.358	ppb	0.358	14.24	1854	5000	
Mn	55	3	72	24.565	ppb	24.565	2.91	9939	10000	
Fe	56	2	72	506.253	ppb	506.253	1.66	766028	10000	
Co	59	3	72	1.013	ppb	1.013	2.48	1254	2000	
Ni	60	3	72	1.463	ppb	1.463	3.53	621	5000	
Cu	63	3	72	0.381	ppb	0.381	17.01	616	5000	
Zn	66	3	72	3.515	ppb	3.515	7.95	788	5000	
As	75	3	72	0.246	ppb	0.246	64.01	58	2000	
Se	78	2	72	0.140	ppb	0.140	139.54	11	2000	
(Se)	78	3	72	0.668	ppb	0.668	128.43	17	2000	
Sr	88	3	72	14.873	ppb	14.873	2.89	7643	4000	
Mo	95	3	115	-0.015	ppb	-0.015	-296.64	77	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-570.98	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-181.57	3	2000	
Sn	120	3	115	0.433	ppb	0.433	49.63	1274	2000	
Sb	121	3	115	0.246	ppb	0.246	22.11	260	1000	
Ba	137	3	115	25.841	ppb	25.841	3.60	6032	5000	
Tl	205	3	193	-0.121	ppb	-0.121	-10.27	247	2000	
(Pb)	206	3	193	-0.011	ppb	-0.011	-158.73	208	100	
(Pb)	207	3	193	-0.097	ppb	-0.097	-21.91	337	100	
Pb	208	3	193	-0.026	ppb	-0.026	-17.89	1063	5000	
Th	232	3	193	0.224	ppb	0.224	27.89	5468	2000	
U	238	3	193	0.060	ppb	0.060	36.79	1894	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3974093	1.35	4160703	95.51	60	120	
Sc (IS)	45	3	HMI He	593350	1.35	620569	95.61	60	120	
Ge Internal standard	72	2	HMI H2	2258489	0.73	2172040	103.98	60	120	
Ge Internal standard	72	3	HMI He	710107	0.29	684400	103.76	60	120	
In Internal Standard	115	3	HMI He	2496057	2.77	2522161	98.97	60	120	
Ir (IS)	193	3	HMI He	5575160	0.60	5572879	100.04	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-15-A
Data File Name	196SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:15:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.132	ppb	0.132	43.64	7	2000	
Na	23	3	45	1013.972	ppb	1013.972	1.10	136349	400000	
Mg	24	3	45	1663.384	ppb	1663.384	2.09	98529	400000	
Al	27	3	45	233.839	ppb	233.839	3.76	4999	400000	
K	39	3	45	368.883	ppb	368.883	9.96	31213	400000	
Ca	40	2	45	4968.240	ppb	4968.240	1.33	2666826	400000	
V	51	3	72	3.435	ppb	3.435	7.22	2491	2000	
Cr	52	3	72	1.039	ppb	1.039	8.66	2366	5000	
Mn	55	3	72	75.287	ppb	75.287	1.27	30119	10000	
Fe	56	2	72	5795.690	ppb	5795.690	0.78	8661913	10000	
Co	59	3	72	0.983	ppb	0.983	6.57	1221	2000	
Ni	60	3	72	2.640	ppb	2.640	8.26	1016	5000	
Cu	63	3	72	0.433	ppb	0.433	19.20	665	5000	
Zn	66	3	72	2.736	ppb	2.736	13.52	666	5000	
As	75	3	72	1.027	ppb	1.027	22.73	145	2000	
Se	78	2	72	0.116	ppb	0.116	59.07	10	2000	
(Se)	78	3	72	0.406	ppb	0.406	311.20	15	2000	
Sr	88	3	72	20.678	ppb	20.678	2.99	10632	4000	
Mo	95	3	115	-0.026	ppb	-0.026	-150.84	72	2000	
Ag	107	3	115	-0.007	ppb	-0.007	-63.65	12	100	
Cd	111	3	115	0.041	ppb	0.041	49.49	15	2000	
Sn	120	3	115	-0.462	ppb	-0.462	-8.93	636	2000	
Sb	121	3	115	0.219	ppb	0.219	0.51	242	1000	
Ba	137	3	115	29.779	ppb	29.779	2.72	6982	5000	
Tl	205	3	193	-0.120	ppb	-0.120	-3.51	250	2000	
(Pb)	206	3	193	0.053	ppb	0.053	40.46	288	100	
(Pb)	207	3	193	-0.071	ppb	-0.071	-40.02	366	100	
Pb	208	3	193	0.013	ppb	0.013	88.75	1259	5000	
Th	232	3	193	0.147	ppb	0.147	13.13	5109	2000	
U	238	3	193	0.060	ppb	0.060	9.64	1908	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4034840	0.56	4160703	96.97	60	120	
Sc (IS)	45	3	HMI He	595667	1.06	620569	95.99	60	120	
Ge Internal standard	72	2	HMI H2	2254317	1.52	2172040	103.79	60	120	
Ge Internal standard	72	3	HMI He	711697	1.72	684400	103.99	60	120	
In Internal Standard	115	3	HMI He	2508654	1.31	2522161	99.46	60	120	
Ir (IS)	193	3	HMI He	5609848	1.19	5572879	100.66	60	120	

Sample Report

Sample Table

Sample Name	280-171404-D-17-A
Data File Name	197SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:17:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	1726.336	ppb	1726.336	1.62	221731	400000	
Mg	24	3	45	2797.138	ppb	2797.138	1.86	169354	400000	
Al	27	3	45	161.212	ppb	161.212	15.06	3557	400000	
K	39	3	45	807.205	ppb	807.205	1.14	51158	400000	
Ca	40	2	45	7970.044	ppb	7970.044	0.74	4157038	400000	
V	51	3	72	2.203	ppb	2.203	1.34	1819	2000	
Cr	52	3	72	0.773	ppb	0.773	6.70	2219	5000	
Mn	55	3	72	77.873	ppb	77.873	2.75	31886	10000	
Fe	56	2	72	2931.654	ppb	2931.654	0.59	4342833	10000	
Co	59	3	72	0.473	ppb	0.473	9.63	616	2000	
Ni	60	3	72	1.141	ppb	1.141	18.17	526	5000	
Cu	63	3	72	0.904	ppb	0.904	4.96	1119	5000	
Zn	66	3	72	8.458	ppb	8.458	4.85	1611	5000	
As	75	3	72	0.499	ppb	0.499	44.17	88	2000	
Se	78	2	72	0.203	ppb	0.203	28.08	15	2000	
(Se)	78	3	72	0.854	ppb	0.854	132.80	18	2000	
Sr	88	3	72	23.527	ppb	23.527	1.62	12384	4000	
Mo	95	3	115	0.010	ppb	0.010	318.57	90	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-461.26	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-343.83	3	2000	
Sn	120	3	115	-0.357	ppb	-0.357	-35.40	713	2000	
Sb	121	3	115	0.177	ppb	0.177	13.52	212	1000	
Ba	137	3	115	22.080	ppb	22.080	4.97	5200	5000	
Tl	205	3	193	-0.129	ppb	-0.129	-5.02	223	2000	
(Pb)	206	3	193	0.050	ppb	0.050	72.86	290	100	
(Pb)	207	3	193	0.032	ppb	0.032	41.74	486	100	
Pb	208	3	193	0.038	ppb	0.038	17.04	1408	5000	
Th	232	3	193	0.109	ppb	0.109	45.27	5017	2000	
U	238	3	193	0.049	ppb	0.049	35.86	1886	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3926776	2.26	4160703	94.38	60	120	
Sc (IS)	45	3	HMI He	609216	1.53	620569	98.17	60	120	
Ge Internal standard	72	2	HMI H2	2232159	0.99	2172040	102.77	60	120	
Ge Internal standard	72	3	HMI He	728645	1.43	684400	106.46	60	120	
In Internal Standard	115	3	HMI He	2514294	1.59	2522161	99.69	60	120	
Ir (IS)	193	3	HMI He	5723876	0.71	5572879	102.71	60	120	

Sample Report

Sample Table

Sample Name	280-171404-C-19-G
Data File Name	198SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:18:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3278.876	ppb	3278.876	1.61	393794	400000	
Mg	24	3	45	13514.093	ppb	13514.093	3.70	802981	400000	
Al	27	3	45	35.350	ppb	35.350	6.30	854	400000	
K	39	3	45	838.248	ppb	838.248	1.37	51559	400000	
Ca	40	2	45	46219.922	ppb	46219.922	0.50	24271974	400000	
V	51	3	72	-0.250	ppb	-0.250	-4.47	365	2000	
Cr	52	3	72	0.195	ppb	0.195	86.79	1776	5000	
Mn	55	3	72	302.087	ppb	302.087	3.38	123061	10000	
Fe	56	2	72	10465.270	ppb	10465.270	1.21	15511276	10000	
Co	59	3	72	0.183	ppb	0.183	9.14	255	2000	
Ni	60	3	72	1.203	ppb	1.203	25.23	546	5000	
Cu	63	3	72	2.609	ppb	2.609	4.13	2704	5000	
Zn	66	3	72	568.386	ppb	568.386	3.20	92490	5000	
As	75	3	72	7.841	ppb	7.841	13.32	920	2000	
Se	78	2	72	0.034	ppb	0.034	262.18	5	2000	
(Se)	78	3	72	-0.586	ppb	-0.586	-77.72	8	2000	
Sr	88	3	72	82.359	ppb	82.359	3.48	43222	4000	
Mo	95	3	115	0.058	ppb	0.058	125.18	113	2000	
Ag	107	3	115	0.008	ppb	0.008	77.16	37	100	
Cd	111	3	115	0.056	ppb	0.056	113.98	18	2000	
Sn	120	3	115	-0.352	ppb	-0.352	-7.18	713	2000	
Sb	121	3	115	0.199	ppb	0.199	24.84	227	1000	
Ba	137	3	115	60.604	ppb	60.604	3.37	14091	5000	
Tl	205	3	193	-0.133	ppb	-0.133	-3.19	207	2000	
(Pb)	206	3	193	0.771	ppb	0.771	12.56	1171	100	
(Pb)	207	3	193	0.674	ppb	0.674	14.08	1178	100	
Pb	208	3	193	0.744	ppb	0.744	3.05	4891	5000	
Th	232	3	193	0.057	ppb	0.057	59.39	4717	2000	
U	238	3	193	0.015	ppb	0.015	10.37	1689	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3962723	1.19	4160703	95.24	60	120	
Sc (IS)	45	3	HMI He	598102	0.83	620569	96.38	60	120	
Ge Internal standard	72	2	HMI H2	2236675	1.22	2172040	102.98	60	120	
Ge Internal standard	72	3	HMI He	728808	4.06	684400	106.49	60	120	
In Internal Standard	115	3	HMI He	2497699	0.40	2522161	99.03	60	120	
Ir (IS)	193	3	HMI He	5685950	0.54	5572879	102.03	60	120	

Sample Report

Sample Table

Sample Name	280-171404-C-19-H MS
Data File Name	199SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:20:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.522	ppb	39.522	7.20	1934	2000	
Na	23	3	45	4074.113	ppb	4074.113	1.39	477218	400000	
Mg	24	3	45	13849.800	ppb	13849.800	0.33	811398	400000	
Al	27	3	45	858.855	ppb	858.855	2.01	17876	400000	
K	39	3	45	1686.083	ppb	1686.083	3.14	86827	400000	
Ca	40	2	45	46903.111	ppb	46903.111	1.67	24170434	400000	
V	51	3	72	39.584	ppb	39.584	1.05	23231	2000	
Cr	52	3	72	41.114	ppb	41.114	3.30	31936	5000	
Mn	55	3	72	347.698	ppb	347.698	0.87	137253	10000	
Fe	56	2	72	11649.709	ppb	11649.709	2.73	16684437	10000	
Co	59	3	72	39.509	ppb	39.509	1.66	47601	2000	
Ni	60	3	72	40.224	ppb	40.224	1.83	13482	5000	
Cu	63	3	72	43.835	ppb	43.835	0.51	39761	5000	
Zn	66	3	72	671.920	ppb	671.920	1.14	105926	5000	
As	75	3	72	46.610	ppb	46.610	3.50	5158	2000	
Se	78	2	72	42.425	ppb	42.425	1.71	2287	2000	
(Se)	78	3	72	38.180	ppb	38.180	13.09	268	2000	
Sr	88	3	72	166.411	ppb	166.411	2.31	84601	4000	
Mo	95	3	115	39.149	ppb	39.149	1.74	19641	2000	
Ag	107	3	115	40.062	ppb	40.062	0.74	65262	100	
Cd	111	3	115	39.683	ppb	39.683	1.40	9607	2000	
Sn	120	3	115	39.609	ppb	39.609	1.01	29464	2000	
Sb	121	3	115	40.064	ppb	40.064	3.09	29344	1000	
Ba	137	3	115	101.189	ppb	101.189	0.53	23508	5000	
Tl	205	3	193	40.467	ppb	40.467	1.35	149897	2000	
(Pb)	206	3	193	41.760	ppb	41.760	0.73	51081	100	
(Pb)	207	3	193	40.803	ppb	40.803	1.52	44324	100	
Pb	208	3	193	41.369	ppb	41.369	1.51	204496	5000	
Th	232	3	193	40.804	ppb	40.804	1.92	211763	2000	
U	238	3	193	41.110	ppb	41.110	2.32	219958	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3889163	2.12	4160703	93.47	60	120	
Sc (IS)	45	3	HMI He	589736	0.70	620569	95.03	60	120	
Ge Internal standard	72	2	HMI H2	2161881	1.97	2172040	99.53	60	120	
Ge Internal standard	72	3	HMI He	705770	0.94	684400	103.12	60	120	
In Internal Standard	115	3	HMI He	2499284	0.99	2522161	99.09	60	120	
Ir (IS)	193	3	HMI He	5648117	1.49	5572879	101.35	60	120	

Sample Report

Sample Table

Sample Name	280-171404-C-19-I MSD
Data File Name	200SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:22:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.139	ppb	41.139	7.02	2082	2000	
Na	23	3	45	4063.576	ppb	4063.576	2.12	485560	400000	
Mg	24	3	45	14310.007	ppb	14310.007	1.92	855096	400000	
Al	27	3	45	880.919	ppb	880.919	1.89	18705	400000	
K	39	3	45	1684.149	ppb	1684.149	3.79	88476	400000	
Ca	40	2	45	47589.874	ppb	47589.874	1.54	25396486	400000	
V	51	3	72	39.942	ppb	39.942	0.81	23890	2000	
Cr	52	3	72	40.729	ppb	40.729	0.90	32266	5000	
Mn	55	3	72	353.611	ppb	353.611	1.68	142288	10000	
Fe	56	2	72	12677.862	ppb	12677.862	2.49	19179894	10000	
Co	59	3	72	40.126	ppb	40.126	0.80	49278	2000	
Ni	60	3	72	38.620	ppb	38.620	2.63	13201	5000	
Cu	63	3	72	43.966	ppb	43.966	1.74	40644	5000	
Zn	66	3	72	753.114	ppb	753.114	0.38	120990	5000	
As	75	3	72	47.005	ppb	47.005	1.64	5302	2000	
Se	78	2	72	42.175	ppb	42.175	3.21	2402	2000	
(Se)	78	3	72	43.499	ppb	43.499	13.42	310	2000	
Sr	88	3	72	170.011	ppb	170.011	0.73	88106	4000	
Mo	95	3	115	40.393	ppb	40.393	2.40	20372	2000	
Ag	107	3	115	41.098	ppb	41.098	2.20	67302	100	
Cd	111	3	115	40.293	ppb	40.293	1.89	9807	2000	
Sn	120	3	115	41.186	ppb	41.186	2.34	30758	2000	
Sb	121	3	115	41.564	ppb	41.564	2.19	30607	1000	
Ba	137	3	115	104.419	ppb	104.419	2.77	24382	5000	
Tl	205	3	193	41.051	ppb	41.051	1.19	155321	2000	
(Pb)	206	3	193	43.384	ppb	43.384	1.33	54195	100	
(Pb)	207	3	193	42.136	ppb	42.136	1.67	46741	100	
Pb	208	3	193	42.711	ppb	42.711	1.31	215625	5000	
Th	232	3	193	41.628	ppb	41.628	1.73	220596	2000	
U	238	3	193	42.192	ppb	42.192	1.12	230572	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4026684	2.04	4160703	96.78	60	120	
Sc (IS)	45	3	HMI He	601581	1.03	620569	96.94	60	120	
Ge Internal standard	72	2	HMI H2	2284600	4.37	2172040	105.18	60	120	
Ge Internal standard	72	3	HMI He	719367	0.70	684400	105.11	60	120	
In Internal Standard	115	3	HMI He	2513333	2.50	2522161	99.65	60	120	
Ir (IS)	193	3	HMI He	5768767	0.28	5572879	103.52	60	120	

Sample Report

Sample Table

Sample Name	280-171404-C-20-C
Data File Name	201SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:24:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.101	ppb	0.101	100.92	5	2000	
Na	23	3	45	3189.303	ppb	3189.303	0.95	382868	400000	
Mg	24	3	45	13778.609	ppb	13778.609	0.61	817009	400000	
Al	27	3	45	17.745	ppb	17.745	10.34	484	400000	
K	39	3	45	847.025	ppb	847.025	3.93	51827	400000	
Ca	40	2	45	47305.458	ppb	47305.458	2.11	24546266	400000	
V	51	3	72	-0.242	ppb	-0.242	-19.38	363	2000	
Cr	52	3	72	0.138	ppb	0.138	108.94	1704	5000	
Mn	55	3	72	307.365	ppb	307.365	1.69	123059	10000	
Fe	56	2	72	8939.307	ppb	8939.307	1.27	12993716	10000	
Co	59	3	72	0.228	ppb	0.228	7.01	307	2000	
Ni	60	3	72	0.345	ppb	0.345	7.97	250	5000	
Cu	63	3	72	1.818	ppb	1.818	5.37	1934	5000	
Zn	66	3	72	426.823	ppb	426.823	2.34	68314	5000	
As	75	3	72	8.525	ppb	8.525	10.66	981	2000	
Se	78	2	72	-0.001	ppb	-0.001	-6839.17	3	2000	
(Se)	78	3	72	0.161	ppb	0.161	533.57	13	2000	
Sr	88	3	72	84.465	ppb	84.465	2.60	43566	4000	
Mo	95	3	115	0.093	ppb	0.093	64.55	130	2000	
Ag	107	3	115	0.012	ppb	0.012	30.25	42	100	
Cd	111	3	115	0.056	ppb	0.056	57.56	18	2000	
Sn	120	3	115	0.064	ppb	0.064	218.14	1003	2000	
Sb	121	3	115	0.223	ppb	0.223	21.21	242	1000	
Ba	137	3	115	57.681	ppb	57.681	1.48	13295	5000	
Tl	205	3	193	-0.128	ppb	-0.128	-6.15	225	2000	
(Pb)	206	3	193	0.472	ppb	0.472	6.20	806	100	
(Pb)	207	3	193	0.449	ppb	0.449	19.38	936	100	
Pb	208	3	193	0.471	ppb	0.471	11.39	3547	5000	
Th	232	3	193	0.481	ppb	0.481	29.74	6903	2000	
U	238	3	193	0.017	ppb	0.017	91.80	1703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3916580	2.24	4160703	94.13	60	120	
Sc (IS)	45	3	HMI He	596868	0.26	620569	96.18	60	120	
Ge Internal standard	72	2	HMI H2	2193175	0.84	2172040	100.97	60	120	
Ge Internal standard	72	3	HMI He	715795	1.75	684400	104.59	60	120	
In Internal Standard	115	3	HMI He	2475626	1.06	2522161	98.15	60	120	
Ir (IS)	193	3	HMI He	5698505	1.01	5572879	102.25	60	120	

Sample Report

Sample Table

Sample Name	280-171404-C-21-C
Data File Name	202SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:26:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3244.604	ppb	3244.604	1.64	389486	400000	
Mg	24	3	45	12905.952	ppb	12905.952	2.65	765919	400000	
Al	27	3	45	3.858	ppb	3.858	37.33	194	400000	
K	39	3	45	1112.115	ppb	1112.115	2.49	63279	400000	
Ca	40	2	45	47241.322	ppb	47241.322	3.60	23964733	400000	
V	51	3	72	-0.309	ppb	-0.309	-20.02	330	2000	
Cr	52	3	72	-0.025	ppb	-0.025	-411.57	1609	5000	
Mn	55	3	72	211.486	ppb	211.486	0.76	86194	10000	
Fe	56	2	72	5180.048	ppb	5180.048	1.22	7352330	10000	
Co	59	3	72	0.070	ppb	0.070	16.79	115	2000	
Ni	60	3	72	0.219	ppb	0.219	76.12	212	5000	
Cu	63	3	72	36.756	ppb	36.756	1.27	34431	5000	
Zn	66	3	72	27.546	ppb	27.546	1.80	4707	5000	
As	75	3	72	8.059	ppb	8.059	8.87	946	2000	
Se	78	2	72	0.026	ppb	0.026	220.46	5	2000	
(Se)	78	3	72	-0.106	ppb	-0.106	-1423.60	12	2000	
Sr	88	3	72	99.716	ppb	99.716	0.81	52312	4000	
Mo	95	3	115	0.147	ppb	0.147	27.18	158	2000	
Ag	107	3	115	0.003	ppb	0.003	149.88	28	100	
Cd	111	3	115	0.055	ppb	0.055	85.72	18	2000	
Sn	120	3	115	0.134	ppb	0.134	141.10	1063	2000	
Sb	121	3	115	0.156	ppb	0.156	27.20	195	1000	
Ba	137	3	115	47.800	ppb	47.800	2.93	11139	5000	
Tl	205	3	193	-0.137	ppb	-0.137	-1.50	188	2000	
(Pb)	206	3	193	2.376	ppb	2.376	3.25	3109	100	
(Pb)	207	3	193	2.343	ppb	2.343	3.83	2956	100	
Pb	208	3	193	2.351	ppb	2.351	1.99	12715	5000	
Th	232	3	193	0.116	ppb	0.116	22.13	4974	2000	
U	238	3	193	0.016	ppb	0.016	122.42	1679	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3830262	2.70	4160703	92.06	60	120	
Sc (IS)	45	3	HMI He	597524	1.60	620569	96.29	60	120	
Ge Internal standard	72	2	HMI H2	2140573	0.58	2172040	98.55	60	120	
Ge Internal standard	72	3	HMI He	727997	1.04	684400	106.37	60	120	
In Internal Standard	115	3	HMI He	2500849	0.57	2522161	99.16	60	120	
Ir (IS)	193	3	HMI He	5630088	0.31	5572879	101.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	203_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:28:19-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.685	ppb	2.498	2369	50	97.4	90	110	
Na	23	3	45	49476.663	ppb	1.200	5589570	51000	97.0	90	110	
Mg	24	3	45	10913.261	ppb	0.478	643386	11000	99.2	90	110	
Al	27	3	45	970.813	ppb	2.515	20318	1000	97.1	90	110	
K	39	3	45	11057.148	ppb	1.409	487689	11000	100.5	90	110	
Ca	40	2	45	11361.740	ppb	2.938	5922695	11000	103.3	90	110	
V	51	3	72	50.322	ppb	0.409	28492	50	100.6	90	110	
Cr	52	3	72	50.940	ppb	1.532	37983	50	101.9	90	110	
Mn	55	3	72	51.555	ppb	1.805	19881	50	103.1	90	110	
Fe	56	2	72	1041.145	ppb	1.848	1466649	1000	104.1	90	110	
Co	59	3	72	49.935	ppb	1.649	58291	50	99.9	90	110	
Ni	60	3	72	50.308	ppb	1.648	16308	50	100.6	90	110	
Cu	63	3	72	50.624	ppb	1.917	44452	50	101.2	90	110	
Zn	66	3	72	51.122	ppb	1.447	8017	50	102.2	90	110	
As	75	3	72	51.228	ppb	2.794	5490	50	102.5	90	110	
Se	78	2	72	52.403	ppb	2.091	2763	50	104.8	90	110	
(Se)	78	3	72	52.769	ppb	5.856	355	50	105.5	90	110	
Sr	88	3	72	106.892	ppb	0.929	52680	100	106.9	90	110	
Mo	95	3	115	50.810	ppb	1.175	25081	50	101.6	90	110	
Ag	107	3	115	50.924	ppb	1.433	81700	50	101.8	90	110	
Cd	111	3	115	50.886	ppb	3.009	12131	50	101.8	90	110	
Sn	120	3	115	50.736	ppb	0.883	36904	50	101.5	90	110	
Sb	121	3	115	51.914	ppb	0.596	37435	50	103.8	90	110	
Ba	137	3	115	51.913	ppb	2.450	11904	50	103.8	90	110	
Tl	205	3	193	50.207	ppb	2.025	184927	50	100.4	90	110	
(Pb)	206	3	193	50.335	ppb	1.952	61229	50	100.7	90	110	
(Pb)	207	3	193	50.542	ppb	0.854	54553	50	101.1	90	110	
Pb	208	3	193	50.493	ppb	1.819	248155	50	101.0	90	110	
Th	232	3	193	50.730	ppb	1.478	261008	50	101.5	90	110	
U	238	3	193	51.580	ppb	0.855	274319	50	103.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3929925	2.68	4160703	94.45	60	120	
Sc (IS)	45	3	HMI He	593430	0.64	620569	95.63	60	120	
Ge Internal standard	72	2	HMI H2	2115243	1.70	2172040	97.39	60	120	
Ge Internal standard	72	3	HMI He	683956	1.00	684400	99.94	60	120	
In Internal Standard	115	3	HMI He	2461738	0.69	2522161	97.60	60	120	
Ir (IS)	193	3	HMI He	5621895	1.73	5572879	100.88	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	204_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:30:10-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	173.2	2	0.5	
Na	23	3	45	28.013	ppb	14.5	25131	25	>RL
Mg	24	3	45	3.836	ppb	28.5	350	25	
Al	27	3	45	-0.921	ppb	-31.4	93	15	
K	39	3	45	13.997	ppb	179.3	16112	50	
V	51	3	72	-0.503	ppb	-8.9	202	1	
Cr	52	3	72	-0.105	ppb	-118.3	1456	1	
Mn	55	3	72	-0.014	ppb	-179.2	183	0.5	
Co	59	3	72	0.009	ppb	56.3	37	0.5	
Ni	60	3	72	0.063	ppb	147.8	148	1	
Cu	63	3	72	-0.014	ppb	-359.2	250	1	
Zn	66	3	72	-0.208	ppb	-107.5	192	5	
As	75	3	72	-0.031	ppb	-223.5	27	1	
Se	78	2	72	0.002	ppb	2940.7	3	1	
(Se)	78	3	72	0.498	ppb	305.5	15	1	
Sr	88	3	72	-0.007	ppb	-228.4	33	0.5	
Mo	95	3	115	-0.013	ppb	-382.2	78	0.5	
Ag	107	3	115	0.017	ppb	7.7	52	1	
Cd	111	3	115	0.007	ppb	322.7	7	0.5	
Sn	120	3	115	-0.500	ppb	-25.5	610	1	
Sb	121	3	115	0.148	ppb	9.8	190	0.6	
Ba	137	3	115	0.009	ppb	1279.8	55	0.5	
Tl	205	3	193	-0.130	ppb	-9.3	220	0.1	
(Pb)	206	3	193	-0.035	ppb	-51.0	185	1	
(Pb)	207	3	193	-0.127	ppb	-27.7	313	1	
Pb	208	3	193	-0.067	ppb	-4.2	886	0.5	
Th	232	3	193	0.444	ppb	25.9	6737	1	
U	238	3	193	0.020	ppb	33.9	1728	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3888608	0.85	4160703	93.46	60	120	
Sc (IS)	45	3	HMI He	599323	1.38	620569	96.58	60	120	
Ge Internal standard	72	2	HMI H2	2134562	1.57	2172040	98.27	60	120	
Ge Internal standard	72	3	HMI He	684733	0.62	684400	100.05	60	120	
In Internal Standard	115	3	HMI He	2510719	1.35	2522161	99.55	60	120	
Ir (IS)	193	3	HMI He	5717409	0.80	5572879	102.59	60	120	

Sample Report

Sample Table

Sample Name	280-171549-E-1-A
Data File Name	205SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:32:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.034	ppb	0.034	173.21	2	2000	
Na	23	3	45	490172.944	ppb	490172.944	1.89	57522776	400000	
Mg	24	3	45	76890.593	ppb	76890.593	1.98	4724357	400000	
Al	27	3	45	14.333	ppb	14.333	22.07	427	400000	
K	39	3	45	44454.177	ppb	44454.177	3.15	1995351	400000	
Ca	40	2	45	295625.421	ppb	295625.421	1.82	155013211	400000	
V	51	3	72	7.995	ppb	7.995	2.55	5262	2000	
Cr	52	3	72	8.252	ppb	8.252	2.91	7932	5000	
Mn	55	3	72	2738.039	ppb	2738.039	2.59	1115957	10000	
Fe	56	2	72	2135.216	ppb	2135.216	1.02	3151687	10000	
Co	59	3	72	4.309	ppb	4.309	2.69	5392	2000	
Ni	60	3	72	39.415	ppb	39.415	2.66	13660	5000	
Cu	63	3	72	1.364	ppb	1.364	4.88	1549	5000	
Zn	66	3	72	4.537	ppb	4.537	13.19	976	5000	
As	75	3	72	11.262	ppb	11.262	2.99	1313	2000	
Se	78	2	72	0.481	ppb	0.481	23.02	30	2000	
(Se)	78	3	72	0.604	ppb	0.604	183.87	17	2000	
Sr	88	3	72	4000.903	ppb	4000.903	1.12	2102143	4000	
Mo	95	3	115	0.509	ppb	0.509	12.48	343	2000	
Ag	107	3	115	0.006	ppb	0.006	196.29	33	100	
Cd	111	3	115	-0.013	ppb	-0.013	-88.59	2	2000	
Sn	120	3	115	0.355	ppb	0.355	18.75	1238	2000	
Sb	121	3	115	1.089	ppb	1.089	4.29	886	1000	
Ba	137	3	115	729.925	ppb	729.925	1.97	171238	5000	
Tl	205	3	193	-0.136	ppb	-0.136	-5.10	198	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-1004.70	227	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-88.69	415	100	
Pb	208	3	193	-0.002	ppb	-0.002	-567.73	1209	5000	
Th	232	3	193	0.121	ppb	0.121	58.39	5089	2000	
U	238	3	193	1.459	ppb	1.459	2.54	9484	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3958730	1.19	4160703	95.15	60	120	
Sc (IS)	45	3	HMI He	618620	0.93	620569	99.69	60	120	
Ge Internal standard	72	2	HMI H2	2222539	0.43	2172040	102.32	60	120	
Ge Internal standard	72	3	HMI He	729639	0.52	684400	106.61	60	120	
In Internal Standard	115	3	HMI He	2529445	2.44	2522161	100.29	60	120	
Ir (IS)	193	3	HMI He	5731597	2.33	5572879	102.85	60	120	

Sample Report

Sample Table

Sample Name	280-171550-D-1-A
Data File Name	206SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:33:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.065	ppb	0.065	173.21	3	2000	
Na	23	3	45	491656.396	ppb	491656.396	1.44	59271110	400000	
Mg	24	3	45	78166.734	ppb	78166.734	0.50	4934039	400000	
Al	27	3	45	15.280	ppb	15.280	25.01	460	400000	
K	39	3	45	44919.510	ppb	44919.510	0.57	2071276	400000	
Ca	40	2	45	297311.901	ppb	297311.901	1.61	160524792	400000	
V	51	3	72	7.927	ppb	7.927	1.62	5445	2000	
Cr	52	3	72	8.315	ppb	8.315	0.16	8325	5000	
Mn	55	3	72	2719.329	ppb	2719.329	2.26	1156183	10000	
Fe	56	2	72	2183.078	ppb	2183.078	0.19	3300733	10000	
Co	59	3	72	4.412	ppb	4.412	4.00	5757	2000	
Ni	60	3	72	39.683	ppb	39.683	2.17	14344	5000	
Cu	63	3	72	12.082	ppb	12.082	1.26	12028	5000	
Zn	66	3	72	37.337	ppb	37.337	6.31	6578	5000	
As	75	3	72	10.371	ppb	10.371	6.64	1263	2000	
Se	78	2	72	0.432	ppb	0.432	8.67	28	2000	
(Se)	78	3	72	1.658	ppb	1.658	43.58	25	2000	
Sr	88	3	72	3897.018	ppb	3897.018	1.70	2135623	4000	
Mo	95	3	115	0.519	ppb	0.519	26.04	356	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-122.23	22	100	
Cd	111	3	115	-0.007	ppb	-0.007	-165.30	3	2000	
Sn	120	3	115	0.485	ppb	0.485	16.44	1364	2000	
Sb	121	3	115	1.103	ppb	1.103	15.34	920	1000	
Ba	137	3	115	725.556	ppb	725.556	0.27	174445	5000	
Tl	205	3	193	-0.136	ppb	-0.136	-2.95	200	2000	
(Pb)	206	3	193	0.058	ppb	0.058	54.54	303	100	
(Pb)	207	3	193	-0.014	ppb	-0.014	-186.05	441	100	
Pb	208	3	193	0.037	ppb	0.037	35.07	1421	5000	
Th	232	3	193	0.033	ppb	0.033	117.71	4687	2000	
U	238	3	193	1.466	ppb	1.466	2.35	9631	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4076243	1.25	4160703	97.97	60	120	
Sc (IS)	45	3	HMI He	635464	0.75	620569	102.40	60	120	
Ge Internal standard	72	2	HMI H2	2276693	0.81	2172040	104.82	60	120	
Ge Internal standard	72	3	HMI He	761139	1.59	684400	111.21	60	120	
In Internal Standard	115	3	HMI He	2591497	0.74	2522161	102.75	60	120	
Ir (IS)	193	3	HMI He	5795403	0.77	5572879	103.99	60	120	

Sample Report

Sample Table

Sample Name	280-171561-A-20-A
Data File Name	207SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:35:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1037839.230	ppb	1037839.230	0.86	129558332	400000	
Mg	24	3	45	185628.995	ppb	185628.995	1.10	12134709	400000	
Al	27	3	45	91.388	ppb	91.388	8.27	2236	400000	
K	39	3	45	12691.630	ppb	12691.630	0.78	618339	400000	
Ca	40	2	45	613904.043	ppb	613904.043	1.30	342483144	400000	
V	51	3	72	-0.239	ppb	-0.239	-30.69	388	2000	
Cr	52	3	72	0.087	ppb	0.087	35.53	1771	5000	
Mn	55	3	72	2509.420	ppb	2509.420	4.05	1065905	10000	
Fe	56	2	72	439.596	ppb	439.596	0.93	675180	10000	
Co	59	3	72	7.575	ppb	7.575	2.58	9857	2000	
Ni	60	3	72	41.469	ppb	41.469	4.78	14969	5000	
Cu	63	3	72	1.282	ppb	1.282	10.01	1534	5000	
Zn	66	3	72	12.158	ppb	12.158	2.62	2309	5000	
As	75	3	72	0.873	ppb	0.873	28.42	137	2000	
Se	78	2	72	0.617	ppb	0.617	25.97	39	2000	
(Se)	78	3	72	2.104	ppb	2.104	47.46	28	2000	
Sr	88	3	72	14395.027	ppb	14395.027	1.84	7883289	4000	
Mo	95	3	115	0.785	ppb	0.785	12.42	498	2000	
Ag	107	3	115	0.010	ppb	0.010	90.27	42	100	
Cd	111	3	115	0.072	ppb	0.072	13.66	23	2000	
Sn	120	3	115	-0.512	ppb	-0.512	-2.70	626	2000	
Sb	121	3	115	0.259	ppb	0.259	23.10	283	1000	
Ba	137	3	115	20.416	ppb	20.416	1.73	5010	5000	
Tl	205	3	193	-0.046	ppb	-0.046	-1.94	530	2000	
(Pb)	206	3	193	0.451	ppb	0.451	19.78	780	100	
(Pb)	207	3	193	0.342	ppb	0.342	6.37	820	100	
Pb	208	3	193	0.379	ppb	0.379	7.41	3090	5000	
Th	232	3	193	0.064	ppb	0.064	36.28	4759	2000	
U	238	3	193	118.675	ppb	118.675	0.92	636770	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4211906	1.33	4160703	101.23	60	120	
Sc (IS)	45	3	HMI He	658216	2.00	620569	106.07	60	120	
Ge Internal standard	72	2	HMI H2	2288910	1.42	2172040	105.38	60	120	
Ge Internal standard	72	3	HMI He	760634	1.57	684400	111.14	60	120	
In Internal Standard	115	3	HMI He	2616440	2.52	2522161	103.74	60	120	
Ir (IS)	193	3	HMI He	5690005	0.37	5572879	102.10	60	120	

Sample Report

Sample Table

Sample Name	280-171609-B-1-A
Data File Name	208SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:37:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.062	ppb	0.062	86.63	3	2000	
Na	23	3	45	7272.051	ppb	7272.051	1.88	936612	400000	
Mg	24	3	45	22857.064	ppb	22857.064	1.27	1502145	400000	
Al	27	3	45	147.499	ppb	147.499	4.60	3547	400000	
K	39	3	45	2699.982	ppb	2699.982	1.27	145705	400000	
Ca	40	2	45	74815.856	ppb	74815.856	1.60	42555903	400000	
V	51	3	72	-0.126	ppb	-0.126	-66.17	470	2000	
Cr	52	3	72	0.162	ppb	0.162	63.50	1881	5000	
Mn	55	3	72	10.089	ppb	10.089	0.49	4620	10000	
Fe	56	2	72	106.347	ppb	106.347	1.03	177223	10000	
Co	59	3	72	0.148	ppb	0.148	13.63	228	2000	
Ni	60	3	72	0.817	ppb	0.817	2.41	446	5000	
Cu	63	3	72	0.535	ppb	0.535	5.57	833	5000	
Zn	66	3	72	350.517	ppb	350.517	1.77	61315	5000	
As	75	3	72	0.364	ppb	0.364	103.18	78	2000	
Se	78	2	72	0.186	ppb	0.186	52.67	15	2000	
(Se)	78	3	72	1.801	ppb	1.801	109.37	27	2000	
Sr	88	3	72	286.460	ppb	286.460	1.40	161265	4000	
Mo	95	3	115	1.268	ppb	1.268	18.35	773	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-162.92	22	100	
Cd	111	3	115	0.313	ppb	0.313	41.17	87	2000	
Sn	120	3	115	-0.656	ppb	-0.656	-22.45	531	2000	
Sb	121	3	115	0.275	ppb	0.275	21.14	303	1000	
Ba	137	3	115	45.663	ppb	45.663	0.71	11446	5000	
Tl	205	3	193	-0.128	ppb	-0.128	-5.11	232	2000	
(Pb)	206	3	193	0.242	ppb	0.242	6.27	543	100	
(Pb)	207	3	193	0.143	ppb	0.143	21.05	626	100	
Pb	208	3	193	0.191	ppb	0.191	10.64	2234	5000	
Th	232	3	193	0.041	ppb	0.041	73.56	4809	2000	
U	238	3	193	0.770	ppb	0.770	5.15	5942	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4292640	1.53	4160703	103.17	60	120	
Sc (IS)	45	3	HMI He	661589	0.47	620569	106.61	60	120	
Ge Internal standard	72	2	HMI H2	2386047	0.69	2172040	109.85	60	120	
Ge Internal standard	72	3	HMI He	781656	1.26	684400	114.21	60	120	
In Internal Standard	115	3	HMI He	2689161	1.98	2522161	106.62	60	120	
Ir (IS)	193	3	HMI He	5898555	1.22	5572879	105.84	60	120	

Sample Report

Sample Table

Sample Name	280-171609-B-2-A
Data File Name	209SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:39:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.063	ppb	0.063	86.64	3	2000	
Na	23	3	45	20247.956	ppb	20247.956	1.77	2501747	400000	
Mg	24	3	45	28870.182	ppb	28870.182	2.61	1850730	400000	
Al	27	3	45	113.626	ppb	113.626	8.44	2693	400000	
K	39	3	45	4585.799	ppb	4585.799	0.48	229759	400000	
Ca	40	2	45	94449.539	ppb	94449.539	0.98	53434595	400000	
V	51	3	72	-0.359	ppb	-0.359	-21.51	317	2000	
Cr	52	3	72	0.257	ppb	0.257	13.14	1929	5000	
Mn	55	3	72	4.251	ppb	4.251	4.38	2039	10000	
Fe	56	2	72	52.853	ppb	52.853	2.23	92861	10000	
Co	59	3	72	0.419	ppb	0.419	2.20	580	2000	
Ni	60	3	72	2.081	ppb	2.081	10.08	898	5000	
Cu	63	3	72	0.455	ppb	0.455	8.28	741	5000	
Zn	66	3	72	80.231	ppb	80.231	0.77	14017	5000	
As	75	3	72	0.357	ppb	0.357	34.95	77	2000	
Se	78	2	72	0.107	ppb	0.107	35.67	10	2000	
(Se)	78	3	72	0.243	ppb	0.243	270.34	15	2000	
Sr	88	3	72	2081.442	ppb	2081.442	1.77	1153694	4000	
Mo	95	3	115	2.488	ppb	2.488	2.33	1411	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-496.91	22	100	
Cd	111	3	115	0.238	ppb	0.238	27.58	67	2000	
Sn	120	3	115	-0.611	ppb	-0.611	-10.84	560	2000	
Sb	121	3	115	0.426	ppb	0.426	5.89	416	1000	
Ba	137	3	115	35.027	ppb	35.027	4.12	8687	5000	
Tl	205	3	193	-0.132	ppb	-0.132	-9.74	215	2000	
(Pb)	206	3	193	0.257	ppb	0.257	31.21	550	100	
(Pb)	207	3	193	0.228	ppb	0.228	18.46	706	100	
Pb	208	3	193	0.262	ppb	0.262	3.42	2546	5000	
Th	232	3	193	0.011	ppb	0.011	608.95	4552	2000	
U	238	3	193	1.897	ppb	1.897	3.46	11936	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4270209	0.74	4160703	102.63	60	120	
Sc (IS)	45	3	HMI He	645410	0.65	620569	104.00	60	120	
Ge Internal standard	72	2	HMI H2	2391736	3.31	2172040	110.11	60	120	
Ge Internal standard	72	3	HMI He	769785	1.35	684400	112.48	60	120	
In Internal Standard	115	3	HMI He	2656961	0.92	2522161	105.34	60	120	
Ir (IS)	193	3	HMI He	5773945	1.25	5572879	103.61	60	120	

Sample Report

Sample Table

Sample Name	280-171609-B-3-A
Data File Name	210SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:41:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.128	ppb	0.128	45.39	7	2000	
Na	23	3	45	14521.246	ppb	14521.246	1.13	1743377	400000	
Mg	24	3	45	52956.098	ppb	52956.098	1.95	3286236	400000	
Al	27	3	45	55.243	ppb	55.243	10.86	1328	400000	
K	39	3	45	8690.415	ppb	8690.415	0.83	407013	400000	
Ca	40	2	45	84555.749	ppb	84555.749	1.14	47339457	400000	
V	51	3	72	-0.218	ppb	-0.218	-37.60	388	2000	
Cr	52	3	72	0.195	ppb	0.195	13.15	1799	5000	
Mn	55	3	72	52.478	ppb	52.478	1.48	21811	10000	
Fe	56	2	72	69.766	ppb	69.766	4.74	116014	10000	
Co	59	3	72	1.214	ppb	1.214	6.18	1556	2000	
Ni	60	3	72	3.182	ppb	3.182	7.36	1241	5000	
Cu	63	3	72	11.011	ppb	11.011	1.46	10644	5000	
Zn	66	3	72	342.020	ppb	342.020	1.42	56445	5000	
As	75	3	72	0.401	ppb	0.401	28.21	78	2000	
Se	78	2	72	14.122	ppb	14.122	7.64	819	2000	
(Se)	78	3	72	13.397	ppb	13.397	50.78	107	2000	
Sr	88	3	72	723.682	ppb	723.682	0.59	384240	4000	
Mo	95	3	115	18.975	ppb	18.975	3.83	9900	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-131.79	18	100	
Cd	111	3	115	1.909	ppb	1.909	8.52	483	2000	
Sn	120	3	115	-0.460	ppb	-0.460	-17.23	658	2000	
Sb	121	3	115	10.394	ppb	10.394	1.49	7945	1000	
Ba	137	3	115	21.608	ppb	21.608	0.61	5240	5000	
Tl	205	3	193	-0.077	ppb	-0.077	-16.79	416	2000	
(Pb)	206	3	193	1.403	ppb	1.403	10.40	1958	100	
(Pb)	207	3	193	1.170	ppb	1.170	2.80	1728	100	
Pb	208	3	193	1.319	ppb	1.319	6.04	7785	5000	
Th	232	3	193	0.018	ppb	0.018	138.10	4554	2000	
U	238	3	193	1.630	ppb	1.630	0.86	10399	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4225636	0.61	4160703	101.56	60	120	
Sc (IS)	45	3	HMI He	624790	0.96	620569	100.68	60	120	
Ge Internal standard	72	2	HMI H2	2320147	2.93	2172040	106.82	60	120	
Ge Internal standard	72	3	HMI He	737233	0.55	684400	107.72	60	120	
In Internal Standard	115	3	HMI He	2587496	0.64	2522161	102.59	60	120	
Ir (IS)	193	3	HMI He	5725071	2.51	5572879	102.73	60	120	

Sample Report

Sample Table

Sample Name	280-171609-B-4-A
Data File Name	211SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:43:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600239 6020b
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	4608.046	ppb	4608.046	0.33	544228	400000	
Mg	24	3	45	25429.623	ppb	25429.623	2.05	1509847	400000	
Al	27	3	45	43.663	ppb	43.663	6.12	1028	400000	
K	39	3	45	2995.770	ppb	2995.770	0.28	144361	400000	
Ca	40	2	45	64620.761	ppb	64620.761	1.25	34642592	400000	
V	51	3	72	-0.251	ppb	-0.251	-14.13	353	2000	
Cr	52	3	72	0.030	ppb	0.030	544.82	1603	5000	
Mn	55	3	72	3.715	ppb	3.715	4.20	1661	10000	
Fe	56	2	72	39.032	ppb	39.032	0.37	67773	10000	
Co	59	3	72	0.131	ppb	0.131	17.73	185	2000	
Ni	60	3	72	2.200	ppb	2.200	11.19	863	5000	
Cu	63	3	72	0.568	ppb	0.568	6.28	783	5000	
Zn	66	3	72	261.436	ppb	261.436	2.06	41406	5000	
As	75	3	72	0.007	ppb	0.007	438.93	32	2000	
Se	78	2	72	0.149	ppb	0.149	22.76	12	2000	
(Se)	78	3	72	0.940	ppb	0.940	184.83	18	2000	
Sr	88	3	72	451.597	ppb	451.597	1.84	229832	4000	
Mo	95	3	115	2.532	ppb	2.532	8.34	1331	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-274.54	18	100	
Cd	111	3	115	0.420	ppb	0.420	10.50	105	2000	
Sn	120	3	115	-0.479	ppb	-0.479	-6.53	613	2000	
Sb	121	3	115	0.292	ppb	0.292	8.98	290	1000	
Ba	137	3	115	79.912	ppb	79.912	1.83	18322	5000	
Tl	205	3	193	-0.140	ppb	-0.140	-5.81	175	2000	
(Pb)	206	3	193	0.059	ppb	0.059	28.35	292	100	
(Pb)	207	3	193	-0.027	ppb	-0.027	-319.05	408	100	
Pb	208	3	193	0.028	ppb	0.028	68.98	1314	5000	
Th	232	3	193	0.045	ppb	0.045	49.66	4535	2000	
U	238	3	193	2.032	ppb	2.032	0.44	12150	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4046253	2.11	4160703	97.25	60	120	
Sc (IS)	45	3	HMI He	597717	0.56	620569	96.32	60	120	
Ge Internal standard	72	2	HMI H2	2282819	0.79	2172040	105.10	60	120	
Ge Internal standard	72	3	HMI He	706737	1.30	684400	103.26	60	120	
In Internal Standard	115	3	HMI He	2465112	0.52	2522161	97.74	60	120	
Ir (IS)	193	3	HMI He	5536855	0.70	5572879	99.35	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	212_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:45:09-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.854	ppb	1.412	2422	50	99.7	90	110	
Na	23	3	45	49752.708	ppb	2.202	5729401	51000	97.6	90	110	
Mg	24	3	45	10770.697	ppb	0.472	647534	11000	97.9	90	110	
Al	27	3	45	1003.571	ppb	2.288	21414	1000	100.4	90	110	
K	39	3	45	11290.759	ppb	1.916	507318	11000	102.6	90	110	
Ca	40	2	45	11330.697	ppb	0.482	5881888	11000	103.0	90	110	
V	51	3	72	51.611	ppb	0.301	29306	50	103.2	90	110	
Cr	52	3	72	50.460	ppb	0.932	37766	50	100.9	90	110	
Mn	55	3	72	50.760	ppb	2.471	19647	50	101.5	90	110	
Fe	56	2	72	1033.051	ppb	1.507	1436592	1000	103.3	90	110	
Co	59	3	72	50.026	ppb	0.905	58599	50	100.1	90	110	
Ni	60	3	72	50.116	ppb	1.793	16300	50	100.2	90	110	
Cu	63	3	72	50.259	ppb	2.230	44279	50	100.5	90	110	
Zn	66	3	72	52.233	ppb	0.762	8213	50	104.5	90	110	
As	75	3	72	51.520	ppb	0.118	5540	50	103.0	90	110	
Se	78	2	72	52.738	ppb	2.683	2745	50	105.5	90	110	
(Se)	78	3	72	49.036	ppb	10.298	332	50	98.1	90	110	
Sr	88	3	72	107.137	ppb	0.897	52976	100	107.1	90	110	
Mo	95	3	115	49.549	ppb	1.301	24745	50	99.1	90	110	
Ag	107	3	115	49.769	ppb	1.147	80774	50	99.5	90	110	
Cd	111	3	115	49.625	ppb	2.567	11968	50	99.2	90	110	
Sn	120	3	115	50.018	ppb	1.298	36816	50	100.0	90	110	
Sb	121	3	115	50.452	ppb	0.976	36804	50	100.9	90	110	
Ba	137	3	115	52.788	ppb	1.197	12245	50	105.6	90	110	
Tl	205	3	193	50.371	ppb	0.802	181874	50	100.7	90	110	
(Pb)	206	3	193	51.542	ppb	2.590	61448	50	103.1	90	110	
(Pb)	207	3	193	50.852	ppb	1.630	53790	50	101.7	90	110	
Pb	208	3	193	51.272	ppb	2.063	246973	50	102.5	90	110	
Th	232	3	193	50.926	ppb	1.345	256800	50	101.9	90	110	
U	238	3	193	51.317	ppb	2.598	267491	50	102.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3911466	0.07	4160703	94.01	60	120	
Sc (IS)	45	3	HMI He	605104	2.55	620569	97.51	60	120	
Ge Internal standard	72	2	HMI H2	2088040	1.11	2172040	96.13	60	120	
Ge Internal standard	72	3	HMI He	686222	1.06	684400	100.27	60	120	
In Internal Standard	115	3	HMI He	2490223	1.05	2522161	98.73	60	120	
Ir (IS)	193	3	HMI He	5510243	1.16	5572879	98.88	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	213_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:47:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	015CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	76.689	ppb	5.6	31048	25	>RL
Mg	24	3	45	7.354	ppb	2.8	567	25	
Al	27	3	45	-1.138	ppb	-107.5	90	15	
K	39	3	45	15.460	ppb	142.0	16369	50	
V	51	3	72	-0.420	ppb	-12.3	248	1	
Cr	52	3	72	-0.125	ppb	-142.6	1444	1	
Mn	55	3	72	0.121	ppb	8.6	235	0.5	
Co	59	3	72	0.001	ppb	189.2	28	0.5	
Ni	60	3	72	0.057	ppb	95.8	147	1	
Cu	63	3	72	-0.027	ppb	-128.4	238	1	
Zn	66	3	72	-0.438	ppb	-10.5	157	5	
As	75	3	72	0.000	ppb	25089.9	30	1	
Se	78	2	72	-0.036	ppb	-60.3	1	1	
(Se)	78	3	72	0.508	ppb	307.0	15	1	
Sr	88	3	72	0.344	ppb	7.5	207	0.5	
Mo	95	3	115	-0.070	ppb	-42.5	50	0.5	
Ag	107	3	115	0.013	ppb	101.5	45	1	
Cd	111	3	115	-0.007	ppb	-364.4	3	0.5	
Sn	120	3	115	-0.471	ppb	-29.9	630	1	
Sb	121	3	115	0.146	ppb	31.8	188	0.6	
Ba	137	3	115	0.024	ppb	270.7	58	0.5	
Tl	205	3	193	-0.122	ppb	-11.4	242	0.1	
(Pb)	206	3	193	-0.065	ppb	-10.4	143	1	
(Pb)	207	3	193	-0.120	ppb	-37.9	312	1	
Pb	208	3	193	-0.084	ppb	-10.2	778	0.5	
Th	232	3	193	0.502	ppb	23.5	6847	1	
U	238	3	193	0.023	ppb	20.9	1696	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3884327	1.08	4160703	93.36	60	120	
Sc (IS)	45	3	HMI He	606801	0.67	620569	97.78	60	120	
Ge Internal standard	72	2	HMI H2	2107416	1.36	2172040	97.02	60	120	
Ge Internal standard	72	3	HMI He	685390	1.19	684400	100.14	60	120	
In Internal Standard	115	3	HMI He	2506285	0.61	2522161	99.37	60	120	
Ir (IS)	193	3	HMI He	5566814	0.63	5572879	99.89	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	214SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:48:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.030	ppb	0.030	173.21	2	2000	
Na	23	3	45	105.672	ppb	105.672	2.71	37266	400000	
Mg	24	3	45	16.382	ppb	16.382	6.47	1205	400000	
Al	27	3	45	-1.603	ppb	-1.603	-42.76	87	400000	
K	39	3	45	-3.270	ppb	-3.270	-888.45	16847	400000	
Ca	40	2	45	37.464	ppb	37.464	3.99	34668	400000	
V	51	3	72	-0.778	ppb	-0.778	-1.12	55	2000	
Cr	52	3	72	-1.165	ppb	-1.165	-3.64	791	5000	
Mn	55	3	72	0.094	ppb	0.094	30.76	255	10000	
Fe	56	2	72	-1.128	ppb	-1.128	-6.97	7506	10000	
Co	59	3	72	0.006	ppb	0.006	42.35	38	2000	
Ni	60	3	72	-0.211	ppb	-0.211	-21.21	68	5000	
Cu	63	3	72	-0.140	ppb	-0.140	-22.86	158	5000	
Zn	66	3	72	-0.580	ppb	-0.580	-11.49	153	5000	
As	75	3	72	-0.062	ppb	-0.062	-203.09	27	2000	
Se	78	2	72	-0.051	ppb	-0.051	-37.36	1	2000	
(Se)	78	3	72	-0.232	ppb	-0.232	-429.59	12	2000	
Sr	88	3	72	0.937	ppb	0.937	4.72	566	4000	
Mo	95	3	115	-0.115	ppb	-0.115	-16.73	30	2000	
Ag	107	3	115	0.007	ppb	0.007	64.25	38	100	
Cd	111	3	115	-0.014	ppb	-0.014	-80.04	2	2000	
Sn	120	3	115	-1.064	ppb	-1.064	-3.64	222	2000	
Sb	121	3	115	-0.028	ppb	-0.028	-62.17	67	1000	
Ba	137	3	115	-0.033	ppb	-0.033	-108.76	50	5000	
Tl	205	3	193	-0.139	ppb	-0.139	-3.66	195	2000	
(Pb)	206	3	193	-0.068	ppb	-0.068	-42.49	152	100	
(Pb)	207	3	193	-0.141	ppb	-0.141	-16.40	312	100	
Pb	208	3	193	-0.093	ppb	-0.093	-2.79	790	5000	
Th	232	3	193	0.019	ppb	0.019	191.25	4767	2000	
U	238	3	193	-0.002	ppb	-0.002	-857.70	1683	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4434100	1.17	4160703	106.57	60	120	
Sc (IS)	45	3	HMI He	657684	0.73	620569	105.98	60	120	
Ge Internal standard	72	2	HMI H2	2430443	0.93	2172040	111.90	60	120	
Ge Internal standard	72	3	HMI He	778262	2.97	684400	113.71	60	120	
In Internal Standard	115	3	HMI He	2758378	2.06	2522161	109.37	60	120	
Ir (IS)	193	3	HMI He	5990250	2.78	5572879	107.49	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	215SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:50:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	59.703	ppb	59.703	2.27	31333	400000	
Mg	24	3	45	13.213	ppb	13.213	10.26	991	400000	
Al	27	3	45	-1.435	ppb	-1.435	-61.17	90	400000	
K	39	3	45	6.282	ppb	6.282	694.51	17191	400000	
Ca	40	2	45	24.925	ppb	24.925	15.82	26492	400000	
V	51	3	72	-0.754	ppb	-0.754	-1.45	72	2000	
Cr	52	3	72	-1.146	ppb	-1.146	-14.61	818	5000	
Mn	55	3	72	-0.024	ppb	-0.024	-290.77	207	10000	
Fe	56	2	72	-1.391	ppb	-1.391	-4.13	6902	10000	
Co	59	3	72	-0.008	ppb	-0.008	-79.32	20	2000	
Ni	60	3	72	-0.182	ppb	-0.182	-15.22	80	5000	
Cu	63	3	72	-0.124	ppb	-0.124	-25.34	177	5000	
Zn	66	3	72	-0.602	ppb	-0.602	-6.07	152	5000	
As	75	3	72	-0.023	ppb	-0.023	-454.81	32	2000	
Se	78	2	72	-0.016	ppb	-0.016	-117.36	3	2000	
(Se)	78	3	72	1.313	ppb	1.313	79.54	23	2000	
Sr	88	3	72	0.649	ppb	0.649	19.66	411	4000	
Mo	95	3	115	-0.136	ppb	-0.136	-19.50	18	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-55.41	12	100	
Cd	111	3	115	-0.014	ppb	-0.014	-78.17	2	2000	
Sn	120	3	115	-1.027	ppb	-1.027	-4.65	250	2000	
Sb	121	3	115	-0.036	ppb	-0.036	-91.48	60	1000	
Ba	137	3	115	-0.018	ppb	-0.018	-282.48	53	5000	
Tl	205	3	193	-0.144	ppb	-0.144	-4.20	173	2000	
(Pb)	206	3	193	-0.052	ppb	-0.052	-41.52	172	100	
(Pb)	207	3	193	-0.107	ppb	-0.107	-22.88	351	100	
Pb	208	3	193	-0.075	ppb	-0.075	-16.98	885	5000	
Th	232	3	193	-0.005	ppb	-0.005	-285.91	4647	2000	
U	238	3	193	-0.004	ppb	-0.004	-109.47	1679	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4301373	0.64	4160703	103.38	60	120	
Sc (IS)	45	3	HMI He	653492	0.26	620569	105.31	60	120	
Ge Internal standard	72	2	HMI H2	2368176	0.77	2172040	109.03	60	120	
Ge Internal standard	72	3	HMI He	789543	0.98	684400	115.36	60	120	
In Internal Standard	115	3	HMI He	2739951	0.33	2522161	108.64	60	120	
Ir (IS)	193	3	HMI He	5999129	0.58	5572879	107.65	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	216SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:52:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	39.007	ppb	39.007	14.81	28330	400000	
Mg	24	3	45	6.506	ppb	6.506	7.65	547	400000	
Al	27	3	45	-1.674	ppb	-1.674	-152.31	83	400000	
K	39	3	45	2.133	ppb	2.133	995.04	16744	400000	
Ca	40	2	45	0.569	ppb	0.569	101.14	12345	400000	
V	51	3	72	-0.784	ppb	-0.784	-2.61	52	2000	
Cr	52	3	72	-1.166	ppb	-1.166	-4.04	793	5000	
Mn	55	3	72	-0.027	ppb	-0.027	-202.25	203	10000	
Fe	56	2	72	-1.613	ppb	-1.613	-11.85	6445	10000	
Co	59	3	72	-0.003	ppb	-0.003	-217.72	27	2000	
Ni	60	3	72	-0.201	ppb	-0.201	-50.21	72	5000	
Cu	63	3	72	-0.097	ppb	-0.097	-22.41	202	5000	
Zn	66	3	72	-0.546	ppb	-0.546	-44.23	160	5000	
As	75	3	72	-0.075	ppb	-0.075	-150.76	25	2000	
Se	78	2	72	-0.027	ppb	-0.027	-127.91	2	2000	
(Se)	78	3	72	1.093	ppb	1.093	191.75	22	2000	
Sr	88	3	72	0.423	ppb	0.423	5.81	280	4000	
Mo	95	3	115	-0.132	ppb	-0.132	-18.31	20	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-173.28	23	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-1.085	ppb	-1.085	-2.07	202	2000	
Sb	121	3	115	-0.035	ppb	-0.035	-46.80	60	1000	
Ba	137	3	115	0.011	ppb	0.011	802.70	60	5000	
Tl	205	3	193	-0.147	ppb	-0.147	-2.52	162	2000	
(Pb)	206	3	193	-0.064	ppb	-0.064	-8.96	153	100	
(Pb)	207	3	193	-0.081	ppb	-0.081	-7.04	375	100	
Pb	208	3	193	-0.087	ppb	-0.087	-4.72	811	5000	
Th	232	3	193	0.015	ppb	0.015	65.75	4680	2000	
U	238	3	193	0.014	ppb	0.014	97.69	1751	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4209942	0.84	4160703	101.18	60	120	
Sc (IS)	45	3	HMI He	643559	0.52	620569	103.70	60	120	
Ge Internal standard	72	2	HMI H2	2329514	1.46	2172040	107.25	60	120	
Ge Internal standard	72	3	HMI He	780360	1.82	684400	114.02	60	120	
In Internal Standard	115	3	HMI He	2704314	0.92	2522161	107.22	60	120	
Ir (IS)	193	3	HMI He	5908627	1.02	5572879	106.02	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	217SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:54:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	29.925	ppb	29.925	25.34	26421	400000	
Mg	24	3	45	4.722	ppb	4.722	10.33	420	400000	
Al	27	3	45	-0.495	ppb	-0.495	-43.32	107	400000	
K	39	3	45	-0.727	ppb	-0.727	-2400.91	16126	400000	
Ca	40	2	45	-2.175	ppb	-2.175	-28.48	10631	400000	
V	51	3	72	-0.767	ppb	-0.767	-0.95	60	2000	
Cr	52	3	72	-1.104	ppb	-1.104	-7.37	815	5000	
Mn	55	3	72	-0.116	ppb	-0.116	-79.87	158	10000	
Fe	56	2	72	-1.757	ppb	-1.757	-5.68	6238	10000	
Co	59	3	72	-0.003	ppb	-0.003	-114.27	25	2000	
Ni	60	3	72	-0.195	ppb	-0.195	-7.17	72	5000	
Cu	63	3	72	-0.091	ppb	-0.091	-23.10	200	5000	
Zn	66	3	72	-0.679	ppb	-0.679	-41.20	132	5000	
As	75	3	72	0.018	ppb	0.018	434.42	35	2000	
Se	78	2	72	-0.027	ppb	-0.027	-126.07	2	2000	
(Se)	78	3	72	0.303	ppb	0.303	469.46	15	2000	
Sr	88	3	72	0.288	ppb	0.288	6.92	197	4000	
Mo	95	3	115	-0.119	ppb	-0.119	-24.19	27	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-35.41	10	100	
Cd	111	3	115	-0.014	ppb	-0.014	-82.43	2	2000	
Sn	120	3	115	-1.053	ppb	-1.053	-4.03	220	2000	
Sb	121	3	115	-0.054	ppb	-0.054	-54.93	43	1000	
Ba	137	3	115	-0.105	ppb	-0.105	-37.65	30	5000	
Tl	205	3	193	-0.154	ppb	-0.154	-0.92	132	2000	
(Pb)	206	3	193	-0.083	ppb	-0.083	-23.48	128	100	
(Pb)	207	3	193	-0.119	ppb	-0.119	-48.80	330	100	
Pb	208	3	193	-0.100	ppb	-0.100	-16.61	738	5000	
Th	232	3	193	0.032	ppb	0.032	80.13	4737	2000	
U	238	3	193	-0.004	ppb	-0.004	-275.03	1641	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4138731	1.49	4160703	99.47	60	120	
Sc (IS)	45	3	HMI He	624724	1.08	620569	100.67	60	120	
Ge Internal standard	72	2	HMI H2	2333732	1.10	2172040	107.44	60	120	
Ge Internal standard	72	3	HMI He	752890	1.19	684400	110.01	60	120	
In Internal Standard	115	3	HMI He	2632144	1.22	2522161	104.36	60	120	
Ir (IS)	193	3	HMI He	5867910	0.24	5572879	105.29	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	218SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:56:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	15.792	ppb	15.792	17.67	24997	400000	
Mg	24	3	45	2.903	ppb	2.903	33.02	310	400000	
Al	27	3	45	-1.453	ppb	-1.453	-69.69	87	400000	
K	39	3	45	2.267	ppb	2.267	1632.84	16413	400000	
Ca	40	2	45	-2.262	ppb	-2.262	-39.83	10354	400000	
V	51	3	72	-0.732	ppb	-0.732	-3.43	82	2000	
Cr	52	3	72	-1.151	ppb	-1.151	-7.80	776	5000	
Mn	55	3	72	-0.184	ppb	-0.184	-24.45	130	10000	
Fe	56	2	72	-1.389	ppb	-1.389	-12.30	6565	10000	
Co	59	3	72	-0.012	ppb	-0.012	-34.84	13	2000	
Ni	60	3	72	-0.187	ppb	-0.187	-37.90	75	5000	
Cu	63	3	72	-0.147	ppb	-0.147	-2.19	147	5000	
Zn	66	3	72	-0.666	ppb	-0.666	-31.75	133	5000	
As	75	3	72	0.007	ppb	0.007	3992.36	33	2000	
Se	78	2	72	-0.038	ppb	-0.038	-54.88	1	2000	
(Se)	78	3	72	-0.643	ppb	-0.643	-122.43	8	2000	
Sr	88	3	72	0.270	ppb	0.270	14.85	187	4000	
Mo	95	3	115	-0.125	ppb	-0.125	-18.96	23	2000	
Ag	107	3	115	-0.007	ppb	-0.007	-81.76	12	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-1.028	ppb	-1.028	-4.62	240	2000	
Sb	121	3	115	-0.054	ppb	-0.054	-59.71	43	1000	
Ba	137	3	115	-0.105	ppb	-0.105	-50.45	30	5000	
Tl	205	3	193	-0.156	ppb	-0.156	-7.71	123	2000	
(Pb)	206	3	193	-0.099	ppb	-0.099	-15.68	108	100	
(Pb)	207	3	193	-0.129	ppb	-0.129	-16.28	317	100	
Pb	208	3	193	-0.114	ppb	-0.114	-8.31	663	5000	
Th	232	3	193	0.002	ppb	0.002	513.15	4550	2000	
U	238	3	193	0.012	ppb	0.012	63.53	1719	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4048559	0.14	4160703	97.30	60	120	
Sc (IS)	45	3	HMI He	631011	1.63	620569	101.68	60	120	
Ge Internal standard	72	2	HMI H2	2251685	0.76	2172040	103.67	60	120	
Ge Internal standard	72	3	HMI He	753312	2.23	684400	110.07	60	120	
In Internal Standard	115	3	HMI He	2643443	1.56	2522161	104.81	60	120	
Ir (IS)	193	3	HMI He	5830220	1.68	5572879	104.62	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	219SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T02:58:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	10.337	ppb	10.337	34.33	24523	400000	
Mg	24	3	45	1.323	ppb	1.323	21.57	214	400000	
Al	27	3	45	-2.216	ppb	-2.216	-54.85	70	400000	
K	39	3	45	-1.132	ppb	-1.132	-2824.37	16373	400000	
Ca	40	2	45	-3.735	ppb	-3.735	-18.93	9937	400000	
V	51	3	72	-0.768	ppb	-0.768	-4.97	60	2000	
Cr	52	3	72	-1.079	ppb	-1.079	-6.33	843	5000	
Mn	55	3	72	-0.230	ppb	-0.230	-22.22	112	10000	
Fe	56	2	72	-1.456	ppb	-1.456	-5.90	6712	10000	
Co	59	3	72	-0.007	ppb	-0.007	-107.27	20	2000	
Ni	60	3	72	-0.225	ppb	-0.225	-18.85	62	5000	
Cu	63	3	72	-0.116	ppb	-0.116	-37.63	178	5000	
Zn	66	3	72	-0.617	ppb	-0.617	-36.84	143	5000	
As	75	3	72	-0.070	ppb	-0.070	-63.32	25	2000	
Se	78	2	72	-0.015	ppb	-0.015	-257.16	3	2000	
(Se)	78	3	72	2.102	ppb	2.102	80.63	28	2000	
Sr	88	3	72	0.123	ppb	0.123	19.16	108	4000	
Mo	95	3	115	-0.126	ppb	-0.126	-15.81	23	2000	
Ag	107	3	115	-0.009	ppb	-0.009	-32.52	10	100	
Cd	111	3	115	-0.014	ppb	-0.014	-78.77	2	2000	
Sn	120	3	115	-1.108	ppb	-1.108	-1.02	183	2000	
Sb	121	3	115	-0.016	ppb	-0.016	-153.37	75	1000	
Ba	137	3	115	-0.141	ppb	-0.141	-32.04	22	5000	
Tl	205	3	193	-0.143	ppb	-0.143	-3.26	173	2000	
(Pb)	206	3	193	-0.078	ppb	-0.078	-12.83	133	100	
(Pb)	207	3	193	-0.140	ppb	-0.140	-37.75	302	100	
Pb	208	3	193	-0.103	ppb	-0.103	-17.40	711	5000	
Th	232	3	193	-0.007	ppb	-0.007	-290.58	4472	2000	
U	238	3	193	0.010	ppb	0.010	50.16	1694	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4207305	1.17	4160703	101.12	60	120	
Sc (IS)	45	3	HMI He	635648	1.50	620569	102.43	60	120	
Ge Internal standard	72	2	HMI H2	2337042	1.52	2172040	107.60	60	120	
Ge Internal standard	72	3	HMI He	761062	1.42	684400	111.20	60	120	
In Internal Standard	115	3	HMI He	2701185	1.20	2522161	107.10	60	120	
Ir (IS)	193	3	HMI He	5787470	1.44	5572879	103.85	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	220SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:00:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1.413	ppb	1.413	207.56	23717	400000	
Mg	24	3	45	1.343	ppb	1.343	67.64	217	400000	
Al	27	3	45	-2.111	ppb	-2.111	-64.56	73	400000	
K	39	3	45	-1.843	ppb	-1.843	-1231.09	16546	400000	
Ca	40	2	45	-4.157	ppb	-4.157	-18.27	9867	400000	
V	51	3	72	-0.747	ppb	-0.747	-3.24	73	2000	
Cr	52	3	72	-1.010	ppb	-1.010	-6.59	896	5000	
Mn	55	3	72	-0.222	ppb	-0.222	-42.51	115	10000	
Fe	56	2	72	-1.699	ppb	-1.699	-7.51	6481	10000	
Co	59	3	72	-0.006	ppb	-0.006	-135.63	22	2000	
Ni	60	3	72	-0.178	ppb	-0.178	-35.82	78	5000	
Cu	63	3	72	-0.083	ppb	-0.083	-49.36	210	5000	
Zn	66	3	72	-0.648	ppb	-0.648	-33.13	138	5000	
As	75	3	72	-0.057	ppb	-0.057	-150.50	27	2000	
Se	78	2	72	-0.039	ppb	-0.039	-99.20	1	2000	
(Se)	78	3	72	-0.648	ppb	-0.648	-122.42	8	2000	
Sr	88	3	72	0.097	ppb	0.097	72.21	93	4000	
Mo	95	3	115	-0.135	ppb	-0.135	-16.13	18	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-44.30	12	100	
Cd	111	3	115	-0.008	ppb	-0.008	-288.30	3	2000	
Sn	120	3	115	-0.999	ppb	-0.999	-4.82	267	2000	
Sb	121	3	115	-0.045	ppb	-0.045	-12.97	52	1000	
Ba	137	3	115	-0.067	ppb	-0.067	-29.97	40	5000	
Tl	205	3	193	-0.152	ppb	-0.152	-3.05	142	2000	
(Pb)	206	3	193	-0.090	ppb	-0.090	-30.26	122	100	
(Pb)	207	3	193	-0.165	ppb	-0.165	-11.30	282	100	
Pb	208	3	193	-0.107	ppb	-0.107	-10.26	711	5000	
Th	232	3	193	0.005	ppb	0.005	211.61	4660	2000	
U	238	3	193	-0.009	ppb	-0.009	-190.91	1636	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4278996	0.83	4160703	102.84	60	120	
Sc (IS)	45	3	HMI He	642899	0.92	620569	103.60	60	120	
Ge Internal standard	72	2	HMI H2	2391242	0.52	2172040	110.09	60	120	
Ge Internal standard	72	3	HMI He	759411	2.04	684400	110.96	60	120	
In Internal Standard	115	3	HMI He	2689153	2.36	2522161	106.62	60	120	
Ir (IS)	193	3	HMI He	5948103	2.73	5572879	106.73	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	221SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:02:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	015CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	173.21	2	2000	
Na	23	3	45	-0.737	ppb	-0.737	-422.80	23266	400000	
Mg	24	3	45	0.474	ppb	0.474	103.50	160	400000	
Al	27	3	45	-1.934	ppb	-1.934	-14.13	77	400000	
K	39	3	45	1.909	ppb	1.909	954.37	16583	400000	
Ca	40	2	45	-4.868	ppb	-4.868	-0.38	9119	400000	
V	51	3	72	-0.778	ppb	-0.778	-1.59	53	2000	
Cr	52	3	72	-1.121	ppb	-1.121	-1.79	796	5000	
Mn	55	3	72	-0.182	ppb	-0.182	-25.54	130	10000	
Fe	56	2	72	-1.571	ppb	-1.571	-10.62	6465	10000	
Co	59	3	72	-0.006	ppb	-0.006	-39.52	22	2000	
Ni	60	3	72	-0.213	ppb	-0.213	-13.23	65	5000	
Cu	63	3	72	-0.118	ppb	-0.118	-26.49	173	5000	
Zn	66	3	72	-0.565	ppb	-0.565	-15.26	150	5000	
As	75	3	72	-0.081	ppb	-0.081	-159.53	23	2000	
Se	78	2	72	-0.003	ppb	-0.003	-1669.94	3	2000	
(Se)	78	3	72	0.071	ppb	0.071	569.36	13	2000	
Sr	88	3	72	0.083	ppb	0.083	39.19	85	4000	
Mo	95	3	115	-0.135	ppb	-0.135	-8.42	18	2000	
Ag	107	3	115	-0.007	ppb	-0.007	-23.34	13	100	
Cd	111	3	115	-0.020	ppb	-0.020	0.00	0	2000	
Sn	120	3	115	-1.089	ppb	-1.089	-3.43	197	2000	
Sb	121	3	115	-0.051	ppb	-0.051	-20.94	47	1000	
Ba	137	3	115	-0.094	ppb	-0.094	-12.70	33	5000	
Tl	205	3	193	-0.150	ppb	-0.150	-2.29	145	2000	
(Pb)	206	3	193	-0.056	ppb	-0.056	-26.41	162	100	
(Pb)	207	3	193	-0.166	ppb	-0.166	-4.13	275	100	
Pb	208	3	193	-0.105	ppb	-0.105	-2.98	708	5000	
Th	232	3	193	0.008	ppb	0.008	315.49	4575	2000	
U	238	3	193	0.005	ppb	0.005	787.67	1673	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4121799	0.47	4160703	99.06	60	120	
Sc (IS)	45	3	HMI He	637745	0.72	620569	102.77	60	120	
Ge Internal standard	72	2	HMI H2	2313585	1.29	2172040	106.52	60	120	
Ge Internal standard	72	3	HMI He	748883	0.40	684400	109.42	60	120	
In Internal Standard	115	3	HMI He	2683825	1.64	2522161	106.41	60	120	
Ir (IS)	193	3	HMI He	5823789	2.12	5572879	104.50	60	120	

Calibration Blank Report

Sample Table

Sample Name2	icis-7567575
Data File Name	222CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Method	
Acq Date Time	2023-01-28T03:04:00-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	28975	0.01
Mg	24	45	3	HMI He	798	1.82
Al	27	45	3	HMI He	87	65.61
K	39	45	3	HMI He	15588	0.03
Ca	40	45	2	HMI H2	19376	0.01
V	51	72	3	HMI He	205	11.72
Cr	52	72	3	HMI He	1361	0.46
Mn	55	72	3	HMI He	220	8.83
Fe	56	72	2	HMI H2	8124	0.01
Co	59	72	3	HMI He	25	160.09
Ni	60	72	3	HMI He	112	19.79
Cu	63	72	3	HMI He	268	2.81
Zn	66	72	3	HMI He	185	1.46
As	75	72	3	HMI He	32	57.58
Se	78	72	2	HMI H2	5	2120.88
(Se)	78	72	3	HMI He	13	429.74
Sr	88	72	3	HMI He	375	2.57
Mo	95	115	3	HMI He	42	166.34
Ag	107	115	3	HMI He	15	0.00
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	545	2.15
Sb	121	115	3	HMI He	105	20.79
Ba	137	115	3	HMI He	60	41.68
Tl	205	193	3	HMI He	195	11.39
(Pb)	206	193	3	HMI He	123	19.27
(Pb)	207	193	3	HMI He	318	1.24
Pb	208	193	3	HMI He	706	1.61
Th	232	193	3	HMI He	4574	0.09
U	238	193	3	HMI He	1506	0.22

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	3729052	1.37
Sc (IS)	45	3	HMI He	561397	0.52
Ge Internal standard	72	2	HMI H2	1992040	0.90
Ge Internal standard	72	3	HMI He	651565	0.54
In Internal Standard	115	3	HMI He	2386538	1.06
Ir (IS)	193	3	HMI He	5310051	2.89

Calibration Standard Report

Sample Table

Sample Name	ic-7567579
Data File Name	223CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
method	
Acq Date Time	2023-01-28T03:05:55-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	10744633	0.00
Mg	24	45	3	HMI He	1138504	0.00
Al	27	45	3	HMI He	334	8.35
K	39	45	3	HMI He	886408	0.00
V	51	72	3	HMI He	185	13.94
Cr	52	72	3	HMI He	1413	0.19
Mn	55	72	3	HMI He	298	6.51
Co	59	72	3	HMI He	47	13.27
Ni	60	72	3	HMI He	158	4.15
Cu	63	72	3	HMI He	265	7.84
Zn	66	72	3	HMI He	337	2.94
As	75	72	3	HMI He	37	85.91
Se	78	72	2	HMI H2	3	1623.80
(Se)	78	72	3	HMI He	18	227.24
Sr	88	72	3	HMI He	818	1.84
Mo	95	115	3	HMI He	73	35.21
Ag	107	115	3	HMI He	23	140.40
Cd	111	115	3	HMI He	7	649.52
Sn	120	115	3	HMI He	625	0.78
Sb	121	115	3	HMI He	127	11.80
Ba	137	115	3	HMI He	120	15.92
Tl	205	193	3	HMI He	222	5.61
(Pb)	206	193	3	HMI He	195	3.48
(Pb)	207	193	3	HMI He	318	5.95
Pb	208	193	3	HMI He	990	0.45
Th	232	193	3	HMI He	4512	0.13
U	238	193	3	HMI He	1639	0.42

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3776113	1.38	3729052	101.26	60	120	
Sc (IS)	45	3	HMI He	580005	0.29	561397	103.31	60	120	
Ge Internal standard	72	2	HMI H2	2041517	1.28	1992040	102.48	60	120	
Ge Internal standard	72	3	HMI He	648645	1.18	651565	99.55	60	120	
In Internal Standard	115	3	HMI He	2428282	2.03	2386538	101.75	60	120	
Ir (IS)	193	3	HMI He	5465388	2.51	5310051	102.93	60	120	

Calibration Standard Report

Sample Table

Sample Name	ic-7567578
Data File Name	224CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
method	
Acq Date Time	2023-01-28T03:07:47-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	4645	0.16
Na	23	45	3	HMI He	250034	0.00
Mg	24	45	3	HMI He	113260	0.00
Al	27	45	3	HMI He	41094	0.00
K	39	45	3	HMI He	101005	0.00
V	51	72	3	HMI He	56799	0.00
Cr	52	72	3	HMI He	73473	0.00
Mn	55	72	3	HMI He	38721	0.01
Co	59	72	3	HMI He	116923	0.00
Ni	60	72	3	HMI He	32078	0.01
Cu	63	72	3	HMI He	87237	0.00
Zn	66	72	3	HMI He	15371	0.01
As	75	72	3	HMI He	10570	0.01
Se	78	72	2	HMI H2	5367	0.03
(Se)	78	72	3	HMI He	636	2.45
Sr	88	72	3	HMI He	103164	0.00
Mo	95	115	3	HMI He	47574	0.00
Ag	107	115	3	HMI He	158804	0.00
Cd	111	115	3	HMI He	23702	0.01
Sn	120	115	3	HMI He	71689	0.00
Sb	121	115	3	HMI He	72694	0.00
Ba	137	115	3	HMI He	22907	0.01
Tl	205	193	3	HMI He	362447	0.00
(Pb)	206	193	3	HMI He	120645	0.00
(Pb)	207	193	3	HMI He	105521	0.00
Pb	208	193	3	HMI He	485191	0.00
Th	232	193	3	HMI He	497936	0.00
U	238	193	3	HMI He	527169	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3766974	1.73	3729052	101.02	60	120	
Sc (IS)	45	3	HMI He	592845	2.18	561397	105.60	60	120	
Ge Internal standard	72	2	HMI H2	2096177	0.67	1992040	105.23	60	120	
Ge Internal standard	72	3	HMI He	705574	2.36	651565	108.29	60	120	
In Internal Standard	115	3	HMI He	2467266	1.21	2386538	103.38	60	120	
Ir (IS)	193	3	HMI He	5585742	1.97	5310051	105.19	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	icv-7567581
Data File Name	225_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:09:38-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.319	ppb	6.305	1858	40	100.8	90	110	
Na	23	3	45	12909.738	ppb	1.627	1524649	12800	100.9	90	110	
Mg	24	3	45	4616.014	ppb	1.442	284163	4800	96.2	90	110	
Al	27	3	45	792.135	ppb	1.641	17238	800	99.0	90	110	
K	39	3	45	4530.959	ppb	2.225	230117	4800	94.4	90	110	
Ca	40	2	45	4881.716	ppb	1.049	2554363	4800	101.7	90	110	
V	51	3	72	40.955	ppb	2.535	23623	40	102.4	90	110	
Cr	52	3	72	41.083	ppb	2.728	31361	40	102.7	90	110	
Mn	55	3	72	42.307	ppb	1.645	16687	40	105.8	90	110	
Fe	56	2	72	830.559	ppb	2.673	1131316	800	103.8	90	110	
Co	59	3	72	41.089	ppb	0.395	48549	40	102.7	90	110	
Ni	60	3	72	40.519	ppb	4.356	13195	40	101.3	90	110	
Cu	63	3	72	41.941	ppb	2.974	37115	40	104.9	90	110	
Zn	66	3	72	83.457	ppb	1.805	12991	80	104.3	90	110	
As	75	3	72	40.381	ppb	2.861	4332	40	101.0	90	110	
Se	78	2	72	41.553	ppb	4.408	2184	40	103.9	90	110	
(Se)	78	3	72	48.283	ppb	17.575	318	40	120.7	90	110	>+\-10%
Sr	88	3	72	124.503	ppb	2.255	65012	120	103.8	90	110	
Mo	95	3	115	40.944	ppb	0.218	20369	40	102.4	90	110	
Ag	107	3	115	81.219	ppb	1.211	134721	80	101.5	90	110	
Cd	111	3	115	39.575	ppb	2.126	9797	40	98.9	90	110	
Sn	120	3	115	40.022	ppb	0.386	30321	40	100.1	90	110	
Sb	121	3	115	41.268	ppb	1.378	31395	40	103.2	90	110	
Ba	137	3	115	41.282	ppb	2.068	9915	40	103.2	90	110	
Tl	205	3	193	39.986	ppb	0.707	150054	40	100.0	90	110	
(Pb)	206	3	193	40.875	ppb	2.050	51084	40	102.2	90	110	
(Pb)	207	3	193	40.279	ppb	0.539	44170	40	100.7	90	110	
Pb	208	3	193	40.614	ppb	1.056	204274	40	101.5	90	110	
Th	232	3	193	82.208	ppb	1.417	424243	80	102.8	90	110	
U	238	3	193	41.166	ppb	1.208	225406	40	102.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3775728	0.33	3729052	101.25	60	120	
Sc (IS)	45	3	HMI He	625779	1.01	561397	111.47	60	120	
Ge Internal standard	72	2	HMI H2	2051585	1.89	1992040	102.99	60	120	
Ge Internal standard	72	3	HMI He	712633	2.17	651565	109.37	60	120	
In Internal Standard	115	3	HMI He	2576399	0.54	2386538	107.96	60	120	
Ir (IS)	193	3	HMI He	5777066	0.45	5310051	108.79	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	226_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:11:29-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.835	ppb	2.188	2337	50	99.7	90	110	
Na	23	3	45	51534.480	ppb	1.782	5538728	51000	101.0	90	110	
Mg	24	3	45	10999.063	ppb	1.777	625055	11000	100.0	90	110	
Al	27	3	45	1003.798	ppb	1.528	20178	1000	100.4	90	110	
K	39	3	45	10740.823	ppb	1.467	482398	11000	97.6	90	110	
Ca	40	2	45	11155.802	ppb	1.341	5808843	11000	101.4	90	110	
V	51	3	72	52.230	ppb	0.376	27959	50	104.5	90	110	
Cr	52	3	72	52.045	ppb	2.107	36568	50	104.1	90	110	
Mn	55	3	72	52.081	ppb	1.592	19045	50	104.2	90	110	
Fe	56	2	72	1045.542	ppb	0.383	1419531	1000	104.6	90	110	
Co	59	3	72	51.899	ppb	0.708	56998	50	103.8	90	110	
Ni	60	3	72	51.880	ppb	1.221	15681	50	103.8	90	110	
Cu	63	3	72	52.155	ppb	0.569	42855	50	104.3	90	110	
Zn	66	3	72	54.506	ppb	0.248	7953	50	109.0	90	110	
As	75	3	72	50.423	ppb	0.606	5022	50	100.8	90	110	
Se	78	2	72	51.650	ppb	4.571	2710	50	103.3	90	110	
(Se)	78	3	72	59.882	ppb	4.650	363	50	119.8	90	110	>+\-10%
Sr	88	3	72	104.846	ppb	0.376	50968	100	104.8	90	110	
Mo	95	3	115	50.334	ppb	0.789	23559	50	100.7	90	110	
Ag	107	3	115	50.046	ppb	2.229	78122	50	100.1	90	110	
Cd	111	3	115	50.379	ppb	0.965	11738	50	100.8	90	110	
Sn	120	3	115	50.805	ppb	1.487	36072	50	101.6	90	110	
Sb	121	3	115	50.502	ppb	1.486	36132	50	101.0	90	110	
Ba	137	3	115	52.268	ppb	2.941	11796	50	104.5	90	110	
Tl	205	3	193	50.062	ppb	2.263	178529	50	100.1	90	110	
(Pb)	206	3	193	49.938	ppb	1.267	59300	50	99.9	90	110	
(Pb)	207	3	193	51.024	ppb	2.145	53098	50	102.0	90	110	
Pb	208	3	193	50.100	ppb	1.288	239369	50	100.2	90	110	
Th	232	3	193	51.761	ppb	1.499	255683	50	103.5	90	110	
U	238	3	193	49.845	ppb	1.618	259130	50	99.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3773764	0.64	3729052	101.20	60	120	
Sc (IS)	45	3	HMI He	578747	1.69	561397	103.09	60	120	
Ge Internal standard	72	2	HMI H2	2047562	0.71	1992040	102.79	60	120	
Ge Internal standard	72	3	HMI He	662460	1.29	651565	101.67	60	120	
In Internal Standard	115	3	HMI He	2425040	2.20	2386538	101.61	60	120	
Ir (IS)	193	3	HMI He	5492273	1.14	5310051	103.43	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	227_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:13:21-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-24.791	ppb	-17.4	27010	25	
Mg	24	3	45	-7.197	ppb	-5.7	410	25	
Al	27	3	45	1.078	ppb	51.7	110	15	
K	39	3	45	3.092	ppb	980.4	16075	50	
V	51	3	72	-0.015	ppb	-83.8	198	1	
Cr	52	3	72	-0.180	ppb	-37.7	1249	1	
Mn	55	3	72	-0.250	ppb	-18.4	132	0.5	
Co	59	3	72	0.011	ppb	26.3	37	0.5	
Ni	60	3	72	0.043	ppb	123.3	125	1	
Cu	63	3	72	-0.035	ppb	-189.9	242	1	
Zn	66	3	72	-0.090	ppb	-205.3	173	5	
As	75	3	72	0.015	ppb	846.5	33	1	
Se	78	2	72	-0.005	ppb	-399.9	5	1	
(Se)	78	3	72	0.569	ppb	178.4	17	1	
Sr	88	3	72	-0.619	ppb	-10.7	82	0.5	
Mo	95	3	115	0.061	ppb	63.2	70	0.5	
Ag	107	3	115	0.021	ppb	27.3	47	1	
Cd	111	3	115	0.022	ppb	99.0	5	0.5	
Sn	120	3	115	0.162	ppb	38.7	656	1	
Sb	121	3	115	0.103	ppb	69.1	178	0.6	
Ba	137	3	115	-0.038	ppb	-34.6	52	0.5	
Tl	205	3	193	0.018	ppb	19.4	265	0.1	
(Pb)	206	3	193	0.042	ppb	11.9	177	1	
(Pb)	207	3	193	-0.013	ppb	-375.5	315	1	
Pb	208	3	193	0.025	ppb	45.0	845	0.5	
Th	232	3	193	0.454	ppb	24.7	6919	1	
U	238	3	193	0.038	ppb	23.6	1749	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3897256	1.00	3729052	104.51	60	120	
Sc (IS)	45	3	HMI He	574394	1.69	561397	102.32	60	120	
Ge Internal standard	72	2	HMI H2	2103601	2.12	1992040	105.60	60	120	
Ge Internal standard	72	3	HMI He	655633	0.75	651565	100.62	60	120	
In Internal Standard	115	3	HMI He	2387372	2.40	2386538	100.03	60	120	
Ir (IS)	193	3	HMI He	5480143	1.52	5310051	103.20	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	ccvl-7567582
Data File Name	228LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:15:13-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1.068	ppb	17.132	50	1	106.8	70	130	
Na	23	3	45	7.823	ppb	115.860	31242	50	15.6	70	130	>+/-30%
Mg	24	3	45	38.903	ppb	1.924	3083	50	77.8	70	130	
Al	27	3	45	48.908	ppb	4.726	1088	50	97.8	70	130	
K	39	3	45	83.394	ppb	19.977	20038	100	83.4	70	130	
V	51	3	72	5.336	ppb	3.846	3089	5	106.7	70	130	
Cr	52	3	72	2.187	ppb	2.790	2906	2	109.3	70	130	
Mn	55	3	72	0.786	ppb	22.937	515	1	78.6	70	130	
Co	59	3	72	1.053	ppb	5.136	1199	1	105.3	70	130	
Ni	60	3	72	1.974	ppb	11.320	716	2	98.7	70	130	
Cu	63	3	72	2.172	ppb	3.321	2077	2	108.6	70	130	
Zn	66	3	72	10.813	ppb	4.915	1754	10	108.1	70	130	
As	75	3	72	5.365	ppb	6.610	571	5	107.3	70	130	
Se	78	2	72	4.916	ppb	18.559	266	5	98.3	70	130	
(Se)	78	3	72	3.297	ppb	89.666	33	5	65.9	70	130	>+/-30%
Sr	88	3	72	0.339	ppb	34.827	553	1	33.9	70	130	>+/-30%
Mo	95	3	115	2.073	ppb	3.823	1036	2	103.7	70	130	
Ag	107	3	115	1.080	ppb	1.838	1743	1	108.0	70	130	
Cd	111	3	115	0.881	ppb	12.060	210	1	88.1	70	130	
Sn	120	3	115	9.893	ppb	1.379	7650	10	98.9	70	130	
Sb	121	3	115	2.130	ppb	5.031	1668	2	106.5	70	130	
Ba	137	3	115	0.990	ppb	14.169	290	1	99.0	70	130	
Tl	205	3	193	0.994	ppb	3.514	3862	1	99.4	70	130	
(Pb)	206	3	193	1.023	ppb	4.251	1381	1	102.3	70	130	
(Pb)	207	3	193	0.984	ppb	5.397	1389	1	98.4	70	130	
Pb	208	3	193	1.035	ppb	3.702	5838	1	103.5	70	130	
Th	232	3	193	1.972	ppb	6.892	14738	2	98.6	70	130	
U	238	3	193	1.025	ppb	2.558	7072	1	102.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3783031	2.04	3729052	101.45	60	120	
Sc (IS)	45	3	HMI He	589054	1.76	561397	104.93	60	120	
Ge Internal standard	72	2	HMI H2	2070410	2.63	1992040	103.93	60	120	
Ge Internal standard	72	3	HMI He	672486	0.76	651565	103.21	60	120	
In Internal Standard	115	3	HMI He	2483505	3.12	2386538	104.06	60	120	
Ir (IS)	193	3	HMI He	5668594	2.76	5310051	106.75	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600334/1-a
Data File Name	229_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:17:06-07:00
Sample Type	Blank
Dilution	1
Comment	600334 6020B
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.035	ppb	173.2050808	2	0.5
Na	23	3	45	-46.636	ppb	-9.161473997	25816	25
Mg	24	3	45	-10.172	ppb	-0.89348815	254	25
Al	27	3	45	3.563	ppb	27.2318966	167	15
K	39	3	45	-14.626	ppb	-145.4662596	16019	50
V	51	3	72	-0.018	ppb	-180.3708153	205	1
Cr	52	3	72	0.219	ppb	51.125206	1579	1
Mn	55	3	72	0.155	ppb	48.9515104	288	0.5
Co	59	3	72	0.003	ppb	350.7094887	30	0.5
Ni	60	3	72	0.085	ppb	94.83828748	143	1
Cu	63	3	72	-0.033	ppb	-183.9986501	253	1
Zn	66	3	72	0.927	ppb	35.99872666	330	5
As	75	3	72	0.066	ppb	265.5645216	40	1
(Se)	78	3	72	1.834	ppb	0.72399467	25	1
Sr	88	3	72	-0.683	ppb	-0.893616825	53	0.5
Mo	95	3	115	0.019	ppb	171.5104665	53	0.5
Ag	107	3	115	0.013	ppb	77.52709704	37	1
Cd	111	3	115	0.000	ppb	#DIV/0!	0	0.5
Sn	120	3	115	0.150	ppb	32.42514349	683	1
Sb	121	3	115	0.015	ppb	325.9012077	122	0.6
Ba	137	3	115	0.165	ppb	47.02686631	102	0.5
Tl	205	3	193	-0.008	ppb	-99.19384147	180	0.1
(Pb)	206	3	193	0.024	ppb	23.90502854	162	1
(Pb)	207	3	193	-0.006	ppb	-724.370114	335	1
Pb	208	3	193	0.021	ppb	38.84913641	858	0.5
Th	232	3	193	-0.016	ppb	-38.59714116	4822	1
U	238	3	193	-0.004	ppb	-398.1401379	1594	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3918619	1.35	3729052	105.08	60	120	
Sc (IS)	45	3	HMI He	600497	0.92	561397	106.96	60	120	
Ge Internal standard	72	2	HMI H2	2132953	3.35	1992040	107.07	60	120	
Ge Internal standard	72	3	HMI He	682837	0.32	651565	104.80	60	120	
In Internal Standard	115	3	HMI He	2515222	0.72	2386538	105.39	60	120	
Ir (IS)	193	3	HMI He	5692511	0.94	5310051	107.20	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600334/2-a
Data File Name	230_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:18:58-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600334 6020B
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.600	41.600	ppb	6.136	1996	40	104.0	80	120	
Na	23	3	45	770.102	770.102	ppb	2.469	113760	40	1925.3	80	120	>+/-20%
Mg	24	3	45	727.788	727.788	ppb	2.602	42714	40	1819.5	80	120	>+/-20%
Al	27	3	45	804.673	804.673	ppb	1.281	16419	40	2011.7	80	120	>+/-20%
K	39	3	45	767.164	767.164	ppb	5.343	50069	40	1917.9	80	120	>+/-20%
Ca	40	2	45	822.228	822.228	ppb	1.279	473146	40	2055.6	80	120	>+/-20%
V	51	3	72	42.578	42.578	ppb	0.950	23323	40	106.4	80	120	
Cr	52	3	72	42.370	42.370	ppb	1.528	30680	40	105.9	80	120	
Mn	55	3	72	43.277	43.277	ppb	1.568	16208	40	108.2	80	120	
Fe	56	2	72	853.394	853.394	ppb	1.676	1202384	40	2133.5	80	120	>+/-20%
(Fe)	56	3	72	844.995	844.995	ppb	0.986	504996	40	2112.5	80	120	>+/-20%
Co	59	3	72	42.372	42.372	ppb	1.056	47546	40	105.9	80	120	
Ni	60	3	72	41.605	41.605	ppb	1.860	12871	40	104.0	80	120	
Cu	63	3	72	43.296	43.296	ppb	2.150	36391	40	108.2	80	120	
Zn	66	3	72	43.706	43.706	ppb	3.805	6553	40	109.3	80	120	
As	75	3	72	41.982	41.982	ppb	1.666	4277	40	105.0	80	120	
Se	78	2	72	42.321	42.321	ppb	5.985	2301	40	105.8	80	120	
(Se)	78	3	72	46.019	46.019	ppb	16.363	288	40	115.0	80	120	
Sr	88	3	72	83.987	83.987	ppb	1.303	41788	40	210.0	80	120	>+/-20%
Mo	95	3	115	40.154	40.154	ppb	2.188	18984	40	100.4	80	120	
Ag	107	3	115	40.857	40.857	ppb	2.210	64415	40	102.1	80	120	
Cd	111	3	115	41.765	41.765	ppb	5.944	9824	40	104.4	80	120	
Sn	120	3	115	40.110	40.110	ppb	0.720	28880	40	100.3	80	120	
Sb	121	3	115	39.719	39.719	ppb	2.437	28720	40	99.3	80	120	
Ba	137	3	115	42.386	42.386	ppb	1.772	9674	40	106.0	80	120	
Tl	205	3	193	40.741	40.741	ppb	1.031	149093	40	101.9	80	120	
(Pb)	206	3	193	40.876	40.876	ppb	1.080	49820	40	102.2	80	120	
(Pb)	207	3	193	40.930	40.930	ppb	1.592	43767	40	102.3	80	120	
Pb	208	3	193	40.730	40.730	ppb	0.673	199788	40	101.8	80	120	
Th	232	3	193	40.376	40.376	ppb	0.887	205667	40	100.9	80	120	
U	238	3	193	40.482	40.482	ppb	1.149	216208	40	101.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4000730	0.61	3729052	107.29	60	120	
Sc (IS)	45	3	HMI He	586785	0.50	561397	104.52	60	120	
Ge Internal standard	72	2	HMI H2	2122506	2.22	1992040	106.55	60	120	
Ge Internal standard	72	3	HMI He	676762	0.04	651565	103.87	60	120	
In Internal Standard	115	3	HMI He	2448698	0.84	2386538	102.60	60	120	
Ir (IS)	193	3	HMI He	5634178	0.39	5310051	106.10	60	120	

Sample Report

Sample Table

Sample Name	280-171561-a-7-b
Data File Name	231SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:20:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	835630.146	ppb	835630.146	0.42	93194248	400000	
Mg	24	3	45	115853.805	ppb	115853.805	0.07	6857553	400000	
Al	27	3	45	25.153	ppb	25.153	14.77	617	400000	
K	39	3	45	9862.668	ppb	9862.668	1.17	463316	400000	
Ca	40	2	45	350470.344	ppb	350470.344	0.76	185994314	400000	
V	51	3	72	1.057	ppb	1.057	13.92	823	2000	
Cr	52	3	72	3.259	ppb	3.259	11.02	3837	5000	
Mn	55	3	72	993.777	ppb	993.777	1.16	384430	10000	
Fe	56	2	72	1074.173	ppb	1074.173	2.67	1524930	10000	
Co	59	3	72	0.387	ppb	0.387	15.62	481	2000	
Ni	60	3	72	0.825	ppb	0.825	23.35	386	5000	
Cu	63	3	72	1.824	ppb	1.824	2.44	1884	5000	
Zn	66	3	72	3.883	ppb	3.883	8.51	793	5000	
As	75	3	72	1.075	ppb	1.075	17.92	148	2000	
Se	78	2	72	0.296	ppb	0.296	72.15	21	2000	
(Se)	78	3	72	-0.990	ppb	-0.990	-123.54	8	2000	
Sr	88	3	72	8208.383	ppb	8208.383	1.03	4236077	4000	
Mo	95	3	115	2.975	ppb	2.975	6.72	1464	2000	
Ag	107	3	115	0.022	ppb	0.022	57.25	50	100	
Cd	111	3	115	0.063	ppb	0.063	89.08	15	2000	
Sn	120	3	115	0.264	ppb	0.264	18.25	755	2000	
Sb	121	3	115	0.170	ppb	0.170	14.39	233	1000	
Ba	137	3	115	14.611	ppb	14.611	5.27	3415	5000	
Tl	205	3	193	0.012	ppb	0.012	32.98	243	2000	
(Pb)	206	3	193	0.142	ppb	0.142	30.97	292	100	
(Pb)	207	3	193	0.122	ppb	0.122	7.17	450	100	
Pb	208	3	193	0.149	ppb	0.149	2.58	1419	5000	
Th	232	3	193	0.388	ppb	0.388	38.70	6528	2000	
U	238	3	193	2.162	ppb	2.162	1.66	12558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3858885	1.22	3729052	103.48	60	120	
Sc (IS)	45	3	HMI He	603457	1.78	561397	107.49	60	120	
Ge Internal standard	72	2	HMI H2	2141906	1.95	1992040	107.52	60	120	
Ge Internal standard	72	3	HMI He	708517	0.86	651565	108.74	60	120	
In Internal Standard	115	3	HMI He	2478403	1.02	2386538	103.85	60	120	
Ir (IS)	193	3	HMI He	5418299	1.25	5310051	102.04	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-34-a
Data File Name	232SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:22:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	86.62	3	2000	
Na	23	3	45	1136.325	ppb	1136.325	1.49	155530	400000	
Mg	24	3	45	537.401	ppb	537.401	1.73	32185	400000	
Al	27	3	45	904.571	ppb	904.571	1.28	18695	400000	
K	39	3	45	161.827	ppb	161.827	25.62	23731	400000	
Ca	40	2	45	559.726	ppb	559.726	2.49	325828	400000	
V	51	3	72	0.616	ppb	0.616	14.30	573	2000	
Cr	52	3	72	0.668	ppb	0.668	7.30	1964	5000	
Mn	55	3	72	166.901	ppb	166.901	1.97	64796	10000	
Fe	56	2	72	506.544	ppb	506.544	1.16	750246	10000	
Co	59	3	72	0.662	ppb	0.662	13.09	805	2000	
Ni	60	3	72	4.125	ppb	4.125	2.27	1446	5000	
Cu	63	3	72	1.485	ppb	1.485	1.29	1589	5000	
Zn	66	3	72	5.062	ppb	5.062	6.44	973	5000	
As	75	3	72	0.162	ppb	0.162	61.43	52	2000	
Se	78	2	72	0.002	ppb	0.002	2398.89	5	2000	
(Se)	78	3	72	3.007	ppb	3.007	66.32	33	2000	
Sr	88	3	72	5.646	ppb	5.646	1.55	3324	4000	
Mo	95	3	115	0.112	ppb	0.112	79.39	97	2000	
Ag	107	3	115	0.010	ppb	0.010	116.57	32	100	
Cd	111	3	115	0.113	ppb	0.113	21.60	27	2000	
Sn	120	3	115	0.164	ppb	0.164	16.47	680	2000	
Sb	121	3	115	0.142	ppb	0.142	15.21	212	1000	
Ba	137	3	115	6.997	ppb	6.997	2.48	1659	5000	
Tl	205	3	193	0.019	ppb	0.019	61.90	275	2000	
(Pb)	206	3	193	0.833	ppb	0.833	4.94	1131	100	
(Pb)	207	3	193	0.758	ppb	0.758	16.85	1128	100	
Pb	208	3	193	0.798	ppb	0.798	3.89	4593	5000	
Th	232	3	193	1.385	ppb	1.385	2.41	11610	2000	
U	238	3	193	0.394	ppb	0.394	8.22	3645	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3965680	1.41	3729052	106.35	60	120	
Sc (IS)	45	3	HMI He	594680	0.99	561397	105.93	60	120	
Ge Internal standard	72	2	HMI H2	2219563	1.06	1992040	111.42	60	120	
Ge Internal standard	72	3	HMI He	708949	0.98	651565	108.81	60	120	
In Internal Standard	115	3	HMI He	2465490	1.41	2386538	103.31	60	120	
Ir (IS)	193	3	HMI He	5572110	1.77	5310051	104.94	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-35-a
Data File Name	233SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:24:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.178	ppb	0.178	91.92	8	2000	
Na	23	3	45	17880.237	ppb	17880.237	1.12	1964445	400000	
Mg	24	3	45	3157.120	ppb	3157.120	1.26	182133	400000	
Al	27	3	45	124.746	ppb	124.746	6.39	2616	400000	
K	39	3	45	434.704	ppb	434.704	6.02	35353	400000	
Ca	40	2	45	3137.344	ppb	3137.344	1.02	1668613	400000	
V	51	3	72	0.042	ppb	0.042	103.13	238	2000	
Cr	52	3	72	0.772	ppb	0.772	18.08	1969	5000	
Mn	55	3	72	568.423	ppb	568.423	2.19	212554	10000	
Fe	56	2	72	28.220	ppb	28.220	1.28	47184	10000	
Co	59	3	72	7.048	ppb	7.048	2.20	8023	2000	
Ni	60	3	72	17.058	ppb	17.058	5.60	5407	5000	
Cu	63	3	72	1.375	ppb	1.375	6.44	1443	5000	
Zn	66	3	72	14.585	ppb	14.585	6.46	2341	5000	
As	75	3	72	0.178	ppb	0.178	100.67	52	2000	
Se	78	2	72	-0.042	ppb	-0.042	-104.33	3	2000	
(Se)	78	3	72	0.735	ppb	0.735	241.51	18	2000	
Sr	88	3	72	29.994	ppb	29.994	4.46	15349	4000	
Mo	95	3	115	0.027	ppb	0.027	105.01	55	2000	
Ag	107	3	115	0.017	ppb	0.017	64.48	42	100	
Cd	111	3	115	0.451	ppb	0.451	28.04	105	2000	
Sn	120	3	115	0.049	ppb	0.049	179.17	586	2000	
Sb	121	3	115	0.084	ppb	0.084	40.70	167	1000	
Ba	137	3	115	86.656	ppb	86.656	4.74	19460	5000	
Tl	205	3	193	0.084	ppb	0.084	9.56	491	2000	
(Pb)	206	3	193	0.089	ppb	0.089	33.96	228	100	
(Pb)	207	3	193	0.054	ppb	0.054	11.26	378	100	
Pb	208	3	193	0.075	ppb	0.075	7.47	1069	5000	
Th	232	3	193	-0.009	ppb	-0.009	-117.37	4604	2000	
U	238	3	193	0.100	ppb	0.100	17.09	2039	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3821369	0.63	3729052	102.48	60	120	
Sc (IS)	45	3	HMI He	585544	0.77	561397	104.30	60	120	
Ge Internal standard	72	2	HMI H2	2080339	0.75	1992040	104.43	60	120	
Ge Internal standard	72	3	HMI He	684779	1.67	651565	105.10	60	120	
In Internal Standard	115	3	HMI He	2419046	2.76	2386538	101.36	60	120	
Ir (IS)	193	3	HMI He	5396037	0.89	5310051	101.62	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-35-aSD@5
Data File Name	234SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:26:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.069	ppb	0.069	173.21	3	2000	
Na	23	3	45	3574.890	ppb	3574.890	0.63	431341	400000	
Mg	24	3	45	654.628	ppb	654.628	1.99	39752	400000	
Al	27	3	45	27.374	ppb	27.374	21.26	667	400000	
K	39	3	45	81.278	ppb	81.278	30.12	20512	400000	
Ca	40	2	45	664.482	ppb	664.482	1.31	373399	400000	
V	51	3	72	0.019	ppb	0.019	366.33	237	2000	
Cr	52	3	72	0.183	ppb	0.183	58.21	1634	5000	
Mn	55	3	72	114.584	ppb	114.584	1.20	45107	10000	
Fe	56	2	72	6.784	ppb	6.784	5.66	18123	10000	
Co	59	3	72	1.429	ppb	1.429	7.40	1728	2000	
Ni	60	3	72	3.691	ppb	3.691	3.67	1323	5000	
Cu	63	3	72	0.250	ppb	0.250	7.25	516	5000	
Zn	66	3	72	4.416	ppb	4.416	12.70	885	5000	
As	75	3	72	0.017	ppb	0.017	713.66	37	2000	
Se	78	2	72	0.056	ppb	0.056	198.32	8	2000	
(Se)	78	3	72	0.571	ppb	0.571	206.34	18	2000	
Sr	88	3	72	5.875	ppb	5.875	4.30	3485	4000	
Mo	95	3	115	0.022	ppb	0.022	169.62	55	2000	
Ag	107	3	115	0.011	ppb	0.011	16.90	33	100	
Cd	111	3	115	0.075	ppb	0.075	42.32	18	2000	
Sn	120	3	115	0.271	ppb	0.271	10.23	776	2000	
Sb	121	3	115	0.051	ppb	0.051	86.49	150	1000	
Ba	137	3	115	17.027	ppb	17.027	1.81	4059	5000	
Tl	205	3	193	0.018	ppb	0.018	48.83	272	2000	
(Pb)	206	3	193	0.043	ppb	0.043	58.19	182	100	
(Pb)	207	3	193	0.015	ppb	0.015	196.64	352	100	
Pb	208	3	193	0.034	ppb	0.034	14.02	908	5000	
Th	232	3	193	-0.046	ppb	-0.046	-127.35	4595	2000	
U	238	3	193	0.055	ppb	0.055	16.42	1876	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3866444	0.44	3729052	103.68	60	120	
Sc (IS)	45	3	HMI He	605783	0.86	561397	107.91	60	120	
Ge Internal standard	72	2	HMI H2	2120012	0.91	1992040	106.42	60	120	
Ge Internal standard	72	3	HMI He	717711	1.32	651565	110.15	60	120	
In Internal Standard	115	3	HMI He	2532788	1.37	2386538	106.13	60	120	
Ir (IS)	193	3	HMI He	5596748	0.81	5310051	105.40	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-35-b ms
Data File Name	235SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:28:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.055	ppb	39.055	6.20	1869	2000	
Na	23	3	45	18401.925	ppb	18401.925	0.70	2063392	400000	
Mg	24	3	45	3951.085	ppb	3951.085	0.54	232518	400000	
Al	27	3	45	1271.824	ppb	1271.824	0.86	26388	400000	
K	39	3	45	1313.829	ppb	1313.829	1.16	75534	400000	
Ca	40	2	45	4009.768	ppb	4009.768	2.52	2163543	400000	
V	51	3	72	41.392	ppb	41.392	0.98	23987	2000	
Cr	52	3	72	42.920	ppb	42.920	1.98	32851	5000	
Mn	55	3	72	608.940	ppb	608.940	0.50	238062	10000	
Fe	56	2	72	1075.556	ppb	1075.556	1.84	1563413	10000	
Co	59	3	72	47.408	ppb	47.408	0.68	56262	2000	
Ni	60	3	72	62.456	ppb	62.456	11.12	20377	5000	
Cu	63	3	72	43.997	ppb	43.997	1.01	39111	5000	
Zn	66	3	72	57.371	ppb	57.371	3.03	9035	5000	
As	75	3	72	40.065	ppb	40.065	1.28	4319	2000	
Se	78	2	72	40.253	ppb	40.253	4.50	2262	2000	
(Se)	78	3	72	44.433	ppb	44.433	4.38	295	2000	
Sr	88	3	72	112.457	ppb	112.457	1.46	59042	4000	
Mo	95	3	115	41.473	ppb	41.473	5.08	20097	2000	
Ag	107	3	115	40.417	ppb	40.417	2.09	65335	100	
Cd	111	3	115	41.823	ppb	41.823	1.49	10089	2000	
Sn	120	3	115	39.481	ppb	39.481	3.16	29151	2000	
Sb	121	3	115	40.323	ppb	40.323	4.58	29887	1000	
Ba	137	3	115	131.764	ppb	131.764	1.41	30704	5000	
Tl	205	3	193	42.001	ppb	42.001	1.25	152992	2000	
(Pb)	206	3	193	41.555	ppb	41.555	0.92	50412	100	
(Pb)	207	3	193	41.786	ppb	41.786	3.63	44461	100	
Pb	208	3	193	41.913	ppb	41.913	2.37	204607	5000	
Th	232	3	193	41.868	ppb	41.868	2.11	212091	2000	
U	238	3	193	42.192	ppb	42.192	2.93	224209	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3887861	1.95	3729052	104.26	60	120	
Sc (IS)	45	3	HMI He	597864	0.90	561397	106.50	60	120	
Ge Internal standard	72	2	HMI H2	2193049	2.21	1992040	110.09	60	120	
Ge Internal standard	72	3	HMI He	715804	0.38	651565	109.86	60	120	
In Internal Standard	115	3	HMI He	2510922	1.49	2386538	105.21	60	120	
Ir (IS)	193	3	HMI He	5608559	1.42	5310051	105.62	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-35-c msd
Data File Name	236SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:30:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.468	ppb	41.468	4.65	1967	2000	
Na	23	3	45	16447.969	ppb	16447.969	1.51	1839917	400000	
Mg	24	3	45	4076.883	ppb	4076.883	0.27	238895	400000	
Al	27	3	45	1410.623	ppb	1410.623	3.83	29140	400000	
K	39	3	45	1246.857	ppb	1246.857	3.24	72237	400000	
Ca	40	2	45	5445.284	ppb	5445.284	4.09	2932077	400000	
V	51	3	72	41.152	ppb	41.152	0.91	23495	2000	
Cr	52	3	72	42.823	ppb	42.823	0.84	32293	5000	
Mn	55	3	72	512.777	ppb	512.777	0.58	197517	10000	
Fe	56	2	72	1180.139	ppb	1180.139	0.90	1702165	10000	
Co	59	3	72	45.715	ppb	45.715	2.95	53443	2000	
Ni	60	3	72	55.791	ppb	55.791	0.52	17943	5000	
Cu	63	3	72	43.151	ppb	43.151	1.42	37791	5000	
Zn	66	3	72	56.249	ppb	56.249	0.87	8730	5000	
As	75	3	72	40.689	ppb	40.689	3.84	4320	2000	
Se	78	2	72	41.224	ppb	41.224	1.98	2300	2000	
(Se)	78	3	72	42.748	ppb	42.748	18.32	280	2000	
Sr	88	3	72	109.952	ppb	109.952	1.33	56875	4000	
Mo	95	3	115	39.866	ppb	39.866	2.63	19416	2000	
Ag	107	3	115	39.939	ppb	39.939	1.56	64850	100	
Cd	111	3	115	40.264	ppb	40.264	0.44	9757	2000	
Sn	120	3	115	38.304	ppb	38.304	4.36	28418	2000	
Sb	121	3	115	38.980	ppb	38.980	2.67	29025	1000	
Ba	137	3	115	113.888	ppb	113.888	3.35	26655	5000	
Tl	205	3	193	41.141	ppb	41.141	2.10	150339	2000	
(Pb)	206	3	193	41.843	ppb	41.843	0.70	50925	100	
(Pb)	207	3	193	41.159	ppb	41.159	1.62	43947	100	
Pb	208	3	193	41.604	ppb	41.604	1.46	203770	5000	
Th	232	3	193	41.542	ppb	41.542	2.11	211163	2000	
U	238	3	193	41.060	ppb	41.060	1.16	218977	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3891320	2.66	3729052	104.35	60	120	
Sc (IS)	45	3	HMI He	595368	0.86	561397	106.05	60	120	
Ge Internal standard	72	2	HMI H2	2176557	0.71	1992040	109.26	60	120	
Ge Internal standard	72	3	HMI He	705140	0.38	651565	108.22	60	120	
In Internal Standard	115	3	HMI He	2522014	1.94	2386538	105.68	60	120	
Ir (IS)	193	3	HMI He	5626659	1.08	5310051	105.96	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-35-aPDS
Data File Name	237SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:31:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	190.861	ppb	190.861	3.75	8765	2000	
Na	23	3	45	17706.000	ppb	17706.000	1.43	2006672	400000	
Mg	24	3	45	3163.638	ppb	3163.638	0.11	188254	400000	
Al	27	3	45	2145.787	ppb	2145.787	0.17	44913	400000	
K	39	3	45	496.040	ppb	496.040	5.07	39247	400000	
Ca	40	2	45	3143.332	ppb	3143.332	4.12	1662317	400000	
V	51	3	72	188.720	ppb	188.720	2.27	107193	2000	
Cr	52	3	72	189.988	ppb	189.988	2.13	138521	5000	
Mn	55	3	72	755.599	ppb	755.599	0.67	291624	10000	
Fe	56	2	72	45.826	ppb	45.826	2.78	72584	10000	
Co	59	3	72	195.857	ppb	195.857	0.72	229438	2000	
Ni	60	3	72	205.823	ppb	205.823	1.89	66020	5000	
Cu	63	3	72	194.718	ppb	194.718	2.25	169906	5000	
Zn	66	3	72	224.778	ppb	224.778	1.09	34367	5000	
As	75	3	72	186.492	ppb	186.492	1.49	19724	2000	
Se	78	2	72	182.122	ppb	182.122	1.25	9868	2000	
(Se)	78	3	72	193.976	ppb	193.976	6.59	1223	2000	
Sr	88	3	72	223.507	ppb	223.507	1.98	115459	4000	
Mo	95	3	115	196.835	ppb	196.835	1.06	93360	2000	
Ag	107	3	115	41.845	ppb	41.845	2.17	66291	100	
Cd	111	3	115	192.020	ppb	192.020	1.96	45391	2000	
Sn	120	3	115	195.335	ppb	195.335	2.59	139120	2000	
Sb	121	3	115	192.716	ppb	192.716	2.44	139590	1000	
Ba	137	3	115	287.555	ppb	287.555	2.67	65578	5000	
Tl	205	3	193	188.961	ppb	188.961	2.45	697213	2000	
(Pb)	206	3	193	192.646	ppb	192.646	3.20	236484	100	
(Pb)	207	3	193	190.833	ppb	190.833	2.79	204720	100	
Pb	208	3	193	191.311	ppb	191.311	3.07	944306	5000	
Th	232	3	193	153.514	ppb	153.514	3.02	775501	2000	
U	238	3	193	210.072	ppb	210.072	2.28	1125789	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3801874	2.13	3729052	101.95	60	120	
Sc (IS)	45	3	HMI He	603968	0.47	561397	107.58	60	120	
Ge Internal standard	72	2	HMI H2	2117496	1.77	1992040	106.30	60	120	
Ge Internal standard	72	3	HMI He	706824	0.85	651565	108.48	60	120	
In Internal Standard	115	3	HMI He	2461088	2.85	2386538	103.12	60	120	
Ir (IS)	193	3	HMI He	5688007	1.55	5310051	107.12	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	238_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:33:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.034	ppb	1.794	2347	50	100.1	90	110	
Na	23	3	45	51940.175	ppb	2.170	5666504	51000	101.8	90	110	
Mg	24	3	45	11140.343	ppb	2.620	642596	11000	101.3	90	110	
Al	27	3	45	1028.978	ppb	1.916	20993	1000	102.9	90	110	
K	39	3	45	10745.226	ppb	0.891	489909	11000	97.7	90	110	
Ca	40	2	45	11140.845	ppb	1.988	5877609	11000	101.3	90	110	
V	51	3	72	52.262	ppb	2.858	28149	50	104.5	90	110	
Cr	52	3	72	52.803	ppb	1.255	37326	50	105.6	90	110	
Mn	55	3	72	54.398	ppb	1.831	20011	50	108.8	90	110	
Fe	56	2	72	1043.865	ppb	1.533	1414796	1000	104.4	90	110	
Co	59	3	72	52.746	ppb	2.888	58290	50	105.5	90	110	
Ni	60	3	72	53.793	ppb	3.112	16358	50	107.6	90	110	
Cu	63	3	72	52.276	ppb	2.249	43224	50	104.6	90	110	
Zn	66	3	72	54.752	ppb	0.745	8040	50	109.5	90	110	
As	75	3	72	55.128	ppb	3.809	5523	50	110.3	90	110	>+\-10%
Se	78	2	72	51.382	ppb	0.396	2691	50	102.8	90	110	
(Se)	78	3	72	62.674	ppb	22.262	381	50	125.3	90	110	>+\-10%
Sr	88	3	72	104.516	ppb	2.118	51132	100	104.5	90	110	
Mo	95	3	115	52.681	ppb	2.736	24325	50	105.4	90	110	
Ag	107	3	115	52.048	ppb	0.973	80174	50	104.1	90	110	
Cd	111	3	115	51.715	ppb	2.739	11888	50	103.4	90	110	
Sn	120	3	115	52.501	ppb	2.600	36762	50	105.0	90	110	
Sb	121	3	115	51.752	ppb	1.294	36532	50	103.5	90	110	
Ba	137	3	115	53.317	ppb	2.183	11873	50	106.6	90	110	
Tl	205	3	193	50.861	ppb	1.976	179448	50	101.7	90	110	
(Pb)	206	3	193	52.828	ppb	2.397	62054	50	105.7	90	110	
(Pb)	207	3	193	51.301	ppb	2.951	52812	50	102.6	90	110	
Pb	208	3	193	51.931	ppb	2.806	245426	50	103.9	90	110	
Th	232	3	193	52.955	ppb	1.424	258703	50	105.9	90	110	
U	238	3	193	51.930	ppb	2.380	267015	50	103.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3823942	1.13	3729052	102.54	60	120	
Sc (IS)	45	3	HMI He	587471	1.06	561397	104.64	60	120	
Ge Internal standard	72	2	HMI H2	2043850	0.67	1992040	102.60	60	120	
Ge Internal standard	72	3	HMI He	666785	1.67	651565	102.34	60	120	
In Internal Standard	115	3	HMI He	2392235	0.61	2386538	100.24	60	120	
Ir (IS)	193	3	HMI He	5434945	2.36	5310051	102.35	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	239_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:35:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.036	ppb	173.2	2	0.5	
Na	23	3	45	-20.449	ppb	-31.5	27835	25	
Mg	24	3	45	-8.922	ppb	-6.6	317	25	
Al	27	3	45	0.675	ppb	215.2	103	15	
K	39	3	45	-7.141	ppb	-275.6	15848	50	
V	51	3	72	0.034	ppb	128.0	227	1	
Cr	52	3	72	-0.095	ppb	-87.1	1319	1	
Mn	55	3	72	-0.060	ppb	-204.5	202	0.5	
Co	59	3	72	0.030	ppb	15.7	58	0.5	
Ni	60	3	72	0.017	ppb	1243.0	118	1	
Cu	63	3	72	-0.003	ppb	-647.8	270	1	
Zn	66	3	72	0.026	ppb	721.6	192	5	
As	75	3	72	0.145	ppb	119.0	47	1	
Se	78	2	72	-0.016	ppb	-242.5	4	1	
(Se)	78	3	72	1.691	ppb	281.1	23	1	>RL
Sr	88	3	72	-0.576	ppb	-7.8	103	0.5	
Mo	95	3	115	0.098	ppb	17.8	88	0.5	
Ag	107	3	115	0.035	ppb	18.6	70	1	
Cd	111	3	115	0.021	ppb	99.6	5	0.5	
Sn	120	3	115	0.279	ppb	29.8	750	1	
Sb	121	3	115	0.095	ppb	39.1	175	0.6	
Ba	137	3	115	-0.042	ppb	-304.2	52	0.5	
Tl	205	3	193	0.031	ppb	27.2	312	0.1	
(Pb)	206	3	193	0.050	ppb	35.6	185	1	
(Pb)	207	3	193	0.048	ppb	127.5	376	1	
Pb	208	3	193	0.054	ppb	45.4	983	0.5	
Th	232	3	193	0.457	ppb	29.1	6924	1	
U	238	3	193	0.064	ppb	33.0	1879	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3796910	1.09	3729052	101.82	60	120	
Sc (IS)	45	3	HMI He	581902	0.56	561397	103.65	60	120	
Ge Internal standard	72	2	HMI H2	2053814	2.07	1992040	103.10	60	120	
Ge Internal standard	72	3	HMI He	662492	1.01	651565	101.68	60	120	
In Internal Standard	115	3	HMI He	2428326	0.62	2386538	101.75	60	120	
Ir (IS)	193	3	HMI He	5467315	2.09	5310051	102.96	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-36-a
Data File Name	240SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:37:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.142	ppb	0.142	42.49	7	2000	
Na	23	3	45	9709.615	ppb	9709.615	2.27	1091843	400000	
Mg	24	3	45	3779.102	ppb	3779.102	2.14	220125	400000	
Al	27	3	45	2333.016	ppb	2333.016	3.87	47822	400000	
K	39	3	45	729.066	ppb	729.066	3.57	48793	400000	
Ca	40	2	45	7892.393	ppb	7892.393	2.48	4153818	400000	
V	51	3	72	4.854	ppb	4.854	1.43	2934	2000	
Cr	52	3	72	3.238	ppb	3.238	2.94	3762	5000	
Mn	55	3	72	321.455	ppb	321.455	0.83	122537	10000	
Fe	56	2	72	2362.992	ppb	2362.992	0.36	3320464	10000	
Co	59	3	72	2.466	ppb	2.466	5.33	2876	2000	
Ni	60	3	72	12.232	ppb	12.232	1.12	3984	5000	
Cu	63	3	72	2.586	ppb	2.586	6.21	2511	5000	
Zn	66	3	72	20.249	ppb	20.249	5.35	3235	5000	
As	75	3	72	1.481	ppb	1.481	27.03	188	2000	
Se	78	2	72	0.080	ppb	0.080	96.27	9	2000	
(Se)	78	3	72	6.357	ppb	6.357	14.69	53	2000	
Sr	88	3	72	24.405	ppb	24.405	2.33	12796	4000	
Mo	95	3	115	0.359	ppb	0.359	21.01	213	2000	
Ag	107	3	115	0.016	ppb	0.016	43.76	42	100	
Cd	111	3	115	0.267	ppb	0.267	17.31	63	2000	
Sn	120	3	115	0.252	ppb	0.252	11.61	741	2000	
Sb	121	3	115	0.101	ppb	0.101	5.39	182	1000	
Ba	137	3	115	41.865	ppb	41.865	1.88	9615	5000	
Tl	205	3	193	0.113	ppb	0.113	10.77	608	2000	
(Pb)	206	3	193	2.573	ppb	2.573	9.27	3199	100	
(Pb)	207	3	193	2.424	ppb	2.424	7.39	2857	100	
Pb	208	3	193	2.520	ppb	2.520	1.46	12828	5000	
Th	232	3	193	2.040	ppb	2.040	1.26	14728	2000	
U	238	3	193	0.829	ppb	0.829	3.80	5887	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3809508	1.91	3729052	102.16	60	120	
Sc (IS)	45	3	HMI He	591727	1.04	561397	105.40	60	120	
Ge Internal standard	72	2	HMI H2	2126104	0.60	1992040	106.73	60	120	
Ge Internal standard	72	3	HMI He	697339	0.90	651565	107.03	60	120	
In Internal Standard	115	3	HMI He	2463563	1.11	2386538	103.23	60	120	
Ir (IS)	193	3	HMI He	5533238	0.57	5310051	104.20	60	120	

Sample Report

Sample Table

Sample Name	280-171573-a-37-b
Data File Name	241SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:39:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	2023.595	ppb	2023.595	2.12	253801	400000	
Mg	24	3	45	355.719	ppb	355.719	2.71	21658	400000	
Al	27	3	45	29.672	ppb	29.672	18.00	704	400000	
K	39	3	45	2504.554	ppb	2504.554	0.16	128670	400000	
Ca	40	2	45	1035.218	ppb	1035.218	1.64	576556	400000	
V	51	3	72	0.340	ppb	0.340	22.71	415	2000	
Cr	52	3	72	0.192	ppb	0.192	58.01	1614	5000	
Mn	55	3	72	6.374	ppb	6.374	0.59	2696	10000	
Fe	56	2	72	37.832	ppb	37.832	2.77	62322	10000	
Co	59	3	72	0.083	ppb	0.083	38.32	125	2000	
Ni	60	3	72	0.221	ppb	0.221	57.06	192	5000	
Cu	63	3	72	0.205	ppb	0.205	33.96	470	5000	
Zn	66	3	72	2.814	ppb	2.814	20.16	628	5000	
As	75	3	72	0.038	ppb	0.038	507.06	38	2000	
Se	78	2	72	0.004	ppb	0.004	2487.54	5	2000	
(Se)	78	3	72	-0.980	ppb	-0.980	-95.12	8	2000	
Sr	88	3	72	8.692	ppb	8.692	3.54	4880	4000	
Mo	95	3	115	0.069	ppb	0.069	49.68	77	2000	
Ag	107	3	115	0.014	ppb	0.014	66.83	38	100	
Cd	111	3	115	0.258	ppb	0.258	19.66	62	2000	
Sn	120	3	115	0.205	ppb	0.205	24.48	715	2000	
Sb	121	3	115	0.111	ppb	0.111	56.83	190	1000	
Ba	137	3	115	2.852	ppb	2.852	8.79	720	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-131.59	172	2000	
(Pb)	206	3	193	0.146	ppb	0.146	8.51	302	100	
(Pb)	207	3	193	0.047	ppb	0.047	53.68	380	100	
Pb	208	3	193	0.104	ppb	0.104	19.81	1233	5000	
Th	232	3	193	0.048	ppb	0.048	24.83	4994	2000	
U	238	3	193	0.049	ppb	0.049	64.60	1821	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3907975	1.79	3729052	104.80	60	120	
Sc (IS)	45	3	HMI He	596565	0.66	561397	106.26	60	120	
Ge Internal standard	72	2	HMI H2	2148572	2.62	1992040	107.86	60	120	
Ge Internal standard	72	3	HMI He	706606	0.30	651565	108.45	60	120	
In Internal Standard	115	3	HMI He	2487674	1.83	2386538	104.24	60	120	
Ir (IS)	193	3	HMI He	5524252	1.81	5310051	104.03	60	120	

Sample Report

Sample Table

Sample Name	280-171573-a-38-b
Data File Name	242SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:41:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2070.012	ppb	2070.012	0.64	256246	400000	
Mg	24	3	45	354.897	ppb	354.897	1.77	21391	400000	
Al	27	3	45	51.628	ppb	51.628	13.74	1145	400000	
K	39	3	45	2548.307	ppb	2548.307	0.86	129276	400000	
Ca	40	2	45	1074.929	ppb	1074.929	1.14	585418	400000	
V	51	3	72	0.310	ppb	0.310	16.14	396	2000	
Cr	52	3	72	0.121	ppb	0.121	169.14	1558	5000	
Mn	55	3	72	6.696	ppb	6.696	9.98	2811	10000	
Fe	56	2	72	72.247	ppb	72.247	2.06	111541	10000	
Co	59	3	72	0.064	ppb	0.064	32.08	102	2000	
Ni	60	3	72	0.332	ppb	0.332	14.00	227	5000	
Cu	63	3	72	1.991	ppb	1.991	4.85	2017	5000	
Zn	66	3	72	2.631	ppb	2.631	10.76	598	5000	
As	75	3	72	0.104	ppb	0.104	258.77	45	2000	
Se	78	2	72	-0.068	ppb	-0.068	-31.01	1	2000	
(Se)	78	3	72	-0.711	ppb	-0.711	-112.75	10	2000	
Sr	88	3	72	9.107	ppb	9.107	2.11	5075	4000	
Mo	95	3	115	0.047	ppb	0.047	25.35	65	2000	
Ag	107	3	115	0.010	ppb	0.010	47.54	32	100	
Cd	111	3	115	0.155	ppb	0.155	6.73	37	2000	
Sn	120	3	115	0.192	ppb	0.192	13.08	696	2000	
Sb	121	3	115	0.123	ppb	0.123	19.41	197	1000	
Ba	137	3	115	2.863	ppb	2.863	8.35	713	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-202.00	183	2000	
(Pb)	206	3	193	0.140	ppb	0.140	22.33	297	100	
(Pb)	207	3	193	0.055	ppb	0.055	93.29	391	100	
Pb	208	3	193	0.113	ppb	0.113	17.98	1286	5000	
Th	232	3	193	-0.016	ppb	-0.016	-148.46	4720	2000	
U	238	3	193	0.033	ppb	0.033	73.53	1751	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3825746	0.57	3729052	102.59	60	120	
Sc (IS)	45	3	HMI He	590415	0.98	561397	105.17	60	120	
Ge Internal standard	72	2	HMI H2	2157421	0.94	1992040	108.30	60	120	
Ge Internal standard	72	3	HMI He	703987	0.83	651565	108.05	60	120	
In Internal Standard	115	3	HMI He	2455211	1.11	2386538	102.88	60	120	
Ir (IS)	193	3	HMI He	5569379	0.45	5310051	104.88	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-39-a
Data File Name	243SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:43:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	86.60	3	2000	
Na	23	3	45	18001.063	ppb	18001.063	0.76	1979313	400000	
Mg	24	3	45	3233.917	ppb	3233.917	1.84	186711	400000	
Al	27	3	45	129.735	ppb	129.735	3.02	2720	400000	
K	39	3	45	437.984	ppb	437.984	4.98	35527	400000	
Ca	40	2	45	3153.459	ppb	3153.459	1.49	1683631	400000	
V	51	3	72	0.071	ppb	0.071	14.64	257	2000	
Cr	52	3	72	0.629	ppb	0.629	18.69	1889	5000	
Mn	55	3	72	576.469	ppb	576.469	1.13	217794	10000	
Fe	56	2	72	23.416	ppb	23.416	1.04	42002	10000	
Co	59	3	72	7.247	ppb	7.247	2.03	8333	2000	
Ni	60	3	72	17.637	ppb	17.637	1.74	5645	5000	
Cu	63	3	72	1.425	ppb	1.425	3.31	1499	5000	
Zn	66	3	72	14.741	ppb	14.741	6.65	2389	5000	
As	75	3	72	-0.051	ppb	-0.051	-357.14	28	2000	
Se	78	2	72	-0.007	ppb	-0.007	-1562.26	5	2000	
(Se)	78	3	72	2.056	ppb	2.056	46.50	27	2000	
Sr	88	3	72	30.049	ppb	30.049	2.15	15538	4000	
Mo	95	3	115	0.037	ppb	0.037	159.11	60	2000	
Ag	107	3	115	0.013	ppb	0.013	79.53	37	100	
Cd	111	3	115	0.383	ppb	0.383	41.01	90	2000	
Sn	120	3	115	0.014	ppb	0.014	928.50	570	2000	
Sb	121	3	115	0.061	ppb	0.061	75.70	153	1000	
Ba	137	3	115	87.303	ppb	87.303	3.39	19935	5000	
Tl	205	3	193	0.069	ppb	0.069	19.62	453	2000	
(Pb)	206	3	193	0.121	ppb	0.121	21.52	273	100	
(Pb)	207	3	193	0.081	ppb	0.081	59.34	418	100	
Pb	208	3	193	0.098	ppb	0.098	3.18	1209	5000	
Th	232	3	193	-0.051	ppb	-0.051	-66.50	4534	2000	
U	238	3	193	0.107	ppb	0.107	10.15	2137	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3836455	1.18	3729052	102.88	60	120	
Sc (IS)	45	3	HMI He	586133	1.78	561397	104.41	60	120	
Ge Internal standard	72	2	HMI H2	2152422	1.22	1992040	108.05	60	120	
Ge Internal standard	72	3	HMI He	691722	0.24	651565	106.16	60	120	
In Internal Standard	115	3	HMI He	2459130	2.56	2386538	103.04	60	120	
Ir (IS)	193	3	HMI He	5555854	1.92	5310051	104.63	60	120	

Sample Report

Sample Table

Sample Name	280-171573-c-44-b
Data File Name	244SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:45:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600334 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-8.826	ppb	-8.826	-38.97	29540	400000	
Mg	24	3	45	-9.875	ppb	-9.875	-1.96	267	400000	
Al	27	3	45	0.740	ppb	0.740	203.67	107	400000	
K	39	3	45	-0.750	ppb	-0.750	-4162.73	16369	400000	
Ca	40	2	45	2.729	ppb	2.729	49.05	21522	400000	
V	51	3	72	-0.048	ppb	-0.048	-123.16	185	2000	
Cr	52	3	72	-0.003	ppb	-0.003	-605.15	1401	5000	
Mn	55	3	72	0.136	ppb	0.136	122.64	277	10000	
Fe	56	2	72	6.486	ppb	6.486	0.34	17813	10000	
Co	59	3	72	0.008	ppb	0.008	146.60	35	2000	
Ni	60	3	72	0.110	ppb	0.110	40.04	148	5000	
Cu	63	3	72	0.157	ppb	0.157	29.87	406	5000	
Zn	66	3	72	0.929	ppb	0.929	32.38	325	5000	
As	75	3	72	0.040	ppb	0.040	261.82	37	2000	
Se	78	2	72	-0.080	ppb	-0.080	-26.99	1	2000	
(Se)	78	3	72	1.048	ppb	1.048	157.98	20	2000	
Sr	88	3	72	-0.654	ppb	-0.654	-3.10	67	4000	
Mo	95	3	115	0.015	ppb	0.015	121.12	50	2000	
Ag	107	3	115	0.004	ppb	0.004	91.14	22	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.163	ppb	0.163	94.57	671	2000	
Sb	121	3	115	0.006	ppb	0.006	687.64	112	1000	
Ba	137	3	115	-0.028	ppb	-0.028	-71.09	55	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-43.11	173	2000	
(Pb)	206	3	193	0.037	ppb	0.037	20.67	173	100	
(Pb)	207	3	193	-0.031	ppb	-0.031	-186.08	302	100	
Pb	208	3	193	0.013	ppb	0.013	149.10	801	5000	
Th	232	3	193	-0.050	ppb	-0.050	-35.59	4552	2000	
U	238	3	193	-0.007	ppb	-0.007	-389.96	1539	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3861106	0.85	3729052	103.54	60	120	
Sc (IS)	45	3	HMI He	591122	1.73	561397	105.29	60	120	
Ge Internal standard	72	2	HMI H2	2132172	1.27	1992040	107.03	60	120	
Ge Internal standard	72	3	HMI He	671562	1.06	651565	103.07	60	120	
In Internal Standard	115	3	HMI He	2442399	1.26	2386538	102.34	60	120	
Ir (IS)	193	3	HMI He	5572098	2.11	5310051	104.93	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	245_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:46:53-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.902	ppb	3.068	2334	50	99.8	90	110	
Na	23	3	45	50034.315	ppb	1.899	5422215	51000	98.1	90	110	
Mg	24	3	45	10772.078	ppb	1.737	617028	11000	97.9	90	110	
Al	27	3	45	1014.258	ppb	1.880	20549	1000	101.4	90	110	
K	39	3	45	10643.702	ppb	1.355	482008	11000	96.8	90	110	
Ca	40	2	45	10979.794	ppb	1.364	5754529	11000	99.8	90	110	
V	51	3	72	51.676	ppb	1.950	27724	50	103.4	90	110	
Cr	52	3	72	52.640	ppb	0.889	37059	50	105.3	90	110	
Mn	55	3	72	52.113	ppb	2.780	19100	50	104.2	90	110	
Fe	56	2	72	1031.967	ppb	1.018	1409688	1000	103.2	90	110	
Co	59	3	72	51.505	ppb	1.058	56697	50	103.0	90	110	
Ni	60	3	72	51.815	ppb	1.301	15699	50	103.6	90	110	
Cu	63	3	72	51.825	ppb	1.357	42683	50	103.6	90	110	
Zn	66	3	72	54.789	ppb	1.507	8012	50	109.6	90	110	
As	75	3	72	53.481	ppb	5.615	5335	50	107.0	90	110	
Se	78	2	72	50.205	ppb	2.997	2650	50	100.4	90	110	
(Se)	78	3	72	46.090	ppb	5.562	283	50	92.2	90	110	
Sr	88	3	72	104.260	ppb	2.322	50796	100	104.3	90	110	
Mo	95	3	115	51.211	ppb	1.145	23841	50	102.4	90	110	
Ag	107	3	115	50.115	ppb	1.185	77825	50	100.2	90	110	
Cd	111	3	115	49.800	ppb	1.191	11543	50	99.6	90	110	
Sn	120	3	115	50.381	ppb	0.624	35588	50	100.8	90	110	
Sb	121	3	115	50.529	ppb	1.628	35959	50	101.1	90	110	
Ba	137	3	115	51.662	ppb	3.098	11598	50	103.3	90	110	
Tl	205	3	193	49.579	ppb	0.621	176644	50	99.2	90	110	
(Pb)	206	3	193	49.435	ppb	2.561	58633	50	98.9	90	110	
(Pb)	207	3	193	50.408	ppb	1.396	52409	50	100.8	90	110	
Pb	208	3	193	49.799	ppb	1.703	237669	50	99.6	90	110	
Th	232	3	193	50.589	ppb	2.657	249651	50	101.2	90	110	
U	238	3	193	50.044	ppb	1.833	259874	50	100.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3798191	0.73	3729052	101.85	60	120	
Sc (IS)	45	3	HMI He	583390	2.09	561397	103.92	60	120	
Ge Internal standard	72	2	HMI H2	2059928	0.31	1992040	103.41	60	120	
Ge Internal standard	72	3	HMI He	663949	0.74	651565	101.90	60	120	
In Internal Standard	115	3	HMI He	2411944	1.73	2386538	101.06	60	120	
Ir (IS)	193	3	HMI He	5487189	2.91	5310051	103.34	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	246_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:48:44-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-41.733	ppb	-12.0	25666	25	
Mg	24	3	45	-8.198	ppb	-10.3	360	25	
Al	27	3	45	1.166	ppb	148.6	113	15	
K	39	3	45	-8.795	ppb	-439.7	15845	50	
V	51	3	72	0.031	ppb	172.1	227	1	
Cr	52	3	72	0.008	ppb	2297.5	1399	1	
Mn	55	3	72	-0.175	ppb	-51.0	162	0.5	
Co	59	3	72	0.017	ppb	65.9	45	0.5	
Ni	60	3	72	0.014	ppb	402.7	118	1	
Cu	63	3	72	-0.002	ppb	-2823.1	273	1	
Zn	66	3	72	0.095	ppb	59.2	203	5	
As	75	3	72	-0.058	ppb	-216.2	27	1	
Se	78	2	72	-0.004	ppb	-2169.7	5	1	
(Se)	78	3	72	-0.068	ppb	-1870.2	13	1	
Sr	88	3	72	-0.612	ppb	-5.2	87	0.5	
Mo	95	3	115	0.049	ppb	44.2	65	0.5	
Ag	107	3	115	0.014	ppb	56.9	37	1	
Cd	111	3	115	0.014	ppb	173.2	3	0.5	
Sn	120	3	115	0.179	ppb	18.6	675	1	
Sb	121	3	115	0.080	ppb	47.4	163	0.6	
Ba	137	3	115	0.006	ppb	2117.6	62	0.5	
Tl	205	3	193	-0.001	ppb	-449.6	202	0.1	
(Pb)	206	3	193	0.038	ppb	113.4	173	1	
(Pb)	207	3	193	-0.033	ppb	-40.2	298	1	
Pb	208	3	193	0.017	ppb	32.0	820	0.5	
Th	232	3	193	0.349	ppb	37.4	6495	1	
U	238	3	193	0.011	ppb	29.3	1633	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3808931	1.09	3729052	102.14	60	120	
Sc (IS)	45	3	HMI He	584776	2.17	561397	104.16	60	120	
Ge Internal standard	72	2	HMI H2	2062526	1.19	1992040	103.54	60	120	
Ge Internal standard	72	3	HMI He	667855	1.82	651565	102.50	60	120	
In Internal Standard	115	3	HMI He	2411437	2.14	2386538	101.04	60	120	
Ir (IS)	193	3	HMI He	5550593	1.15	5310051	104.53	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600287/1-a
Data File Name	247_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:50:36-07:00
Sample Type	Blank
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.070	ppb	86.60267523	3	0.5
Na	23	3	45	63.076	ppb	8.611460761	37116	25
Mg	24	3	45	6.521	ppb	45.59735464	1208	25
Al	27	3	45	15.959	ppb	38.24567733	414	15
K	39	3	45	34.979	ppb	55.899138	17836	50
V	51	3	72	-0.017	ppb	-300.6115354	207	1
Cr	52	3	72	1.854	ppb	8.245752073	2736	1
Mn	55	3	72	0.475	ppb	25.75007925	410	0.5
Co	59	3	72	0.012	ppb	109.7062083	40	0.5
Ni	60	3	72	0.415	ppb	50.77700834	247	1
Cu	63	3	72	1.557	ppb	4.771816511	1601	1
Zn	66	3	72	4.893	ppb	5.217410349	918	5
As	75	3	72	-0.163	ppb	-34.42282589	17	1
(Se)	78	3	72	0.707	ppb	67.01480429	18	1
Sr	88	3	72	-0.207	ppb	-26.51593113	292	0.5
Mo	95	3	115	0.297	ppb	11.31388537	183	0.5
Ag	107	3	115	0.007	ppb	110.0788759	27	1
Cd	111	3	115	0.021	ppb	173.2050808	5	0.5
Sn	120	3	115	12.149	ppb	3.94452305	9157	1
Sb	121	3	115	-0.041	ppb	-70.32396093	78	0.6
Ba	137	3	115	0.367	ppb	18.10397792	145	0.5
Tl	205	3	193	-0.014	ppb	-14.22940581	152	0.1
(Pb)	206	3	193	0.692	ppb	8.787424436	946	1
(Pb)	207	3	193	0.617	ppb	7.083155241	968	1
Pb	208	3	193	0.660	ppb	6.061182769	3872	0.5
Th	232	3	193	0.006	ppb	627.3950944	4757	1
U	238	3	193	0.047	ppb	13.62932932	1799	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3906096	0.58	3729052	104.75	60	120	
Sc (IS)	45	3	HMI He	586733	0.89	561397	104.51	60	120	
Ge Internal standard	72	2	HMI H2	2093751	0.80	1992040	105.11	60	120	
Ge Internal standard	72	3	HMI He	686977	0.18	651565	105.43	60	120	
In Internal Standard	115	3	HMI He	2455070	1.98	2386538	102.87	60	120	
Ir (IS)	193	3	HMI He	5490227	1.41	5310051	103.39	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600287/2-a
Data File Name	248LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:52:28-07:00
Sample Type	LCS-s
Dilution	1
Analyst	Denver Metals
Comment	600287 SOIL 6020B
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	191.426	191.426	ppb	3.481	8920	200	95.7	80	120	
Na	23	3	45	3929.254	3929.254	ppb	1.059	455142	200	1964.6	80	120	NewName Main CR1 Failed
Mg	24	3	45	3574.050	3574.050	ppb	2.254	206027	200000	1.8	80	120	NewName Main CR1 Failed
Al	27	3	45	3934.186	3934.186	ppb	1.962	79730	200000	2.0	80	120	NewName Main CR1 Failed
K	39	3	45	3795.566	3795.566	ppb	0.734	182969	200000	1.9	80	120	NewName Main CR1 Failed
Ca	40	2	45	4036.491	4036.491	ppb	2.140	2109436	200000	2.0	80	120	NewName Main CR1 Failed
V	51	3	72	194.805	194.805	ppb	1.319	107908	200	97.4	80	120	
Cr	52	3	72	199.660	199.660	ppb	1.452	141901	200	99.8	80	120	
Mn	55	3	72	205.001	205.001	ppb	2.315	77329	200	102.5	80	120	
Fe	56	2	72	3851.492	3851.492	ppb	2.482	5315919	200	1925.7	80	120	NewName Main CR1 Failed
Co	59	3	72	197.233	197.233	ppb	0.715	225320	200	98.6	80	120	
Ni	60	3	72	198.306	198.306	ppb	1.925	62041	200	99.2	80	120	
Cu	63	3	72	203.885	203.885	ppb	2.683	173485	200	101.9	80	120	
Zn	66	3	72	206.197	206.197	ppb	1.188	30762	200	103.1	80	120	
As	75	3	72	196.984	196.984	ppb	2.197	20315	200	98.5	80	120	
Se	78	2	72	190.203	190.203	ppb	1.735	10174	200	95.1	80	120	
(Se)	78	3	72	195.763	195.763	ppb	7.545	1203	200	97.9	80	120	
Sr	88	3	72	400.469	400.469	ppb	1.387	201446	200	200.2	80	120	NewName Main CR1 Failed
Mo	95	3	115	189.483	189.483	ppb	0.123	90686	200	94.7	80	120	
Ag	107	3	115	191.700	191.700	ppb	1.338	306456	200	95.9	80	120	
Cd	111	3	115	191.887	191.887	ppb	0.988	45780	200	95.9	80	120	
Sn	120	3	115	197.727	197.727	ppb	1.676	142135	200	98.9	80	120	
Sb	121	3	115	189.261	189.261	ppb	0.892	138377	200	94.6	80	110	
Ba	137	3	115	199.532	199.532	ppb	1.147	45947	200	99.8	80	120	
Tl	205	3	193	195.714	195.714	ppb	1.100	706982	200	97.9	80	120	
(Pb)	206	3	193	197.469	197.469	ppb	0.257	237357	200	98.7	80	120	
(Pb)	207	3	193	196.896	196.896	ppb	0.737	206784	200	98.4	80	120	
Pb	208	3	193	197.554	197.554	ppb	0.733	954754	200	98.8	80	120	
Th	232	3	193	201.868	201.868	ppb	1.678	996873	200	100.9	80	120	
U	238	3	193	205.280	205.280	ppb	1.946	1076891	200	102.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3765223	1.18	3729052	100.97	60	120	
Sc (IS)	45	3	HMI He	585437	1.27	561397	104.28	60	120	
Ge Internal standard	72	2	HMI H2	2090223	0.68	1992040	104.93	60	120	
Ge Internal standard	72	3	HMI He	689299	0.32	651565	105.79	60	120	
In Internal Standard	115	3	HMI He	2482958	0.81	2386538	104.04	60	120	
Ir (IS)	193	3	HMI He	5567949	1.69	5310051	104.86	60	120	

Sample Report

Sample Table

Sample Name	280-171404-a-18-c
Data File Name	249SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:54:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.450	ppb	0.450	13.89	22	2000	
Na	23	3	45	61.425	ppb	61.425	13.53	37972	400000	
Mg	24	3	45	1904.318	ppb	1904.318	0.86	113512	400000	
Al	27	3	45	14119.549	ppb	14119.549	0.68	294614	400000	
K	39	3	45	784.097	ppb	784.097	3.74	52239	400000	
Ca	40	2	45	2884.377	ppb	2884.377	1.31	1571661	400000	
V	51	3	72	42.727	ppb	42.727	0.47	24387	2000	
Cr	52	3	72	20.183	ppb	20.183	1.50	16000	5000	
Mn	55	3	72	137.760	ppb	137.760	0.85	53243	10000	
Fe	56	2	72	14003.511	ppb	14003.511	2.46	20041210	10000	
Co	59	3	72	4.747	ppb	4.747	1.81	5575	2000	
Ni	60	3	72	12.942	ppb	12.942	4.35	4255	5000	
Cu	63	3	72	14.042	ppb	14.042	2.71	12496	5000	
Zn	66	3	72	78.633	ppb	78.633	3.44	12124	5000	
As	75	3	72	3.406	ppb	3.406	22.69	393	2000	
Se	78	2	72	0.523	ppb	0.523	34.79	34	2000	
(Se)	78	3	72	2.767	ppb	2.767	42.31	32	2000	
Sr	88	3	72	21.407	ppb	21.407	3.28	11404	4000	
Mo	95	3	115	1.036	ppb	1.036	2.97	541	2000	
Ag	107	3	115	0.067	ppb	0.067	14.19	123	100	
Cd	111	3	115	0.265	ppb	0.265	18.95	63	2000	
Sn	120	3	115	13.612	ppb	13.612	5.39	10351	2000	
Sb	121	3	115	0.515	ppb	0.515	14.92	486	1000	
Ba	137	3	115	76.318	ppb	76.318	2.91	17686	5000	
Tl	205	3	193	0.136	ppb	0.136	9.00	715	2000	
(Pb)	206	3	193	11.542	ppb	11.542	2.26	14344	100	
(Pb)	207	3	193	10.545	ppb	10.545	2.23	11678	100	
Pb	208	3	193	10.950	ppb	10.950	2.11	54959	5000	
Th	232	3	193	5.561	ppb	5.561	6.78	32942	2000	
U	238	3	193	1.108	ppb	1.108	1.46	7569	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3911370	1.32	3729052	104.89	60	120	
Sc (IS)	45	3	HMI He	603165	0.56	561397	107.44	60	120	
Ge Internal standard	72	2	HMI H2	2170787	2.92	1992040	108.97	60	120	
Ge Internal standard	72	3	HMI He	705230	1.07	651565	108.24	60	120	
In Internal Standard	115	3	HMI He	2494741	3.24	2386538	104.53	60	120	
Ir (IS)	193	3	HMI He	5707904	0.98	5310051	107.49	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-4-a
Data File Name	250SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:56:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.461	ppb	2.461	24.37	118	2000	
Na	23	3	45	28.752	ppb	28.752	22.20	35149	400000	
Mg	24	3	45	686.770	ppb	686.770	2.35	42473	400000	
Al	27	3	45	125097.419	ppb	125097.419	1.84	2671334	400000	
K	39	3	45	550.035	ppb	550.035	5.58	42624	400000	
Ca	40	2	45	1326.820	ppb	1326.820	1.03	756378	400000	
V	51	3	72	279.317	ppb	279.317	0.63	158366	2000	
Cr	52	3	72	116.749	ppb	116.749	0.26	85597	5000	
Mn	55	3	72	244.882	ppb	244.882	1.22	94551	10000	
Fe	56	2	72	116894.283	ppb	116894.283	1.48	161438047	10000	>LDR
Co	59	3	72	7.070	ppb	7.070	3.32	8298	2000	
Ni	60	3	72	18.438	ppb	18.438	2.28	6017	5000	
Cu	63	3	72	40.084	ppb	40.084	1.71	35164	5000	
Zn	66	3	72	52.141	ppb	52.141	0.60	8117	5000	
As	75	3	72	32.847	ppb	32.847	2.40	3499	2000	
Se	78	2	72	2.755	ppb	2.755	13.30	153	2000	
(Se)	78	3	72	3.551	ppb	3.551	77.53	37	2000	
Sr	88	3	72	12.205	ppb	12.205	3.00	6683	4000	
Mo	95	3	115	4.807	ppb	4.807	8.05	2359	2000	
Ag	107	3	115	0.082	ppb	0.082	22.18	148	100	
Cd	111	3	115	0.130	ppb	0.130	69.88	32	2000	
Sn	120	3	115	16.536	ppb	16.536	2.61	12498	2000	
Sb	121	3	115	0.879	ppb	0.879	5.57	756	1000	
Ba	137	3	115	62.049	ppb	62.049	1.88	14431	5000	
Tl	205	3	193	0.258	ppb	0.258	13.86	1134	2000	
(Pb)	206	3	193	85.204	ppb	85.204	0.15	102439	100	
(Pb)	207	3	193	81.570	ppb	81.570	1.11	85830	100	
Pb	208	3	193	83.295	ppb	83.295	0.52	402795	5000	
Th	232	3	193	41.038	ppb	41.038	0.54	206397	2000	
U	238	3	193	6.885	ppb	6.885	1.40	37638	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4030495	0.61	3729052	108.08	60	120	
Sc (IS)	45	3	HMI He	617510	0.95	561397	110.00	60	120	
Ge Internal standard	72	2	HMI H2	2095004	0.77	1992040	105.17	60	120	
Ge Internal standard	72	3	HMI He	705955	1.23	651565	108.35	60	120	
In Internal Standard	115	3	HMI He	2500721	2.11	2386538	104.78	60	120	
Ir (IS)	193	3	HMI He	5565241	1.63	5310051	104.81	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-4-aSD@5
Data File Name	251SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:58:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.495	ppb	0.495	31.92	23	2000	
Na	23	3	45	-25.443	ppb	-25.443	-24.72	28036	400000	
Mg	24	3	45	130.068	ppb	130.068	5.38	8471	400000	
Al	27	3	45	25570.514	ppb	25570.514	0.69	528577	400000	
K	39	3	45	117.655	ppb	117.655	21.95	21869	400000	
Ca	40	2	45	283.162	ppb	283.162	0.94	171952	400000	
V	51	3	72	59.333	ppb	59.333	1.17	32401	2000	
Cr	52	3	72	24.281	ppb	24.281	2.68	18178	5000	
Mn	55	3	72	51.078	ppb	51.078	0.32	19079	10000	
Fe	56	2	72	22971.301	ppb	22971.301	1.53	31368762	10000	
Co	59	3	72	1.442	ppb	1.442	2.19	1643	2000	
Ni	60	3	72	3.826	ppb	3.826	7.22	1288	5000	
Cu	63	3	72	8.288	ppb	8.288	2.92	7188	5000	
Zn	66	3	72	13.192	ppb	13.192	4.93	2111	5000	
As	75	3	72	7.111	ppb	7.111	1.69	751	2000	
Se	78	2	72	0.613	ppb	0.613	9.29	37	2000	
(Se)	78	3	72	1.874	ppb	1.874	44.62	25	2000	
Sr	88	3	72	2.112	ppb	2.112	6.29	1429	4000	
Mo	95	3	115	1.047	ppb	1.047	5.57	530	2000	
Ag	107	3	115	0.032	ppb	0.032	11.12	65	100	
Cd	111	3	115	0.022	ppb	0.022	1.17	5	2000	
Sn	120	3	115	3.705	ppb	3.705	2.15	3134	2000	
Sb	121	3	115	0.118	ppb	0.118	10.27	190	1000	
Ba	137	3	115	12.675	ppb	12.675	5.34	2897	5000	
Tl	205	3	193	0.049	ppb	0.049	28.11	385	2000	
(Pb)	206	3	193	16.878	ppb	16.878	5.35	20495	100	
(Pb)	207	3	193	16.460	ppb	16.460	0.19	17675	100	
Pb	208	3	193	16.418	ppb	16.418	1.68	80392	5000	
Th	232	3	193	8.603	ppb	8.603	2.32	47298	2000	
U	238	3	193	1.347	ppb	1.347	3.43	8677	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3896135	2.01	3729052	104.48	60	120	
Sc (IS)	45	3	HMI He	597632	0.53	561397	106.45	60	120	
Ge Internal standard	72	2	HMI H2	2070950	0.76	1992040	103.96	60	120	
Ge Internal standard	72	3	HMI He	676404	0.62	651565	103.81	60	120	
In Internal Standard	115	3	HMI He	2417023	1.17	2386538	101.28	60	120	
Ir (IS)	193	3	HMI He	5593722	0.59	5310051	105.34	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-4-b ms
Data File Name	252SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T03:59:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	200.294	ppb	200.294	2.81	9373	2000	
Na	23	3	45	3765.181	ppb	3765.181	2.48	448487	400000	
Mg	24	3	45	4439.597	ppb	4439.597	0.69	262261	400000	
Al	27	3	45	218719.508	ppb	218719.508	1.08	4540774	400000	
K	39	3	45	4553.107	ppb	4553.107	2.05	221738	400000	
Ca	40	2	45	5145.208	ppb	5145.208	2.03	2842007	400000	
V	51	3	72	507.516	ppb	507.516	0.52	279779	2000	
Cr	52	3	72	337.125	ppb	337.125	0.86	237755	5000	
Mn	55	3	72	334.331	ppb	334.331	0.97	125522	10000	
Fe	56	2	72	122634.486	ppb	122634.486	0.91	166747613	10000	>LDR
Co	59	3	72	202.587	ppb	202.587	0.50	230608	2000	
Ni	60	3	72	224.945	ppb	224.945	1.25	70107	5000	
Cu	63	3	72	241.608	ppb	241.608	0.46	204807	5000	
Zn	66	3	72	263.228	ppb	263.228	1.05	39076	5000	
As	75	3	72	222.993	ppb	222.993	1.60	22911	2000	
Se	78	2	72	194.011	ppb	194.011	2.62	10237	2000	
(Se)	78	3	72	181.211	ppb	181.211	15.15	1111	2000	
Sr	88	3	72	416.774	ppb	416.774	0.24	208890	4000	
Mo	95	3	115	186.044	ppb	186.044	0.83	88738	2000	
Ag	107	3	115	188.680	ppb	188.680	1.47	300570	100	
Cd	111	3	115	186.617	ppb	186.617	2.48	44364	2000	
Sn	120	3	115	203.210	ppb	203.210	1.99	145556	2000	
Sb	121	3	115	166.254	ppb	166.254	1.73	121146	1000	
Ba	137	3	115	263.759	ppb	263.759	1.97	60508	5000	
Tl	205	3	193	195.817	ppb	195.817	0.86	688569	2000	
(Pb)	206	3	193	260.993	ppb	260.993	2.07	305288	100	
(Pb)	207	3	193	262.469	ppb	262.469	1.06	268229	100	
Pb	208	3	193	262.486	ppb	262.486	1.11	1234561	5000	
Th	232	3	193	241.771	ppb	241.771	2.00	1161289	2000	
U	238	3	193	208.621	ppb	208.621	3.76	1065251	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3986680	1.19	3729052	106.91	60	120	
Sc (IS)	45	3	HMI He	600362	1.42	561397	106.94	60	120	
Ge Internal standard	72	2	HMI H2	2062974	3.14	1992040	103.56	60	120	
Ge Internal standard	72	3	HMI He	686834	0.58	651565	105.41	60	120	
In Internal Standard	115	3	HMI He	2474724	1.52	2386538	103.70	60	120	
Ir (IS)	193	3	HMI He	5419836	0.94	5310051	102.07	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-4-c msd
Data File Name	253SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:01:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	205.331	ppb	205.331	2.39	9687	2000	
Na	23	3	45	3907.065	ppb	3907.065	1.59	480415	400000	
Mg	24	3	45	5077.072	ppb	5077.072	1.54	310183	400000	
Al	27	3	45	265623.000	ppb	265623.000	0.59	5706662	400000	
K	39	3	45	5200.752	ppb	5200.752	0.64	259662	400000	
Ca	40	2	45	5332.419	ppb	5332.419	1.93	2941263	400000	
V	51	3	72	509.336	ppb	509.336	1.22	287510	2000	
Cr	52	3	72	355.662	ppb	355.662	0.70	256769	5000	
Mn	55	3	72	385.519	ppb	385.519	0.75	148171	10000	
Fe	56	2	72	115154.204	ppb	115154.204	1.33	160443129	10000	>LDR
Co	59	3	72	208.758	ppb	208.758	0.60	243332	2000	
Ni	60	3	72	247.092	ppb	247.092	0.45	78846	5000	
Cu	63	3	72	249.677	ppb	249.677	0.65	216712	5000	
Zn	66	3	72	286.482	ppb	286.482	0.97	43533	5000	
As	75	3	72	224.283	ppb	224.283	0.10	23597	2000	
Se	78	2	72	194.043	ppb	194.043	3.22	10491	2000	
(Se)	78	3	72	203.120	ppb	203.120	3.54	1273	2000	
Sr	88	3	72	433.095	ppb	433.095	0.17	222264	4000	
Mo	95	3	115	196.234	ppb	196.234	1.32	94192	2000	
Ag	107	3	115	196.177	ppb	196.177	0.84	314539	100	
Cd	111	3	115	196.652	ppb	196.652	0.14	47059	2000	
Sn	120	3	115	216.108	ppb	216.108	1.69	155759	2000	
Sb	121	3	115	169.065	ppb	169.065	1.09	123984	1000	
Ba	137	3	115	319.414	ppb	319.414	2.12	73733	5000	
Tl	205	3	193	197.186	ppb	197.186	0.62	720061	2000	
(Pb)	206	3	193	270.624	ppb	270.624	0.83	328750	100	
(Pb)	207	3	193	264.119	ppb	264.119	0.41	280301	100	
Pb	208	3	193	265.958	ppb	265.958	0.48	1299056	5000	
Th	232	3	193	253.062	ppb	253.062	0.67	1262271	2000	
U	238	3	193	212.249	ppb	212.249	1.19	1125589	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3982324	0.84	3729052	106.79	60	120	
Sc (IS)	45	3	HMI He	621240	1.20	561397	110.66	60	120	
Ge Internal standard	72	2	HMI H2	2114208	3.68	1992040	106.13	60	120	
Ge Internal standard	72	3	HMI He	703318	0.60	651565	107.94	60	120	
In Internal Standard	115	3	HMI He	2490496	1.04	2386538	104.36	60	120	
Ir (IS)	193	3	HMI He	5628350	0.96	5310051	105.99	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-4-aPDS
Data File Name	254SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:03:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	195.755	ppb	195.755	1.54	9530	2000	
Na	23	3	45	129.917	ppb	129.917	1.29	47966	400000	
Mg	24	3	45	714.212	ppb	714.212	1.45	45338	400000	
Al	27	3	45	124416.447	ppb	124416.447	1.55	2729764	400000	
K	39	3	45	605.766	ppb	605.766	3.05	46446	400000	
Ca	40	2	45	1367.175	ppb	1367.175	1.43	800767	400000	
V	51	3	72	462.186	ppb	462.186	2.19	275040	2000	
Cr	52	3	72	307.384	ppb	307.384	2.21	234123	5000	
Mn	55	3	72	434.821	ppb	434.821	2.35	176127	10000	
Fe	56	2	72	108354.494	ppb	108354.494	2.17	155998655	10000	>LDR
Co	59	3	72	201.721	ppb	201.721	1.93	247860	2000	
Ni	60	3	72	212.951	ppb	212.951	1.11	71655	5000	
Cu	63	3	72	239.456	ppb	239.456	2.90	219080	5000	
Zn	66	3	72	256.933	ppb	256.933	0.66	41184	5000	
As	75	3	72	224.430	ppb	224.430	4.07	24885	2000	
Se	78	2	72	201.338	ppb	201.338	4.03	11248	2000	
(Se)	78	3	72	224.581	ppb	224.581	7.11	1481	2000	
Sr	88	3	72	208.282	ppb	208.282	2.64	112880	4000	
Mo	95	3	115	206.337	ppb	206.337	0.95	101400	2000	
Ag	107	3	115	44.924	ppb	44.924	1.71	73751	100	
Cd	111	3	115	195.861	ppb	195.861	1.49	47980	2000	
Sn	120	3	115	215.924	ppb	215.924	1.39	159324	2000	
Sb	121	3	115	201.754	ppb	201.754	1.57	151454	1000	
Ba	137	3	115	266.154	ppb	266.154	1.30	62925	5000	
Tl	205	3	193	197.895	ppb	197.895	1.17	735054	2000	
(Pb)	206	3	193	282.542	ppb	282.542	1.10	349112	100	
(Pb)	207	3	193	281.205	ppb	281.205	0.93	303517	100	
Pb	208	3	193	281.191	ppb	281.191	0.76	1396977	5000	
Th	232	3	193	156.413	ppb	156.413	1.14	795431	2000	
U	238	3	193	218.236	ppb	218.236	2.28	1177247	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4144987	1.80	3729052	111.15	60	120	
Sc (IS)	45	3	HMI He	634364	0.68	561397	113.00	60	120	
Ge Internal standard	72	2	HMI H2	2184498	2.37	1992040	109.66	60	120	
Ge Internal standard	72	3	HMI He	741574	2.28	651565	113.81	60	120	
In Internal Standard	115	3	HMI He	2549789	1.07	2386538	106.84	60	120	
Ir (IS)	193	3	HMI He	5724787	0.49	5310051	107.81	60	120	

Sample Report

Sample Table

Sample Name	280-171184-g-5-d
Data File Name	255SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:05:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.989	ppb	1.989	12.67	97	2000	
Na	23	3	45	76.461	ppb	76.461	6.99	41111	400000	
Mg	24	3	45	1001.601	ppb	1001.601	0.48	62315	400000	
Al	27	3	45	145465.396	ppb	145465.396	1.09	3146364	400000	
K	39	3	45	801.917	ppb	801.917	3.46	54986	400000	
Ca	40	2	45	3887.655	ppb	3887.655	0.06	2193858	400000	
V	51	3	72	334.172	ppb	334.172	1.50	195492	2000	
Cr	52	3	72	161.567	ppb	161.567	1.64	121655	5000	
Mn	55	3	72	376.912	ppb	376.912	1.76	150055	10000	
Fe	56	2	72	128948.298	ppb	128948.298	1.31	184952132	10000	>LDR
Co	59	3	72	6.508	ppb	6.508	1.87	7887	2000	
Ni	60	3	72	22.082	ppb	22.082	2.51	7412	5000	
Cu	63	3	72	39.918	ppb	39.918	1.16	36142	5000	
Zn	66	3	72	51.167	ppb	51.167	1.93	8227	5000	
As	75	3	72	32.594	ppb	32.594	2.59	3584	2000	
Se	78	2	72	3.595	ppb	3.595	4.74	205	2000	
(Se)	78	3	72	5.426	ppb	5.426	59.31	50	2000	
Sr	88	3	72	25.381	ppb	25.381	1.28	13887	4000	
Mo	95	3	115	6.678	ppb	6.678	2.82	3339	2000	
Ag	107	3	115	0.116	ppb	0.116	18.03	207	100	
Cd	111	3	115	0.115	ppb	0.115	67.14	28	2000	
Sn	120	3	115	17.973	ppb	17.973	1.36	13855	2000	
Sb	121	3	115	1.525	ppb	1.525	9.86	1261	1000	
Ba	137	3	115	118.073	ppb	118.073	2.54	28064	5000	
Tl	205	3	193	0.566	ppb	0.566	4.81	2304	2000	
(Pb)	206	3	193	78.330	ppb	78.330	1.74	96487	100	
(Pb)	207	3	193	74.780	ppb	74.780	2.47	80625	100	
Pb	208	3	193	76.241	ppb	76.241	1.76	377757	5000	
Th	232	3	193	53.260	ppb	53.260	1.08	272971	2000	
U	238	3	193	7.359	ppb	7.359	2.34	41089	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4064019	1.22	3729052	108.98	60	120	
Sc (IS)	45	3	HMI He	625354	1.43	561397	111.39	60	120	
Ge Internal standard	72	2	HMI H2	2176051	1.89	1992040	109.24	60	120	
Ge Internal standard	72	3	HMI He	728639	1.86	651565	111.83	60	120	
In Internal Standard	115	3	HMI He	2560782	0.99	2386538	107.30	60	120	
Ir (IS)	193	3	HMI He	5701733	1.26	5310051	107.38	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-6-a
Data File Name	256SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:07:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.595	ppb	1.595	40.06	77	2000	
Na	23	3	45	25.109	ppb	25.109	18.74	34794	400000	
Mg	24	3	45	636.560	ppb	636.560	1.60	39498	400000	
Al	27	3	45	106804.355	ppb	106804.355	1.07	2284818	400000	
K	39	3	45	528.021	ppb	528.021	3.25	41687	400000	
Ca	40	2	45	5342.607	ppb	5342.607	0.38	3009905	400000	
V	51	3	72	298.204	ppb	298.204	1.51	172525	2000	
Cr	52	3	72	149.826	ppb	149.826	1.57	111678	5000	
Mn	55	3	72	250.332	ppb	250.332	1.66	98639	10000	
Fe	56	2	72	130086.874	ppb	130086.874	0.69	184612286	10000	>LDR
Co	59	3	72	4.091	ppb	4.091	2.92	4912	2000	
Ni	60	3	72	13.332	ppb	13.332	0.56	4475	5000	
Cu	63	3	72	41.306	ppb	41.306	2.11	36969	5000	
Zn	66	3	72	39.476	ppb	39.476	1.11	6322	5000	
As	75	3	72	25.896	ppb	25.896	4.93	2821	2000	
Se	78	2	72	2.015	ppb	2.015	6.10	116	2000	
(Se)	78	3	72	5.816	ppb	5.816	43.19	52	2000	
Sr	88	3	72	18.882	ppb	18.882	4.05	10319	4000	
Mo	95	3	115	5.046	ppb	5.046	6.04	2464	2000	
Ag	107	3	115	0.135	ppb	0.135	12.86	232	100	
Cd	111	3	115	0.069	ppb	0.069	14.91	17	2000	
Sn	120	3	115	17.782	ppb	17.782	3.39	13338	2000	
Sb	121	3	115	1.038	ppb	1.038	10.89	870	1000	
Ba	137	3	115	62.059	ppb	62.059	4.98	14376	5000	
Tl	205	3	193	0.326	ppb	0.326	2.22	1386	2000	
(Pb)	206	3	193	64.208	ppb	64.208	1.42	77479	100	
(Pb)	207	3	193	62.010	ppb	62.010	1.19	65543	100	
Pb	208	3	193	63.068	ppb	63.068	1.45	306169	5000	
Th	232	3	193	60.899	ppb	60.899	1.20	304983	2000	
U	238	3	193	12.194	ppb	12.194	1.55	65650	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4067958	1.35	3729052	109.09	60	120	
Sc (IS)	45	3	HMI He	618575	0.50	561397	110.18	60	120	
Ge Internal standard	72	2	HMI H2	2152847	1.34	1992040	108.07	60	120	
Ge Internal standard	72	3	HMI He	720561	1.98	651565	110.59	60	120	
In Internal Standard	115	3	HMI He	2491600	2.27	2386538	104.40	60	120	
Ir (IS)	193	3	HMI He	5584110	1.30	5310051	105.16	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	257_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:09:03-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.478	ppb	1.987	2394	50	101.0	90	110	
Na	23	3	45	50760.140	ppb	1.342	5837272	51000	99.5	90	110	
Mg	24	3	45	10607.525	ppb	2.144	644918	11000	96.4	90	110	
Al	27	3	45	1017.164	ppb	2.093	21872	1000	101.7	90	110	
K	39	3	45	10616.514	ppb	0.886	510316	11000	96.5	90	110	
Ca	40	2	45	11042.114	ppb	0.784	6063570	11000	100.4	90	110	
V	51	3	72	52.259	ppb	0.994	29670	50	104.5	90	110	
Cr	52	3	72	52.305	ppb	1.037	38980	50	104.6	90	110	
Mn	55	3	72	51.571	ppb	1.699	20009	50	103.1	90	110	
Fe	56	2	72	1062.248	ppb	3.659	1516295	1000	106.2	90	110	
Co	59	3	72	52.074	ppb	1.559	60660	50	104.1	90	110	
Ni	60	3	72	52.247	ppb	4.084	16750	50	104.5	90	110	
Cu	63	3	72	52.551	ppb	0.613	45799	50	105.1	90	110	
Zn	66	3	72	53.075	ppb	3.656	8220	50	106.1	90	110	
As	75	3	72	54.840	ppb	3.240	5790	50	109.7	90	110	
Se	78	2	72	50.608	ppb	3.017	2792	50	101.2	90	110	
(Se)	78	3	72	53.663	ppb	8.524	347	50	107.3	90	110	
Sr	88	3	72	103.884	ppb	1.468	53567	100	103.9	90	110	
Mo	95	3	115	50.914	ppb	1.413	25321	50	101.8	90	110	
Ag	107	3	115	49.477	ppb	1.555	82090	50	99.0	90	110	
Cd	111	3	115	48.588	ppb	3.545	12031	50	97.2	90	110	
Sn	120	3	115	50.050	ppb	1.506	37776	50	100.1	90	110	
Sb	121	3	115	49.607	ppb	2.808	37723	50	99.2	90	110	
Ba	137	3	115	50.751	ppb	1.774	12178	50	101.5	90	110	
Tl	205	3	193	51.552	ppb	0.617	184045	50	103.1	90	110	
(Pb)	206	3	193	52.484	ppb	1.003	62379	50	105.0	90	110	
(Pb)	207	3	193	52.137	ppb	1.198	54307	50	104.3	90	110	
Pb	208	3	193	52.239	ppb	1.053	249810	50	104.5	90	110	
Th	232	3	193	52.669	ppb	1.596	260356	50	105.3	90	110	
U	238	3	193	52.443	ppb	2.526	272795	50	104.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3979527	1.09	3729052	106.72	60	120	
Sc (IS)	45	3	HMI He	619084	0.33	561397	110.28	60	120	
Ge Internal standard	72	2	HMI H2	2153652	2.32	1992040	108.11	60	120	
Ge Internal standard	72	3	HMI He	702665	0.76	651565	107.84	60	120	
In Internal Standard	115	3	HMI He	2576851	0.60	2386538	107.97	60	120	
Ir (IS)	193	3	HMI He	5497877	1.47	5310051	103.54	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	258_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:10:55-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-57.288	ppb	-6.4	25074	25	
Mg	24	3	45	-11.585	ppb	-3.1	174	25	
Al	27	3	45	4.237	ppb	64.0	184	15	
K	39	3	45	-20.091	ppb	-98.3	16059	50	
V	51	3	72	-0.116	ppb	-16.9	155	1	
Cr	52	3	72	-0.013	ppb	-1275.1	1453	1	
Mn	55	3	72	-0.308	ppb	-15.2	118	0.5	
Co	59	3	72	0.031	ppb	34.9	63	0.5	
Ni	60	3	72	0.137	ppb	27.0	163	1	
Cu	63	3	72	-0.040	ppb	-93.5	253	1	
Zn	66	3	72	-0.092	ppb	-154.3	185	5	
As	75	3	72	0.089	ppb	81.0	43	1	
Se	78	2	72	0.008	ppb	757.4	5	1	
(Se)	78	3	72	-0.431	ppb	-216.7	12	1	
Sr	88	3	72	-0.678	ppb	-9.5	57	0.5	
Mo	95	3	115	0.070	ppb	59.7	78	0.5	
Ag	107	3	115	0.031	ppb	37.1	67	1	
Cd	111	3	115	0.027	ppb	43.0	7	0.5	
Sn	120	3	115	0.587	ppb	18.8	1005	1	
Sb	121	3	115	0.012	ppb	261.1	120	0.6	
Ba	137	3	115	-0.015	ppb	-512.6	60	0.5	
Tl	205	3	193	0.020	ppb	40.2	280	0.1	
(Pb)	206	3	193	0.078	ppb	37.5	225	1	
(Pb)	207	3	193	0.032	ppb	123.9	371	1	
Pb	208	3	193	0.051	ppb	32.4	998	0.5	
Th	232	3	193	0.278	ppb	29.3	6235	1	
U	238	3	193	0.025	ppb	74.1	1728	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3928217	0.73	3729052	105.34	60	120	
Sc (IS)	45	3	HMI He	611278	2.04	561397	108.89	60	120	
Ge Internal standard	72	2	HMI H2	2102107	2.44	1992040	105.53	60	120	
Ge Internal standard	72	3	HMI He	699997	0.89	651565	107.43	60	120	
In Internal Standard	115	3	HMI He	2526964	0.24	2386538	105.88	60	120	
Ir (IS)	193	3	HMI He	5632263	2.43	5310051	106.07	60	120	

Sample Report

Sample Table

Sample Name	280-171184-g-7-c
Data File Name	259SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:12:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.703	ppb	1.703	19.94	83	2000	
Na	23	3	45	39.786	ppb	39.786	25.73	36721	400000	
Mg	24	3	45	523.869	ppb	523.869	1.29	32901	400000	
Al	27	3	45	104226.942	ppb	104226.942	0.15	2246251	400000	
K	39	3	45	433.309	ppb	433.309	8.23	37544	400000	
Ca	40	2	45	4025.791	ppb	4025.791	3.19	2298051	400000	
V	51	3	72	186.848	ppb	186.848	1.49	106743	2000	
Cr	52	3	72	82.252	ppb	82.252	1.37	61167	5000	
Mn	55	3	72	133.383	ppb	133.383	0.45	51964	10000	
Fe	56	2	72	63455.538	ppb	63455.538	0.87	91767740	10000	>LDR
Co	59	3	72	3.051	ppb	3.051	6.92	3624	2000	
Ni	60	3	72	12.893	ppb	12.893	4.48	4275	5000	
Cu	63	3	72	31.160	ppb	31.160	1.52	27594	5000	
Zn	66	3	72	29.278	ppb	29.278	1.13	4677	5000	
As	75	3	72	18.764	ppb	18.764	6.03	2026	2000	
Se	78	2	72	1.535	ppb	1.535	11.10	91	2000	
(Se)	78	3	72	3.222	ppb	3.222	84.06	35	2000	
Sr	88	3	72	15.349	ppb	15.349	2.62	8358	4000	
Mo	95	3	115	3.435	ppb	3.435	11.49	1701	2000	
Ag	107	3	115	0.061	ppb	0.061	28.04	115	100	
Cd	111	3	115	0.070	ppb	0.070	36.11	17	2000	
Sn	120	3	115	15.496	ppb	15.496	2.07	11746	2000	
Sb	121	3	115	0.646	ppb	0.646	19.74	585	1000	
Ba	137	3	115	41.702	ppb	41.702	1.55	9720	5000	
Tl	205	3	193	0.184	ppb	0.184	14.97	878	2000	
(Pb)	206	3	193	46.593	ppb	46.593	2.66	56489	100	
(Pb)	207	3	193	44.408	ppb	44.408	3.36	47219	100	
Pb	208	3	193	45.529	ppb	45.529	2.44	222167	5000	
Th	232	3	193	41.952	ppb	41.952	3.60	212438	2000	
U	238	3	193	5.313	ppb	5.313	3.90	29605	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4113108	1.41	3729052	110.30	60	120	
Sc (IS)	45	3	HMI He	623144	3.06	561397	111.00	60	120	
Ge Internal standard	72	2	HMI H2	2193658	1.48	1992040	110.12	60	120	
Ge Internal standard	72	3	HMI He	710787	2.55	651565	109.09	60	120	
In Internal Standard	115	3	HMI He	2500308	2.14	2386538	104.77	60	120	
Ir (IS)	193	3	HMI He	5611172	5.05	5310051	105.67	60	120	

Sample Report

Sample Table

Sample Name	280-171184-h-8-b
Data File Name	260SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:14:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.595	ppb	1.595	20.88	78	2000	
Na	23	3	45	58.176	ppb	58.176	13.33	39441	400000	
Mg	24	3	45	717.472	ppb	717.472	1.49	45408	400000	
Al	27	3	45	126110.365	ppb	126110.365	1.71	2758512	400000	
K	39	3	45	607.793	ppb	607.793	3.92	46423	400000	
Ca	40	2	45	2640.078	ppb	2640.078	1.27	1546428	400000	
V	51	3	72	245.224	ppb	245.224	0.90	144319	2000	
Cr	52	3	72	104.694	ppb	104.694	0.39	79816	5000	
Mn	55	3	72	226.564	ppb	226.564	0.88	90810	10000	
Fe	56	2	72	86649.108	ppb	86649.108	2.32	125797607	10000	>LDR
Co	59	3	72	4.462	ppb	4.462	2.86	5445	2000	
Ni	60	3	72	17.893	ppb	17.893	4.11	6065	5000	
Cu	63	3	72	28.124	ppb	28.124	3.10	25693	5000	
Zn	66	3	72	41.615	ppb	41.615	4.90	6763	5000	
As	75	3	72	24.773	ppb	24.773	4.34	2747	2000	
Se	78	2	72	2.153	ppb	2.153	10.73	127	2000	
(Se)	78	3	72	5.676	ppb	5.676	39.02	52	2000	
Sr	88	3	72	16.424	ppb	16.424	3.45	9185	4000	
Mo	95	3	115	4.542	ppb	4.542	3.19	2244	2000	
Ag	107	3	115	0.089	ppb	0.089	28.31	160	100	
Cd	111	3	115	0.083	ppb	0.083	51.30	20	2000	
Sn	120	3	115	16.993	ppb	16.993	3.87	12886	2000	
Sb	121	3	115	1.031	ppb	1.031	3.96	873	1000	
Ba	137	3	115	62.390	ppb	62.390	2.69	14586	5000	
Tl	205	3	193	0.275	ppb	0.275	10.78	1199	2000	
(Pb)	206	3	193	60.988	ppb	60.988	0.85	73519	100	
(Pb)	207	3	193	59.116	ppb	59.116	2.25	62419	100	
Pb	208	3	193	60.279	ppb	60.279	1.33	292318	5000	
Th	232	3	193	51.366	ppb	51.366	0.96	257701	2000	
U	238	3	193	6.727	ppb	6.727	2.56	36878	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4199383	0.78	3729052	112.61	60	120	
Sc (IS)	45	3	HMI He	632568	1.29	561397	112.68	60	120	
Ge Internal standard	72	2	HMI H2	2203117	2.58	1992040	110.60	60	120	
Ge Internal standard	72	3	HMI He	732647	0.74	651565	112.44	60	120	
In Internal Standard	115	3	HMI He	2514248	2.34	2386538	105.35	60	120	
Ir (IS)	193	3	HMI He	5577726	1.67	5310051	105.04	60	120	

Sample Report

Sample Table

Sample Name	280-171184-h-9-b
Data File Name	261SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:16:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.328	ppb	1.328	0.45	65	2000	
Na	23	3	45	10.982	ppb	10.982	64.08	33744	400000	
Mg	24	3	45	461.566	ppb	461.566	1.29	29373	400000	
Al	27	3	45	95367.827	ppb	95367.827	1.87	2075028	400000	
K	39	3	45	429.532	ppb	429.532	7.87	37742	400000	
Ca	40	2	45	1057.332	ppb	1057.332	1.59	618081	400000	
V	51	3	72	206.518	ppb	206.518	0.32	123957	2000	
Cr	52	3	72	78.343	ppb	78.343	1.03	61279	5000	
Mn	55	3	72	203.176	ppb	203.176	1.35	83047	10000	
Fe	56	2	72	76678.632	ppb	76678.632	1.29	110509000	10000	>LDR
Co	59	3	72	4.395	ppb	4.395	2.66	5470	2000	
Ni	60	3	72	12.060	ppb	12.060	4.90	4210	5000	
Cu	63	3	72	21.037	ppb	21.037	0.88	19674	5000	
Zn	66	3	72	31.963	ppb	31.963	4.96	5343	5000	
As	75	3	72	20.024	ppb	20.024	5.99	2269	2000	
Se	78	2	72	2.182	ppb	2.182	15.98	127	2000	
(Se)	78	3	72	2.234	ppb	2.234	58.33	30	2000	
Sr	88	3	72	10.096	ppb	10.096	1.61	5923	4000	
Mo	95	3	115	3.704	ppb	3.704	10.29	1876	2000	
Ag	107	3	115	0.075	ppb	0.075	16.81	140	100	
Cd	111	3	115	0.081	ppb	0.081	44.03	20	2000	
Sn	120	3	115	15.401	ppb	15.401	1.31	11993	2000	
Sb	121	3	115	0.908	ppb	0.908	2.75	800	1000	
Ba	137	3	115	42.857	ppb	42.857	1.80	10262	5000	
Tl	205	3	193	0.196	ppb	0.196	10.66	930	2000	
(Pb)	206	3	193	67.959	ppb	67.959	2.30	83240	100	
(Pb)	207	3	193	65.520	ppb	65.520	0.17	70281	100	
Pb	208	3	193	66.439	ppb	66.439	1.42	327383	5000	
Th	232	3	193	44.024	ppb	44.024	2.10	225172	2000	
U	238	3	193	4.737	ppb	4.737	2.77	26872	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4104044	0.47	3729052	110.06	60	120	
Sc (IS)	45	3	HMI He	629195	1.28	561397	112.08	60	120	
Ge Internal standard	72	2	HMI H2	2186441	1.65	1992040	109.76	60	120	
Ge Internal standard	72	3	HMI He	746946	1.88	651565	114.64	60	120	
In Internal Standard	115	3	HMI He	2568516	1.87	2386538	107.63	60	120	
Ir (IS)	193	3	HMI He	5668109	0.23	5310051	106.74	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-10-a
Data File Name	262SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:18:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.936	ppb	0.936	42.47	47	2000	
Na	23	3	45	5.321	ppb	5.321	102.46	33406	400000	
Mg	24	3	45	448.931	ppb	448.931	0.86	28872	400000	
Al	27	3	45	110747.219	ppb	110747.219	2.39	2432859	400000	
K	39	3	45	502.718	ppb	502.718	3.55	41607	400000	
Ca	40	2	45	137.278	ppb	137.278	0.12	100287	400000	
V	51	3	72	235.679	ppb	235.679	1.60	138221	2000	
Cr	52	3	72	96.361	ppb	96.361	1.81	73327	5000	
Mn	55	3	72	103.574	ppb	103.574	1.35	41503	10000	
Fe	56	2	72	72675.971	ppb	72675.971	1.82	106954406	10000	>LDR
Co	59	3	72	3.288	ppb	3.288	4.27	4005	2000	
Ni	60	3	72	15.617	ppb	15.617	3.65	5292	5000	
Cu	63	3	72	24.194	ppb	24.194	1.34	22072	5000	
Zn	66	3	72	29.576	ppb	29.576	3.54	4850	5000	
As	75	3	72	18.723	ppb	18.723	0.90	2077	2000	
Se	78	2	72	0.968	ppb	0.968	31.31	61	2000	
(Se)	78	3	72	2.069	ppb	2.069	105.80	28	2000	
Sr	88	3	72	10.520	ppb	10.520	1.47	6015	4000	
Mo	95	3	115	4.456	ppb	4.456	8.44	2272	2000	
Ag	107	3	115	0.052	ppb	0.052	39.22	103	100	
Cd	111	3	115	0.020	ppb	0.020	173.21	5	2000	
Sn	120	3	115	16.473	ppb	16.473	3.14	12921	2000	
Sb	121	3	115	0.697	ppb	0.697	8.03	646	1000	
Ba	137	3	115	34.897	ppb	34.897	4.07	8454	5000	
Tl	205	3	193	0.221	ppb	0.221	8.36	1015	2000	
(Pb)	206	3	193	48.462	ppb	48.462	2.05	59081	100	
(Pb)	207	3	193	45.984	ppb	45.984	1.26	49171	100	
Pb	208	3	193	47.293	ppb	47.293	1.31	232031	5000	
Th	232	3	193	49.688	ppb	49.688	1.51	252171	2000	
U	238	3	193	3.586	ppb	3.586	2.46	20622	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4165411	0.34	3729052	111.70	60	120	
Sc (IS)	45	3	HMI He	635236	0.99	561397	113.15	60	120	
Ge Internal standard	72	2	HMI H2	2232699	1.35	1992040	112.08	60	120	
Ge Internal standard	72	3	HMI He	730122	1.06	651565	112.06	60	120	
In Internal Standard	115	3	HMI He	2596422	1.96	2386538	108.79	60	120	
Ir (IS)	193	3	HMI He	5639109	1.59	5310051	106.20	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-1-a
Data File Name	263SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:20:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.613	ppb	0.613	50.54	30	2000	
Na	23	3	45	-8.863	ppb	-8.863	-58.23	31784	400000	
Mg	24	3	45	933.864	ppb	933.864	0.75	59159	400000	
Al	27	3	45	31358.867	ppb	31358.867	0.98	689852	400000	
K	39	3	45	1007.208	ppb	1007.208	0.49	65729	400000	
Ca	40	2	45	6999.739	ppb	6999.739	0.22	3939126	400000	
V	51	3	72	92.934	ppb	92.934	2.28	56183	2000	
Cr	52	3	72	45.705	ppb	45.705	2.95	36583	5000	
Mn	55	3	72	301.173	ppb	301.173	2.14	123604	10000	
Fe	56	2	72	36530.782	ppb	36530.782	1.93	53706637	10000	
Co	59	3	72	3.636	ppb	3.636	1.62	4552	2000	
Ni	60	3	72	9.490	ppb	9.490	4.65	3359	5000	
Cu	63	3	72	14.787	ppb	14.787	0.46	13993	5000	
Zn	66	3	72	43.969	ppb	43.969	0.89	7313	5000	
As	75	3	72	9.038	ppb	9.038	5.61	1050	2000	
Se	78	2	72	1.018	ppb	1.018	5.72	63	2000	
(Se)	78	3	72	3.948	ppb	3.948	57.69	42	2000	
Sr	88	3	72	29.914	ppb	29.914	5.70	16789	4000	
Mo	95	3	115	2.863	ppb	2.863	6.29	1471	2000	
Ag	107	3	115	0.046	ppb	0.046	8.06	93	100	
Cd	111	3	115	0.121	ppb	0.121	61.36	30	2000	
Sn	120	3	115	13.872	ppb	13.872	0.46	10926	2000	
Sb	121	3	115	0.486	ppb	0.486	4.06	483	1000	
Ba	137	3	115	66.447	ppb	66.447	2.76	15963	5000	
Tl	205	3	193	0.170	ppb	0.170	5.56	858	2000	
(Pb)	206	3	193	28.950	ppb	28.950	2.55	36613	100	
(Pb)	207	3	193	28.111	ppb	28.111	1.19	31266	100	
Pb	208	3	193	28.636	ppb	28.636	1.34	145819	5000	
Th	232	3	193	38.746	ppb	38.746	0.29	204773	2000	
U	238	3	193	3.661	ppb	3.661	1.33	21773	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4070200	0.31	3729052	109.15	60	120	
Sc (IS)	45	3	HMI He	636056	0.94	561397	113.30	60	120	
Ge Internal standard	72	2	HMI H2	2230331	1.55	1992040	111.96	60	120	
Ge Internal standard	72	3	HMI He	750928	2.83	651565	115.25	60	120	
In Internal Standard	115	3	HMI He	2583970	1.64	2386538	108.27	60	120	
Ir (IS)	193	3	HMI He	5839808	0.69	5310051	109.98	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-2-a
Data File Name	264SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:22:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.956	ppb	2.956	20.26	147	2000	
Na	23	3	45	121.908	ppb	121.908	5.11	46921	400000	
Mg	24	3	45	2435.327	ppb	2435.327	1.11	152077	400000	
Al	27	3	45	211358.685	ppb	211358.685	1.36	4626956	400000	
K	39	3	45	1923.552	ppb	1923.552	2.28	108922	400000	
Ca	40	2	45	9100.469	ppb	9100.469	0.86	5299851	400000	
V	51	3	72	522.272	ppb	522.272	0.61	303222	2000	
Cr	52	3	72	234.299	ppb	234.299	1.40	174481	5000	
Mn	55	3	72	807.765	ppb	807.765	1.05	319036	10000	
Fe	56	2	72	225033.473	ppb	225033.473	0.99	326718320	10000	>LDR
Co	59	3	72	14.365	ppb	14.365	0.38	17247	2000	
Ni	60	3	72	64.746	ppb	64.746	1.29	21342	5000	
Cu	63	3	72	98.942	ppb	98.942	1.31	88513	5000	
Zn	66	3	72	296.915	ppb	296.915	1.90	46391	5000	
As	75	3	72	43.395	ppb	43.395	3.06	4723	2000	
Se	78	2	72	3.231	ppb	3.231	11.02	187	2000	
(Se)	78	3	72	10.484	ppb	10.484	35.25	82	2000	
Sr	88	3	72	55.629	ppb	55.629	1.92	29723	4000	
Mo	95	3	115	9.807	ppb	9.807	3.11	4900	2000	
Ag	107	3	115	0.122	ppb	0.122	19.66	218	100	
Cd	111	3	115	0.654	ppb	0.654	22.31	162	2000	
Sn	120	3	115	23.897	ppb	23.897	1.43	18295	2000	
Sb	121	3	115	3.358	ppb	3.358	3.49	2652	1000	
Ba	137	3	115	231.334	ppb	231.334	1.78	55124	5000	
Tl	205	3	193	0.841	ppb	0.841	2.93	3309	2000	
(Pb)	206	3	193	136.670	ppb	136.670	0.76	167640	100	
(Pb)	207	3	193	131.135	ppb	131.135	1.23	140640	100	
Pb	208	3	193	133.213	ppb	133.213	0.56	657125	5000	
Th	232	3	193	86.885	ppb	86.885	0.58	440604	2000	
U	238	3	193	11.749	ppb	11.749	0.60	64411	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4217340	1.86	3729052	113.09	60	120	
Sc (IS)	45	3	HMI He	632994	0.93	561397	112.75	60	120	
Ge Internal standard	72	2	HMI H2	2202496	0.88	1992040	110.56	60	120	
Ge Internal standard	72	3	HMI He	723383	0.99	651565	111.02	60	120	
In Internal Standard	115	3	HMI He	2569965	1.00	2386538	107.69	60	120	
Ir (IS)	193	3	HMI He	5680807	0.73	5310051	106.98	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-3-a
Data File Name	265SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:23:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.536	ppb	1.536	10.77	73	2000	
Na	23	3	45	40.824	ppb	40.824	21.04	36748	400000	
Mg	24	3	45	1051.287	ppb	1051.287	2.21	64927	400000	
Al	27	3	45	110586.499	ppb	110586.499	1.85	2375467	400000	
K	39	3	45	1026.652	ppb	1026.652	0.53	65105	400000	
Ca	40	2	45	4528.369	ppb	4528.369	0.99	2502086	400000	
V	51	3	72	252.487	ppb	252.487	2.29	144710	2000	
Cr	52	3	72	217.804	ppb	217.804	1.16	160116	5000	
Mn	55	3	72	1022.751	ppb	1022.751	1.34	398421	10000	
Fe	56	2	72	310309.068	ppb	310309.068	0.21	432305934	10000	>LDR
Co	59	3	72	18.219	ppb	18.219	3.30	21569	2000	
Ni	60	3	72	112.600	ppb	112.600	0.98	36525	5000	
Cu	63	3	72	340.633	ppb	340.633	1.47	299860	5000	
Zn	66	3	72	48.398	ppb	48.398	4.16	7628	5000	
As	75	3	72	45.208	ppb	45.208	1.26	4853	2000	
Se	78	2	72	2.522	ppb	2.522	2.06	141	2000	
(Se)	78	3	72	5.875	ppb	5.875	53.41	52	2000	
Sr	88	3	72	32.081	ppb	32.081	1.96	17084	4000	
Mo	95	3	115	17.006	ppb	17.006	1.58	8302	2000	
Ag	107	3	115	0.215	ppb	0.215	14.51	365	100	
Cd	111	3	115	0.076	ppb	0.076	16.07	18	2000	
Sn	120	3	115	133.558	ppb	133.558	2.31	97631	2000	
Sb	121	3	115	7.673	ppb	7.673	1.80	5802	1000	
Ba	137	3	115	75.872	ppb	75.872	3.32	17771	5000	
Tl	205	3	193	0.325	ppb	0.325	7.19	1381	2000	
(Pb)	206	3	193	58.514	ppb	58.514	0.87	70591	100	
(Pb)	207	3	193	56.273	ppb	56.273	0.49	59483	100	
Pb	208	3	193	57.095	ppb	57.095	1.25	277116	5000	
Th	232	3	193	43.854	ppb	43.854	0.79	220871	2000	
U	238	3	193	6.076	ppb	6.076	1.50	33492	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3984577	0.46	3729052	106.85	60	120	
Sc (IS)	45	3	HMI He	621226	1.60	561397	110.66	60	120	
Ge Internal standard	72	2	HMI H2	2113381	0.28	1992040	106.09	60	120	
Ge Internal standard	72	3	HMI He	713620	1.00	651565	109.52	60	120	
In Internal Standard	115	3	HMI He	2520643	1.28	2386538	105.62	60	120	
Ir (IS)	193	3	HMI He	5581190	0.75	5310051	105.11	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-4-a
Data File Name	266SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:25:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	5.496	ppb	5.496	18.74	265	2000	
Na	23	3	45	142.305	ppb	142.305	1.03	51033	400000	
Mg	24	3	45	1640.887	ppb	1640.887	1.25	106356	400000	
Al	27	3	45	313396.031	ppb	313396.031	0.59	7100138	400000	
K	39	3	45	3419.211	ppb	3419.211	0.42	186249	400000	
Ca	40	2	45	1085.354	ppb	1085.354	0.55	654471	400000	
V	51	3	72	1056.150	ppb	1056.150	0.42	607573	2000	
Cr	52	3	72	218.699	ppb	218.699	0.85	161545	5000	
Mn	55	3	72	1801.234	ppb	1801.234	1.12	704980	10000	
Fe	56	2	72	487491.327	ppb	487491.327	2.70	689690800	10000	>LDR
Co	59	3	72	10.343	ppb	10.343	2.11	12316	2000	
Ni	60	3	72	32.612	ppb	32.612	2.54	10717	5000	
Cu	63	3	72	65.513	ppb	65.513	1.50	58191	5000	
Zn	66	3	72	107.829	ppb	107.829	2.33	16829	5000	
As	75	3	72	27.736	ppb	27.736	0.52	3006	2000	
Se	78	2	72	4.900	ppb	4.900	9.80	274	2000	
(Se)	78	3	72	7.158	ppb	7.158	27.78	60	2000	
Sr	88	3	72	35.196	ppb	35.196	1.44	18792	4000	
Mo	95	3	115	10.946	ppb	10.946	1.53	5407	2000	
Ag	107	3	115	0.160	ppb	0.160	4.88	278	100	
Cd	111	3	115	0.095	ppb	0.095	52.02	23	2000	
Sn	120	3	115	31.095	ppb	31.095	4.45	23367	2000	
Sb	121	3	115	0.743	ppb	0.743	10.30	668	1000	
Ba	137	3	115	127.258	ppb	127.258	4.00	30021	5000	
Tl	205	3	193	1.422	ppb	1.422	6.17	5487	2000	
(Pb)	206	3	193	256.248	ppb	256.248	1.29	316342	100	
(Pb)	207	3	193	248.011	ppb	248.011	1.49	267491	100	
Pb	208	3	193	250.525	ppb	250.525	1.31	1243551	5000	
Th	232	3	193	59.696	ppb	59.696	1.36	306328	2000	
U	238	3	193	9.870	ppb	9.870	1.97	54738	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4237390	1.01	3729052	113.63	60	120	
Sc (IS)	45	3	HMI He	655096	0.55	561397	116.69	60	120	
Ge Internal standard	72	2	HMI H2	2146607	1.05	1992040	107.76	60	120	
Ge Internal standard	72	3	HMI He	717039	1.25	651565	110.05	60	120	
In Internal Standard	115	3	HMI He	2543383	2.76	2386538	106.57	60	120	
Ir (IS)	193	3	HMI He	5719431	0.60	5310051	107.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	267_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:27:39-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.754	ppb	3.757	2396	50	99.5	90	110	
Na	23	3	45	50946.059	ppb	1.546	5636457	51000	99.9	90	110	
Mg	24	3	45	10807.377	ppb	2.270	632133	11000	98.2	90	110	
Al	27	3	45	1066.266	ppb	2.387	22053	1000	106.6	90	110	
K	39	3	45	10582.810	ppb	1.495	489483	11000	96.2	90	110	
Ca	40	2	45	10920.574	ppb	0.822	6064609	11000	99.3	90	110	
V	51	3	72	52.720	ppb	2.282	28881	50	105.4	90	110	
Cr	52	3	72	51.807	ppb	0.919	37264	50	103.6	90	110	
Mn	55	3	72	52.177	ppb	1.384	19531	50	104.4	90	110	
Fe	56	2	72	1106.263	ppb	0.424	1553899	1000	110.6	90	110	>+\-10%
Co	59	3	72	52.120	ppb	2.161	58584	50	104.2	90	110	
Ni	60	3	72	53.833	ppb	2.346	16650	50	107.7	90	110	
Cu	63	3	72	52.761	ppb	0.989	44364	50	105.5	90	110	
Zn	66	3	72	53.646	ppb	3.684	8017	50	107.3	90	110	
As	75	3	72	51.950	ppb	2.180	5293	50	103.9	90	110	
Se	78	2	72	51.126	ppb	1.641	2776	50	102.3	90	110	
(Se)	78	3	72	55.986	ppb	5.054	348	50	112.0	90	110	>+\-10%
Sr	88	3	72	103.432	ppb	0.828	51463	100	103.4	90	110	
Mo	95	3	115	51.901	ppb	1.903	24470	50	103.8	90	110	
Ag	107	3	115	50.644	ppb	1.222	79641	50	101.3	90	110	
Cd	111	3	115	50.449	ppb	2.295	11838	50	100.9	90	110	
Sn	120	3	115	51.501	ppb	1.070	36834	50	103.0	90	110	
Sb	121	3	115	50.440	ppb	0.783	36358	50	100.9	90	110	
Ba	137	3	115	52.789	ppb	1.302	12003	50	105.6	90	110	
Tl	205	3	193	51.050	ppb	1.076	177803	50	102.1	90	110	
(Pb)	206	3	193	52.148	ppb	1.213	60472	50	104.3	90	110	
(Pb)	207	3	193	51.806	ppb	0.382	52656	50	103.6	90	110	
Pb	208	3	193	51.995	ppb	0.813	242608	50	104.0	90	110	
Th	232	3	193	52.380	ppb	0.764	252668	50	104.8	90	110	
U	238	3	193	51.307	ppb	1.094	260466	50	102.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4024346	1.00	3729052	107.92	60	120	
Sc (IS)	45	3	HMI He	595681	1.42	561397	106.11	60	120	
Ge Internal standard	72	2	HMI H2	2119036	1.60	1992040	106.38	60	120	
Ge Internal standard	72	3	HMI He	677984	1.16	651565	104.05	60	120	
In Internal Standard	115	3	HMI He	2442507	1.40	2386538	102.35	60	120	
Ir (IS)	193	3	HMI He	5364175	2.05	5310051	101.02	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	268_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:29:32-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.035	ppb	173.2	2	0.5	
Na	23	3	45	-60.887	ppb	-2.3	24108	25	
Mg	24	3	45	-10.208	ppb	-13.1	250	25	
Al	27	3	45	19.762	ppb	1.7	501	15	>RL
K	39	3	45	-17.200	ppb	-245.0	15808	50	
V	51	3	72	-0.176	ppb	-16.4	118	1	
Cr	52	3	72	0.102	ppb	23.0	1501	1	
Mn	55	3	72	-0.034	ppb	-358.7	218	0.5	
Co	59	3	72	0.012	ppb	72.7	40	0.5	
Ni	60	3	72	0.036	ppb	105.5	128	1	
Cu	63	3	72	0.008	ppb	437.8	288	1	
Zn	66	3	72	-0.143	ppb	-91.1	173	5	
As	75	3	72	0.017	ppb	767.6	35	1	
Se	78	2	72	-0.042	ppb	-51.3	3	1	
(Se)	78	3	72	-0.939	ppb	-183.7	8	1	
Sr	88	3	72	-0.700	ppb	-5.2	45	0.5	
Mo	95	3	115	0.026	ppb	88.8	55	0.5	
Ag	107	3	115	0.022	ppb	52.9	50	1	
Cd	111	3	115	0.007	ppb	173.2	2	0.5	
Sn	120	3	115	0.341	ppb	8.3	800	1	
Sb	121	3	115	0.026	ppb	58.5	127	0.6	
Ba	137	3	115	-0.088	ppb	-17.6	42	0.5	
Tl	205	3	193	0.002	ppb	678.1	217	0.1	
(Pb)	206	3	193	0.068	ppb	36.1	215	1	
(Pb)	207	3	193	0.050	ppb	102.8	395	1	
Pb	208	3	193	0.069	ppb	19.5	1093	0.5	
Th	232	3	193	0.185	ppb	45.2	5825	1	
U	238	3	193	0.031	ppb	32.5	1776	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3840021	0.34	3729052	102.98	60	120	
Sc (IS)	45	3	HMI He	597281	0.68	561397	106.39	60	120	
Ge Internal standard	72	2	HMI H2	2086097	0.31	1992040	104.72	60	120	
Ge Internal standard	72	3	HMI He	684496	0.15	651565	105.05	60	120	
In Internal Standard	115	3	HMI He	2448000	1.60	2386538	102.58	60	120	
Ir (IS)	193	3	HMI He	5683987	0.27	5310051	107.04	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-5-a
Data File Name	269SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:31:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.824	ppb	0.824	42.37	40	2000	
Na	23	3	45	66.949	ppb	66.949	8.15	38862	400000	
Mg	24	3	45	1043.400	ppb	1043.400	0.44	63029	400000	
Al	27	3	45	40757.813	ppb	40757.813	0.50	856380	400000	
K	39	3	45	958.238	ppb	958.238	3.08	60551	400000	
Ca	40	2	45	9517.429	ppb	9517.429	2.18	5251360	400000	
V	51	3	72	135.369	ppb	135.369	1.33	77375	2000	
Cr	52	3	72	64.400	ppb	64.400	0.74	48191	5000	
Mn	55	3	72	373.616	ppb	373.616	1.54	145102	10000	
Fe	56	2	72	50724.357	ppb	50724.357	1.07	74417537	10000	>LDR
Co	59	3	72	3.572	ppb	3.572	1.78	4234	2000	
Ni	60	3	72	10.381	ppb	10.381	6.14	3462	5000	
Cu	63	3	72	21.496	ppb	21.496	2.20	19117	5000	
Zn	66	3	72	67.404	ppb	67.404	1.52	10502	5000	
As	75	3	72	16.105	ppb	16.105	5.65	1744	2000	
Se	78	2	72	2.097	ppb	2.097	15.05	125	2000	
(Se)	78	3	72	5.655	ppb	5.655	48.12	50	2000	
Sr	88	3	72	76.711	ppb	76.711	0.74	40111	4000	
Mo	95	3	115	3.954	ppb	3.954	9.74	1936	2000	
Ag	107	3	115	0.048	ppb	0.048	18.88	92	100	
Cd	111	3	115	0.322	ppb	0.322	20.79	77	2000	
Sn	120	3	115	14.852	ppb	14.852	2.16	11201	2000	
Sb	121	3	115	0.653	ppb	0.653	11.24	586	1000	
Ba	137	3	115	84.541	ppb	84.541	2.89	19501	5000	
Tl	205	3	193	0.186	ppb	0.186	5.84	888	2000	
(Pb)	206	3	193	38.322	ppb	38.322	1.77	46783	100	
(Pb)	207	3	193	36.640	ppb	36.640	0.89	39273	100	
Pb	208	3	193	37.393	ppb	37.393	0.60	183748	5000	
Th	232	3	193	21.458	ppb	21.458	2.21	111728	2000	
U	238	3	193	4.085	ppb	4.085	1.70	23290	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3996470	0.22	3729052	107.17	60	120	
Sc (IS)	45	3	HMI He	607484	1.09	561397	108.21	60	120	
Ge Internal standard	72	2	HMI H2	2225321	0.29	1992040	111.71	60	120	
Ge Internal standard	72	3	HMI He	710609	0.98	651565	109.06	60	120	
In Internal Standard	115	3	HMI He	2482949	0.94	2386538	104.04	60	120	
Ir (IS)	193	3	HMI He	5642738	1.46	5310051	106.27	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-6-a
Data File Name	270SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:33:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.817	ppb	2.817	26.63	138	2000	
Na	23	3	45	112.805	ppb	112.805	9.00	45435	400000	
Mg	24	3	45	2156.186	ppb	2156.186	1.76	133500	400000	
Al	27	3	45	174278.780	ppb	174278.780	0.62	3779737	400000	
K	39	3	45	1862.498	ppb	1862.498	1.68	105052	400000	
Ca	40	2	45	5461.776	ppb	5461.776	0.60	3124283	400000	
V	51	3	72	338.574	ppb	338.574	3.91	197509	2000	
Cr	52	3	72	151.789	ppb	151.789	3.72	114077	5000	
Mn	55	3	72	796.430	ppb	796.430	3.30	315990	10000	
Fe	56	2	72	133244.001	ppb	133244.001	2.11	190836867	10000	>LDR
Co	59	3	72	13.748	ppb	13.748	5.39	16573	2000	
Ni	60	3	72	53.498	ppb	53.498	3.35	17734	5000	
Cu	63	3	72	98.120	ppb	98.120	3.33	88176	5000	
Zn	66	3	72	142.927	ppb	142.927	1.70	22554	5000	
As	75	3	72	29.826	ppb	29.826	2.52	3274	2000	
Se	78	2	72	2.977	ppb	2.977	2.33	171	2000	
(Se)	78	3	72	8.561	ppb	8.561	23.15	70	2000	
Sr	88	3	72	75.528	ppb	75.528	3.20	40393	4000	
Mo	95	3	115	7.197	ppb	7.197	3.63	3594	2000	
Ag	107	3	115	0.071	ppb	0.071	11.02	133	100	
Cd	111	3	115	0.488	ppb	0.488	4.82	120	2000	
Sn	120	3	115	18.636	ppb	18.636	0.26	14336	2000	
Sb	121	3	115	2.029	ppb	2.029	7.62	1639	1000	
Ba	137	3	115	205.954	ppb	205.954	1.98	48872	5000	
Tl	205	3	193	0.752	ppb	0.752	5.40	3004	2000	
(Pb)	206	3	193	210.181	ppb	210.181	1.14	259859	100	
(Pb)	207	3	193	191.126	ppb	191.126	1.51	206491	100	
Pb	208	3	193	198.664	ppb	198.664	1.06	987651	5000	
Th	232	3	193	73.873	ppb	73.873	0.44	378449	2000	
U	238	3	193	11.221	ppb	11.221	1.45	62102	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4130906	1.10	3729052	110.78	60	120	
Sc (IS)	45	3	HMI He	627117	0.41	561397	111.71	60	120	
Ge Internal standard	72	2	HMI H2	2173006	2.16	1992040	109.08	60	120	
Ge Internal standard	72	3	HMI He	727214	3.71	651565	111.61	60	120	
In Internal Standard	115	3	HMI He	2559016	1.30	2386538	107.23	60	120	
Ir (IS)	193	3	HMI He	5727660	0.88	5310051	107.86	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-7-a
Data File Name	271SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:35:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	3.042	ppb	3.042	27.65	148	2000	
Na	23	3	45	571.310	ppb	571.310	0.23	99926	400000	
Mg	24	3	45	2123.121	ppb	2123.121	0.58	133301	400000	
Al	27	3	45	251496.527	ppb	251496.527	2.86	5530181	400000	
K	39	3	45	3471.060	ppb	3471.060	0.72	183250	400000	
Ca	40	2	45	30469.054	ppb	30469.054	0.15	17417106	400000	
V	51	3	72	237.292	ppb	237.292	1.89	141717	2000	
Cr	52	3	72	176.489	ppb	176.489	2.01	135466	5000	
Mn	55	3	72	198.223	ppb	198.223	2.43	80649	10000	
Fe	56	2	72	98109.560	ppb	98109.560	0.85	141799438	10000	>LDR
Co	59	3	72	7.430	ppb	7.430	0.68	9183	2000	
Ni	60	3	72	34.774	ppb	34.774	4.76	11834	5000	
Cu	63	3	72	97.911	ppb	97.911	0.88	90030	5000	
Zn	66	3	72	85.785	ppb	85.785	2.53	13927	5000	
As	75	3	72	13.147	ppb	13.147	2.64	1496	2000	
Se	78	2	72	2.117	ppb	2.117	9.81	124	2000	
(Se)	78	3	72	4.788	ppb	4.788	64.10	47	2000	
Sr	88	3	72	180.523	ppb	180.523	3.18	98166	4000	
Mo	95	3	115	6.461	ppb	6.461	3.24	3265	2000	
Ag	107	3	115	0.148	ppb	0.148	12.14	263	100	
Cd	111	3	115	0.147	ppb	0.147	54.38	37	2000	
Sn	120	3	115	23.596	ppb	23.596	1.50	18193	2000	
Sb	121	3	115	3.335	ppb	3.335	2.46	2652	1000	
Ba	137	3	115	128.641	ppb	128.641	1.56	30891	5000	
Tl	205	3	193	0.717	ppb	0.717	9.33	2861	2000	
(Pb)	206	3	193	121.082	ppb	121.082	0.58	149125	100	
(Pb)	207	3	193	117.349	ppb	117.349	0.56	126383	100	
Pb	208	3	193	119.109	ppb	119.109	0.69	589941	5000	
Th	232	3	193	64.224	ppb	64.224	0.86	328253	2000	
U	238	3	193	5.721	ppb	5.721	1.59	32319	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4151596	1.89	3729052	111.33	60	120	
Sc (IS)	45	3	HMI He	635843	0.19	561397	113.26	60	120	
Ge Internal standard	72	2	HMI H2	2192635	2.05	1992040	110.07	60	120	
Ge Internal standard	72	3	HMI He	743602	1.88	651565	114.13	60	120	
In Internal Standard	115	3	HMI He	2587335	0.81	2386538	108.41	60	120	
Ir (IS)	193	3	HMI He	5703317	1.04	5310051	107.41	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-8-a
Data File Name	272SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:36:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.677	ppb	1.677	11.62	83	2000	
Na	23	3	45	342.998	ppb	342.998	2.96	75214	400000	
Mg	24	3	45	765.242	ppb	765.242	1.03	50025	400000	
Al	27	3	45	212915.875	ppb	212915.875	0.62	4816840	400000	
K	39	3	45	1877.684	ppb	1877.684	1.86	110327	400000	
Ca	40	2	45	528.316	ppb	528.316	2.29	332506	400000	
V	51	3	72	380.548	ppb	380.548	1.31	228647	2000	
Cr	52	3	72	152.442	ppb	152.442	2.44	117989	5000	
Mn	55	3	72	122.095	ppb	122.095	1.28	50110	10000	
Fe	56	2	72	68902.678	ppb	68902.678	0.66	99515550	10000	>LDR
Co	59	3	72	3.753	ppb	3.753	3.54	4683	2000	
Ni	60	3	72	11.045	ppb	11.045	3.33	3872	5000	
Cu	63	3	72	32.889	ppb	32.889	2.91	30639	5000	
Zn	66	3	72	48.989	ppb	48.989	3.87	8095	5000	
As	75	3	72	3.224	ppb	3.224	16.61	396	2000	
Se	78	2	72	0.443	ppb	0.443	15.70	30	2000	
(Se)	78	3	72	3.730	ppb	3.730	51.58	40	2000	
Sr	88	3	72	8.763	ppb	8.763	3.72	5207	4000	
Mo	95	3	115	2.435	ppb	2.435	1.11	1281	2000	
Ag	107	3	115	0.110	ppb	0.110	38.29	203	100	
Cd	111	3	115	0.013	ppb	0.013	86.60	3	2000	
Sn	120	3	115	24.069	ppb	24.069	1.85	18867	2000	
Sb	121	3	115	0.698	ppb	0.698	3.54	656	1000	
Ba	137	3	115	46.615	ppb	46.615	3.05	11428	5000	
Tl	205	3	193	0.711	ppb	0.711	3.45	2844	2000	
(Pb)	206	3	193	79.031	ppb	79.031	2.56	97551	100	
(Pb)	207	3	193	74.338	ppb	74.338	2.25	80329	100	
Pb	208	3	193	76.281	ppb	76.281	2.32	378760	5000	
Th	232	3	193	65.034	ppb	65.034	1.22	332969	2000	
U	238	3	193	5.172	ppb	5.172	1.25	29428	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4271586	1.30	3729052	114.55	60	120	
Sc (IS)	45	3	HMI He	654157	0.20	561397	116.52	60	120	
Ge Internal standard	72	2	HMI H2	2190911	1.18	1992040	109.98	60	120	
Ge Internal standard	72	3	HMI He	748473	1.48	651565	114.87	60	120	
In Internal Standard	115	3	HMI He	2632309	1.64	2386538	110.30	60	120	
Ir (IS)	193	3	HMI He	5714903	1.95	5310051	107.62	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-9-a
Data File Name	273SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:38:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.882	ppb	1.882	18.62	95	2000	
Na	23	3	45	134.245	ppb	134.245	3.26	50446	400000	
Mg	24	3	45	1234.977	ppb	1234.977	0.60	80911	400000	
Al	27	3	45	202508.849	ppb	202508.849	0.40	4624141	400000	
K	39	3	45	1202.696	ppb	1202.696	0.90	77913	400000	
Ca	40	2	45	552.707	ppb	552.707	2.05	350556	400000	
V	51	3	72	644.736	ppb	644.736	3.24	384794	2000	
Cr	52	3	72	168.973	ppb	168.973	2.74	129821	5000	
Mn	55	3	72	162.847	ppb	162.847	4.04	66314	10000	
Fe	56	2	72	101369.302	ppb	101369.302	1.14	149147099	10000	>LDR
Co	59	3	72	3.664	ppb	3.664	5.38	4542	2000	
Ni	60	3	72	10.299	ppb	10.299	6.59	3595	5000	
Cu	63	3	72	35.277	ppb	35.277	2.59	32649	5000	
Zn	66	3	72	48.271	ppb	48.271	3.59	7932	5000	
As	75	3	72	5.610	ppb	5.610	4.80	660	2000	
Se	78	2	72	0.608	ppb	0.608	20.63	40	2000	
(Se)	78	3	72	1.722	ppb	1.722	108.12	27	2000	
Sr	88	3	72	12.112	ppb	12.112	2.43	6990	4000	
Mo	95	3	115	4.145	ppb	4.145	1.54	2097	2000	
Ag	107	3	115	0.157	ppb	0.157	14.56	277	100	
Cd	111	3	115	0.034	ppb	0.034	92.42	8	2000	
Sn	120	3	115	24.306	ppb	24.306	3.21	18589	2000	
Sb	121	3	115	1.126	ppb	1.126	13.47	963	1000	
Ba	137	3	115	56.149	ppb	56.149	2.99	13422	5000	
Tl	205	3	193	0.792	ppb	0.792	2.66	3117	2000	
(Pb)	206	3	193	101.843	ppb	101.843	2.04	124542	100	
(Pb)	207	3	193	96.681	ppb	96.681	1.24	103450	100	
Pb	208	3	193	98.926	ppb	98.926	2.02	486564	5000	
Th	232	3	193	63.273	ppb	63.273	0.95	321194	2000	
U	238	3	193	5.955	ppb	5.955	1.44	33336	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4317558	1.64	3729052	115.78	60	120	
Sc (IS)	45	3	HMI He	660241	1.65	561397	117.61	60	120	
Ge Internal standard	72	2	HMI H2	2232078	1.22	1992040	112.05	60	120	
Ge Internal standard	72	3	HMI He	744242	3.66	651565	114.22	60	120	
In Internal Standard	115	3	HMI He	2569545	2.20	2386538	107.67	60	120	
Ir (IS)	193	3	HMI He	5663498	2.27	5310051	106.66	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-10-a
Data File Name	274SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:40:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	4.907	ppb	4.907	5.99	245	2000	
Na	23	3	45	147.776	ppb	147.776	4.06	50611	400000	
Mg	24	3	45	3473.964	ppb	3473.964	0.27	219431	400000	
Al	27	3	45	221364.408	ppb	221364.408	1.92	4909985	400000	
K	39	3	45	2557.824	ppb	2557.824	1.06	140895	400000	
Ca	40	2	45	8561.461	ppb	8561.461	2.46	5004090	400000	
V	51	3	72	425.407	ppb	425.407	3.36	249748	2000	
Cr	52	3	72	187.492	ppb	187.492	3.27	141481	5000	
Mn	55	3	72	741.080	ppb	741.080	2.99	295974	10000	
Fe	56	2	72	167014.786	ppb	167014.786	3.38	243494928	10000	>LDR
Co	59	3	72	40.126	ppb	40.126	3.89	48652	2000	
Ni	60	3	72	65.666	ppb	65.666	1.72	21888	5000	
Cu	63	3	72	103.779	ppb	103.779	3.95	93837	5000	
Zn	66	3	72	205.958	ppb	205.958	1.70	32612	5000	
As	75	3	72	32.289	ppb	32.289	3.53	3567	2000	
Se	78	2	72	2.865	ppb	2.865	2.31	167	2000	
(Se)	78	3	72	20.491	ppb	20.491	17.50	147	2000	
Sr	88	3	72	159.384	ppb	159.384	3.03	85325	4000	
Mo	95	3	115	9.901	ppb	9.901	4.51	4940	2000	
Ag	107	3	115	0.222	ppb	0.222	16.22	383	100	
Cd	111	3	115	0.594	ppb	0.594	19.71	147	2000	
Sn	120	3	115	21.434	ppb	21.434	0.38	16452	2000	
Sb	121	3	115	2.797	ppb	2.797	1.21	2226	1000	
Ba	137	3	115	580.672	ppb	580.672	0.39	138121	5000	
Tl	205	3	193	1.064	ppb	1.064	5.14	4067	2000	
(Pb)	206	3	193	235.448	ppb	235.448	2.13	284454	100	
(Pb)	207	3	193	226.346	ppb	226.346	1.14	238966	100	
Pb	208	3	193	230.234	ppb	230.234	2.08	1118431	5000	
Th	232	3	193	80.830	ppb	80.830	1.19	404280	2000	
U	238	3	193	13.503	ppb	13.503	3.01	72690	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4232404	1.49	3729052	113.50	60	120	
Sc (IS)	45	3	HMI He	641365	0.22	561397	114.24	60	120	
Ge Internal standard	72	2	HMI H2	2212426	1.81	1992040	111.06	60	120	
Ge Internal standard	72	3	HMI He	731844	3.14	651565	112.32	60	120	
In Internal Standard	115	3	HMI He	2567046	0.97	2386538	107.56	60	120	
Ir (IS)	193	3	HMI He	5598971	2.61	5310051	105.44	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-11-a
Data File Name	275SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:42:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	3.171	ppb	3.171	8.53	163	2000	
Na	23	3	45	409.020	ppb	409.020	1.72	85626	400000	
Mg	24	3	45	1626.106	ppb	1626.106	3.27	108300	400000	
Al	27	3	45	207587.392	ppb	207587.392	1.51	4833397	400000	
K	39	3	45	2612.502	ppb	2612.502	0.26	150696	400000	
Ca	40	2	45	16112.816	ppb	16112.816	0.54	9888166	400000	
V	51	3	72	474.317	ppb	474.317	0.85	293219	2000	
Cr	52	3	72	236.587	ppb	236.587	1.94	187567	5000	
Mn	55	3	72	292.749	ppb	292.749	0.74	123277	10000	
Fe	56	2	72	218274.160	ppb	218274.160	1.62	335584463	10000	>LDR
Co	59	3	72	7.019	ppb	7.019	0.83	8988	2000	
Ni	60	3	72	31.115	ppb	31.115	1.67	10987	5000	
Cu	63	3	72	69.011	ppb	69.011	2.28	65823	5000	
Zn	66	3	72	71.431	ppb	71.431	3.06	12049	5000	
As	75	3	72	18.406	ppb	18.406	8.59	2154	2000	
Se	78	2	72	2.365	ppb	2.365	11.12	147	2000	
(Se)	78	3	72	5.784	ppb	5.784	33.75	55	2000	
Sr	88	3	72	84.697	ppb	84.697	3.03	47950	4000	
Mo	95	3	115	4.284	ppb	4.284	4.11	2181	2000	
Ag	107	3	115	0.069	ppb	0.069	18.24	132	100	
Cd	111	3	115	0.155	ppb	0.155	78.71	38	2000	
Sn	120	3	115	26.534	ppb	26.534	2.06	20394	2000	
Sb	121	3	115	1.639	ppb	1.639	5.42	1363	1000	
Ba	137	3	115	106.661	ppb	106.661	1.26	25634	5000	
Tl	205	3	193	0.702	ppb	0.702	5.15	2841	2000	
(Pb)	206	3	193	147.284	ppb	147.284	2.09	183557	100	
(Pb)	207	3	193	142.150	ppb	142.150	2.32	154863	100	
Pb	208	3	193	143.808	ppb	143.808	1.95	720715	5000	
Th	232	3	193	72.530	ppb	72.530	2.18	374526	2000	
U	238	3	193	8.829	ppb	8.829	1.81	49591	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4452164	0.63	3729052	119.39	60	120	
Sc (IS)	45	3	HMI He	673402	2.24	561397	119.95	60	120	
Ge Internal standard	72	2	HMI H2	2332755	2.07	1992040	117.10	60	120	
Ge Internal standard	72	3	HMI He	770193	0.85	651565	118.21	60	120	
In Internal Standard	115	3	HMI He	2588537	1.53	2386538	108.46	60	120	
Ir (IS)	193	3	HMI He	5773696	2.37	5310051	108.73	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-12-a
Data File Name	276SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:44:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600287 SOIL 6020B
ISTD Ref FileName	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.795	ppb	2.795	14.83	142	2000	
Na	23	3	45	93.344	ppb	93.344	4.79	46215	400000	
Mg	24	3	45	2653.395	ppb	2653.395	2.91	175548	400000	
Al	27	3	45	202022.519	ppb	202022.519	2.98	4687676	400000	
K	39	3	45	2042.059	ppb	2042.059	2.62	121446	400000	
Ca	40	2	45	6218.515	ppb	6218.515	2.06	3764213	400000	
V	51	3	72	407.396	ppb	407.396	1.19	254168	2000	
Cr	52	3	72	194.279	ppb	194.279	1.28	155724	5000	
Mn	55	3	72	553.207	ppb	553.207	1.49	234824	10000	
Fe	56	2	72	168420.580	ppb	168420.580	2.42	255511579	10000	>LDR
Co	59	3	72	13.693	ppb	13.693	1.89	17664	2000	
Ni	60	3	72	60.852	ppb	60.852	0.86	21558	5000	
Cu	63	3	72	235.079	ppb	235.079	0.78	225488	5000	
Zn	66	3	72	156.052	ppb	156.052	1.43	26304	5000	
As	75	3	72	34.024	ppb	34.024	3.82	3989	2000	
Se	78	2	72	2.897	ppb	2.897	12.43	176	2000	
(Se)	78	3	72	10.328	ppb	10.328	15.85	87	2000	
Sr	88	3	72	62.246	ppb	62.246	1.93	35682	4000	
Mo	95	3	115	8.575	ppb	8.575	4.11	4507	2000	
Ag	107	3	115	0.130	ppb	0.130	12.35	243	100	
Cd	111	3	115	0.919	ppb	0.919	15.36	238	2000	
Sn	120	3	115	21.010	ppb	21.010	1.83	16972	2000	
Sb	121	3	115	1.955	ppb	1.955	1.01	1673	1000	
Ba	137	3	115	275.525	ppb	275.525	1.41	68967	5000	
Tl	205	3	193	0.880	ppb	0.880	5.78	3559	2000	
(Pb)	206	3	193	107.911	ppb	107.911	0.63	136456	100	
(Pb)	207	3	193	102.372	ppb	102.372	2.15	113226	100	
Pb	208	3	193	104.723	ppb	104.723	0.98	532588	5000	
Th	232	3	193	77.508	ppb	77.508	1.78	405644	2000	
U	238	3	193	10.441	ppb	10.441	1.71	59177	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4375594	2.61	3729052	117.34	60	120	
Sc (IS)	45	3	HMI He	671220	2.37	561397	119.56	60	120	
Ge Internal standard	72	2	HMI H2	2301460	0.34	1992040	115.53	60	120	
Ge Internal standard	72	3	HMI He	777193	0.91	651565	119.28	60	120	
In Internal Standard	115	3	HMI He	2700353	1.78	2386538	113.15	60	120	
Ir (IS)	193	3	HMI He	5855142	0.67	5310051	110.27	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	ccv-7567580
Data File Name	277_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:46:15-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.198	ppb	3.003	2482	50	100.4	90	110	
Na	23	3	45	51302.565	ppb	1.460	5994012	51000	100.6	90	110	
Mg	24	3	45	10989.788	ppb	1.283	678838	11000	99.9	90	110	
Al	27	3	45	1048.610	ppb	1.543	22908	1000	104.9	90	110	
K	39	3	45	10680.904	ppb	0.416	521521	11000	97.1	90	110	
Ca	40	2	45	10950.958	ppb	1.605	6317197	11000	99.6	90	110	
V	51	3	72	53.218	ppb	2.464	30642	50	106.4	90	110	
Cr	52	3	72	53.446	ppb	1.474	40365	50	106.9	90	110	
Mn	55	3	72	53.120	ppb	4.033	20892	50	106.2	90	110	
Fe	56	2	72	1095.667	ppb	4.356	1597502	1000	109.6	90	110	
Co	59	3	72	52.855	ppb	1.467	62454	50	105.7	90	110	
Ni	60	3	72	53.397	ppb	1.253	17362	50	106.8	90	110	
Cu	63	3	72	54.099	ppb	1.219	47815	50	108.2	90	110	
Zn	66	3	72	55.194	ppb	1.446	8663	50	110.4	90	110	>+\-10%
As	75	3	72	54.013	ppb	5.391	5783	50	108.0	90	110	
Se	78	2	72	50.753	ppb	5.425	2860	50	101.5	90	110	
(Se)	78	3	72	59.506	ppb	4.001	388	50	119.0	90	110	>+\-10%
Sr	88	3	72	105.540	ppb	1.282	55197	100	105.5	90	110	
Mo	95	3	115	51.304	ppb	1.715	25668	50	102.6	90	110	
Ag	107	3	115	50.738	ppb	0.906	84686	50	101.5	90	110	
Cd	111	3	115	50.193	ppb	1.573	12501	50	100.4	90	110	
Sn	120	3	115	50.649	ppb	1.019	38449	50	101.3	90	110	
Sb	121	3	115	50.192	ppb	1.537	38398	50	100.4	90	110	
Ba	137	3	115	51.139	ppb	0.289	12343	50	102.3	90	110	
Tl	205	3	193	50.890	ppb	1.263	186645	50	101.8	90	110	
(Pb)	206	3	193	51.576	ppb	1.988	62979	50	103.2	90	110	
(Pb)	207	3	193	51.824	ppb	0.722	55467	50	103.6	90	110	
Pb	208	3	193	51.660	ppb	1.050	253829	50	103.3	90	110	
Th	232	3	193	51.776	ppb	1.532	263015	50	103.6	90	110	
U	238	3	193	51.341	ppb	0.836	274467	50	102.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4180945	1.45	3729052	112.12	60	120	
Sc (IS)	45	3	HMI He	628987	0.55	561397	112.04	60	120	
Ge Internal standard	72	2	HMI H2	2200956	2.60	1992040	110.49	60	120	
Ge Internal standard	72	3	HMI He	712747	1.02	651565	109.39	60	120	
In Internal Standard	115	3	HMI He	2592227	0.72	2386538	108.62	60	120	
Ir (IS)	193	3	HMI He	5648567	1.22	5310051	106.37	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	ccb-7567575
Data File Name	278_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012723.b
Acq Date Time	2023-01-28T04:48:06-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	222CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.070	ppb	86.6	3	0.5	
Na	23	3	45	-64.252	ppb	-7.5	24549	25	
Mg	24	3	45	-10.235	ppb	-5.2	257	25	
Al	27	3	45	14.907	ppb	15.6	414	15	
K	39	3	45	-20.641	ppb	-111.5	16199	50	
V	51	3	72	-0.219	ppb	-11.6	98	1	
Cr	52	3	72	-0.014	ppb	-1373.1	1474	1	
Mn	55	3	72	-0.158	ppb	-89.8	178	0.5	
Co	59	3	72	0.016	ppb	89.0	47	0.5	
Ni	60	3	72	0.062	ppb	192.4	142	1	
Cu	63	3	72	-0.005	ppb	-666.3	288	1	
Zn	66	3	72	-0.121	ppb	-89.8	183	5	
As	75	3	72	-0.058	ppb	-126.8	28	1	
Se	78	2	72	-0.056	ppb	-64.6	2	1	
(Se)	78	3	72	-0.453	ppb	-446.2	12	1	
Sr	88	3	72	-0.693	ppb	-4.8	50	0.5	
Mo	95	3	115	0.027	ppb	210.5	58	0.5	
Ag	107	3	115	0.018	ppb	69.0	45	1	
Cd	111	3	115	0.047	ppb	137.5	12	0.5	
Sn	120	3	115	0.411	ppb	20.5	888	1	
Sb	121	3	115	-0.013	ppb	-402.9	103	0.6	
Ba	137	3	115	0.066	ppb	54.5	80	0.5	
Tl	205	3	193	-0.003	ppb	-54.2	197	0.1	
(Pb)	206	3	193	0.063	ppb	65.3	207	1	
(Pb)	207	3	193	0.030	ppb	121.3	370	1	
Pb	208	3	193	0.065	ppb	10.5	1066	0.5	
Th	232	3	193	0.250	ppb	36.7	6088	1	
U	238	3	193	0.023	ppb	84.3	1716	0.5	

QC ISTD Table

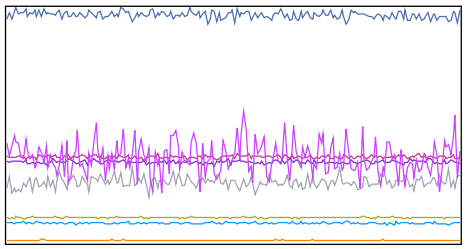
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4081314	2.99	3729052	109.45	60	120	
Sc (IS)	45	3	HMI He	617754	0.68	561397	110.04	60	120	
Ge Internal standard	72	2	HMI H2	2155295	1.48	1992040	108.20	60	120	
Ge Internal standard	72	3	HMI He	710573	0.78	651565	109.06	60	120	
In Internal Standard	115	3	HMI He	2560953	0.44	2386538	107.31	60	120	
Ir (IS)	193	3	HMI He	5627747	0.54	5310051	105.98	60	120	

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/30/2023 10:32:22 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012923.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	20000	4443	4430	1.922
2	59	50000	4313	4319	1 773
3	63	20000	111	111	9 171
4	70	1000	207	188	8.225
5	80	2000000	546691	546872	0.285
6	89	20000	6639	6609	1.666
7	115	20000	6672	6861	1.832
8	118	10000	97	98	10.679
9	137	10000	835	833	3.564
10	140	20000	7226	7297	1.604
11	205	50000	5486	5322	2.042
12	6	5000	4938	4842	1.526
13	70/140	10	2.865 %	2.571 %	8.379
14	156/140	1	0 388 %	0 363 %	18.700

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-50 V
Extract 2	175 0 V	Q1 Exit		Def ect	11 8 V
Omega Bias	90 V	Cel Focus		P ate Bias	35 V
Omega Lens	7.7 V	Cel Entrance	30 V		

Cell Parameters

Use Gas	No	3rd Gas F ow		Axia Acce eration	
He F ow	0.0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0 0 mL/min	OctP Bias	8 0 V	Energy Discrimination	5 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	-3 0 V
Mass Offset	123	Axis Offset	0.06		

Torch

Current Signal

Torch H	0 2 mm	Torch V	0 2 mm		

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

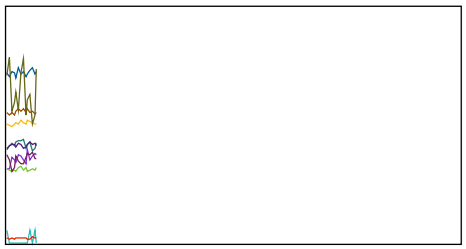
Name	Value	Unit
F/BK Press	2.58E+2	Pa
Ana yzer Press	8 53E 5	Pa
Reflected Power	1	W
Forward Power	1600	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/30/2023 10:32:51 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012923.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	200	101	112	10 647
2	9	500	187	178	6 645
3	59	1000	743	675	4 751
4	63	500	5	7	39 791
5	70	200	74	73	6.543
6	78	20	0	0	198 714
7	89	10000	5024	5081	1.531
8	115	20000	6404	6241	2 224
9	118	5000	90	95	12 124
10	137	2000	846	835	3.513
11	140	10000	4140	4139	2.317
12	205	10000	5548	5558	1.582
13	238	10000	7255	7222	1.857
14	70/140	5	1 787 %	1 771 %	6 461
15	156/140	2	1.473 %	1.277 %	14 787

Integration Time [sec] 0 1

Tune Parameters

Plasma Parameters

P asma Mode		Nebulizer Gas	0.64 L/min	Dilution Gas	0.26 L/min
RF Power	1600 W	Option Gas		Auxi iary Gas	0.90 L/min
RF Matching	1 40 V	Nebulizer Pump	0 10 rps	P asma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance		Cel Exit	60 V
Extract 2	175 0 V	Q1 Exit		Def ect	1 4 V
Omega Bias	90 V	Cel Focus		P ate Bias	60 V
Omega Lens	8 2 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	0 0 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	5 0 mL/min	OctP Bias	18.0 V	Energy Discrimination	3 0 V

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Current Signal

Torch

Torch H	0 2 mm	Torch V	-0 2 mm		

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

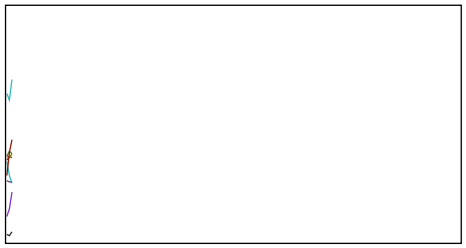
Name	Value	Unit
F/BK Press	2.66E+2	Pa
Ana yzer Press	4.89E 4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

Current Signal

Operator Name	Denver Meta s
Acq. Date-Time	1/30/2023 10:33:03 AM
Instrument Name	G8422A SG22251392
Batch Folder	D:\Agilent\ICPMH\1\DATA\79_012923.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	53	100	25	29	15 802
2	59	5000	1334	1389	3 435
3	66	500	53	51	8 547
4	70	100	52	47	9.750
5	78	20	2	1	173 205
6	115	5000	1795	1785	2.492
7	118	1000	41	32	26 304
8	137	1000	256	255	0 815
9	140	10000	3758	3659	2.567
10	205	10000	3711	3733	2.627
11	51/59	5	2.175 %	1.831 %	21 172
12	70/140	2	1.384 %	1.283 %	7.151
13	156/140	1	0.213 %	0.154 %	34 388

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebulizer Gas	0 64 L/min	Dilution Gas	0 26 L/min
RF Power	1600 W	Option Gas	---	Auxi iary Gas	0.90 L/min
RF Matching	1.40 V	Nebulizer Pump	0.10 rps	P asma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cel Exit	-60 V
Extract 2	180 0 V	Q1 Exit		Def ect	1 2 V
Omega Bias	85 V	Cel Focus		P ate Bias	55 V
Omega Lens	8.3 V	Cel Entrance	40 V		

Cell Parameters

Use Gas	Yes	3rd Gas F ow		Axia Acce eration	
He F ow	4.3 mL/min	4th Gas F ow		OctP RF	200 V
H2 F ow	0.0 mL/min	OctP Bias	18 0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0.06		

Torch

Torch H	0.2 mm	Torch V	0.2 mm

Current Signal

EM

Discriminator	2 9 mV	Ana og HV	2114 V	Pu se HV	969 V

Meter

Name	Value	Unit
F/BK Press	2 60E+2	Pa
Ana yzer Press	3 25E-4	Pa
Reflected Power	1	W
Forward Power	1599	W
Tune/ISTD Va ve		

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 10:40:47 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

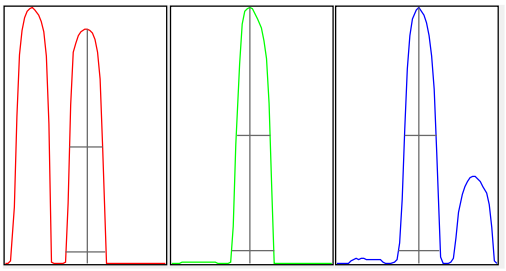
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2634	26339 72	0.589	5 000	
89		3901	39009 55	0.350	5 000	
205		2979	29792 71	0.965	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2649	2617	2627	2652	2625
89	3910	3883	3909	3913	3890
205	2948	2976	3016	3001	2956

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4379.31	7.05	6 90 7 10	
89	6585.86	89.00	88 90 89.10	
205	5251 74	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.736	0.900	
89	0.61	0.776	0.900	
205	0.59	0.769	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 7 V	Def ect	11 8 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	90 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

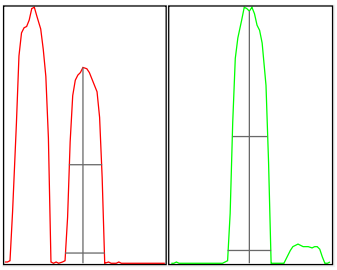
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		70	699 53	2 468	5.000	
9		108	1080 66	1.792	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	70	70	68	70	73
9	105	109	109	108	109

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	120 56	7 00	6.90 - 7.10	
9	174 11	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.735	0.900	
9	0.64	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 2 V	Def ect	-1 4 V
Extract 2	-175 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		134	1339.10	0 994	5.000	
25		20	202 50	5 238	5.000	Fai
26		25	247.40	2.927	5 000	
59		819	8193 45	0.762	5 000	
103		2265	22646.90	0 444	5.000	
115		1028	10275.37	0 640	5.000	
205		2107	21068.31	0 977	5.000	
206		691	6908 96	0.556	5 000	
207		597	5974 14	1.338	5 000	

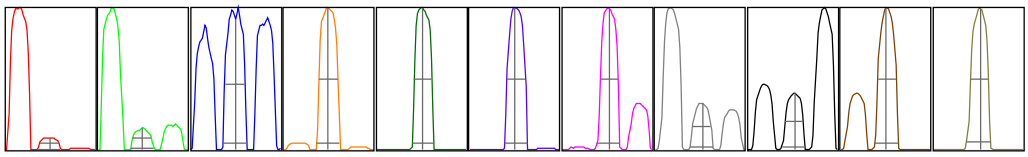
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1466	14657.32	0 970	5.000	
238		3042	30419.57	1 072	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	134	133	136	133	134
25	22	20	20	19	21
26	24	25	25	26	24
59	825	824	813	812	823
103	2249	2262	2275	2266	2271
115	1018	1031	1024	1032	1033
205	2101	2096	2093	2101	2143
206	690	688	693	688	697
207	587	596	603	608	593
208	1446	1468	1474	1483	1458
238	2985	3044	3060	3065	3057

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	224.37	24.00	23 90 24.10	
25	35.20	25.00	24 90 25.10	
26	37 00	26 00	25.90 - 26 10	
59	1329 64	59 00	58.90 - 59 10	
103	3952.18	103.05	102.90 103.10	
115	1763.66	115.05	114.90 115.10	
205	3657.16	205.10	204.90 205.10	
206	1202 37	206 10	205 90 - 206 10	
207	1029 37	207 10	206 90 - 207 10	
208	2602.83	208.05	207.90 208.10	
238	5289.50	238.10	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 764	0 900	
25	0.64	0.786	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.66	0.788	0.900	
59	0.64	0.779	0.900	
103	0 59	0 735	0 900	
115	0 60	0 737	0 900	
205	0.59	0.761	0.900	
206	0.60	0.754	0.900	
207	0.60	0.780	0.900	
208	0 59	0 774	0 900	
238	0 60	0 801	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.3 V	Def ect	1.2 V
Extract 2	180.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	85 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 10:49:22 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

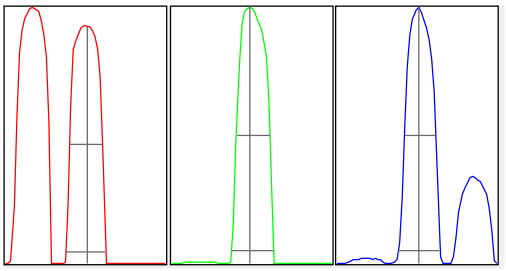
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2588	25878 01	0.463	5 000	
89		3849	38493 77	0.344	5 000	
205		2943	29430 65	0.534	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2598	2581	2603	2580	2577
89	3869	3835	3841	3848	3853
205	2961	2920	2954	2941	2941

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4305.44	7.05	6 90 7 10	
89	6492.57	89.00	88 90 89.10	
205	5225 47	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.736	0.900	
89	0.61	0.776	0.900	
205	0.59	0.770	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	7 7 V	Def ect	11 8 V
Extract 2	-175.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	90 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

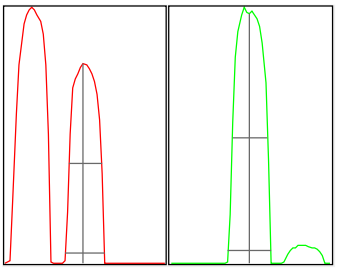
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		68	683 13	0 733	5.000	
9		108	1083 26	2.855	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	69	68	68	69	68
9	105	112	106	107	112

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	117 36	7 00	6.90 - 7.10	
9	172 21	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.736	0.900	
9	0.64	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 2 V	Def ect	-1 4 V
Extract 2	-175 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		131	1309.59	2 696	5.000	
25		20	195 30	5 487	5.000	Fai
26		24	238.20	4.440	5 000	
59		824	8241 09	1.236	5 000	
103		2272	22715.57	1 024	5.000	
115		1035	10349.94	1 274	5.000	
205		2099	20986.51	1 365	5.000	
206		700	7004 84	1.190	5 000	
207		603	6033 08	0.624	5 000	

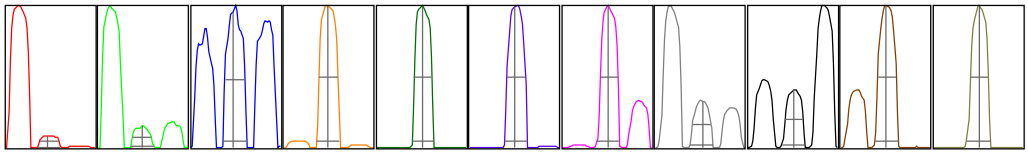
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1467	14665.23	0 623	5.000	
238		3050	30501.00	0 968	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	130	128	128	133	136
25	19	20	18	21	20
26	25	24	24	22	23
59	817	811	836	830	827
103	2276	2233	2270	2293	2286
115	1029	1017	1033	1052	1043
205	2087	2059	2106	2137	2105
206	695	702	691	702	713
207	605	602	598	608	603
208	1452	1474	1470	1464	1473
238	3019	3056	3097	3035	3044

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	217.02	23.95	23 90 24.10	
25	33.90	25.00	24 90 25.10	
26	38 75	25 95	25.90 - 26 10	
59	1329 34	59 00	58.90 - 59 10	
103	3993.20	103.05	102.90 103.10	
115	1751.10	115.05	114.90 115.10	
205	3688.65	205.05	204.90 205.10	
206	1218 49	206 10	205 90 - 206 10	
207	1035 98	207 05	206 90 - 207 10	
208	2558.33	208.05	207.90 208.10	
238	5308.04	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 759	0 900	
25	0.64	0.780	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.787	0.900	
59	0.64	0.779	0.900	
103	0 59	0 735	0 900	
115	0 60	0 738	0 900	
205	0.59	0.762	0.900	
206	0.60	0.760	0.900	
207	0.60	0.780	0.900	
208	0 59	0 775	0 900	
238	0 60	0 802	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.3 V	Def ect	1.2 V
Extract 2	180.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	85 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 11:26:11 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

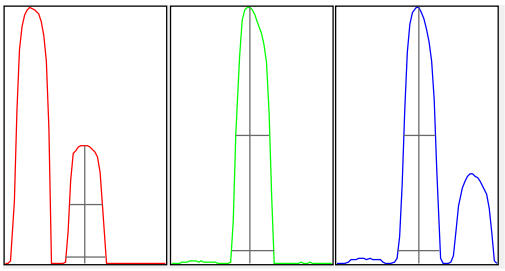
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2150	21501 82	0.997	5 000	
89		3508	35079 83	0.178	5 000	
205		2988	29882 52	0.783	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2164	2168	2164	2136	2120
89	3515	3507	3514	3499	3506
205	2985	2999	2988	2952	3016

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3575.10	7.00	6 90 7 10	
89	5950.35	89.00	88 90 89.10	
205	5227 54	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.61	0.777	0.900	
205	0.59	0.777	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	9 6 V	Def ect	11 4 V
Extract 2	-180.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

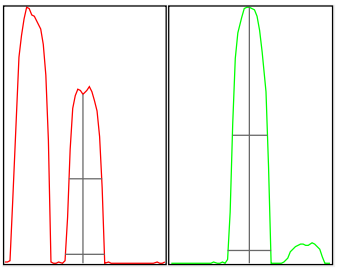
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		68	681 03	1 321	5.000	
9		98	983.45	1.791	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	67	69	68	69	68
9	99	97	101	97	97

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	111 75	7 00	6.90 - 7.10	
9	160 36	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.737	0.900	
9	0.64	0.784	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 5 V	Def ect	-0 6 V
Extract 2	-190 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	100 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		144	1441.31	1 386	5.000	
25		21	214 40	5 637	5.000	Fai
26		27	268.80	3.963	5 000	
59		800	8003 98	1.549	5 000	
103		2199	21994.83	1 358	5.000	
115		1017	10171.81	1 280	5.000	
205		1990	19896.70	1 226	5.000	
206		670	6701 69	0.746	5 000	
207		584	5838 74	0.931	5 000	

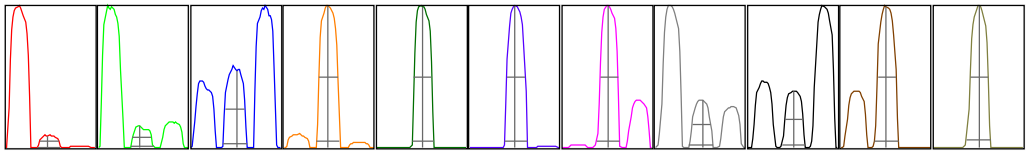
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1422	14219.56	1 026	5.000	
238		2855	28545.23	0 575	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	145	146	141	144	145
25	21	21	22	20	23
26	26	26	26	28	28
59	789	797	793	821	803
103	2216	2196	2166	2241	2179
115	1025	997	1030	1020	1014
205	1979	1978	1962	2024	2004
206	674	674	662	671	670
207	581	576	587	590	586
208	1413	1418	1405	1434	1440
238	2843	2840	2848	2879	2864

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	232.42	23.95	23 90 24.10	
25	36.35	24.90	24 90 25.10	
26	41 50	26 05	25.90 - 26 10	
59	1300 56	59 00	58.90 - 59 10	
103	3810.17	103.05	102.90 103.10	
115	1738.03	115.05	114.90 115.10	
205	3435.34	205.05	204.90 205.10	
206	1140 32	206 10	205 90 - 206 10	
207	983 58	207 05	206 90 - 207 10	
208	2450.17	208.05	207.90 208.10	
238	4912.52	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 757	0 900	
25	0.63	0.779	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.786	0.900	
59	0.64	0.780	0.900	
103	0 59	0 736	0 900	
115	0 60	0 739	0 900	
205	0.60	0.777	0.900	
206	0.60	0.777	0.900	
207	0.61	0.783	0.900	
208	0 60	0 785	0 900	
238	0 60	0 814	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.1 V	Def ect	1.2 V
Extract 2	170.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	80 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 11:39:47 AM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

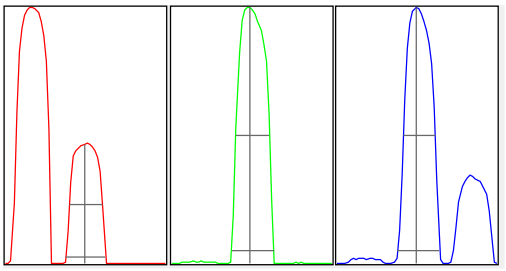
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2130	21296 75	0.275	5 000	
89		3501	35012 57	0.555	5 000	
205		3018	30180 55	0.834	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2137	2133	2128	2121	2129
89	3500	3496	3473	3524	3514
205	2990	3036	3016	3050	2998

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3553.14	7.00	6 90 7 10	
89	5906.97	89.00	88 90 89.10	
205	5278 45	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.778	0.900	
205	0.59	0.781	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	9 6 V	Def ect	11 4 V
Extract 2	-180.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm

[HMI H2]

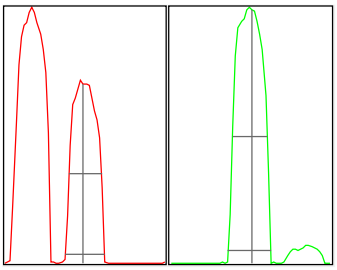
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		68	678 33	2 341	5.000	
9		101	1011 66	2.025	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	70	66	68	68	67
9	99	102	104	101	100

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	117 31	7 00	6.90 - 7.10	
9	165 51	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.738	0.900	
9	0.63	0.781	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 5 V	Def ect	-0 6 V
Extract 2	-190 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	100 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.2 mm	Torch V	0 2 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		142	1423.61	1 440	5.000	
25		21	210 80	7 628	5.000	Fai
26		28	280.20	3.864	5 000	
59		806	8059 11	0.386	5 000	
103		2226	22259.94	0 880	5.000	
115		1023	10232.20	0 843	5.000	
205		1998	19981.19	1 254	5.000	
206		676	6760 12	1.130	5 000	
207		588	5883 66	0.476	5 000	

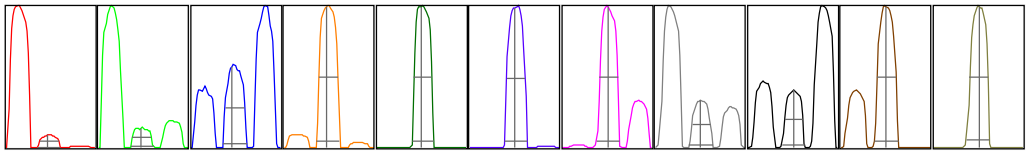
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1429	14285.05	1 164	5.000	
238		2886	28855.72	0 769	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	144	142	140	141	145
25	22	20	19	22	22
26	30	28	27	28	27
59	804	810	806	807	803
103	2230	2249	2201	2211	2238
115	1018	1038	1016	1022	1022
205	2010	2034	1968	1985	1993
206	679	681	663	678	679
207	585	590	589	586	591
208	1447	1423	1405	1425	1442
238	2878	2901	2850	2903	2896

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	239.22	23.95	23 90 24.10	
25	33.70	24.95	24 90 25.10	
26	45 85	25 90	25.90 - 26 10	
59	1290 00	58 95	58.90 - 59 10	
103	3852.64	103.00	102.90 103.10	
115	1729.92	115.05	114.90 115.10	
205	3465.53	205.05	204.90 205.10	
206	1158 93	206 05	205 90 - 206 10	
207	1007 75	207 05	206 90 - 207 10	
208	2463.24	208.05	207.90 208.10	
238	4894.30	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 750	0 900	
25	0.65	0.779	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.63	0.784	0.900	
59	0.65	0.781	0.900	
103	0 59	0 736	0 900	
115	0 60	0 739	0 900	
205	0.60	0.778	0.900	
206	0.60	0.779	0.900	
207	0.61	0.760	0.900	
208	0 60	0 786	0 900	
238	0 61	0 781	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.1 V	Def ect	1.2 V
Extract 2	170.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	80 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 2 mm	Torch V	-0.2 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 12:01:31 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

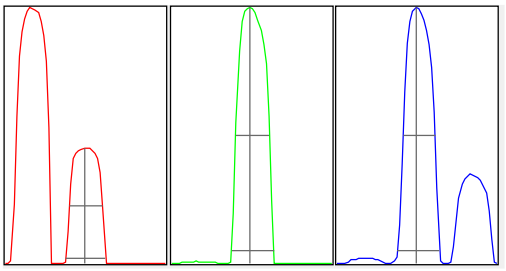
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2104	21035 85	4.166	5 000	
89		3581	35808 30	5.268	5 000	Fai
205		3000	30001 30	5.122	5 000	Fai

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	1958	2085	2152	2154	2168
89	3281	3514	3658	3715	3735
205	2742	2974	3081	3098	3106

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3492.35	7.00	6 90 7 10	
89	6035.50	89.00	88 90 89.10	
205	5225 65	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.783	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	9 6 V	Def ect	11 4 V
Extract 2	-180.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI H2]

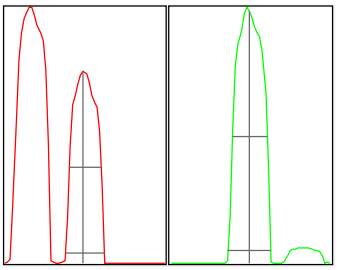
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		73	732 93	4 648	5.000	
9		107	1074 06	1.763	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	76	71	69	76	75
9	110	105	107	107	108

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	131 46	7 00	6.90 - 7.10	
9	178 76	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.60	0.735	0.900	
9	0.63	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 5 V	Def ect	-0 6 V
Extract 2	-190 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	100 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		147	1467.02	1 610	5.000	
25		22	220 80	3 818	5.000	
26		27	265.50	1.397	5 000	
59		838	8377 78	0.894	5 000	
103		2300	22996.78	0 896	5.000	
115		1047	10472.19	1 249	5.000	
205		2039	20391.65	1 035	5.000	
206		696	6962 28	0.628	5 000	
207		607	6073 00	1.331	5 000	

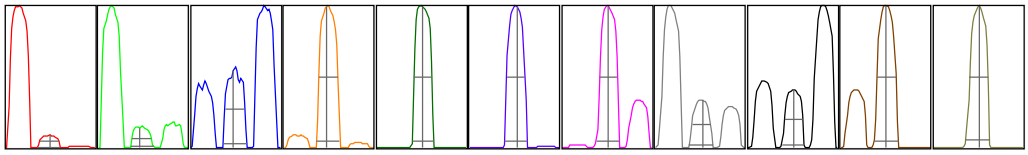
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1469	14691.67	0 286	5.000	
238		2965	29645.36	0 304	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	149	149	146	143	148
25	23	22	23	22	21
26	26	26	27	27	27
59	851	836	835	834	833
103	2332	2307	2290	2288	2281
115	1061	1048	1040	1029	1058
205	2048	2017	2019	2068	2043
206	699	690	695	697	701
207	619	600	608	600	609
208	1474	1462	1470	1470	1470
238	2977	2966	2958	2968	2954

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	244.90	24.00	23 90 24.10	
25	32.94	24.90	24 90 25.10	
26	43 13	25 95	25.90 - 26 10	
59	1362 86	58 95	58.90 - 59 10	
103	3948.39	103.05	102.90 103.10	
115	1793.89	115.10	114.90 115.10	
205	3523.83	205.05	204.90 205.10	
206	1181 55	206 10	205 90 - 206 10	
207	1019 73	207 05	206 90 - 207 10	
208	2513.37	208.05	207.90 208.10	
238	5049.77	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 62	0 741	0 900	
25	0.66	0.783	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.783	0.900	
59	0.65	0.782	0.900	
103	0 60	0 737	0 900	
115	0 60	0 738	0 900	
205	0.60	0.781	0.900	
206	0.60	0.781	0.900	
207	0.61	0.748	0.900	
208	0 60	0 796	0 900	
238	0 61	0 786	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.1 V	Def ect	1.2 V
Extract 2	170.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	80 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 4 mm	Torch V	-0.1 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 12:20:04 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

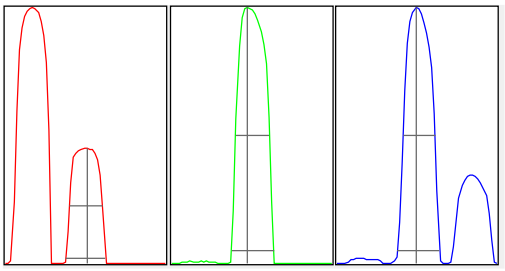
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2084	20841 02	0.522	5 000	
89		3630	36301 65	0.445	5 000	
205		3080	30798 09	0.329	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2094	2078	2095	2084	2069
89	3644	3645	3630	3627	3605
205	3069	3096	3078	3075	3081

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3451.44	7.05	6 90 7 10	
89	6091.67	88.95	88 90 89.10	
205	5382 43	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.779	0.900	
205	0.60	0.783	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	9 6 V	Def ect	11 4 V
Extract 2	-180.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI H2]

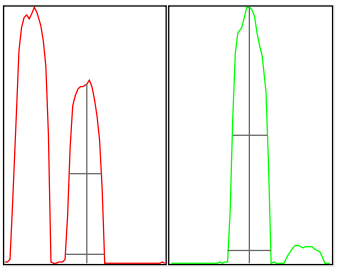
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		68	683 33	5 522	5.000	Fai
9		100	996.35	0.990	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	72	66	68	64	72
9	101	98	100	100	99

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	117 46	7 05	6.90 - 7.10	
9	165 31	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.60	0.737	0.900	
9	0.64	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 5 V	Def ect	-0 6 V
Extract 2	-190 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	100 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		148	1475.52	1 438	5.000	
25		22	220 60	5 329	5.000	Fai
26		27	265.90	5.166	5 000	Fai
59		837	8368 77	0.601	5 000	
103		2303	23027.45	0 396	5.000	
115		1053	10534.27	0 385	5.000	
205		2056	20558.31	0 624	5.000	
206		693	6930 66	1.329	5 000	
207		611	6109 41	1.016	5 000	

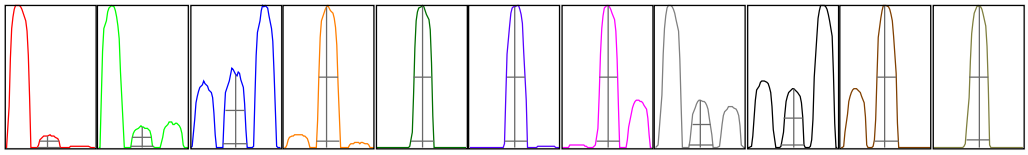
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1466	14664.74	0 638	5.000	
238		2971	29707.67	0 444	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	148	151	145	147	147
25	22	22	23	23	20
26	27	27	28	24	26
59	831	843	837	833	841
103	2302	2304	2289	2304	2314
115	1056	1058	1049	1049	1056
205	2041	2073	2048	2054	2064
206	681	697	694	705	688
207	606	612	620	612	605
208	1465	1482	1457	1467	1462
238	2957	2990	2976	2970	2960

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	243.92	23.95	23 90 24.10	
25	36.45	25.00	24 90 25.10	
26	41 40	26 00	25.90 - 26 10	
59	1355 81	58 95	58.90 - 59 10	
103	4003.47	103.05	102.90 103.10	
115	1784.94	115.05	114.90 115.10	
205	3548.91	205.05	204.90 205.10	
206	1183 20	206 05	205 90 - 206 10	
207	1029 97	207 05	206 90 - 207 10	
208	2500.57	208.00	207.90 208.10	
238	4999.36	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 741	0 900	
25	0.64	0.766	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.785	0.900	
59	0.64	0.782	0.900	
103	0 59	0 768	0 900	
115	0 60	0 739	0 900	
205	0.60	0.780	0.900	
206	0.60	0.781	0.900	
207	0.62	0.748	0.900	
208	0 60	0 793	0 900	
238	0 61	0 785	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.1 V	Def ect	1.2 V
Extract 2	170.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	80 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 4 mm	Torch V	-0.1 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 12:36:49 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

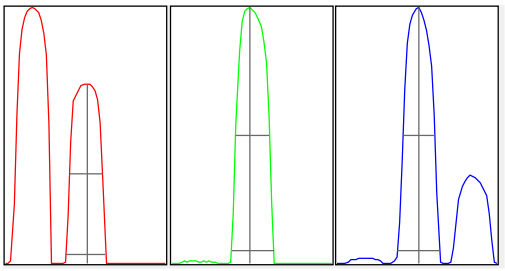
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2396	23963 90	0.538	5 000	
89		3759	37590 74	1.173	5 000	
205		3010	30095 98	0.877	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2387	2397	2381	2402	2414
89	3686	3773	3776	3803	3759
205	2971	3004	3009	3043	3021

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	3984.72	7.05	6 90 7 10	
89	6316.85	89.00	88 90 89.10	
205	5257 36	205 05	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.737	0.900	
89	0.62	0.778	0.900	
205	0.60	0.782	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 7 V	Def ect	12 0 V
Extract 2	-190.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI H2]

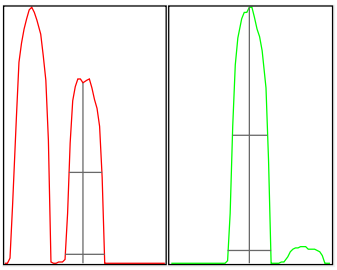
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		70	700 03	2 372	5.000	
9		105	1048 46	2.548	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	71	70	68	69	72
9	107	101	107	105	104

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	116 21	7 00	6.90 - 7.10	
9	173 06	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.62	0.738	0.900	
9	0.64	0.783	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 6 V	Def ect	-1 6 V
Extract 2	-195 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	95 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		141	1407.81	2 028	5.000	
25		20	199 00	5 174	5.000	Fai
26		27	266.20	2.863	5 000	
59		823	8228 75	1.802	5 000	
103		2269	22694.49	0 534	5.000	
115		981	9808.03	1 032	5.000	
205		2048	20483.50	1 076	5.000	
206		692	6924 06	1.322	5 000	
207		602	6018 26	1.013	5 000	

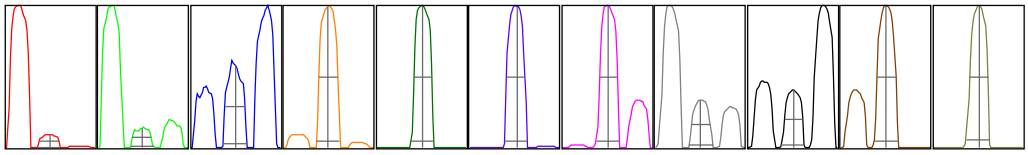
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1467	14671.06	1 278	5.000	
238		2962	29615.91	0 793	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	143	136	142	142	142
25	19	19	20	20	21
26	26	26	26	28	27
59	830	819	822	801	841
103	2282	2262	2258	2262	2283
115	977	994	975	969	988
205	2056	2058	2059	2009	2060
206	692	700	681	686	703
207	611	600	600	595	604
208	1467	1471	1464	1440	1493
238	2966	2960	2973	2923	2985

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	233.17	24.00	23 90 24.10	
25	32.60	25.00	24 90 25.10	
26	43 85	26 00	25.90 - 26 10	
59	1331 34	59 00	58.90 - 59 10	
103	3929.86	103.05	102.90 103.10	
115	1669.74	115.10	114.90 115.10	
205	3518.67	205.05	204.90 205.10	
206	1179 60	206 05	205 90 - 206 10	
207	1023 17	207 05	206 90 - 207 10	
208	2516.00	208.05	207.90 208.10	
238	5030.99	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 750	0 900	
25	0.65	0.775	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.64	0.786	0.900	
59	0.65	0.782	0.900	
103	0 59	0 768	0 900	
115	0 60	0 739	0 900	
205	0.60	0.781	0.900	
206	0.60	0.781	0.900	
207	0.61	0.745	0.900	
208	0 60	0 795	0 900	
238	0 61	0 784	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.7 V	Def ect	0.4 V
Extract 2	175.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 4 mm	Torch V	-0.1 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 12:45:05 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

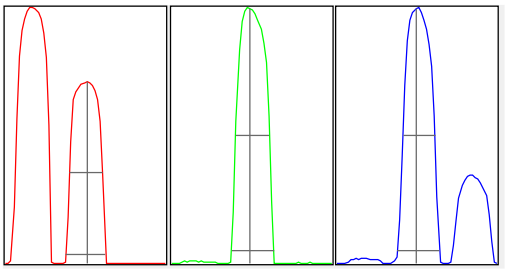
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		2404	24043 16	0.527	5 000	
89		3722	37221 92	0.315	5 000	
205		2993	29928 20	0.755	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2392	2398	2410	2398	2424
89	3719	3727	3738	3722	3705
205	2972	2967	2997	3014	3015

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4007.93	7.05	6 90 7 10	
89	6255.21	89.00	88 90 89.10	
205	5185 62	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.736	0.900	
89	0.62	0.779	0.900	
205	0.60	0.783	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 7 V	Def ect	12 0 V
Extract 2	-190.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI H2]

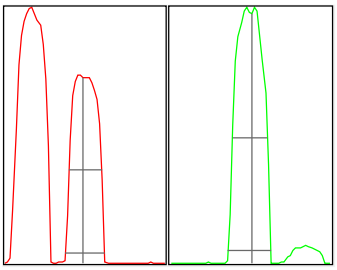
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		70	698 63	2 663	5.000	
9		105	1052 46	2.038	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	69	69	73	69	70
9	106	107	103	108	103

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	116 91	7 00	6.90 - 7.10	
9	169 61	9 05	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.736	0.900	
9	0.64	0.782	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 6 V	Def ect	-1 6 V
Extract 2	-195 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	95 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		139	1391.31	2 956	5.000	
25		20	202 00	3 353	5.000	
26		26	256.50	6.518	5 000	Fai
59		815	8146 19	1.591	5 000	
103		2244	22443.03	0 903	5.000	
115		970	9703.32	2 039	5.000	
205		2024	20235.43	0 925	5.000	
206		684	6838 49	1.671	5 000	
207		597	5967 21	0.948	5 000	

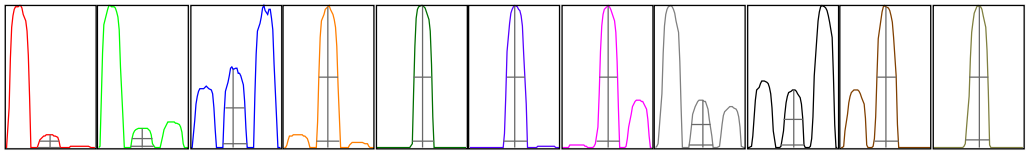
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		1448	14475.67	1 449	5.000	
238		2941	29414.53	0 622	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	146	138	137	136	138
25	20	20	21	21	19
26	24	27	27	27	24
59	823	821	816	822	792
103	2243	2254	2257	2258	2210
115	978	972	981	984	936
205	2018	2020	2033	2049	1998
206	690	685	691	689	664
207	595	601	602	596	588
208	1450	1470	1446	1458	1414
238	2944	2931	2949	2966	2918

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	223.67	24.00	23 90 24.10	
25	31.30	25.00	24 90 25.10	
26	40 80	25 95	25.90 - 26 10	
59	1324 63	59 00	58.90 - 59 10	
103	3869.63	103.05	102.90 103.10	
115	1658.43	115.05	114.90 115.10	
205	3492.15	205.05	204.90 205.10	
206	1160 28	206 10	205 90 - 206 10	
207	1006 65	207 05	206 90 - 207 10	
208	2464.50	208.05	207.90 208.10	
238	4959.50	238.05	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 754	0 900	
25	0.66	0.784	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.65	0.784	0.900	
59	0.64	0.782	0.900	
103	0 59	0 736	0 900	
115	0 60	0 768	0 900	
205	0.60	0.781	0.900	
206	0.61	0.781	0.900	
207	0.62	0.746	0.900	
208	0 60	0 800	0 900	
238	0 61	0 785	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.7 V	Def ect	0.4 V
Extract 2	175.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 4 mm	Torch V	-0.1 mm

US EPA Tune Check Report

Operator Name	Denver Metals
Acq/Data Batch	D:\Agi ent\ICPMH\1\DATA\79 012923.b
Acq. Date-Time	1/30/2023 12:59:58 PM
Report Comment	---
Instrument Name	G8422A SG22251392

[No Gas]

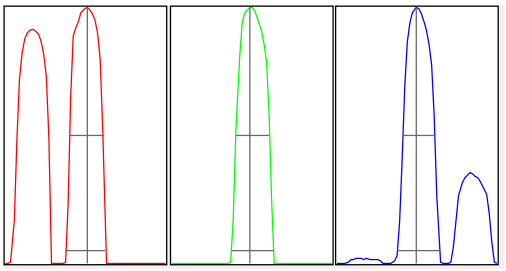
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		4534	45338 11	2.010	5 000	
89		7458	74577 90	2.912	5 000	
205		6102	61017 09	3.371	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	4434	4444	4552	4621	4618
89	7144	7317	7578	7611	7639
205	5819	5954	6228	6202	6305

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	7589.53	7.05	6 90 7 10	
89	12646.09	89.00	88 90 89.10	
205	10624 90	205 00	204 90 - 205 10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (F ag)
7	0.62	0.735	0.900	
89	0.61	0.777	0.900	
205	0.60	0.783	0.900	

Integration Time [sec] 0 1

Acquisition Time [sec] 92.3700000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

P asma Mode --- Nebu izer Gas Di ution Gas 0.26 L/min

US EPA Tune Check Report

RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 7 V	Def ect	12 0 V
Extract 2	-190.0 V	Ce l Entrance	-30 V	Plate Bias	-35 V
Omega Bias	85 V	Ce l Exit	50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow		Energy Discriminatio	5.0 V
He Flow	0 0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	3.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm

[HMI H2]

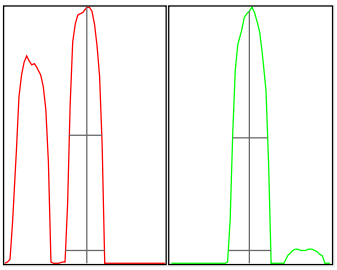
Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
7		137	1374.61	1 896	5.000	
9		224	2243 77	2.332	5 000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	139	133	137	139	139
9	226	216	229	228	224

Integration Time [sec] 0 1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	234 87	7 05	6.90 - 7.10	
9	369 10	9 00	8.90 - 9.10	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
7	0.61	0.734	0.900	
9	0.63	0.780	0.900	

Integration Time [sec]	0 1
Acquisition Time [sec]	51.09
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode	---	Nebu izer Gas		Di ution Gas	0.26 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15.0 L/min
Samp e Depth	8 0 mm	S/C Temp			

Lens Parameters

Extract 1	0 0 V	Omega Lens	8 6 V	Def ect	-1 6 V
Extract 2	-195 0 V	Ce l Entrance	-40 V	Plate Bias	-60 V
Omega Bias	95 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow		Energy Discriminatio	3 0 V
He Flow	0 0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5 0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9997	QP Bias	15.0 V
Mass Offset	123	Axis Offset	0.06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0.4 mm	Torch V	0 1 mm		

[HMI He]

Sensitivity

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
24		244	2443.42	1 650	5.000	
25		36	361 51	3 000	5.000	
26		44	444.51	2.364	5 000	
59		1866	18664 99	2.323	5 000	
103		5176	51756.19	1 528	5.000	
115		2144	21443.97	1 798	5.000	
205		4603	46030.56	1 418	5.000	
206		1553	15531 19	1.425	5 000	
207		1355	13551 97	1.751	5 000	

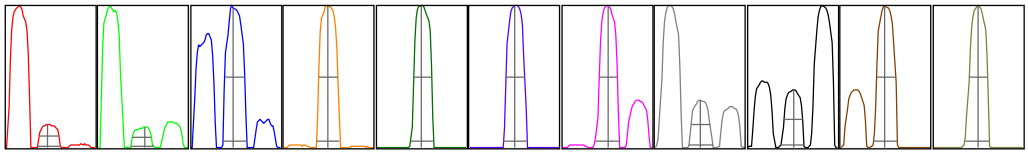
US EPA Tune Check Report

Mass	Conc. [ug/]	Count	CPS	RSD%	RSD% (Required)	RSD% (F ag)
208		3275	32749.15	1 434	5.000	
238		6734	67342.45	0 922	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	241	249	240	248	244
25	37	35	36	35	38
26	43	44	46	45	45
59	1837	1831	1838	1922	1905
103	5116	5144	5098	5264	5257
115	2130	2112	2109	2184	2187
205	4598	4571	4514	4671	4662
206	1537	1539	1540	1561	1589
207	1329	1365	1331	1376	1375
208	3278	3242	3216	3308	3331
238	6714	6698	6685	6735	6840

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	403.16	23.95	23 90 24.10	
25	58.90	25.10	24 90 25.10	
26	72 60	25 95	25.90 - 26 10	
59	2984 11	59 00	58.90 - 59 10	
103	8870.25	103.00	102.90 103.10	
115	3615.02	115.05	114.90 115.10	
205	7803.49	205.05	204.90 205.10	
206	2603 12	206 05	205 90 - 206 10	
207	2246 39	207 05	206 90 - 207 10	
208	5541.49	208.00	207.90 208.10	
238	11247.59	238.00	237.90 238.10	

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
24	0 63	0 745	0 900	
25	0.64	0.774	0.900	

US EPA Tune Check Report

Mass	W 50%	W 5%	W 5% (Required)	W 5% (F ag)
26	0.64	0.785	0.900	
59	0.65	0.784	0.900	
103	0 60	0 773	0 900	
115	0 61	0 774	0 900	
205	0.61	0.805	0.900	
206	0.62	0.784	0.900	
207	0.62	0.749	0.900	
208	0 61	0 778	0 900	
238	0 62	0 817	0 900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235.339999999997
Y Axis	Linear

Tune Parameters

Plasma Parameters

P asma Mode		Nebu izer Gas		Di ution Gas	0 26 L/min
RF Power	1600 W	Option Gas		Auxiliary Gas	0 90 L/min
RF Matching		Nebu izer Pump		Plasma Gas	15 0 L/min
Samp e Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.7 V	Def ect	0.4 V
Extract 2	175.0 V	Ce l Entrance	40 V	Plate Bias	55 V
Omega Bias	90 V	Ce l Exit	60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discriminatio	3 0 V
He Flow	4.3 mL/min	OctP Bias	18 0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0 9997	QP Bias	-15 0 V
Mass Offset	123	Axis Offset	0 06		

Hardware Settings

EM

Discriminator	2.9 mV	Ana og HV	2114 V	Pulse HV	969 V

Torch

Torch H	0 4 mm	Torch V	-0.1 mm

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
6		0.078713	☑
9		0.085709	☑
23		0.088098	☑
24		0.091682	☑
27		0.092051	☑
39		0.096089	☑
45		0.095512	☑
48		0.098730	☑
51		0.099466	☑
52		0.097939	☑
55		0.102210	☑
59		0.099389	☑
60		0.102452	☑
63		0.102529	☑
66		0.102545	☑
72		0.103109	☑
75		0.102296	☑
88		0.106016	☑
98		0.101553	☑
102		0.107067	☑
106		0.102605	☑
114		0.108549	☑
115		0.107555	☑

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
118		0.103382	☑
121		0.108698	☑
138		0.109236	☑
175		0.112498	☑
193		0.111704	☑
205		0.113498	☑
208		0.114263	☑
209		0.110620	☑
232		0.105607	☑
238		0.113597	☑

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:12:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:14:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:16:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:18:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:20:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:22:24-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	007SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:24:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	008SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:26:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	009SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:28:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	010SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:30:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	011SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:32:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	012SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:33:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	013SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:35:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	014CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-30T13:37:45-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	21702	0.02
Mg	24	45	3	HMI He	77	80.32
Al	27	45	3	HMI He	30	192.26
K	39	45	3	HMI He	12859	0.06
Ca	40	45	2	HMI H2	7633	0.06
V	51	72	3	HMI He	165	8.42
Cr	52	72	3	HMI He	1338	0.60
Mn	55	72	3	HMI He	180	3.09
Fe	56	72	2	HMI H2	4278	0.05
Co	59	72	3	HMI He	38	78.61
Ni	60	72	3	HMI He	255	3.08
Cu	63	72	3	HMI He	252	1.21
Zn	66	72	3	HMI He	82	22.91
As	75	72	3	HMI He	18	227.24
Se	78	72	2	HMI H2	3	1623.80
(Se)	78	72	3	HMI He	18	227.24
Sr	88	72	3	HMI He	7	649.52
Mo	95	115	3	HMI He	98	5.98
Ag	107	115	3	HMI He	18	85.98
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	1903	0.61
Sb	121	115	3	HMI He	105	9.07
Ba	137	115	3	HMI He	18	171.96
Tl	205	193	3	HMI He	715	0.84
(Pb)	206	193	3	HMI He	232	1.08
(Pb)	207	193	3	HMI He	237	3.14
Pb	208	193	3	HMI He	998	0.43
Th	232	193	3	HMI He	62	64.88
U	238	193	3	HMI He	235	5.51

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	2202	15.64
Sc (IS)	45	3	HMI He	80	25.00
Ge Internal standard	72	2	HMI H2	153316	2.48
Ge Internal standard	72	3	HMI He	54908	2.24
In Internal Standard	115	3	HMI He	7215	5.28
Ir (IS)	193	3	HMI He	10535	14.52

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	015CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T13:39:38-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	7	1718.96
Na	23	45	3	HMI He	14827184	0.00
Mg	24	45	3	HMI He	1568410	0.00
Al	27	45	3	HMI He	320	7.62
K	39	45	3	HMI He	1079502	0.00
V	51	72	3	HMI He	198	5.73
Cr	52	72	3	HMI He	1509	0.15
Mn	55	72	3	HMI He	228	2.93
Co	59	72	3	HMI He	68	16.36
Ni	60	72	3	HMI He	210	6.90
Cu	63	72	3	HMI He	340	3.12
Zn	66	72	3	HMI He	317	5.05
As	75	72	3	HMI He	32	76.17
Se	78	72	2	HMI H2	3	3247.60
(Se)	78	72	3	HMI He	20	216.51
Sr	88	72	3	HMI He	451	3.67
Mo	95	115	3	HMI He	112	6.13
Ag	107	115	3	HMI He	52	39.01
Cd	111	115	3	HMI He	8	415.69
Sn	120	115	3	HMI He	2214	0.22
Sb	121	115	3	HMI He	135	9.90
Ba	137	115	3	HMI He	148	7.31
Tl	205	193	3	HMI He	463	0.36
(Pb)	206	193	3	HMI He	302	6.03
(Pb)	207	193	3	HMI He	287	4.88
Pb	208	193	3	HMI He	1186	0.38
Th	232	193	3	HMI He	160	5.86
U	238	193	3	HMI He	406	0.35

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2626	14.80	2202	119.24	60	120	
Sc (IS)	45	3	HMI He	83	6.93	80	104.17	60	120	
Ge Internal standard	72	2	HMI H2	136864	1.96	153316	89.27	60	120	
Ge Internal standard	72	3	HMI He	45814	3.63	54908	83.44	60	120	
In Internal Standard	115	3	HMI He	5063	5.01	7215	70.18	60	120	
Ir (IS)	193	3	HMI He	6799	4.83	10535	64.53	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	016CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T13:41:31-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	6477	0.05
Na	23	45	3	HMI He	324492	0.00
Mg	24	45	3	HMI He	151708	0.00
Al	27	45	3	HMI He	52661	0.00
K	39	45	3	HMI He	118799	0.00
V	51	72	3	HMI He	72632	0.00
Cr	52	72	3	HMI He	97114	0.00
Mn	55	72	3	HMI He	49109	0.00
Co	59	72	3	HMI He	155244	0.00
Ni	60	72	3	HMI He	44474	0.00
Cu	63	72	3	HMI He	121616	0.00
Zn	66	72	3	HMI He	19484	0.01
As	75	72	3	HMI He	12701	0.00
Se	78	72	2	HMI H2	6547	0.02
(Se)	78	72	3	HMI He	746	0.40
Sr	88	72	3	HMI He	120952	0.00
Mo	95	115	3	HMI He	62208	0.00
Ag	107	115	3	HMI He	213888	0.00
Cd	111	115	3	HMI He	29583	0.01
Sn	120	115	3	HMI He	90132	0.00
Sb	121	115	3	HMI He	85713	0.00
Ba	137	115	3	HMI He	28113	0.00
Tl	205	193	3	HMI He	470700	0.00
(Pb)	206	193	3	HMI He	161036	0.00
(Pb)	207	193	3	HMI He	140124	0.00
Pb	208	193	3	HMI He	641025	0.00
Th	232	193	3	HMI He	650822	0.00
U	238	193	3	HMI He	690734	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2313	10.81	2202	105.00	60	120	
Sc (IS)	45	3	HMI He	143	26.41	80	179.17	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	164734	2.00	153316	107.45	60	120	
Ge Internal standard	72	3	HMI He	56571	0.90	54908	103.03	60	120	
In Internal Standard	115	3	HMI He	5851	3.68	7215	81.10	60	120	
Ir (IS)	193	3	HMI He	4876	7.67	10535	46.28	60	120	IS Failed

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	017_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:43:24-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	014CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.753	ppb	8.029	2527	40	94.4	90	110	
Na	23	3	45	16606.837	ppb	31.277	1927680	12800	129.7	90	110	>+\-10%
Mg	24	3	45	5850.993	ppb	31.329	356023	4800	121.9	90	110	>+\-10%
Al	27	3	45	1608.724	ppb	29.729	20272	800	201.1	90	110	>+\-10%
K	39	3	45	6060.988	ppb	32.851	261671	4800	126.3	90	110	>+\-10%
Ca	40	2	45	5943.690	ppb	5.583	3295479	4800	123.8	90	110	>+\-10%
V	51	3	72	40.059	ppb	3.641	28922	40	100.1	90	110	
Cr	52	3	72	39.926	ppb	1.459	39231	40	99.8	90	110	
Mn	55	3	72	41.099	ppb	0.784	20103	40	102.7	90	110	
Fe	56	2	72	847.161	ppb	2.059	1449209	800	105.9	90	110	
Co	59	3	72	39.943	ppb	2.624	61454	40	99.9	90	110	
Ni	60	3	72	38.822	ppb	1.634	17262	40	97.1	90	110	
Cu	63	3	72	39.382	ppb	2.704	47597	40	98.5	90	110	
Zn	66	3	72	78.621	ppb	7.145	15191	80	98.3	90	110	
As	75	3	72	40.094	ppb	5.380	5055	40	100.2	90	110	
Se	78	2	72	44.369	ppb	4.011	2681	40	110.9	90	110	>+\-10%
(Se)	78	3	72	41.119	ppb	15.070	315	40	102.8	90	110	
Sr	88	3	72	120.281	ppb	4.042	72043	120	100.2	90	110	
Mo	95	3	115	43.308	ppb	4.908	25286	40	108.3	90	110	
Ag	107	3	115	83.387	ppb	2.659	167241	80	104.2	90	110	
Cd	111	3	115	41.203	ppb	3.971	11426	40	103.0	90	110	
Sn	120	3	115	43.683	ppb	4.164	37701	40	109.2	90	110	
Sb	121	3	115	43.454	ppb	5.511	34942	40	108.6	90	110	
Ba	137	3	115	42.583	ppb	5.915	11221	40	106.5	90	110	
Tl	205	3	193	41.579	ppb	4.865	188995	40	103.9	90	110	
(Pb)	206	3	193	40.524	ppb	7.572	62868	40	101.3	90	110	
(Pb)	207	3	193	40.704	ppb	4.870	55049	40	101.8	90	110	
Pb	208	3	193	41.112	ppb	6.071	254052	40	102.8	90	110	
Th	232	3	193	83.078	ppb	5.014	521379	80	103.8	90	110	
U	238	3	193	42.802	ppb	6.070	284999	40	107.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2059	6.00	2202	93.48	60	120	
Sc (IS)	45	3	HMI He	70	37.80	80	87.50	60	120	
Ge Internal standard	72	2	HMI H2	151920	1.53	153316	99.09	60	120	
Ge Internal standard	72	3	HMI He	56040	0.55	54908	102.06	60	120	
In Internal Standard	115	3	HMI He	5486	5.10	7215	76.04	60	120	
Ir (IS)	193	3	HMI He	4692	7.23	10535	44.54	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	018SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:51:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.070	ppb	0.070	102.45	5	2000	
Na	23	3	45	-41.450	ppb	-41.450	-33.01	18664	400000	
Mg	24	3	45	0.288	ppb	0.288	127.80	107	400000	
Al	27	3	45	3.324	ppb	3.324	30.01	90	400000	
K	39	3	45	-18.102	ppb	-18.102	-226.05	13827	400000	
Ca	40	2	45	-3.599	ppb	-3.599	-32.03	4782	400000	
V	51	3	72	0.668	ppb	0.668	31.33	47	2000	
Cr	52	3	72	9.882	ppb	9.882	4.99	768	5000	
Mn	55	3	72	3.813	ppb	3.813	24.36	145	10000	
Fe	56	2	72	26.583	ppb	26.583	6.34	4625	10000	
Co	59	3	72	0.258	ppb	0.258	81.69	32	2000	
Ni	60	3	72	3.757	ppb	3.757	14.80	137	5000	
Cu	63	3	72	0.769	ppb	0.769	28.86	85	5000	
Zn	66	3	72	9.883	ppb	9.883	13.61	142	5000	
As	75	3	72	1.709	ppb	1.709	104.05	17	2000	
Se	78	2	72	0.911	ppb	0.911	61.61	5	2000	
(Se)	78	3	72	23.047	ppb	23.047	44.06	13	2000	
Sr	88	3	72	0.219	ppb	0.219	49.20	10	4000	
Mo	95	3	115	0.115	ppb	0.115	29.20	37	2000	
Ag	107	3	115	0.019	ppb	0.019	107.38	13	100	
Cd	111	3	115	-0.004	ppb	-0.004	0.00	0	2000	
Sn	120	3	115	-0.923	ppb	-0.923	-23.52	175	2000	
Sb	121	3	115	0.002	ppb	0.002	3045.37	22	1000	
Ba	137	3	115	0.123	ppb	0.123	100.75	12	5000	
Tl	205	3	193	1.491	ppb	1.491	3.54	4164	2000	
(Pb)	206	3	193	-0.034	ppb	-0.034	-69.60	30	100	
(Pb)	207	3	193	-0.023	ppb	-0.023	-56.53	45	100	
Pb	208	3	193	-0.029	ppb	-0.029	-20.62	160	5000	
Th	232	3	193	0.086	ppb	0.086	18.28	332	2000	
U	238	3	193	0.001	ppb	0.001	1593.74	65	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1879	11.46	2202	85.30	60	120	
Sc (IS)	45	3	HMI He	90	11.11	80	112.50	60	120	
Ge Internal standard	72	2	HMI H2	14178	2.30	153316	9.25	60	120	IS Failed
Ge Internal standard	72	3	HMI He	4011	3.91	54908	7.30	60	120	IS Failed
In Internal Standard	115	3	HMI He	1423	6.81	7215	19.73	60	120	IS Failed
Ir (IS)	193	3	HMI He	2753	6.21	10535	26.13	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	019SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:53:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	014CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.056	ppb	0.056	86.60	3	2000	
Na	23	3	45	183.765	ppb	183.765	92.09	18337	400000	
Mg	24	3	45	1.928	ppb	1.928	37.08	93	400000	
Al	27	3	45	8.756	ppb	8.756	50.31	70	400000	
K	39	3	45	468.072	ppb	468.072	88.05	13781	400000	
Ca	40	2	45	-2.059	ppb	-2.059	-81.38	4649	400000	
V	51	3	72	0.431	ppb	0.431	89.04	35	2000	
Cr	52	3	72	10.232	ppb	10.232	13.40	800	5000	
Mn	55	3	72	3.271	ppb	3.271	4.52	128	10000	
Fe	56	2	72	43.994	ppb	43.994	78.63	6972	10000	
Co	59	3	72	0.067	ppb	0.067	79.33	10	2000	
Ni	60	3	72	3.970	ppb	3.970	2.36	145	5000	
Cu	63	3	72	0.672	ppb	0.672	36.32	77	5000	
Zn	66	3	72	9.662	ppb	9.662	14.09	140	5000	
As	75	3	72	1.183	ppb	1.183	82.93	12	2000	
Se	78	2	72	0.086	ppb	0.086	261.20	1	2000	
(Se)	78	3	72	10.078	ppb	10.078	48.46	7	2000	
Sr	88	3	72	0.073	ppb	0.073	200.20	3	4000	
Mo	95	3	115	0.050	ppb	0.050	261.80	23	2000	
Ag	107	3	115	0.015	ppb	0.015	74.89	10	100	
Cd	111	3	115	-0.004	ppb	-0.004	0.00	0	2000	
Sn	120	3	115	-0.794	ppb	-0.794	-11.83	180	2000	
Sb	121	3	115	0.031	ppb	0.031	244.93	23	1000	
Ba	137	3	115	0.062	ppb	0.062	227.42	7	5000	
Tl	205	3	193	1.161	ppb	1.161	4.88	2116	2000	
(Pb)	206	3	193	-0.014	ppb	-0.014	-112.29	32	100	
(Pb)	207	3	193	-0.005	ppb	-0.005	-395.48	38	100	
Pb	208	3	193	-0.015	ppb	-0.015	-29.84	135	5000	
Th	232	3	193	0.050	ppb	0.050	29.78	130	2000	
U	238	3	193	-0.003	ppb	-0.003	-157.58	32	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1578	13.03	2202	71.67	60	120	
Sc (IS)	45	3	HMI He	37	56.77	80	45.83	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	14028	15.15	153316	9.15	60	120	IS Failed
Ge Internal standard	72	3	HMI He	4061	8.19	54908	7.40	60	120	IS Failed
In Internal Standard	115	3	HMI He	1265	10.96	7215	17.54	60	120	IS Failed
Ir (IS)	193	3	HMI He	1775	5.98	10535	16.85	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	020SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:55:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	021SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T13:57:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	022SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:02:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	023SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:08:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	024SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:10:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	026SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:19:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	027SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:21:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	028SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:23:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	029SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:35:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	030SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:37:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	031SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:39:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	032SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:41:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	033SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:44:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	034SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:47:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	035SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:50:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	036CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-30T14:52:16-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5	2000.00
Na	23	45	3	HMI He	24158	0.01
Mg	24	45	3	HMI He	274	8.90
Al	27	45	3	HMI He	53	20.28
K	39	45	3	HMI He	14375	0.07
Ca	40	45	2	HMI H2	9553	0.04
V	51	72	3	HMI He	210	7.94
Cr	52	72	3	HMI He	1578	0.36
Mn	55	72	3	HMI He	233	9.74
Fe	56	72	2	HMI H2	7019	0.07
Co	59	72	3	HMI He	23	347.82
Ni	60	72	3	HMI He	282	0.36
Cu	63	72	3	HMI He	353	2.02
Zn	66	72	3	HMI He	97	26.41
As	75	72	3	HMI He	28	35.98
Se	78	72	2	HMI H2	7	687.39
(Se)	78	72	3	HMI He	22	162.85
Sr	88	72	3	HMI He	22	61.55
Mo	95	115	3	HMI He	117	11.81
Ag	107	115	3	HMI He	35	81.67
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	1273	0.79
Sb	121	115	3	HMI He	107	17.77
Ba	137	115	3	HMI He	35	163.37
Tl	205	193	3	HMI He	371	4.59
(Pb)	206	193	3	HMI He	143	9.84
(Pb)	207	193	3	HMI He	213	8.82
Pb	208	193	3	HMI He	643	1.10
Th	232	193	3	HMI He	3929	0.62
U	238	193	3	HMI He	493	0.93

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	1039886	1.64
Sc (IS)	45	3	HMI He	150011	1.63
Ge Internal standard	72	2	HMI H2	619265	1.31
Ge Internal standard	72	3	HMI He	195723	1.26
In Internal Standard	115	3	HMI He	626578	1.65
Ir (IS)	193	3	HMI He	1575653	2.00

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	037CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T14:54:10-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	5196.15
Na	23	45	3	HMI He	14631988	0.00
Mg	24	45	3	HMI He	1546844	0.00
Al	27	45	3	HMI He	444	5.85
K	39	45	3	HMI He	1117030	0.00
V	51	72	3	HMI He	227	2.45
Cr	52	72	3	HMI He	1749	0.38
Mn	55	72	3	HMI He	277	0.75
Co	59	72	3	HMI He	40	54.14
Ni	60	72	3	HMI He	232	4.20
Cu	63	72	3	HMI He	491	3.56
Zn	66	72	3	HMI He	441	0.78
As	75	72	3	HMI He	38	70.87
Se	78	72	2	HMI H2	9	406.74
(Se)	78	72	3	HMI He	7	1718.96
Sr	88	72	3	HMI He	483	1.99
Mo	95	115	3	HMI He	112	12.26
Ag	107	115	3	HMI He	48	65.43
Cd	111	115	3	HMI He	8	415.69
Sn	120	115	3	HMI He	1706	0.28
Sb	121	115	3	HMI He	132	9.28
Ba	137	115	3	HMI He	130	5.92
Tl	205	193	3	HMI He	430	1.41
(Pb)	206	193	3	HMI He	198	10.28
(Pb)	207	193	3	HMI He	218	7.14
Pb	208	193	3	HMI He	870	1.21
Th	232	193	3	HMI He	2094	0.56
U	238	193	3	HMI He	611	2.84

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1009131	3.62	1039886	97.04	60	120	
Sc (IS)	45	3	HMI He	147178	1.53	150011	98.11	60	120	
Ge Internal standard	72	2	HMI H2	586228	1.22	619265	94.67	60	120	
Ge Internal standard	72	3	HMI He	186981	1.94	195723	95.53	60	120	
In Internal Standard	115	3	HMI He	613975	2.46	626578	97.99	60	120	
Ir (IS)	193	3	HMI He	1563216	2.71	1575653	99.21	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	038CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T14:56:02-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	6683	0.04
Na	23	45	3	HMI He	339434	0.00
Mg	24	45	3	HMI He	156904	0.00
Al	27	45	3	HMI He	54385	0.00
K	39	45	3	HMI He	126004	0.00
V	51	72	3	HMI He	78704	0.00
Cr	52	72	3	HMI He	103541	0.00
Mn	55	72	3	HMI He	52635	0.00
Co	59	72	3	HMI He	169089	0.00
Ni	60	72	3	HMI He	48271	0.00
Cu	63	72	3	HMI He	131518	0.00
Zn	66	72	3	HMI He	21166	0.00
As	75	72	3	HMI He	14734	0.01
Se	78	72	2	HMI H2	7378	0.01
(Se)	78	72	3	HMI He	760	1.08
Sr	88	72	3	HMI He	133485	0.00
Mo	95	115	3	HMI He	67358	0.00
Ag	107	115	3	HMI He	229697	0.00
Cd	111	115	3	HMI He	31922	0.00
Sn	120	115	3	HMI He	97183	0.00
Sb	121	115	3	HMI He	94252	0.00
Ba	137	115	3	HMI He	30320	0.00
Tl	205	193	3	HMI He	499607	0.00
(Pb)	206	193	3	HMI He	166457	0.00
(Pb)	207	193	3	HMI He	145532	0.00
Pb	208	193	3	HMI He	669868	0.00
Th	232	193	3	HMI He	686995	0.00
U	238	193	3	HMI He	718590	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	990901	4.51	1039886	95.29	60	120	
Sc (IS)	45	3	HMI He	144973	1.79	150011	96.64	60	120	
Ge Internal standard	72	2	HMI H2	674682	2.44	619265	108.95	60	120	
Ge Internal standard	72	3	HMI He	220394	0.93	195723	112.61	60	120	
In Internal Standard	115	3	HMI He	611201	1.71	626578	97.55	60	120	
Ir (IS)	193	3	HMI He	1543246	1.74	1575653	97.94	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	039_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T14:57:55-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.843	ppb	7.522	2556	40	94.6	90	110	
Na	23	3	45	13274.180	ppb	2.659	1984992	12800	103.7	90	110	
Mg	24	3	45	4755.804	ppb	1.286	372194	4800	99.1	90	110	
Al	27	3	45	781.724	ppb	4.496	21856	800	97.7	90	110	
K	39	3	45	4792.487	ppb	2.151	281551	4800	99.8	90	110	
Ca	40	2	45	4719.922	ppb	2.386	3585315	4800	98.3	90	110	
V	51	3	72	42.218	ppb	1.354	31508	40	105.5	90	110	
Cr	52	3	72	42.301	ppb	0.495	42330	40	105.8	90	110	
Mn	55	3	72	43.090	ppb	2.352	21559	40	107.7	90	110	
Fe	56	2	72	836.467	ppb	3.494	1567137	800	104.6	90	110	
Co	59	3	72	41.481	ppb	0.919	66248	40	103.7	90	110	
Ni	60	3	72	41.629	ppb	0.685	19150	40	104.1	90	110	
Cu	63	3	72	42.011	ppb	1.350	52389	40	105.0	90	110	
Zn	66	3	72	82.815	ppb	3.432	16568	80	103.5	90	110	
As	75	3	72	41.475	ppb	2.374	5788	40	103.7	90	110	
Se	78	2	72	41.549	ppb	2.740	2955	40	103.9	90	110	
(Se)	78	3	72	44.426	ppb	4.668	332	40	111.1	90	110	>+\-10%
Sr	88	3	72	124.645	ppb	1.152	78565	120	103.9	90	110	
Mo	95	3	115	39.405	ppb	1.788	27384	40	98.5	90	110	
Ag	107	3	115	77.264	ppb	1.419	182623	80	96.6	90	110	
Cd	111	3	115	38.269	ppb	2.497	12571	40	95.7	90	110	
Sn	120	3	115	38.195	ppb	4.086	38977	40	95.5	90	110	
Sb	121	3	115	39.076	ppb	0.385	37970	40	97.7	90	110	
Ba	137	3	115	38.374	ppb	2.514	11991	40	95.9	90	110	
Tl	205	3	193	39.428	ppb	2.735	200663	40	98.6	90	110	
(Pb)	206	3	193	39.054	ppb	2.594	66231	40	97.6	90	110	
(Pb)	207	3	193	39.187	ppb	2.885	58151	40	98.0	90	110	
Pb	208	3	193	39.137	ppb	2.348	267134	40	97.8	90	110	
Th	232	3	193	78.729	ppb	4.112	550991	80	98.4	90	110	
U	238	3	193	40.014	ppb	2.982	292814	40	100.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1042263	0.31	1039886	100.23	60	120	
Sc (IS)	45	3	HMI He	148851	1.50	150011	99.23	60	120	
Ge Internal standard	72	2	HMI H2	649282	2.21	619265	104.85	60	120	
Ge Internal standard	72	3	HMI He	208115	0.87	195723	106.33	60	120	
In Internal Standard	115	3	HMI He	628798	0.93	626578	100.35	60	120	
Ir (IS)	193	3	HMI He	1570341	2.48	1575653	99.66	60	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB-7569070
Data File Name	040_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:01:09-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	0.002	ppb	4260.1	5	0.5	
Na	23	3	6.494	ppb	126.8	23673	25	
Mg	24	3	-1.185	ppb	-25.7	170	25	
Al	27	3	-0.633	ppb	-41.9	33	15	
K	39	3	-4.033	ppb	-786.9	13303	50	
V	51	3	0.076	ppb	85.0	255	1	
Cr	52	3	0.010	ppb	256.0	1541	1	
Mn	55	3	-0.114	ppb	-48.4	175	0.5	
Co	59	3	0.013	ppb	104.2	42	0.5	
Ni	60	3	-0.093	ppb	-32.0	235	1	
Cu	63	3	-0.045	ppb	-73.3	292	1	
Zn	66	3	0.123	ppb	102.1	117	5	
As	75	3	-0.021	ppb	-361.5	25	1	
Se	78	2	-0.038	ppb	-77.4	4	1	
(Se)	78	3	-1.198	ppb	-79.5	13	1	
Sr	88	3	-0.016	ppb	-179.0	12	0.5	
Mo	95	3	-0.050	ppb	-73.7	78	0.5	
Ag	107	3	0.014	ppb	19.6	65	1	
Cd	111	3	0.005	ppb	173.2	2	0.5	
Sn	120	3	-0.020	ppb	-285.2	1198	1	
Sb	121	3	0.012	ppb	150.0	113	0.6	
Ba	137	3	0.032	ppb	147.5	43	0.5	
Tl	205	3	0.012	ppb	205.6	418	0.1	
(Pb)	206	3	-0.007	ppb	-210.7	127	1	
(Pb)	207	3	-0.014	ppb	-122.2	185	1	
Pb	208	3	-0.012	ppb	-60.7	543	0.5	
Th	232	3	0.739	ppb	32.9	8779	1	
U	238	3	0.019	ppb	29.1	610	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1002679	2.73	1039886	96.42	60	120	
Sc (IS)	45	3	HMI He	141489	3.72	150011	94.32	60	120	
Ge Internal standard	72	2	HMI H2	602377	1.97	619265	97.27	60	120	
Ge Internal standard	72	3	HMI He	190010	1.79	195723	97.08	60	120	
In Internal Standard	115	3	HMI He	600012	2.67	626578	95.76	60	120	
Ir (IS)	193	3	HMI He	1520595	1.94	1575653	96.51	60	120	

CRI Report

Sample Table

Sample Name	CRI-7569078
Data File Name	041LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:04:12-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	0.988	ppb	23.391	73	1	98.8	80	120	
Na	23	3	45	58.055	ppb	30.536	31299	50	116.1	80	120	
Mg	24	3	45	48.345	ppb	7.847	3901	50	96.7	80	120	
Al	27	3	45	48.374	ppb	2.287	1355	50	96.7	80	120	
K	39	3	45	97.751	ppb	52.398	18882	100	97.8	80	120	
Ca	40	2	45	57.764	ppb	2.935	52799	50	115.5	80	120	
V	51	3	72	5.362	ppb	13.946	3802	5	107.2	80	120	
Cr	52	3	72	2.303	ppb	15.887	3535	2	115.1	80	120	
Mn	55	3	72	2.241	ppb	6.718	1234	1	224.1	80	120	>+/-30%
Fe	56	2	72	57.989	ppb	1.831	107393	50	116.0	80	120	
Co	59	3	72	1.121	ppb	11.167	1646	1	112.1	80	120	
Ni	60	3	72	2.202	ppb	18.141	1174	2	110.1	80	120	
Cu	63	3	72	2.272	ppb	5.406	2904	2	113.6	80	120	
Zn	66	3	72	11.436	ppb	11.840	2156	10	114.4	80	120	
As	75	3	72	5.959	ppb	4.817	781	5	119.2	80	120	
Se	78	2	72	5.484	ppb	9.524	368	5	109.7	80	120	
Sr	88	3	72	1.078	ppb	14.254	636	1	107.8	80	120	
Mo	95	3	115	1.845	ppb	15.201	1334	2	92.2	80	120	
Ag	107	3	115	1.041	ppb	10.877	2392	1	104.1	80	120	
Cd	111	3	115	1.031	ppb	1.638	327	1	103.1	80	120	
Sn	120	3	115	9.989	ppb	9.652	10696	10	99.9	80	120	
Sb	121	3	115	2.027	ppb	9.589	1989	2	101.3	80	120	
Ba	137	3	115	0.956	ppb	18.907	322	1	95.6	80	120	
Tl	205	3	193	0.969	ppb	10.601	5207	1	96.9	80	120	
(Pb)	206	3	193	1.032	ppb	18.493	1853	1	103.2	80	120	
(Pb)	207	3	193	1.042	ppb	6.995	1728	1	104.2	80	120	
Pb	208	3	193	1.011	ppb	9.984	7407	1	101.1	80	120	
Th	232	3	193	1.744	ppb	9.971	15795	2	87.2	80	120	
U	238	3	193	1.029	ppb	7.919	7894	1	102.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1031916	1.33	1039886	99.23	60	120	
Sc (IS)	45	3	HMI He	143813	9.07	150011	95.87	60	120	
Ge Internal standard	72	2	HMI H2	603630	1.84	619265	97.48	60	120	
Ge Internal standard	72	3	HMI He	189924	8.16	195723	97.04	60	120	
In Internal Standard	115	3	HMI He	606701	8.41	626578	96.83	60	120	
Ir (IS)	193	3	HMI He	1552517	8.15	1575653	98.53	60	120	

CRI Report

Sample Table

Sample Name	CRI-
Data File Name	042LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:08:51-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	-0.024	ppb	-172.149	3	1	-2.4	80	120	>+/-30%
Na	23	3	45	-11.977	ppb	-18.341	23266	50	-24.0	80	120	>+/-30%
Mg	24	3	45	-1.646	ppb	-27.701	150	50	-3.3	80	120	>+/-30%
Al	27	3	45	-0.407	ppb	-135.799	43	50	-0.8	80	120	>+/-30%
K	39	3	45	-31.587	ppb	-40.491	13103	100	-31.6	80	120	>+/-30%
Ca	40	2	45	-0.033	ppb	-3342.892	9673	50	-0.1	80	120	>+/-30%
V	51	3	72	0.007	ppb	702.417	218	5	0.1	80	120	>+/-30%
Cr	52	3	72	-0.169	ppb	-22.544	1453	2	-8.4	80	120	>+/-30%
Mn	55	3	72	2.105	ppb	8.248	1236	1	210.5	80	120	>+/-30%
Fe	56	2	72	-0.804	ppb	-11.074	5383	50	-1.6	80	120	>+/-30%
Co	59	3	72	0.004	ppb	281.587	30	1	0.4	80	120	>+/-30%
Ni	60	3	72	-0.042	ppb	-167.334	268	2	-2.1	80	120	>+/-30%
Cu	63	3	72	-0.060	ppb	-28.386	288	2	-3.0	80	120	>+/-30%
Zn	66	3	72	-0.019	ppb	-274.070	95	10	-0.2	80	120	>+/-30%
As	75	3	72	0.045	ppb	281.065	35	5	0.9	80	120	>+/-30%
Se	78	2	72	-0.016	ppb	-111.231	5	5	-0.3	80	120	>+/-30%
Sr	88	3	72	-0.006	ppb	-266.581	18	1	-0.6	80	120	>+/-30%
Mo	95	3	115	-0.052	ppb	-23.843	83	2	-2.6	80	120	>+/-30%
Ag	107	3	115	-0.006	ppb	-70.135	22	1	-0.6	80	120	>+/-30%
Cd	111	3	115	0.000	ppb	#DIV/0!	0	1	0.0	80	120	>+/-30%
Sn	120	3	115	-0.345	ppb	-16.449	961	10	-3.4	80	120	>+/-30%
Sb	121	3	115	-0.008	ppb	-307.183	102	2	-0.4	80	120	>+/-30%
Ba	137	3	115	-0.050	ppb	-81.798	20	1	-5.0	80	120	>+/-30%
Tl	205	3	193	-0.050	ppb	-19.808	122	1	-5.0	80	120	>+/-30%
(Pb)	206	3	193	-0.036	ppb	-24.929	87	1	-3.6	80	120	>+/-30%
(Pb)	207	3	193	-0.057	ppb	-0.919	135	1	-5.7	80	120	>+/-30%
Pb	208	3	193	-0.031	ppb	-20.732	453	1	-3.1	80	120	>+/-30%
Th	232	3	193	-0.308	ppb	-5.779	1859	2	-15.4	80	120	>+/-30%
U	238	3	193	-0.005	ppb	-86.219	476	1	-0.5	80	120	>+/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1057142	2.66	1039886	101.66	60	120	
Sc (IS)	45	3	HMI He	155981	1.84	150011	103.98	60	120	
Ge Internal standard	72	2	HMI H2	596625	1.25	619265	96.34	60	120	
Ge Internal standard	72	3	HMI He	199379	2.00	195723	101.87	60	120	
In Internal Standard	115	3	HMI He	645458	1.43	626578	103.01	60	120	
Ir (IS)	193	3	HMI He	1651115	0.60	1575653	104.79	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA-7567583
Data File Name	043ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:13:09-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.077	ppb	166.5	10	0.5	
Na	23	3	45	98198.268	ppb	2.0	14588027	100000	
Mg	24	3	45	95349.768	ppb	1.5	7485944	100000	
Al	27	3	45	91456.595	ppb	1.3	2561566	100000	
K	39	3	45	94244.595	ppb	1.7	5291502	100000	
Ca	40	2	45	93133.549	ppb	1.9	70334695	100000	
V	51	3	72	-0.043	ppb	-67.2	203	1	
Cr	52	3	72	0.996	ppb	10.4	2802	1	
Mn	55	3	72	0.386	ppb	23.0	466	0.95	
Fe	56	2	72	94159.676	ppb	2.4	181505591	100000	
Co	59	3	72	0.225	ppb	15.0	408	0.5	
Ni	60	3	72	0.116	ppb	113.2	373	1	
Cu	63	3	72	0.097	ppb	47.7	528	1	
Zn	66	3	72	1.136	ppb	9.5	350	1	>RL or LOD
As	75	3	72	-0.027	ppb	-368.8	28	1	
Se	78	2	72	0.002	ppb	2446.1	7	1	
(Se)	78	3	72	-1.729	ppb	-23.3	12	1	
Sr	88	3	72	0.691	ppb	16.2	488	1	
Mo	95	3	115	1954.437	ppb	1.6	1308672	2000	
Ag	107	3	115	0.012	ppb	86.0	62	1	
Cd	111	3	115	0.178	ppb	22.8	57	1	
Sn	120	3	115	0.139	ppb	70.4	1368	1	
Sb	121	3	115	0.126	ppb	25.0	222	1	
Ba	137	3	115	1.628	ppb	10.1	525	0.95	>RL or LOD
Tl	205	3	193	-0.037	ppb	-24.8	175	1	
(Pb)	206	3	193	0.160	ppb	8.1	403	1	
(Pb)	207	3	193	0.097	ppb	19.7	348	1	
Pb	208	3	193	0.144	ppb	5.1	1586	1	
Th	232	3	193	-0.322	ppb	-9.7	1628	1	
U	238	3	193	0.013	ppb	55.0	570	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1038973	1.52	1039886	99.91	60	120	
Sc (IS)	45	3	HMI He	149442	2.13	150011	99.62	60	120	
Ge Internal standard	72	2	HMI H2	671018	1.98	619265	108.36	60	120	
Ge Internal standard	72	3	HMI He	221287	2.58	195723	113.06	60	120	
In Internal Standard	115	3	HMI He	608485	1.71	626578	97.11	60	120	
Ir (IS)	193	3	HMI He	1533255	2.74	1575653	97.31	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB-7569079
Data File Name	044ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:16:31-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	96.628	ppb	3.949	6627	100	96.6	80	120	
Na	23	3	45	106479.584	ppb	0.888	15737182	100	106479.6	80	120	
Mg	24	3	45	103772.714	ppb	1.341	8105503	100	103772.7	80	120	
Al	27	3	45	96084.218	ppb	2.371	2676896	100	96084.2	80	120	>+\-20%
K	39	3	45	101993.320	ppb	2.064	5695544	100	101993.3	80	120	>+\-20%
Ca	40	2	45	102142.237	ppb	2.075	77848319	100	102142.2	80	120	>+\-20%
V	51	3	72	102.741	ppb	1.574	77008	100	102.7	80	120	
Cr	52	3	72	101.120	ppb	2.730	99697	100	101.1	80	120	
Mn	55	3	72	102.997	ppb	0.774	51630	100	103.0	80	120	
Fe	56	2	72	100674.216	ppb	1.235	189892432	100	100674.2	80	120	>+\-20%
Co	59	3	72	99.603	ppb	0.718	160417	100	99.6	80	120	
Ni	60	3	72	97.912	ppb	2.309	45020	100	97.9	80	120	
Cu	63	3	72	99.473	ppb	1.287	124603	100	99.5	80	120	
Zn	66	3	72	100.266	ppb	1.870	20213	100	100.3	80	120	
As	75	3	72	100.190	ppb	0.020	14062	100	100.2	80	120	
Se	78	2	72	102.458	ppb	3.693	7355	100	102.5	80	120	
(Se)	78	3	72	112.687	ppb	6.571	813	100	112.7	80	120	
Sr	88	3	72	201.172	ppb	1.290	127884	100	201.2	80	120	>+\-20%
Mo	95	3	115	2043.940	ppb	3.764	1345935	100	2043.9	80	120	
Ag	107	3	115	95.682	ppb	2.105	215244	100	95.7	80	120	
Cd	111	3	115	95.975	ppb	0.743	30007	100	96.0	80	120	
Sn	120	3	115	97.067	ppb	2.347	92422	100	97.1	80	120	
Sb	121	3	115	98.954	ppb	2.491	91350	100	99.0	80	120	
Ba	137	3	115	103.051	ppb	3.896	30587	100	103.1	80	120	
Tl	205	3	193	95.605	ppb	0.522	476799	100	95.6	80	120	
(Pb)	206	3	193	97.012	ppb	1.837	161160	100	97.0	80	120	
(Pb)	207	3	193	96.468	ppb	1.487	140115	100	96.5	80	120	
Pb	208	3	193	96.140	ppb	1.555	642732	100	96.1	80	120	
Th	232	3	193	98.486	ppb	1.578	675322	100	98.5	80	120	
U	238	3	193	98.720	ppb	0.510	708009	100	98.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1048716	2.65	1039886	100.85	60	120	
Sc (IS)	45	3	HMI He	148659	1.25	150011	99.10	60	120	
Ge Internal standard	72	2	HMI H2	656531	1.82	619265	106.02	60	120	
Ge Internal standard	72	3	HMI He	209915	0.70	195723	107.25	60	120	
In Internal Standard	115	3	HMI He	598600	2.07	626578	95.53	60	120	
Ir (IS)	193	3	HMI He	1539895	1.42	1575653	97.73	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	045SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:20:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.023	ppb	-0.023	-356.55	3	2000	
Na	23	3	45	2.970	ppb	2.970	219.90	25301	400000	
Mg	24	3	45	6.750	ppb	6.750	25.32	831	400000	
Al	27	3	45	7.199	ppb	7.199	25.59	264	400000	
K	39	3	45	3.130	ppb	3.130	411.12	14973	400000	
Ca	40	2	45	25.561	ppb	25.561	16.29	29665	400000	
V	51	3	72	-0.027	ppb	-0.027	-108.94	193	2000	
Cr	52	3	72	-0.078	ppb	-0.078	-119.57	1524	5000	
Mn	55	3	72	-0.077	ppb	-0.077	-125.05	200	10000	
Fe	56	2	72	26.972	ppb	26.972	9.13	53939	10000	
Co	59	3	72	0.010	ppb	0.010	19.76	38	2000	
Ni	60	3	72	-0.228	ppb	-0.228	-55.88	187	5000	
Cu	63	3	72	-0.074	ppb	-0.074	-46.32	270	5000	
Zn	66	3	72	-0.068	ppb	-0.068	-203.50	85	5000	
As	75	3	72	-0.028	ppb	-0.028	-363.80	25	2000	
Se	78	2	72	0.203	ppb	0.203	24.42	20	2000	
(Se)	78	3	72	-0.280	ppb	-0.280	-714.80	20	2000	
Sr	88	3	72	0.000	ppb	0.000	-3441.90	22	4000	
Mo	95	3	115	0.708	ppb	0.708	7.25	613	2000	
Ag	107	3	115	0.000	ppb	0.000	1705.43	37	100	
Cd	111	3	115	0.015	ppb	0.015	173.21	5	2000	
Sn	120	3	115	-0.398	ppb	-0.398	-21.34	891	2000	
Sb	121	3	115	0.003	ppb	0.003	1219.07	112	1000	
Ba	137	3	115	-0.060	ppb	-0.060	-15.49	17	5000	
Tl	205	3	193	-0.032	ppb	-0.032	-31.25	205	2000	
(Pb)	206	3	193	-0.034	ppb	-0.034	-31.84	83	100	
(Pb)	207	3	193	-0.053	ppb	-0.053	-55.71	132	100	
Pb	208	3	193	-0.028	ppb	-0.028	-34.66	445	5000	
Th	232	3	193	0.600	ppb	0.600	53.27	7905	2000	
U	238	3	193	0.002	ppb	0.002	212.41	496	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1067935	2.77	1039886	102.70	60	120	
Sc (IS)	45	3	HMI He	154305	1.52	150011	102.86	60	120	
Ge Internal standard	72	2	HMI H2	607101	1.06	619265	98.04	60	120	
Ge Internal standard	72	3	HMI He	197803	0.15	195723	101.06	60	120	
In Internal Standard	115	3	HMI He	635308	1.86	626578	101.39	60	120	
Ir (IS)	193	3	HMI He	1544590	3.06	1575653	98.03	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	046_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:22:34-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	1666.456	ppb	2.279	157658	2000	83.3	90	110	LRS Main CR1 Failed
Al	27	3	45	8.296	ppb	7.051	370	50000	0.0	90	110	LRS Main CR1 Failed
V	51	3	72	2202.951	ppb	2.245	1786395	2000	110.1	90	110	LRS Main CR1 Failed
Cr	52	3	72	5246.923	ppb	2.194	5519188	5000	104.9	90	110	
Mn	55	3	72	10409.374	ppb	2.040	5633705	10000	104.1	90	110	
Co	59	3	72	2129.640	ppb	1.403	3721079	2000	106.5	90	110	
Ni	60	3	72	5185.575	ppb	1.762	2569986	5000	103.7	90	110	
Cu	63	3	72	5435.146	ppb	1.694	7364878	5000	108.7	90	110	
Zn	66	3	72	5389.305	ppb	2.273	1172797	5000	107.8	90	110	
As	75	3	72	2096.343	ppb	1.693	318549	2000	104.8	90	110	
Se	78	2	72	1984.839	ppb	1.413	175020	2000	99.2	90	110	
(Se)	78	3	72	2420.353	ppb	2.530	18425	2000	121.0	90	110	LRS Main CR1 Failed
Sr	88	3	72	5123.613	ppb	2.582	3532989	2000	256.2	90	110	LRS Main CR1 Failed
Mo	95	3	115	1518.669	ppb	2.085	1470873	2000	75.9	90	110	LRS Main CR1 Failed
Cd	111	3	115	1517.063	ppb	2.070	697140	2000	75.9	90	110	LRS Main CR1 Failed
Sn	120	3	115	1567.643	ppb	2.297	2167128	2000	78.4	90	110	LRS Main CR1 Failed
Sb	121	3	115	756.635	ppb	1.359	1025950	1000	75.7	90	110	LRS Main CR1 Failed
Ba	137	3	115	3928.169	ppb	3.230	1712384	5000	78.6	90	110	LRS Main CR1 Failed
Tl	205	3	193	852.006	ppb	0.417	5752472	1000	85.2	90	110	LRS Main CR1 Failed
(Pb)	206	3	193	4185.122	ppb	1.092	9411152	5000	83.7	90	110	LRS Main CR1 Failed
(Pb)	207	3	193	4196.360	ppb	1.614	8244984	5000	83.9	90	110	LRS Main CR1 Failed
Pb	208	3	193	4229.262	ppb	1.233	38268233	5000	84.6	90	110	LRS Main CR1 Failed
Th	232	3	193	829.242	ppb	1.632	7664158	1000	82.9	90	110	LRS Main CR1 Failed
U	238	3	193	1739.125	ppb	0.835	16885524	2000	87.0	90	110	LRS Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1506916	4.00	1039886	144.91	60	120	IS Failed
Sc (IS)	45	3	HMI He	193762	1.57	150011	129.16	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	806894	1.61	619265	130.30	60	120	IS Failed
Ge Internal standard	72	3	HMI He	227771	1.44	195723	116.37	60	120	
In Internal Standard	115	3	HMI He	879921	1.68	626578	140.43	60	120	IS Failed
Ir (IS)	193	3	HMI He	2086022	1.11	1575653	132.39	60	120	IS Failed

Sample Report

Sample Table

Sample Name	AI 300
Data File Name	047SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:24:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.637	ppb	1.637	11.02	110	2000	
Na	23	3	45	16.804	ppb	16.804	39.02	25656	400000	
Mg	24	3	45	3.860	ppb	3.860	17.31	557	400000	
Al	27	3	45	328466.854	ppb	328466.854	3.69	8885560	400000	
K	39	3	45	36.395	ppb	36.395	75.49	15802	400000	
Ca	40	2	45	11.845	ppb	11.845	5.60	17335	400000	
V	51	3	72	1.236	ppb	1.236	4.93	1068	2000	
Cr	52	3	72	3.750	ppb	3.750	7.15	4950	5000	
Mn	55	3	72	7.813	ppb	7.813	5.87	3854	10000	
Fe	56	2	72	11.072	ppb	11.072	3.75	25148	10000	
Co	59	3	72	1.285	ppb	1.285	1.45	1948	2000	
Ni	60	3	72	3.391	ppb	3.391	0.55	1721	5000	
Cu	63	3	72	4.009	ppb	4.009	8.74	5007	5000	
Zn	66	3	72	4.212	ppb	4.212	8.60	881	5000	
As	75	3	72	1.168	ppb	1.168	29.46	180	2000	
Se	78	2	72	1.879	ppb	1.879	2.45	126	2000	
(Se)	78	3	72	2.088	ppb	2.088	102.81	35	2000	
Sr	88	3	72	4.810	ppb	4.810	1.65	2864	4000	
Mo	95	3	115	6.833	ppb	6.833	11.66	4412	2000	
Ag	107	3	115	0.036	ppb	0.036	42.25	110	100	
Cd	111	3	115	1.054	ppb	1.054	11.10	315	2000	
Sn	120	3	115	5.315	ppb	5.315	1.01	5940	2000	
Sb	121	3	115	1.597	ppb	1.597	2.34	1506	1000	
Ba	137	3	115	3.545	ppb	3.545	18.05	1040	5000	
Tl	205	3	193	0.741	ppb	0.741	9.66	3545	2000	
(Pb)	206	3	193	3.583	ppb	3.583	4.87	5322	100	
(Pb)	207	3	193	3.634	ppb	3.634	7.43	4787	100	
Pb	208	3	193	3.570	ppb	3.570	5.62	21388	5000	
Th	232	3	193	9.371	ppb	9.371	24.17	59211	2000	
U	238	3	193	2.282	ppb	2.282	2.32	14718	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	974366	2.40	1039886	93.70	60	120	
Sc (IS)	45	3	HMI He	144414	2.48	150011	96.27	60	120	
Ge Internal standard	72	2	HMI H2	582990	1.47	619265	94.14	60	120	
Ge Internal standard	72	3	HMI He	195167	2.11	195723	99.72	60	120	
In Internal Standard	115	3	HMI He	572476	1.52	626578	91.37	60	120	
Ir (IS)	193	3	HMI He	1346066	1.23	1575653	85.43	60	120	

Sample Report

Sample Table

Sample Name	Na 200
Data File Name	048SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:26:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.165	ppb	0.165	104.10	17	2000	
Na	23	3	45	213462.125	ppb	213462.125	1.04	32027486	400000	
Mg	24	3	45	1.776	ppb	1.776	5.76	417	400000	
Al	27	3	45	176.169	ppb	176.169	10.73	5043	400000	
K	39	3	45	8.222	ppb	8.222	323.22	14943	400000	
Ca	40	2	45	12.099	ppb	12.099	7.64	18554	400000	
V	51	3	72	0.081	ppb	0.081	58.96	258	2000	
Cr	52	3	72	0.506	ppb	0.506	15.76	1976	5000	
Mn	55	3	72	0.967	ppb	0.967	5.23	663	10000	
Fe	56	2	72	4.836	ppb	4.836	5.56	14709	10000	
Co	59	3	72	0.130	ppb	0.130	14.34	212	2000	
Ni	60	3	72	0.121	ppb	0.121	76.50	323	5000	
Cu	63	3	72	0.418	ppb	0.418	11.46	815	5000	
Zn	66	3	72	0.979	ppb	0.979	26.05	272	5000	
As	75	3	72	0.032	ppb	0.032	387.56	32	2000	
Se	78	2	72	0.153	ppb	0.153	4.58	16	2000	
(Se)	78	3	72	-1.477	ppb	-1.477	-80.26	12	2000	
Sr	88	3	72	0.389	ppb	0.389	16.89	245	4000	
Mo	95	3	115	0.775	ppb	0.775	24.19	635	2000	
Ag	107	3	115	0.009	ppb	0.009	44.43	55	100	
Cd	111	3	115	0.125	ppb	0.125	13.41	40	2000	
Sn	120	3	115	0.459	ppb	0.459	114.98	1678	2000	
Sb	121	3	115	0.290	ppb	0.290	16.30	376	1000	
Ba	137	3	115	0.514	ppb	0.514	25.15	190	5000	
Tl	205	3	193	0.047	ppb	0.047	27.17	571	2000	
(Pb)	206	3	193	0.448	ppb	0.448	3.84	846	100	
(Pb)	207	3	193	0.437	ppb	0.437	15.88	806	100	
Pb	208	3	193	0.453	ppb	0.453	7.02	3503	5000	
Th	232	3	193	0.859	ppb	0.859	39.04	9276	2000	
U	238	3	193	0.205	ppb	0.205	4.62	1869	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1032929	3.88	1039886	99.33	60	120	
Sc (IS)	45	3	HMI He	151037	1.28	150011	100.68	60	120	
Ge Internal standard	72	2	HMI H2	583397	2.76	619265	94.21	60	120	
Ge Internal standard	72	3	HMI He	189923	0.83	195723	97.04	60	120	
In Internal Standard	115	3	HMI He	611557	1.39	626578	97.60	60	120	
Ir (IS)	193	3	HMI He	1474999	0.27	1575653	93.61	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	049SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:28:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.023	ppb	-0.023	-175.50	3	2000	
Na	23	3	45	110.790	ppb	110.790	18.61	40605	400000	
Mg	24	3	45	0.118	ppb	0.118	348.94	284	400000	
Al	27	3	45	23.556	ppb	23.556	18.14	714	400000	
K	39	3	45	2.646	ppb	2.646	1162.33	14499	400000	
Ca	40	2	45	5.646	ppb	5.646	23.96	14101	400000	
V	51	3	72	0.080	ppb	0.080	53.59	262	2000	
Cr	52	3	72	0.126	ppb	0.126	143.56	1666	5000	
Mn	55	3	72	0.255	ppb	0.255	62.69	347	10000	
Fe	56	2	72	5.128	ppb	5.128	4.13	15568	10000	
Co	59	3	72	0.016	ppb	0.016	115.95	47	2000	
Ni	60	3	72	-0.097	ppb	-0.097	-28.41	237	5000	
Cu	63	3	72	0.055	ppb	0.055	118.84	410	5000	
Zn	66	3	72	18.697	ppb	18.697	6.47	3539	5000	
As	75	3	72	0.030	ppb	0.030	311.72	32	2000	
Se	78	2	72	-0.015	ppb	-0.015	-505.85	5	2000	
(Se)	78	3	72	-2.021	ppb	-2.021	-58.58	8	2000	
Sr	88	3	72	0.043	ppb	0.043	28.89	47	4000	
Mo	95	3	115	0.227	ppb	0.227	14.98	268	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-52.38	25	100	
Cd	111	3	115	0.016	ppb	0.016	100.41	5	2000	
Sn	120	3	115	-0.139	ppb	-0.139	-21.71	1114	2000	
Sb	121	3	115	0.146	ppb	0.146	19.74	243	1000	
Ba	137	3	115	-0.004	ppb	-0.004	-1129.33	33	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-16.91	273	2000	
(Pb)	206	3	193	0.134	ppb	0.134	14.07	352	100	
(Pb)	207	3	193	0.152	ppb	0.152	19.46	415	100	
Pb	208	3	193	0.141	ppb	0.141	6.92	1523	5000	
Th	232	3	193	-0.036	ppb	-0.036	-170.53	3482	2000	
U	238	3	193	0.055	ppb	0.055	5.04	846	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1062661	3.86	1039886	102.19	60	120	
Sc (IS)	45	3	HMI He	149897	1.31	150011	99.92	60	120	
Ge Internal standard	72	2	HMI H2	597403	2.05	619265	96.47	60	120	
Ge Internal standard	72	3	HMI He	192707	1.06	195723	98.46	60	120	
In Internal Standard	115	3	HMI He	615551	0.66	626578	98.24	60	120	
Ir (IS)	193	3	HMI He	1491407	2.60	1575653	94.65	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	050_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:30:44-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.574	ppb	2.951	3585	50	101.1	90	110	
Na	23	3	45	52625.925	ppb	1.107	8190845	51000	103.2	90	110	
Mg	24	3	45	11224.888	ppb	2.144	922153	11000	102.0	90	110	
Al	27	3	45	993.232	ppb	2.508	29149	1000	99.3	90	110	
K	39	3	45	10861.656	ppb	1.232	651193	11000	98.7	90	110	
Ca	40	2	45	11148.909	ppb	0.125	8662613	11000	101.4	90	110	
V	51	3	72	54.997	ppb	1.261	40341	50	110.0	90	110	
Cr	52	3	72	53.905	ppb	3.200	52636	50	107.8	90	110	
Mn	55	3	72	55.203	ppb	2.040	27121	50	110.4	90	110	>+\-10%
Fe	56	2	72	1161.853	ppb	1.288	2082980	1000	116.2	90	110	>+\-10%
Co	59	3	72	52.998	ppb	2.447	83314	50	106.0	90	110	
Ni	60	3	72	52.291	ppb	3.241	23602	50	104.6	90	110	
Cu	63	3	72	52.922	ppb	3.178	64863	50	105.8	90	110	
Zn	66	3	72	55.263	ppb	5.464	10912	50	110.5	90	110	>+\-10%
As	75	3	72	51.761	ppb	1.751	7105	50	103.5	90	110	
Se	78	2	72	57.028	ppb	2.657	3881	50	114.1	90	110	>+\-10%
(Se)	78	3	72	63.300	ppb	11.338	455	50	126.6	90	110	>+\-10%
Sr	88	3	72	106.821	ppb	2.849	66278	100	106.8	90	110	
Mo	95	3	115	47.621	ppb	3.290	33900	50	95.2	90	110	
Ag	107	3	115	46.740	ppb	3.079	113265	50	93.5	90	110	
Cd	111	3	115	47.480	ppb	2.848	15987	50	95.0	90	110	
Sn	120	3	115	46.377	ppb	4.283	48231	50	92.8	90	110	
Sb	121	3	115	47.278	ppb	3.979	47058	50	94.6	90	110	
Ba	137	3	115	47.917	ppb	5.050	15336	50	95.8	90	110	
Tl	205	3	193	48.534	ppb	1.921	247187	50	97.1	90	110	
(Pb)	206	3	193	48.891	ppb	3.289	82952	50	97.8	90	110	
(Pb)	207	3	193	48.713	ppb	1.794	72314	50	97.4	90	110	
Pb	208	3	193	48.572	ppb	2.836	331692	50	97.1	90	110	
Th	232	3	193	48.937	ppb	1.197	344454	50	97.9	90	110	
U	238	3	193	49.447	ppb	2.172	362127	50	98.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1067693	1.34	1039886	102.67	60	120	
Sc (IS)	45	3	HMI He	156306	1.00	150011	104.20	60	120	
Ge Internal standard	72	2	HMI H2	621829	1.56	619265	100.41	60	120	
Ge Internal standard	72	3	HMI He	204938	2.60	195723	104.71	60	120	
In Internal Standard	115	3	HMI He	644989	3.42	626578	102.94	60	120	
Ir (IS)	193	3	HMI He	1571683	1.62	1575653	99.75	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	051_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:32:38-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.027	ppb	-142.4	3	0.5	
Na	23	3	45	13.845	ppb	57.8	27665	25	
Mg	24	3	45	4.466	ppb	17.8	661	25	
Al	27	3	45	7.660	ppb	8.7	284	15	
K	39	3	45	-12.780	ppb	-164.3	14402	50	
V	51	3	72	0.049	ppb	22.4	250	1	
Cr	52	3	72	0.012	ppb	394.1	1628	1	
Mn	55	3	72	0.128	ppb	55.7	300	0.5	
Co	59	3	72	0.038	ppb	50.3	82	0.5	
Ni	60	3	72	-0.160	ppb	-21.3	218	1	
Cu	63	3	72	0.000	ppb	-19085.0	361	1	
Zn	66	3	72	0.352	ppb	20.5	167	5	
As	75	3	72	-0.030	ppb	-130.3	25	1	
Se	78	2	72	-0.020	ppb	-235.1	5	1	
(Se)	78	3	72	-2.563	ppb	-0.3	5	1	
Sr	88	3	72	0.052	ppb	92.0	53	0.5	
Mo	95	3	115	0.077	ppb	50.6	178	0.5	
Ag	107	3	115	0.018	ppb	36.0	82	1	
Cd	111	3	115	0.053	ppb	15.7	18	0.5	
Sn	120	3	115	-0.345	ppb	-17.5	980	1	
Sb	121	3	115	0.070	ppb	20.0	183	0.6	
Ba	137	3	115	0.081	ppb	60.4	63	0.5	
Tl	205	3	193	-0.007	ppb	-200.7	342	0.1	
(Pb)	206	3	193	0.080	ppb	35.9	283	1	
(Pb)	207	3	193	0.090	ppb	28.0	351	1	
Pb	208	3	193	0.087	ppb	13.6	1254	0.5	
Th	232	3	193	0.407	ppb	28.4	6862	1	
U	238	3	193	0.038	ppb	9.1	786	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1120356	0.88	1039886	107.74	60	120	
Sc (IS)	45	3	HMI He	158296	1.03	150011	105.52	60	120	
Ge Internal standard	72	2	HMI H2	624222	1.82	619265	100.80	60	120	
Ge Internal standard	72	3	HMI He	200425	1.15	195723	102.40	60	120	
In Internal Standard	115	3	HMI He	658659	0.10	626578	105.12	60	120	
Ir (IS)	193	3	HMI He	1599091	1.78	1575653	101.49	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL-7569078
Data File Name	052LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:34:32-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.985	ppb	19.011	78	1	98.5	70	130	
Na	23	3	45	33.666	ppb	9.768	31436	50	67.3	70	130	>+/-30%
Mg	24	3	45	45.800	ppb	7.756	4181	50	91.6	70	130	
Al	27	3	45	52.510	ppb	6.155	1648	50	105.0	70	130	
K	39	3	45	73.330	ppb	12.666	19944	100	73.3	70	130	
V	51	3	72	5.197	ppb	2.034	3944	5	103.9	70	130	
Cr	52	3	72	2.153	ppb	13.806	3625	2	107.7	70	130	
Mn	55	3	72	2.136	ppb	12.948	1263	1	213.6	70	130	>+/-30%
Co	59	3	72	1.081	ppb	8.319	1696	1	108.1	70	130	
Ni	60	3	72	1.947	ppb	9.393	1143	2	97.4	70	130	
Cu	63	3	72	2.116	ppb	3.763	2899	2	105.8	70	130	
Zn	66	3	72	11.111	ppb	6.772	2237	10	111.1	70	130	
As	75	3	72	5.340	ppb	12.089	746	5	106.8	70	130	
Se	78	2	72	6.063	ppb	5.622	417	5	121.3	70	130	
(Se)	78	3	72	3.137	ppb	50.672	43	5	62.7	70	130	>+/-30%
Sr	88	3	72	1.051	ppb	4.706	663	1	105.1	70	130	
Mo	95	3	115	1.769	ppb	6.080	1431	2	88.5	70	130	
Ag	107	3	115	0.942	ppb	5.274	2416	1	94.2	70	130	
Cd	111	3	115	0.974	ppb	13.648	342	1	97.4	70	130	
Sn	120	3	115	8.463	ppb	3.689	10281	10	84.6	70	130	
Sb	121	3	115	1.777	ppb	1.927	1953	2	88.8	70	130	
Ba	137	3	115	0.956	ppb	16.596	355	1	95.6	70	130	
Tl	205	3	193	0.890	ppb	4.444	5139	1	89.0	70	130	
(Pb)	206	3	193	0.966	ppb	2.334	1868	1	96.6	70	130	
(Pb)	207	3	193	0.968	ppb	5.333	1728	1	96.8	70	130	
Pb	208	3	193	0.976	ppb	1.985	7655	1	97.6	70	130	
Th	232	3	193	1.586	ppb	5.159	15682	2	79.3	70	130	
U	238	3	193	0.973	ppb	4.485	7989	1	97.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1137529	1.99	1039886	109.39	60	120	
Sc (IS)	45	3	HMI He	161679	2.59	150011	107.78	60	120	
Ge Internal standard	72	2	HMI H2	619465	2.09	619265	100.03	60	120	
Ge Internal standard	72	3	HMI He	201434	1.14	195723	102.92	60	120	
In Internal Standard	115	3	HMI He	671427	2.40	626578	107.16	60	120	
Ir (IS)	193	3	HMI He	1649309	0.87	1575653	104.67	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-3-b
Data File Name	053SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:37:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	3.175	ppb	3.175	5.78	242	2000	
Na	23	3	45	324.072	ppb	324.072	1.08	81786	400000	
Mg	24	3	45	5534.175	ppb	5534.175	1.31	492904	400000	
Al	27	3	45	198830.250	ppb	198830.250	0.93	6313293	400000	
K	39	3	45	1801.321	ppb	1801.321	2.32	130587	400000	
Ca	40	2	45	18876.453	ppb	18876.453	2.15	17035853	400000	
V	51	3	72	533.129	ppb	533.129	1.44	353564	2000	
Cr	52	3	72	288.425	ppb	288.425	0.71	249447	5000	
Mn	55	3	72	2704.989	ppb	2704.989	1.01	1196986	10000	
Fe	56	2	72	190120.021	ppb	190120.021	0.69	329544486	10000	>LDR
Co	59	3	72	19.977	ppb	19.977	1.38	28552	2000	
Ni	60	3	72	85.695	ppb	85.695	1.89	34980	5000	
Cu	63	3	72	176.724	ppb	176.724	0.31	196080	5000	
Zn	66	3	72	330.705	ppb	330.705	0.84	58918	5000	
As	75	3	72	55.403	ppb	55.403	0.69	6908	2000	
Se	78	2	72	4.085	ppb	4.085	10.16	276	2000	
(Se)	78	3	72	18.951	ppb	18.951	10.59	138	2000	
Sr	88	3	72	104.499	ppb	104.499	0.51	58928	4000	
Mo	95	3	115	8.519	ppb	8.519	0.92	6047	2000	
Ag	107	3	115	0.210	ppb	0.210	17.24	533	100	
Cd	111	3	115	2.789	ppb	2.789	1.63	921	2000	
Sn	120	3	115	18.829	ppb	18.829	1.63	19978	2000	
Sb	121	3	115	3.084	ppb	3.084	3.31	3112	1000	
Ba	137	3	115	334.448	ppb	334.448	0.77	104846	5000	
Tl	205	3	193	0.931	ppb	0.931	2.35	5099	2000	
(Pb)	206	3	193	278.124	ppb	278.124	1.68	470618	100	
(Pb)	207	3	193	264.810	ppb	264.810	0.98	391636	100	
Pb	208	3	193	277.627	ppb	277.627	1.80	1890337	5000	
Th	232	3	193	80.840	ppb	80.840	1.99	565589	2000	
U	238	3	193	11.715	ppb	11.715	0.77	86058	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	1240844	1.05	1039886	119.32	60	120	
Sc (IS)	45	3	HMI He	169412	1.02	150011	112.93	60	120	
Ge Internal standard	72	2	HMI H2	603219	1.01	619265	97.41	60	120	
Ge Internal standard	72	3	HMI He	186172	0.74	195723	95.12	60	120	
In Internal Standard	115	3	HMI He	632414	1.27	626578	100.93	60	120	
Ir (IS)	193	3	HMI He	1569432	1.81	1575653	99.61	60	120	

Sample Report

Sample Table

Sample Name	07549873
Data File Name	054SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:39:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.389	ppb	0.389	108.88	43	2000	
Na	23	3	45	74.837	ppb	74.837	5.15	134214	400000	
Mg	24	3	45	1703.756	ppb	1703.756	0.22	511591	400000	
Al	27	3	45	2547.529	ppb	2547.529	1.18	272494	400000	
K	39	3	45	35.143	ppb	35.143	15.29	62159	400000	
Ca	40	2	45	117759.951	ppb	117759.951	66.60	139889807	400000	
V	51	3	72	5.596	ppb	5.596	1.40	14140	2000	
Cr	52	3	72	5.117	ppb	5.117	0.11	21344	5000	
Mn	55	3	72	87.393	ppb	87.393	1.12	140668	10000	
Fe	56	2	72	6966.455	ppb	6966.455	59.03	20845297	10000	
Co	59	3	72	0.666	ppb	0.666	4.63	3520	2000	
Ni	60	3	72	1.887	ppb	1.887	3.92	3734	5000	
Cu	63	3	72	8.967	ppb	8.967	0.58	37145	5000	
Zn	66	3	72	18.883	ppb	18.883	2.46	12484	5000	
As	75	3	72	3.569	ppb	3.569	7.66	1701	2000	
Se	78	2	72	3.579	ppb	3.579	62.94	415	2000	
(Se)	78	3	72	0.392	ppb	0.392	276.23	83	2000	
Sr	88	3	72	87.086	ppb	87.086	0.53	177662	4000	
Mo	95	3	115	2.005	ppb	2.005	2.00	6025	2000	
Ag	107	3	115	0.017	ppb	0.017	21.71	298	100	
Cd	111	3	115	0.082	ppb	0.082	15.41	108	2000	
Sn	120	3	115	1.413	ppb	1.413	4.24	10694	2000	
Sb	121	3	115	0.054	ppb	0.054	21.64	636	1000	
Ba	137	3	115	32.995	ppb	32.995	2.96	41299	5000	
Tl	205	3	193	0.136	ppb	0.136	5.69	3780	2000	
(Pb)	206	3	193	10.540	ppb	10.540	1.00	64026	100	
(Pb)	207	3	193	9.980	ppb	9.980	0.84	53307	100	
Pb	208	3	193	10.214	ppb	10.214	0.82	249946	5000	
Th	232	3	193	2.266	ppb	2.266	1.71	70018	2000	
U	238	3	193	0.637	ppb	0.637	0.77	18326	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2123352	54.35	1039886	204.19	60	120	IS Failed
Sc (IS)	45	3	HMI He	570294	0.89	150011	380.17	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	1283345	49.68	619265	207.24	60	120	IS Failed
Ge Internal standard	72	3	HMI He	673449	0.48	195723	344.08	60	120	IS Failed
In Internal Standard	115	3	HMI He	2518154	2.03	626578	401.89	60	120	IS Failed
Ir (IS)	193	3	HMI He	5590097	0.50	1575653	354.78	60	120	IS Failed

Sample Report

Sample Table

Sample Name	07549873
Data File Name	055SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:42:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.066	ppb	0.066	168.81	33	2000	
Na	23	3	45	66.891	ppb	66.891	5.72	124884	400000	
Mg	24	3	45	1696.400	ppb	1696.400	1.42	490347	400000	
Al	27	3	45	2561.442	ppb	2561.442	1.92	263758	400000	
K	39	3	45	30.333	ppb	30.333	27.47	58848	400000	
Ca	40	2	45	41283.856	ppb	41283.856	1.01	119893882	400000	
V	51	3	72	5.571	ppb	5.571	3.64	13485	2000	
Cr	52	3	72	5.058	ppb	5.058	0.48	20270	5000	
Mn	55	3	72	87.213	ppb	87.213	1.45	134468	10000	
Fe	56	2	72	2695.694	ppb	2695.694	2.06	17321468	10000	
Co	59	3	72	0.665	ppb	0.665	7.16	3367	2000	
Ni	60	3	72	1.787	ppb	1.787	5.87	3437	5000	
Cu	63	3	72	9.030	ppb	9.030	2.59	35817	5000	
Zn	66	3	72	18.726	ppb	18.726	2.00	11861	5000	
As	75	3	72	3.708	ppb	3.708	1.66	1689	2000	
Se	78	2	72	1.228	ppb	1.228	8.84	324	2000	
(Se)	78	3	72	-0.367	ppb	-0.367	-207.58	63	2000	
Sr	88	3	72	87.735	ppb	87.735	0.35	171452	4000	
Mo	95	3	115	1.933	ppb	1.933	4.91	5598	2000	
Ag	107	3	115	0.016	ppb	0.016	12.49	282	100	
Cd	111	3	115	0.065	ppb	0.065	31.70	82	2000	
Sn	120	3	115	1.334	ppb	1.334	5.02	9982	2000	
Sb	121	3	115	0.056	ppb	0.056	18.34	621	1000	
Ba	137	3	115	32.932	ppb	32.932	1.22	39640	5000	
Tl	205	3	193	0.133	ppb	0.133	3.71	3594	2000	
(Pb)	206	3	193	10.596	ppb	10.596	1.80	62258	100	
(Pb)	207	3	193	9.832	ppb	9.832	0.47	50808	100	
Pb	208	3	193	10.270	ppb	10.270	0.74	243088	5000	
Th	232	3	193	2.089	ppb	2.089	1.58	63481	2000	
U	238	3	193	0.654	ppb	0.654	1.66	18163	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3994482	1.78	1039886	384.13	60	120	IS Failed
Sc (IS)	45	3	HMI He	549012	0.66	150011	365.98	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2233370	1.56	619265	360.65	60	120	IS Failed
Ge Internal standard	72	3	HMI He	645122	0.70	195723	329.61	60	120	IS Failed
In Internal Standard	115	3	HMI He	2420622	0.42	626578	386.32	60	120	IS Failed
Ir (IS)	193	3	HMI He	5407353	0.83	1575653	343.18	60	120	IS Failed

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	056_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:44:03-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	419.081	ppb	0.661	108413	2000	21.0	90	110	LRS Main CR1 Failed
Al	27	3	45	5.254	ppb	15.274	767	50000	0.0	90	110	LRS Main CR1 Failed
V	51	3	72	548.819	ppb	1.623	1290956	2000	27.4	90	110	LRS Main CR1 Failed
Cr	52	3	72	1308.981	ppb	1.264	3996479	5000	26.2	90	110	LRS Main CR1 Failed
Mn	55	3	72	2536.709	ppb	1.402	3981339	10000	25.4	90	110	LRS Main CR1 Failed
Co	59	3	72	524.994	ppb	1.125	2659427	2000	26.2	90	110	LRS Main CR1 Failed
Ni	60	3	72	1292.062	ppb	2.066	1857347	5000	25.8	90	110	LRS Main CR1 Failed
Cu	63	3	72	1330.221	ppb	3.618	5226647	5000	26.6	90	110	LRS Main CR1 Failed
Zn	66	3	72	1376.097	ppb	2.238	868468	5000	27.5	90	110	LRS Main CR1 Failed
As	75	3	72	523.024	ppb	0.974	230505	2000	26.2	90	110	LRS Main CR1 Failed
Se	78	2	72	487.927	ppb	2.301	121920	2000	24.4	90	110	LRS Main CR1 Failed
(Se)	78	3	72	599.963	ppb	3.143	13295	2000	30.0	90	110	LRS Main CR1 Failed
Sr	88	3	72	1288.172	ppb	1.282	2575601	2000	64.4	90	110	LRS Main CR1 Failed
Mo	95	3	115	364.213	ppb	2.006	1043917	2000	18.2	90	110	LRS Main CR1 Failed
Cd	111	3	115	369.062	ppb	0.256	501912	2000	18.5	90	110	LRS Main CR1 Failed
Sn	120	3	115	386.622	ppb	1.562	1585848	2000	19.3	90	110	LRS Main CR1 Failed
Sb	121	3	115	182.822	ppb	1.028	733891	1000	18.3	90	110	LRS Main CR1 Failed
Ba	137	3	115	954.639	ppb	0.962	1231763	5000	19.1	90	110	LRS Main CR1 Failed
Tl	205	3	193	215.316	ppb	1.203	4166075	1000	21.5	90	110	LRS Main CR1 Failed
(Pb)	206	3	193	1045.556	ppb	1.527	6736920	5000	20.9	90	110	LRS Main CR1 Failed
(Pb)	207	3	193	1062.673	ppb	1.094	5983443	5000	21.3	90	110	LRS Main CR1 Failed
Pb	208	3	193	1061.451	ppb	1.200	27521321	5000	21.2	90	110	LRS Main CR1 Failed
Th	232	3	193	210.028	ppb	1.016	5573444	1000	21.0	90	110	LRS Main CR1 Failed
U	238	3	193	434.344	ppb	1.940	12083065	2000	21.7	90	110	LRS Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4085864	1.44	1039886	392.91	60	120	IS Failed
Sc (IS)	45	3	HMI He	572090	1.33	150011	381.36	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2286876	2.73	619265	369.29	60	120	IS Failed
Ge Internal standard	72	3	HMI He	660320	0.40	195723	337.37	60	120	IS Failed
In Internal Standard	115	3	HMI He	2603504	0.87	626578	415.51	60	120	IS Failed
Ir (IS)	193	3	HMI He	5977512	1.97	1575653	379.37	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171339-a-4-a@10
Data File Name	057SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:45:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.275	ppb	0.275	17.51	82	2000	
Na	23	3	45	-113.568	ppb	-113.568	-0.38	26582	400000	
Mg	24	3	45	35.675	ppb	35.675	2.48	11316	400000	
Al	27	3	45	6956.864	ppb	6956.864	2.29	717420	400000	
K	39	3	45	-106.338	ppb	-106.338	-4.22	30778	400000	
Ca	40	2	45	19.035	ppb	19.035	2.80	84900	400000	
V	51	3	72	27.647	ppb	27.647	0.75	60496	2000	
Cr	52	3	72	5.045	ppb	5.045	3.84	19065	5000	
Mn	55	3	72	46.909	ppb	46.909	0.54	68506	10000	
Fe	56	2	72	12403.759	ppb	12403.759	1.12	69304920	10000	
Co	59	3	72	0.449	ppb	0.449	8.20	2164	2000	
Ni	60	3	72	0.702	ppb	0.702	6.81	1804	5000	
Cu	63	3	72	2.104	ppb	2.104	3.68	8705	5000	
Zn	66	3	72	3.705	ppb	3.705	6.94	2452	5000	
As	75	3	72	0.761	ppb	0.761	15.74	396	2000	
Se	78	2	72	0.264	ppb	0.264	35.87	77	2000	
(Se)	78	3	72	-1.427	ppb	-1.427	-54.32	38	2000	
Sr	88	3	72	1.273	ppb	1.273	9.02	2409	4000	
Mo	95	3	115	1.232	ppb	1.232	15.19	3790	2000	
Ag	107	3	115	-0.009	ppb	-0.009	-35.54	52	100	
Cd	111	3	115	0.132	ppb	0.132	40.86	170	2000	
Sn	120	3	115	0.317	ppb	0.317	21.64	6215	2000	
Sb	121	3	115	0.118	ppb	0.118	17.63	863	1000	
Ba	137	3	115	2.460	ppb	2.460	2.31	3135	5000	
Tl	205	3	193	0.061	ppb	0.061	16.02	2421	2000	
(Pb)	206	3	193	5.567	ppb	5.567	1.25	34101	100	
(Pb)	207	3	193	5.262	ppb	5.262	1.56	28499	100	
Pb	208	3	193	5.400	ppb	5.400	1.57	133405	5000	
Th	232	3	193	3.032	ppb	3.032	16.93	89173	2000	
U	238	3	193	0.553	ppb	0.553	1.32	16163	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3688833	2.55	1039886	354.73	60	120	IS Failed
Sc (IS)	45	3	HMI He	549982	0.85	150011	366.63	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	1943755	1.87	619265	313.88	60	120	IS Failed
Ge Internal standard	72	3	HMI He	607987	1.13	195723	310.64	60	120	IS Failed
In Internal Standard	115	3	HMI He	2458962	0.26	626578	392.44	60	120	IS Failed
Ir (IS)	193	3	HMI He	5598011	1.10	1575653	355.28	60	120	IS Failed

Blank Report

Sample Table

Sample Name	mb 280-600565/1-a
Data File Name	058_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:47:41-07:00
Sample Type	Blank
Dilution	1
Comment	600565 6020B
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.023	ppb	-48.84209329	12	0.5
Na	23	3	45	-115.716	ppb	-0.941674806	25716	25
Mg	24	3	45	-2.602	ppb	-2.297167244	257	25
Al	27	3	45	0.342	ppb	82.5866678	234	15
K	39	3	45	-183.661	ppb	-3.038977904	15023	50
V	51	3	72	-0.228	ppb	-7.154418056	162	1
Cr	52	3	72	-1.122	ppb	-5.419558791	1796	1
Mn	55	3	72	-0.155	ppb	-2.503628403	513	0.5
Co	59	3	72	0.009	ppb	42.0917473	117	0.5
Ni	60	3	72	-0.490	ppb	-7.112381803	232	1
Cu	63	3	72	0.087	ppb	0.817697724	1444	1
Zn	66	3	72	-0.028	ppb	-248.0881876	292	5
As	75	3	72	-0.141	ppb	-19.60871472	32	1
(Se)	78	3	72	-2.267	ppb	-16.43100221	22	1
Sr	88	3	72	0.018	ppb	31.55105046	103	0.5
Mo	95	3	115	-0.015	ppb	-145.3520868	423	0.5
Ag	107	3	115	-0.013	ppb	-2.925341796	22	1
Cd	111	3	115	0.015	ppb	64.20738111	20	0.5
Sn	120	3	115	-1.016	ppb	-1.143408384	1085	1
Sb	121	3	115	-0.041	ppb	-3.823721049	268	0.6
Ba	137	3	115	-0.060	ppb	-5.479718636	65	0.5
Tl	205	3	193	-0.046	ppb	-6.461201425	493	0.1
(Pb)	206	3	193	0.028	ppb	28.66607991	676	1
(Pb)	207	3	193	-0.005	ppb	-112.98996	730	1
Pb	208	3	193	0.022	ppb	7.387514474	2824	0.5
Th	232	3	193	-0.033	ppb	-272.5912123	13154	1
U	238	3	193	0.032	ppb	10.47922073	2579	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3935007	1.68	1039886	378.41	60	120	IS Failed
Sc (IS)	45	3	HMI He	556662	0.92	150011	371.08	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2050331	1.68	619265	331.09	60	120	IS Failed
Ge Internal standard	72	3	HMI He	622755	0.43	195723	318.18	60	120	IS Failed
In Internal Standard	115	3	HMI He	2497754	2.50	626578	398.63	60	120	IS Failed
Ir (IS)	193	3	HMI He	5606590	1.13	1575653	355.83	60	120	IS Failed

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600565/2-a
Data File Name	059_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:49:36-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600565 6020B
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	7.984	7.984	ppb	3.327	2059	40	20.0	80	120	>+/-20%
Na	23	3	45	45.548	45.548	ppb	2.911	118607	40	113.9	80	120	
Mg	24	3	45	144.524	144.524	ppb	0.535	44715	40	361.3	80	120	>+/-20%
Al	27	3	45	157.379	157.379	ppb	2.640	17164	40	393.4	80	120	>+/-20%
K	39	3	45	-11.464	-11.464	ppb	-73.728	52631	40	-28.7	80	120	>+/-20%
Ca	40	2	45	157.751	157.751	ppb	3.278	492143	40	394.4	80	120	>+/-20%
V	51	3	72	10.160	10.160	ppb	1.226	24434	40	25.4	80	120	>+/-20%
Cr	52	3	72	9.003	9.003	ppb	2.025	32563	40	22.5	80	120	>+/-20%
Mn	55	3	72	10.837	10.837	ppb	1.316	17677	40	27.1	80	120	>+/-20%
Fe	56	2	72	198.212	198.212	ppb	0.165	1241969	40	495.5	80	120	>+/-20%
(Fe)	56	3	72	208.928	208.928	ppb	0.490	532250	40	522.3	80	120	>+/-20%
Co	59	3	72	10.190	10.190	ppb	0.690	51359	40	25.5	80	120	>+/-20%
Ni	60	3	72	9.458	9.458	ppb	1.994	14445	40	23.6	80	120	>+/-20%
Cu	63	3	72	10.374	10.374	ppb	1.420	41675	40	25.9	80	120	>+/-20%
Zn	66	3	72	10.734	10.734	ppb	5.604	7053	40	26.8	80	120	>+/-20%
As	75	3	72	10.381	10.381	ppb	0.250	4638	40	26.0	80	120	>+/-20%
Se	78	2	72	9.909	9.909	ppb	2.943	2338	40	24.8	80	120	>+/-20%
(Se)	78	3	72	7.571	7.571	ppb	26.521	238	40	18.9	80	120	>+/-20%
Sr	88	3	72	19.870	19.870	ppb	1.033	39543	40	49.7	80	120	>+/-20%
Mo	95	3	115	7.214	7.214	ppb	2.391	20212	40	18.0	80	120	>+/-20%
Ag	107	3	115	7.247	7.247	ppb	3.512	67872	40	18.1	80	120	>+/-20%
Cd	111	3	115	7.255	7.255	ppb	4.323	9424	40	18.1	80	120	>+/-20%
Sn	120	3	115	5.930	5.930	ppb	4.387	28199	40	14.8	80	120	>+/-20%
Sb	121	3	115	7.338	7.338	ppb	1.817	28548	40	18.3	80	120	>+/-20%
Ba	137	3	115	7.308	7.308	ppb	4.014	9145	40	18.3	80	120	>+/-20%
Tl	205	3	193	8.039	8.039	ppb	2.575	147792	40	20.1	80	120	>+/-20%
(Pb)	206	3	193	8.070	8.070	ppb	0.767	49502	40	20.2	80	120	>+/-20%
(Pb)	207	3	193	8.079	8.079	ppb	1.208	43612	40	20.2	80	120	>+/-20%
Pb	208	3	193	8.086	8.086	ppb	1.475	199804	40	20.2	80	120	>+/-20%
Th	232	3	193	7.656	7.656	ppb	3.396	204860	40	19.1	80	120	>+/-20%
U	238	3	193	8.079	8.079	ppb	2.617	213461	40	20.2	80	120	>+/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3974704	1.77	1039886	382.22	60	120	IS Failed
Sc (IS)	45	3	HMI He	574967	0.66	150011	383.28	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2138191	0.77	619265	345.28	60	120	IS Failed
Ge Internal standard	72	3	HMI He	656029	0.22	195723	335.18	60	120	IS Failed
In Internal Standard	115	3	HMI He	2488062	2.47	626578	397.09	60	120	IS Failed
Ir (IS)	193	3	HMI He	5631615	1.83	1575653	357.41	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-1-A@50
Data File Name	060SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:51:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.044	ppb	-0.044	-70.08	7	2000	
Na	23	3	45	140.489	ppb	140.489	3.52	171237	400000	
Mg	24	3	45	169.281	ppb	169.281	0.66	51726	400000	
Al	27	3	45	-0.024	ppb	-0.024	-1680.68	200	400000	
K	39	3	45	-162.506	ppb	-162.506	-5.37	19908	400000	
Ca	40	2	45	299.130	ppb	299.130	2.91	910514	400000	
V	51	3	72	-0.239	ppb	-0.239	-12.09	142	2000	
Cr	52	3	72	-1.187	ppb	-1.187	-1.51	1659	5000	
Mn	55	3	72	-0.264	ppb	-0.264	-4.59	363	10000	
Fe	56	2	72	-1.143	ppb	-1.143	-6.35	17285	10000	
Co	59	3	72	0.007	ppb	0.007	76.61	110	2000	
Ni	60	3	72	-0.493	ppb	-0.493	-4.16	235	5000	
Cu	63	3	72	-0.172	ppb	-0.172	-6.08	500	5000	
Zn	66	3	72	0.877	ppb	0.877	5.44	856	5000	
As	75	3	72	-0.128	ppb	-0.128	-22.83	38	2000	
Se	78	2	72	-0.073	ppb	-0.073	-19.70	6	2000	
(Se)	78	3	72	-2.611	ppb	-2.611	-0.22	15	2000	
Sr	88	3	72	5.949	ppb	5.949	1.15	11646	4000	
Mo	95	3	115	-0.071	ppb	-0.071	-10.26	277	2000	
Ag	107	3	115	0.193	ppb	0.193	4.29	2002	100	
Cd	111	3	115	0.007	ppb	0.007	50.31	10	2000	
Sn	120	3	115	-1.020	ppb	-1.020	-2.44	1096	2000	
Sb	121	3	115	-0.048	ppb	-0.048	-2.50	247	1000	
Ba	137	3	115	0.153	ppb	0.153	5.17	338	5000	
Tl	205	3	193	-0.051	ppb	-0.051	-3.18	391	2000	
(Pb)	206	3	193	-0.017	ppb	-0.017	-50.76	400	100	
(Pb)	207	3	193	-0.043	ppb	-0.043	-31.85	521	100	
Pb	208	3	193	-0.022	ppb	-0.022	-22.06	1718	5000	
Th	232	3	193	0.041	ppb	0.041	42.49	14705	2000	
U	238	3	193	0.085	ppb	0.085	1.67	3902	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4018137	0.56	1039886	386.40	60	120	IS Failed
Sc (IS)	45	3	HMI He	569794	0.75	150011	379.83	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2147855	1.24	619265	346.84	60	120	IS Failed
Ge Internal standard	72	3	HMI He	642612	0.82	195723	328.33	60	120	IS Failed
In Internal Standard	115	3	HMI He	2566270	0.67	626578	409.57	60	120	IS Failed
Ir (IS)	193	3	HMI He	5502827	1.84	1575653	349.24	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-2-a@50
Data File Name	061SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:53:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.058	ppb	-0.058	-19.89	3	2000	
Na	23	3	45	276.684	ppb	276.684	2.09	251555	400000	
Mg	24	3	45	199.470	ppb	199.470	1.29	61565	400000	
Al	27	3	45	-0.511	ppb	-0.511	-46.06	150	400000	
K	39	3	45	-173.263	ppb	-173.263	-2.80	17829	400000	
Ca	40	2	45	398.572	ppb	398.572	2.11	1219710	400000	
V	51	3	72	-0.226	ppb	-0.226	-5.95	173	2000	
Cr	52	3	72	-1.216	ppb	-1.216	-4.85	1579	5000	
Mn	55	3	72	0.446	ppb	0.446	13.99	1453	10000	
Fe	56	2	72	-1.685	ppb	-1.685	-2.43	13898	10000	
Co	59	3	72	0.002	ppb	0.002	312.42	87	2000	
Ni	60	3	72	-0.489	ppb	-0.489	-7.41	242	5000	
Cu	63	3	72	-0.169	ppb	-0.169	-4.35	513	5000	
Zn	66	3	72	0.267	ppb	0.267	15.70	483	5000	
As	75	3	72	-0.151	ppb	-0.151	-21.64	28	2000	
Se	78	2	72	-0.073	ppb	-0.073	-12.06	6	2000	
(Se)	78	3	72	-2.924	ppb	-2.924	-9.08	8	2000	
Sr	88	3	72	7.359	ppb	7.359	0.27	14440	4000	
Mo	95	3	115	-0.105	ppb	-0.105	-7.32	182	2000	
Ag	107	3	115	-0.013	ppb	-0.013	-6.37	17	100	
Cd	111	3	115	0.002	ppb	0.002	173.21	3	2000	
Sn	120	3	115	-1.056	ppb	-1.056	-4.01	953	2000	
Sb	121	3	115	-0.072	ppb	-0.072	-10.82	150	1000	
Ba	137	3	115	0.218	ppb	0.218	23.04	420	5000	
Tl	205	3	193	-0.057	ppb	-0.057	-4.43	278	2000	
(Pb)	206	3	193	-0.033	ppb	-0.033	-26.45	308	100	
(Pb)	207	3	193	-0.057	ppb	-0.057	-19.73	458	100	
Pb	208	3	193	-0.036	ppb	-0.036	-20.20	1406	5000	
Th	232	3	193	-0.346	ppb	-0.346	-3.23	5364	2000	
U	238	3	193	0.047	ppb	0.047	22.05	2967	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4081909	2.43	1039886	392.53	60	120	IS Failed
Sc (IS)	45	3	HMI He	577347	0.83	150011	384.87	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2142151	0.80	619265	345.92	60	120	IS Failed
Ge Internal standard	72	3	HMI He	644822	1.39	195723	329.46	60	120	IS Failed
In Internal Standard	115	3	HMI He	2564668	2.48	626578	409.31	60	120	IS Failed
Ir (IS)	193	3	HMI He	5591791	0.69	1575653	354.89	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-3-a@50
Data File Name	062SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:55:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.058	ppb	-0.058	-38.91	3	2000	
Na	23	3	45	378.803	ppb	378.803	1.41	307962	400000	
Mg	24	3	45	697.365	ppb	697.365	1.15	211142	400000	
Al	27	3	45	-0.779	ppb	-0.779	-32.85	120	400000	
K	39	3	45	-164.733	ppb	-164.733	-4.98	19537	400000	
Ca	40	2	45	874.415	ppb	874.415	1.02	2615109	400000	
V	51	3	72	-0.216	ppb	-0.216	-0.75	197	2000	
Cr	52	3	72	-1.193	ppb	-1.193	-1.30	1651	5000	
Mn	55	3	72	-0.321	ppb	-0.321	-7.55	278	10000	
Fe	56	2	72	-1.825	ppb	-1.825	-2.49	12962	10000	
Co	59	3	72	-0.005	ppb	-0.005	-34.55	53	2000	
Ni	60	3	72	-0.499	ppb	-0.499	-8.84	227	5000	
Cu	63	3	72	-0.189	ppb	-0.189	-7.62	436	5000	
Zn	66	3	72	0.230	ppb	0.230	31.98	461	5000	
As	75	3	72	-0.097	ppb	-0.097	-46.25	52	2000	
Se	78	2	72	-0.061	ppb	-0.061	-32.11	9	2000	
(Se)	78	3	72	-2.457	ppb	-2.457	-14.78	18	2000	
Sr	88	3	72	17.061	ppb	17.061	1.25	33409	4000	
Mo	95	3	115	-0.126	ppb	-0.126	-6.34	122	2000	
Ag	107	3	115	-0.012	ppb	-0.012	-16.01	30	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-1.058	ppb	-1.058	-1.09	948	2000	
Sb	121	3	115	-0.078	ppb	-0.078	-10.84	128	1000	
Ba	137	3	115	0.036	ppb	0.036	58.26	190	5000	
Tl	205	3	193	-0.058	ppb	-0.058	-3.86	260	2000	
(Pb)	206	3	193	-0.037	ppb	-0.037	-9.84	282	100	
(Pb)	207	3	193	-0.064	ppb	-0.064	-7.99	418	100	
Pb	208	3	193	-0.038	ppb	-0.038	-3.88	1368	5000	
Th	232	3	193	-0.370	ppb	-0.370	-2.04	4747	2000	
U	238	3	193	0.111	ppb	0.111	6.20	4630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4055791	0.53	1039886	390.02	60	120	IS Failed
Sc (IS)	45	3	HMI He	573385	0.75	150011	382.23	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2129647	0.96	619265	343.90	60	120	IS Failed
Ge Internal standard	72	3	HMI He	645404	1.15	195723	329.75	60	120	IS Failed
In Internal Standard	115	3	HMI He	2568065	1.74	626578	409.86	60	120	IS Failed
Ir (IS)	193	3	HMI He	5580441	1.11	1575653	354.17	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	063_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:57:08-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	9.999	ppb	6.583	2506	50	20.0	90	110	>+\-10%
Na	23	3	45	10757.707	ppb	1.805	6172659	51000	21.1	90	110	>+\-10%
Mg	24	3	45	2327.891	ppb	1.534	697530	11000	21.2	90	110	>+\-10%
Al	27	3	45	202.127	ppb	1.119	21775	1000	20.2	90	110	>+\-10%
K	39	3	45	2076.716	ppb	1.182	497702	11000	18.9	90	110	>+\-10%
Ca	40	2	45	2269.218	ppb	2.587	6625775	11000	20.6	90	110	>+\-10%
V	51	3	72	13.014	ppb	1.559	30350	50	26.0	90	110	>+\-10%
Cr	52	3	72	12.071	ppb	1.752	40848	50	24.1	90	110	>+\-10%
Mn	55	3	72	12.782	ppb	2.064	20211	50	25.6	90	110	>+\-10%
Fe	56	2	72	250.649	ppb	1.747	1559447	1000	25.1	90	110	>+\-10%
Co	59	3	72	12.952	ppb	1.261	63684	50	25.9	90	110	>+\-10%
Ni	60	3	72	12.236	ppb	1.405	17966	50	24.5	90	110	>+\-10%
Cu	63	3	72	12.594	ppb	0.870	49124	50	25.2	90	110	>+\-10%
Zn	66	3	72	13.463	ppb	1.052	8552	50	26.9	90	110	>+\-10%
As	75	3	72	12.942	ppb	1.752	5620	50	25.9	90	110	>+\-10%
Se	78	2	72	12.168	ppb	1.327	2858	50	24.3	90	110	>+\-10%
(Se)	78	3	72	14.464	ppb	14.671	380	50	28.9	90	110	>+\-10%
Sr	88	3	72	26.064	ppb	0.798	50595	100	26.1	90	110	>+\-10%
Mo	95	3	115	9.163	ppb	2.979	25585	50	18.3	90	110	>+\-10%
Ag	107	3	115	9.164	ppb	1.179	85950	50	18.3	90	110	>+\-10%
Cd	111	3	115	9.197	ppb	2.498	11969	50	18.4	90	110	>+\-10%
Sn	120	3	115	7.978	ppb	1.897	36264	50	16.0	90	110	>+\-10%
Sb	121	3	115	9.199	ppb	0.112	35743	50	18.4	90	110	>+\-10%
Ba	137	3	115	9.281	ppb	2.279	11598	50	18.6	90	110	>+\-10%
Tl	205	3	193	10.089	ppb	0.632	183486	50	20.2	90	110	>+\-10%
(Pb)	206	3	193	10.146	ppb	1.217	61535	50	20.3	90	110	>+\-10%
(Pb)	207	3	193	10.148	ppb	0.532	54083	50	20.3	90	110	>+\-10%
Pb	208	3	193	10.112	ppb	0.060	247024	50	20.2	90	110	>+\-10%
Th	232	3	193	9.976	ppb	0.883	260343	50	20.0	90	110	>+\-10%
U	238	3	193	10.271	ppb	1.813	268447	50	20.5	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3995207	0.89	1039886	384.20	60	120	IS Failed
Sc (IS)	45	3	HMI He	569420	0.30	150011	379.58	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2131768	0.41	619265	344.24	60	120	IS Failed
Ge Internal standard	72	3	HMI He	640195	0.37	195723	327.09	60	120	IS Failed
In Internal Standard	115	3	HMI He	2491533	0.44	626578	397.64	60	120	IS Failed
Ir (IS)	193	3	HMI He	5579364	0.96	1575653	354.10	60	120	IS Failed

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	064_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T15:59:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.051	ppb	-40.0	5	0.5	
Na	23	3	45	-122.280	ppb	-0.7	22768	25	
Mg	24	3	45	-2.673	ppb	-5.4	244	25	
Al	27	3	45	-0.966	ppb	-35.4	100	15	
K	39	3	45	-182.330	ppb	-5.6	15775	50	
V	51	3	72	-0.226	ppb	-1.6	173	1	
Cr	52	3	72	-1.254	ppb	-0.9	1464	1	
Mn	55	3	72	-0.360	ppb	-4.0	218	0.5	
Co	59	3	72	-0.006	ppb	-56.4	48	0.5	
Ni	60	3	72	-0.540	ppb	-3.3	170	1	
Cu	63	3	72	-0.218	ppb	-4.5	325	1	
Zn	66	3	72	-0.277	ppb	-24.8	148	5	
As	75	3	72	-0.112	ppb	-20.8	45	1	
Se	78	2	72	-0.060	ppb	-46.3	9	1	
(Se)	78	3	72	-2.615	ppb	-15.3	15	1	
Sr	88	3	72	-0.014	ppb	-57.2	43	0.5	
Mo	95	3	115	-0.135	ppb	-10.4	93	0.5	
Ag	107	3	115	-0.010	ppb	-20.0	45	1	
Cd	111	3	115	0.001	ppb	173.2	2	0.5	
Sn	120	3	115	-1.093	ppb	-1.7	786	1	
Sb	121	3	115	-0.070	ppb	-12.9	155	0.6	
Ba	137	3	115	-0.059	ppb	-11.7	67	0.5	
Tl	205	3	193	-0.061	ppb	-1.8	210	0.1	
(Pb)	206	3	193	-0.035	ppb	-3.2	293	1	
(Pb)	207	3	193	-0.061	ppb	-7.9	433	1	
Pb	208	3	193	-0.040	ppb	-1.6	1306	0.5	
Th	232	3	193	-0.239	ppb	-12.6	7967	1	
U	238	3	193	-0.004	ppb	-91.5	1644	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3981374	0.95	1039886	382.87	60	120	IS Failed
Sc (IS)	45	3	HMI He	573814	0.93	150011	382.51	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2061527	2.53	619265	332.90	60	120	IS Failed
Ge Internal standard	72	3	HMI He	644188	1.36	195723	329.13	60	120	IS Failed
In Internal Standard	115	3	HMI He	2513201	1.95	626578	401.10	60	120	IS Failed
Ir (IS)	193	3	HMI He	5566247	0.79	1575653	353.27	60	120	IS Failed

Blank Report

Sample Table

Sample Name	mb 280-600256/1-a
Data File Name	065_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:00:54-07:00
Sample Type	Blank
Dilution	1
Comment	600256 6020B
ISTD Ref File Name	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.051	ppb	-39.76045528	5	0.5
Na	23	3	45	-125.387	ppb	-0.239207614	20559	25
Mg	24	3	45	-2.270	ppb	-14.26392091	357	25
Al	27	3	45	2.354	ppb	49.63987119	447	15
K	39	3	45	-186.324	ppb	-2.912046484	14606	50
V	51	3	72	-0.267	ppb	-4.551370113	80	1
Cr	52	3	72	-1.019	ppb	-4.570016899	2187	1
Mn	55	3	72	-0.111	ppb	-45.32512247	605	0.5
Co	59	3	72	0.002	ppb	24.72022974	88	0.5
Ni	60	3	72	-0.513	ppb	-3.685317216	210	1
Cu	63	3	72	-0.210	ppb	-4.95854171	361	1
Zn	66	3	72	-0.071	ppb	-55.24198621	278	5
As	75	3	72	-0.125	ppb	-55.28118666	40	1
(Se)	78	3	72	-2.774	ppb	-4.828405852	12	1
Sr	88	3	72	0.019	ppb	35.9587613	110	0.5
Mo	95	3	115	-0.128	ppb	-4.935829427	115	0.5
Ag	107	3	115	-0.012	ppb	-2.201735369	28	1
Cd	111	3	115	0.006	ppb	68.4915503	8	0.5
Sn	120	3	115	-1.198	ppb	-0.57037319	375	1
Sb	121	3	115	-0.097	ppb	-4.491825531	53	0.6
Ba	137	3	115	-0.028	ppb	-44.29299206	107	0.5
Tl	205	3	193	-0.054	ppb	-7.030986785	333	0.1
(Pb)	206	3	193	-0.040	ppb	-16.937049	265	1
(Pb)	207	3	193	-0.062	ppb	-13.52272441	433	1
Pb	208	3	193	-0.038	ppb	-27.6760327	1351	0.5
Th	232	3	193	-0.351	ppb	-5.44135789	5244	1
U	238	3	193	-0.003	ppb	-147.9215738	1678	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3946478	1.40	1039886	379.51	60	120	IS Failed
Sc (IS)	45	3	HMI He	561793	1.11	150011	374.50	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2156081	1.80	619265	348.17	60	120	IS Failed
Ge Internal standard	72	3	HMI He	651267	0.53	195723	332.75	60	120	IS Failed
In Internal Standard	115	3	HMI He	2535800	1.43	626578	404.71	60	120	IS Failed
Ir (IS)	193	3	HMI He	5610886	2.13	1575653	356.10	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	066SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:02:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.052	ppb	-0.052	-60.43	5	2000	
Na	23	3	45	-130.321	ppb	-130.321	-0.83	19770	400000	
Mg	24	3	45	-2.971	ppb	-2.971	-1.18	167	400000	
Al	27	3	45	-1.012	ppb	-1.012	-19.65	103	400000	
K	39	3	45	-192.907	ppb	-192.907	-3.02	14676	400000	
Ca	40	2	45	-8.867	ppb	-8.867	-0.94	12168	400000	
V	51	3	72	-0.275	ppb	-0.275	-2.51	68	2000	
Cr	52	3	72	-1.490	ppb	-1.490	-1.17	881	5000	
Mn	55	3	72	-0.423	ppb	-0.423	-2.37	140	10000	
Fe	56	2	72	-2.864	ppb	-2.864	-1.28	7416	10000	
Co	59	3	72	-0.009	ppb	-0.009	-45.57	40	2000	
Ni	60	3	72	-0.574	ppb	-0.574	-1.59	142	5000	
Cu	63	3	72	-0.259	ppb	-0.259	-2.18	195	5000	
Zn	66	3	72	-0.382	ppb	-0.382	-11.32	97	5000	
As	75	3	72	-0.160	ppb	-0.160	-13.12	28	2000	
Se	78	2	72	-0.075	ppb	-0.075	-17.49	6	2000	
(Se)	78	3	72	-2.844	ppb	-2.844	-10.48	12	2000	
Sr	88	3	72	-0.014	ppb	-0.014	-14.12	50	4000	
Mo	95	3	115	-0.155	ppb	-0.155	-4.29	43	2000	
Ag	107	3	115	-0.013	ppb	-0.013	-9.35	15	100	
Cd	111	3	115	0.005	ppb	0.005	86.60	7	2000	
Sn	120	3	115	-1.246	ppb	-1.246	-0.38	205	2000	
Sb	121	3	115	-0.087	ppb	-0.087	-2.57	100	1000	
Ba	137	3	115	-0.082	ppb	-0.082	-20.66	42	5000	
Tl	205	3	193	-0.061	ppb	-0.061	-2.73	225	2000	
(Pb)	206	3	193	-0.059	ppb	-0.059	-8.67	168	100	
(Pb)	207	3	193	-0.086	ppb	-0.086	-7.40	335	100	
Pb	208	3	193	-0.061	ppb	-0.061	-3.27	870	5000	
Th	232	3	193	-0.396	ppb	-0.396	-3.01	4502	2000	
U	238	3	193	-0.010	ppb	-0.010	-14.10	1629	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4441989	1.89	1039886	427.16	60	120	IS Failed
Sc (IS)	45	3	HMI He	623691	0.12	150011	415.76	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2392072	0.75	619265	386.28	60	120	IS Failed
Ge Internal standard	72	3	HMI He	744646	1.80	195723	380.46	60	120	IS Failed
In Internal Standard	115	3	HMI He	2779444	0.53	626578	443.59	60	120	IS Failed
Ir (IS)	193	3	HMI He	6124777	0.85	1575653	388.71	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	067SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:04:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	-22.72	7	2000	
Na	23	3	45	-129.682	ppb	-129.682	-0.70	19720	400000	
Mg	24	3	45	-2.981	ppb	-2.981	-3.12	160	400000	
Al	27	3	45	-0.876	ppb	-0.876	-20.55	117	400000	
K	39	3	45	-189.520	ppb	-189.520	-2.83	15127	400000	
Ca	40	2	45	-8.689	ppb	-8.689	-0.05	12605	400000	
V	51	3	72	-0.282	ppb	-0.282	-0.66	48	2000	
Cr	52	3	72	-1.492	ppb	-1.492	-1.12	856	5000	
Mn	55	3	72	-0.413	ppb	-0.413	-2.62	153	10000	
Fe	56	2	72	-2.778	ppb	-2.778	-1.21	8000	10000	
Co	59	3	72	-0.009	ppb	-0.009	-10.02	37	2000	
Ni	60	3	72	-0.577	ppb	-0.577	-4.57	133	5000	
Cu	63	3	72	-0.264	ppb	-0.264	-1.46	168	5000	
Zn	66	3	72	-0.374	ppb	-0.374	-2.60	100	5000	
As	75	3	72	-0.162	ppb	-0.162	-13.81	27	2000	
Se	78	2	72	-0.068	ppb	-0.068	-11.68	8	2000	
(Se)	78	3	72	-2.686	ppb	-2.686	-15.95	15	2000	
Sr	88	3	72	-0.020	ppb	-0.020	-15.34	37	4000	
Mo	95	3	115	-0.163	ppb	-0.163	-1.56	18	2000	
Ag	107	3	115	-0.013	ppb	-0.013	-7.77	18	100	
Cd	111	3	115	0.001	ppb	0.001	173.21	2	2000	
Sn	120	3	115	-1.252	ppb	-1.252	-0.19	173	2000	
Sb	121	3	115	-0.099	ppb	-0.099	-3.75	48	1000	
Ba	137	3	115	-0.088	ppb	-0.088	-8.80	33	5000	
Tl	205	3	193	-0.062	ppb	-0.062	-0.67	200	2000	
(Pb)	206	3	193	-0.057	ppb	-0.057	-4.13	172	100	
(Pb)	207	3	193	-0.081	ppb	-0.081	-5.03	348	100	
Pb	208	3	193	-0.059	ppb	-0.059	-6.06	903	5000	
Th	232	3	193	-0.393	ppb	-0.393	-1.61	4407	2000	
U	238	3	193	-0.005	ppb	-0.005	-41.60	1714	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4392370	0.81	1039886	422.39	60	120	IS Failed
Sc (IS)	45	3	HMI He	609928	0.22	150011	406.59	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2389456	1.22	619265	385.85	60	120	IS Failed
Ge Internal standard	72	3	HMI He	727710	2.54	195723	371.81	60	120	IS Failed
In Internal Standard	115	3	HMI He	2706518	0.34	626578	431.95	60	120	IS Failed
Ir (IS)	193	3	HMI He	5899523	1.26	1575653	374.42	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	068SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:06:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.065	ppb	-0.065	-16.65	2	2000	
Na	23	3	45	-130.258	ppb	-130.258	-0.48	19386	400000	
Mg	24	3	45	-2.950	ppb	-2.950	-5.25	170	400000	
Al	27	3	45	-1.081	ppb	-1.081	-4.72	93	400000	
K	39	3	45	-190.723	ppb	-190.723	-3.31	14853	400000	
Ca	40	2	45	-8.851	ppb	-8.851	-0.93	12057	400000	
V	51	3	72	-0.280	ppb	-0.280	-3.52	52	2000	
Cr	52	3	72	-1.496	ppb	-1.496	-0.50	820	5000	
Mn	55	3	72	-0.437	ppb	-0.437	-3.93	110	10000	
Fe	56	2	72	-2.741	ppb	-2.741	-2.38	8171	10000	
Co	59	3	72	-0.007	ppb	-0.007	-37.27	47	2000	
Ni	60	3	72	-0.574	ppb	-0.574	-3.08	133	5000	
Cu	63	3	72	-0.262	ppb	-0.262	-1.26	175	5000	
Zn	66	3	72	-0.383	ppb	-0.383	-5.40	92	5000	
As	75	3	72	-0.167	ppb	-0.167	-13.83	23	2000	
Se	78	2	72	-0.070	ppb	-0.070	-17.18	7	2000	
(Se)	78	3	72	-2.828	ppb	-2.828	-18.11	12	2000	
Sr	88	3	72	-0.017	ppb	-0.017	-31.73	42	4000	
Mo	95	3	115	-0.159	ppb	-0.159	-1.12	30	2000	
Ag	107	3	115	-0.014	ppb	-0.014	-3.55	10	100	
Cd	111	3	115	0.004	ppb	0.004	173.21	5	2000	
Sn	120	3	115	-1.252	ppb	-1.252	-0.17	168	2000	
Sb	121	3	115	-0.096	ppb	-0.096	-3.35	60	1000	
Ba	137	3	115	-0.097	ppb	-0.097	-14.11	20	5000	
Tl	205	3	193	-0.063	ppb	-0.063	-2.01	190	2000	
(Pb)	206	3	193	-0.053	ppb	-0.053	-4.42	195	100	
(Pb)	207	3	193	-0.085	ppb	-0.085	-0.78	325	100	
Pb	208	3	193	-0.061	ppb	-0.061	-2.47	845	5000	
Th	232	3	193	-0.397	ppb	-0.397	-0.98	4275	2000	
U	238	3	193	-0.007	ppb	-0.007	-82.52	1638	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4381668	0.85	1039886	421.36	60	120	IS Failed
Sc (IS)	45	3	HMI He	610319	0.73	150011	406.85	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2366274	1.85	619265	382.11	60	120	IS Failed
Ge Internal standard	72	3	HMI He	708760	3.17	195723	362.12	60	120	IS Failed
In Internal Standard	115	3	HMI He	2667568	1.03	626578	425.74	60	120	IS Failed
Ir (IS)	193	3	HMI He	5845083	1.27	1575653	370.96	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	069SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:08:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	036CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.064	ppb	-0.064	-16.91	2	2000	
Na	23	3	45	-130.469	ppb	-130.469	-0.68	19065	400000	
Mg	24	3	45	-3.039	ppb	-3.039	-3.10	140	400000	
Al	27	3	45	-1.308	ppb	-1.308	-20.62	67	400000	
K	39	3	45	-188.510	ppb	-188.510	-3.05	15214	400000	
Ca	40	2	45	-9.261	ppb	-9.261	-0.65	10611	400000	
V	51	3	72	-0.277	ppb	-0.277	-1.23	60	2000	
Cr	52	3	72	-1.488	ppb	-1.488	-1.24	833	5000	
Mn	55	3	72	-0.429	ppb	-0.429	-2.40	122	10000	
Fe	56	2	72	-2.766	ppb	-2.766	-1.66	7690	10000	
Co	59	3	72	-0.009	ppb	-0.009	-20.73	33	2000	
Ni	60	3	72	-0.568	ppb	-0.568	-3.82	142	5000	
Cu	63	3	72	-0.259	ppb	-0.259	-2.54	185	5000	
Zn	66	3	72	-0.360	ppb	-0.360	-11.22	105	5000	
As	75	3	72	-0.153	ppb	-0.153	-30.58	30	2000	
Se	78	2	72	-0.074	ppb	-0.074	-19.02	6	2000	
(Se)	78	3	72	-2.666	ppb	-2.666	-7.94	15	2000	
Sr	88	3	72	-0.022	ppb	-0.022	-22.80	32	4000	
Mo	95	3	115	-0.155	ppb	-0.155	-1.40	42	2000	
Ag	107	3	115	-0.013	ppb	-0.013	-7.73	20	100	
Cd	111	3	115	0.002	ppb	0.002	86.66	3	2000	
Sn	120	3	115	-1.256	ppb	-1.256	-0.48	157	2000	
Sb	121	3	115	-0.096	ppb	-0.096	-1.50	58	1000	
Ba	137	3	115	-0.084	ppb	-0.084	-14.19	38	5000	
Tl	205	3	193	-0.065	ppb	-0.065	-3.60	155	2000	
(Pb)	206	3	193	-0.052	ppb	-0.052	-10.77	203	100	
(Pb)	207	3	193	-0.080	ppb	-0.080	-5.63	350	100	
Pb	208	3	193	-0.059	ppb	-0.059	-3.43	891	5000	
Th	232	3	193	-0.394	ppb	-0.394	-0.21	4374	2000	
U	238	3	193	-0.010	ppb	-0.010	-36.52	1579	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4324896	1.37	1039886	415.90	60	120	IS Failed
Sc (IS)	45	3	HMI He	604248	0.14	150011	402.80	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2273216	0.93	619265	367.08	60	120	IS Failed
Ge Internal standard	72	3	HMI He	696770	0.49	195723	356.00	60	120	IS Failed
In Internal Standard	115	3	HMI He	2729904	2.08	626578	435.68	60	120	IS Failed
Ir (IS)	193	3	HMI He	5876883	0.84	1575653	372.98	60	120	IS Failed

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	070CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-30T16:10:21-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	2598.08
Na	23	45	3	HMI He	21822	0.00
Mg	24	45	3	HMI He	110	35.99
Al	27	45	3	HMI He	47	161.10
K	39	45	3	HMI He	16069	0.03
Ca	40	45	2	HMI H2	10755	0.04
V	51	72	3	HMI He	202	7.41
Cr	52	72	3	HMI He	1381	0.18
Mn	55	72	3	HMI He	183	6.87
Fe	56	72	2	HMI H2	6745	0.08
Co	59	72	3	HMI He	50	52.94
Ni	60	72	3	HMI He	190	12.08
Cu	63	72	3	HMI He	308	3.21
Zn	66	72	3	HMI He	110	0.00
As	75	72	3	HMI He	20	250.04
Se	78	72	2	HMI H2	8	541.27
(Se)	78	72	3	HMI He	7	1299.04
Sr	88	72	3	HMI He	20	250.04
Mo	95	115	3	HMI He	53	36.60
Ag	107	115	3	HMI He	20	125.13
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	596	0.96
Sb	121	115	3	HMI He	123	21.90
Ba	137	115	3	HMI He	30	192.56
Tl	205	193	3	HMI He	203	5.97
(Pb)	206	193	3	HMI He	233	9.02
(Pb)	207	193	3	HMI He	391	3.43
Pb	208	193	3	HMI He	1056	0.52
Th	232	193	3	HMI He	4362	0.04
U	238	193	3	HMI He	1429	0.15

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	4073877	2.54
Sc (IS)	45	3	HMI He	571359	0.42
Ge Internal standard	72	2	HMI H2	2151320	2.32
Ge Internal standard	72	3	HMI He	637725	0.15
In Internal Standard	115	3	HMI He	2522150	2.37
Ir (IS)	193	3	HMI He	5499210	1.93

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	071CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T16:12:15-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	11968575	0.00
Mg	24	45	3	HMI He	1262309	0.00
Al	27	45	3	HMI He	424	4.74
K	39	45	3	HMI He	910966	0.00
V	51	72	3	HMI He	218	5.97
Cr	52	72	3	HMI He	1533	0.27
Mn	55	72	3	HMI He	227	5.70
Co	59	72	3	HMI He	68	16.36
Ni	60	72	3	HMI He	243	5.09
Cu	63	72	3	HMI He	365	2.34
Zn	66	72	3	HMI He	356	0.60
As	75	72	3	HMI He	45	24.71
Se	78	72	2	HMI H2	11	237.85
(Se)	78	72	3	HMI He	8	415.69
Sr	88	72	3	HMI He	423	3.64
Mo	95	115	3	HMI He	78	20.52
Ag	107	115	3	HMI He	33	25.95
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	1013	0.27
Sb	121	115	3	HMI He	118	2.06
Ba	137	115	3	HMI He	123	12.45
Tl	205	193	3	HMI He	218	6.33
(Pb)	206	193	3	HMI He	228	5.78
(Pb)	207	193	3	HMI He	418	1.41
Pb	208	193	3	HMI He	1229	0.26
Th	232	193	3	HMI He	4332	0.05
U	238	193	3	HMI He	1581	0.36

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4075119	0.44	4073877	100.03	60	120	
Sc (IS)	45	3	HMI He	567224	0.88	571359	99.28	60	120	
Ge Internal standard	72	2	HMI H2	2079276	0.49	2151320	96.65	60	120	
Ge Internal standard	72	3	HMI He	627706	1.10	637725	98.43	60	120	
In Internal Standard	115	3	HMI He	2502007	1.68	2522150	99.20	60	120	
Ir (IS)	193	3	HMI He	5500407	1.27	5499210	100.02	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	072CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T16:14:06-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	5288	0.04
Na	23	45	3	HMI He	268270	0.00
Mg	24	45	3	HMI He	124144	0.00
Al	27	45	3	HMI He	43574	0.01
K	39	45	3	HMI He	105456	0.00
V	51	72	3	HMI He	61520	0.00
Cr	52	72	3	HMI He	80347	0.00
Mn	55	72	3	HMI He	40701	0.00
Co	59	72	3	HMI He	128712	0.00
Ni	60	72	3	HMI He	36981	0.00
Cu	63	72	3	HMI He	99573	0.00
Zn	66	72	3	HMI He	16695	0.01
As	75	72	3	HMI He	11532	0.02
Se	78	72	2	HMI H2	5901	0.03
(Se)	78	72	3	HMI He	703	0.86
Sr	88	72	3	HMI He	101890	0.00
Mo	95	115	3	HMI He	51826	0.00
Ag	107	115	3	HMI He	174916	0.00
Cd	111	115	3	HMI He	24574	0.01
Sn	120	115	3	HMI He	73150	0.00
Sb	121	115	3	HMI He	73145	0.00
Ba	137	115	3	HMI He	23294	0.00
Tl	205	193	3	HMI He	370605	0.00
(Pb)	206	193	3	HMI He	126881	0.00
(Pb)	207	193	3	HMI He	110030	0.00
Pb	208	193	3	HMI He	504561	0.00
Th	232	193	3	HMI He	522503	0.00
U	238	193	3	HMI He	540428	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4063549	1.02	4073877	99.75	60	120	
Sc (IS)	45	3	HMI He	577647	2.84	571359	101.10	60	120	
Ge Internal standard	72	2	HMI H2	2206994	2.22	2151320	102.59	60	120	
Ge Internal standard	72	3	HMI He	661836	2.07	637725	103.78	60	120	
In Internal Standard	115	3	HMI He	2525720	3.59	2522150	100.14	60	120	
Ir (IS)	193	3	HMI He	5554751	3.37	5499210	101.01	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	073_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:15:58-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.427	ppb	6.648	2107	40	101.1	90	110	
Na	23	3	45	13412.357	ppb	2.621	1647460	12800	104.8	90	110	
Mg	24	3	45	4592.923	ppb	2.384	294178	4800	95.7	90	110	
Al	27	3	45	792.928	ppb	0.353	17261	800	99.1	90	110	
K	39	3	45	4646.009	ppb	0.551	227136	4800	96.8	90	110	
Ca	40	2	45	4999.348	ppb	1.666	2929199	4800	104.2	90	110	
V	51	3	72	40.372	ppb	4.782	24853	40	100.9	90	110	
Cr	52	3	72	39.498	ppb	4.172	32455	40	98.7	90	110	
Mn	55	3	72	40.579	ppb	5.886	16552	40	101.4	90	110	
Fe	56	2	72	835.492	ppb	2.554	1261983	800	104.4	90	110	
Co	59	3	72	40.338	ppb	3.959	51715	40	100.8	90	110	
Ni	60	3	72	40.152	ppb	3.153	14906	40	100.4	90	110	
Cu	63	3	72	40.235	ppb	2.405	40098	40	100.6	90	110	
Zn	66	3	72	80.071	ppb	4.661	13333	80	100.1	90	110	
As	75	3	72	41.184	ppb	0.985	4742	40	103.0	90	110	
Se	78	2	72	41.786	ppb	1.440	2385	40	104.5	90	110	
(Se)	78	3	72	40.769	ppb	7.196	290	40	101.9	90	110	
Sr	88	3	72	120.607	ppb	2.831	61195	120	100.5	90	110	
Mo	95	3	115	39.902	ppb	0.732	20837	40	99.8	90	110	
Ag	107	3	115	79.676	ppb	1.960	140230	80	99.6	90	110	
Cd	111	3	115	39.495	ppb	1.785	9772	40	98.7	90	110	
Sn	120	3	115	39.706	ppb	2.618	29580	40	99.3	90	110	
Sb	121	3	115	40.422	ppb	0.276	29827	40	101.1	90	110	
Ba	137	3	115	39.325	ppb	2.416	9234	40	98.3	90	110	
Tl	205	3	193	38.546	ppb	2.150	149400	40	96.4	90	110	
(Pb)	206	3	193	37.466	ppb	4.040	49791	40	93.7	90	110	
(Pb)	207	3	193	37.796	ppb	1.980	43718	40	94.5	90	110	
Pb	208	3	193	37.715	ppb	2.051	199493	40	94.3	90	110	
Th	232	3	193	76.556	ppb	1.864	419105	80	95.7	90	110	
U	238	3	193	38.980	ppb	2.187	221020	40	97.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4026345	0.94	4073877	98.83	60	120	
Sc (IS)	45	3	HMI He	575447	0.71	571359	100.72	60	120	
Ge Internal standard	72	2	HMI H2	2129812	1.75	2151320	99.00	60	120	
Ge Internal standard	72	3	HMI He	659108	1.96	637725	103.35	60	120	
In Internal Standard	115	3	HMI He	2538989	0.30	2522150	100.67	60	120	
Ir (IS)	193	3	HMI He	5800455	1.49	5499210	105.48	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	074_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:17:49-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.801	ppb	0.932	2777	50	105.6	90	110	
Na	23	3	45	1142.008	ppb	0.812	161539	51000	2.2	90	110	>+\-10%
Mg	24	3	45	1009.059	ppb	2.062	65178	11000	9.2	90	110	>+\-10%
Al	27	3	45	1023.272	ppb	0.819	22420	1000	102.3	90	110	
K	39	3	45	987.312	ppb	3.545	61456	11000	9.0	90	110	>+\-10%
Ca	40	2	45	1105.269	ppb	1.914	659476	11000	10.0	90	110	>+\-10%
V	51	3	72	50.380	ppb	2.307	31635	50	100.8	90	110	
Cr	52	3	72	50.352	ppb	1.378	41867	50	100.7	90	110	
Mn	55	3	72	50.199	ppb	0.269	20877	50	100.4	90	110	
Fe	56	2	72	1040.550	ppb	2.805	1633895	1000	104.1	90	110	
Co	59	3	72	50.621	ppb	0.347	66286	50	101.2	90	110	
Ni	60	3	72	49.196	ppb	0.608	18610	50	98.4	90	110	
Cu	63	3	72	50.465	ppb	1.224	51281	50	100.9	90	110	
Zn	66	3	72	52.452	ppb	2.931	8963	50	104.9	90	110	
As	75	3	72	50.967	ppb	0.961	5987	50	101.9	90	110	
Se	78	2	72	50.132	ppb	1.057	2976	50	100.3	90	110	
(Se)	78	3	72	48.180	ppb	11.635	348	50	96.4	90	110	
Sr	88	3	72	102.253	ppb	0.660	52996	100	102.3	90	110	
Mo	95	3	115	49.073	ppb	1.602	26337	50	98.1	90	110	
Ag	107	3	115	49.299	ppb	2.009	89223	50	98.6	90	110	
Cd	111	3	115	49.681	ppb	4.588	12636	50	99.4	90	110	
Sn	120	3	115	48.954	ppb	1.821	37355	50	97.9	90	110	
Sb	121	3	115	48.861	ppb	2.637	37045	50	97.7	90	110	
Ba	137	3	115	49.506	ppb	3.505	11943	50	99.0	90	110	
Tl	205	3	193	50.940	ppb	2.225	192793	50	101.9	90	110	
(Pb)	206	3	193	49.004	ppb	1.846	63561	50	98.0	90	110	
(Pb)	207	3	193	49.970	ppb	0.973	56332	50	99.9	90	110	
Pb	208	3	193	49.816	ppb	1.083	257048	50	99.6	90	110	
Th	232	3	193	51.057	ppb	0.933	274527	50	102.1	90	110	
U	238	3	193	50.138	ppb	1.403	277294	50	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4048155	1.70	4073877	99.37	60	120	
Sc (IS)	45	3	HMI He	579568	1.13	571359	101.44	60	120	
Ge Internal standard	72	2	HMI H2	2216364	2.33	2151320	103.02	60	120	
Ge Internal standard	72	3	HMI He	672988	0.28	637725	105.53	60	120	
In Internal Standard	115	3	HMI He	2610896	1.05	2522150	103.52	60	120	
Ir (IS)	193	3	HMI He	5665315	1.05	5499210	103.02	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	075_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:19:41-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	15500.4	3	0.5	
Na	23	3	45	3.194	ppb	97.5	22537	25	
Mg	24	3	45	0.230	ppb	278.0	127	25	
Al	27	3	45	0.118	ppb	18.3	50	15	
K	39	3	45	-19.103	ppb	-84.7	15434	50	
V	51	3	72	-0.042	ppb	-61.5	182	1	
Cr	52	3	72	0.152	ppb	51.4	1538	1	
Mn	55	3	72	0.137	ppb	40.8	243	0.5	
Co	59	3	72	0.000	ppb	3769.1	52	0.5	
Ni	60	3	72	-0.005	ppb	-1458.5	193	1	
Cu	63	3	72	-0.034	ppb	-106.6	283	1	
Zn	66	3	72	0.174	ppb	88.5	142	5	
As	75	3	72	0.185	ppb	119.2	42	1	
Se	78	2	72	0.157	ppb	47.3	17	1	
(Se)	78	3	72	1.422	ppb	29.1	17	1	>RL
Sr	88	3	72	0.045	ppb	25.0	43	0.5	
Mo	95	3	115	0.052	ppb	95.2	82	0.5	
Ag	107	3	115	0.009	ppb	47.3	37	1	
Cd	111	3	115	0.014	ppb	149.5	5	0.5	
Sn	120	3	115	0.542	ppb	11.8	1003	1	
Sb	121	3	115	0.037	ppb	66.0	152	0.6	
Ba	137	3	115	0.048	ppb	45.8	42	0.5	
Tl	205	3	193	0.008	ppb	53.1	243	0.1	
(Pb)	206	3	193	-0.046	ppb	-100.0	185	1	
(Pb)	207	3	193	-0.041	ppb	-56.9	365	1	
Pb	208	3	193	-0.028	ppb	-34.7	965	0.5	
Th	232	3	193	0.727	ppb	27.0	8534	1	
U	238	3	193	0.028	ppb	62.9	1664	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4146987	1.93	4073877	101.79	60	120	
Sc (IS)	45	3	HMI He	579824	0.95	571359	101.48	60	120	
Ge Internal standard	72	2	HMI H2	2190188	2.23	2151320	101.81	60	120	
Ge Internal standard	72	3	HMI He	655274	0.20	637725	102.75	60	120	
In Internal Standard	115	3	HMI He	2554165	1.83	2522150	101.27	60	120	
Ir (IS)	193	3	HMI He	5795954	0.24	5499210	105.40	60	120	

Sample Report

Sample Table

Sample Name	280-171184-a-3-b
Data File Name	076SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:21:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	2.880	ppb	2.880	7.00	162	2000	
Na	23	3	45	337.211	ppb	337.211	3.49	67139	400000	
Mg	24	3	45	5545.011	ppb	5545.011	1.58	379374	400000	
Al	27	3	45	216251.848	ppb	216251.848	1.11	5014965	400000	
K	39	3	45	1837.082	ppb	1837.082	3.27	106387	400000	
Ca	40	2	45	21931.076	ppb	21931.076	1.95	13658377	400000	
V	51	3	72	444.558	ppb	444.558	0.54	281139	2000	
Cr	52	3	72	240.473	ppb	240.473	0.64	197008	5000	
Mn	55	3	72	2221.219	ppb	2221.219	1.27	927472	10000	
Fe	56	2	72	167703.769	ppb	167703.769	3.16	265365463	10000	>LDR
Co	59	3	72	17.329	ppb	17.329	0.48	23026	2000	
Ni	60	3	72	73.115	ppb	73.115	0.64	27924	5000	
Cu	63	3	72	151.822	ppb	151.822	0.45	155647	5000	
Zn	66	3	72	274.972	ppb	274.972	1.59	47110	5000	
As	75	3	72	47.869	ppb	47.869	1.86	5698	2000	
Se	78	2	72	3.340	ppb	3.340	12.08	208	2000	
(Se)	78	3	72	11.311	ppb	11.311	9.34	88	2000	
Sr	88	3	72	89.893	ppb	89.893	0.82	47208	4000	
Mo	95	3	115	8.924	ppb	8.924	3.69	4822	2000	
Ag	107	3	115	0.213	ppb	0.213	16.28	405	100	
Cd	111	3	115	2.776	ppb	2.776	5.29	706	2000	
Sn	120	3	115	20.107	ppb	20.107	0.79	15668	2000	
Sb	121	3	115	3.389	ppb	3.389	2.77	2681	1000	
Ba	137	3	115	349.090	ppb	349.090	0.89	83821	5000	
Tl	205	3	193	1.008	ppb	1.008	4.37	4094	2000	
(Pb)	206	3	193	278.551	ppb	278.551	1.47	366698	100	
(Pb)	207	3	193	269.786	ppb	269.786	1.44	307870	100	
Pb	208	3	193	283.218	ppb	283.218	3.12	1482793	5000	
Th	232	3	193	81.106	ppb	81.106	1.50	441361	2000	
U	238	3	193	11.753	ppb	11.753	0.93	67333	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4292549	1.42	4073877	105.37	60	120	
Sc (IS)	45	3	HMI He	614693	0.65	571359	107.58	60	120	
Ge Internal standard	72	2	HMI H2	2243788	3.35	2151320	104.30	60	120	
Ge Internal standard	72	3	HMI He	681870	0.09	637725	106.92	60	120	
In Internal Standard	115	3	HMI He	2604119	0.99	2522150	103.25	60	120	
Ir (IS)	193	3	HMI He	5768740	0.79	5499210	104.90	60	120	

Sample Report

Sample Table

Sample Name	07549873
Data File Name	077SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:23:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.683	ppb	0.683	23.47	40	2000	
Na	23	3	45	959.740	ppb	959.740	0.70	144251	400000	
Mg	24	3	45	7996.690	ppb	7996.690	0.64	534201	400000	
Al	27	3	45	12562.837	ppb	12562.837	1.60	284542	400000	
K	39	3	45	1012.046	ppb	1012.046	1.75	64817	400000	
Ca	40	2	45	208814.349	ppb	208814.349	2.78	125553843	400000	
V	51	3	72	21.677	ppb	21.677	1.38	14715	2000	
Cr	52	3	72	23.842	ppb	23.842	1.82	22060	5000	
Mn	55	3	72	333.488	ppb	333.488	2.04	147390	10000	
Fe	56	2	72	11290.806	ppb	11290.806	1.13	18320046	10000	
Co	59	3	72	2.566	ppb	2.566	4.32	3652	2000	
Ni	60	3	72	9.007	ppb	9.007	2.66	3825	5000	
Cu	63	3	72	35.481	ppb	35.481	0.54	38733	5000	
Zn	66	3	72	69.645	ppb	69.645	2.93	12710	5000	
As	75	3	72	14.221	ppb	14.221	9.11	1804	2000	
Se	78	2	72	5.789	ppb	5.789	6.08	364	2000	
(Se)	78	3	72	10.445	ppb	10.445	16.70	87	2000	
Sr	88	3	72	336.500	ppb	336.500	1.74	186769	4000	
Mo	95	3	115	11.236	ppb	11.236	2.35	6115	2000	
Ag	107	3	115	0.147	ppb	0.147	16.12	290	100	
Cd	111	3	115	0.378	ppb	0.378	22.38	98	2000	
Sn	120	3	115	13.672	ppb	13.672	2.53	10956	2000	
Sb	121	3	115	0.725	ppb	0.725	8.96	680	1000	
Ba	137	3	115	177.847	ppb	177.847	0.73	43129	5000	
Tl	205	3	193	0.917	ppb	0.917	1.34	3765	2000	
(Pb)	206	3	193	49.190	ppb	49.190	0.27	65342	100	
(Pb)	207	3	193	46.423	ppb	46.423	1.44	53632	100	
Pb	208	3	193	47.977	ppb	47.977	0.37	253602	5000	
Th	232	3	193	11.982	ppb	11.982	1.05	69510	2000	
U	238	3	193	3.089	ppb	3.089	1.58	18915	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4147141	0.79	4073877	101.80	60	120	
Sc (IS)	45	3	HMI He	600204	1.11	571359	105.05	60	120	
Ge Internal standard	72	2	HMI H2	2298308	0.93	2151320	106.83	60	120	
Ge Internal standard	72	3	HMI He	721046	1.83	637725	113.07	60	120	
In Internal Standard	115	3	HMI He	2629136	1.24	2522150	104.24	60	120	
Ir (IS)	193	3	HMI He	5802404	0.40	5499210	105.51	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	078_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:25:19-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	2031.450	ppb	0.868	113030	2000	101.6	90	110	
Al	27	3	45	31.871	ppb	6.451	777	50000	0.1	90	110	LRS Main CR1 Failed
V	51	3	72	2099.601	ppb	1.798	1367624	2000	105.0	90	110	
Cr	52	3	72	4983.769	ppb	1.415	4177952	5000	99.7	90	110	
Mn	55	3	72	9927.963	ppb	1.623	4271712	10000	99.3	90	110	
Co	59	3	72	2062.430	ppb	2.094	2818497	2000	103.1	90	110	
Ni	60	3	72	5055.651	ppb	1.104	1975940	5000	101.1	90	110	
Cu	63	3	72	5309.604	ppb	0.864	5599087	5000	106.2	90	110	
Zn	66	3	72	5233.063	ppb	3.141	921840	5000	104.7	90	110	
As	75	3	72	2006.025	ppb	0.617	245222	2000	100.3	90	110	
Se	78	2	72	2044.107	ppb	1.543	129542	2000	102.2	90	110	
(Se)	78	3	72	1903.229	ppb	1.491	14082	2000	95.2	90	110	
Sr	88	3	72	5093.187	ppb	2.552	2755524	2000	254.7	90	110	LRS Main CR1 Failed
Mo	95	3	115	2005.709	ppb	2.188	1134242	2000	100.3	90	110	
Cd	111	3	115	1953.353	ppb	1.732	524676	2000	97.7	90	110	
Sn	120	3	115	2097.826	ppb	4.221	1662286	2000	104.9	90	110	
Sb	121	3	115	991.584	ppb	2.444	791132	1000	99.2	90	110	
Ba	137	3	115	5124.038	ppb	4.802	1301358	5000	102.5	90	110	
Tl	205	3	193	1031.010	ppb	0.345	4330203	1000	103.1	90	110	
(Pb)	206	3	193	4915.129	ppb	0.675	7054716	5000	98.3	90	110	
(Pb)	207	3	193	4979.127	ppb	1.421	6190914	5000	99.6	90	110	
Pb	208	3	193	5032.987	ppb	1.579	28727345	5000	100.7	90	110	
Th	232	3	193	992.646	ppb	1.126	5836996	1000	99.3	90	110	
U	238	3	193	2052.150	ppb	1.646	12541933	2000	102.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4379064	1.05	4073877	107.49	60	120	
Sc (IS)	45	3	HMI He	605270	0.44	571359	105.94	60	120	
Ge Internal standard	72	2	HMI H2	2372567	0.82	2151320	110.28	60	120	
Ge Internal standard	72	3	HMI He	702816	1.00	637725	110.21	60	120	
In Internal Standard	115	3	HMI He	2757397	2.56	2522150	109.33	60	120	
Ir (IS)	193	3	HMI He	6293158	0.45	5499210	114.44	60	120	

Sample Report

Sample Table

Sample Name	280-171339-a-4-a@10
Data File Name	079SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:27:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.047	ppb	1.047	31.41	60	2000	
Na	23	3	45	40.825	ppb	40.825	10.15	28059	400000	
Mg	24	3	45	176.751	ppb	176.751	4.46	11907	400000	
Al	27	3	45	34110.511	ppb	34110.511	0.74	771794	400000	
K	39	3	45	366.121	ppb	366.121	12.74	34186	400000	
Ca	40	2	45	134.263	ppb	134.263	3.39	91955	400000	
V	51	3	72	104.004	ppb	104.004	1.61	64863	2000	
Cr	52	3	72	23.633	ppb	23.633	0.89	20360	5000	
Mn	55	3	72	181.661	ppb	181.661	1.73	74795	10000	
Fe	56	2	72	48859.371	ppb	48859.371	3.24	74772324	10000	
Co	59	3	72	1.710	ppb	1.710	4.91	2282	2000	
Ni	60	3	72	5.422	ppb	5.422	1.07	2222	5000	
Cu	63	3	72	8.971	ppb	8.971	0.45	9354	5000	
Zn	66	3	72	14.538	ppb	14.538	5.24	2559	5000	
As	75	3	72	3.419	ppb	3.419	5.66	420	2000	
Se	78	2	72	1.344	ppb	1.344	6.40	86	2000	
(Se)	78	3	72	3.014	ppb	3.014	25.55	28	2000	
Sr	88	3	72	5.297	ppb	5.297	2.05	2757	4000	
Mo	95	3	115	7.185	ppb	7.185	13.03	3944	2000	
Ag	107	3	115	0.030	ppb	0.030	37.47	77	100	
Cd	111	3	115	0.538	ppb	0.538	14.38	140	2000	
Sn	120	3	115	8.285	ppb	8.285	7.57	6907	2000	
Sb	121	3	115	1.152	ppb	1.152	12.28	1008	1000	
Ba	137	3	115	14.048	ppb	14.048	4.30	3447	5000	
Tl	205	3	193	0.546	ppb	0.546	9.96	2367	2000	
(Pb)	206	3	193	26.426	ppb	26.426	2.59	35831	100	
(Pb)	207	3	193	25.184	ppb	25.184	2.61	29794	100	
Pb	208	3	193	25.861	ppb	25.861	2.21	139611	5000	
Th	232	3	193	15.695	ppb	15.695	14.13	91356	2000	
U	238	3	193	2.708	ppb	2.708	0.58	17062	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4160227	2.16	4073877	102.12	60	120	
Sc (IS)	45	3	HMI He	599714	1.22	571359	104.96	60	120	
Ge Internal standard	72	2	HMI H2	2169693	2.77	2151320	100.85	60	120	
Ge Internal standard	72	3	HMI He	670852	1.34	637725	105.19	60	120	
In Internal Standard	115	3	HMI He	2637843	0.08	2522150	104.59	60	120	
Ir (IS)	193	3	HMI He	5905344	1.78	5499210	107.39	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600565/1-a
Data File Name	080_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:28:56-07:00
Sample Type	Blank
Dilution	1
Comment	600565 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.029	ppb	309.7343638	5	0.5
Na	23	3	45	27.218	ppb	19.36991263	26705	25
Mg	24	3	45	1.423	ppb	5.393106721	214	25
Al	27	3	45	8.724	ppb	45.23813447	250	15
K	39	3	45	-11.750	ppb	-170.3864088	16540	50
V	51	3	72	-0.077	ppb	-70.62349806	168	1
Cr	52	3	72	0.519	ppb	24.88773618	1913	1
Mn	55	3	72	0.842	ppb	7.717072075	551	0.5
Co	59	3	72	0.056	ppb	39.81354605	128	0.5
Ni	60	3	72	0.070	ppb	233.0533902	232	1
Cu	63	3	72	1.050	ppb	8.155589341	1414	1
Zn	66	3	72	1.015	ppb	20.79921344	293	5
As	75	3	72	0.155	ppb	98.1041839	40	1
(Se)	78	3	72	0.850	ppb	46.46233342	13	1
Sr	88	3	72	0.136	ppb	19.66478028	93	0.5
Mo	95	3	115	0.568	ppb	18.17142238	373	0.5
Ag	107	3	115	-0.002	ppb	-82.98302738	18	1
Cd	111	3	115	0.019	ppb	117.4728287	7	0.5
Sn	120	3	115	0.714	ppb	29.32138035	1199	1
Sb	121	3	115	0.169	ppb	40.1550331	265	0.6
Ba	137	3	115	0.118	ppb	61.61330281	62	0.5
Tl	205	3	193	0.044	ppb	19.9061168	390	0.1
(Pb)	206	3	193	0.326	ppb	19.72490073	686	1
(Pb)	207	3	193	0.311	ppb	20.33120912	780	1
Pb	208	3	193	0.340	ppb	8.601854707	2945	0.5
Th	232	3	193	1.427	ppb	26.53283354	12507	1
U	238	3	193	0.191	ppb	4.093111502	2622	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4302470	1.50	4073877	105.61	60	120	
Sc (IS)	45	3	HMI He	608006	0.63	571359	106.41	60	120	
Ge Internal standard	72	2	HMI H2	2263281	0.59	2151320	105.20	60	120	
Ge Internal standard	72	3	HMI He	686958	0.33	637725	107.72	60	120	
In Internal Standard	115	3	HMI He	2714389	1.09	2522150	107.62	60	120	
Ir (IS)	193	3	HMI He	5883502	0.41	5499210	106.99	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600565/2-a
Data File Name	081_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:30:50-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600565 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.000	41.000	ppb	5.640	2219	40	102.5	80	120	
Na	23	3	45	795.329	795.329	ppb	1.155	125880	40	1988.3	80	120	>+/-20%
Mg	24	3	45	698.049	698.049	ppb	0.647	47651	40	1745.1	80	120	>+/-20%
Al	27	3	45	758.403	758.403	ppb	3.299	17555	40	1896.0	80	120	>+/-20%
K	39	3	45	809.379	809.379	ppb	2.855	56286	40	2023.4	80	120	>+/-20%
Ca	40	2	45	843.545	843.545	ppb	3.206	529412	40	2108.9	80	120	>+/-20%
V	51	3	72	39.557	39.557	ppb	2.088	25926	40	98.9	80	120	
Cr	52	3	72	39.613	39.613	ppb	1.131	34642	40	99.0	80	120	
Mn	55	3	72	43.631	43.631	ppb	1.722	18932	40	109.1	80	120	
Fe	56	2	72	822.556	822.556	ppb	1.725	1341950	40	2056.4	80	120	>+/-20%
(Fe)	56	3	72	769.210	769.210	ppb	1.121	561381	40	1923.0	80	120	>+/-20%
Co	59	3	72	39.709	39.709	ppb	0.936	54192	40	99.3	80	120	
Ni	60	3	72	38.801	38.801	ppb	1.136	15339	40	97.0	80	120	
Cu	63	3	72	41.018	41.018	ppb	0.637	43493	40	102.5	80	120	
Zn	66	3	72	41.604	41.604	ppb	2.455	7433	40	104.0	80	120	
As	75	3	72	37.677	37.677	ppb	2.980	4617	40	94.2	80	120	
Se	78	2	72	41.426	41.426	ppb	1.349	2553	40	103.6	80	120	
(Se)	78	3	72	38.761	38.761	ppb	10.441	293	40	96.9	80	120	
Sr	88	3	72	78.876	78.876	ppb	1.487	42600	40	197.2	80	120	>+/-20%
Mo	95	3	115	39.208	39.208	ppb	0.560	21465	40	98.0	80	120	
Ag	107	3	115	38.673	38.673	ppb	0.528	71365	40	96.7	80	120	
Cd	111	3	115	39.238	39.238	ppb	3.723	10179	40	98.1	80	120	
Sn	120	3	115	37.991	37.991	ppb	0.708	29697	40	95.0	80	120	
Sb	121	3	115	38.457	38.457	ppb	0.567	29753	40	96.1	80	120	
Ba	137	3	115	40.155	40.155	ppb	4.115	9880	40	100.4	80	120	
Tl	205	3	193	39.357	39.357	ppb	2.272	153532	40	98.4	80	120	
(Pb)	206	3	193	38.986	38.986	ppb	2.270	52148	40	97.5	80	120	
(Pb)	207	3	193	38.668	38.668	ppb	1.913	45012	40	96.7	80	120	
Pb	208	3	193	39.141	39.141	ppb	1.841	208355	40	97.9	80	120	
Th	232	3	193	37.953	37.953	ppb	1.519	211476	40	94.9	80	120	
U	238	3	193	38.576	38.576	ppb	2.325	220166	40	96.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4238414	2.01	4073877	104.04	60	120	
Sc (IS)	45	3	HMI He	611958	1.43	571359	107.11	60	120	
Ge Internal standard	72	2	HMI H2	2299840	1.70	2151320	106.90	60	120	
Ge Internal standard	72	3	HMI He	701255	0.81	637725	109.96	60	120	
In Internal Standard	115	3	HMI He	2661515	0.83	2522150	105.53	60	120	
Ir (IS)	193	3	HMI He	5838754	2.11	5499210	106.17	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-1-A@50
Data File Name	082SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:32:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	-20899.15	3	2000	
Na	23	3	45	1227.906	ppb	1227.906	0.67	179629	400000	
Mg	24	3	45	791.545	ppb	791.545	0.97	53421	400000	
Al	27	3	45	8.204	ppb	8.204	10.52	237	400000	
K	39	3	45	99.205	ppb	99.205	21.98	21762	400000	
Ca	40	2	45	1524.158	ppb	1524.158	1.85	957445	400000	
V	51	3	72	-0.061	ppb	-0.061	-68.77	178	2000	
Cr	52	3	72	0.050	ppb	0.050	457.80	1526	5000	
Mn	55	3	72	0.363	ppb	0.363	16.01	350	10000	
Fe	56	2	72	6.808	ppb	6.808	3.50	17936	10000	
Co	59	3	72	0.016	ppb	0.016	50.66	75	2000	
Ni	60	3	72	0.189	ppb	0.189	29.63	277	5000	
Cu	63	3	72	0.257	ppb	0.257	4.35	596	5000	
Zn	66	3	72	3.857	ppb	3.857	7.16	781	5000	
As	75	3	72	0.086	ppb	0.086	185.85	32	2000	
Se	78	2	72	0.158	ppb	0.158	69.61	18	2000	
(Se)	78	3	72	0.860	ppb	0.860	96.13	13	2000	
Sr	88	3	72	23.510	ppb	23.510	0.23	12441	4000	
Mo	95	3	115	0.460	ppb	0.460	25.34	313	2000	
Ag	107	3	115	1.143	ppb	1.143	5.44	2166	100	
Cd	111	3	115	0.012	ppb	0.012	268.45	5	2000	
Sn	120	3	115	0.723	ppb	0.723	5.91	1204	2000	
Sb	121	3	115	0.121	ppb	0.121	11.76	227	1000	
Ba	137	3	115	1.298	ppb	1.298	12.64	356	5000	
Tl	205	3	193	0.023	ppb	0.023	54.48	302	2000	
(Pb)	206	3	193	0.098	ppb	0.098	42.20	373	100	
(Pb)	207	3	193	0.066	ppb	0.066	67.15	485	100	
Pb	208	3	193	0.109	ppb	0.109	13.05	1678	5000	
Th	232	3	193	1.839	ppb	1.839	7.34	14475	2000	
U	238	3	193	0.448	ppb	0.448	4.37	4010	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4281408	0.82	4073877	105.09	60	120	
Sc (IS)	45	3	HMI He	605164	0.76	571359	105.92	60	120	
Ge Internal standard	72	2	HMI H2	2257766	1.82	2151320	104.95	60	120	
Ge Internal standard	72	3	HMI He	686217	1.20	637725	107.60	60	120	
In Internal Standard	115	3	HMI He	2707887	1.62	2522150	107.36	60	120	
Ir (IS)	193	3	HMI He	5766465	0.19	5499210	104.86	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-2-a@50
Data File Name	083SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:34:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-4069.87	3	2000	
Na	23	3	45	1887.035	ppb	1887.035	0.42	263763	400000	
Mg	24	3	45	957.821	ppb	957.821	2.22	64635	400000	
Al	27	3	45	4.692	ppb	4.692	18.33	157	400000	
K	39	3	45	36.032	ppb	36.032	74.58	18758	400000	
Ca	40	2	45	2041.771	ppb	2041.771	0.79	1260376	400000	
V	51	3	72	0.014	ppb	0.014	700.59	227	2000	
Cr	52	3	72	0.112	ppb	0.112	104.38	1583	5000	
Mn	55	3	72	3.338	ppb	3.338	9.42	1604	10000	
Fe	56	2	72	5.281	ppb	5.281	5.42	15668	10000	
Co	59	3	72	0.026	ppb	0.026	118.58	88	2000	
Ni	60	3	72	0.109	ppb	0.109	72.28	247	5000	
Cu	63	3	72	0.136	ppb	0.136	19.65	473	5000	
Zn	66	3	72	2.286	ppb	2.286	10.47	513	5000	
As	75	3	72	0.182	ppb	0.182	92.99	43	2000	
Se	78	2	72	0.156	ppb	0.156	20.85	18	2000	
(Se)	78	3	72	0.846	ppb	0.846	124.08	13	2000	
Sr	88	3	72	28.368	ppb	28.368	1.80	15051	4000	
Mo	95	3	115	0.266	ppb	0.266	12.93	203	2000	
Ag	107	3	115	0.007	ppb	0.007	113.80	35	100	
Cd	111	3	115	0.012	ppb	0.012	154.18	5	2000	
Sn	120	3	115	0.625	ppb	0.625	35.52	1120	2000	
Sb	121	3	115	0.071	ppb	0.071	40.62	187	1000	
Ba	137	3	115	1.682	ppb	1.682	18.30	448	5000	
Tl	205	3	193	0.016	ppb	0.016	29.52	273	2000	
(Pb)	206	3	193	0.091	ppb	0.091	37.99	365	100	
(Pb)	207	3	193	0.063	ppb	0.063	64.41	483	100	
Pb	208	3	193	0.087	ppb	0.087	1.61	1566	5000	
Th	232	3	193	0.195	ppb	0.195	37.91	5628	2000	
U	238	3	193	0.251	ppb	0.251	6.84	2906	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4219922	0.59	4073877	103.58	60	120	
Sc (IS)	45	3	HMI He	605444	1.20	571359	105.97	60	120	
Ge Internal standard	72	2	HMI H2	2282515	0.34	2151320	106.10	60	120	
Ge Internal standard	72	3	HMI He	688226	0.35	637725	107.92	60	120	
In Internal Standard	115	3	HMI He	2687986	2.01	2522150	106.58	60	120	
Ir (IS)	193	3	HMI He	5773955	2.27	5499210	105.00	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-3-a@50
Data File Name	084SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:36:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.122	ppb	0.122	130.60	10	2000	
Na	23	3	45	2306.203	ppb	2306.203	0.60	317562	400000	
Mg	24	3	45	3259.521	ppb	3259.521	1.75	219925	400000	
Al	27	3	45	3.073	ppb	3.073	40.77	120	400000	
K	39	3	45	65.272	ppb	65.272	43.53	20161	400000	
Ca	40	2	45	4329.957	ppb	4329.957	3.26	2715068	400000	
V	51	3	72	-0.034	ppb	-0.034	-79.48	195	2000	
Cr	52	3	72	0.250	ppb	0.250	51.56	1686	5000	
Mn	55	3	72	0.215	ppb	0.215	6.34	287	10000	
Fe	56	2	72	3.925	ppb	3.925	1.89	13290	10000	
Co	59	3	72	-0.003	ppb	-0.003	-378.35	50	2000	
Ni	60	3	72	0.034	ppb	0.034	158.02	217	5000	
Cu	63	3	72	0.145	ppb	0.145	46.60	480	5000	
Zn	66	3	72	2.782	ppb	2.782	8.81	595	5000	
As	75	3	72	0.309	ppb	0.309	63.29	58	2000	
Se	78	2	72	0.071	ppb	0.071	94.48	13	2000	
(Se)	78	3	72	2.022	ppb	2.022	53.98	22	2000	
Sr	88	3	72	66.248	ppb	66.248	1.63	34904	4000	
Mo	95	3	115	0.124	ppb	0.124	31.91	125	2000	
Ag	107	3	115	0.002	ppb	0.002	136.95	25	100	
Cd	111	3	115	0.019	ppb	0.019	117.02	7	2000	
Sn	120	3	115	0.418	ppb	0.418	6.69	960	2000	
Sb	121	3	115	0.044	ppb	0.044	38.57	165	1000	
Ba	137	3	115	0.698	ppb	0.698	15.43	205	5000	
Tl	205	3	193	0.001	ppb	0.001	582.80	218	2000	
(Pb)	206	3	193	0.045	ppb	0.045	68.70	303	100	
(Pb)	207	3	193	0.066	ppb	0.066	46.29	486	100	
Pb	208	3	193	0.060	ppb	0.060	28.15	1424	5000	
Th	232	3	193	0.024	ppb	0.024	119.01	4709	2000	
U	238	3	193	0.586	ppb	0.586	4.78	4785	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4308535	2.18	4073877	105.76	60	120	
Sc (IS)	45	3	HMI He	606108	1.19	571359	106.08	60	120	
Ge Internal standard	72	2	HMI H2	2249646	1.22	2151320	104.57	60	120	
Ge Internal standard	72	3	HMI He	684041	0.90	637725	107.26	60	120	
In Internal Standard	115	3	HMI He	2689090	0.59	2522150	106.62	60	120	
Ir (IS)	193	3	HMI He	5770881	1.49	5499210	104.94	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	085_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:38:24-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.094	ppb	2.539	2746	50	100.2	90	110	
Na	23	3	45	49857.504	ppb	2.227	6350820	51000	97.8	90	110	
Mg	24	3	45	10657.589	ppb	1.321	714899	11000	96.9	90	110	
Al	27	3	45	975.713	ppb	2.000	22233	1000	97.6	90	110	
K	39	3	45	10580.795	ppb	3.117	519951	11000	96.2	90	110	
Ca	40	2	45	11194.865	ppb	0.293	6907512	11000	101.8	90	110	
V	51	3	72	50.474	ppb	0.768	31829	50	100.9	90	110	
Cr	52	3	72	49.828	ppb	1.274	41623	50	99.7	90	110	
Mn	55	3	72	51.144	ppb	2.445	21357	50	102.3	90	110	
Fe	56	2	72	1050.263	ppb	2.232	1657389	1000	105.0	90	110	
Co	59	3	72	50.324	ppb	0.606	66181	50	100.6	90	110	
Ni	60	3	72	49.463	ppb	2.492	18790	50	98.9	90	110	
Cu	63	3	72	49.951	ppb	1.330	50978	50	99.9	90	110	
Zn	66	3	72	51.617	ppb	5.672	8860	50	103.2	90	110	
As	75	3	72	51.089	ppb	2.432	6027	50	102.2	90	110	
Se	78	2	72	51.482	ppb	0.446	3070	50	103.0	90	110	
(Se)	78	3	72	45.149	ppb	3.282	328	50	90.3	90	110	
Sr	88	3	72	102.993	ppb	1.444	53610	100	103.0	90	110	
Mo	95	3	115	49.408	ppb	3.091	26563	50	98.8	90	110	
Ag	107	3	115	48.944	ppb	1.557	88748	50	97.9	90	110	
Cd	111	3	115	48.704	ppb	2.892	12413	50	97.4	90	110	
Sn	120	3	115	49.307	ppb	3.485	37681	50	98.6	90	110	
Sb	121	3	115	49.458	ppb	1.520	37566	50	98.9	90	110	
Ba	137	3	115	50.288	ppb	2.053	12156	50	100.6	90	110	
Tl	205	3	193	49.341	ppb	1.012	186999	50	98.7	90	110	
(Pb)	206	3	193	48.539	ppb	1.013	63038	50	97.1	90	110	
(Pb)	207	3	193	49.156	ppb	1.843	55492	50	98.3	90	110	
Pb	208	3	193	49.025	ppb	1.320	253317	50	98.0	90	110	
Th	232	3	193	48.751	ppb	0.952	262695	50	97.5	90	110	
U	238	3	193	49.440	ppb	1.025	273815	50	98.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4248676	0.44	4073877	104.29	60	120	
Sc (IS)	45	3	HMI He	602759	2.45	571359	105.50	60	120	
Ge Internal standard	72	2	HMI H2	2226770	0.35	2151320	103.51	60	120	
Ge Internal standard	72	3	HMI He	675880	0.09	637725	105.98	60	120	
In Internal Standard	115	3	HMI He	2615966	1.82	2522150	103.72	60	120	
Ir (IS)	193	3	HMI He	5672999	1.00	5499210	103.16	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	086_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:40:16-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.062	ppb	0.0	0	0.5	
Na	23	3	45	2.569	ppb	158.0	22838	25	
Mg	24	3	45	2.234	ppb	47.3	260	25	
Al	27	3	45	2.030	ppb	89.7	93	15	
K	39	3	45	0.486	ppb	8011.0	16607	50	
V	51	3	72	-0.010	ppb	-240.1	203	1	
Cr	52	3	72	0.080	ppb	67.8	1498	1	
Mn	55	3	72	0.102	ppb	11.7	232	0.5	
Co	59	3	72	-0.014	ppb	-41.5	33	0.5	
Ni	60	3	72	-0.029	ppb	-220.6	187	1	
Cu	63	3	72	0.068	ppb	65.8	388	1	
Zn	66	3	72	0.767	ppb	1.7	242	5	
As	75	3	72	0.109	ppb	59.8	33	1	
Se	78	2	72	0.312	ppb	25.8	27	1	
(Se)	78	3	72	1.160	ppb	124.3	15	1	>RL
Sr	88	3	72	0.057	ppb	61.5	50	0.5	
Mo	95	3	115	0.065	ppb	79.8	90	0.5	
Ag	107	3	115	0.011	ppb	13.3	42	1	
Cd	111	3	115	0.026	ppb	44.4	8	0.5	
Sn	120	3	115	0.121	ppb	94.9	710	1	
Sb	121	3	115	0.072	ppb	37.5	182	0.6	
Ba	137	3	115	-0.005	ppb	-844.8	30	0.5	
Tl	205	3	193	-0.001	ppb	-1471.2	212	0.1	
(Pb)	206	3	193	0.010	ppb	141.0	260	1	
(Pb)	207	3	193	0.026	ppb	124.4	443	1	
Pb	208	3	193	0.047	ppb	30.4	1364	0.5	
Th	232	3	193	0.643	ppb	15.2	8100	1	
U	238	3	193	0.053	ppb	24.0	1813	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4210187	0.80	4073877	103.35	60	120	
Sc (IS)	45	3	HMI He	589593	0.11	571359	103.19	60	120	
Ge Internal standard	72	2	HMI H2	2211131	1.13	2151320	102.78	60	120	
Ge Internal standard	72	3	HMI He	662564	0.44	637725	103.89	60	120	
In Internal Standard	115	3	HMI He	2616993	3.00	2522150	103.76	60	120	
Ir (IS)	193	3	HMI He	5808442	0.91	5499210	105.62	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600256/1-a
Data File Name	087_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:42:10-07:00
Sample Type	Blank
Dilution	1
Comment	600256 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.035	ppb	1.255061412	5	0.5
Na	23	3	45	-6.060	ppb	-64.5364715	21331	25
Mg	24	3	45	4.080	ppb	36.34749969	374	25
Al	27	3	45	22.022	ppb	35.60190953	527	15
K	39	3	45	-23.958	ppb	-118.7577588	15160	50
V	51	3	72	-0.228	ppb	-6.09520948	70	1
Cr	52	3	72	1.100	ppb	10.56077588	2317	1
Mn	55	3	72	0.838	ppb	16.69309067	533	0.5
Co	59	3	72	0.051	ppb	34.73799576	118	0.5
Ni	60	3	72	0.107	ppb	26.9027272	238	1
Cu	63	3	72	-0.004	ppb	-767.369009	318	1
Zn	66	3	72	1.248	ppb	20.6848242	323	5
As	75	3	72	0.122	ppb	36.14714253	35	1
(Se)	78	3	72	1.858	ppb	101.285849	20	1
Sr	88	3	72	0.135	ppb	33.56216535	90	0.5
Mo	95	3	115	0.078	ppb	29.91450162	97	0.5
Ag	107	3	115	0.001	ppb	113.9264915	23	1
Cd	111	3	115	0.026	ppb	45.29639109	8	0.5
Sn	120	3	115	-0.311	ppb	-10.30338392	383	1
Sb	121	3	115	-0.082	ppb	-16.19218737	65	0.6
Ba	137	3	115	0.385	ppb	1.447512069	123	0.5
Tl	205	3	193	0.022	ppb	70.0204497	290	0.1
(Pb)	206	3	193	0.051	ppb	42.26944935	305	1
(Pb)	207	3	193	-0.023	ppb	-166.1569188	376	1
Pb	208	3	193	0.040	ppb	72.4988059	1293	0.5
Th	232	3	193	0.122	ppb	33.36250693	5129	1
U	238	3	193	0.060	ppb	29.94786664	1803	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4102785	2.40	4073877	100.71	60	120	
Sc (IS)	45	3	HMI He	577784	0.12	571359	101.12	60	120	
Ge Internal standard	72	2	HMI H2	2252014	1.00	2151320	104.68	60	120	
Ge Internal standard	72	3	HMI He	666320	0.38	637725	104.48	60	120	
In Internal Standard	115	3	HMI He	2603889	2.59	2522150	103.24	60	120	
Ir (IS)	193	3	HMI He	5654691	1.27	5499210	102.83	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600256/2-a
Data File Name	088_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:44:08-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600256 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.943	37.943	ppb	3.700	1979	40	94.9	80	120	
Na	23	3	45	743.597	743.597	ppb	2.534	111729	40	1859.0	80	120	>+/-20%
Mg	24	3	45	698.696	698.696	ppb	2.280	44699	40	1746.7	80	120	>+/-20%
Al	27	3	45	799.189	799.189	ppb	3.679	17335	40	1998.0	80	120	>+/-20%
K	39	3	45	742.365	742.365	ppb	2.128	49745	40	1855.9	80	120	>+/-20%
Ca	40	2	45	831.201	831.201	ppb	0.880	498684	40	2078.0	80	120	>+/-20%
V	51	3	72	39.531	39.531	ppb	5.000	24434	40	98.8	80	120	
Cr	52	3	72	40.084	40.084	ppb	3.619	33046	40	100.2	80	120	
Mn	55	3	72	40.311	40.311	ppb	2.203	16517	40	100.8	80	120	
Fe	56	2	72	789.807	789.807	ppb	3.415	1254066	40	1974.5	80	120	>+/-20%
(Fe)	56	3	72	757.839	757.839	ppb	1.267	521886	40	1894.6	80	120	>+/-20%
Co	59	3	72	39.309	39.309	ppb	1.125	50622	40	98.3	80	120	
Ni	60	3	72	38.733	38.733	ppb	2.531	14444	40	96.8	80	120	
Cu	63	3	72	40.673	40.673	ppb	3.989	40678	40	101.7	80	120	
Zn	66	3	72	39.955	39.955	ppb	3.606	6740	40	99.9	80	120	
As	75	3	72	39.012	39.012	ppb	3.403	4509	40	97.5	80	120	
Se	78	2	72	39.519	39.519	ppb	6.795	2368	40	98.8	80	120	
(Se)	78	3	72	36.115	36.115	ppb	8.237	258	40	90.3	80	120	
Sr	88	3	72	81.287	81.287	ppb	2.084	41417	40	203.2	80	120	>+/-20%
Mo	95	3	115	37.687	37.687	ppb	5.036	20108	40	94.2	80	120	
Ag	107	3	115	37.087	37.087	ppb	2.455	66722	40	92.7	80	120	
Cd	111	3	115	37.219	37.219	ppb	2.245	9412	40	93.0	80	120	
Sn	120	3	115	37.670	37.670	ppb	2.822	28715	40	94.2	80	120	
Sb	121	3	115	37.327	37.327	ppb	3.599	28154	40	93.3	80	120	
Ba	137	3	115	39.087	39.087	ppb	4.044	9380	40	97.7	80	120	
Tl	205	3	193	39.382	39.382	ppb	1.580	147676	40	98.5	80	120	
(Pb)	206	3	193	38.630	38.630	ppb	1.635	49672	40	96.6	80	120	
(Pb)	207	3	193	38.855	38.855	ppb	2.754	43471	40	97.1	80	120	
Pb	208	3	193	39.270	39.270	ppb	1.970	200921	40	98.2	80	120	
Th	232	3	193	38.777	38.777	ppb	2.449	207567	40	96.9	80	120	
U	238	3	193	39.720	39.720	ppb	2.052	217873	40	99.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4049375	1.52	4073877	99.40	60	120	
Sc (IS)	45	3	HMI He	573660	2.09	571359	100.40	60	120	
Ge Internal standard	72	2	HMI H2	2239086	3.40	2151320	104.08	60	120	
Ge Internal standard	72	3	HMI He	661731	2.19	637725	103.76	60	120	
In Internal Standard	115	3	HMI He	2596005	2.89	2522150	102.93	60	120	
Ir (IS)	193	3	HMI He	5612133	1.83	5499210	102.05	60	120	

Sample Report

Sample Table

Sample Name	280-171347-e-1-a
Data File Name	089SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:46:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	160658.075	ppb	160658.075	1.14	19356231	400000	
Mg	24	3	45	61310.750	ppb	61310.750	1.84	3897960	400000	
Al	27	3	45	5.717	ppb	5.717	34.40	170	400000	
K	39	3	45	9674.597	ppb	9674.597	1.25	452223	400000	
Ca	40	2	45	310657.527	ppb	310657.527	0.93	182908055	400000	
V	51	3	72	-0.030	ppb	-0.030	-312.73	195	2000	
Cr	52	3	72	1.253	ppb	1.253	0.86	2472	5000	
Mn	55	3	72	0.534	ppb	0.534	27.97	415	10000	
Fe	56	2	72	6.296	ppb	6.296	7.42	17004	10000	
Co	59	3	72	0.084	ppb	0.084	7.85	163	2000	
Ni	60	3	72	1.160	ppb	1.160	17.67	636	5000	
Cu	63	3	72	0.957	ppb	0.957	9.19	1296	5000	
Zn	66	3	72	1.241	ppb	1.241	12.44	327	5000	
As	75	3	72	0.188	ppb	0.188	55.87	43	2000	
Se	78	2	72	3.644	ppb	3.644	6.92	227	2000	
(Se)	78	3	72	4.392	ppb	4.392	66.18	38	2000	
Sr	88	3	72	2716.262	ppb	2716.262	1.25	1412417	4000	
Mo	95	3	115	1.718	ppb	1.718	9.17	961	2000	
Ag	107	3	115	0.001	ppb	0.001	921.24	22	100	
Cd	111	3	115	0.039	ppb	0.039	159.24	12	2000	
Sn	120	3	115	-0.211	ppb	-0.211	-39.86	451	2000	
Sb	121	3	115	0.058	ppb	0.058	126.96	168	1000	
Ba	137	3	115	73.961	ppb	73.961	4.95	17538	5000	
Tl	205	3	193	0.005	ppb	0.005	84.21	223	2000	
(Pb)	206	3	193	-0.025	ppb	-0.025	-111.69	203	100	
(Pb)	207	3	193	-0.056	ppb	-0.056	-42.23	333	100	
Pb	208	3	193	-0.023	ppb	-0.023	-59.58	948	5000	
Th	232	3	193	0.703	ppb	0.703	23.74	8030	2000	
U	238	3	193	104.506	ppb	104.506	0.49	563776	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4060274	1.12	4073877	99.67	60	120	
Sc (IS)	45	3	HMI He	571429	1.79	571359	100.01	60	120	
Ge Internal standard	72	2	HMI H2	2244000	1.70	2151320	104.31	60	120	
Ge Internal standard	72	3	HMI He	675432	0.83	637725	105.91	60	120	
In Internal Standard	115	3	HMI He	2570401	2.98	2522150	101.91	60	120	
Ir (IS)	193	3	HMI He	5541259	0.47	5499210	100.76	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-2-a
Data File Name	090SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:47:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	-198.75	2	2000	
Na	23	3	45	101088.109	ppb	101088.109	0.50	12318092	400000	
Mg	24	3	45	33663.986	ppb	33663.986	0.53	2163324	400000	
Al	27	3	45	4.265	ppb	4.265	32.58	140	400000	
K	39	3	45	5922.254	ppb	5922.254	0.62	286086	400000	
Ca	40	2	45	94268.264	ppb	94268.264	3.83	53880987	400000	
V	51	3	72	-0.035	ppb	-0.035	-234.53	190	2000	
Cr	52	3	72	1.247	ppb	1.247	6.94	2446	5000	
Mn	55	3	72	5.244	ppb	5.244	1.05	2342	10000	
Fe	56	2	72	13.749	ppb	13.749	5.03	28281	10000	
Co	59	3	72	0.164	ppb	0.164	35.33	267	2000	
Ni	60	3	72	2.484	ppb	2.484	6.35	1124	5000	
Cu	63	3	72	0.895	ppb	0.895	5.77	1223	5000	
Zn	66	3	72	2.548	ppb	2.548	4.09	543	5000	
As	75	3	72	0.091	ppb	0.091	70.60	32	2000	
Se	78	2	72	3.034	ppb	3.034	14.46	187	2000	
(Se)	78	3	72	5.157	ppb	5.157	21.48	43	2000	
Sr	88	3	72	961.950	ppb	961.950	0.63	495899	4000	
Mo	95	3	115	1.563	ppb	1.563	12.75	891	2000	
Ag	107	3	115	0.002	ppb	0.002	119.02	25	100	
Cd	111	3	115	0.020	ppb	0.020	154.32	7	2000	
Sn	120	3	115	-0.450	ppb	-0.450	-18.21	280	2000	
Sb	121	3	115	0.044	ppb	0.044	82.04	160	1000	
Ba	137	3	115	22.368	ppb	22.368	3.99	5412	5000	
Tl	205	3	193	-0.012	ppb	-0.012	-28.04	162	2000	
(Pb)	206	3	193	-0.016	ppb	-0.016	-80.35	217	100	
(Pb)	207	3	193	-0.068	ppb	-0.068	-44.27	323	100	
Pb	208	3	193	-0.035	ppb	-0.035	-11.04	898	5000	
Th	232	3	193	0.074	ppb	0.074	63.14	4840	2000	
U	238	3	193	11.948	ppb	11.948	0.75	66556	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3944038	3.55	4073877	96.81	60	120	
Sc (IS)	45	3	HMI He	577471	0.74	571359	101.07	60	120	
Ge Internal standard	72	2	HMI H2	2203140	1.23	2151320	102.41	60	120	
Ge Internal standard	72	3	HMI He	669634	0.52	637725	105.00	60	120	
In Internal Standard	115	3	HMI He	2610582	1.22	2522150	103.51	60	120	
Ir (IS)	193	3	HMI He	5610511	0.37	5499210	102.02	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-3-a
Data File Name	091SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:49:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.031	ppb	-0.031	-177.54	2	2000	
Na	23	3	45	96526.677	ppb	96526.677	0.33	11594191	400000	
Mg	24	3	45	33215.335	ppb	33215.335	1.59	2103762	400000	
Al	27	3	45	2.492	ppb	2.492	19.50	100	400000	
K	39	3	45	6158.618	ppb	6158.618	1.37	292594	400000	
Ca	40	2	45	83764.146	ppb	83764.146	0.42	50159134	400000	
V	51	3	72	0.221	ppb	0.221	28.32	350	2000	
Cr	52	3	72	2.201	ppb	2.201	1.12	3219	5000	
Mn	55	3	72	71.383	ppb	71.383	1.49	29560	10000	
Fe	56	2	72	17.012	ppb	17.012	1.79	33631	10000	
Co	59	3	72	0.873	ppb	0.873	3.91	1193	2000	
Ni	60	3	72	2.693	ppb	2.693	2.47	1206	5000	
Cu	63	3	72	0.676	ppb	0.676	12.04	1006	5000	
Zn	66	3	72	1.547	ppb	1.547	9.30	376	5000	
As	75	3	72	0.233	ppb	0.233	45.77	48	2000	
Se	78	2	72	1.683	ppb	1.683	9.18	108	2000	
(Se)	78	3	72	3.484	ppb	3.484	11.73	32	2000	
Sr	88	3	72	930.577	ppb	930.577	0.63	481388	4000	
Mo	95	3	115	6.386	ppb	6.386	1.57	3494	2000	
Ag	107	3	115	0.000	ppb	0.000	-584.10	20	100	
Cd	111	3	115	0.000	ppb	0.000	-12012.31	2	2000	
Sn	120	3	115	-0.377	ppb	-0.377	-6.83	337	2000	
Sb	121	3	115	0.034	ppb	0.034	144.89	153	1000	
Ba	137	3	115	27.737	ppb	27.737	4.45	6740	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-29.71	140	2000	
(Pb)	206	3	193	-0.076	ppb	-0.076	-22.14	140	100	
(Pb)	207	3	193	-0.042	ppb	-0.042	-65.62	353	100	
Pb	208	3	193	-0.046	ppb	-0.046	-12.48	843	5000	
Th	232	3	193	-0.004	ppb	-0.004	-347.77	4430	2000	
U	238	3	193	15.390	ppb	15.390	2.20	85323	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4129221	1.16	4073877	101.36	60	120	
Sc (IS)	45	3	HMI He	569189	0.48	571359	99.62	60	120	
Ge Internal standard	72	2	HMI H2	2221384	2.12	2151320	103.26	60	120	
Ge Internal standard	72	3	HMI He	671946	0.25	637725	105.37	60	120	
In Internal Standard	115	3	HMI He	2624229	0.38	2522150	104.05	60	120	
Ir (IS)	193	3	HMI He	5612774	1.59	5499210	102.07	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-4-a
Data File Name	092SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:51:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.030	ppb	-0.030	-179.53	2	2000	
Na	23	3	45	110924.784	ppb	110924.784	0.80	13433746	400000	
Mg	24	3	45	39692.165	ppb	39692.165	1.24	2535476	400000	
Al	27	3	45	2.298	ppb	2.298	41.96	97	400000	
K	39	3	45	6238.330	ppb	6238.330	1.69	298699	400000	
Ca	40	2	45	118399.039	ppb	118399.039	3.05	69052865	400000	
V	51	3	72	-0.060	ppb	-0.060	-109.69	175	2000	
Cr	52	3	72	0.975	ppb	0.975	11.05	2232	5000	
Mn	55	3	72	114.121	ppb	114.121	1.07	47064	10000	
Fe	56	2	72	6.075	ppb	6.075	5.19	16590	10000	
Co	59	3	72	0.123	ppb	0.123	16.14	213	2000	
Ni	60	3	72	2.122	ppb	2.122	9.67	991	5000	
Cu	63	3	72	0.577	ppb	0.577	8.72	905	5000	
Zn	66	3	72	0.897	ppb	0.897	21.82	267	5000	
As	75	3	72	0.134	ppb	0.134	129.00	37	2000	
Se	78	2	72	2.431	ppb	2.431	5.27	153	2000	
(Se)	78	3	72	3.725	ppb	3.725	39.27	33	2000	
Sr	88	3	72	1223.326	ppb	1223.326	1.42	631812	4000	
Mo	95	3	115	2.279	ppb	2.279	8.15	1278	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-308.80	18	100	
Cd	111	3	115	0.039	ppb	0.039	116.25	12	2000	
Sn	120	3	115	-0.391	ppb	-0.391	-9.56	325	2000	
Sb	121	3	115	-0.032	ppb	-0.032	-45.64	103	1000	
Ba	137	3	115	28.317	ppb	28.317	3.66	6857	5000	
Tl	205	3	193	0.004	ppb	0.004	192.76	218	2000	
(Pb)	206	3	193	-0.056	ppb	-0.056	-57.89	163	100	
(Pb)	207	3	193	-0.056	ppb	-0.056	-31.45	333	100	
Pb	208	3	193	-0.053	ppb	-0.053	-10.22	798	5000	
Th	232	3	193	-0.003	ppb	-0.003	-724.29	4380	2000	
U	238	3	193	31.027	ppb	31.027	2.94	168388	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4023620	2.38	4073877	98.77	60	120	
Sc (IS)	45	3	HMI He	574027	0.20	571359	100.47	60	120	
Ge Internal standard	72	2	HMI H2	2233971	0.82	2151320	103.84	60	120	
Ge Internal standard	72	3	HMI He	670860	0.40	637725	105.20	60	120	
In Internal Standard	115	3	HMI He	2615194	0.60	2522150	103.69	60	120	
Ir (IS)	193	3	HMI He	5542409	1.42	5499210	100.79	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-5-a
Data File Name	093SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:53:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.002	ppb	0.002	2603.54	3	2000	
Na	23	3	45	109893.428	ppb	109893.428	1.93	13580234	400000	
Mg	24	3	45	34857.687	ppb	34857.687	0.68	2272588	400000	
Al	27	3	45	3.110	ppb	3.110	21.06	117	400000	
K	39	3	45	6122.867	ppb	6122.867	0.84	299522	400000	
Ca	40	2	45	97918.583	ppb	97918.583	0.78	57870652	400000	
V	51	3	72	0.100	ppb	0.100	16.94	277	2000	
Cr	52	3	72	1.017	ppb	1.017	9.61	2284	5000	
Mn	55	3	72	17.200	ppb	17.200	3.11	7313	10000	
Fe	56	2	72	2.520	ppb	2.520	5.22	10875	10000	
Co	59	3	72	0.140	ppb	0.140	14.27	237	2000	
Ni	60	3	72	1.250	ppb	1.250	18.54	671	5000	
Cu	63	3	72	0.612	ppb	0.612	19.46	948	5000	
Zn	66	3	72	0.777	ppb	0.777	23.12	248	5000	
As	75	3	72	0.231	ppb	0.231	46.52	48	2000	
Se	78	2	72	2.463	ppb	2.463	13.52	154	2000	
(Se)	78	3	72	4.389	ppb	4.389	45.70	38	2000	
Sr	88	3	72	985.673	ppb	985.673	1.49	513019	4000	
Mo	95	3	115	3.143	ppb	3.143	8.45	1731	2000	
Ag	107	3	115	-0.008	ppb	-0.008	-54.21	7	100	
Cd	111	3	115	0.026	ppb	0.026	156.34	8	2000	
Sn	120	3	115	-0.471	ppb	-0.471	-7.77	263	2000	
Sb	121	3	115	0.011	ppb	0.011	358.62	135	1000	
Ba	137	3	115	28.285	ppb	28.285	1.95	6807	5000	
Tl	205	3	193	-0.004	ppb	-0.004	-73.62	188	2000	
(Pb)	206	3	193	-0.030	ppb	-0.030	-70.62	195	100	
(Pb)	207	3	193	-0.061	ppb	-0.061	-44.49	325	100	
Pb	208	3	193	-0.031	ppb	-0.031	-42.05	901	5000	
Th	232	3	193	-0.026	ppb	-0.026	-119.83	4230	2000	
U	238	3	193	23.086	ppb	23.086	0.87	124715	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4075767	1.76	4073877	100.05	60	120	
Sc (IS)	45	3	HMI He	585830	1.48	571359	102.53	60	120	
Ge Internal standard	72	2	HMI H2	2211272	2.10	2151320	102.79	60	120	
Ge Internal standard	72	3	HMI He	676080	0.48	637725	106.01	60	120	
In Internal Standard	115	3	HMI He	2598777	0.40	2522150	103.04	60	120	
Ir (IS)	193	3	HMI He	5499367	0.90	5499210	100.00	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-6-a
Data File Name	094SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:55:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.030	ppb	-0.030	-181.96	2	2000	
Na	23	3	45	107809.839	ppb	107809.839	1.42	13068208	400000	
Mg	24	3	45	36426.948	ppb	36426.948	0.72	2329196	400000	
Al	27	3	45	13.240	ppb	13.240	14.64	334	400000	
K	39	3	45	5382.419	ppb	5382.419	1.96	260144	400000	
Ca	40	2	45	111085.371	ppb	111085.371	3.52	66300773	400000	
V	51	3	72	-0.059	ppb	-0.059	-116.89	175	2000	
Cr	52	3	72	2.239	ppb	2.239	2.27	3235	5000	
Mn	55	3	72	64.982	ppb	64.982	0.34	26807	10000	
Fe	56	2	72	14.124	ppb	14.124	3.84	29501	10000	
Co	59	3	72	0.125	ppb	0.125	12.37	215	2000	
Ni	60	3	72	3.030	ppb	3.030	6.99	1326	5000	
Cu	63	3	72	0.842	ppb	0.842	13.24	1168	5000	
Zn	66	3	72	1.559	ppb	1.559	28.31	376	5000	
As	75	3	72	0.522	ppb	0.522	32.20	82	2000	
Se	78	2	72	2.665	ppb	2.665	6.38	169	2000	
(Se)	78	3	72	3.505	ppb	3.505	12.40	32	2000	
Sr	88	3	72	1162.612	ppb	1162.612	0.92	598738	4000	
Mo	95	3	115	2.258	ppb	2.258	9.03	1258	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-117.56	12	100	
Cd	111	3	115	0.020	ppb	0.020	57.30	7	2000	
Sn	120	3	115	-0.323	ppb	-0.323	-13.54	373	2000	
Sb	121	3	115	-0.049	ppb	-0.049	-22.25	90	1000	
Ba	137	3	115	25.681	ppb	25.681	3.70	6173	5000	
Tl	205	3	193	-0.013	ppb	-0.013	-64.70	157	2000	
(Pb)	206	3	193	-0.053	ppb	-0.053	-59.00	168	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-41.00	347	100	
Pb	208	3	193	-0.037	ppb	-0.037	-24.31	881	5000	
Th	232	3	193	-0.060	ppb	-0.060	-23.00	4094	2000	
U	238	3	193	17.426	ppb	17.426	2.33	95292	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4116486	0.81	4073877	101.05	60	120	
Sc (IS)	45	3	HMI He	574617	1.86	571359	100.57	60	120	
Ge Internal standard	72	2	HMI H2	2251508	0.91	2151320	104.66	60	120	
Ge Internal standard	72	3	HMI He	668988	0.94	637725	104.90	60	120	
In Internal Standard	115	3	HMI He	2594691	2.14	2522150	102.88	60	120	
Ir (IS)	193	3	HMI He	5547660	1.86	5499210	100.88	60	120	

Sample Report

Sample Table

Sample Name	280-171348-c-7-a
Data File Name	095SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:57:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.002	ppb	0.002	2509.98	3	2000	
Na	23	3	45	122422.994	ppb	122422.994	1.85	14810172	400000	
Mg	24	3	45	33889.864	ppb	33889.864	1.15	2162830	400000	
Al	27	3	45	19.875	ppb	19.875	46.06	477	400000	
K	39	3	45	11662.852	ppb	11662.852	0.68	543898	400000	
Ca	40	2	45	86968.214	ppb	86968.214	1.13	51844742	400000	
V	51	3	72	0.074	ppb	0.074	80.79	255	2000	
Cr	52	3	72	4.053	ppb	4.053	6.46	4648	5000	
Mn	55	3	72	18.438	ppb	18.438	0.52	7690	10000	
Fe	56	2	72	35.869	ppb	35.869	2.43	64886	10000	
Co	59	3	72	0.260	ppb	0.260	11.28	388	2000	
Ni	60	3	72	8.923	ppb	8.923	7.27	3492	5000	
Cu	63	3	72	1.885	ppb	1.885	7.16	2201	5000	
Zn	66	3	72	4.861	ppb	4.861	12.72	923	5000	
As	75	3	72	0.296	ppb	0.296	50.60	55	2000	
Se	78	2	72	0.735	ppb	0.735	21.32	53	2000	
(Se)	78	3	72	1.846	ppb	1.846	113.78	20	2000	
Sr	88	3	72	943.793	ppb	943.793	1.37	482643	4000	
Mo	95	3	115	1.616	ppb	1.616	7.91	901	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-31.40	12	100	
Cd	111	3	115	0.060	ppb	0.060	50.08	17	2000	
Sn	120	3	115	-0.386	ppb	-0.386	-1.97	322	2000	
Sb	121	3	115	0.169	ppb	0.169	17.19	250	1000	
Ba	137	3	115	122.114	ppb	122.114	2.85	28794	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-23.37	138	2000	
(Pb)	206	3	193	0.008	ppb	0.008	251.70	247	100	
(Pb)	207	3	193	0.011	ppb	0.011	94.09	408	100	
Pb	208	3	193	0.024	ppb	0.024	25.44	1193	5000	
Th	232	3	193	-0.006	ppb	-0.006	-644.70	4385	2000	
U	238	3	193	3.926	ppb	3.926	0.55	22676	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4111135	1.65	4073877	100.91	60	120	
Sc (IS)	45	3	HMI He	573501	0.18	571359	100.37	60	120	
Ge Internal standard	72	2	HMI H2	2281360	2.03	2151320	106.04	60	120	
Ge Internal standard	72	3	HMI He	664340	1.52	637725	104.17	60	120	
In Internal Standard	115	3	HMI He	2556416	2.17	2522150	101.36	60	120	
Ir (IS)	193	3	HMI He	5568691	0.51	5499210	101.26	60	120	

Sample Report

Sample Table

Sample Name	280-171630-d-1-a@10
Data File Name	096SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T16:59:04-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.279	ppb	0.279	37.20	18	2000	
Na	23	3	45	76715.634	ppb	76715.634	0.97	9016244	400000	
Mg	24	3	45	5330.686	ppb	5330.686	1.76	330277	400000	
Al	27	3	45	3273.137	ppb	3273.137	1.71	68779	400000	
K	39	3	45	1105.109	ppb	1105.109	1.53	64194	400000	
Ca	40	2	45	9951.526	ppb	9951.526	2.45	5820962	400000	
V	51	3	72	7.674	ppb	7.674	1.99	4822	2000	
Cr	52	3	72	4.990	ppb	4.990	1.97	5268	5000	
Mn	55	3	72	50.907	ppb	50.907	1.88	20422	10000	
Fe	56	2	72	4119.211	ppb	4119.211	2.05	6397261	10000	
Co	59	3	72	1.595	ppb	1.595	4.33	2064	2000	
Ni	60	3	72	4.299	ppb	4.299	5.76	1746	5000	
Cu	63	3	72	3.698	ppb	3.698	3.07	3915	5000	
Zn	66	3	72	16.401	ppb	16.401	9.66	2779	5000	
As	75	3	72	1.591	ppb	1.591	10.48	200	2000	
Se	78	2	72	1.212	ppb	1.212	13.83	79	2000	
(Se)	78	3	72	1.938	ppb	1.938	39.24	20	2000	
Sr	88	3	72	212.169	ppb	212.169	0.02	106059	4000	
Mo	95	3	115	0.706	ppb	0.706	13.80	418	2000	
Ag	107	3	115	0.027	ppb	0.027	52.74	67	100	
Cd	111	3	115	0.041	ppb	0.041	57.69	12	2000	
Sn	120	3	115	0.228	ppb	0.228	38.01	761	2000	
Sb	121	3	115	0.477	ppb	0.477	13.38	470	1000	
Ba	137	3	115	14.091	ppb	14.091	3.05	3299	5000	
Tl	205	3	193	0.027	ppb	0.027	31.94	303	2000	
(Pb)	206	3	193	3.472	ppb	3.472	2.42	4589	100	
(Pb)	207	3	193	3.243	ppb	3.243	7.64	3915	100	
Pb	208	3	193	3.368	ppb	3.368	1.77	17859	5000	
Th	232	3	193	1.322	ppb	1.322	4.53	11151	2000	
U	238	3	193	0.578	ppb	0.578	4.96	4515	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4026960	0.94	4073877	98.85	60	120	
Sc (IS)	45	3	HMI He	556674	1.03	571359	97.43	60	120	
Ge Internal standard	72	2	HMI H2	2198591	0.80	2151320	102.20	60	120	
Ge Internal standard	72	3	HMI He	649218	1.08	637725	101.80	60	120	
In Internal Standard	115	3	HMI He	2517134	2.08	2522150	99.80	60	120	
Ir (IS)	193	3	HMI He	5500940	1.45	5499210	100.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	097_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:00:57-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.667	ppb	3.007	2437	50	95.3	90	110	
Na	23	3	45	50978.363	ppb	2.374	5913318	51000	100.0	90	110	
Mg	24	3	45	10971.233	ppb	1.082	670037	11000	99.7	90	110	
Al	27	3	45	983.614	ppb	1.431	20409	1000	98.4	90	110	
K	39	3	45	10608.060	ppb	0.169	474761	11000	96.4	90	110	
Ca	40	2	45	11218.403	ppb	0.381	6345212	11000	102.0	90	110	
V	51	3	72	50.944	ppb	2.413	29274	50	101.9	90	110	
Cr	52	3	72	50.121	ppb	2.347	38148	50	100.2	90	110	
Mn	55	3	72	50.592	ppb	1.955	19259	50	101.2	90	110	
Fe	56	2	72	1041.910	ppb	2.656	1516795	1000	104.2	90	110	
Co	59	3	72	50.184	ppb	2.281	60145	50	100.4	90	110	
Ni	60	3	72	48.952	ppb	0.564	16952	50	97.9	90	110	
Cu	63	3	72	49.530	ppb	1.080	46075	50	99.1	90	110	
Zn	66	3	72	52.786	ppb	0.466	8257	50	105.6	90	110	
As	75	3	72	50.816	ppb	5.736	5465	50	101.6	90	110	
Se	78	2	72	50.177	ppb	2.921	2760	50	100.4	90	110	
(Se)	78	3	72	51.358	ppb	16.032	340	50	102.7	90	110	
Sr	88	3	72	102.820	ppb	1.966	48776	100	102.8	90	110	
Mo	95	3	115	49.247	ppb	1.403	24577	50	98.5	90	110	
Ag	107	3	115	49.145	ppb	0.241	82715	50	98.3	90	110	
Cd	111	3	115	48.493	ppb	4.505	11471	50	97.0	90	110	
Sn	120	3	115	49.078	ppb	1.442	34826	50	98.2	90	110	
Sb	121	3	115	49.604	ppb	1.550	34977	50	99.2	90	110	
Ba	137	3	115	49.866	ppb	0.629	11188	50	99.7	90	110	
Tl	205	3	193	48.628	ppb	0.212	178352	50	97.3	90	110	
(Pb)	206	3	193	48.078	ppb	0.441	60427	50	96.2	90	110	
(Pb)	207	3	193	48.389	ppb	1.898	52870	50	96.8	90	110	
Pb	208	3	193	48.628	ppb	1.246	243169	50	97.3	90	110	
Th	232	3	193	48.694	ppb	0.304	253920	50	97.4	90	110	
U	238	3	193	49.027	ppb	1.552	262773	50	98.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3894551	1.19	4073877	95.60	60	120	
Sc (IS)	45	3	HMI He	548755	0.12	571359	96.04	60	120	
Ge Internal standard	72	2	HMI H2	2054067	1.88	2151320	95.48	60	120	
Ge Internal standard	72	3	HMI He	616075	1.35	637725	96.61	60	120	
In Internal Standard	115	3	HMI He	2427759	1.31	2522150	96.26	60	120	
Ir (IS)	193	3	HMI He	5489686	0.47	5499210	99.83	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	098_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:02:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.034	ppb	276.9	5	0.5	
Na	23	3	45	33.641	ppb	8.0	24569	25	>RL
Mg	24	3	45	3.896	ppb	39.6	340	25	
Al	27	3	45	1.261	ppb	157.3	70	15	
K	39	3	45	-3.598	ppb	-985.9	15117	50	
V	51	3	72	0.253	ppb	38.6	337	1	
Cr	52	3	72	-0.048	ppb	-303.6	1289	1	
Mn	55	3	72	-0.038	ppb	-114.2	162	0.5	
Co	59	3	72	0.002	ppb	888.3	50	0.5	
Ni	60	3	72	-0.051	ppb	-82.4	165	1	
Cu	63	3	72	0.035	ppb	169.2	328	1	
Zn	66	3	72	1.063	ppb	23.7	268	5	
As	75	3	72	0.273	ppb	85.4	48	1	
Se	78	2	72	0.227	ppb	1.6	20	1	
(Se)	78	3	72	0.822	ppb	144.7	12	1	
Sr	88	3	72	0.090	ppb	44.1	62	0.5	
Mo	95	3	115	0.009	ppb	225.1	57	0.5	
Ag	107	3	115	0.020	ppb	45.5	53	1	
Cd	111	3	115	0.021	ppb	57.3	7	0.5	
Sn	120	3	115	-0.028	ppb	-382.2	563	1	
Sb	121	3	115	0.201	ppb	30.6	263	0.6	
Ba	137	3	115	0.025	ppb	232.0	35	0.5	
Tl	205	3	193	0.003	ppb	271.1	213	0.1	
(Pb)	206	3	193	0.031	ppb	25.3	272	1	
(Pb)	207	3	193	0.012	ppb	264.3	405	1	
Pb	208	3	193	0.027	ppb	59.2	1193	0.5	
Th	232	3	193	0.631	ppb	17.7	7605	1	
U	238	3	193	0.022	ppb	131.4	1551	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3850700	1.38	4073877	94.52	60	120	
Sc (IS)	45	3	HMI He	542641	0.79	571359	94.97	60	120	
Ge Internal standard	72	2	HMI H2	2042364	0.98	2151320	94.94	60	120	
Ge Internal standard	72	3	HMI He	611579	0.71	637725	95.90	60	120	
In Internal Standard	115	3	HMI He	2464363	0.71	2522150	97.71	60	120	
Ir (IS)	193	3	HMI He	5502246	0.27	5499210	100.06	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-a@50
Data File Name	099SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:04:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.100	ppb	0.100	280.78	8	2000	
Na	23	3	45	1752.527	ppb	1752.527	1.23	215350	400000	
Mg	24	3	45	1914.926	ppb	1914.926	0.63	112755	400000	
Al	27	3	45	34.972	ppb	34.972	12.40	741	400000	
K	39	3	45	139.302	ppb	139.302	18.31	20679	400000	
Ca	40	2	45	7866.302	ppb	7866.302	2.71	4514414	400000	
V	51	3	72	0.178	ppb	0.178	5.78	290	2000	
Cr	52	3	72	0.175	ppb	0.175	72.24	1429	5000	
Mn	55	3	72	741.188	ppb	741.188	0.89	273455	10000	
Fe	56	2	72	4.997	ppb	4.997	2.62	13517	10000	
Co	59	3	72	3.622	ppb	3.622	0.64	4289	2000	
Ni	60	3	72	27.097	ppb	27.097	0.21	9254	5000	
Cu	63	3	72	534.992	ppb	534.992	0.92	483678	5000	
Zn	66	3	72	76.160	ppb	76.160	2.45	11601	5000	
As	75	3	72	0.329	ppb	0.329	22.88	53	2000	
Se	78	2	72	0.501	ppb	0.501	38.49	35	2000	
(Se)	78	3	72	1.379	ppb	1.379	99.76	15	2000	
Sr	88	3	72	13.437	ppb	13.437	2.56	6248	4000	
Mo	95	3	115	-0.002	ppb	-0.002	-2180.97	50	2000	
Ag	107	3	115	0.014	ppb	0.014	53.38	43	100	
Cd	111	3	115	49.896	ppb	49.896	2.94	11741	2000	
Sn	120	3	115	0.226	ppb	0.226	43.71	728	2000	
Sb	121	3	115	0.096	ppb	0.096	29.61	185	1000	
Ba	137	3	115	3.870	ppb	3.870	11.32	891	5000	
Tl	205	3	193	0.149	ppb	0.149	18.00	733	2000	
(Pb)	206	3	193	0.221	ppb	0.221	11.81	498	100	
(Pb)	207	3	193	0.167	ppb	0.167	45.84	560	100	
Pb	208	3	193	0.196	ppb	0.196	6.87	1986	5000	
Th	232	3	193	0.110	ppb	0.110	42.75	4815	2000	
U	238	3	193	0.110	ppb	0.110	16.45	1969	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3950334	2.14	4073877	96.97	60	120	
Sc (IS)	45	3	HMI He	528681	0.32	571359	92.53	60	120	
Ge Internal standard	72	2	HMI H2	2027844	3.67	2151320	94.26	60	120	
Ge Internal standard	72	3	HMI He	602252	0.63	637725	94.44	60	120	
In Internal Standard	115	3	HMI He	2415259	1.61	2522150	95.76	60	120	
Ir (IS)	193	3	HMI He	5371862	1.05	5499210	97.68	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aSD@250
Data File Name	100SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:06:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.029	ppb	-0.029	-194.59	2	2000	
Na	23	3	45	364.518	ppb	364.518	0.92	61099	400000	
Mg	24	3	45	361.258	ppb	361.258	1.24	21465	400000	
Al	27	3	45	9.815	ppb	9.815	38.41	240	400000	
K	39	3	45	25.082	ppb	25.082	95.32	15999	400000	
Ca	40	2	45	1553.042	ppb	1553.042	0.52	858273	400000	
V	51	3	72	0.127	ppb	0.127	43.79	262	2000	
Cr	52	3	72	0.111	ppb	0.111	34.75	1384	5000	
Mn	55	3	72	138.393	ppb	138.393	0.22	51215	10000	
Fe	56	2	72	2.952	ppb	2.952	7.32	10468	10000	
Co	59	3	72	0.635	ppb	0.635	6.88	791	2000	
Ni	60	3	72	5.383	ppb	5.383	1.22	1982	5000	
Cu	63	3	72	102.334	ppb	102.334	0.67	92780	5000	
Zn	66	3	72	17.850	ppb	17.850	0.89	2799	5000	
As	75	3	72	0.328	ppb	0.328	67.45	53	2000	
Se	78	2	72	0.134	ppb	0.134	40.66	15	2000	
(Se)	78	3	72	1.637	ppb	1.637	29.26	17	2000	
Sr	88	3	72	2.744	ppb	2.744	3.31	1291	4000	
Mo	95	3	115	-0.001	ppb	-0.001	-1902.57	50	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-482.50	17	100	
Cd	111	3	115	9.469	ppb	9.469	1.86	2209	2000	
Sn	120	3	115	0.259	ppb	0.259	14.27	745	2000	
Sb	121	3	115	0.104	ppb	0.104	43.34	188	1000	
Ba	137	3	115	0.731	ppb	0.731	20.54	190	5000	
Tl	205	3	193	0.022	ppb	0.022	21.25	285	2000	
(Pb)	206	3	193	-0.008	ppb	-0.008	-477.09	223	100	
(Pb)	207	3	193	-0.005	ppb	-0.005	-545.91	386	100	
Pb	208	3	193	0.008	ppb	0.008	194.62	1101	5000	
Th	232	3	193	-0.030	ppb	-0.030	-162.00	4220	2000	
U	238	3	193	0.038	ppb	0.038	32.85	1638	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3767481	1.44	4073877	92.48	60	120	
Sc (IS)	45	3	HMI He	531427	0.53	571359	93.01	60	120	
Ge Internal standard	72	2	HMI H2	2004391	1.33	2151320	93.17	60	120	
Ge Internal standard	72	3	HMI He	602418	0.91	637725	94.46	60	120	
In Internal Standard	115	3	HMI He	2392050	2.40	2522150	94.84	60	120	
Ir (IS)	193	3	HMI He	5513730	0.72	5499210	100.26	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-b ms@50
Data File Name	101SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:08:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.922	ppb	0.922	55.47	48	2000	
Na	23	3	45	1750.122	ppb	1750.122	1.61	213301	400000	
Mg	24	3	45	1908.061	ppb	1908.061	2.61	111406	400000	
Al	27	3	45	47.888	ppb	47.888	7.62	991	400000	
K	39	3	45	157.251	ppb	157.251	18.92	21248	400000	
Ca	40	2	45	7885.316	ppb	7885.316	2.25	4259606	400000	
V	51	3	72	0.950	ppb	0.950	4.19	713	2000	
Cr	52	3	72	1.085	ppb	1.085	4.94	2062	5000	
Mn	55	3	72	736.296	ppb	736.296	0.98	268880	10000	
Fe	56	2	72	21.019	ppb	21.019	3.46	35558	10000	
Co	59	3	72	4.256	ppb	4.256	1.45	4978	2000	
Ni	60	3	72	29.203	ppb	29.203	2.30	9857	5000	
Cu	63	3	72	538.063	ppb	538.063	0.79	481495	5000	
Zn	66	3	72	77.103	ppb	77.103	0.35	11622	5000	
As	75	3	72	0.736	ppb	0.736	5.85	95	2000	
Se	78	2	72	1.066	ppb	1.066	30.16	63	2000	
(Se)	78	3	72	0.871	ppb	0.871	140.90	12	2000	
Sr	88	3	72	15.380	ppb	15.380	2.91	7077	4000	
Mo	95	3	115	0.846	ppb	0.846	5.23	460	2000	
Ag	107	3	115	0.856	ppb	0.856	1.09	1419	100	
Cd	111	3	115	49.230	ppb	49.230	5.80	11321	2000	
Sn	120	3	115	0.975	ppb	0.975	6.10	1221	2000	
Sb	121	3	115	0.859	ppb	0.859	7.65	701	1000	
Ba	137	3	115	4.868	ppb	4.868	1.54	1088	5000	
Tl	205	3	193	0.929	ppb	0.929	8.31	3570	2000	
(Pb)	206	3	193	0.929	ppb	0.929	4.73	1383	100	
(Pb)	207	3	193	0.881	ppb	0.881	7.95	1334	100	
Pb	208	3	193	0.919	ppb	0.919	1.32	5578	5000	
Th	232	3	193	0.754	ppb	0.754	12.07	8140	2000	
U	238	3	193	0.910	ppb	0.910	1.63	6220	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3717840	1.31	4073877	91.26	60	120	
Sc (IS)	45	3	HMI He	524358	1.76	571359	91.77	60	120	
Ge Internal standard	72	2	HMI H2	1980196	3.95	2151320	92.05	60	120	
Ge Internal standard	72	3	HMI He	596111	0.72	637725	93.47	60	120	
In Internal Standard	115	3	HMI He	2361653	2.23	2522150	93.64	60	120	
Ir (IS)	193	3	HMI He	5440557	2.06	5499210	98.93	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-c msd@50
Data File Name	102SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:10:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.045	ppb	1.045	33.89	55	2000	
Na	23	3	45	1717.103	ppb	1717.103	1.17	209586	400000	
Mg	24	3	45	1880.428	ppb	1880.428	0.97	109775	400000	
Al	27	3	45	51.152	ppb	51.152	11.40	1054	400000	
K	39	3	45	147.033	ppb	147.033	23.89	20820	400000	
Ca	40	2	45	7803.163	ppb	7803.163	0.22	4243012	400000	
V	51	3	72	1.090	ppb	1.090	7.20	788	2000	
Cr	52	3	72	1.023	ppb	1.023	11.89	2011	5000	
Mn	55	3	72	727.460	ppb	727.460	1.65	264681	10000	
Fe	56	2	72	20.080	ppb	20.080	4.50	34069	10000	
Co	59	3	72	4.137	ppb	4.137	6.26	4823	2000	
Ni	60	3	72	28.101	ppb	28.101	2.06	9459	5000	
Cu	63	3	72	528.631	ppb	528.631	0.44	471359	5000	
Zn	66	3	72	75.199	ppb	75.199	2.00	11297	5000	
As	75	3	72	0.821	ppb	0.821	25.58	103	2000	
Se	78	2	72	1.257	ppb	1.257	18.41	73	2000	
(Se)	78	3	72	1.396	ppb	1.396	113.03	15	2000	
Sr	88	3	72	15.017	ppb	15.017	3.98	6883	4000	
Mo	95	3	115	0.742	ppb	0.742	9.20	406	2000	
Ag	107	3	115	0.847	ppb	0.847	5.57	1396	100	
Cd	111	3	115	48.915	ppb	48.915	0.45	11182	2000	
Sn	120	3	115	0.998	ppb	0.998	12.92	1228	2000	
Sb	121	3	115	0.889	ppb	0.889	3.39	718	1000	
Ba	137	3	115	4.386	ppb	4.386	5.16	976	5000	
Tl	205	3	193	0.929	ppb	0.929	4.48	3587	2000	
(Pb)	206	3	193	0.943	ppb	0.943	9.89	1404	100	
(Pb)	207	3	193	0.913	ppb	0.913	6.18	1373	100	
Pb	208	3	193	0.954	ppb	0.954	3.91	5769	5000	
Th	232	3	193	0.738	ppb	0.738	3.75	8094	2000	
U	238	3	193	0.901	ppb	0.901	2.08	6195	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3741540	0.40	4073877	91.84	60	120	
Sc (IS)	45	3	HMI He	524145	0.41	571359	91.74	60	120	
Ge Internal standard	72	2	HMI H2	1969377	2.24	2151320	91.54	60	120	
Ge Internal standard	72	3	HMI He	593963	1.00	637725	93.14	60	120	
In Internal Standard	115	3	HMI He	2345874	1.22	2522150	93.01	60	120	
Ir (IS)	193	3	HMI He	5459858	1.15	5499210	99.28	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aPDS@50
Data File Name	103SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:12:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	190.947	ppb	190.947	3.12	9208	2000	
Na	23	3	45	11933.902	ppb	11933.902	2.70	1324991	400000	
Mg	24	3	45	3808.875	ppb	3808.875	1.07	220193	400000	
Al	27	3	45	2049.792	ppb	2049.792	1.11	40201	400000	
K	39	3	45	2115.547	ppb	2115.547	2.15	101295	400000	
Ca	40	2	45	9919.601	ppb	9919.601	1.95	5288611	400000	
V	51	3	72	188.147	ppb	188.147	1.21	108858	2000	
Cr	52	3	72	190.564	ppb	190.564	0.53	142966	5000	
Mn	55	3	72	874.837	ppb	874.837	0.62	333976	10000	
Fe	56	2	72	23.389	ppb	23.389	3.26	39519	10000	
Co	59	3	72	192.967	ppb	192.967	0.25	233858	2000	
Ni	60	3	72	210.780	ppb	210.780	0.72	73223	5000	
Cu	63	3	72	693.040	ppb	693.040	0.49	648284	5000	
Zn	66	3	72	268.218	ppb	268.218	1.06	41999	5000	
As	75	3	72	185.098	ppb	185.098	3.09	20083	2000	
Se	78	2	72	194.895	ppb	194.895	2.59	10481	2000	
(Se)	78	3	72	177.104	ppb	177.104	5.08	1168	2000	
Sr	88	3	72	206.473	ppb	206.473	0.29	99077	4000	
Mo	95	3	115	195.875	ppb	195.875	0.85	95739	2000	
Ag	107	3	115	42.924	ppb	42.924	2.45	70856	100	
Cd	111	3	115	238.804	ppb	238.804	1.16	55410	2000	
Sn	120	3	115	193.716	ppb	193.716	1.76	133151	2000	
Sb	121	3	115	195.444	ppb	195.444	1.41	134812	1000	
Ba	137	3	115	199.938	ppb	199.938	1.03	43913	5000	
Tl	205	3	193	194.572	ppb	194.572	1.82	700203	2000	
(Pb)	206	3	193	192.153	ppb	192.153	1.11	236481	100	
(Pb)	207	3	193	192.772	ppb	192.772	1.22	205699	100	
Pb	208	3	193	194.012	ppb	194.012	1.41	949634	5000	
Th	232	3	193	180.256	ppb	180.256	2.46	911430	2000	
U	238	3	193	211.357	ppb	211.357	2.24	1107758	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3670726	1.17	4073877	90.10	60	120	
Sc (IS)	45	3	HMI He	519329	1.19	571359	90.89	60	120	
Ge Internal standard	72	2	HMI H2	2012252	1.43	2151320	93.54	60	120	
Ge Internal standard	72	3	HMI He	623207	0.92	637725	97.72	60	120	
In Internal Standard	115	3	HMI He	2381428	1.41	2522150	94.42	60	120	
Ir (IS)	193	3	HMI He	5391320	1.04	5499210	98.04	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	104_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:14:10-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	48.936	ppb	3.202	2391	50	97.9	90	110	
Na	23	3	45	52106.250	ppb	0.729	5660174	51000	102.2	90	110	
Mg	24	3	45	10679.348	ppb	1.514	610936	11000	97.1	90	110	
Al	27	3	45	1009.690	ppb	2.493	19620	1000	101.0	90	110	
K	39	3	45	10656.220	ppb	1.918	446550	11000	96.9	90	110	
Ca	40	2	45	11265.987	ppb	1.914	6035241	11000	102.4	90	110	
V	51	3	72	49.666	ppb	1.474	27634	50	99.3	90	110	
Cr	52	3	72	49.978	ppb	2.803	36817	50	100.0	90	110	
Mn	55	3	72	49.944	ppb	3.213	18398	50	99.9	90	110	
Fe	56	2	72	1031.028	ppb	2.119	1438315	1000	103.1	90	110	
Co	59	3	72	50.347	ppb	2.050	58400	50	100.7	90	110	
Ni	60	3	72	48.886	ppb	2.272	16382	50	97.8	90	110	
Cu	63	3	72	49.710	ppb	2.011	44750	50	99.4	90	110	
Zn	66	3	72	51.478	ppb	0.972	7797	50	103.0	90	110	
As	75	3	72	49.784	ppb	5.750	5178	50	99.6	90	110	
Se	78	2	72	49.686	ppb	1.423	2620	50	99.4	90	110	
(Se)	78	3	72	42.742	ppb	17.387	275	50	85.5	90	110	>+\-10%
Sr	88	3	72	102.980	ppb	1.326	47283	100	103.0	90	110	
Mo	95	3	115	49.144	ppb	1.647	23687	50	98.3	90	110	
Ag	107	3	115	49.515	ppb	1.547	80476	50	99.0	90	110	
Cd	111	3	115	50.689	ppb	2.125	11581	50	101.4	90	110	
Sn	120	3	115	48.865	ppb	1.759	33484	50	97.7	90	110	
Sb	121	3	115	49.417	ppb	3.124	33637	50	98.8	90	110	
Ba	137	3	115	50.294	ppb	2.230	10899	50	100.6	90	110	
Tl	205	3	193	49.088	ppb	2.283	175868	50	98.2	90	110	
(Pb)	206	3	193	47.847	ppb	3.804	58731	50	95.7	90	110	
(Pb)	207	3	193	48.590	ppb	0.660	51877	50	97.2	90	110	
Pb	208	3	193	48.386	ppb	2.829	236344	50	96.8	90	110	
Th	232	3	193	50.433	ppb	2.993	256717	50	100.9	90	110	
U	238	3	193	49.418	ppb	3.100	258697	50	98.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3689108	0.73	4073877	90.56	60	120	
Sc (IS)	45	3	HMI He	513965	1.81	571359	89.95	60	120	
Ge Internal standard	72	2	HMI H2	1968611	1.42	2151320	91.51	60	120	
Ge Internal standard	72	3	HMI He	596270	1.60	637725	93.50	60	120	
In Internal Standard	115	3	HMI He	2344556	1.35	2522150	92.96	60	120	
Ir (IS)	193	3	HMI He	5364154	2.21	5499210	97.54	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	105_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:16:02-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.062	ppb	0.0	0	0.5	
Na	23	3	45	23.321	ppb	17.9	22033	25	
Mg	24	3	45	2.081	ppb	32.5	217	25	
Al	27	3	45	1.287	ppb	82.6	67	15	
K	39	3	45	4.631	ppb	339.4	14562	50	
V	51	3	72	0.136	ppb	17.0	258	1	
Cr	52	3	72	0.099	ppb	85.4	1334	1	
Mn	55	3	72	-0.050	ppb	-111.2	150	0.5	
Co	59	3	72	-0.001	ppb	-2324.8	45	0.5	
Ni	60	3	72	-0.054	ppb	-132.3	157	1	
Cu	63	3	72	0.102	ppb	39.3	371	1	
Zn	66	3	72	0.970	ppb	39.1	243	5	
As	75	3	72	0.215	ppb	71.1	40	1	
Se	78	2	72	0.258	ppb	45.1	21	1	
(Se)	78	3	72	0.354	ppb	471.7	8	1	
Sr	88	3	72	0.052	ppb	33.0	42	0.5	
Mo	95	3	115	0.052	ppb	57.8	75	0.5	
Ag	107	3	115	0.011	ppb	56.2	37	1	
Cd	111	3	115	0.001	ppb	1967.0	2	0.5	
Sn	120	3	115	0.087	ppb	92.1	616	1	
Sb	121	3	115	0.108	ppb	15.3	188	0.6	
Ba	137	3	115	0.047	ppb	93.7	38	0.5	
Tl	205	3	193	0.022	ppb	54.9	273	0.1	
(Pb)	206	3	193	0.009	ppb	326.1	235	1	
(Pb)	207	3	193	-0.037	ppb	-164.2	338	1	
Pb	208	3	193	0.012	ppb	65.1	1078	0.5	
Th	232	3	193	0.747	ppb	22.2	7917	1	
U	238	3	193	0.056	ppb	32.2	1668	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3637148	1.45	4073877	89.28	60	120	
Sc (IS)	45	3	HMI He	511145	0.47	571359	89.46	60	120	
Ge Internal standard	72	2	HMI H2	1941127	1.70	2151320	90.23	60	120	
Ge Internal standard	72	3	HMI He	584073	1.25	637725	91.59	60	120	
In Internal Standard	115	3	HMI He	2356282	2.13	2522150	93.42	60	120	
Ir (IS)	193	3	HMI He	5306905	1.25	5499210	96.50	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600416/1-b
Data File Name	106_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:17:55-07:00
Sample Type	Blank
Dilution	1
Comment	600476 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.062	ppb	0	0	0.5
Na	23	3	45	21.208	ppb	2.018708995	21535	25
Mg	24	3	45	1.177	ppb	7.140950242	163	25
Al	27	3	45	-0.243	ppb	-250.9681289	37	15
K	39	3	45	13.313	ppb	140.0367824	14726	50
V	51	3	72	0.178	ppb	9.80496672	277	1
Cr	52	3	72	0.306	ppb	91.4533171	1454	1
Mn	55	3	72	0.047	ppb	276.1874416	182	0.5
Co	59	3	72	-0.015	ppb	-35.26842255	28	0.5
Ni	60	3	72	-0.073	ppb	-112.981877	148	1
Cu	63	3	72	0.160	ppb	15.92212218	416	1
Zn	66	3	72	0.434	ppb	47.0432019	162	5
As	75	3	72	0.284	ppb	83.90859095	47	1
(Se)	78	3	72	1.775	ppb	98.38317559	17	1
Sr	88	3	72	0.076	ppb	31.09461653	52	0.5
Mo	95	3	115	0.020	ppb	127.7820588	58	0.5
Ag	107	3	115	0.007	ppb	113.815891	30	1
Cd	111	3	115	0.008	ppb	156.1118151	3	0.5
Sn	120	3	115	0.151	ppb	65.92234084	648	1
Sb	121	3	115	0.071	ppb	59.10198864	160	0.6
Ba	137	3	115	0.043	ppb	78.77191941	37	0.5
Tl	205	3	193	0.007	ppb	94.44015431	222	0.1
(Pb)	206	3	193	-0.028	ppb	-46.65084261	190	1
(Pb)	207	3	193	-0.075	ppb	-41.37694765	298	1
Pb	208	3	193	-0.041	ppb	-22.51091798	821	0.5
Th	232	3	193	0.151	ppb	45.08948824	4949	1
U	238	3	193	0.019	ppb	107.4382051	1476	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3607416	0.39	4073877	88.55	60	120	
Sc (IS)	45	3	HMI He	504776	0.70	571359	88.35	60	120	
Ge Internal standard	72	2	HMI H2	1938381	1.21	2151320	90.10	60	120	
Ge Internal standard	72	3	HMI He	575429	1.41	637725	90.23	60	120	
In Internal Standard	115	3	HMI He	2312283	1.18	2522150	91.68	60	120	
Ir (IS)	193	3	HMI He	5298411	1.42	5499210	96.35	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600416/2-b
Data File Name	107_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:19:50-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600476 6020B
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	37.960	37.960	ppb	9.799	1764	40	94.9	80	120	
Na	23	3	45	787.253	787.253	ppb	1.953	102315	40	1968.1	80	120	>+/-20%
Mg	24	3	45	710.835	710.835	ppb	1.847	39766	40	1777.1	80	120	>+/-20%
Al	27	3	45	826.411	826.411	ppb	3.213	15674	40	2066.0	80	120	>+/-20%
K	39	3	45	765.510	765.510	ppb	6.097	44384	40	1913.8	80	120	>+/-20%
Ca	40	2	45	838.454	838.454	ppb	1.221	444007	40	2096.1	80	120	>+/-20%
V	51	3	72	39.305	39.305	ppb	1.537	21738	40	98.3	80	120	
Cr	52	3	72	40.413	40.413	ppb	0.089	29792	40	101.0	80	120	
Mn	55	3	72	40.195	40.195	ppb	3.025	14731	40	100.5	80	120	
Fe	56	2	72	832.402	832.402	ppb	2.190	1172804	40	2081.0	80	120	>+/-20%
(Fe)	56	3	72	787.651	787.651	ppb	0.822	484911	40	1969.1	80	120	>+/-20%
Co	59	3	72	39.695	39.695	ppb	1.707	45702	40	99.2	80	120	
Ni	60	3	72	38.299	38.299	ppb	2.105	12775	40	95.7	80	120	
Cu	63	3	72	40.484	40.484	ppb	1.195	36219	40	101.2	80	120	
Zn	66	3	72	39.882	39.882	ppb	3.188	6015	40	99.7	80	120	
As	75	3	72	38.112	38.112	ppb	1.179	3940	40	95.3	80	120	
Se	78	2	72	39.357	39.357	ppb	6.064	2094	40	98.4	80	120	
(Se)	78	3	72	38.074	38.074	ppb	6.398	243	40	95.2	80	120	
Sr	88	3	72	82.366	82.366	ppb	0.258	37531	40	205.9	80	120	>+/-20%
Mo	95	3	115	38.513	38.513	ppb	3.159	18325	40	96.3	80	120	
Ag	107	3	115	39.107	39.107	ppb	1.556	62726	40	97.8	80	120	
Cd	111	3	115	38.290	38.290	ppb	2.854	8632	40	95.7	80	120	
Sn	120	3	115	39.033	39.033	ppb	2.093	26505	40	97.6	80	120	
Sb	121	3	115	38.008	38.008	ppb	2.754	25562	40	95.0	80	120	
Ba	137	3	115	41.275	41.275	ppb	2.913	8829	40	103.2	80	120	
Tl	205	3	193	40.557	40.557	ppb	0.210	140927	40	101.4	80	120	
(Pb)	206	3	193	39.641	39.641	ppb	1.068	47229	40	99.1	80	120	
(Pb)	207	3	193	40.289	40.289	ppb	1.204	41760	40	100.7	80	120	
Pb	208	3	193	40.234	40.234	ppb	1.104	190740	40	100.6	80	120	
Th	232	3	193	39.730	39.730	ppb	0.919	196993	40	99.3	80	120	
U	238	3	193	40.481	40.481	ppb	2.139	205734	40	101.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3574531	1.50	4073877	87.74	60	120	
Sc (IS)	45	3	HMI He	501632	2.34	571359	87.80	60	120	
Ge Internal standard	72	2	HMI H2	1986265	1.55	2151320	92.33	60	120	
Ge Internal standard	72	3	HMI He	591611	0.52	637725	92.77	60	120	
In Internal Standard	115	3	HMI He	2313334	0.49	2522150	91.72	60	120	
Ir (IS)	193	3	HMI He	5199742	0.79	5499210	94.55	60	120	

Sample Report

Sample Table

Sample Name	280-171348-a-2-b@50
Data File Name	108SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:21:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.027	ppb	-0.027	-223.06	2	2000	
Na	23	3	45	158641.406	ppb	158641.406	1.95	17044570	400000	
Mg	24	3	45	666.952	ppb	666.952	4.34	37899	400000	
Al	27	3	45	31.319	ppb	31.319	7.58	644	400000	
K	39	3	45	3576.066	ppb	3576.066	1.25	158090	400000	
Ca	40	2	45	473.979	ppb	473.979	0.95	257913	400000	
V	51	3	72	0.289	ppb	0.289	16.77	342	2000	
Cr	52	3	72	0.297	ppb	0.297	41.71	1474	5000	
Mn	55	3	72	6.545	ppb	6.545	5.57	2512	10000	
Fe	56	2	72	49.876	ppb	49.876	1.21	75114	10000	
Co	59	3	72	0.077	ppb	0.077	25.72	133	2000	
Ni	60	3	72	0.043	ppb	0.043	103.96	188	5000	
Cu	63	3	72	1.608	ppb	1.608	0.29	1694	5000	
Zn	66	3	72	10.430	ppb	10.430	10.15	1629	5000	
As	75	3	72	0.262	ppb	0.262	20.53	45	2000	
Se	78	2	72	0.281	ppb	0.281	2.76	22	2000	
(Se)	78	3	72	1.168	ppb	1.168	78.41	13	2000	
Sr	88	3	72	4.783	ppb	4.783	1.23	2172	4000	
Mo	95	3	115	0.091	ppb	0.091	24.40	92	2000	
Ag	107	3	115	0.017	ppb	0.017	0.29	45	100	
Cd	111	3	115	0.016	ppb	0.016	142.45	5	2000	
Sn	120	3	115	0.612	ppb	0.612	15.64	950	2000	
Sb	121	3	115	0.182	ppb	0.182	27.36	233	1000	
Ba	137	3	115	3.847	ppb	3.847	12.39	843	5000	
Tl	205	3	193	0.004	ppb	0.004	241.17	212	2000	
(Pb)	206	3	193	0.022	ppb	0.022	95.54	252	100	
(Pb)	207	3	193	-0.004	ppb	-0.004	-1280.22	373	100	
Pb	208	3	193	0.018	ppb	0.018	96.17	1108	5000	
Th	232	3	193	0.645	ppb	0.645	21.51	7397	2000	
U	238	3	193	0.041	ppb	0.041	77.42	1591	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3614119	0.69	4073877	88.71	60	120	
Sc (IS)	45	3	HMI He	509533	1.40	571359	89.18	60	120	
Ge Internal standard	72	2	HMI H2	1959713	1.84	2151320	91.09	60	120	
Ge Internal standard	72	3	HMI He	585008	1.26	637725	91.73	60	120	
In Internal Standard	115	3	HMI He	2300547	0.17	2522150	91.21	60	120	
Ir (IS)	193	3	HMI He	5303130	1.73	5499210	96.43	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-b@50
Data File Name	109SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:23:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	6620.149	ppb	6620.149	4.40	723803	400000	
Mg	24	3	45	399.440	ppb	399.440	1.06	22561	400000	
Al	27	3	45	5.015	ppb	5.015	23.66	137	400000	
K	39	3	45	166.473	ppb	166.473	29.85	20836	400000	
Ca	40	2	45	1589.311	ppb	1589.311	0.92	836831	400000	
V	51	3	72	0.215	ppb	0.215	28.12	297	2000	
Cr	52	3	72	0.212	ppb	0.212	31.48	1393	5000	
Mn	55	3	72	0.933	ppb	0.933	14.89	495	10000	
Fe	56	2	72	2.873	ppb	2.873	11.66	10111	10000	
Co	59	3	72	-0.002	ppb	-0.002	-449.92	43	2000	
Ni	60	3	72	-0.016	ppb	-0.016	-850.13	167	5000	
Cu	63	3	72	0.148	ppb	0.148	15.20	406	5000	
Zn	66	3	72	2.478	ppb	2.478	21.78	456	5000	
As	75	3	72	0.287	ppb	0.287	96.34	47	2000	
Se	78	2	72	0.243	ppb	0.243	40.76	20	2000	
(Se)	78	3	72	0.657	ppb	0.657	3.42	10	2000	
Sr	88	3	72	19.671	ppb	19.671	4.50	8737	4000	
Mo	95	3	115	0.647	ppb	0.647	14.75	350	2000	
Ag	107	3	115	0.005	ppb	0.005	142.35	27	100	
Cd	111	3	115	0.001	ppb	0.001	1801.44	2	2000	
Sn	120	3	115	0.398	ppb	0.398	21.82	800	2000	
Sb	121	3	115	0.024	ppb	0.024	105.93	127	1000	
Ba	137	3	115	3.046	ppb	3.046	13.04	665	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-65.39	158	2000	
(Pb)	206	3	193	-0.012	ppb	-0.012	-140.31	207	100	
(Pb)	207	3	193	-0.042	ppb	-0.042	-116.66	327	100	
Pb	208	3	193	-0.025	ppb	-0.025	-57.50	881	5000	
Th	232	3	193	0.106	ppb	0.106	55.71	4640	2000	
U	238	3	193	0.006	ppb	0.006	345.07	1384	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3590001	1.53	4073877	88.12	60	120	
Sc (IS)	45	3	HMI He	505386	1.40	571359	88.45	60	120	
Ge Internal standard	72	2	HMI H2	1957992	1.70	2151320	91.01	60	120	
Ge Internal standard	72	3	HMI He	575979	1.36	637725	90.32	60	120	
In Internal Standard	115	3	HMI He	2275448	2.34	2522150	90.22	60	120	
Ir (IS)	193	3	HMI He	5204340	1.20	5499210	94.64	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bSD@250
Data File Name	110SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:25:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	1362.174	ppb	1362.174	0.67	163361	400000	
Mg	24	3	45	90.659	ppb	90.659	3.97	5166	400000	
Al	27	3	45	4.517	ppb	4.517	17.74	127	400000	
K	39	3	45	40.841	ppb	40.841	60.04	15751	400000	
Ca	40	2	45	344.475	ppb	344.475	0.92	189323	400000	
V	51	3	72	0.100	ppb	0.100	135.17	237	2000	
Cr	52	3	72	0.170	ppb	0.170	102.40	1371	5000	
Mn	55	3	72	0.208	ppb	0.208	31.28	240	10000	
Fe	56	2	72	2.411	ppb	2.411	26.10	9323	10000	
Co	59	3	72	-0.003	ppb	-0.003	-701.39	42	2000	
Ni	60	3	72	-0.028	ppb	-0.028	-110.01	163	5000	
Cu	63	3	72	0.054	ppb	0.054	28.58	327	5000	
Zn	66	3	72	2.676	ppb	2.676	13.87	488	5000	
As	75	3	72	0.052	ppb	0.052	201.51	23	2000	
Se	78	2	72	0.185	ppb	0.185	87.94	17	2000	
(Se)	78	3	72	1.747	ppb	1.747	151.58	17	2000	
Sr	88	3	72	4.020	ppb	4.020	3.48	1809	4000	
Mo	95	3	115	0.120	ppb	0.120	37.21	105	2000	
Ag	107	3	115	0.006	ppb	0.006	150.67	28	100	
Cd	111	3	115	0.008	ppb	0.008	155.70	3	2000	
Sn	120	3	115	0.318	ppb	0.318	36.99	753	2000	
Sb	121	3	115	0.055	ppb	0.055	14.09	148	1000	
Ba	137	3	115	0.697	ppb	0.697	7.97	175	5000	
Tl	205	3	193	0.002	ppb	0.002	784.55	198	2000	
(Pb)	206	3	193	-0.062	ppb	-0.062	-34.74	147	100	
(Pb)	207	3	193	-0.098	ppb	-0.098	-27.70	270	100	
Pb	208	3	193	-0.048	ppb	-0.048	-37.43	776	5000	
Th	232	3	193	0.009	ppb	0.009	135.93	4182	2000	
U	238	3	193	0.032	ppb	0.032	68.20	1521	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3600230	0.95	4073877	88.37	60	120	
Sc (IS)	45	3	HMI He	502485	0.51	571359	87.95	60	120	
Ge Internal standard	72	2	HMI H2	1926832	0.95	2151320	89.57	60	120	
Ge Internal standard	72	3	HMI He	578838	0.27	637725	90.77	60	120	
In Internal Standard	115	3	HMI He	2295362	0.88	2522150	91.01	60	120	
Ir (IS)	193	3	HMI He	5218643	0.91	5499210	94.90	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-c ms@50
Data File Name	111SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:27:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.684	ppb	0.684	47.49	35	2000	
Na	23	3	45	6482.568	ppb	6482.568	1.22	704638	400000	
Mg	24	3	45	408.702	ppb	408.702	3.17	22932	400000	
Al	27	3	45	20.727	ppb	20.727	12.17	434	400000	
K	39	3	45	180.673	ppb	180.673	17.95	21271	400000	
Ca	40	2	45	1647.967	ppb	1647.967	1.75	874839	400000	
V	51	3	72	0.960	ppb	0.960	12.43	700	2000	
Cr	52	3	72	0.978	ppb	0.978	9.45	1933	5000	
Mn	55	3	72	1.878	ppb	1.878	12.01	833	10000	
Fe	56	2	72	19.344	ppb	19.344	2.69	32397	10000	
Co	59	3	72	0.824	ppb	0.824	2.73	975	2000	
Ni	60	3	72	0.823	ppb	0.823	4.42	438	5000	
Cu	63	3	72	0.879	ppb	0.879	12.70	1045	5000	
Zn	66	3	72	3.363	ppb	3.363	15.88	588	5000	
As	75	3	72	0.927	ppb	0.927	7.39	112	2000	
Se	78	2	72	1.178	ppb	1.178	35.01	68	2000	
(Se)	78	3	72	3.923	ppb	3.923	36.40	30	2000	
Sr	88	3	72	22.247	ppb	22.247	4.51	9949	4000	
Mo	95	3	115	1.394	ppb	1.394	2.62	720	2000	
Ag	107	3	115	0.879	ppb	0.879	7.12	1448	100	
Cd	111	3	115	0.795	ppb	0.795	22.19	183	2000	
Sn	120	3	115	0.904	ppb	0.904	13.77	1164	2000	
Sb	121	3	115	0.885	ppb	0.885	0.22	715	1000	
Ba	137	3	115	3.790	ppb	3.790	4.67	846	5000	
Tl	205	3	193	0.834	ppb	0.834	0.35	3106	2000	
(Pb)	206	3	193	0.782	ppb	0.782	0.66	1156	100	
(Pb)	207	3	193	0.747	ppb	0.747	7.64	1144	100	
Pb	208	3	193	0.776	ppb	0.776	4.27	4688	5000	
Th	232	3	193	0.750	ppb	0.750	3.27	7820	2000	
U	238	3	193	0.838	ppb	0.838	6.31	5618	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3621403	0.34	4073877	88.89	60	120	
Sc (IS)	45	3	HMI He	502041	0.99	571359	87.87	60	120	
Ge Internal standard	72	2	HMI H2	1929766	0.56	2151320	89.70	60	120	
Ge Internal standard	72	3	HMI He	579867	1.27	637725	90.93	60	120	
In Internal Standard	115	3	HMI He	2343731	1.04	2522150	92.93	60	120	
Ir (IS)	193	3	HMI He	5235899	2.51	5499210	95.21	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-d msd@50
Data File Name	112SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:29:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.795	ppb	0.795	23.02	40	2000	
Na	23	3	45	6658.203	ppb	6658.203	7.70	697668	400000	
Mg	24	3	45	427.966	ppb	427.966	9.32	23139	400000	
Al	27	3	45	17.996	ppb	17.996	20.34	367	400000	
K	39	3	45	180.963	ppb	180.963	27.47	20546	400000	
Ca	40	2	45	1602.155	ppb	1602.155	1.04	844583	400000	
V	51	3	72	1.136	ppb	1.136	14.60	753	2000	
Cr	52	3	72	1.022	ppb	1.022	17.30	1868	5000	
Mn	55	3	72	1.920	ppb	1.920	13.69	805	10000	
Fe	56	2	72	18.920	ppb	18.920	4.13	32082	10000	
Co	59	3	72	0.872	ppb	0.872	10.99	976	2000	
Ni	60	3	72	0.856	ppb	0.856	29.81	425	5000	
Cu	63	3	72	0.985	ppb	0.985	19.33	1080	5000	
Zn	66	3	72	3.202	ppb	3.202	6.56	540	5000	
As	75	3	72	1.252	ppb	1.252	21.64	137	2000	
Se	78	2	72	0.966	ppb	0.966	28.28	57	2000	
(Se)	78	3	72	3.870	ppb	3.870	5.43	28	2000	
Sr	88	3	72	23.093	ppb	23.093	10.76	9797	4000	
Mo	95	3	115	1.689	ppb	1.689	19.74	825	2000	
Ag	107	3	115	0.835	ppb	0.835	13.33	1319	100	
Cd	111	3	115	0.808	ppb	0.808	18.93	178	2000	
Sn	120	3	115	1.106	ppb	1.106	10.61	1251	2000	
Sb	121	3	115	0.797	ppb	0.797	23.61	626	1000	
Ba	137	3	115	3.844	ppb	3.844	11.03	825	5000	
Tl	205	3	193	0.885	ppb	0.885	3.69	3102	2000	
(Pb)	206	3	193	0.799	ppb	0.799	4.70	1110	100	
(Pb)	207	3	193	0.840	ppb	0.840	4.70	1171	100	
Pb	208	3	193	0.863	ppb	0.863	7.40	4811	5000	
Th	232	3	193	0.809	ppb	0.809	2.71	7660	2000	
U	238	3	193	0.937	ppb	0.937	6.42	5775	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3594660	0.96	4073877	88.24	60	120	
Sc (IS)	45	3	HMI He	485808	6.30	571359	85.03	60	120	
Ge Internal standard	72	2	HMI H2	1946018	1.56	2151320	90.46	60	120	
Ge Internal standard	72	3	HMI He	552487	6.05	637725	86.63	60	120	
In Internal Standard	115	3	HMI He	2262495	6.91	2522150	89.71	60	120	
Ir (IS)	193	3	HMI He	4946536	6.06	5499210	89.95	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bPDS@50
Data File Name	113SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:31:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	195.810	ppb	195.810	2.05	9335	2000	
Na	23	3	45	16441.009	ppb	16441.009	1.72	1759665	400000	
Mg	24	3	45	2384.554	ppb	2384.554	1.16	133446	400000	
Al	27	3	45	2019.368	ppb	2019.368	2.41	38327	400000	
K	39	3	45	2157.904	ppb	2157.904	1.55	99705	400000	
Ca	40	2	45	3793.211	ppb	3793.211	1.21	1957773	400000	
V	51	3	72	188.214	ppb	188.214	0.14	105059	2000	
Cr	52	3	72	190.782	ppb	190.782	1.61	138079	5000	
Mn	55	3	72	193.109	ppb	193.109	1.38	71253	10000	
Fe	56	2	72	20.745	ppb	20.745	3.64	35986	10000	
Co	59	3	72	190.590	ppb	190.590	1.91	222830	2000	
Ni	60	3	72	187.372	ppb	187.372	1.35	62820	5000	
Cu	63	3	72	194.177	ppb	194.177	0.31	175446	5000	
Zn	66	3	72	197.481	ppb	197.481	2.02	29862	5000	
As	75	3	72	186.924	ppb	186.924	1.44	19566	2000	
Se	78	2	72	192.363	ppb	192.363	2.62	10407	2000	
(Se)	78	3	72	169.635	ppb	169.635	4.93	1080	2000	
Sr	88	3	72	214.825	ppb	214.825	1.69	99453	4000	
Mo	95	3	115	195.661	ppb	195.661	1.31	92545	2000	
Ag	107	3	115	43.628	ppb	43.628	1.82	69703	100	
Cd	111	3	115	194.409	ppb	194.409	0.37	43652	2000	
Sn	120	3	115	194.203	ppb	194.203	1.22	129186	2000	
Sb	121	3	115	193.308	ppb	193.308	1.22	129040	1000	
Ba	137	3	115	201.325	ppb	201.325	1.95	42791	5000	
Tl	205	3	193	192.362	ppb	192.362	1.65	680680	2000	
(Pb)	206	3	193	190.758	ppb	190.758	2.45	230812	100	
(Pb)	207	3	193	191.100	ppb	191.100	1.82	200509	100	
Pb	208	3	193	191.528	ppb	191.528	2.39	921743	5000	
Th	232	3	193	167.488	ppb	167.488	3.74	832863	2000	
U	238	3	193	210.129	ppb	210.129	1.93	1082967	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3542294	1.78	4073877	86.95	60	120	
Sc (IS)	45	3	HMI He	502576	0.69	571359	87.96	60	120	
Ge Internal standard	72	2	HMI H2	2024403	1.38	2151320	94.10	60	120	
Ge Internal standard	72	3	HMI He	601227	0.44	637725	94.28	60	120	
In Internal Standard	115	3	HMI He	2304414	0.50	2522150	91.37	60	120	
Ir (IS)	193	3	HMI He	5302380	2.65	5499210	96.42	60	120	

Sample Report

Sample Table

Sample Name	280-171662-a-1-a@10
Data File Name	114SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:33:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.075	ppb	0.075	206.92	7	2000	
Na	23	3	45	16245.068	ppb	16245.068	2.32	1735267	400000	
Mg	24	3	45	2448.969	ppb	2448.969	1.81	136774	400000	
Al	27	3	45	7.010	ppb	7.010	38.13	174	400000	
K	39	3	45	597.635	ppb	597.635	7.37	37755	400000	
Ca	40	2	45	25290.171	ppb	25290.171	1.75	13352557	400000	
V	51	3	72	0.168	ppb	0.168	49.26	283	2000	
Cr	52	3	72	0.094	ppb	0.094	64.51	1366	5000	
Mn	55	3	72	21.153	ppb	21.153	2.17	7940	10000	
Fe	56	2	72	8.390	ppb	8.390	5.81	17843	10000	
Co	59	3	72	1.312	ppb	1.312	12.29	1578	2000	
Ni	60	3	72	1.153	ppb	1.153	6.58	563	5000	
Cu	63	3	72	0.119	ppb	0.119	45.68	396	5000	
Zn	66	3	72	3.614	ppb	3.614	18.70	646	5000	
As	75	3	72	0.219	ppb	0.219	63.10	42	2000	
Se	78	2	72	8.746	ppb	8.746	8.06	468	2000	
(Se)	78	3	72	10.350	ppb	10.350	22.97	72	2000	
Sr	88	3	72	483.679	ppb	483.679	1.52	223356	4000	
Mo	95	3	115	802.722	ppb	802.722	1.91	383409	2000	
Ag	107	3	115	0.008	ppb	0.008	195.69	32	100	
Cd	111	3	115	0.052	ppb	0.052	49.04	13	2000	
Sn	120	3	115	0.508	ppb	0.508	7.93	891	2000	
Sb	121	3	115	0.124	ppb	0.124	60.77	197	1000	
Ba	137	3	115	3.053	ppb	3.053	5.78	683	5000	
Tl	205	3	193	0.016	ppb	0.016	79.52	252	2000	
(Pb)	206	3	193	-0.030	ppb	-0.030	-32.85	187	100	
(Pb)	207	3	193	-0.044	ppb	-0.044	-106.59	328	100	
Pb	208	3	193	-0.020	ppb	-0.020	-56.95	915	5000	
Th	232	3	193	1.299	ppb	1.299	18.61	10553	2000	
U	238	3	193	9.039	ppb	9.039	2.29	47580	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3639675	2.19	4073877	89.34	60	120	
Sc (IS)	45	3	HMI He	501611	1.04	571359	87.79	60	120	
Ge Internal standard	72	2	HMI H2	1970638	2.01	2151320	91.60	60	120	
Ge Internal standard	72	3	HMI He	599857	0.86	637725	94.06	60	120	
In Internal Standard	115	3	HMI He	2328145	0.85	2522150	92.31	60	120	
Ir (IS)	193	3	HMI He	5265727	1.47	5499210	95.75	60	120	

Sample Report

Sample Table

Sample Name	280-171662-a-2-a@10
Data File Name	115SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:34:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600539 200.8
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.026	ppb	-0.026	-236.09	2	2000	
Na	23	3	45	15873.384	ppb	15873.384	2.01	1723393	400000	
Mg	24	3	45	2377.552	ppb	2377.552	0.79	134935	400000	
Al	27	3	45	4.938	ppb	4.938	49.22	137	400000	
K	39	3	45	566.282	ppb	566.282	3.31	37106	400000	
Ca	40	2	45	24676.542	ppb	24676.542	2.47	13165176	400000	
V	51	3	72	0.066	ppb	0.066	81.49	225	2000	
Cr	52	3	72	0.103	ppb	0.103	114.45	1364	5000	
Mn	55	3	72	20.906	ppb	20.906	0.71	7800	10000	
Fe	56	2	72	8.224	ppb	8.224	8.68	17679	10000	
Co	59	3	72	1.233	ppb	1.233	6.01	1476	2000	
Ni	60	3	72	1.078	ppb	1.078	10.61	535	5000	
Cu	63	3	72	0.043	ppb	0.043	45.21	327	5000	
Zn	66	3	72	3.792	ppb	3.792	10.90	670	5000	
As	75	3	72	0.253	ppb	0.253	17.36	45	2000	
Se	78	2	72	8.912	ppb	8.912	5.95	479	2000	
(Se)	78	3	72	7.787	ppb	7.787	37.71	55	2000	
Sr	88	3	72	475.464	ppb	475.464	1.09	218170	4000	
Mo	95	3	115	518.480	ppb	518.480	0.22	249581	2000	
Ag	107	3	115	0.015	ppb	0.015	41.31	43	100	
Cd	111	3	115	0.066	ppb	0.066	19.16	17	2000	
Sn	120	3	115	0.401	ppb	0.401	32.06	826	2000	
Sb	121	3	115	0.035	ppb	0.035	96.49	138	1000	
Ba	137	3	115	3.061	ppb	3.061	3.80	690	5000	
Tl	205	3	193	0.000	ppb	0.000	-7349.68	195	2000	
(Pb)	206	3	193	-0.013	ppb	-0.013	-218.91	208	100	
(Pb)	207	3	193	-0.068	ppb	-0.068	-23.54	305	100	
Pb	208	3	193	-0.030	ppb	-0.030	-38.70	868	5000	
Th	232	3	193	0.289	ppb	0.289	28.36	5618	2000	
U	238	3	193	10.232	ppb	10.232	1.71	53868	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3677318	0.96	4073877	90.27	60	120	
Sc (IS)	45	3	HMI He	509669	0.68	571359	89.20	60	120	
Ge Internal standard	72	2	HMI H2	1978251	1.80	2151320	91.96	60	120	
Ge Internal standard	72	3	HMI He	596037	1.09	637725	93.46	60	120	
In Internal Standard	115	3	HMI He	2345930	0.55	2522150	93.01	60	120	
Ir (IS)	193	3	HMI He	5284217	1.62	5499210	96.09	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	116_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:36:46-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.880	ppb	10.165	2257	50	95.8	90	110	
Na	23	3	45	51584.139	ppb	0.729	5491578	51000	101.1	90	110	
Mg	24	3	45	10605.075	ppb	1.749	594390	11000	96.4	90	110	
Al	27	3	45	986.275	ppb	1.107	18781	1000	98.6	90	110	
K	39	3	45	10574.034	ppb	1.084	434366	11000	96.1	90	110	
Ca	40	2	45	11049.363	ppb	1.615	5825844	11000	100.4	90	110	
V	51	3	72	48.989	ppb	3.091	26644	50	98.0	90	110	
Cr	52	3	72	48.956	ppb	2.689	35287	50	97.9	90	110	
Mn	55	3	72	49.886	ppb	3.006	17966	50	99.8	90	110	
Fe	56	2	72	1032.741	ppb	1.584	1401091	1000	103.3	90	110	
Co	59	3	72	49.347	ppb	1.277	55963	50	98.7	90	110	
Ni	60	3	72	49.117	ppb	2.960	16091	50	98.2	90	110	
Cu	63	3	72	49.010	ppb	2.546	43136	50	98.0	90	110	
Zn	66	3	72	51.034	ppb	0.537	7555	50	102.1	90	110	
As	75	3	72	50.063	ppb	6.349	5093	50	100.1	90	110	
Se	78	2	72	49.817	ppb	1.550	2554	50	99.6	90	110	
(Se)	78	3	72	33.199	ppb	31.424	210	50	66.4	90	110	>+\-10%
Sr	88	3	72	101.855	ppb	0.926	45717	100	101.9	90	110	
Mo	95	3	115	48.921	ppb	1.036	23315	50	97.8	90	110	
Ag	107	3	115	48.293	ppb	1.349	77612	50	96.6	90	110	
Cd	111	3	115	48.658	ppb	2.551	10996	50	97.3	90	110	
Sn	120	3	115	48.623	ppb	2.342	32946	50	97.2	90	110	
Sb	121	3	115	48.556	ppb	2.604	32685	50	97.1	90	110	
Ba	137	3	115	50.201	ppb	1.549	10756	50	100.4	90	110	
Tl	205	3	193	48.190	ppb	1.488	171298	50	96.4	90	110	
(Pb)	206	3	193	46.445	ppb	1.955	56581	50	92.9	90	110	
(Pb)	207	3	193	48.470	ppb	2.105	51323	50	96.9	90	110	
Pb	208	3	193	47.511	ppb	1.717	230281	50	95.0	90	110	
Th	232	3	193	48.823	ppb	1.966	246718	50	97.6	90	110	
U	238	3	193	48.906	ppb	1.550	254067	50	97.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3631424	2.53	4073877	89.14	60	120	
Sc (IS)	45	3	HMI He	503659	1.55	571359	88.15	60	120	
Ge Internal standard	72	2	HMI H2	1914374	0.99	2151320	88.99	60	120	
Ge Internal standard	72	3	HMI He	582809	0.48	637725	91.39	60	120	
In Internal Standard	115	3	HMI He	2318383	1.47	2522150	91.92	60	120	
Ir (IS)	193	3	HMI He	5321208	1.69	5499210	96.76	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	117_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:38:38-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.008	ppb	740.7	3	0.5	
Na	23	3	45	18.345	ppb	34.7	21284	25	
Mg	24	3	45	1.287	ppb	25.7	170	25	
Al	27	3	45	0.631	ppb	175.9	53	15	
K	39	3	45	0.540	ppb	3913.8	14255	50	
V	51	3	72	0.080	ppb	122.3	225	1	
Cr	52	3	72	-0.031	ppb	-152.3	1228	1	
Mn	55	3	72	-0.144	ppb	-24.9	115	0.5	
Co	59	3	72	0.007	ppb	233.4	53	0.5	
Ni	60	3	72	-0.073	ppb	-80.2	148	1	
Cu	63	3	72	-0.031	ppb	-139.3	252	1	
Zn	66	3	72	0.914	ppb	18.0	232	5	
As	75	3	72	0.201	ppb	86.1	38	1	
Se	78	2	72	0.278	ppb	43.9	21	1	
(Se)	78	3	72	1.481	ppb	96.7	15	1	>RL
Sr	88	3	72	0.061	ppb	18.2	45	0.5	
Mo	95	3	115	0.127	ppb	76.1	108	0.5	
Ag	107	3	115	0.004	ppb	259.1	25	1	
Cd	111	3	115	0.001	ppb	1728.1	2	0.5	
Sn	120	3	115	0.173	ppb	8.0	656	1	
Sb	121	3	115	0.025	ppb	182.6	128	0.6	
Ba	137	3	115	0.077	ppb	160.9	43	0.5	
Tl	205	3	193	0.003	ppb	137.3	205	0.1	
(Pb)	206	3	193	-0.023	ppb	-84.7	197	1	
(Pb)	207	3	193	-0.065	ppb	-41.9	308	1	
Pb	208	3	193	-0.017	ppb	-47.6	931	0.5	
Th	232	3	193	0.708	ppb	16.0	7685	1	
U	238	3	193	0.024	ppb	79.2	1499	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3555347	0.58	4073877	87.27	60	120	
Sc (IS)	45	3	HMI He	506119	0.80	571359	88.58	60	120	
Ge Internal standard	72	2	HMI H2	1916955	0.72	2151320	89.11	60	120	
Ge Internal standard	72	3	HMI He	576879	0.54	637725	90.46	60	120	
In Internal Standard	115	3	HMI He	2290951	1.82	2522150	90.83	60	120	
Ir (IS)	193	3	HMI He	5285632	0.81	5499210	96.12	60	120	

Sample Report

Sample Table

Sample Name	280-171552-a-1-b
Data File Name	118SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:40:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.185	ppb	0.185	31.33	12	2000	
Na	23	3	45	4265962.630	ppb	4265962.630	0.47	507124223	400000	>LDR
Mg	24	3	45	480688.277	ppb	480688.277	0.65	30188078	400000	
Al	27	3	45	230.608	ppb	230.608	2.40	4956	400000	
K	39	3	45	316008.993	ppb	316008.993	0.81	14087728	400000	
Ca	40	2	45	135403.156	ppb	135403.156	1.57	74733167	400000	
V	51	3	72	109.535	ppb	109.535	0.47	65626	2000	
Cr	52	3	72	449.064	ppb	449.064	0.65	346503	5000	
Mn	55	3	72	439.646	ppb	439.646	1.18	173656	10000	
Fe	56	2	72	9994.102	ppb	9994.102	3.28	14617521	10000	
Co	59	3	72	50.083	ppb	50.083	1.34	62802	2000	
Ni	60	3	72	798.366	ppb	798.366	1.68	286268	5000	
Cu	63	3	72	2032.131	ppb	2032.131	2.24	1965058	5000	
Zn	66	3	72	816.739	ppb	816.739	0.83	132034	5000	
As	75	3	72	161.382	ppb	161.382	1.08	18110	2000	
Se	78	2	72	1.717	ppb	1.717	16.28	103	2000	
(Se)	78	3	72	2.442	ppb	2.442	91.93	23	2000	
Sr	88	3	72	4631.808	ppb	4631.808	1.35	2297957	4000	
Mo	95	3	115	36.008	ppb	36.008	2.69	17413	2000	
Ag	107	3	115	0.483	ppb	0.483	3.24	806	100	
Cd	111	3	115	2.982	ppb	2.982	2.56	685	2000	
Sn	120	3	115	32.674	ppb	32.674	1.46	22635	2000	
Sb	121	3	115	11.692	ppb	11.692	0.90	8070	1000	
Ba	137	3	115	1524.458	ppb	1524.458	1.81	330327	5000	
Tl	205	3	193	0.068	ppb	0.068	24.58	411	2000	
(Pb)	206	3	193	226.883	ppb	226.883	1.54	258942	100	
(Pb)	207	3	193	224.437	ppb	224.437	1.86	222065	100	
Pb	208	3	193	225.693	ppb	225.693	2.12	1024447	5000	
Th	232	3	193	0.151	ppb	0.151	36.58	4670	2000	
U	238	3	193	0.167	ppb	0.167	11.11	2114	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3806597	1.22	4073877	93.44	60	120	
Sc (IS)	45	3	HMI He	564364	0.60	571359	98.78	60	120	
Ge Internal standard	72	2	HMI H2	2072770	2.31	2151320	96.35	60	120	
Ge Internal standard	72	3	HMI He	644485	0.69	637725	101.06	60	120	
In Internal Standard	115	3	HMI He	2350893	1.32	2522150	93.21	60	120	
Ir (IS)	193	3	HMI He	5000625	1.02	5499210	90.93	60	120	

Sample Report

Sample Table

Sample Name	280-171595-c-1-b
Data File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:42:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.264	ppb	0.264	85.23	17	2000	
Na	23	3	45	308106.134	ppb	308106.134	0.60	35361848	400000	
Mg	24	3	45	162131.556	ppb	162131.556	0.49	9825114	400000	
Al	27	3	45	2820.655	ppb	2820.655	7.40	57993	400000	
K	39	3	45	7947.785	ppb	7947.785	0.72	356827	400000	
Ca	40	2	45	449813.900	ppb	449813.900	1.07	253616728	400000	
V	51	3	72	7.381	ppb	7.381	4.38	4487	2000	
Cr	52	3	72	4.205	ppb	4.205	3.94	4500	5000	
Mn	55	3	72	38.290	ppb	38.290	2.00	14874	10000	
Fe	56	2	72	1778.376	ppb	1778.376	1.75	2743717	10000	
Co	59	3	72	2.908	ppb	2.908	0.99	3594	2000	
Ni	60	3	72	6.724	ppb	6.724	5.77	2531	5000	
Cu	63	3	72	1.696	ppb	1.696	8.44	1898	5000	
Zn	66	3	72	7.561	ppb	7.561	2.16	1296	5000	
As	75	3	72	2.601	ppb	2.601	5.23	303	2000	
Se	78	2	72	234.023	ppb	234.023	1.00	13641	2000	
(Se)	78	3	72	229.329	ppb	229.329	0.75	1519	2000	
Sr	88	3	72	5988.456	ppb	5988.456	0.85	2889715	4000	
Mo	95	3	115	5.450	ppb	5.450	1.43	2714	2000	
Ag	107	3	115	0.013	ppb	0.013	42.30	40	100	
Cd	111	3	115	0.058	ppb	0.058	74.20	15	2000	
Sn	120	3	115	0.571	ppb	0.571	16.98	955	2000	
Sb	121	3	115	1.480	ppb	1.480	9.60	1136	1000	
Ba	137	3	115	72.615	ppb	72.615	12.41	15966	5000	
Tl	205	3	193	0.029	ppb	0.029	26.22	292	2000	
(Pb)	206	3	193	1.918	ppb	1.918	9.00	2484	100	
(Pb)	207	3	193	1.763	ppb	1.763	1.58	2172	100	
Pb	208	3	193	1.877	ppb	1.877	5.83	9808	5000	
Th	232	3	193	0.685	ppb	0.685	2.72	7420	2000	
U	238	3	193	42.512	ppb	42.512	1.41	215186	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3889046	2.15	4073877	95.46	60	120	
Sc (IS)	45	3	HMI He	544580	0.65	571359	95.31	60	120	
Ge Internal standard	72	2	HMI H2	2181031	0.49	2151320	101.38	60	120	
Ge Internal standard	72	3	HMI He	626848	0.76	637725	98.29	60	120	
In Internal Standard	115	3	HMI He	2382173	0.61	2522150	94.45	60	120	
Ir (IS)	193	3	HMI He	5180441	1.16	5499210	94.20	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-2-b
Data File Name	120SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:44:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.005	ppb	0.005	1093.48	3	2000	
Na	23	3	45	159841.986	ppb	159841.986	2.16	17965083	400000	
Mg	24	3	45	23134.161	ppb	23134.161	1.76	1372200	400000	
Al	27	3	45	120.784	ppb	120.784	2.98	2473	400000	
K	39	3	45	12808.641	ppb	12808.641	0.30	553711	400000	
Ca	40	2	45	70756.403	ppb	70756.403	1.50	38722667	400000	
V	51	3	72	4.653	ppb	4.653	6.65	2869	2000	
Cr	52	3	72	0.290	ppb	0.290	35.29	1558	5000	
Mn	55	3	72	39.118	ppb	39.118	1.43	15027	10000	
Fe	56	2	72	197.324	ppb	197.324	3.71	301473	10000	
Co	59	3	72	0.175	ppb	0.175	24.17	260	2000	
Ni	60	3	72	0.276	ppb	0.276	17.72	280	5000	
Cu	63	3	72	1.525	ppb	1.525	8.55	1718	5000	
Zn	66	3	72	2.261	ppb	2.261	24.04	458	5000	
As	75	3	72	0.345	ppb	0.345	19.69	57	2000	
Se	78	2	72	3.718	ppb	3.718	12.09	218	2000	
(Se)	78	3	72	5.390	ppb	5.390	16.35	42	2000	
Sr	88	3	72	337.650	ppb	337.650	0.25	161182	4000	
Mo	95	3	115	4.586	ppb	4.586	1.40	2296	2000	
Ag	107	3	115	0.001	ppb	0.001	1301.95	20	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	0.199	ppb	0.199	38.26	701	2000	
Sb	121	3	115	0.278	ppb	0.278	7.39	308	1000	
Ba	137	3	115	162.682	ppb	162.682	1.55	35807	5000	
Tl	205	3	193	0.026	ppb	0.026	10.35	280	2000	
(Pb)	206	3	193	-0.027	ppb	-0.027	-108.73	187	100	
(Pb)	207	3	193	-0.038	ppb	-0.038	-170.80	328	100	
Pb	208	3	193	-0.012	ppb	-0.012	-47.26	935	5000	
Th	232	3	193	0.010	ppb	0.010	294.85	4140	2000	
U	238	3	193	14.924	ppb	14.924	0.25	76067	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3774425	2.47	4073877	92.65	60	120	
Sc (IS)	45	3	HMI He	533038	0.61	571359	93.29	60	120	
Ge Internal standard	72	2	HMI H2	2118627	2.61	2151320	98.48	60	120	
Ge Internal standard	72	3	HMI He	620023	0.68	637725	97.22	60	120	
In Internal Standard	115	3	HMI He	2386224	0.90	2522150	94.61	60	120	
Ir (IS)	193	3	HMI He	5156349	0.63	5499210	93.77	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-3-b
Data File Name	121SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:46:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	124898.875	ppb	124898.875	1.19	13818715	400000	
Mg	24	3	45	23050.124	ppb	23050.124	1.33	1345389	400000	
Al	27	3	45	16.547	ppb	16.547	15.89	370	400000	
K	39	3	45	7367.579	ppb	7367.579	0.55	319676	400000	
Ca	40	2	45	78154.594	ppb	78154.594	1.55	42725296	400000	
V	51	3	72	3.249	ppb	3.249	4.23	2056	2000	
Cr	52	3	72	0.569	ppb	0.569	42.43	1758	5000	
Mn	55	3	72	10.444	ppb	10.444	4.52	4129	10000	
Fe	56	2	72	21.124	ppb	21.124	2.52	36846	10000	
Co	59	3	72	0.145	ppb	0.145	21.30	223	2000	
Ni	60	3	72	0.604	ppb	0.604	21.94	391	5000	
Cu	63	3	72	0.688	ppb	0.688	8.21	936	5000	
Zn	66	3	72	3.529	ppb	3.529	8.89	653	5000	
As	75	3	72	0.300	ppb	0.300	47.17	52	2000	
Se	78	2	72	1.291	ppb	1.291	6.09	78	2000	
(Se)	78	3	72	3.877	ppb	3.877	41.51	32	2000	
Sr	88	3	72	300.626	ppb	300.626	0.61	143014	4000	
Mo	95	3	115	8.729	ppb	8.729	3.38	4307	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-323.40	15	100	
Cd	111	3	115	0.022	ppb	0.022	55.25	7	2000	
Sn	120	3	115	0.244	ppb	0.244	5.70	730	2000	
Sb	121	3	115	0.195	ppb	0.195	51.77	250	1000	
Ba	137	3	115	110.424	ppb	110.424	2.54	24215	5000	
Tl	205	3	193	0.006	ppb	0.006	113.55	210	2000	
(Pb)	206	3	193	-0.030	ppb	-0.030	-31.45	183	100	
(Pb)	207	3	193	-0.065	ppb	-0.065	-51.38	300	100	
Pb	208	3	193	-0.024	ppb	-0.024	-54.85	878	5000	
Th	232	3	193	-0.032	ppb	-0.032	-78.42	3934	2000	
U	238	3	193	9.393	ppb	9.393	2.29	48318	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3769833	0.81	4073877	92.54	60	120	
Sc (IS)	45	3	HMI He	524532	0.85	571359	91.80	60	120	
Ge Internal standard	72	2	HMI H2	2041904	0.58	2151320	94.91	60	120	
Ge Internal standard	72	3	HMI He	617878	0.22	637725	96.89	60	120	
In Internal Standard	115	3	HMI He	2377038	1.86	2522150	94.25	60	120	
Ir (IS)	193	3	HMI He	5150093	0.37	5499210	93.65	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-4-b
Data File Name	122SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:48:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	249.857	ppb	249.857	5.96	46265	400000	
Mg	24	3	45	11.434	ppb	11.434	10.47	747	400000	
Al	27	3	45	3.042	ppb	3.042	19.28	100	400000	
K	39	3	45	36.016	ppb	36.016	62.86	15791	400000	
Ca	40	2	45	45.417	ppb	45.417	2.84	33497	400000	
V	51	3	72	0.718	ppb	0.718	6.96	560	2000	
Cr	52	3	72	-0.007	ppb	-0.007	-260.46	1231	5000	
Mn	55	3	72	0.121	ppb	0.121	91.19	207	10000	
Fe	56	2	72	5.214	ppb	5.214	3.98	13360	10000	
Co	59	3	72	-0.019	ppb	-0.019	-90.63	23	2000	
Ni	60	3	72	-0.216	ppb	-0.216	-26.37	102	5000	
Cu	63	3	72	0.081	ppb	0.081	75.68	345	5000	
Zn	66	3	72	1.009	ppb	1.009	25.68	243	5000	
As	75	3	72	0.070	ppb	0.070	135.15	25	2000	
Se	78	2	72	0.246	ppb	0.246	86.50	20	2000	
(Se)	78	3	72	2.629	ppb	2.629	50.46	22	2000	
Sr	88	3	72	0.168	ppb	0.168	35.35	92	4000	
Mo	95	3	115	0.048	ppb	0.048	35.29	72	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-88.44	12	100	
Cd	111	3	115	0.001	ppb	0.001	1969.61	2	2000	
Sn	120	3	115	0.153	ppb	0.153	61.57	650	2000	
Sb	121	3	115	0.061	ppb	0.061	74.79	153	1000	
Ba	137	3	115	0.082	ppb	0.082	103.33	45	5000	
Tl	205	3	193	-0.011	ppb	-0.011	-47.67	150	2000	
(Pb)	206	3	193	-0.060	ppb	-0.060	-32.22	145	100	
(Pb)	207	3	193	-0.054	ppb	-0.054	-104.35	307	100	
Pb	208	3	193	-0.037	ppb	-0.037	-19.30	801	5000	
Th	232	3	193	-0.038	ppb	-0.038	-60.36	3844	2000	
U	238	3	193	-0.003	ppb	-0.003	-235.50	1303	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3630182	1.49	4073877	89.11	60	120	
Sc (IS)	45	3	HMI He	509606	1.76	571359	89.19	60	120	
Ge Internal standard	72	2	HMI H2	1960243	2.15	2151320	91.12	60	120	
Ge Internal standard	72	3	HMI He	570586	2.46	637725	89.47	60	120	
In Internal Standard	115	3	HMI He	2312860	1.69	2522150	91.70	60	120	
Ir (IS)	193	3	HMI He	5070979	0.43	5499210	92.21	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-5-b
Data File Name	123SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:49:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.146	ppb	0.146	70.71	10	2000	
Na	23	3	45	289.220	ppb	289.220	3.83	50336	400000	
Mg	24	3	45	15.454	ppb	15.454	11.05	971	400000	
Al	27	3	45	10.367	ppb	10.367	4.47	240	400000	
K	39	3	45	17.746	ppb	17.746	169.11	14997	400000	
Ca	40	2	45	65.551	ppb	65.551	2.96	44107	400000	
V	51	3	72	0.762	ppb	0.762	15.60	596	2000	
Cr	52	3	72	0.097	ppb	0.097	44.82	1333	5000	
Mn	55	3	72	0.203	ppb	0.203	70.17	240	10000	
Fe	56	2	72	8.892	ppb	8.892	6.79	18381	10000	
Co	59	3	72	0.042	ppb	0.042	19.39	93	2000	
Ni	60	3	72	0.019	ppb	0.019	406.59	180	5000	
Cu	63	3	72	0.229	ppb	0.229	32.34	483	5000	
Zn	66	3	72	5.382	ppb	5.382	18.21	890	5000	
As	75	3	72	0.296	ppb	0.296	63.78	48	2000	
Se	78	2	72	0.206	ppb	0.206	96.67	18	2000	
(Se)	78	3	72	1.723	ppb	1.723	109.77	17	2000	
Sr	88	3	72	0.330	ppb	0.330	10.63	167	4000	
Mo	95	3	115	0.069	ppb	0.069	30.77	82	2000	
Ag	107	3	115	0.016	ppb	0.016	83.89	43	100	
Cd	111	3	115	0.068	ppb	0.068	52.55	17	2000	
Sn	120	3	115	0.202	ppb	0.202	49.48	683	2000	
Sb	121	3	115	0.147	ppb	0.147	7.74	212	1000	
Ba	137	3	115	0.176	ppb	0.176	26.62	65	5000	
Tl	205	3	193	0.053	ppb	0.053	32.63	373	2000	
(Pb)	206	3	193	0.010	ppb	0.010	359.05	230	100	
(Pb)	207	3	193	-0.006	ppb	-0.006	-188.70	361	100	
Pb	208	3	193	0.027	ppb	0.027	64.61	1116	5000	
Th	232	3	193	-0.035	ppb	-0.035	-92.50	3932	2000	
U	238	3	193	0.071	ppb	0.071	15.86	1698	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3630545	1.05	4073877	89.12	60	120	
Sc (IS)	45	3	HMI He	507880	0.60	571359	88.89	60	120	
Ge Internal standard	72	2	HMI H2	1952547	0.33	2151320	90.76	60	120	
Ge Internal standard	72	3	HMI He	584164	1.43	637725	91.60	60	120	
In Internal Standard	115	3	HMI He	2318233	2.20	2522150	91.91	60	120	
Ir (IS)	193	3	HMI He	5166380	1.28	5499210	93.95	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-6-b
Data File Name	124SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:51:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.027	ppb	-0.027	-225.53	2	2000	
Na	23	3	45	124548.177	ppb	124548.177	0.35	13566780	400000	
Mg	24	3	45	22929.162	ppb	22929.162	2.54	1317754	400000	
Al	27	3	45	30.560	ppb	30.560	17.38	637	400000	
K	39	3	45	7317.588	ppb	7317.588	0.53	312689	400000	
Ca	40	2	45	80932.712	ppb	80932.712	1.78	41857537	400000	
V	51	3	72	3.098	ppb	3.098	7.72	1946	2000	
Cr	52	3	72	0.506	ppb	0.506	42.28	1691	5000	
Mn	55	3	72	10.083	ppb	10.083	4.18	3949	10000	
Fe	56	2	72	78.644	ppb	78.644	1.99	117138	10000	
Co	59	3	72	0.136	ppb	0.136	22.40	210	2000	
Ni	60	3	72	0.603	ppb	0.603	23.04	386	5000	
Cu	63	3	72	0.873	ppb	0.873	9.04	1095	5000	
Zn	66	3	72	8.768	ppb	8.768	6.76	1448	5000	
As	75	3	72	0.338	ppb	0.338	25.52	55	2000	
Se	78	2	72	1.260	ppb	1.260	13.31	75	2000	
(Se)	78	3	72	2.646	ppb	2.646	68.78	23	2000	
Sr	88	3	72	297.540	ppb	297.540	0.96	139981	4000	
Mo	95	3	115	8.742	ppb	8.742	2.21	4259	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-123.27	15	100	
Cd	111	3	115	0.008	ppb	0.008	316.94	3	2000	
Sn	120	3	115	0.699	ppb	0.699	12.13	1026	2000	
Sb	121	3	115	0.181	ppb	0.181	46.98	238	1000	
Ba	137	3	115	108.948	ppb	108.948	0.95	23584	5000	
Tl	205	3	193	0.002	ppb	0.002	317.87	198	2000	
(Pb)	206	3	193	-0.018	ppb	-0.018	-102.22	197	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-39.58	305	100	
Pb	208	3	193	-0.022	ppb	-0.022	-71.40	885	5000	
Th	232	3	193	-0.041	ppb	-0.041	-88.25	3885	2000	
U	238	3	193	9.296	ppb	9.296	2.25	47771	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3565983	0.59	4073877	87.53	60	120	
Sc (IS)	45	3	HMI He	516391	0.56	571359	90.38	60	120	
Ge Internal standard	72	2	HMI H2	1997791	0.26	2151320	92.86	60	120	
Ge Internal standard	72	3	HMI He	611110	1.89	637725	95.83	60	120	
In Internal Standard	115	3	HMI He	2346091	2.64	2522150	93.02	60	120	
Ir (IS)	193	3	HMI He	5144043	0.74	5499210	93.54	60	120	

Sample Report

Sample Table

Sample Name	280-171673-a-1-a
Data File Name	125SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:53:40-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.042	ppb	0.042	2.59	5	2000	
Na	23	3	45	571223.859	ppb	571223.859	1.84	64796854	400000	
Mg	24	3	45	323079.905	ppb	323079.905	0.06	19356092	400000	
Al	27	3	45	33.140	ppb	33.140	22.52	717	400000	
K	39	3	45	10324.669	ppb	10324.669	0.92	453756	400000	
Ca	40	2	45	641056.742	ppb	641056.742	2.61	339137235	400000	
V	51	3	72	20.964	ppb	20.964	2.38	12081	2000	
Cr	52	3	72	0.398	ppb	0.398	24.39	1614	5000	
Mn	55	3	72	0.599	ppb	0.599	12.84	400	10000	
Fe	56	2	72	25.519	ppb	25.519	5.74	42796	10000	
Co	59	3	72	0.250	ppb	0.250	3.77	345	2000	
Ni	60	3	72	1.604	ppb	1.604	9.50	728	5000	
Cu	63	3	72	2.136	ppb	2.136	8.33	2257	5000	
Zn	66	3	72	1.355	ppb	1.355	4.33	313	5000	
As	75	3	72	2.701	ppb	2.701	12.00	307	2000	
Se	78	2	72	4.166	ppb	4.166	10.42	233	2000	
(Se)	78	3	72	7.537	ppb	7.537	19.42	55	2000	
Sr	88	3	72	8557.275	ppb	8557.275	1.81	4029344	4000	
Mo	95	3	115	0.209	ppb	0.209	34.11	150	2000	
Ag	107	3	115	0.043	ppb	0.043	41.07	88	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	0.058	ppb	0.058	67.10	593	2000	
Sb	121	3	115	0.162	ppb	0.162	32.61	223	1000	
Ba	137	3	115	102.489	ppb	102.489	1.12	22146	5000	
Tl	205	3	193	0.039	ppb	0.039	30.66	320	2000	
(Pb)	206	3	193	-0.040	ppb	-0.040	-72.57	170	100	
(Pb)	207	3	193	-0.053	ppb	-0.053	-47.50	310	100	
Pb	208	3	193	-0.026	ppb	-0.026	-31.34	860	5000	
Th	232	3	193	-0.028	ppb	-0.028	-113.45	3920	2000	
U	238	3	193	12.814	ppb	12.814	2.34	64903	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3649729	1.82	4073877	89.59	60	120	
Sc (IS)	45	3	HMI He	538399	0.89	571359	94.23	60	120	
Ge Internal standard	72	2	HMI H2	2024721	1.34	2151320	94.12	60	120	
Ge Internal standard	72	3	HMI He	611710	1.60	637725	95.92	60	120	
In Internal Standard	115	3	HMI He	2341295	1.20	2522150	92.83	60	120	
Ir (IS)	193	3	HMI He	5109640	0.80	5499210	92.92	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	126_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:55:32-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	49.261	ppb	3.478	2444	50	98.5	90	110	
Na	23	3	45	51584.985	ppb	0.108	5804002	51000	101.1	90	110	
Mg	24	3	45	10729.287	ppb	4.235	635678	11000	97.5	90	110	
Al	27	3	45	987.255	ppb	4.106	19864	1000	98.7	90	110	
K	39	3	45	10693.095	ppb	2.286	464006	11000	97.2	90	110	
Ca	40	2	45	11299.156	ppb	1.943	6292590	11000	102.7	90	110	
V	51	3	72	50.711	ppb	1.253	28719	50	101.4	90	110	
Cr	52	3	72	48.979	ppb	2.718	36763	50	98.0	90	110	
Mn	55	3	72	50.047	ppb	0.646	18775	50	100.1	90	110	
Fe	56	2	72	1019.647	ppb	2.495	1479470	1000	102.0	90	110	
Co	59	3	72	49.219	ppb	0.992	58134	50	98.4	90	110	
Ni	60	3	72	48.739	ppb	2.181	16635	50	97.5	90	110	
Cu	63	3	72	49.031	ppb	1.193	44945	50	98.1	90	110	
Zn	66	3	72	50.875	ppb	0.857	7845	50	101.8	90	110	
As	75	3	72	51.177	ppb	4.661	5420	50	102.4	90	110	
Se	78	2	72	49.936	ppb	0.927	2738	50	99.9	90	110	
(Se)	78	3	72	47.330	ppb	18.437	308	50	94.7	90	110	
Sr	88	3	72	103.624	ppb	1.568	48440	100	103.6	90	110	
Mo	95	3	115	48.249	ppb	1.320	23966	50	96.5	90	110	
Ag	107	3	115	47.653	ppb	3.354	79784	50	95.3	90	110	
Cd	111	3	115	48.063	ppb	3.885	11311	50	96.1	90	110	
Sn	120	3	115	48.771	ppb	3.471	34431	50	97.5	90	110	
Sb	121	3	115	48.465	ppb	3.396	33991	50	96.9	90	110	
Ba	137	3	115	48.840	ppb	3.885	10901	50	97.7	90	110	
Tl	205	3	193	49.654	ppb	2.539	175099	50	99.3	90	110	
(Pb)	206	3	193	48.440	ppb	2.407	58539	50	96.9	90	110	
(Pb)	207	3	193	49.251	ppb	1.120	51743	50	98.5	90	110	
Pb	208	3	193	49.088	ppb	1.785	236034	50	98.2	90	110	
Th	232	3	193	49.517	ppb	2.301	248207	50	99.0	90	110	
U	238	3	193	49.854	ppb	1.767	256926	50	99.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3836175	2.93	4073877	94.17	60	120	
Sc (IS)	45	3	HMI He	532291	1.84	571359	93.16	60	120	
Ge Internal standard	72	2	HMI H2	2047302	0.13	2151320	95.16	60	120	
Ge Internal standard	72	3	HMI He	607068	1.49	637725	95.19	60	120	
In Internal Standard	115	3	HMI He	2416213	2.35	2522150	95.80	60	120	
Ir (IS)	193	3	HMI He	5279570	1.44	5499210	96.01	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	127_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:57:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.039	ppb	255.1	5	0.5	
Na	23	3	45	130.282	ppb	1.6	34169	25	>RL
Mg	24	3	45	9.857	ppb	18.9	671	25	
Al	27	3	45	3.433	ppb	25.0	110	15	
K	39	3	45	31.266	ppb	107.6	15918	50	
V	51	3	72	0.528	ppb	12.6	470	1	
Cr	52	3	72	-0.062	ppb	-27.5	1221	1	
Mn	55	3	72	-0.096	ppb	-55.1	133	0.5	
Co	59	3	72	-0.018	ppb	-2.4	25	0.5	
Ni	60	3	72	-0.089	ppb	-74.3	145	1	
Cu	63	3	72	0.026	ppb	46.6	305	1	
Zn	66	3	72	1.006	ppb	29.4	248	5	
As	75	3	72	0.198	ppb	101.1	38	1	
Se	78	2	72	-0.015	ppb	-287.9	7	1	
(Se)	78	3	72	0.630	ppb	128.1	10	1	
Sr	88	3	72	0.174	ppb	14.1	97	0.5	
Mo	95	3	115	0.008	ppb	321.1	53	0.5	
Ag	107	3	115	0.023	ppb	39.0	57	1	
Cd	111	3	115	0.001	ppb	1457.9	2	0.5	
Sn	120	3	115	-0.030	ppb	-160.9	535	1	
Sb	121	3	115	0.047	ppb	12.1	147	0.6	
Ba	137	3	115	0.025	ppb	131.5	33	0.5	
Tl	205	3	193	0.002	ppb	730.6	200	0.1	
(Pb)	206	3	193	-0.031	ppb	-81.2	185	1	
(Pb)	207	3	193	-0.019	ppb	-267.1	353	1	
Pb	208	3	193	-0.021	ppb	-41.6	910	0.5	
Th	232	3	193	0.629	ppb	24.0	7250	1	
U	238	3	193	0.020	ppb	73.2	1468	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3645686	1.75	4073877	89.49	60	120	
Sc (IS)	45	3	HMI He	520595	1.05	571359	91.12	60	120	
Ge Internal standard	72	2	HMI H2	2001728	0.76	2151320	93.05	60	120	
Ge Internal standard	72	3	HMI He	583759	1.96	637725	91.54	60	120	
In Internal Standard	115	3	HMI He	2346860	2.91	2522150	93.05	60	120	
Ir (IS)	193	3	HMI He	5247394	2.10	5499210	95.42	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-1-A
Data File Name	128SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T17:59:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	57409.480	ppb	57409.480	0.95	6351540	400000	
Mg	24	3	45	36721.298	ppb	36721.298	1.30	2139682	400000	
Al	27	3	45	8.815	ppb	8.815	38.65	217	400000	
K	39	3	45	1636.343	ppb	1636.343	1.18	82332	400000	
Ca	40	2	45	69728.135	ppb	69728.135	2.03	37829884	400000	
V	51	3	72	1.068	ppb	1.068	4.23	803	2000	
Cr	52	3	72	0.087	ppb	0.087	23.27	1396	5000	
Mn	55	3	72	6.181	ppb	6.181	5.91	2504	10000	
Fe	56	2	72	11.310	ppb	11.310	2.44	23283	10000	
Co	59	3	72	0.036	ppb	0.036	17.10	92	2000	
Ni	60	3	72	0.327	ppb	0.327	26.84	295	5000	
Cu	63	3	72	0.548	ppb	0.548	12.76	803	5000	
Zn	66	3	72	4.371	ppb	4.371	12.58	780	5000	
As	75	3	72	0.334	ppb	0.334	37.31	55	2000	
Se	78	2	72	-0.032	ppb	-0.032	-299.57	6	2000	
(Se)	78	3	72	0.808	ppb	0.808	145.58	12	2000	
Sr	88	3	72	1058.099	ppb	1058.099	0.43	500979	4000	
Mo	95	3	115	11.988	ppb	11.988	3.81	5920	2000	
Ag	107	3	115	0.089	ppb	0.089	23.10	167	100	
Cd	111	3	115	0.015	ppb	0.015	143.65	5	2000	
Sn	120	3	115	0.083	ppb	0.083	161.81	621	2000	
Sb	121	3	115	0.133	ppb	0.133	47.84	208	1000	
Ba	137	3	115	62.099	ppb	62.099	2.86	13689	5000	
Tl	205	3	193	0.003	ppb	0.003	257.48	207	2000	
(Pb)	206	3	193	-0.047	ppb	-0.047	-99.29	168	100	
(Pb)	207	3	193	-0.047	ppb	-0.047	-79.81	330	100	
Pb	208	3	193	-0.032	ppb	-0.032	-7.13	868	5000	
Th	232	3	193	0.171	ppb	0.171	20.47	5077	2000	
U	238	3	193	7.670	ppb	7.670	2.63	41071	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3740782	0.18	4073877	91.82	60	120	
Sc (IS)	45	3	HMI He	523603	0.27	571359	91.64	60	120	
Ge Internal standard	72	2	HMI H2	2093854	1.15	2151320	97.33	60	120	
Ge Internal standard	72	3	HMI He	615012	0.30	637725	96.44	60	120	
In Internal Standard	115	3	HMI He	2387477	2.18	2522150	94.66	60	120	
Ir (IS)	193	3	HMI He	5329461	1.48	5499210	96.91	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-2-a
Data File Name	129SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:01:10-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	93910.846	ppb	93910.846	1.63	10329701	400000	
Mg	24	3	45	47694.718	ppb	47694.718	0.52	2766529	400000	
Al	27	3	45	38.590	ppb	38.590	27.07	801	400000	
K	39	3	45	2201.137	ppb	2201.137	1.56	105186	400000	
Ca	40	2	45	95393.486	ppb	95393.486	2.26	51684101	400000	
V	51	3	72	0.925	ppb	0.925	13.91	711	2000	
Cr	52	3	72	0.330	ppb	0.330	13.85	1553	5000	
Mn	55	3	72	144.323	ppb	144.323	1.17	53774	10000	
Fe	56	2	72	51.882	ppb	51.882	1.71	81718	10000	
Co	59	3	72	0.964	ppb	0.964	7.25	1184	2000	
Ni	60	3	72	1.392	ppb	1.392	24.01	650	5000	
Cu	63	3	72	2.103	ppb	2.103	2.90	2207	5000	
Zn	66	3	72	3.048	ppb	3.048	5.97	568	5000	
As	75	3	72	0.467	ppb	0.467	5.65	68	2000	
Se	78	2	72	0.239	ppb	0.239	78.93	21	2000	
(Se)	78	3	72	1.621	ppb	1.621	56.65	17	2000	
Sr	88	3	72	1371.177	ppb	1371.177	0.67	640349	4000	
Mo	95	3	115	7.575	ppb	7.575	1.65	3747	2000	
Ag	107	3	115	0.002	ppb	0.002	99.21	22	100	
Cd	111	3	115	0.015	ppb	0.015	251.12	5	2000	
Sn	120	3	115	0.346	ppb	0.346	14.27	800	2000	
Sb	121	3	115	0.190	ppb	0.190	24.67	247	1000	
Ba	137	3	115	77.803	ppb	77.803	0.51	17088	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-49.24	162	2000	
(Pb)	206	3	193	-0.012	ppb	-0.012	-109.57	208	100	
(Pb)	207	3	193	-0.018	ppb	-0.018	-118.58	355	100	
Pb	208	3	193	0.009	ppb	0.009	118.70	1051	5000	
Th	232	3	193	0.004	ppb	0.004	205.78	4192	2000	
U	238	3	193	10.936	ppb	10.936	1.53	57181	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3736782	1.60	4073877	91.73	60	120	
Sc (IS)	45	3	HMI He	521242	0.66	571359	91.23	60	120	
Ge Internal standard	72	2	HMI H2	2056271	2.09	2151320	95.58	60	120	
Ge Internal standard	72	3	HMI He	606637	0.73	637725	95.13	60	120	
In Internal Standard	115	3	HMI He	2378764	0.74	2522150	94.31	60	120	
Ir (IS)	193	3	HMI He	5256082	1.06	5499210	95.58	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-3-a
Data File Name	130SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:03:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	115679.647	ppb	115679.647	1.93	12466808	400000	
Mg	24	3	45	163383.741	ppb	163383.741	1.82	9288284	400000	
Al	27	3	45	16.024	ppb	16.024	22.00	350	400000	
K	39	3	45	4127.581	ppb	4127.581	0.91	180772	400000	
Ca	40	2	45	213631.791	ppb	213631.791	1.72	111523965	400000	
V	51	3	72	0.575	ppb	0.575	18.78	505	2000	
Cr	52	3	72	0.245	ppb	0.245	12.50	1461	5000	
Mn	55	3	72	2.257	ppb	2.257	9.37	991	10000	
Fe	56	2	72	20.340	ppb	20.340	1.76	34588	10000	
Co	59	3	72	0.059	ppb	0.059	23.34	115	2000	
Ni	60	3	72	0.533	ppb	0.533	5.03	353	5000	
Cu	63	3	72	0.526	ppb	0.526	9.38	756	5000	
Zn	66	3	72	1.743	ppb	1.743	30.63	361	5000	
As	75	3	72	0.595	ppb	0.595	36.61	80	2000	
Se	78	2	72	1.309	ppb	1.309	18.89	77	2000	
(Se)	78	3	72	2.189	ppb	2.189	94.43	20	2000	
Sr	88	3	72	3402.490	ppb	3402.490	2.41	1556682	4000	
Mo	95	3	115	2.370	ppb	2.370	8.98	1168	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-489.06	15	100	
Cd	111	3	115	0.001	ppb	0.001	1734.13	2	2000	
Sn	120	3	115	0.645	ppb	0.645	6.55	971	2000	
Sb	121	3	115	0.122	ppb	0.122	19.23	193	1000	
Ba	137	3	115	28.759	ppb	28.759	5.88	6123	5000	
Tl	205	3	193	-0.012	ppb	-0.012	-70.28	148	2000	
(Pb)	206	3	193	-0.018	ppb	-0.018	-56.90	198	100	
(Pb)	207	3	193	-0.070	ppb	-0.070	-11.90	297	100	
Pb	208	3	193	-0.028	ppb	-0.028	-9.95	863	5000	
Th	232	3	193	-0.004	ppb	-0.004	-643.54	4087	2000	
U	238	3	193	26.176	ppb	26.176	2.15	132910	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3601154	2.96	4073877	88.40	60	120	
Sc (IS)	45	3	HMI He	510918	1.05	571359	89.42	60	120	
Ge Internal standard	72	2	HMI H2	1978110	3.64	2151320	91.95	60	120	
Ge Internal standard	72	3	HMI He	594297	1.13	637725	93.19	60	120	
In Internal Standard	115	3	HMI He	2300023	1.78	2522150	91.19	60	120	
Ir (IS)	193	3	HMI He	5176146	0.32	5499210	94.13	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-9-b
Data File Name	131SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:04:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	8523.381	ppb	8523.381	2.76	936364	400000	
Mg	24	3	45	13431.211	ppb	13431.211	0.52	763445	400000	
Al	27	3	45	22.077	ppb	22.077	16.74	467	400000	
K	39	3	45	1904.086	ppb	1904.086	2.74	91095	400000	
Ca	40	2	45	76166.136	ppb	76166.136	1.51	40118162	400000	
V	51	3	72	0.677	ppb	0.677	6.55	566	2000	
Cr	52	3	72	0.277	ppb	0.277	29.01	1498	5000	
Mn	55	3	72	2.627	ppb	2.627	3.69	1138	10000	
Fe	56	2	72	36.792	ppb	36.792	2.21	58880	10000	
Co	59	3	72	1.639	ppb	1.639	1.29	1959	2000	
Ni	60	3	72	0.213	ppb	0.213	37.45	250	5000	
Cu	63	3	72	1.404	ppb	1.404	5.37	1554	5000	
Zn	66	3	72	17.765	ppb	17.765	7.32	2776	5000	
As	75	3	72	0.410	ppb	0.410	35.63	62	2000	
Se	78	2	72	0.404	ppb	0.404	38.48	29	2000	
(Se)	78	3	72	0.854	ppb	0.854	107.05	12	2000	
Sr	88	3	72	257.697	ppb	257.697	1.18	119083	4000	
Mo	95	3	115	0.739	ppb	0.739	13.75	406	2000	
Ag	107	3	115	0.001	ppb	0.001	798.21	20	100	
Cd	111	3	115	0.008	ppb	0.008	160.27	3	2000	
Sn	120	3	115	0.185	ppb	0.185	48.77	681	2000	
Sb	121	3	115	0.145	ppb	0.145	20.58	213	1000	
Ba	137	3	115	58.730	ppb	58.730	3.29	12758	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-630.34	185	2000	
(Pb)	206	3	193	0.224	ppb	0.224	15.88	488	100	
(Pb)	207	3	193	0.168	ppb	0.168	5.71	545	100	
Pb	208	3	193	0.210	ppb	0.210	8.05	1999	5000	
Th	232	3	193	-0.036	ppb	-0.036	-19.26	3967	2000	
U	238	3	193	4.395	ppb	4.395	0.53	23656	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3633171	3.54	4073877	89.18	60	120	
Sc (IS)	45	3	HMI He	510746	0.52	571359	89.39	60	120	
Ge Internal standard	72	2	HMI H2	2023484	1.64	2151320	94.06	60	120	
Ge Internal standard	72	3	HMI He	600181	0.10	637725	94.11	60	120	
In Internal Standard	115	3	HMI He	2352147	1.39	2522150	93.26	60	120	
Ir (IS)	193	3	HMI He	5224391	1.61	5499210	95.00	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-11-b
Data File Name	132SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:06:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.026	ppb	-0.026	-238.40	2	2000	
Na	23	3	45	1068.307	ppb	1068.307	1.59	133257	400000	
Mg	24	3	45	18106.749	ppb	18106.749	0.53	1020222	400000	
Al	27	3	45	6.742	ppb	6.742	8.90	170	400000	
K	39	3	45	1433.102	ppb	1433.102	3.14	71483	400000	
Ca	40	2	45	63006.629	ppb	63006.629	2.62	31816680	400000	
V	51	3	72	1.134	ppb	1.134	9.99	823	2000	
Cr	52	3	72	0.309	ppb	0.309	49.99	1526	5000	
Mn	55	3	72	0.186	ppb	0.186	20.04	242	10000	
Fe	56	2	72	8.509	ppb	8.509	6.00	18033	10000	
Co	59	3	72	0.001	ppb	0.001	1567.38	48	2000	
Ni	60	3	72	-0.038	ppb	-0.038	-127.27	167	5000	
Cu	63	3	72	0.383	ppb	0.383	22.02	638	5000	
Zn	66	3	72	1.585	ppb	1.585	9.12	343	5000	
As	75	3	72	1.093	ppb	1.093	13.82	133	2000	
Se	78	2	72	0.125	ppb	0.125	53.06	14	2000	
(Se)	78	3	72	1.915	ppb	1.915	132.93	18	2000	
Sr	88	3	72	129.429	ppb	129.429	0.86	60025	4000	
Mo	95	3	115	0.375	ppb	0.375	13.31	233	2000	
Ag	107	3	115	0.001	ppb	0.001	489.64	20	100	
Cd	111	3	115	0.001	ppb	0.001	2293.99	2	2000	
Sn	120	3	115	0.264	ppb	0.264	31.66	746	2000	
Sb	121	3	115	0.112	ppb	0.112	61.10	193	1000	
Ba	137	3	115	42.863	ppb	42.863	5.24	9442	5000	
Tl	205	3	193	0.000	ppb	0.000	-25097.37	192	2000	
(Pb)	206	3	193	-0.048	ppb	-0.048	-14.75	163	100	
(Pb)	207	3	193	-0.053	ppb	-0.053	-50.08	317	100	
Pb	208	3	193	-0.043	ppb	-0.043	-22.41	800	5000	
Th	232	3	193	-0.070	ppb	-0.070	-26.50	3794	2000	
U	238	3	193	0.772	ppb	0.772	6.19	5255	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3483039	3.39	4073877	85.50	60	120	
Sc (IS)	45	3	HMI He	506331	1.45	571359	88.62	60	120	
Ge Internal standard	72	2	HMI H2	1973596	4.09	2151320	91.74	60	120	
Ge Internal standard	72	3	HMI He	602231	1.19	637725	94.43	60	120	
In Internal Standard	115	3	HMI He	2384645	2.40	2522150	94.55	60	120	
Ir (IS)	193	3	HMI He	5209398	1.90	5499210	94.73	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-15-b
Data File Name	133SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:08:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.009	ppb	0.009	655.23	3	2000	
Na	23	3	45	1006.961	ppb	1006.961	1.00	128115	400000	
Mg	24	3	45	18133.090	ppb	18133.090	3.14	1032686	400000	
Al	27	3	45	5.789	ppb	5.789	50.09	153	400000	
K	39	3	45	1434.913	ppb	1434.913	1.55	72355	400000	
Ca	40	2	45	61227.191	ppb	61227.191	6.01	31923756	400000	
V	51	3	72	1.096	ppb	1.096	19.09	806	2000	
Cr	52	3	72	0.484	ppb	0.484	23.79	1663	5000	
Mn	55	3	72	0.101	ppb	0.101	19.17	212	10000	
Fe	56	2	72	10.515	ppb	10.515	5.71	20940	10000	
Co	59	3	72	-0.011	ppb	-0.011	-106.00	35	2000	
Ni	60	3	72	-0.052	ppb	-0.052	-319.12	163	5000	
Cu	63	3	72	0.423	ppb	0.423	11.05	678	5000	
Zn	66	3	72	0.692	ppb	0.692	37.09	210	5000	
As	75	3	72	1.099	ppb	1.099	18.70	135	2000	
Se	78	2	72	0.163	ppb	0.163	63.36	16	2000	
(Se)	78	3	72	2.139	ppb	2.139	35.82	20	2000	
Sr	88	3	72	130.131	ppb	130.131	1.52	60733	4000	
Mo	95	3	115	0.297	ppb	0.297	17.63	193	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-45.01	12	100	
Cd	111	3	115	0.001	ppb	0.001	2376.15	2	2000	
Sn	120	3	115	-0.069	ppb	-0.069	-63.33	511	2000	
Sb	121	3	115	0.108	ppb	0.108	28.75	188	1000	
Ba	137	3	115	44.956	ppb	44.956	0.78	9790	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-109.06	182	2000	
(Pb)	206	3	193	-0.049	ppb	-0.049	-29.85	162	100	
(Pb)	207	3	193	-0.077	ppb	-0.077	-42.07	290	100	
Pb	208	3	193	-0.050	ppb	-0.050	-32.90	763	5000	
Th	232	3	193	-0.077	ppb	-0.077	-19.28	3749	2000	
U	238	3	193	0.798	ppb	0.798	3.44	5373	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3596802	1.69	4073877	88.29	60	120	
Sc (IS)	45	3	HMI He	511894	1.39	571359	89.59	60	120	
Ge Internal standard	72	2	HMI H2	1984344	2.00	2151320	92.24	60	120	
Ge Internal standard	72	3	HMI He	606083	0.97	637725	95.04	60	120	
In Internal Standard	115	3	HMI He	2355784	2.07	2522150	93.40	60	120	
Ir (IS)	193	3	HMI He	5194054	1.97	5499210	94.45	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-15-bSD@5
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:10:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.026	ppb	-0.026	-235.43	2	2000	
Na	23	3	45	290.246	ppb	290.246	2.47	50798	400000	
Mg	24	3	45	3611.259	ppb	3611.259	1.52	205592	400000	
Al	27	3	45	31.719	ppb	31.719	8.96	654	400000	
K	39	3	45	315.662	ppb	315.662	8.25	27120	400000	
Ca	40	2	45	12637.616	ppb	12637.616	0.86	6582334	400000	
V	51	3	72	0.622	ppb	0.622	12.26	535	2000	
Cr	52	3	72	0.207	ppb	0.207	15.91	1444	5000	
Mn	55	3	72	3.230	ppb	3.230	4.60	1356	10000	
Fe	56	2	72	3.712	ppb	3.712	2.34	11326	10000	
Co	59	3	72	-0.012	ppb	-0.012	-55.46	33	2000	
Ni	60	3	72	-0.119	ppb	-0.119	-129.57	138	5000	
Cu	63	3	72	0.156	ppb	0.156	16.84	430	5000	
Zn	66	3	72	2.608	ppb	2.608	5.01	495	5000	
As	75	3	72	0.331	ppb	0.331	14.80	53	2000	
Se	78	2	72	-0.025	ppb	-0.025	-5.46	6	2000	
(Se)	78	3	72	0.321	ppb	0.321	373.20	8	2000	
Sr	88	3	72	27.293	ppb	27.293	2.52	12598	4000	
Mo	95	3	115	0.075	ppb	0.075	22.77	85	2000	
Ag	107	3	115	0.002	ppb	0.002	95.69	22	100	
Cd	111	3	115	0.008	ppb	0.008	158.29	3	2000	
Sn	120	3	115	0.640	ppb	0.640	13.26	980	2000	
Sb	121	3	115	0.067	ppb	0.067	33.79	158	1000	
Ba	137	3	115	8.630	ppb	8.630	3.59	1879	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-103.62	172	2000	
(Pb)	206	3	193	-0.049	ppb	-0.049	-17.05	163	100	
(Pb)	207	3	193	-0.078	ppb	-0.078	-94.37	292	100	
Pb	208	3	193	-0.047	ppb	-0.047	-27.28	783	5000	
Th	232	3	193	-0.031	ppb	-0.031	-117.87	3999	2000	
U	238	3	193	0.171	ppb	0.171	10.42	2229	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3587035	0.59	4073877	88.05	60	120	
Sc (IS)	45	3	HMI He	511431	1.29	571359	89.51	60	120	
Ge Internal standard	72	2	HMI H2	1967149	1.21	2151320	91.44	60	120	
Ge Internal standard	72	3	HMI He	598814	1.19	637725	93.90	60	120	
In Internal Standard	115	3	HMI He	2327316	0.66	2522150	92.28	60	120	
Ir (IS)	193	3	HMI He	5234556	2.23	5499210	95.19	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-15-c ms
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:12:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	36.103	ppb	36.103	6.60	1684	2000	
Na	23	3	45	1818.582	ppb	1818.582	1.61	214243	400000	
Mg	24	3	45	18908.780	ppb	18908.780	2.07	1070356	400000	
Al	27	3	45	771.075	ppb	771.075	5.81	14833	400000	
K	39	3	45	2172.740	ppb	2172.740	1.64	101496	400000	
Ca	40	2	45	61037.114	ppb	61037.114	2.28	31676522	400000	
V	51	3	72	38.774	ppb	38.774	2.52	21891	2000	
Cr	52	3	72	37.701	ppb	37.701	2.23	28458	5000	
Mn	55	3	72	38.895	ppb	38.895	1.84	14555	10000	
Fe	56	2	72	828.198	ppb	828.198	2.38	1169988	10000	
Co	59	3	72	37.092	ppb	37.092	0.75	43598	2000	
Ni	60	3	72	35.845	ppb	35.845	3.11	12216	5000	
Cu	63	3	72	38.358	ppb	38.358	1.32	35047	5000	
Zn	66	3	72	39.788	ppb	39.788	5.54	6127	5000	
As	75	3	72	37.842	ppb	37.842	4.68	3994	2000	
Se	78	2	72	37.610	ppb	37.610	1.71	2009	2000	
(Se)	78	3	72	38.595	ppb	38.595	6.93	252	2000	
Sr	88	3	72	206.849	ppb	206.849	0.29	96186	4000	
Mo	95	3	115	38.003	ppb	38.003	3.57	18101	2000	
Ag	107	3	115	38.230	ppb	38.230	2.97	61377	100	
Cd	111	3	115	38.155	ppb	38.155	4.10	8608	2000	
Sn	120	3	115	37.900	ppb	37.900	1.76	25782	2000	
Sb	121	3	115	38.691	ppb	38.691	1.05	26049	1000	
Ba	137	3	115	86.243	ppb	86.243	3.64	18434	5000	
Tl	205	3	193	38.458	ppb	38.458	2.94	136203	2000	
(Pb)	206	3	193	38.380	ppb	38.380	0.23	46636	100	
(Pb)	207	3	193	37.524	ppb	37.524	2.08	39671	100	
Pb	208	3	193	38.245	ppb	38.245	2.47	184857	5000	
Th	232	3	193	37.233	ppb	37.233	2.45	188431	2000	
U	238	3	193	39.446	ppb	39.446	3.77	204332	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3579157	2.02	4073877	87.86	60	120	
Sc (IS)	45	3	HMI He	508597	1.33	571359	89.02	60	120	
Ge Internal standard	72	2	HMI H2	1991993	2.34	2151320	92.59	60	120	
Ge Internal standard	72	3	HMI He	603920	0.41	637725	94.70	60	120	
In Internal Standard	115	3	HMI He	2316553	2.28	2522150	91.85	60	120	
Ir (IS)	193	3	HMI He	5302210	2.84	5499210	96.42	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-15-d msd
Data File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:14:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.197	ppb	39.197	4.07	1886	2000	
Na	23	3	45	1803.630	ppb	1803.630	3.03	212232	400000	
Mg	24	3	45	18862.651	ppb	18862.651	3.92	1065498	400000	
Al	27	3	45	771.612	ppb	771.612	4.61	14819	400000	
K	39	3	45	2179.933	ppb	2179.933	2.73	101597	400000	
Ca	40	2	45	61044.210	ppb	61044.210	0.55	32235253	400000	
V	51	3	72	38.511	ppb	38.511	2.70	22001	2000	
Cr	52	3	72	37.140	ppb	37.140	0.84	28390	5000	
Mn	55	3	72	38.836	ppb	38.836	3.06	14704	10000	
Fe	56	2	72	780.334	ppb	780.334	1.47	1116174	10000	
Co	59	3	72	37.264	ppb	37.264	2.01	44329	2000	
Ni	60	3	72	36.067	ppb	36.067	1.09	12438	5000	
Cu	63	3	72	38.216	ppb	38.216	2.91	35346	5000	
Zn	66	3	72	39.697	ppb	39.697	1.92	6187	5000	
As	75	3	72	37.909	ppb	37.909	2.58	4049	2000	
Se	78	2	72	39.845	ppb	39.845	3.23	2153	2000	
(Se)	78	3	72	33.414	ppb	33.414	12.59	222	2000	
Sr	88	3	72	203.234	ppb	203.234	0.90	95640	4000	
Mo	95	3	115	37.864	ppb	37.864	1.86	18212	2000	
Ag	107	3	115	37.697	ppb	37.697	2.01	61113	100	
Cd	111	3	115	37.777	ppb	37.777	0.75	8608	2000	
Sn	120	3	115	37.368	ppb	37.368	2.43	25667	2000	
Sb	121	3	115	38.265	ppb	38.265	0.84	26011	1000	
Ba	137	3	115	83.359	ppb	83.359	2.01	17993	5000	
Tl	205	3	193	39.477	ppb	39.477	2.92	138630	2000	
(Pb)	206	3	193	38.627	ppb	38.627	3.02	46520	100	
(Pb)	207	3	193	38.470	ppb	38.470	3.42	40309	100	
Pb	208	3	193	38.741	ppb	38.741	2.73	185647	5000	
Th	232	3	193	38.742	ppb	38.742	1.87	194254	2000	
U	238	3	193	39.736	ppb	39.736	2.76	204125	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3640994	1.29	4073877	89.37	60	120	
Sc (IS)	45	3	HMI He	507677	0.69	571359	88.85	60	120	
Ge Internal standard	72	2	HMI H2	2015670	0.92	2151320	93.69	60	120	
Ge Internal standard	72	3	HMI He	611176	1.52	637725	95.84	60	120	
In Internal Standard	115	3	HMI He	2338436	1.33	2522150	92.72	60	120	
Ir (IS)	193	3	HMI He	5255780	1.52	5499210	95.57	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-15-b PDS
Data File Name	137SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:16:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	196.426	ppb	196.426	2.23	9242	2000	
Na	23	3	45	11294.384	ppb	11294.384	2.80	1214586	400000	
Mg	24	3	45	19750.243	ppb	19750.243	2.93	1104238	400000	
Al	27	3	45	2040.045	ppb	2040.045	1.17	38712	400000	
K	39	3	45	3472.842	ppb	3472.842	1.10	151819	400000	
Ca	40	2	45	61903.538	ppb	61903.538	0.89	31936136	400000	
V	51	3	72	191.432	ppb	191.432	1.51	104876	2000	
Cr	52	3	72	190.508	ppb	190.508	0.22	135347	5000	
Mn	55	3	72	195.982	ppb	195.982	2.87	70968	10000	
Fe	56	2	72	25.561	ppb	25.561	1.34	42310	10000	
Co	59	3	72	189.515	ppb	189.515	1.68	217472	2000	
Ni	60	3	72	185.643	ppb	185.643	1.39	61089	5000	
Cu	63	3	72	190.492	ppb	190.492	1.15	168943	5000	
Zn	66	3	72	199.863	ppb	199.863	2.35	29660	5000	
As	75	3	72	189.848	ppb	189.848	2.79	19502	2000	
Se	78	2	72	193.370	ppb	193.370	1.81	10327	2000	
(Se)	78	3	72	184.316	ppb	184.316	4.93	1151	2000	
Sr	88	3	72	328.232	ppb	328.232	1.36	149136	4000	
Mo	95	3	115	194.495	ppb	194.495	1.31	91767	2000	
Ag	107	3	115	43.426	ppb	43.426	4.17	69178	100	
Cd	111	3	115	190.069	ppb	190.069	4.19	42554	2000	
Sn	120	3	115	193.060	ppb	193.060	3.82	128066	2000	
Sb	121	3	115	196.016	ppb	196.016	1.84	130502	1000	
Ba	137	3	115	241.410	ppb	241.410	3.03	51165	5000	
Tl	205	3	193	194.850	ppb	194.850	0.19	677111	2000	
(Pb)	206	3	193	194.051	ppb	194.051	1.29	230611	100	
(Pb)	207	3	193	194.048	ppb	194.048	0.55	199947	100	
Pb	208	3	193	194.737	ppb	194.737	0.41	920459	5000	
Th	232	3	193	228.145	ppb	228.145	2.45	1112919	2000	
U	238	3	193	220.702	ppb	220.702	2.77	1117034	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3557083	0.89	4073877	87.31	60	120	
Sc (IS)	45	3	HMI He	502468	0.67	571359	87.94	60	120	
Ge Internal standard	72	2	HMI H2	1998428	2.74	2151320	92.89	60	120	
Ge Internal standard	72	3	HMI He	590158	0.95	637725	92.54	60	120	
In Internal Standard	115	3	HMI He	2298971	1.99	2522150	91.15	60	120	
Ir (IS)	193	3	HMI He	5205732	0.12	5499210	94.66	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	138_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:18:06-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.554	ppb	7.954	2399	50	103.1	90	110	
Na	23	3	45	51609.891	ppb	0.834	5387050	51000	101.2	90	110	
Mg	24	3	45	10394.600	ppb	2.508	571214	11000	94.5	90	110	
Al	27	3	45	1001.334	ppb	0.791	18698	1000	100.1	90	110	
K	39	3	45	10591.595	ppb	1.472	426625	11000	96.3	90	110	
Ca	40	2	45	11161.739	ppb	1.307	5752974	11000	101.5	90	110	
V	51	3	72	50.326	ppb	3.161	26507	50	100.7	90	110	
Cr	52	3	72	49.473	ppb	1.743	34515	50	98.9	90	110	
Mn	55	3	72	49.092	ppb	2.930	17122	50	98.2	90	110	
Fe	56	2	72	1032.349	ppb	2.073	1388488	1000	103.2	90	110	
Co	59	3	72	49.467	ppb	2.246	54321	50	98.9	90	110	
Ni	60	3	72	48.278	ppb	1.404	15318	50	96.6	90	110	
Cu	63	3	72	48.854	ppb	1.466	41640	50	97.7	90	110	
Zn	66	3	72	51.043	ppb	2.226	7317	50	102.1	90	110	
As	75	3	72	49.964	ppb	2.310	4923	50	99.9	90	110	
Se	78	2	72	49.294	ppb	2.874	2506	50	98.6	90	110	
(Se)	78	3	72	46.374	ppb	15.593	282	50	92.7	90	110	
Sr	88	3	72	103.957	ppb	1.911	45182	100	104.0	90	110	
Mo	95	3	115	47.663	ppb	1.915	22407	50	95.3	90	110	
Ag	107	3	115	47.219	ppb	1.726	74845	50	94.4	90	110	
Cd	111	3	115	47.582	ppb	3.248	10601	50	95.2	90	110	
Sn	120	3	115	48.495	ppb	1.801	32413	50	97.0	90	110	
Sb	121	3	115	49.249	ppb	0.669	32705	50	98.5	90	110	
Ba	137	3	115	49.647	ppb	1.841	10491	50	99.3	90	110	
Tl	205	3	193	50.251	ppb	3.413	171681	50	100.5	90	110	
(Pb)	206	3	193	48.048	ppb	4.023	56246	50	96.1	90	110	
(Pb)	207	3	193	48.604	ppb	1.461	49490	50	97.2	90	110	
Pb	208	3	193	48.775	ppb	3.923	227175	50	97.6	90	110	
Th	232	3	193	50.861	ppb	1.460	246978	50	101.7	90	110	
U	238	3	193	49.993	ppb	3.975	249561	50	100.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3549062	0.81	4073877	87.12	60	120	
Sc (IS)	45	3	HMI He	493850	1.08	571359	86.43	60	120	
Ge Internal standard	72	2	HMI H2	1898323	1.95	2151320	88.24	60	120	
Ge Internal standard	72	3	HMI He	564418	1.30	637725	88.50	60	120	
In Internal Standard	115	3	HMI He	2286646	1.28	2522150	90.66	60	120	
Ir (IS)	193	3	HMI He	5117312	3.27	5499210	93.06	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	139_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:19:58-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.011	ppb	562.3	3	0.5	
Na	23	3	45	52.875	ppb	3.1	24115	25	>RL
Mg	24	3	45	3.359	ppb	14.0	277	25	
Al	27	3	45	2.895	ppb	28.2	93	15	
K	39	3	45	28.372	ppb	104.3	14836	50	
V	51	3	72	0.307	ppb	21.1	337	1	
Cr	52	3	72	-0.011	ppb	-734.6	1206	1	
Mn	55	3	72	-0.192	ppb	-27.5	95	0.5	
Co	59	3	72	0.006	ppb	412.5	50	0.5	
Ni	60	3	72	-0.092	ppb	-88.8	138	1	
Cu	63	3	72	-0.031	ppb	-187.7	245	1	
Zn	66	3	72	0.855	ppb	28.6	217	5	
As	75	3	72	0.247	ppb	114.4	42	1	
Se	78	2	72	-0.016	ppb	-520.6	6	1	
(Se)	78	3	72	0.984	ppb	131.2	12	1	
Sr	88	3	72	0.083	ppb	58.3	53	0.5	
Mo	95	3	115	0.042	ppb	105.4	68	0.5	
Ag	107	3	115	0.003	ppb	54.9	23	1	
Cd	111	3	115	0.008	ppb	156.0	3	0.5	
Sn	120	3	115	0.225	ppb	35.4	693	1	
Sb	121	3	115	0.132	ppb	20.1	200	0.6	
Ba	137	3	115	0.052	ppb	251.0	38	0.5	
Tl	205	3	193	-0.004	ppb	-236.6	177	0.1	
(Pb)	206	3	193	-0.023	ppb	-38.5	192	1	
(Pb)	207	3	193	-0.024	ppb	-74.3	343	1	
Pb	208	3	193	-0.012	ppb	-126.2	938	0.5	
Th	232	3	193	0.841	ppb	22.4	8172	1	
U	238	3	193	0.038	ppb	17.4	1536	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3428069	1.03	4073877	84.15	60	120	
Sc (IS)	45	3	HMI He	488853	1.12	571359	85.56	60	120	
Ge Internal standard	72	2	HMI H2	1816496	2.19	2151320	84.44	60	120	
Ge Internal standard	72	3	HMI He	560268	0.15	637725	87.85	60	120	
In Internal Standard	115	3	HMI He	2298759	0.53	2522150	91.14	60	120	
Ir (IS)	193	3	HMI He	5174548	0.55	5499210	94.10	60	120	

Sample Report

Sample Table

Sample Name	160-48523-a-2-b
Data File Name	140SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:21:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	8179.068	ppb	8179.068	2.92	883391	400000	
Mg	24	3	45	13209.798	ppb	13209.798	0.91	737234	400000	
Al	27	3	45	11.997	ppb	11.997	53.11	267	400000	
K	39	3	45	1839.700	ppb	1839.700	1.28	86901	400000	
Ca	40	2	45	74031.652	ppb	74031.652	2.15	38183348	400000	
V	51	3	72	0.492	ppb	0.492	10.74	463	2000	
Cr	52	3	72	0.188	ppb	0.188	10.43	1433	5000	
Mn	55	3	72	0.592	ppb	0.592	28.90	390	10000	
Fe	56	2	72	32.500	ppb	32.500	6.02	51718	10000	
Co	59	3	72	1.365	ppb	1.365	5.17	1638	2000	
Ni	60	3	72	-0.036	ppb	-0.036	-193.27	167	5000	
Cu	63	3	72	0.565	ppb	0.565	4.57	798	5000	
Zn	66	3	72	3.924	ppb	3.924	6.36	693	5000	
As	75	3	72	0.187	ppb	0.187	14.44	38	2000	
Se	78	2	72	0.313	ppb	0.313	21.54	24	2000	
(Se)	78	3	72	1.386	ppb	1.386	99.28	15	2000	
Sr	88	3	72	243.194	ppb	243.194	2.24	112257	4000	
Mo	95	3	115	0.710	ppb	0.710	4.03	386	2000	
Ag	107	3	115	0.000	ppb	0.000	-5751.13	18	100	
Cd	111	3	115	0.023	ppb	0.023	58.29	7	2000	
Sn	120	3	115	0.135	ppb	0.135	149.60	638	2000	
Sb	121	3	115	0.093	ppb	0.093	20.63	175	1000	
Ba	137	3	115	58.376	ppb	58.376	1.41	12490	5000	
Tl	205	3	193	0.003	ppb	0.003	82.16	207	2000	
(Pb)	206	3	193	0.016	ppb	0.016	291.60	242	100	
(Pb)	207	3	193	-0.032	ppb	-0.032	-87.05	342	100	
Pb	208	3	193	0.005	ppb	0.005	176.00	1033	5000	
Th	232	3	193	0.185	ppb	0.185	15.44	5089	2000	
U	238	3	193	4.310	ppb	4.310	0.95	23422	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3556742	1.19	4073877	87.31	60	120	
Sc (IS)	45	3	HMI He	501514	1.54	571359	87.78	60	120	
Ge Internal standard	72	2	HMI H2	1984945	1.88	2151320	92.27	60	120	
Ge Internal standard	72	3	HMI He	599534	0.29	637725	94.01	60	120	
In Internal Standard	115	3	HMI He	2316417	1.74	2522150	91.84	60	120	
Ir (IS)	193	3	HMI He	5268692	1.42	5499210	95.81	60	120	

Sample Report

Sample Table

Sample Name	280-171655-e-1-a
Data File Name	141SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:23:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	6387033.822	ppb	6387033.822	0.86	754350170	400000	>LDR
Mg	24	3	45	387623.518	ppb	387623.518	0.72	24180243	400000	
Al	27	3	45	12.045	ppb	12.045	15.12	300	400000	
K	39	3	45	15732.604	ppb	15732.604	3.08	712075	400000	
Ca	40	2	45	1828332.159	ppb	1828332.159	1.16	1005211349	400000	
V	51	3	72	1.568	ppb	1.568	13.30	1101	2000	
Cr	52	3	72	5.183	ppb	5.183	6.33	5203	5000	
Mn	55	3	72	379.310	ppb	379.310	1.29	144931	10000	
Fe	56	2	72	55.315	ppb	55.315	0.64	85770	10000	
Co	59	3	72	2.209	ppb	2.209	7.43	2724	2000	
Ni	60	3	72	8.500	ppb	8.500	4.10	3130	5000	
Cu	63	3	72	2.981	ppb	2.981	3.16	3089	5000	
Zn	66	3	72	3.899	ppb	3.899	4.37	716	5000	
As	75	3	72	0.967	ppb	0.967	35.56	125	2000	
Se	78	2	72	3.209	ppb	3.209	17.82	182	2000	
(Se)	78	3	72	3.341	ppb	3.341	29.79	28	2000	
Sr	88	3	72	25241.287	ppb	25241.287	0.44	12110684	4000	>LDR
Mo	95	3	115	5.906	ppb	5.906	4.04	2791	2000	
Ag	107	3	115	0.749	ppb	0.749	5.59	1194	100	
Cd	111	3	115	0.122	ppb	0.122	13.12	28	2000	
Sn	120	3	115	0.697	ppb	0.697	5.25	990	2000	
Sb	121	3	115	0.181	ppb	0.181	21.55	228	1000	
Ba	137	3	115	30.383	ppb	30.383	1.70	6373	5000	
Tl	205	3	193	0.211	ppb	0.211	7.03	820	2000	
(Pb)	206	3	193	0.831	ppb	0.831	5.22	1066	100	
(Pb)	207	3	193	0.624	ppb	0.624	4.47	895	100	
Pb	208	3	193	0.751	ppb	0.751	2.20	4018	5000	
Th	232	3	193	0.086	ppb	0.086	6.71	4019	2000	
U	238	3	193	262.767	ppb	262.767	2.20	1175762	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3792115	2.15	4073877	93.08	60	120	
Sc (IS)	45	3	HMI He	560645	2.32	571359	98.12	60	120	
Ge Internal standard	72	2	HMI H2	2033796	1.61	2151320	94.54	60	120	
Ge Internal standard	72	3	HMI He	623208	2.36	637725	97.72	60	120	
In Internal Standard	115	3	HMI He	2265308	3.16	2522150	89.82	60	120	
Ir (IS)	193	3	HMI He	4602429	2.31	5499210	83.69	60	120	

Sample Report

Sample Table

Sample Name	280-171655-a-2-a
Data File Name	142SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:25:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.025	ppb	-0.025	-256.23	2	2000	
Na	23	3	45	6427817.228	ppb	6427817.228	0.48	795371750	400000	>LDR
Mg	24	3	45	418281.074	ppb	418281.074	0.61	27343038	400000	
Al	27	3	45	21.919	ppb	21.919	9.53	534	400000	
K	39	3	45	22156.983	ppb	22156.983	1.57	1043592	400000	
Ca	40	2	45	2016841.414	ppb	2016841.414	3.41	1086967182	400000	>LDR
V	51	3	72	0.754	ppb	0.754	13.50	668	2000	
Cr	52	3	72	3.541	ppb	3.541	2.53	4205	5000	
Mn	55	3	72	119.838	ppb	119.838	1.38	48487	10000	
Fe	56	2	72	21.336	ppb	21.336	2.73	36016	10000	
Co	59	3	72	0.102	ppb	0.102	27.76	182	2000	
Ni	60	3	72	4.421	ppb	4.421	3.15	1814	5000	
Cu	63	3	72	0.356	ppb	0.356	2.92	670	5000	
Zn	66	3	72	15.669	ppb	15.669	2.23	2699	5000	
As	75	3	72	0.781	ppb	0.781	34.13	110	2000	
Se	78	2	72	3.047	ppb	3.047	9.08	169	2000	
(Se)	78	3	72	6.226	ppb	6.226	23.73	50	2000	
Sr	88	3	72	27763.254	ppb	27763.254	0.63	14069858	4000	>LDR
Mo	95	3	115	4.607	ppb	4.607	2.96	2292	2000	
Ag	107	3	115	0.371	ppb	0.371	7.25	630	100	
Cd	111	3	115	0.195	ppb	0.195	23.81	47	2000	
Sn	120	3	115	0.384	ppb	0.384	38.76	823	2000	
Sb	121	3	115	0.274	ppb	0.274	41.85	303	1000	
Ba	137	3	115	30.908	ppb	30.908	3.13	6787	5000	
Tl	205	3	193	0.247	ppb	0.247	3.80	915	2000	
(Pb)	206	3	193	0.471	ppb	0.471	15.67	680	100	
(Pb)	207	3	193	0.508	ppb	0.508	24.40	778	100	
Pb	208	3	193	0.496	ppb	0.496	10.43	2914	5000	
Th	232	3	193	0.046	ppb	0.046	114.11	3794	2000	
U	238	3	193	150.142	ppb	150.142	0.91	662751	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3720169	3.72	4073877	91.32	60	120	
Sc (IS)	45	3	HMI He	587450	0.35	571359	102.82	60	120	
Ge Internal standard	72	2	HMI H2	1979948	2.07	2151320	92.03	60	120	
Ge Internal standard	72	3	HMI He	658300	0.48	637725	103.23	60	120	
In Internal Standard	115	3	HMI He	2372974	1.42	2522150	94.09	60	120	
Ir (IS)	193	3	HMI He	4537581	0.38	5499210	82.51	60	120	

Sample Report

Sample Table

Sample Name	280-171655-c-3-a
Data File Name	143SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:27:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.043	ppb	0.043	245.32	5	2000	
Na	23	3	45	6221889.158	ppb	6221889.158	1.13	804716235	400000	>LDR
Mg	24	3	45	412796.107	ppb	412796.107	0.83	28205416	400000	
Al	27	3	45	423.891	ppb	423.891	0.66	9870	400000	
K	39	3	45	18527.239	ppb	18527.239	0.94	914870	400000	
Ca	40	2	45	1910454.102	ppb	1910454.102	0.62	1109811706	400000	
V	51	3	72	1.919	ppb	1.919	3.68	1453	2000	
Cr	52	3	72	5.353	ppb	5.353	0.99	5927	5000	
Mn	55	3	72	271.182	ppb	271.182	0.73	115283	10000	
Fe	56	2	72	446.591	ppb	446.591	2.02	672294	10000	
Co	59	3	72	1.747	ppb	1.747	0.83	2409	2000	
Ni	60	3	72	5.862	ppb	5.862	5.67	2467	5000	
Cu	63	3	72	1.041	ppb	1.041	5.77	1418	5000	
Zn	66	3	72	4.197	ppb	4.197	9.17	848	5000	
As	75	3	72	0.800	ppb	0.800	8.55	118	2000	
Se	78	2	72	3.109	ppb	3.109	4.59	183	2000	
(Se)	78	3	72	4.487	ppb	4.487	15.06	40	2000	
Sr	88	3	72	26699.010	ppb	26699.010	0.38	14247254	4000	>LDR
Mo	95	3	115	3.644	ppb	3.644	2.14	1906	2000	
Ag	107	3	115	0.457	ppb	0.457	9.99	805	100	
Cd	111	3	115	0.159	ppb	0.159	22.54	40	2000	
Sn	120	3	115	0.367	ppb	0.367	24.99	848	2000	
Sb	121	3	115	0.203	ppb	0.203	32.99	267	1000	
Ba	137	3	115	39.267	ppb	39.267	1.02	9004	5000	
Tl	205	3	193	0.218	ppb	0.218	5.40	838	2000	
(Pb)	206	3	193	0.704	ppb	0.704	7.61	933	100	
(Pb)	207	3	193	0.635	ppb	0.635	15.39	905	100	
Pb	208	3	193	0.663	ppb	0.663	1.19	3648	5000	
Th	232	3	193	0.259	ppb	0.259	18.38	4760	2000	
U	238	3	193	165.731	ppb	165.731	5.15	740922	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4006524	0.21	4073877	98.35	60	120	
Sc (IS)	45	3	HMI He	614059	2.33	571359	107.47	60	120	
Ge Internal standard	72	2	HMI H2	2112829	1.94	2151320	98.21	60	120	
Ge Internal standard	72	3	HMI He	693204	1.77	637725	108.70	60	120	
In Internal Standard	115	3	HMI He	2479236	0.84	2522150	98.30	60	120	
Ir (IS)	193	3	HMI He	4597443	2.04	5499210	83.60	60	120	

Sample Report

Sample Table

Sample Name	280-171655-e-4-a
Data File Name	144SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:29:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.008	ppb	0.008	737.32	3	2000	
Na	23	3	45	6255224.625	ppb	6255224.625	1.44	783382241	400000	>LDR
Mg	24	3	45	393284.162	ppb	393284.162	1.21	26020169	400000	
Al	27	3	45	594.430	ppb	594.430	3.34	13387	400000	
K	39	3	45	13639.004	ppb	13639.004	1.33	656606	400000	
Ca	40	2	45	1938750.197	ppb	1938750.197	4.24	1147202349	400000	
V	51	3	72	2.673	ppb	2.673	5.26	1859	2000	
Cr	52	3	72	3.448	ppb	3.448	1.92	4180	5000	
Mn	55	3	72	19.638	ppb	19.638	3.18	8193	10000	
Fe	56	2	72	557.056	ppb	557.056	5.45	857189	10000	
Co	59	3	72	0.159	ppb	0.159	12.15	258	2000	
Ni	60	3	72	3.130	ppb	3.130	10.42	1358	5000	
Cu	63	3	72	0.616	ppb	0.616	4.26	938	5000	
Zn	66	3	72	4.273	ppb	4.273	3.12	828	5000	
As	75	3	72	0.908	ppb	0.908	38.65	127	2000	
Se	78	2	72	4.651	ppb	4.651	7.20	277	2000	
(Se)	78	3	72	4.984	ppb	4.984	46.00	42	2000	
Sr	88	3	72	25267.267	ppb	25267.267	1.22	12951907	4000	>LDR
Mo	95	3	115	2.342	ppb	2.342	3.28	1199	2000	
Ag	107	3	115	0.508	ppb	0.508	18.69	861	100	
Cd	111	3	115	0.108	ppb	0.108	40.95	27	2000	
Sn	120	3	115	0.525	ppb	0.525	14.83	926	2000	
Sb	121	3	115	0.198	ppb	0.198	32.43	253	1000	
Ba	137	3	115	30.092	ppb	30.092	1.54	6660	5000	
Tl	205	3	193	0.141	ppb	0.141	6.23	573	2000	
(Pb)	206	3	193	0.311	ppb	0.311	12.60	496	100	
(Pb)	207	3	193	0.213	ppb	0.213	33.38	496	100	
Pb	208	3	193	0.268	ppb	0.268	9.08	1906	5000	
Th	232	3	193	0.162	ppb	0.162	38.44	4139	2000	
U	238	3	193	280.991	ppb	280.991	4.17	1196700	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4083656	2.50	4073877	100.24	60	120	
Sc (IS)	45	3	HMI He	594475	2.26	571359	104.05	60	120	
Ge Internal standard	72	2	HMI H2	2165180	2.33	2151320	100.64	60	120	
Ge Internal standard	72	3	HMI He	665840	2.13	637725	104.41	60	120	
In Internal Standard	115	3	HMI He	2390431	1.61	2522150	94.78	60	120	
Ir (IS)	193	3	HMI He	4383044	2.23	5499210	79.70	60	120	

Sample Report

Sample Table

Sample Name	280-171655-e-5-a
Data File Name	145SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:31:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.037	ppb	0.037	267.04	5	2000	
Na	23	3	45	5971422.891	ppb	5971422.891	2.57	792503569	400000	>LDR
Mg	24	3	45	365535.156	ppb	365535.156	1.35	25630480	400000	
Al	27	3	45	62.283	ppb	62.283	7.32	1532	400000	
K	39	3	45	13575.120	ppb	13575.120	3.89	692545	400000	
Ca	40	2	45	1829321.009	ppb	1829321.009	1.84	1131843537	400000	
V	51	3	72	1.274	ppb	1.274	1.34	1088	2000	
Cr	52	3	72	1.304	ppb	1.304	9.14	2704	5000	
Mn	55	3	72	159.849	ppb	159.849	2.03	71312	10000	
Fe	56	2	72	42.320	ppb	42.320	1.09	75950	10000	
Co	59	3	72	5.926	ppb	5.926	3.74	8427	2000	
Ni	60	3	72	19.952	ppb	19.952	0.54	8278	5000	
Cu	63	3	72	0.323	ppb	0.323	21.74	703	5000	
Zn	66	3	72	2.750	ppb	2.750	7.85	626	5000	
As	75	3	72	0.729	ppb	0.729	15.97	115	2000	
Se	78	2	72	6.382	ppb	6.382	8.43	401	2000	
(Se)	78	3	72	8.134	ppb	8.134	33.85	70	2000	
Sr	88	3	72	22384.672	ppb	22384.672	1.96	12521303	4000	>LDR
Mo	95	3	115	3.617	ppb	3.617	3.38	1908	2000	
Ag	107	3	115	0.186	ppb	0.186	9.06	342	100	
Cd	111	3	115	0.055	ppb	0.055	65.65	15	2000	
Sn	120	3	115	0.188	ppb	0.188	51.15	726	2000	
Sb	121	3	115	0.200	ppb	0.200	13.33	267	1000	
Ba	137	3	115	30.772	ppb	30.772	0.46	7118	5000	
Tl	205	3	193	0.177	ppb	0.177	4.17	713	2000	
(Pb)	206	3	193	0.156	ppb	0.156	28.59	358	100	
(Pb)	207	3	193	0.150	ppb	0.150	28.12	463	100	
Pb	208	3	193	0.134	ppb	0.134	20.66	1441	5000	
Th	232	3	193	0.027	ppb	0.027	65.66	3769	2000	
U	238	3	193	352.657	ppb	352.657	0.71	1576965	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4267629	0.71	4073877	104.76	60	120	
Sc (IS)	45	3	HMI He	630152	1.11	571359	110.29	60	120	
Ge Internal standard	72	2	HMI H2	2301171	1.30	2151320	106.97	60	120	
Ge Internal standard	72	3	HMI He	726664	1.32	637725	113.95	60	120	
In Internal Standard	115	3	HMI He	2499302	2.12	2522150	99.09	60	120	
Ir (IS)	193	3	HMI He	4601606	1.05	5499210	83.68	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	146_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:33:07-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.087	ppb	6.493	2832	50	100.2	90	110	
Na	23	3	45	53713.141	ppb	0.674	6702755	51000	105.3	90	110	
Mg	24	3	45	10843.122	ppb	1.354	712768	11000	98.6	90	110	
Al	27	3	45	1020.481	ppb	1.243	22778	1000	102.0	90	110	
K	39	3	45	11119.620	ppb	0.654	534777	11000	101.1	90	110	
Ca	40	2	45	12110.073	ppb	1.266	8027591	11000	110.1	90	110	>+\-10%
V	51	3	72	50.292	ppb	1.883	31293	50	100.6	90	110	
Cr	52	3	72	48.768	ppb	0.901	40213	50	97.5	90	110	
Mn	55	3	72	50.001	ppb	1.229	20597	50	100.0	90	110	
Fe	56	2	72	1039.792	ppb	2.047	1757888	1000	104.0	90	110	
Co	59	3	72	48.913	ppb	1.215	63465	50	97.8	90	110	
Ni	60	3	72	46.761	ppb	1.416	17536	50	93.5	90	110	
Cu	63	3	72	47.243	ppb	0.658	47573	50	94.5	90	110	
Zn	66	3	72	49.913	ppb	1.335	8455	50	99.8	90	110	
As	75	3	72	49.621	ppb	2.814	5775	50	99.2	90	110	
Se	78	2	72	50.429	ppb	2.174	3223	50	100.9	90	110	
(Se)	78	3	72	48.165	ppb	3.889	345	50	96.3	90	110	
Sr	88	3	72	110.332	ppb	0.914	56638	100	110.3	90	110	>+\-10%
Mo	95	3	115	46.876	ppb	0.886	25308	50	93.8	90	110	
Ag	107	3	115	46.004	ppb	0.882	83763	50	92.0	90	110	
Cd	111	3	115	47.438	ppb	0.993	12138	50	94.9	90	110	
Sn	120	3	115	48.827	ppb	1.619	37487	50	97.7	90	110	
Sb	121	3	115	48.593	ppb	1.676	37066	50	97.2	90	110	
Ba	137	3	115	49.552	ppb	0.546	12024	50	99.1	90	110	
Tl	205	3	193	50.762	ppb	0.762	176612	50	101.5	90	110	
(Pb)	206	3	193	49.566	ppb	1.531	59093	50	99.1	90	110	
(Pb)	207	3	193	50.531	ppb	0.434	52360	50	101.1	90	110	
Pb	208	3	193	50.234	ppb	1.069	238271	50	100.5	90	110	
Th	232	3	193	50.266	ppb	1.364	248522	50	100.5	90	110	
U	238	3	193	50.493	ppb	1.355	256704	50	101.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4565268	0.78	4073877	112.06	60	120	
Sc (IS)	45	3	HMI He	590541	3.41	571359	103.36	60	120	
Ge Internal standard	72	2	HMI H2	2385826	0.97	2151320	110.90	60	120	
Ge Internal standard	72	3	HMI He	666684	2.66	637725	104.54	60	120	
In Internal Standard	115	3	HMI He	2625962	2.31	2522150	104.12	60	120	
Ir (IS)	193	3	HMI He	5207450	1.65	5499210	94.69	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	147_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:34:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	070CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.028	ppb	-204.9	2	0.5	
Na	23	3	45	1715.108	ppb	3.1	222353	25	>RL
Mg	24	3	45	28.476	ppb	5.7	1872	25	>RL
Al	27	3	45	1.150	ppb	120.2	70	15	
K	39	3	45	129.921	ppb	31.5	21348	50	>RL
V	51	3	72	0.206	ppb	26.0	323	1	
Cr	52	3	72	-0.106	ppb	-24.1	1303	1	
Mn	55	3	72	-0.214	ppb	-40.4	100	0.5	
Co	59	3	72	-0.021	ppb	-41.3	23	0.5	
Ni	60	3	72	-0.226	ppb	-16.1	110	1	
Cu	63	3	72	-0.010	ppb	-429.9	298	1	
Zn	66	3	72	0.871	ppb	26.4	250	5	
As	75	3	72	0.135	ppb	88.4	35	1	
Se	78	2	72	-0.115	ppb	-18.3	1	1	
(Se)	78	3	72	1.983	ppb	3.2	20	1	>RL
Sr	88	3	72	1.819	ppb	7.5	915	0.5	>RL
Mo	95	3	115	0.004	ppb	927.5	55	0.5	
Ag	107	3	115	0.006	ppb	51.7	30	1	
Cd	111	3	115	0.007	ppb	167.3	3	0.5	
Sn	120	3	115	-0.134	ppb	-53.4	495	1	
Sb	121	3	115	0.062	ppb	22.8	167	0.6	
Ba	137	3	115	0.045	ppb	168.3	40	0.5	
Tl	205	3	193	-0.010	ppb	-107.0	157	0.1	
(Pb)	206	3	193	-0.062	ppb	-16.3	147	1	
(Pb)	207	3	193	-0.058	ppb	-37.5	310	1	
Pb	208	3	193	-0.038	ppb	-22.6	818	0.5	
Th	232	3	193	0.722	ppb	16.3	7629	1	
U	238	3	193	0.064	ppb	19.3	1674	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3847635	0.86	4073877	94.45	60	120	
Sc (IS)	45	3	HMI He	556829	1.96	571359	97.46	60	120	
Ge Internal standard	72	2	HMI H2	2046642	0.86	2151320	95.13	60	120	
Ge Internal standard	72	3	HMI He	638575	2.11	637725	100.13	60	120	
In Internal Standard	115	3	HMI He	2498665	0.85	2522150	99.07	60	120	
Ir (IS)	193	3	HMI He	5194539	1.88	5499210	94.46	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	148SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:36:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.031	ppb	-0.031	-176.79	2	2000	
Na	23	3	45	4050.274	ppb	4050.274	7.29	526672	400000	
Mg	24	3	45	222.463	ppb	222.463	10.46	14739	400000	
Al	27	3	45	-0.822	ppb	-0.822	-55.67	30	400000	
K	39	3	45	84.049	ppb	84.049	35.97	20539	400000	
Ca	40	2	45	1438.732	ppb	1438.732	2.16	856279	400000	
V	51	3	72	-0.196	ppb	-0.196	-29.61	93	2000	
Cr	52	3	72	-0.884	ppb	-0.884	-15.88	771	5000	
Mn	55	3	72	-0.203	ppb	-0.203	-23.20	113	10000	
Fe	56	2	72	-1.438	ppb	-1.438	-13.14	4679	10000	
Co	59	3	72	-0.030	ppb	-0.030	-7.22	13	2000	
Ni	60	3	72	-0.419	ppb	-0.419	-8.36	45	5000	
Cu	63	3	72	-0.205	ppb	-0.205	-9.25	122	5000	
Zn	66	3	72	-0.267	ppb	-0.267	-36.49	73	5000	
As	75	3	72	0.041	ppb	0.041	356.60	27	2000	
Se	78	2	72	-0.071	ppb	-0.071	-5.42	4	2000	
(Se)	78	3	72	0.603	ppb	0.603	65.87	12	2000	
Sr	88	3	72	14.086	ppb	14.086	7.58	7553	4000	
Mo	95	3	115	-0.056	ppb	-0.056	-79.80	27	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-89.75	18	100	
Cd	111	3	115	0.000	ppb	0.000	-2140.23	2	2000	
Sn	120	3	115	-0.626	ppb	-0.626	-4.53	153	2000	
Sb	121	3	115	-0.057	ppb	-0.057	-21.41	87	1000	
Ba	137	3	115	0.013	ppb	0.013	760.86	35	5000	
Tl	205	3	193	-0.014	ppb	-0.014	-33.39	157	2000	
(Pb)	206	3	193	-0.087	ppb	-0.087	-36.74	127	100	
(Pb)	207	3	193	-0.076	ppb	-0.076	-38.76	315	100	
Pb	208	3	193	-0.074	ppb	-0.074	-1.98	703	5000	
Th	232	3	193	-0.033	ppb	-0.033	-37.06	4287	2000	
U	238	3	193	0.125	ppb	0.125	35.25	2144	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4055440	3.47	4073877	99.55	60	120	
Sc (IS)	45	3	HMI He	591125	0.84	571359	103.46	60	120	
Ge Internal standard	72	2	HMI H2	2205309	5.86	2151320	102.51	60	120	
Ge Internal standard	72	3	HMI He	694739	0.80	637725	108.94	60	120	
In Internal Standard	115	3	HMI He	2698511	2.93	2522150	106.99	60	120	
Ir (IS)	193	3	HMI He	5622806	0.88	5499210	102.25	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	149SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:38:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.005	ppb	0.005	1172.61	3	2000	
Na	23	3	45	1894.308	ppb	1894.308	2.38	255061	400000	
Mg	24	3	45	87.208	ppb	87.208	3.55	5774	400000	
Al	27	3	45	-0.806	ppb	-0.806	-56.08	30	400000	
K	39	3	45	82.287	ppb	82.287	23.79	20198	400000	
Ca	40	2	45	395.478	ppb	395.478	0.96	235663	400000	
V	51	3	72	-0.207	ppb	-0.207	-26.12	85	2000	
Cr	52	3	72	-0.810	ppb	-0.810	-14.12	821	5000	
Mn	55	3	72	-0.295	ppb	-0.295	-21.90	73	10000	
Fe	56	2	72	-1.802	ppb	-1.802	-2.83	4051	10000	
Co	59	3	72	-0.020	ppb	-0.020	-58.85	27	2000	
Ni	60	3	72	-0.378	ppb	-0.378	-8.92	60	5000	
Cu	63	3	72	-0.184	ppb	-0.184	-19.32	142	5000	
Zn	66	3	72	-0.299	ppb	-0.299	-23.56	67	5000	
As	75	3	72	-0.027	ppb	-0.027	-237.86	18	2000	
Se	78	2	72	-0.070	ppb	-0.070	-97.00	4	2000	
(Se)	78	3	72	1.088	ppb	1.088	1.46	15	2000	
Sr	88	3	72	5.109	ppb	5.109	3.22	2714	4000	
Mo	95	3	115	-0.062	ppb	-0.062	-43.86	22	2000	
Ag	107	3	115	0.000	ppb	0.000	1165.11	22	100	
Cd	111	3	115	0.000	ppb	0.000	-14124.73	2	2000	
Sn	120	3	115	-0.632	ppb	-0.632	-5.40	143	2000	
Sb	121	3	115	-0.095	ppb	-0.095	-30.04	55	1000	
Ba	137	3	115	0.037	ppb	0.037	196.33	40	5000	
Tl	205	3	193	-0.022	ppb	-0.022	-13.40	127	2000	
(Pb)	206	3	193	-0.110	ppb	-0.110	-6.72	97	100	
(Pb)	207	3	193	-0.101	ppb	-0.101	-22.78	288	100	
Pb	208	3	193	-0.086	ppb	-0.086	-5.48	643	5000	
Th	232	3	193	-0.065	ppb	-0.065	-9.54	4125	2000	
U	238	3	193	0.045	ppb	0.045	32.30	1709	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3929150	1.57	4073877	96.45	60	120	
Sc (IS)	45	3	HMI He	583356	0.54	571359	102.10	60	120	
Ge Internal standard	72	2	HMI H2	2170401	1.58	2151320	100.89	60	120	
Ge Internal standard	72	3	HMI He	684516	0.76	637725	107.34	60	120	
In Internal Standard	115	3	HMI He	2604004	1.40	2522150	103.25	60	120	
Ir (IS)	193	3	HMI He	5633853	1.32	5499210	102.45	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	150SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:40:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	1285.586	ppb	1285.586	3.00	179392	400000	
Mg	24	3	45	51.314	ppb	51.314	1.96	3431	400000	
Al	27	3	45	-1.247	ppb	-1.247	-39.35	20	400000	
K	39	3	45	60.062	ppb	60.062	34.42	19102	400000	
Ca	40	2	45	212.750	ppb	212.750	2.40	140981	400000	
V	51	3	72	-0.170	ppb	-0.170	-23.97	108	2000	
Cr	52	3	72	-0.970	ppb	-0.970	-14.46	685	5000	
Mn	55	3	72	-0.281	ppb	-0.281	-18.47	78	10000	
Fe	56	2	72	-1.930	ppb	-1.930	-5.01	4161	10000	
Co	59	3	72	-0.032	ppb	-0.032	-6.19	12	2000	
Ni	60	3	72	-0.345	ppb	-0.345	-15.66	72	5000	
Cu	63	3	72	-0.158	ppb	-0.158	-28.75	167	5000	
Zn	66	3	72	-0.288	ppb	-0.288	-25.88	68	5000	
As	75	3	72	0.058	ppb	0.058	76.66	28	2000	
Se	78	2	72	-0.129	ppb	-0.129	-14.43	1	2000	
(Se)	78	3	72	0.192	ppb	0.192	454.59	8	2000	
Sr	88	3	72	3.138	ppb	3.138	5.20	1666	4000	
Mo	95	3	115	-0.058	ppb	-0.058	-24.87	25	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-80.39	17	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	-0.629	ppb	-0.629	-6.20	150	2000	
Sb	121	3	115	-0.100	ppb	-0.100	-11.06	53	1000	
Ba	137	3	115	0.035	ppb	0.035	175.53	40	5000	
Tl	205	3	193	-0.027	ppb	-0.027	-22.77	105	2000	
(Pb)	206	3	193	-0.079	ppb	-0.079	-16.29	137	100	
(Pb)	207	3	193	-0.081	ppb	-0.081	-56.32	312	100	
Pb	208	3	193	-0.091	ppb	-0.091	-4.72	618	5000	
Th	232	3	193	-0.073	ppb	-0.073	-40.76	4085	2000	
U	238	3	193	0.045	ppb	0.045	39.97	1713	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4209044	1.13	4073877	103.32	60	120	
Sc (IS)	45	3	HMI He	580936	3.55	571359	101.68	60	120	
Ge Internal standard	72	2	HMI H2	2342550	0.54	2151320	108.89	60	120	
Ge Internal standard	72	3	HMI He	681660	4.04	637725	106.89	60	120	
In Internal Standard	115	3	HMI He	2674424	4.03	2522150	106.04	60	120	
Ir (IS)	193	3	HMI He	5627767	2.57	5499210	102.34	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	151SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:42:31-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.030	ppb	-0.030	-185.28	2	2000	
Na	23	3	45	960.162	ppb	960.162	7.24	142579	400000	
Mg	24	3	45	30.949	ppb	30.949	20.06	2159	400000	
Al	27	3	45	-1.271	ppb	-1.271	-36.22	20	400000	
K	39	3	45	38.012	ppb	38.012	65.47	18437	400000	
Ca	40	2	45	1.857	ppb	1.857	88.33	11730	400000	
V	51	3	72	-0.213	ppb	-0.213	-13.54	85	2000	
Cr	52	3	72	-0.958	ppb	-0.958	-6.46	735	5000	
Mn	55	3	72	-0.341	ppb	-0.341	-6.24	57	10000	
Fe	56	2	72	-1.881	ppb	-1.881	-6.38	4055	10000	
Co	59	3	72	-0.026	ppb	-0.026	-26.54	20	2000	
Ni	60	3	72	-0.415	ppb	-0.415	-2.04	48	5000	
Cu	63	3	72	-0.174	ppb	-0.174	-13.26	160	5000	
Zn	66	3	72	-0.178	ppb	-0.178	-52.01	92	5000	
As	75	3	72	0.100	ppb	0.100	36.06	35	2000	
Se	78	2	72	-0.095	ppb	-0.095	-20.93	3	2000	
(Se)	78	3	72	0.760	ppb	0.760	130.19	13	2000	
Sr	88	3	72	1.925	ppb	1.925	23.70	1086	4000	
Mo	95	3	115	-0.055	ppb	-0.055	-63.15	27	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-27.13	12	100	
Cd	111	3	115	0.000	ppb	0.000	-2645.36	2	2000	
Sn	120	3	115	-0.597	ppb	-0.597	-6.46	175	2000	
Sb	121	3	115	-0.093	ppb	-0.093	-15.96	58	1000	
Ba	137	3	115	-0.055	ppb	-0.055	-42.29	18	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-62.08	148	2000	
(Pb)	206	3	193	-0.092	ppb	-0.092	-13.91	122	100	
(Pb)	207	3	193	-0.109	ppb	-0.109	-15.73	283	100	
Pb	208	3	193	-0.083	ppb	-0.083	-9.27	668	5000	
Th	232	3	193	-0.064	ppb	-0.064	-25.64	4195	2000	
U	238	3	193	0.030	ppb	0.030	22.11	1653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4029674	1.92	4073877	98.91	60	120	
Sc (IS)	45	3	HMI He	592675	1.36	571359	103.73	60	120	
Ge Internal standard	72	2	HMI H2	2239322	1.23	2151320	104.09	60	120	
Ge Internal standard	72	3	HMI He	717791	2.03	637725	112.55	60	120	
In Internal Standard	115	3	HMI He	2693035	2.02	2522150	106.78	60	120	
Ir (IS)	193	3	HMI He	5716368	0.53	5499210	103.95	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	152SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:44:25-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.031	ppb	-0.031	-177.72	2	2000	
Na	23	3	45	819.726	ppb	819.726	9.78	123943	400000	
Mg	24	3	45	23.820	ppb	23.820	5.79	1672	400000	
Al	27	3	45	-0.974	ppb	-0.974	-115.30	27	400000	
K	39	3	45	35.095	ppb	35.095	105.49	18184	400000	
Ca	40	2	45	3.573	ppb	3.573	44.45	13083	400000	
V	51	3	72	-0.215	ppb	-0.215	-13.90	82	2000	
Cr	52	3	72	-0.949	ppb	-0.949	-4.94	726	5000	
Mn	55	3	72	-0.299	ppb	-0.299	-4.79	73	10000	
Fe	56	2	72	-1.911	ppb	-1.911	-7.28	4118	10000	
Co	59	3	72	-0.024	ppb	-0.024	-23.62	22	2000	
Ni	60	3	72	-0.402	ppb	-0.402	-18.75	52	5000	
Cu	63	3	72	-0.179	ppb	-0.179	-19.99	150	5000	
Zn	66	3	72	-0.214	ppb	-0.214	-32.52	83	5000	
As	75	3	72	0.011	ppb	0.011	446.01	23	2000	
Se	78	2	72	-0.085	ppb	-0.085	-45.14	3	2000	
(Se)	78	3	72	0.796	ppb	0.796	124.65	13	2000	
Sr	88	3	72	1.789	ppb	1.789	24.60	985	4000	
Mo	95	3	115	-0.079	ppb	-0.079	-26.12	13	2000	
Ag	107	3	115	-0.004	ppb	-0.004	-73.14	13	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	-0.586	ppb	-0.586	-8.63	183	2000	
Sb	121	3	115	-0.102	ppb	-0.102	-28.00	52	1000	
Ba	137	3	115	-0.001	ppb	-0.001	-1034.79	32	5000	
Tl	205	3	193	-0.019	ppb	-0.019	-24.73	138	2000	
(Pb)	206	3	193	-0.078	ppb	-0.078	-29.46	142	100	
(Pb)	207	3	193	-0.152	ppb	-0.152	-30.96	237	100	
Pb	208	3	193	-0.090	ppb	-0.090	-5.31	633	5000	
Th	232	3	193	-0.071	ppb	-0.071	-47.85	4184	2000	
U	238	3	193	0.016	ppb	0.016	146.87	1586	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	4139472	0.56	4073877	101.61	60	120	
Sc (IS)	45	3	HMI He	588148	1.14	571359	102.94	60	120	
Ge Internal standard	72	2	HMI H2	2301666	1.50	2151320	106.99	60	120	
Ge Internal standard	72	3	HMI He	702206	2.91	637725	110.11	60	120	
In Internal Standard	115	3	HMI He	2692019	2.86	2522150	106.74	60	120	
Ir (IS)	193	3	HMI He	5752101	1.33	5499210	104.60	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	153SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:46:18-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	070CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.062	ppb	-0.062	0.00	0	2000	
Na	23	3	45	713.949	ppb	713.949	12.01	105692	400000	
Mg	24	3	45	19.380	ppb	19.380	42.28	1311	400000	
Al	27	3	45	0.202	ppb	0.202	478.50	50	400000	
K	39	3	45	54.971	ppb	54.971	46.82	18237	400000	
Ca	40	2	45	2.760	ppb	2.760	49.44	11760	400000	
V	51	3	72	-0.233	ppb	-0.233	-1.35	67	2000	
Cr	52	3	72	-0.891	ppb	-0.891	-2.64	736	5000	
Mn	55	3	72	-0.338	ppb	-0.338	-14.62	53	10000	
Fe	56	2	72	-1.966	ppb	-1.966	-9.17	3798	10000	
Co	59	3	72	-0.034	ppb	-0.034	-17.69	8	2000	
Ni	60	3	72	-0.388	ppb	-0.388	-3.07	55	5000	
Cu	63	3	72	-0.179	ppb	-0.179	-3.23	143	5000	
Zn	66	3	72	-0.079	ppb	-0.079	-137.46	102	5000	
As	75	3	72	0.063	ppb	0.063	190.43	28	2000	
Se	78	2	72	-0.139	ppb	-0.139	0.00	0	2000	
(Se)	78	3	72	2.335	ppb	2.335	19.89	23	2000	
Sr	88	3	72	1.425	ppb	1.425	29.22	750	4000	
Mo	95	3	115	-0.047	ppb	-0.047	-57.44	30	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-90.56	10	100	
Cd	111	3	115	-0.007	ppb	-0.007	0.00	0	2000	
Sn	120	3	115	-0.607	ppb	-0.607	-13.22	162	2000	
Sb	121	3	115	-0.104	ppb	-0.104	-37.08	48	1000	
Ba	137	3	115	-0.011	ppb	-0.011	-466.01	28	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-20.78	138	2000	
(Pb)	206	3	193	-0.083	ppb	-0.083	-6.96	127	100	
(Pb)	207	3	193	-0.104	ppb	-0.104	-27.19	275	100	
Pb	208	3	193	-0.082	ppb	-0.082	-13.90	636	5000	
Th	232	3	193	-0.043	ppb	-0.043	-83.77	4089	2000	
U	238	3	193	0.016	ppb	0.016	101.69	1498	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3866006	0.74	4073877	94.90	60	120	
Sc (IS)	45	3	HMI He	561246	2.18	571359	98.23	60	120	
Ge Internal standard	72	2	HMI H2	2170035	1.91	2151320	100.87	60	120	
Ge Internal standard	72	3	HMI He	667180	2.09	637725	104.62	60	120	
In Internal Standard	115	3	HMI He	2610421	1.61	2522150	103.50	60	120	
Ir (IS)	193	3	HMI He	5428554	1.40	5499210	98.72	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	154CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-30T18:48:10-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	149098	0.00
Mg	24	45	3	HMI He	3207	0.38
Al	27	45	3	HMI He	53	73.11
K	39	45	3	HMI He	16944	0.04
Ca	40	45	2	HMI H2	67591	0.01
V	51	72	3	HMI He	238	5.73
Cr	52	72	3	HMI He	1301	0.60
Mn	55	72	3	HMI He	87	13.87
Fe	56	72	2	HMI H2	5019	0.10
Co	59	72	3	HMI He	30	111.15
Ni	60	72	3	HMI He	82	11.46
Cu	63	72	3	HMI He	262	4.40
Zn	66	72	3	HMI He	192	12.36
As	75	72	3	HMI He	32	28.75
Se	78	72	2	HMI H2	1	6495.19
(Se)	78	72	3	HMI He	15	384.99
Sr	88	72	3	HMI He	1624	1.25
Mo	95	115	3	HMI He	43	134.09
Ag	107	115	3	HMI He	13	162.22
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	428	1.14
Sb	121	115	3	HMI He	113	4.49
Ba	137	115	3	HMI He	35	40.81
Tl	205	193	3	HMI He	162	14.62
(Pb)	206	193	3	HMI He	107	11.07
(Pb)	207	193	3	HMI He	270	2.06
Pb	208	193	3	HMI He	645	1.88
Th	232	193	3	HMI He	4484	0.14
U	238	193	3	HMI He	1576	0.15

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	3486335	0.88
Sc (IS)	45	3	HMI He	518733	2.99
Ge Internal standard	72	2	HMI H2	1896849	1.02
Ge Internal standard	72	3	HMI He	606605	4.16
In Internal Standard	115	3	HMI He	2408797	1.52
Ir (IS)	193	3	HMI He	5218365	3.21

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	155CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T18:50:02-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	11262147	0.00
Mg	24	45	3	HMI He	1164016	0.00
Al	27	45	3	HMI He	324	1.99
K	39	45	3	HMI He	855515	0.00
V	51	72	3	HMI He	232	7.93
Cr	52	72	3	HMI He	1354	0.56
Mn	55	72	3	HMI He	158	5.02
Co	59	72	3	HMI He	28	129.71
Ni	60	72	3	HMI He	97	25.29
Cu	63	72	3	HMI He	511	1.46
Zn	66	72	3	HMI He	358	1.92
As	75	72	3	HMI He	25	80.06
Se	78	72	2	HMI H2	5	405.95
(Se)	78	72	3	HMI He	17	104.05
Sr	88	72	3	HMI He	3049	0.16
Mo	95	115	3	HMI He	57	116.94
Ag	107	115	3	HMI He	35	70.72
Cd	111	115	3	HMI He	8	1100.07
Sn	120	115	3	HMI He	731	0.19
Sb	121	115	3	HMI He	130	10.67
Ba	137	115	3	HMI He	122	11.87
Tl	205	193	3	HMI He	173	12.50
(Pb)	206	193	3	HMI He	177	12.45
(Pb)	207	193	3	HMI He	295	3.04
Pb	208	193	3	HMI He	805	1.66
Th	232	193	3	HMI He	4109	0.09
U	238	193	3	HMI He	1641	0.18

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3712170	0.54	3486335	106.48	60	120	
Sc (IS)	45	3	HMI He	518749	0.86	518733	100.00	60	120	
Ge Internal standard	72	2	HMI H2	2008363	1.18	1896849	105.88	60	120	
Ge Internal standard	72	3	HMI He	583660	1.20	606605	96.22	60	120	
In Internal Standard	115	3	HMI He	2397939	0.54	2408797	99.55	60	120	
Ir (IS)	193	3	HMI He	5171172	0.47	5218365	99.10	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	156CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-30T18:51:52-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	4402	0.10
Na	23	45	3	HMI He	299047	0.00
Mg	24	45	3	HMI He	110653	0.00
Al	27	45	3	HMI He	38494	0.01
K	39	45	3	HMI He	96520	0.00
V	51	72	3	HMI He	53462	0.00
Cr	52	72	3	HMI He	68926	0.00
Mn	55	72	3	HMI He	35484	0.01
Co	59	72	3	HMI He	112101	0.00
Ni	60	72	3	HMI He	31370	0.00
Cu	63	72	3	HMI He	84513	0.00
Zn	66	72	3	HMI He	14827	0.01
As	75	72	3	HMI He	10100	0.01
Se	78	72	2	HMI H2	5036	0.04
(Se)	78	72	3	HMI He	620	0.91
Sr	88	72	3	HMI He	95455	0.00
Mo	95	115	3	HMI He	45161	0.00
Ag	107	115	3	HMI He	151976	0.00
Cd	111	115	3	HMI He	22152	0.01
Sn	120	115	3	HMI He	66164	0.00
Sb	121	115	3	HMI He	66920	0.00
Ba	137	115	3	HMI He	21345	0.01
Tl	205	193	3	HMI He	340923	0.00
(Pb)	206	193	3	HMI He	114949	0.00
(Pb)	207	193	3	HMI He	99835	0.00
Pb	208	193	3	HMI He	460455	0.00
Th	232	193	3	HMI He	474611	0.00
U	238	193	3	HMI He	497372	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3511144	2.33	3486335	100.71	60	120	
Sc (IS)	45	3	HMI He	508079	0.92	518733	97.95	60	120	
Ge Internal standard	72	2	HMI H2	1977839	2.83	1896849	104.27	60	120	
Ge Internal standard	72	3	HMI He	599324	1.08	606605	98.80	60	120	
In Internal Standard	115	3	HMI He	2350759	1.12	2408797	97.59	60	120	
Ir (IS)	193	3	HMI He	5060124	1.14	5218365	96.97	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	157_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:53:44-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.072	ppb	2.551	1759	40	102.7	90	110	
Na	23	3	45	12228.535	ppb	2.533	1464681	12800	95.5	90	110	
Mg	24	3	45	4483.854	ppb	1.430	255879	4800	93.4	90	110	
Al	27	3	45	806.729	ppb	1.266	15431	800	100.8	90	110	
K	39	3	45	4660.906	ppb	2.722	206257	4800	97.1	90	110	
Ca	40	2	45	4764.679	ppb	0.942	2543001	4800	99.3	90	110	
V	51	3	72	40.682	ppb	2.702	21631	40	101.7	90	110	
Cr	52	3	72	40.928	ppb	4.435	28610	40	102.3	90	110	
Mn	55	3	72	40.899	ppb	2.032	14392	40	102.2	90	110	
Fe	56	2	72	838.799	ppb	1.620	1104765	800	104.8	90	110	
Co	59	3	72	39.712	ppb	1.646	43996	40	99.3	90	110	
Ni	60	3	72	39.226	ppb	1.620	12211	40	98.1	90	110	
Cu	63	3	72	41.300	ppb	1.636	34633	40	103.3	90	110	
Zn	66	3	72	78.075	ppb	1.225	11479	80	97.6	90	110	
As	75	3	72	38.563	ppb	1.924	3869	40	96.4	90	110	
Se	78	2	72	41.945	ppb	2.988	2033	40	104.9	90	110	
(Se)	78	3	72	41.671	ppb	23.048	265	40	104.2	90	110	
Sr	88	3	72	118.629	ppb	1.558	56579	120	98.9	90	110	
Mo	95	3	115	40.873	ppb	1.834	18810	40	102.2	90	110	
Ag	107	3	115	78.516	ppb	0.274	121419	80	98.1	90	110	
Cd	111	3	115	38.490	ppb	2.818	8675	40	96.2	90	110	
Sn	120	3	115	39.707	ppb	4.066	27001	40	99.3	90	110	
Sb	121	3	115	40.820	ppb	2.715	27865	40	102.1	90	110	
Ba	137	3	115	40.209	ppb	1.892	8754	40	100.5	90	110	
Tl	205	3	193	40.025	ppb	1.250	138002	40	100.1	90	110	
(Pb)	206	3	193	39.006	ppb	0.780	45384	40	97.5	90	110	
(Pb)	207	3	193	39.511	ppb	0.458	40040	40	98.8	90	110	
Pb	208	3	193	39.401	ppb	1.222	183737	40	98.5	90	110	
Th	232	3	193	79.688	ppb	0.358	383199	80	99.6	90	110	
U	238	3	193	40.301	ppb	2.580	203435	40	100.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3471161	2.06	3486335	99.56	60	120	
Sc (IS)	45	3	HMI He	503884	2.61	518733	97.14	60	120	
Ge Internal standard	72	2	HMI H2	1903355	2.73	1896849	100.34	60	120	
Ge Internal standard	72	3	HMI He	592183	2.66	606605	97.62	60	120	
In Internal Standard	115	3	HMI He	2391924	1.60	2408797	99.30	60	120	
Ir (IS)	193	3	HMI He	5114602	3.03	5218365	98.01	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	158_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:55:36-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.640	ppb	3.224	2322	50	103.3	90	110	
Na	23	3	45	202.674	ppb	14.393	169114	51000	0.4	90	110	>+\-10%
Mg	24	3	45	951.449	ppb	1.463	57608	11000	8.6	90	110	>+\-10%
Al	27	3	45	1040.561	ppb	2.095	20191	1000	104.1	90	110	
K	39	3	45	1011.524	ppb	3.868	58557	11000	9.2	90	110	>+\-10%
Ca	40	2	45	964.795	ppb	1.151	593534	11000	8.8	90	110	>+\-10%
V	51	3	72	51.272	ppb	2.447	27500	50	102.5	90	110	
Cr	52	3	72	52.049	ppb	3.249	36459	50	104.1	90	110	
Mn	55	3	72	52.267	ppb	1.785	18572	50	104.5	90	110	
Fe	56	2	72	1021.218	ppb	1.654	1425509	1000	102.1	90	110	
Co	59	3	72	50.989	ppb	0.815	57139	50	102.0	90	110	
Ni	60	3	72	50.353	ppb	1.017	15825	50	100.7	90	110	
Cu	63	3	72	51.063	ppb	1.004	43259	50	102.1	90	110	
Zn	66	3	72	50.710	ppb	3.820	7605	50	101.4	90	110	
As	75	3	72	50.533	ppb	1.738	5115	50	101.1	90	110	
Se	78	2	72	50.856	ppb	2.350	2615	50	101.7	90	110	
(Se)	78	3	72	46.900	ppb	14.217	298	50	93.8	90	110	
Sr	88	3	72	98.482	ppb	2.047	47776	100	98.5	90	110	
Mo	95	3	115	51.642	ppb	3.672	23353	50	103.3	90	110	
Ag	107	3	115	51.863	ppb	2.184	78876	50	103.7	90	110	
Cd	111	3	115	51.069	ppb	2.851	11323	50	102.1	90	110	
Sn	120	3	115	52.523	ppb	4.448	34965	50	105.0	90	110	
Sb	121	3	115	51.091	ppb	3.566	34264	50	102.2	90	110	
Ba	137	3	115	51.613	ppb	2.659	11039	50	103.2	90	110	
Tl	205	3	193	49.914	ppb	1.689	177681	50	99.8	90	110	
(Pb)	206	3	193	49.775	ppb	1.845	59764	50	99.5	90	110	
(Pb)	207	3	193	50.356	ppb	2.805	52599	50	100.7	90	110	
Pb	208	3	193	49.806	ppb	1.729	239667	50	99.6	90	110	
Th	232	3	193	50.901	ppb	1.628	254349	50	101.8	90	110	
U	238	3	193	49.475	ppb	1.400	257614	50	99.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3623612	0.89	3486335	103.94	60	120	
Sc (IS)	45	3	HMI He	511507	0.37	518733	98.61	60	120	
Ge Internal standard	72	2	HMI H2	2018970	1.62	1896849	106.44	60	120	
Ge Internal standard	72	3	HMI He	598888	1.21	606605	98.73	60	120	
In Internal Standard	115	3	HMI He	2353011	2.37	2408797	97.68	60	120	
Ir (IS)	193	3	HMI He	5281312	1.71	5218365	101.21	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	159_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:57:28-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-951.257	ppb	-0.7	40632	25	
Mg	24	3	45	-48.198	ppb	-1.8	380	25	
Al	27	3	45	1.049	ppb	312.0	70	15	
K	39	3	45	-8.394	ppb	-476.3	15614	50	
V	51	3	72	0.010	ppb	765.0	225	1	
Cr	52	3	72	-0.098	ppb	-78.3	1141	1	
Mn	55	3	72	0.167	ppb	55.1	135	0.5	
Co	59	3	72	0.016	ppb	102.2	45	0.5	
Ni	60	3	72	0.050	ppb	135.0	90	1	
Cu	63	3	72	0.037	ppb	148.8	270	1	
Zn	66	3	72	-0.299	ppb	-7.9	137	5	
As	75	3	72	0.150	ppb	55.0	43	1	
Se	78	2	72	0.016	ppb	471.2	2	1	
(Se)	78	3	72	-0.996	ppb	-103.0	8	1	
Sr	88	3	72	-3.079	ppb	-0.4	143	0.5	
Mo	95	3	115	0.084	ppb	58.9	77	0.5	
Ag	107	3	115	0.019	ppb	2.3	40	1	
Cd	111	3	115	0.008	ppb	173.2	2	0.5	
Sn	120	3	115	0.690	ppb	3.7	838	1	
Sb	121	3	115	-0.005	ppb	-298.6	103	0.6	
Ba	137	3	115	0.059	ppb	161.8	45	0.5	
Tl	205	3	193	0.016	ppb	46.5	210	0.1	
(Pb)	206	3	193	0.030	ppb	82.6	137	1	
(Pb)	207	3	193	0.036	ppb	94.8	295	1	
Pb	208	3	193	0.025	ppb	25.6	735	0.5	
Th	232	3	193	0.594	ppb	24.9	7050	1	
U	238	3	193	-0.018	ppb	-87.5	1421	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3328149	2.24	3486335	95.46	60	120	
Sc (IS)	45	3	HMI He	487295	1.25	518733	93.94	60	120	
Ge Internal standard	72	2	HMI H2	1780539	0.65	1896849	93.87	60	120	
Ge Internal standard	72	3	HMI He	559868	0.31	606605	92.30	60	120	
In Internal Standard	115	3	HMI He	2260771	1.59	2408797	93.85	60	120	
Ir (IS)	193	3	HMI He	4998181	0.99	5218365	95.78	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600573/1-a
Data File Name	160_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T18:59:22-07:00
Sample Type	Blank
Dilution	1
Comment	600573 200.8
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.040	ppb	173.2050808	2	0.5
Na	23	3	45	-962.544	ppb	-1.059896074	38983	25
Mg	24	3	45	-50.786	ppb	-3.81718461	237	25
Al	27	3	45	1.839	ppb	44.7452088	83	15
K	39	3	45	-7.754	ppb	-441.8007442	15441	50
V	51	3	72	-0.033	ppb	-85.83851595	198	1
Cr	52	3	72	0.089	ppb	115.5104051	1224	1
Mn	55	3	72	0.179	ppb	50.33089928	135	0.5
Co	59	3	72	0.014	ppb	137.7761014	42	0.5
Ni	60	3	72	0.123	ppb	28.09757481	108	1
Cu	63	3	72	2.744	ppb	2.032646162	2334	1
Zn	66	3	72	2.714	ppb	9.096922451	533	5
As	75	3	72	0.072	ppb	200.368936	35	1
(Se)	78	3	72	0.551	ppb	341.2265059	17	1
Sr	88	3	72	-3.140	ppb	-2.118763788	113	0.5
Mo	95	3	115	0.017	ppb	377.9111591	47	0.5
Ag	107	3	115	0.172	ppb	18.02472687	257	1
Cd	111	3	115	0.008	ppb	173.2050808	2	0.5
Sn	120	3	115	0.252	ppb	28.85389521	545	1
Sb	121	3	115	0.080	ppb	106.8776165	153	0.6
Ba	137	3	115	0.109	ppb	121.2475384	53	0.5
Tl	205	3	193	-0.009	ppb	-57.81978232	123	0.1
(Pb)	206	3	193	0.035	ppb	90.09875058	142	1
(Pb)	207	3	193	0.090	ppb	24.69678768	345	1
Pb	208	3	193	0.039	ppb	12.28778004	790	0.5
Th	232	3	193	0.036	ppb	154.2970324	4427	1
U	238	3	193	-0.020	ppb	-72.83992449	1399	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3401050	0.39	3486335	97.55	60	120	
Sc (IS)	45	3	HMI He	481457	1.26	518733	92.81	60	120	
Ge Internal standard	72	2	HMI H2	1793715	1.89	1896849	94.56	60	120	
Ge Internal standard	72	3	HMI He	544303	0.91	606605	89.73	60	120	
In Internal Standard	115	3	HMI He	2196583	1.35	2408797	91.19	60	120	
Ir (IS)	193	3	HMI He	4959991	2.14	5218365	95.05	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600573/2-a
Data File Name	161_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:01:17-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600573 200.8
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.823	39.823	ppb	2.498	1679	40	99.6	80	120	
Na	23	3	45	-143.642	-143.642	ppb	-6.669	126651	40	-359.1	80	120	>+/-20%
Mg	24	3	45	647.859	647.859	ppb	1.245	38846	40	1619.6	80	120	>+/-20%
Al	27	3	45	798.003	798.003	ppb	3.814	14963	40	1995.0	80	120	>+/-20%
K	39	3	45	745.557	745.557	ppb	4.014	45921	40	1863.9	80	120	>+/-20%
Ca	40	2	45	718.684	718.684	ppb	1.479	426184	40	1796.7	80	120	>+/-20%
V	51	3	72	39.608	39.608	ppb	2.307	20617	40	99.0	80	120	
Cr	52	3	72	40.063	40.063	ppb	2.243	27455	40	100.2	80	120	
Mn	55	3	72	41.345	41.345	ppb	3.791	14237	40	103.4	80	120	
Fe	56	2	72	825.194	825.194	ppb	2.233	1055659	40	2063.0	80	120	>+/-20%
(Fe)	56	3	72	783.678	783.678	ppb	1.081	446622	40	1959.2	80	120	>+/-20%
Co	59	3	72	39.422	39.422	ppb	0.083	42761	40	98.6	80	120	
Ni	60	3	72	39.039	39.039	ppb	3.056	11893	40	97.6	80	120	
Cu	63	3	72	40.410	40.410	ppb	0.774	33183	40	101.0	80	120	
Zn	66	3	72	41.427	41.427	ppb	2.806	6048	40	103.6	80	120	
As	75	3	72	39.826	39.826	ppb	3.090	3909	40	99.6	80	120	
Se	78	2	72	42.752	42.752	ppb	4.361	2013	40	106.9	80	120	
(Se)	78	3	72	35.968	35.968	ppb	14.890	225	40	89.9	80	120	
Sr	88	3	72	74.867	74.867	ppb	0.980	35527	40	187.2	80	120	>+/-20%
Mo	95	3	115	39.758	39.758	ppb	2.282	17481	40	99.4	80	120	
Ag	107	3	115	39.725	39.725	ppb	3.401	58683	40	99.3	80	120	
Cd	111	3	115	39.414	39.414	ppb	3.439	8487	40	98.5	80	120	
Sn	120	3	115	39.234	39.234	ppb	3.513	25480	40	98.1	80	120	
Sb	121	3	115	39.452	39.452	ppb	4.685	25724	40	98.6	80	120	
Ba	137	3	115	39.653	39.653	ppb	4.775	8243	40	99.1	80	120	
Tl	205	3	193	38.888	38.888	ppb	0.600	134217	40	97.2	80	120	
(Pb)	206	3	193	39.128	39.128	ppb	1.245	45561	40	97.8	80	120	
(Pb)	207	3	193	39.185	39.185	ppb	1.020	39739	40	98.0	80	120	
Pb	208	3	193	39.145	39.145	ppb	1.141	182727	40	97.9	80	120	
Th	232	3	193	38.224	38.224	ppb	1.640	186222	40	95.6	80	120	
U	238	3	193	38.996	38.996	ppb	1.400	197141	40	97.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3357419	1.78	3486335	96.30	60	120	
Sc (IS)	45	3	HMI He	493888	0.72	518733	95.21	60	120	
Ge Internal standard	72	2	HMI H2	1848694	0.70	1896849	97.46	60	120	
Ge Internal standard	72	3	HMI He	579638	0.08	606605	95.55	60	120	
In Internal Standard	115	3	HMI He	2286091	2.85	2408797	94.91	60	120	
Ir (IS)	193	3	HMI He	5118655	1.33	5218365	98.09	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-3-a
Data File Name	162SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:03:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	173.21	2	2000	
Na	23	3	45	3057.097	ppb	3057.097	2.20	454667	400000	
Mg	24	3	45	4695.371	ppb	4695.371	1.76	256475	400000	
Al	27	3	45	5.308	ppb	5.308	26.77	147	400000	
K	39	3	45	1719.039	ppb	1719.039	2.81	82840	400000	
Ca	40	2	45	18667.378	ppb	18667.378	0.86	9492651	400000	
V	51	3	72	0.028	ppb	0.028	123.74	243	2000	
Cr	52	3	72	-0.155	ppb	-0.155	-94.12	1148	5000	
Mn	55	3	72	12.297	ppb	12.297	4.12	4307	10000	
Fe	56	2	72	20.958	ppb	20.958	1.83	32561	10000	
Co	59	3	72	0.030	ppb	0.030	32.30	62	2000	
Ni	60	3	72	0.774	ppb	0.774	9.04	313	5000	
Cu	63	3	72	288.405	ppb	288.405	0.47	236072	5000	
Zn	66	3	72	97.871	ppb	97.871	1.70	14085	5000	
As	75	3	72	0.082	ppb	0.082	71.50	38	2000	
Se	78	2	72	0.381	ppb	0.381	50.93	20	2000	
(Se)	78	3	72	1.785	ppb	1.785	47.48	25	2000	
Sr	88	3	72	98.417	ppb	98.417	2.49	46367	4000	
Mo	95	3	115	0.110	ppb	0.110	30.84	88	2000	
Ag	107	3	115	0.042	ppb	0.042	18.91	73	100	
Cd	111	3	115	0.016	ppb	0.016	173.21	3	2000	
Sn	120	3	115	0.400	ppb	0.400	30.63	655	2000	
Sb	121	3	115	0.158	ppb	0.158	49.45	208	1000	
Ba	137	3	115	13.572	ppb	13.572	6.71	2816	5000	
Tl	205	3	193	0.009	ppb	0.009	59.93	187	2000	
(Pb)	206	3	193	2.724	ppb	2.724	9.87	3205	100	
(Pb)	207	3	193	2.498	ppb	2.498	3.45	2727	100	
Pb	208	3	193	2.591	ppb	2.591	4.04	12440	5000	
Th	232	3	193	0.602	ppb	0.602	27.97	7125	2000	
U	238	3	193	-0.002	ppb	-0.002	-349.57	1506	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3374450	2.99	3486335	96.79	60	120	
Sc (IS)	45	3	HMI He	482615	1.33	518733	93.04	60	120	
Ge Internal standard	72	2	HMI H2	1906042	2.95	1896849	100.48	60	120	
Ge Internal standard	72	3	HMI He	581551	0.27	606605	95.87	60	120	
In Internal Standard	115	3	HMI He	2262151	0.45	2408797	93.91	60	120	
Ir (IS)	193	3	HMI He	5020265	1.39	5218365	96.20	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-4-a
Data File Name	163SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:05:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3154.069	ppb	3154.069	1.24	475761	400000	
Mg	24	3	45	4826.277	ppb	4826.277	0.24	269825	400000	
Al	27	3	45	4.057	ppb	4.057	101.75	127	400000	
K	39	3	45	1733.308	ppb	1733.308	2.48	85387	400000	
Ca	40	2	45	18819.368	ppb	18819.368	1.26	9191247	400000	
V	51	3	72	0.068	ppb	0.068	140.56	273	2000	
Cr	52	3	72	-0.063	ppb	-0.063	-139.59	1251	5000	
Mn	55	3	72	13.046	ppb	13.046	2.97	4725	10000	
Fe	56	2	72	23.210	ppb	23.210	1.32	33534	10000	
Co	59	3	72	0.010	ppb	0.010	63.94	42	2000	
Ni	60	3	72	0.547	ppb	0.547	30.16	253	5000	
Cu	63	3	72	229.889	ppb	229.889	1.29	194892	5000	
Zn	66	3	72	36.255	ppb	36.255	4.47	5522	5000	
As	75	3	72	0.331	ppb	0.331	115.61	65	2000	
Se	78	2	72	0.279	ppb	0.279	42.78	14	2000	
(Se)	78	3	72	0.817	ppb	0.817	200.19	20	2000	
Sr	88	3	72	100.002	ppb	100.002	1.22	48759	4000	
Mo	95	3	115	0.076	ppb	0.076	68.85	75	2000	
Ag	107	3	115	0.020	ppb	0.020	81.74	43	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.331	ppb	0.331	18.71	626	2000	
Sb	121	3	115	0.121	ppb	0.121	44.58	188	1000	
Ba	137	3	115	14.547	ppb	14.547	3.23	3089	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-1006.04	152	2000	
(Pb)	206	3	193	1.494	ppb	1.494	6.15	1828	100	
(Pb)	207	3	193	1.484	ppb	1.484	4.35	1748	100	
Pb	208	3	193	1.501	ppb	1.501	2.81	7562	5000	
Th	232	3	193	0.087	ppb	0.087	41.86	4779	2000	
U	238	3	193	-0.009	ppb	-0.009	-238.76	1491	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3240579	0.26	3486335	92.95	60	120	
Sc (IS)	45	3	HMI He	494052	0.46	518733	95.24	60	120	
Ge Internal standard	72	2	HMI H2	1799490	1.01	1896849	94.87	60	120	
Ge Internal standard	72	3	HMI He	602148	0.69	606605	99.27	60	120	
In Internal Standard	115	3	HMI He	2317396	1.68	2408797	96.21	60	120	
Ir (IS)	193	3	HMI He	5082983	1.16	5218365	97.41	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-5-a
Data File Name	164SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:07:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2929.750	ppb	2929.750	0.91	456557	400000	
Mg	24	3	45	4571.542	ppb	4571.542	0.90	258304	400000	
Al	27	3	45	5.209	ppb	5.209	16.15	150	400000	
K	39	3	45	1641.307	ppb	1641.307	0.52	82534	400000	
Ca	40	2	45	18128.673	ppb	18128.673	2.58	9454347	400000	
V	51	3	72	-0.001	ppb	-0.001	-2748.88	237	2000	
Cr	52	3	72	-0.142	ppb	-0.142	-103.11	1199	5000	
Mn	55	3	72	12.633	ppb	12.633	2.54	4585	10000	
Fe	56	2	72	22.992	ppb	22.992	2.38	35839	10000	
Co	59	3	72	0.024	ppb	0.024	58.71	57	2000	
Ni	60	3	72	3.265	ppb	3.265	5.52	1109	5000	
Cu	63	3	72	227.886	ppb	227.886	0.90	193483	5000	
Zn	66	3	72	56.239	ppb	56.239	4.09	8473	5000	
As	75	3	72	0.051	ppb	0.051	146.03	37	2000	
Se	78	2	72	0.270	ppb	0.270	9.25	15	2000	
(Se)	78	3	72	0.540	ppb	0.540	90.04	18	2000	
Sr	88	3	72	96.584	ppb	96.584	1.14	47218	4000	
Mo	95	3	115	0.035	ppb	0.035	116.52	58	2000	
Ag	107	3	115	0.029	ppb	0.029	28.99	57	100	
Cd	111	3	115	0.008	ppb	0.008	173.21	2	2000	
Sn	120	3	115	0.283	ppb	0.283	42.54	606	2000	
Sb	121	3	115	0.120	ppb	0.120	24.34	192	1000	
Ba	137	3	115	13.096	ppb	13.096	2.60	2836	5000	
Tl	205	3	193	-0.012	ppb	-0.012	-103.98	118	2000	
(Pb)	206	3	193	1.986	ppb	1.986	6.55	2442	100	
(Pb)	207	3	193	1.905	ppb	1.905	4.04	2212	100	
Pb	208	3	193	1.913	ppb	1.913	2.32	9653	5000	
Th	232	3	193	-0.046	ppb	-0.046	-162.05	4230	2000	
U	238	3	193	-0.020	ppb	-0.020	-57.83	1466	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3460020	1.42	3486335	99.25	60	120	
Sc (IS)	45	3	HMI He	499018	0.91	518733	96.20	60	120	
Ge Internal standard	72	2	HMI H2	1938782	0.50	1896849	102.21	60	120	
Ge Internal standard	72	3	HMI He	603055	0.77	606605	99.41	60	120	
In Internal Standard	115	3	HMI He	2359630	0.29	2408797	97.96	60	120	
Ir (IS)	193	3	HMI He	5183757	1.47	5218365	99.34	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-6-a
Data File Name	165SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:08:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3133.202	ppb	3133.202	1.15	445111	400000	
Mg	24	3	45	4802.073	ppb	4802.073	0.88	252361	400000	
Al	27	3	45	4.453	ppb	4.453	56.14	127	400000	
K	39	3	45	1740.138	ppb	1740.138	3.97	80507	400000	
Ca	40	2	45	18330.263	ppb	18330.263	2.41	9484751	400000	
V	51	3	72	-0.002	ppb	-0.002	-2727.82	222	2000	
Cr	52	3	72	-0.133	ppb	-0.133	-74.80	1131	5000	
Mn	55	3	72	13.206	ppb	13.206	8.26	4494	10000	
Fe	56	2	72	24.983	ppb	24.983	1.63	38047	10000	
Co	59	3	72	0.038	ppb	0.038	69.53	68	2000	
Ni	60	3	72	4.614	ppb	4.614	6.01	1439	5000	
Cu	63	3	72	232.427	ppb	232.427	2.33	185192	5000	
Zn	66	3	72	42.920	ppb	42.920	3.65	6110	5000	
As	75	3	72	0.302	ppb	0.302	5.90	58	2000	
Se	78	2	72	0.162	ppb	0.162	56.49	9	2000	
(Se)	78	3	72	0.792	ppb	0.792	291.34	18	2000	
Sr	88	3	72	100.310	ppb	100.310	3.54	45953	4000	
Mo	95	3	115	-0.002	ppb	-0.002	-846.51	38	2000	
Ag	107	3	115	0.018	ppb	0.018	26.49	38	100	
Cd	111	3	115	0.016	ppb	0.016	86.69	3	2000	
Sn	120	3	115	0.296	ppb	0.296	26.10	575	2000	
Sb	121	3	115	0.126	ppb	0.126	66.21	182	1000	
Ba	137	3	115	14.563	ppb	14.563	5.25	2942	5000	
Tl	205	3	193	-0.004	ppb	-0.004	-304.59	140	2000	
(Pb)	206	3	193	3.872	ppb	3.872	4.45	4404	100	
(Pb)	207	3	193	3.728	ppb	3.728	3.15	3845	100	
Pb	208	3	193	3.711	ppb	3.711	2.03	17114	5000	
Th	232	3	193	-0.106	ppb	-0.106	-20.02	3722	2000	
U	238	3	193	-0.009	ppb	-0.009	-27.08	1436	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3434265	3.00	3486335	98.51	60	120	
Sc (IS)	45	3	HMI He	464407	1.78	518733	89.53	60	120	
Ge Internal standard	72	2	HMI H2	1916366	2.22	1896849	101.03	60	120	
Ge Internal standard	72	3	HMI He	566240	3.75	606605	93.35	60	120	
In Internal Standard	115	3	HMI He	2204102	2.81	2408797	91.50	60	120	
Ir (IS)	193	3	HMI He	4895991	3.40	5218365	93.82	60	120	

Sample Table

Sample Name	280-171741-a-7-a
Data File Name	166SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:10:47-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3192.311	ppb	3192.311	0.84	488162	400000	
Mg	24	3	45	4891.695	ppb	4891.695	0.56	278230	400000	
Al	27	3	45	6.181	ppb	6.181	41.39	170	400000	
K	39	3	45	1735.045	ppb	1735.045	1.05	86962	400000	
Ca	40	2	45	19445.677	ppb	19445.677	0.78	10028645	400000	
V	51	3	72	-0.030	ppb	-0.030	-283.97	223	2000	
Cr	52	3	72	-0.055	ppb	-0.055	-182.17	1269	5000	
Mn	55	3	72	12.935	ppb	12.935	2.91	4733	10000	
Fe	56	2	72	27.161	ppb	27.161	0.99	41520	10000	
Co	59	3	72	0.016	ppb	0.016	152.73	48	2000	
Ni	60	3	72	0.524	ppb	0.524	8.42	248	5000	
Cu	63	3	72	317.967	ppb	317.967	0.96	272142	5000	
Zn	66	3	72	30.124	ppb	30.124	2.47	4667	5000	
As	75	3	72	0.424	ppb	0.424	36.44	75	2000	
Se	78	2	72	0.268	ppb	0.268	32.93	15	2000	
(Se)	78	3	72	0.226	ppb	0.226	735.90	17	2000	
Sr	88	3	72	102.390	ppb	102.390	2.32	50373	4000	
Mo	95	3	115	0.047	ppb	0.047	99.39	63	2000	
Ag	107	3	115	0.019	ppb	0.019	88.22	42	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.562	ppb	0.562	6.82	788	2000	
Sb	121	3	115	0.163	ppb	0.163	14.81	220	1000	
Ba	137	3	115	14.378	ppb	14.378	3.78	3100	5000	
Tl	205	3	193	-0.005	ppb	-0.005	-37.36	142	2000	
(Pb)	206	3	193	1.199	ppb	1.199	6.75	1514	100	
(Pb)	207	3	193	1.162	ppb	1.162	11.14	1451	100	
Pb	208	3	193	1.157	ppb	1.157	2.98	6083	5000	
Th	232	3	193	-0.099	ppb	-0.099	-32.72	3967	2000	
U	238	3	193	-0.006	ppb	-0.006	-16.57	1533	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3422619	0.55	3486335	98.17	60	120	
Sc (IS)	45	3	HMI He	502685	2.16	518733	96.91	60	120	
Ge Internal standard	72	2	HMI H2	1944180	1.52	1896849	102.50	60	120	
Ge Internal standard	72	3	HMI He	608180	1.45	606605	100.26	60	120	
In Internal Standard	115	3	HMI He	2352849	1.75	2408797	97.68	60	120	
Ir (IS)	193	3	HMI He	5173435	0.62	5218365	99.14	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-8-a
Data File Name	167SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:12:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3103.447	ppb	3103.447	0.98	455644	400000	
Mg	24	3	45	4782.206	ppb	4782.206	1.35	258990	400000	
Al	27	3	45	7.414	ppb	7.414	42.08	184	400000	
K	39	3	45	1711.444	ppb	1711.444	3.92	81856	400000	
Ca	40	2	45	18577.165	ppb	18577.165	2.40	9703944	400000	
V	51	3	72	-0.024	ppb	-0.024	-133.70	215	2000	
Cr	52	3	72	-0.107	ppb	-0.107	-122.27	1171	5000	
Mn	55	3	72	13.508	ppb	13.508	5.30	4683	10000	
Fe	56	2	72	26.251	ppb	26.251	2.03	40188	10000	
Co	59	3	72	0.026	ppb	0.026	42.84	57	2000	
Ni	60	3	72	4.543	ppb	4.543	4.06	1446	5000	
Cu	63	3	72	251.029	ppb	251.029	2.36	203827	5000	
Zn	66	3	72	33.640	ppb	33.640	1.48	4923	5000	
As	75	3	72	0.259	ppb	0.259	73.90	55	2000	
Se	78	2	72	0.257	ppb	0.257	63.51	14	2000	
(Se)	78	3	72	0.365	ppb	0.365	579.22	17	2000	
Sr	88	3	72	100.220	ppb	100.220	2.03	46805	4000	
Mo	95	3	115	0.009	ppb	0.009	547.01	45	2000	
Ag	107	3	115	0.011	ppb	0.011	53.16	28	100	
Cd	111	3	115	0.008	ppb	0.008	173.21	2	2000	
Sn	120	3	115	0.477	ppb	0.477	30.38	706	2000	
Sb	121	3	115	0.126	ppb	0.126	12.18	188	1000	
Ba	137	3	115	13.509	ppb	13.509	8.39	2809	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-51.58	123	2000	
(Pb)	206	3	193	1.192	ppb	1.192	1.14	1489	100	
(Pb)	207	3	193	1.160	ppb	1.160	13.49	1433	100	
Pb	208	3	193	1.168	ppb	1.168	3.60	6061	5000	
Th	232	3	193	-0.103	ppb	-0.103	-59.73	3895	2000	
U	238	3	193	-0.021	ppb	-0.021	-51.34	1443	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3466799	2.41	3486335	99.44	60	120	
Sc (IS)	45	3	HMI He	478562	0.96	518733	92.26	60	120	
Ge Internal standard	72	2	HMI H2	1938629	1.50	1896849	102.20	60	120	
Ge Internal standard	72	3	HMI He	576955	1.91	606605	95.11	60	120	
In Internal Standard	115	3	HMI He	2271764	4.16	2408797	94.31	60	120	
Ir (IS)	193	3	HMI He	5115920	2.71	5218365	98.04	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-9-a
Data File Name	168SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:14:34-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3103.022	ppb	3103.022	0.32	456460	400000	
Mg	24	3	45	4753.858	ppb	4753.858	1.86	257968	400000	
Al	27	3	45	6.273	ppb	6.273	17.80	163	400000	
K	39	3	45	1745.357	ppb	1745.357	3.13	83323	400000	
Ca	40	2	45	19071.791	ppb	19071.791	1.32	9630851	400000	
V	51	3	72	-0.005	ppb	-0.005	-649.88	223	2000	
Cr	52	3	72	0.003	ppb	0.003	1230.76	1238	5000	
Mn	55	3	72	11.093	ppb	11.093	6.45	3847	10000	
Fe	56	2	72	23.406	ppb	23.406	2.33	36234	10000	
Co	59	3	72	0.018	ppb	0.018	61.15	48	2000	
Ni	60	3	72	0.337	ppb	0.337	5.17	178	5000	
Cu	63	3	72	163.742	ppb	163.742	1.26	132581	5000	
Zn	66	3	72	26.958	ppb	26.958	3.30	3967	5000	
As	75	3	72	0.188	ppb	0.188	111.63	48	2000	
Se	78	2	72	0.189	ppb	0.189	45.06	11	2000	
(Se)	78	3	72	0.974	ppb	0.974	5.02	20	2000	
Sr	88	3	72	102.213	ppb	102.213	0.55	47546	4000	
Mo	95	3	115	0.027	ppb	0.027	88.78	52	2000	
Ag	107	3	115	0.024	ppb	0.024	32.18	47	100	
Cd	111	3	115	0.039	ppb	0.039	92.07	8	2000	
Sn	120	3	115	0.496	ppb	0.496	8.78	708	2000	
Sb	121	3	115	0.175	ppb	0.175	5.01	217	1000	
Ba	137	3	115	15.275	ppb	15.275	8.22	3129	5000	
Tl	205	3	193	-0.005	ppb	-0.005	-141.52	140	2000	
(Pb)	206	3	193	1.962	ppb	1.962	1.44	2341	100	
(Pb)	207	3	193	1.952	ppb	1.952	2.19	2191	100	
Pb	208	3	193	1.925	ppb	1.925	0.81	9413	5000	
Th	232	3	193	-0.104	ppb	-0.104	-6.70	3827	2000	
U	238	3	193	-0.016	ppb	-0.016	-68.09	1441	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3352035	4.08	3486335	96.15	60	120	
Sc (IS)	45	3	HMI He	479439	0.88	518733	92.43	60	120	
Ge Internal standard	72	2	HMI H2	1930285	2.26	1896849	101.76	60	120	
Ge Internal standard	72	3	HMI He	574863	1.42	606605	94.77	60	120	
In Internal Standard	115	3	HMI He	2236824	1.03	2408797	92.86	60	120	
Ir (IS)	193	3	HMI He	5025153	0.94	5218365	96.30	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	169_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:16:26-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.107	ppb	1.872	2167	50	100.2	90	110	
Na	23	3	45	57.956	ppb	22.659	148647	51000	0.1	90	110	>+\-10%
Mg	24	3	45	966.695	ppb	1.135	56724	11000	8.8	90	110	>+\-10%
Al	27	3	45	1002.210	ppb	4.548	18862	1000	100.2	90	110	
K	39	3	45	999.902	ppb	2.564	56329	11000	9.1	90	110	>+\-10%
Ca	40	2	45	973.093	ppb	1.733	555384	11000	8.8	90	110	>+\-10%
V	51	3	72	50.916	ppb	1.962	26716	50	101.8	90	110	
Cr	52	3	72	51.479	ppb	1.959	35290	50	103.0	90	110	
Mn	55	3	72	51.290	ppb	2.404	17828	50	102.6	90	110	
Fe	56	2	72	1058.829	ppb	2.156	1375547	1000	105.9	90	110	
Co	59	3	72	50.811	ppb	2.411	55684	50	101.6	90	110	
Ni	60	3	72	50.535	ppb	0.455	15536	50	101.1	90	110	
Cu	63	3	72	51.331	ppb	2.336	42524	50	102.7	90	110	
Zn	66	3	72	50.883	ppb	5.780	7463	50	101.8	90	110	
As	75	3	72	50.770	ppb	2.373	5027	50	101.5	90	110	
Se	78	2	72	52.062	ppb	2.186	2492	50	104.1	90	110	
(Se)	78	3	72	40.619	ppb	17.363	255	50	81.2	90	110	>+\-10%
Sr	88	3	72	98.326	ppb	1.495	46662	100	98.3	90	110	
Mo	95	3	115	51.218	ppb	1.340	22856	50	102.4	90	110	
Ag	107	3	115	52.179	ppb	1.174	78284	50	104.4	90	110	
Cd	111	3	115	50.425	ppb	4.756	11022	50	100.8	90	110	
Sn	120	3	115	51.066	ppb	1.066	33560	50	102.1	90	110	
Sb	121	3	115	51.792	ppb	2.543	34265	50	103.6	90	110	
Ba	137	3	115	51.243	ppb	2.911	10816	50	102.5	90	110	
Tl	205	3	193	50.402	ppb	0.770	175944	50	100.8	90	110	
(Pb)	206	3	193	49.688	ppb	1.670	58500	50	99.4	90	110	
(Pb)	207	3	193	50.782	ppb	1.755	52016	50	101.6	90	110	
Pb	208	3	193	50.496	ppb	1.408	238256	50	101.0	90	110	
Th	232	3	193	50.606	ppb	1.426	247983	50	101.2	90	110	
U	238	3	193	50.891	ppb	1.837	259766	50	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3365517	1.01	3486335	96.53	60	120	
Sc (IS)	45	3	HMI He	496121	0.62	518733	95.64	60	120	
Ge Internal standard	72	2	HMI H2	1879018	1.05	1896849	99.06	60	120	
Ge Internal standard	72	3	HMI He	585813	1.17	606605	96.57	60	120	
In Internal Standard	115	3	HMI He	2320835	2.28	2408797	96.35	60	120	
Ir (IS)	193	3	HMI He	5178542	1.85	5218365	99.24	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	170_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:18:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.078	ppb	173.2	3	0.5	
Na	23	3	45	-1075.631	ppb	-0.2	27574	25	
Mg	24	3	45	-52.955	ppb	-1.3	120	25	
Al	27	3	45	3.062	ppb	43.2	107	15	
K	39	3	45	-6.571	ppb	-577.4	15631	50	
V	51	3	72	-0.081	ppb	-69.5	182	1	
Cr	52	3	72	-0.012	ppb	-1193.0	1206	1	
Mn	55	3	72	0.163	ppb	38.9	135	0.5	
Co	59	3	72	0.006	ppb	193.6	35	0.5	
Ni	60	3	72	0.014	ppb	548.1	80	1	
Cu	63	3	72	0.092	ppb	46.4	317	1	
Zn	66	3	72	-0.514	ppb	-23.4	108	5	
As	75	3	72	-0.065	ppb	-42.1	23	1	
Se	78	2	72	0.029	ppb	86.0	3	1	
(Se)	78	3	72	1.923	ppb	82.5	25	1	>RL
Sr	88	3	72	-3.233	ppb	-1.6	77	0.5	
Mo	95	3	115	0.070	ppb	55.6	72	0.5	
Ag	107	3	115	0.023	ppb	38.5	47	1	
Cd	111	3	115	0.031	ppb	115.0	7	0.5	
Sn	120	3	115	0.467	ppb	22.9	706	1	
Sb	121	3	115	0.073	ppb	27.5	155	0.6	
Ba	137	3	115	0.048	ppb	185.2	43	0.5	
Tl	205	3	193	0.010	ppb	120.0	195	0.1	
(Pb)	206	3	193	0.018	ppb	78.3	127	1	
(Pb)	207	3	193	0.011	ppb	121.0	278	1	
Pb	208	3	193	0.005	ppb	170.3	661	0.5	
Th	232	3	193	0.496	ppb	23.4	6800	1	
U	238	3	193	-0.017	ppb	-56.5	1473	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3420685	0.21	3486335	98.12	60	120	
Sc (IS)	45	3	HMI He	485897	0.86	518733	93.67	60	120	
Ge Internal standard	72	2	HMI H2	1861823	1.13	1896849	98.15	60	120	
Ge Internal standard	72	3	HMI He	565041	1.40	606605	93.15	60	120	
In Internal Standard	115	3	HMI He	2290223	1.11	2408797	95.08	60	120	
Ir (IS)	193	3	HMI He	5148774	0.95	5218365	98.67	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-10-a
Data File Name	171SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:20:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.078	ppb	0.078	86.60	3	2000	
Na	23	3	45	3027.671	ppb	3027.671	0.16	452906	400000	
Mg	24	3	45	4767.183	ppb	4767.183	0.29	261089	400000	
Al	27	3	45	3.277	ppb	3.277	17.29	110	400000	
K	39	3	45	1747.943	ppb	1747.943	3.01	84209	400000	
Ca	40	2	45	18700.473	ppb	18700.473	2.61	9467510	400000	
V	51	3	72	-0.034	ppb	-0.034	-214.35	215	2000	
Cr	52	3	72	-0.165	ppb	-0.165	-78.60	1163	5000	
Mn	55	3	72	10.449	ppb	10.449	3.01	3739	10000	
Fe	56	2	72	20.488	ppb	20.488	4.50	31945	10000	
Co	59	3	72	0.250	ppb	0.250	22.01	307	2000	
Ni	60	3	72	7.719	ppb	7.719	1.48	2466	5000	
Cu	63	3	72	715.262	ppb	715.262	0.51	595624	5000	
Zn	66	3	72	636.607	ppb	636.607	0.96	92232	5000	
As	75	3	72	0.210	ppb	0.210	75.75	52	2000	
Se	78	2	72	0.302	ppb	0.302	49.21	16	2000	
(Se)	78	3	72	0.317	ppb	0.317	156.51	17	2000	
Sr	88	3	72	100.120	ppb	100.120	0.34	47992	4000	
Mo	95	3	115	-0.013	ppb	-0.013	-295.53	35	2000	
Ag	107	3	115	0.061	ppb	0.061	9.06	103	100	
Cd	111	3	115	0.062	ppb	0.062	107.83	13	2000	
Sn	120	3	115	0.675	ppb	0.675	16.08	840	2000	
Sb	121	3	115	0.390	ppb	0.390	9.77	361	1000	
Ba	137	3	115	15.096	ppb	15.096	1.68	3169	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-942.89	155	2000	
(Pb)	206	3	193	8.780	ppb	8.780	2.03	10304	100	
(Pb)	207	3	193	8.371	ppb	8.371	1.69	8695	100	
Pb	208	3	193	8.593	ppb	8.593	0.83	40602	5000	
Th	232	3	193	0.034	ppb	0.034	172.42	4557	2000	
U	238	3	193	-0.019	ppb	-0.019	-103.50	1451	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3360781	3.04	3486335	96.40	60	120	
Sc (IS)	45	3	HMI He	483919	0.79	518733	93.29	60	120	
Ge Internal standard	72	2	HMI H2	1906148	0.74	1896849	100.49	60	120	
Ge Internal standard	72	3	HMI He	592028	1.21	606605	97.60	60	120	
In Internal Standard	115	3	HMI He	2291063	0.57	2408797	95.11	60	120	
Ir (IS)	193	3	HMI He	5117252	1.57	5218365	98.06	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-11-a
Data File Name	172SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:22:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.039	ppb	0.039	173.21	2	2000	
Na	23	3	45	2932.631	ppb	2932.631	1.20	438562	400000	
Mg	24	3	45	4617.931	ppb	4617.931	1.31	250436	400000	
Al	27	3	45	4.801	ppb	4.801	33.74	137	400000	
K	39	3	45	1683.149	ppb	1683.149	3.67	80856	400000	
Ca	40	2	45	17930.245	ppb	17930.245	1.36	9433251	400000	
V	51	3	72	-0.008	ppb	-0.008	-400.73	223	2000	
Cr	52	3	72	0.116	ppb	0.116	176.22	1318	5000	
Mn	55	3	72	22.240	ppb	22.240	5.63	7668	10000	
Fe	56	2	72	37.460	ppb	37.460	2.65	55198	10000	
Co	59	3	72	0.027	ppb	0.027	34.70	58	2000	
Ni	60	3	72	5.880	ppb	5.880	6.84	1851	5000	
Cu	63	3	72	205.340	ppb	205.340	1.33	167007	5000	
Zn	66	3	72	57.894	ppb	57.894	1.27	8350	5000	
As	75	3	72	0.324	ppb	0.324	23.80	62	2000	
Se	78	2	72	0.255	ppb	0.255	29.61	14	2000	
(Se)	78	3	72	0.670	ppb	0.670	320.63	18	2000	
Sr	88	3	72	97.575	ppb	97.575	1.50	45672	4000	
Mo	95	3	115	0.012	ppb	0.012	354.41	45	2000	
Ag	107	3	115	0.012	ppb	0.012	54.79	30	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.855	ppb	0.855	15.00	930	2000	
Sb	121	3	115	0.111	ppb	0.111	30.94	175	1000	
Ba	137	3	115	13.740	ppb	13.740	5.50	2809	5000	
Tl	205	3	193	-0.011	ppb	-0.011	-13.41	117	2000	
(Pb)	206	3	193	1.991	ppb	1.991	6.09	2359	100	
(Pb)	207	3	193	2.190	ppb	2.190	3.99	2412	100	
Pb	208	3	193	2.068	ppb	2.068	2.68	10008	5000	
Th	232	3	193	-0.078	ppb	-0.078	-24.49	3929	2000	
U	238	3	193	-0.018	ppb	-0.018	-100.99	1423	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3489620	0.48	3486335	100.09	60	120	
Sc (IS)	45	3	HMI He	479002	0.89	518733	92.34	60	120	
Ge Internal standard	72	2	HMI H2	1940809	2.28	1896849	102.32	60	120	
Ge Internal standard	72	3	HMI He	577608	0.48	606605	95.22	60	120	
In Internal Standard	115	3	HMI He	2229052	1.25	2408797	92.54	60	120	
Ir (IS)	193	3	HMI He	4995979	0.60	5218365	95.74	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-12-a
Data File Name	173SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:23:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.039	ppb	0.039	173.21	2	2000	
Na	23	3	45	3004.233	ppb	3004.233	0.79	433877	400000	
Mg	24	3	45	4668.288	ppb	4668.288	1.61	246270	400000	
Al	27	3	45	8.418	ppb	8.418	38.49	197	400000	
K	39	3	45	1682.544	ppb	1682.544	2.90	78618	400000	
Ca	40	2	45	18514.682	ppb	18514.682	1.42	9396589	400000	
V	51	3	72	-0.117	ppb	-0.117	-28.19	163	2000	
Cr	52	3	72	-0.070	ppb	-0.070	-192.13	1168	5000	
Mn	55	3	72	25.359	ppb	25.359	3.39	8533	10000	
Fe	56	2	72	36.937	ppb	36.937	2.40	54093	10000	
Co	59	3	72	0.022	ppb	0.022	82.73	52	2000	
Ni	60	3	72	2.392	ppb	2.392	7.54	781	5000	
Cu	63	3	72	200.245	ppb	200.245	0.31	159152	5000	
Zn	66	3	72	38.197	ppb	38.197	1.80	5443	5000	
As	75	3	72	0.236	ppb	0.236	60.33	52	2000	
Se	78	2	72	0.190	ppb	0.190	11.93	11	2000	
(Se)	78	3	72	-0.127	ppb	-0.127	-420.46	13	2000	
Sr	88	3	72	97.925	ppb	97.925	0.40	44783	4000	
Mo	95	3	115	0.022	ppb	0.022	188.17	48	2000	
Ag	107	3	115	0.010	ppb	0.010	23.39	27	100	
Cd	111	3	115	0.008	ppb	0.008	173.21	2	2000	
Sn	120	3	115	0.446	ppb	0.446	7.02	660	2000	
Sb	121	3	115	0.116	ppb	0.116	41.60	175	1000	
Ba	137	3	115	14.040	ppb	14.040	5.38	2807	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-137.29	127	2000	
(Pb)	206	3	193	1.612	ppb	1.612	3.57	1901	100	
(Pb)	207	3	193	1.492	ppb	1.492	9.61	1699	100	
Pb	208	3	193	1.561	ppb	1.561	6.39	7590	5000	
Th	232	3	193	-0.086	ppb	-0.086	-5.62	3830	2000	
U	238	3	193	-0.014	ppb	-0.014	-70.19	1419	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3367637	1.90	3486335	96.60	60	120	
Sc (IS)	45	3	HMI He	466061	1.70	518733	89.85	60	120	
Ge Internal standard	72	2	HMI H2	1925971	1.22	1896849	101.54	60	120	
Ge Internal standard	72	3	HMI He	564416	1.68	606605	93.05	60	120	
In Internal Standard	115	3	HMI He	2181794	1.87	2408797	90.58	60	120	
Ir (IS)	193	3	HMI He	4918063	1.12	5218365	94.25	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-13-a
Data File Name	174SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:25:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	2913.112	ppb	2913.112	2.87	457175	400000	
Mg	24	3	45	4599.008	ppb	4599.008	2.14	261215	400000	
Al	27	3	45	6.926	ppb	6.926	28.58	184	400000	
K	39	3	45	1662.368	ppb	1662.368	5.23	83819	400000	
Ca	40	2	45	17702.888	ppb	17702.888	1.40	9558627	400000	
V	51	3	72	-0.047	ppb	-0.047	-61.25	215	2000	
Cr	52	3	72	-0.219	ppb	-0.219	-54.88	1163	5000	
Mn	55	3	72	13.226	ppb	13.226	1.81	4865	10000	
Fe	56	2	72	38.162	ppb	38.162	2.56	58019	10000	
Co	59	3	72	0.023	ppb	0.023	55.33	57	2000	
Ni	60	3	72	2.679	ppb	2.679	8.84	938	5000	
Cu	63	3	72	267.928	ppb	267.928	0.90	230672	5000	
Zn	66	3	72	38.039	ppb	38.039	0.48	5877	5000	
As	75	3	72	0.112	ppb	0.112	103.69	43	2000	
Se	78	2	72	0.351	ppb	0.351	26.10	19	2000	
(Se)	78	3	72	-0.037	ppb	-0.037	-2268.51	15	2000	
Sr	88	3	72	97.117	ppb	97.117	0.77	48144	4000	
Mo	95	3	115	0.018	ppb	0.018	384.76	50	2000	
Ag	107	3	115	0.000	ppb	0.000	1216.35	13	100	
Cd	111	3	115	0.007	ppb	0.007	173.21	2	2000	
Sn	120	3	115	0.323	ppb	0.323	37.91	633	2000	
Sb	121	3	115	0.120	ppb	0.120	21.46	192	1000	
Ba	137	3	115	13.586	ppb	13.586	4.60	2942	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-106.42	130	2000	
(Pb)	206	3	193	2.000	ppb	2.000	4.11	2497	100	
(Pb)	207	3	193	1.837	ppb	1.837	12.08	2176	100	
Pb	208	3	193	1.899	ppb	1.899	3.12	9738	5000	
Th	232	3	193	-0.084	ppb	-0.084	-15.10	4107	2000	
U	238	3	193	-0.024	ppb	-0.024	-43.08	1466	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3581167	0.62	3486335	102.72	60	120	
Sc (IS)	45	3	HMI He	501717	1.25	518733	96.72	60	120	
Ge Internal standard	72	2	HMI H2	2005475	1.02	1896849	105.73	60	120	
Ge Internal standard	72	3	HMI He	611657	1.14	606605	100.83	60	120	
In Internal Standard	115	3	HMI He	2360795	1.29	2408797	98.01	60	120	
Ir (IS)	193	3	HMI He	5264081	0.72	5218365	100.88	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-14-a
Data File Name	175SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:27:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	3005.108	ppb	3005.108	1.36	457259	400000	
Mg	24	3	45	4677.896	ppb	4677.896	1.48	260069	400000	
Al	27	3	45	8.579	ppb	8.579	35.03	210	400000	
K	39	3	45	1781.097	ppb	1781.097	2.81	86784	400000	
Ca	40	2	45	18436.295	ppb	18436.295	2.38	9943407	400000	
V	51	3	72	-0.044	ppb	-0.044	-176.10	212	2000	
Cr	52	3	72	0.112	ppb	0.112	82.86	1358	5000	
Mn	55	3	72	17.514	ppb	17.514	3.48	6260	10000	
Fe	56	2	72	35.192	ppb	35.192	3.19	53466	10000	
Co	59	3	72	0.030	ppb	0.030	45.74	63	2000	
Ni	60	3	72	4.873	ppb	4.873	5.67	1598	5000	
Cu	63	3	72	703.710	ppb	703.710	0.52	590760	5000	
Zn	66	3	72	161.134	ppb	161.134	1.04	23673	5000	
As	75	3	72	0.070	ppb	0.070	209.90	38	2000	
Se	78	2	72	0.222	ppb	0.222	5.69	13	2000	
(Se)	78	3	72	-0.537	ppb	-0.537	-86.62	12	2000	
Sr	88	3	72	100.011	ppb	100.011	2.23	48335	4000	
Mo	95	3	115	0.024	ppb	0.024	194.94	52	2000	
Ag	107	3	115	0.017	ppb	0.017	47.37	38	100	
Cd	111	3	115	0.046	ppb	0.046	50.82	10	2000	
Sn	120	3	115	0.477	ppb	0.477	25.04	716	2000	
Sb	121	3	115	0.165	ppb	0.165	12.48	217	1000	
Ba	137	3	115	13.652	ppb	13.652	4.46	2887	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-265.28	147	2000	
(Pb)	206	3	193	7.071	ppb	7.071	1.04	8329	100	
(Pb)	207	3	193	7.105	ppb	7.105	4.92	7429	100	
Pb	208	3	193	6.968	ppb	6.968	1.52	33084	5000	
Th	232	3	193	-0.104	ppb	-0.104	-22.56	3905	2000	
U	238	3	193	0.002	ppb	0.002	696.72	1561	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3579629	2.76	3486335	102.68	60	120	
Sc (IS)	45	3	HMI He	491081	0.92	518733	94.67	60	120	
Ge Internal standard	72	2	HMI H2	1989942	4.02	1896849	104.91	60	120	
Ge Internal standard	72	3	HMI He	596780	1.45	606605	98.38	60	120	
In Internal Standard	115	3	HMI He	2304899	1.48	2408797	95.69	60	120	
Ir (IS)	193	3	HMI He	5124161	1.27	5218365	98.19	60	120	

Sample Report

Sample Table

Sample Name	280-171743-a-1-a
Data File Name	176SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:29:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.039	ppb	0.039	173.21	2	2000	
Na	23	3	45	884.575	ppb	884.575	2.68	234576	400000	
Mg	24	3	45	8218.136	ppb	8218.136	0.80	455430	400000	
Al	27	3	45	2.091	ppb	2.091	127.53	90	400000	
K	39	3	45	7203.084	ppb	7203.084	1.63	302606	400000	
Ca	40	2	45	49334.547	ppb	49334.547	0.39	25403162	400000	
V	51	3	72	-0.135	ppb	-0.135	-94.61	160	2000	
Cr	52	3	72	0.053	ppb	0.053	118.22	1294	5000	
Mn	55	3	72	5947.479	ppb	5947.479	1.57	2058772	10000	
Fe	56	2	72	225.834	ppb	225.834	1.12	302839	10000	
Co	59	3	72	0.011	ppb	0.011	26.15	42	2000	
Ni	60	3	72	0.125	ppb	0.125	147.04	117	5000	
Cu	63	3	72	60.713	ppb	60.713	1.32	50281	5000	
Zn	66	3	72	16.948	ppb	16.948	7.39	2611	5000	
As	75	3	72	2.158	ppb	2.158	9.66	243	2000	
Se	78	2	72	0.067	ppb	0.067	194.17	5	2000	
(Se)	78	3	72	-0.497	ppb	-0.497	-101.71	12	2000	
Sr	88	3	72	254.220	ppb	254.220	1.05	118221	4000	
Mo	95	3	115	0.400	ppb	0.400	32.09	215	2000	
Ag	107	3	115	0.005	ppb	0.005	135.52	20	100	
Cd	111	3	115	0.039	ppb	0.039	91.85	8	2000	
Sn	120	3	115	0.199	ppb	0.199	17.77	530	2000	
Sb	121	3	115	0.044	ppb	0.044	117.91	135	1000	
Ba	137	3	115	269.110	ppb	269.110	1.68	55406	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-27.02	103	2000	
(Pb)	206	3	193	1.494	ppb	1.494	12.56	1836	100	
(Pb)	207	3	193	1.486	ppb	1.486	6.38	1758	100	
Pb	208	3	193	1.486	ppb	1.486	1.58	7527	5000	
Th	232	3	193	-0.075	ppb	-0.075	-9.33	4029	2000	
U	238	3	193	-0.042	ppb	-0.042	-33.77	1333	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3431035	0.55	3486335	98.41	60	120	
Sc (IS)	45	3	HMI He	492030	0.67	518733	94.85	60	120	
Ge Internal standard	72	2	HMI H2	1914115	0.78	1896849	100.91	60	120	
Ge Internal standard	72	3	HMI He	586060	0.86	606605	96.61	60	120	
In Internal Standard	115	3	HMI He	2269935	0.62	2408797	94.24	60	120	
Ir (IS)	193	3	HMI He	5104740	0.58	5218365	97.82	60	120	

Sample Report

Sample Table

Sample Name	280-171744-a-1-b
Data File Name	177SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:31:32-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	6124.111	ppb	6124.111	1.60	825926	400000	
Mg	24	3	45	7433.028	ppb	7433.028	1.73	432659	400000	
Al	27	3	45	36.707	ppb	36.707	4.74	771	400000	
K	39	3	45	3043.153	ppb	3043.153	1.36	143935	400000	
Ca	40	2	45	41595.863	ppb	41595.863	1.96	21649940	400000	
V	51	3	72	0.652	ppb	0.652	12.85	578	2000	
Cr	52	3	72	1.476	ppb	1.476	8.71	2269	5000	
Mn	55	3	72	2.372	ppb	2.372	4.01	918	10000	
Fe	56	2	72	11.540	ppb	11.540	4.36	20061	10000	
Co	59	3	72	0.000	ppb	0.000	1513.90	30	2000	
Ni	60	3	72	0.129	ppb	0.129	68.35	120	5000	
Cu	63	3	72	13.548	ppb	13.548	2.44	11581	5000	
Zn	66	3	72	10.792	ppb	10.792	6.13	1756	5000	
As	75	3	72	0.589	ppb	0.589	37.47	90	2000	
Se	78	2	72	0.453	ppb	0.453	34.26	23	2000	
(Se)	78	3	72	1.705	ppb	1.705	131.08	25	2000	
Sr	88	3	72	260.736	ppb	260.736	2.01	122967	4000	
Mo	95	3	115	1.859	ppb	1.859	9.88	875	2000	
Ag	107	3	115	0.001	ppb	0.001	238.43	15	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.116	ppb	0.116	37.84	490	2000	
Sb	121	3	115	0.106	ppb	0.106	4.66	180	1000	
Ba	137	3	115	7.296	ppb	7.296	2.25	1576	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-32.29	100	2000	
(Pb)	206	3	193	0.017	ppb	0.017	56.73	130	100	
(Pb)	207	3	193	-0.013	ppb	-0.013	-116.89	262	100	
Pb	208	3	193	0.007	ppb	0.007	163.43	693	5000	
Th	232	3	193	-0.119	ppb	-0.119	-36.92	3977	2000	
U	238	3	193	0.340	ppb	0.340	3.08	3380	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3466986	1.96	3486335	99.45	60	120	
Sc (IS)	45	3	HMI He	516466	1.22	518733	99.56	60	120	
Ge Internal standard	72	2	HMI H2	1893573	3.24	1896849	99.83	60	120	
Ge Internal standard	72	3	HMI He	594603	1.12	606605	98.02	60	120	
In Internal Standard	115	3	HMI He	2331534	1.81	2408797	96.79	60	120	
Ir (IS)	193	3	HMI He	5321438	1.83	5218365	101.98	60	120	

Sample Report

Sample Table

Sample Name	280-171744-a-1-c ms
Data File Name	178SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:33:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.397	ppb	40.397	5.57	1708	2000	
Na	23	3	45	6490.358	ppb	6490.358	1.35	824934	400000	
Mg	24	3	45	7843.988	ppb	7843.988	1.93	434394	400000	
Al	27	3	45	797.705	ppb	797.705	4.16	14886	400000	
K	39	3	45	3728.487	ppb	3728.487	1.04	164243	400000	
Ca	40	2	45	41354.413	ppb	41354.413	0.83	20838552	400000	
V	51	3	72	42.103	ppb	42.103	3.81	21521	2000	
Cr	52	3	72	42.499	ppb	42.499	4.16	28543	5000	
Mn	55	3	72	42.248	ppb	42.248	1.38	14297	10000	
Fe	56	2	72	829.524	ppb	829.524	4.38	1070668	10000	
Co	59	3	72	40.727	ppb	40.727	3.18	43413	2000	
Ni	60	3	72	39.855	ppb	39.855	1.73	11931	5000	
Cu	63	3	72	55.142	ppb	55.142	2.62	44411	5000	
Zn	66	3	72	49.779	ppb	49.779	1.79	7107	5000	
As	75	3	72	41.354	ppb	41.354	3.98	3987	2000	
Se	78	2	72	43.000	ppb	43.000	4.36	2043	2000	
(Se)	78	3	72	40.077	ppb	40.077	8.04	245	2000	
Sr	88	3	72	335.090	ppb	335.090	1.87	150997	4000	
Mo	95	3	115	40.765	ppb	40.765	1.44	18332	2000	
Ag	107	3	115	39.882	ppb	39.882	2.35	60270	100	
Cd	111	3	115	38.682	ppb	38.682	0.92	8522	2000	
Sn	120	3	115	37.843	ppb	37.843	0.99	25158	2000	
Sb	121	3	115	38.927	ppb	38.927	1.56	25974	1000	
Ba	137	3	115	45.675	ppb	45.675	4.25	9710	5000	
Tl	205	3	193	39.970	ppb	39.970	2.99	137118	2000	
(Pb)	206	3	193	38.759	ppb	38.759	3.85	44860	100	
(Pb)	207	3	193	39.190	ppb	39.190	2.45	39510	100	
Pb	208	3	193	39.446	ppb	39.446	2.98	183018	5000	
Th	232	3	193	38.875	ppb	38.875	2.42	188218	2000	
U	238	3	193	40.231	ppb	40.231	2.81	202114	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3355771	2.19	3486335	96.25	60	120	
Sc (IS)	45	3	HMI He	491615	1.55	518733	94.77	60	120	
Ge Internal standard	72	2	HMI H2	1868223	5.86	1896849	98.49	60	120	
Ge Internal standard	72	3	HMI He	569770	1.43	606605	93.93	60	120	
In Internal Standard	115	3	HMI He	2337466	0.76	2408797	97.04	60	120	
Ir (IS)	193	3	HMI He	5090037	2.54	5218365	97.54	60	120	

Sample Report

Sample Table

Sample Name	280-171744-a-1-d msd
Data File Name	179SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:35:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.123	ppb	41.123	6.36	1808	2000	
Na	23	3	45	6839.219	ppb	6839.219	4.63	888519	400000	
Mg	24	3	45	7903.006	ppb	7903.006	0.95	451399	400000	
Al	27	3	45	813.849	ppb	813.849	4.58	15658	400000	
K	39	3	45	3760.991	ppb	3760.991	1.98	170685	400000	
Ca	40	2	45	41010.995	ppb	41010.995	1.86	21624715	400000	
V	51	3	72	41.303	ppb	41.303	2.69	21653	2000	
Cr	52	3	72	42.221	ppb	42.221	2.54	29086	5000	
Mn	55	3	72	42.645	ppb	42.645	2.00	14794	10000	
Fe	56	2	72	802.004	ppb	802.004	2.05	1072440	10000	
Co	59	3	72	39.787	ppb	39.787	3.03	43485	2000	
Ni	60	3	72	40.028	ppb	40.028	3.41	12284	5000	
Cu	63	3	72	54.392	ppb	54.392	1.60	44917	5000	
Zn	66	3	72	50.951	ppb	50.951	4.26	7453	5000	
As	75	3	72	38.572	ppb	38.572	3.92	3815	2000	
Se	78	2	72	41.112	ppb	41.112	0.98	2024	2000	
(Se)	78	3	72	39.917	ppb	39.917	7.84	250	2000	
Sr	88	3	72	334.495	ppb	334.495	2.41	154533	4000	
Mo	95	3	115	41.757	ppb	41.757	1.48	18704	2000	
Ag	107	3	115	40.599	ppb	40.599	1.98	61123	100	
Cd	111	3	115	39.078	ppb	39.078	3.63	8573	2000	
Sn	120	3	115	39.534	ppb	39.534	4.97	26158	2000	
Sb	121	3	115	39.869	ppb	39.869	2.37	26491	1000	
Ba	137	3	115	48.038	ppb	48.038	3.64	10171	5000	
Tl	205	3	193	38.783	ppb	38.783	0.84	137429	2000	
(Pb)	206	3	193	38.676	ppb	38.676	1.99	46253	100	
(Pb)	207	3	193	38.954	ppb	38.954	2.03	40556	100	
Pb	208	3	193	38.827	ppb	38.827	0.33	186098	5000	
Th	232	3	193	38.829	ppb	38.829	0.20	194178	2000	
U	238	3	193	39.313	ppb	39.313	0.95	204052	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3511968	0.77	3486335	100.74	60	120	
Sc (IS)	45	3	HMI He	506937	1.33	518733	97.73	60	120	
Ge Internal standard	72	2	HMI H2	1932418	1.66	1896849	101.88	60	120	
Ge Internal standard	72	3	HMI He	584054	0.18	606605	96.28	60	120	
In Internal Standard	115	3	HMI He	2328611	1.79	2408797	96.67	60	120	
Ir (IS)	193	3	HMI He	5255466	1.59	5218365	100.71	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	180_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:37:14-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.325	ppb	7.190	2292	50	102.7	90	110	
Na	23	3	45	44.864	ppb	68.961	143658	51000	0.1	90	110	>+\-10%
Mg	24	3	45	938.968	ppb	0.987	53870	11000	8.5	90	110	>+\-10%
Al	27	3	45	1000.733	ppb	1.869	18380	1000	100.1	90	110	
K	39	3	45	994.631	ppb	6.198	54711	11000	9.0	90	110	>+\-10%
Ca	40	2	45	937.653	ppb	1.359	570503	11000	8.5	90	110	>+\-10%
V	51	3	72	50.424	ppb	2.437	25758	50	100.8	90	110	
Cr	52	3	72	51.123	ppb	2.315	34120	50	102.2	90	110	
Mn	55	3	72	52.154	ppb	1.725	17646	50	104.3	90	110	
Fe	56	2	72	1060.823	ppb	3.347	1432098	1000	106.1	90	110	
Co	59	3	72	51.176	ppb	0.768	54620	50	102.4	90	110	
Ni	60	3	72	51.094	ppb	3.953	15276	50	102.2	90	110	
Cu	63	3	72	51.672	ppb	2.238	41665	50	103.3	90	110	
Zn	66	3	72	50.972	ppb	1.685	7282	50	101.9	90	110	
As	75	3	72	50.023	ppb	2.270	4828	50	100.0	90	110	
Se	78	2	72	52.170	ppb	5.131	2593	50	104.3	90	110	
(Se)	78	3	72	47.514	ppb	19.964	290	50	95.0	90	110	
Sr	88	3	72	97.467	ppb	1.538	45044	100	97.5	90	110	
Mo	95	3	115	50.398	ppb	1.665	21815	50	100.8	90	110	
Ag	107	3	115	51.771	ppb	0.946	75354	50	103.5	90	110	
Cd	111	3	115	49.740	ppb	1.546	10561	50	99.5	90	110	
Sn	120	3	115	51.394	ppb	2.962	32762	50	102.8	90	110	
Sb	121	3	115	51.130	ppb	1.865	32829	50	102.3	90	110	
Ba	137	3	115	50.628	ppb	3.689	10372	50	101.3	90	110	
Tl	205	3	193	50.146	ppb	1.381	171030	50	100.3	90	110	
(Pb)	206	3	193	49.892	ppb	1.414	57394	50	99.8	90	110	
(Pb)	207	3	193	50.195	ppb	0.738	50238	50	100.4	90	110	
Pb	208	3	193	49.884	ppb	0.977	229964	50	99.8	90	110	
Th	232	3	193	50.630	ppb	1.239	242427	50	101.3	90	110	
U	238	3	193	50.175	ppb	0.485	250278	50	100.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3572081	1.58	3486335	102.46	60	120	
Sc (IS)	45	3	HMI He	484331	4.79	518733	93.37	60	120	
Ge Internal standard	72	2	HMI H2	1953997	4.13	1896849	103.01	60	120	
Ge Internal standard	72	3	HMI He	570580	5.67	606605	94.06	60	120	
In Internal Standard	115	3	HMI He	2251643	4.46	2408797	93.48	60	120	
Ir (IS)	193	3	HMI He	5059410	4.14	5218365	96.95	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	181_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:39:05-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-1083.526	ppb	-0.4	26933	25	
Mg	24	3	45	-51.019	ppb	-2.7	227	25	
Al	27	3	45	1.588	ppb	68.1	80	15	
K	39	3	45	-14.706	ppb	-260.9	15417	50	
V	51	3	72	-0.126	ppb	-49.8	160	1	
Cr	52	3	72	-0.035	ppb	-165.4	1199	1	
Mn	55	3	72	0.656	ppb	20.6	302	0.5	>RL
Co	59	3	72	0.014	ppb	133.9	43	0.5	
Ni	60	3	72	0.097	ppb	66.4	105	1	
Cu	63	3	72	0.069	ppb	21.8	300	1	
Zn	66	3	72	-0.434	ppb	-8.1	120	5	
As	75	3	72	0.038	ppb	281.8	33	1	
Se	78	2	72	0.071	ppb	150.1	5	1	
(Se)	78	3	72	0.447	ppb	312.4	17	1	
Sr	88	3	72	-3.233	ppb	-1.0	77	0.5	
Mo	95	3	115	0.078	ppb	54.4	75	0.5	
Ag	107	3	115	0.022	ppb	31.8	45	1	
Cd	111	3	115	0.023	ppb	100.5	5	0.5	
Sn	120	3	115	0.620	ppb	0.9	803	1	
Sb	121	3	115	0.031	ppb	180.2	128	0.6	
Ba	137	3	115	0.072	ppb	219.7	48	0.5	
Tl	205	3	193	0.004	ppb	135.6	173	0.1	
(Pb)	206	3	193	0.025	ppb	116.9	133	1	
(Pb)	207	3	193	0.054	ppb	58.1	318	1	
Pb	208	3	193	0.029	ppb	67.7	765	0.5	
Th	232	3	193	0.577	ppb	29.3	7105	1	
U	238	3	193	-0.013	ppb	-114.9	1473	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3440440	2.06	3486335	98.68	60	120	
Sc (IS)	45	3	HMI He	489190	0.74	518733	94.30	60	120	
Ge Internal standard	72	2	HMI H2	1852843	0.65	1896849	97.68	60	120	
Ge Internal standard	72	3	HMI He	568649	2.10	606605	93.74	60	120	
In Internal Standard	115	3	HMI He	2287891	1.05	2408797	94.98	60	120	
Ir (IS)	193	3	HMI He	5094260	0.52	5218365	97.62	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600571/1-a
Data File Name	182_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:40:59-07:00
Sample Type	Blank
Dilution	1
Comment	600571 200.8
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5
Na	23	3	45	-1071.532	ppb	-1.106523094	28267	25
Mg	24	3	45	-52.550	ppb	-1.263740129	143	25
Al	27	3	45	33.394	ppb	5.460721316	671	15
K	39	3	45	-7.527	ppb	-596.6448739	15761	50
V	51	3	72	-0.143	ppb	-50.78690496	152	1
Cr	52	3	72	-0.154	ppb	-31.8414194	1126	1
Mn	55	3	72	0.604	ppb	16.73082645	285	0.5
Co	59	3	72	0.019	ppb	52.77930251	48	0.5
Ni	60	3	72	0.067	ppb	40.66164984	97	1
Cu	63	3	72	0.118	ppb	12.86827022	340	1
Zn	66	3	72	0.139	ppb	216.6257786	200	5
As	75	3	72	0.055	ppb	331.2353146	35	1
(Se)	78	3	72	0.141	ppb	1631.101337	15	1
Sr	88	3	72	-3.264	ppb	-0.373750967	63	0.5
Mo	95	3	115	0.003	ppb	931.0813642	42	0.5
Ag	107	3	115	0.021	ppb	40.7766327	43	1
Cd	111	3	115	0.016	ppb	86.60255028	3	0.5
Sn	120	3	115	0.266	ppb	23.75379101	568	1
Sb	121	3	115	0.027	ppb	57.88603285	123	0.6
Ba	137	3	115	0.101	ppb	69.23729911	53	0.5
Tl	205	3	193	-0.003	ppb	-146.0409558	148	0.1
(Pb)	206	3	193	0.050	ppb	79.3765602	163	1
(Pb)	207	3	193	0.067	ppb	28.90936761	332	1
Pb	208	3	193	0.039	ppb	26.73118954	813	0.5
Th	232	3	193	0.033	ppb	210.8225781	4537	1
U	238	3	193	-0.022	ppb	-116.2022607	1434	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3516693	1.04	3486335	100.87	60	120	
Sc (IS)	45	3	HMI He	490568	0.86	518733	94.57	60	120	
Ge Internal standard	72	2	HMI H2	1878016	2.20	1896849	99.01	60	120	
Ge Internal standard	72	3	HMI He	570186	0.53	606605	94.00	60	120	
In Internal Standard	115	3	HMI He	2252891	0.31	2408797	93.53	60	120	
Ir (IS)	193	3	HMI He	5103723	0.99	5218365	97.80	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600571/2-a
Data File Name	183_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:42:53-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600571 200.8
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	39.563	39.563	ppb	4.558	1684	40	98.9	80	120	
Na	23	3	45	-335.040	-335.040	ppb	-5.126	106702	40	-837.6	80	120	>+/-20%
Mg	24	3	45	630.253	630.253	ppb	2.368	37982	40	1575.6	80	120	>+/-20%
Al	27	3	45	770.406	770.406	ppb	4.598	14485	40	1926.0	80	120	>+/-20%
K	39	3	45	753.281	753.281	ppb	5.458	46360	40	1883.2	80	120	>+/-20%
Ca	40	2	45	682.912	682.912	ppb	1.431	409688	40	1707.3	80	120	>+/-20%
V	51	3	72	38.655	38.655	ppb	2.454	20355	40	96.6	80	120	
Cr	52	3	72	39.063	39.063	ppb	1.554	27106	40	97.7	80	120	
Mn	55	3	72	40.085	40.085	ppb	1.860	13963	40	100.2	80	120	
Fe	56	2	72	803.511	803.511	ppb	1.802	1034220	40	2008.8	80	120	>+/-20%
(Fe)	56	3	72	765.443	765.443	ppb	0.655	441259	40	1913.6	80	120	>+/-20%
Co	59	3	72	39.514	39.514	ppb	1.625	43349	40	98.8	80	120	
Ni	60	3	72	39.213	39.213	ppb	3.333	12081	40	98.0	80	120	
Cu	63	3	72	40.402	40.402	ppb	1.691	33554	40	101.0	80	120	
Zn	66	3	72	38.442	38.442	ppb	1.709	5690	40	96.1	80	120	
As	75	3	72	38.426	38.426	ppb	0.653	3815	40	96.1	80	120	
Se	78	2	72	40.457	40.457	ppb	2.034	1917	40	101.1	80	120	
(Se)	78	3	72	38.922	38.922	ppb	15.889	245	40	97.3	80	120	
Sr	88	3	72	73.837	73.837	ppb	1.306	35458	40	184.6	80	120	>+/-20%
Mo	95	3	115	39.695	39.695	ppb	1.533	17508	40	99.2	80	120	
Ag	107	3	115	40.101	40.101	ppb	1.156	59441	40	100.3	80	120	
Cd	111	3	115	39.156	39.156	ppb	1.127	8460	40	97.9	80	120	
Sn	120	3	115	38.046	38.046	ppb	1.460	24804	40	95.1	80	120	
Sb	121	3	115	38.794	38.794	ppb	1.631	25387	40	97.0	80	120	
Ba	137	3	115	40.336	40.336	ppb	4.323	8414	40	100.8	80	120	
Tl	205	3	193	38.493	38.493	ppb	2.178	134519	40	96.2	80	120	
(Pb)	206	3	193	37.871	37.871	ppb	1.695	44660	40	94.7	80	120	
(Pb)	207	3	193	38.160	38.160	ppb	1.496	39196	40	95.4	80	120	
Pb	208	3	193	38.161	38.161	ppb	1.566	180397	40	95.4	80	120	
Th	232	3	193	37.988	37.988	ppb	1.458	187448	40	95.0	80	120	
U	238	3	193	38.857	38.857	ppb	2.177	198906	40	97.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3369253	0.69	3486335	96.64	60	120	
Sc (IS)	45	3	HMI He	495374	1.20	518733	95.50	60	120	
Ge Internal standard	72	2	HMI H2	1859855	1.01	1896849	98.05	60	120	
Ge Internal standard	72	3	HMI He	586235	0.27	606605	96.64	60	120	
In Internal Standard	115	3	HMI He	2292644	1.45	2408797	95.18	60	120	
Ir (IS)	193	3	HMI He	5183479	1.27	5218365	99.33	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-1-a
Data File Name	184SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:44:46-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.039	ppb	0.039	173.21	2	2000	
Na	23	3	45	945.005	ppb	945.005	3.23	240536	400000	
Mg	24	3	45	8419.637	ppb	8419.637	0.75	465752	400000	
Al	27	3	45	6.951	ppb	6.951	42.63	180	400000	
K	39	3	45	7455.072	ppb	7455.072	1.16	312090	400000	
Ca	40	2	45	50150.294	ppb	50150.294	2.37	25592893	400000	
V	51	3	72	-0.083	ppb	-0.083	-46.35	192	2000	
Cr	52	3	72	-0.204	ppb	-0.204	-45.53	1151	5000	
Mn	55	3	72	5857.035	ppb	5857.035	1.42	2075863	10000	
Fe	56	2	72	146.214	ppb	146.214	1.18	196153	10000	
Co	59	3	72	0.057	ppb	0.057	33.77	93	2000	
Ni	60	3	72	4.547	ppb	4.547	5.93	1506	5000	
Cu	63	3	72	123.606	ppb	123.606	1.36	104544	5000	
Zn	66	3	72	464.943	ppb	464.943	1.15	68331	5000	
As	75	3	72	1.210	ppb	1.210	17.12	153	2000	
Se	78	2	72	0.081	ppb	0.081	126.55	5	2000	
(Se)	78	3	72	-0.006	ppb	-0.006	-27748.86	15	2000	
Sr	88	3	72	247.683	ppb	247.683	1.44	117979	4000	
Mo	95	3	115	0.585	ppb	0.585	13.88	298	2000	
Ag	107	3	115	0.059	ppb	0.059	34.69	100	100	
Cd	111	3	115	0.054	ppb	0.054	65.08	12	2000	
Sn	120	3	115	0.414	ppb	0.414	35.79	671	2000	
Sb	121	3	115	0.221	ppb	0.221	25.41	252	1000	
Ba	137	3	115	233.234	ppb	233.234	0.20	48434	5000	
Tl	205	3	193	0.011	ppb	0.011	99.72	197	2000	
(Pb)	206	3	193	7.840	ppb	7.840	2.20	9279	100	
(Pb)	207	3	193	7.802	ppb	7.802	2.47	8182	100	
Pb	208	3	193	7.727	ppb	7.727	0.62	36838	5000	
Th	232	3	193	0.570	ppb	0.570	33.65	7154	2000	
U	238	3	193	-0.014	ppb	-0.014	-240.14	1488	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3401446	1.72	3486335	97.57	60	120	
Sc (IS)	45	3	HMI He	491209	0.40	518733	94.69	60	120	
Ge Internal standard	72	2	HMI H2	1898099	2.94	1896849	100.07	60	120	
Ge Internal standard	72	3	HMI He	600099	0.89	606605	98.93	60	120	
In Internal Standard	115	3	HMI He	2289197	0.37	2408797	95.03	60	120	
Ir (IS)	193	3	HMI He	5154873	0.49	5218365	98.78	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-2-a
Data File Name	185SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:46:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	855.161	ppb	855.161	2.89	233281	400000	
Mg	24	3	45	8169.067	ppb	8169.067	0.67	456267	400000	
Al	27	3	45	2.606	ppb	2.606	83.91	100	400000	
K	39	3	45	7239.348	ppb	7239.348	1.77	306365	400000	
Ca	40	2	45	50083.265	ppb	50083.265	1.81	25764357	400000	
V	51	3	72	-0.165	ppb	-0.165	-25.87	147	2000	
Cr	52	3	72	-0.136	ppb	-0.136	-32.78	1188	5000	
Mn	55	3	72	5682.933	ppb	5682.933	0.66	1998009	10000	
Fe	56	2	72	140.212	ppb	140.212	1.03	189265	10000	
Co	59	3	72	0.039	ppb	0.039	46.47	73	2000	
Ni	60	3	72	0.455	ppb	0.455	20.88	222	5000	
Cu	63	3	72	103.024	ppb	103.024	0.61	86477	5000	
Zn	66	3	72	100.327	ppb	100.327	2.40	14774	5000	
As	75	3	72	1.356	ppb	1.356	37.52	167	2000	
Se	78	2	72	0.069	ppb	0.069	70.51	5	2000	
(Se)	78	3	72	1.130	ppb	1.130	111.34	22	2000	
Sr	88	3	72	252.699	ppb	252.699	0.38	119369	4000	
Mo	95	3	115	0.515	ppb	0.515	16.89	265	2000	
Ag	107	3	115	0.015	ppb	0.015	46.20	35	100	
Cd	111	3	115	0.031	ppb	0.031	113.96	7	2000	
Sn	120	3	115	0.228	ppb	0.228	30.59	548	2000	
Sb	121	3	115	0.263	ppb	0.263	28.05	277	1000	
Ba	137	3	115	272.364	ppb	272.364	2.03	56112	5000	
Tl	205	3	193	-0.007	ppb	-0.007	-122.96	137	2000	
(Pb)	206	3	193	5.964	ppb	5.964	1.65	7140	100	
(Pb)	207	3	193	6.056	ppb	6.056	0.39	6463	100	
Pb	208	3	193	5.992	ppb	5.992	1.81	28942	5000	
Th	232	3	193	0.038	ppb	0.038	72.37	4649	2000	
U	238	3	193	-0.007	ppb	-0.007	-458.92	1534	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3428574	1.54	3486335	98.34	60	120	
Sc (IS)	45	3	HMI He	495887	1.79	518733	95.60	60	120	
Ge Internal standard	72	2	HMI H2	1907515	1.51	1896849	100.56	60	120	
Ge Internal standard	72	3	HMI He	595231	0.33	606605	98.13	60	120	
In Internal Standard	115	3	HMI He	2271589	1.09	2408797	94.30	60	120	
Ir (IS)	193	3	HMI He	5197116	2.04	5218365	99.59	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-3-a
Data File Name	186SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:48:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	963.456	ppb	963.456	1.05	234718	400000	
Mg	24	3	45	8150.309	ppb	8150.309	1.25	436535	400000	
Al	27	3	45	4.685	ppb	4.685	28.24	133	400000	
K	39	3	45	7259.967	ppb	7259.967	2.24	294628	400000	
Ca	40	2	45	48298.503	ppb	48298.503	2.85	24862910	400000	
V	51	3	72	-0.144	ppb	-0.144	-38.43	152	2000	
Cr	52	3	72	-0.197	ppb	-0.197	-106.89	1103	5000	
Mn	55	3	72	5294.521	ppb	5294.521	2.49	1789454	10000	
Fe	56	2	72	170.705	ppb	170.705	1.65	230575	10000	
Co	59	3	72	0.054	ppb	0.054	25.38	87	2000	
Ni	60	3	72	6.123	ppb	6.123	3.91	1906	5000	
Cu	63	3	72	94.430	ppb	94.430	0.52	76216	5000	
Zn	66	3	72	254.096	ppb	254.096	0.32	35692	5000	
As	75	3	72	1.282	ppb	1.282	32.05	153	2000	
Se	78	2	72	0.122	ppb	0.122	51.01	7	2000	
(Se)	78	3	72	-0.451	ppb	-0.451	-222.16	12	2000	
Sr	88	3	72	239.359	ppb	239.359	0.77	108769	4000	
Mo	95	3	115	0.503	ppb	0.503	2.76	250	2000	
Ag	107	3	115	0.022	ppb	0.022	9.38	43	100	
Cd	111	3	115	0.040	ppb	0.040	34.22	8	2000	
Sn	120	3	115	0.295	ppb	0.295	40.26	568	2000	
Sb	121	3	115	0.178	ppb	0.178	26.05	213	1000	
Ba	137	3	115	207.190	ppb	207.190	0.99	41058	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-23.63	125	2000	
(Pb)	206	3	193	3.724	ppb	3.724	4.02	4222	100	
(Pb)	207	3	193	3.760	ppb	3.760	0.89	3862	100	
Pb	208	3	193	3.720	ppb	3.720	1.38	17094	5000	
Th	232	3	193	-0.032	ppb	-0.032	-59.27	4042	2000	
U	238	3	193	-0.018	ppb	-0.018	-90.17	1386	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3432386	3.79	3486335	98.45	60	120	
Sc (IS)	45	3	HMI He	475483	0.51	518733	91.66	60	120	
Ge Internal standard	72	2	HMI H2	1917934	1.46	1896849	101.11	60	120	
Ge Internal standard	72	3	HMI He	572199	0.66	606605	94.33	60	120	
In Internal Standard	115	3	HMI He	2184389	0.64	2408797	90.68	60	120	
Ir (IS)	193	3	HMI He	4877949	1.16	5218365	93.48	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-4-a
Data File Name	187SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:50:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	862.598	ppb	862.598	4.14	233461	400000	
Mg	24	3	45	7950.307	ppb	7950.307	0.74	442975	400000	
Al	27	3	45	3.649	ppb	3.649	101.13	120	400000	
K	39	3	45	7111.998	ppb	7111.998	0.53	300549	400000	
Ca	40	2	45	48335.175	ppb	48335.175	1.04	25630996	400000	
V	51	3	72	-0.173	ppb	-0.173	-12.15	143	2000	
Cr	52	3	72	0.158	ppb	0.158	92.33	1391	5000	
Mn	55	3	72	5615.536	ppb	5615.536	2.16	1980125	10000	
Fe	56	2	72	137.667	ppb	137.667	3.61	197598	10000	
Co	59	3	72	0.052	ppb	0.052	25.16	88	2000	
Ni	60	3	72	0.394	ppb	0.394	1.80	203	5000	
Cu	63	3	72	72.117	ppb	72.117	1.66	60801	5000	
Zn	66	3	72	54.633	ppb	54.633	1.36	8157	5000	
As	75	3	72	1.210	ppb	1.210	36.80	152	2000	
Se	78	2	72	0.101	ppb	0.101	58.91	7	2000	
(Se)	78	3	72	-0.795	ppb	-0.795	-110.47	10	2000	
Sr	88	3	72	245.938	ppb	245.938	2.61	116547	4000	
Mo	95	3	115	0.389	ppb	0.389	16.91	212	2000	
Ag	107	3	115	0.016	ppb	0.016	49.52	37	100	
Cd	111	3	115	0.015	ppb	0.015	173.21	3	2000	
Sn	120	3	115	0.160	ppb	0.160	68.09	508	2000	
Sb	121	3	115	0.039	ppb	0.039	23.94	133	1000	
Ba	137	3	115	259.672	ppb	259.672	0.67	53946	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-34.92	137	2000	
(Pb)	206	3	193	2.696	ppb	2.696	5.47	3219	100	
(Pb)	207	3	193	2.789	ppb	2.789	4.64	3057	100	
Pb	208	3	193	2.657	ppb	2.657	1.20	12923	5000	
Th	232	3	193	-0.088	ppb	-0.088	-27.03	3957	2000	
U	238	3	193	-0.005	ppb	-0.005	-238.59	1516	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3533548	2.00	3486335	101.35	60	120	
Sc (IS)	45	3	HMI He	494601	1.32	518733	95.35	60	120	
Ge Internal standard	72	2	HMI H2	2028151	2.27	1896849	106.92	60	120	
Ge Internal standard	72	3	HMI He	597248	3.21	606605	98.46	60	120	
In Internal Standard	115	3	HMI He	2290465	3.14	2408797	95.09	60	120	
Ir (IS)	193	3	HMI He	5090775	1.24	5218365	97.55	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-5-a
Data File Name	188SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:52:19-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	1072.043	ppb	1072.043	2.41	257384	400000	
Mg	24	3	45	8457.760	ppb	8457.760	0.36	474288	400000	
Al	27	3	45	10.925	ppb	10.925	38.68	257	400000	
K	39	3	45	7584.199	ppb	7584.199	0.47	321553	400000	
Ca	40	2	45	51877.942	ppb	51877.942	0.96	26631290	400000	
V	51	3	72	-0.213	ppb	-0.213	-5.56	123	2000	
Cr	52	3	72	0.103	ppb	0.103	152.61	1366	5000	
Mn	55	3	72	6120.730	ppb	6120.730	1.61	2181386	10000	
Fe	56	2	72	236.941	ppb	236.941	1.42	315356	10000	
Co	59	3	72	0.065	ppb	0.065	28.61	103	2000	
Ni	60	3	72	12.476	ppb	12.476	2.90	4014	5000	
Cu	63	3	72	158.970	ppb	158.970	0.54	135135	5000	
Zn	66	3	72	803.265	ppb	803.265	1.37	118590	5000	
As	75	3	72	1.610	ppb	1.610	11.88	195	2000	
Se	78	2	72	0.068	ppb	0.068	68.40	5	2000	
(Se)	78	3	72	0.815	ppb	0.815	105.52	20	2000	
Sr	88	3	72	258.274	ppb	258.274	0.85	123658	4000	
Mo	95	3	115	0.394	ppb	0.394	27.76	218	2000	
Ag	107	3	115	0.010	ppb	0.010	16.40	28	100	
Cd	111	3	115	0.031	ppb	0.031	45.60	7	2000	
Sn	120	3	115	1.011	ppb	1.011	6.30	1070	2000	
Sb	121	3	115	0.129	ppb	0.129	36.76	193	1000	
Ba	137	3	115	263.987	ppb	263.987	0.78	55564	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-155.77	147	2000	
(Pb)	206	3	193	5.546	ppb	5.546	3.74	6482	100	
(Pb)	207	3	193	5.425	ppb	5.425	1.85	5672	100	
Pb	208	3	193	5.458	ppb	5.458	0.68	25752	5000	
Th	232	3	193	-0.085	ppb	-0.085	-35.16	3950	2000	
U	238	3	193	-0.024	ppb	-0.024	-55.82	1411	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3420872	1.04	3486335	98.12	60	120	
Sc (IS)	45	3	HMI He	497941	2.17	518733	95.99	60	120	
Ge Internal standard	72	2	HMI H2	1901634	1.75	1896849	100.25	60	120	
Ge Internal standard	72	3	HMI He	603480	2.90	606605	99.48	60	120	
In Internal Standard	115	3	HMI He	2320675	3.77	2408797	96.34	60	120	
Ir (IS)	193	3	HMI He	5065304	1.69	5218365	97.07	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-6-a
Data File Name	189SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:54:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	773.924	ppb	773.924	2.63	231700	400000	
Mg	24	3	45	7821.221	ppb	7821.221	0.80	450707	400000	
Al	27	3	45	1.569	ppb	1.569	81.51	83	400000	
K	39	3	45	6901.751	ppb	6901.751	0.96	302080	400000	
Ca	40	2	45	47993.336	ppb	47993.336	2.58	24881464	400000	
V	51	3	72	-0.129	ppb	-0.129	-28.43	172	2000	
Cr	52	3	72	-0.183	ppb	-0.183	-64.05	1198	5000	
Mn	55	3	72	5501.826	ppb	5501.826	1.77	2004419	10000	
Fe	56	2	72	281.521	ppb	281.521	1.56	384195	10000	
Co	59	3	72	0.030	ppb	0.030	64.44	65	2000	
Ni	60	3	72	0.338	ppb	0.338	28.96	192	5000	
Cu	63	3	72	74.738	ppb	74.738	0.76	65087	5000	
Zn	66	3	72	47.924	ppb	47.924	3.13	7415	5000	
As	75	3	72	1.843	ppb	1.843	9.21	223	2000	
Se	78	2	72	0.012	ppb	0.012	4.72	2	2000	
(Se)	78	3	72	-1.397	ppb	-1.397	-34.42	7	2000	
Sr	88	3	72	242.440	ppb	242.440	1.55	118742	4000	
Mo	95	3	115	0.396	ppb	0.396	17.51	220	2000	
Ag	107	3	115	0.008	ppb	0.008	71.51	25	100	
Cd	111	3	115	0.023	ppb	0.023	99.58	5	2000	
Sn	120	3	115	0.168	ppb	0.168	76.63	526	2000	
Sb	121	3	115	0.070	ppb	0.070	46.27	157	1000	
Ba	137	3	115	259.578	ppb	259.578	1.01	55156	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-90.84	130	2000	
(Pb)	206	3	193	2.652	ppb	2.652	1.87	3279	100	
(Pb)	207	3	193	2.557	ppb	2.557	4.03	2924	100	
Pb	208	3	193	2.690	ppb	2.690	3.34	13533	5000	
Th	232	3	193	-0.099	ppb	-0.099	-40.98	4039	2000	
U	238	3	193	-0.005	ppb	-0.005	-288.06	1564	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3454482	0.76	3486335	99.09	60	120	
Sc (IS)	45	3	HMI He	511474	0.90	518733	98.60	60	120	
Ge Internal standard	72	2	HMI H2	1954786	1.46	1896849	103.05	60	120	
Ge Internal standard	72	3	HMI He	616891	1.29	606605	101.70	60	120	
In Internal Standard	115	3	HMI He	2342475	0.79	2408797	97.25	60	120	
Ir (IS)	193	3	HMI He	5268909	0.71	5218365	100.97	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-7-a
Data File Name	190SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:56:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	897.936	ppb	897.936	2.58	239401	400000	
Mg	24	3	45	8091.601	ppb	8091.601	1.03	454980	400000	
Al	27	3	45	7.872	ppb	7.872	41.70	200	400000	
K	39	3	45	7182.776	ppb	7182.776	0.71	306169	400000	
Ca	40	2	45	48998.644	ppb	48998.644	1.98	25361627	400000	
V	51	3	72	-0.223	ppb	-0.223	-17.80	117	2000	
Cr	52	3	72	-0.001	ppb	-0.001	-19684.31	1286	5000	
Mn	55	3	72	5986.244	ppb	5986.244	1.61	2116930	10000	
Fe	56	2	72	244.219	ppb	244.219	2.48	327136	10000	
Co	59	3	72	0.100	ppb	0.100	27.16	142	2000	
Ni	60	3	72	35.621	ppb	35.621	2.55	11217	5000	
Cu	63	3	72	203.842	ppb	203.842	0.29	171866	5000	
Zn	66	3	72	968.098	ppb	968.098	0.34	141760	5000	
As	75	3	72	1.064	ppb	1.064	7.06	138	2000	
Se	78	2	72	0.000	ppb	0.000	-28535.30	1	2000	
(Se)	78	3	72	0.563	ppb	0.563	339.95	18	2000	
Sr	88	3	72	246.339	ppb	246.339	1.24	117088	4000	
Mo	95	3	115	0.373	ppb	0.373	18.21	207	2000	
Ag	107	3	115	0.017	ppb	0.017	22.68	38	100	
Cd	111	3	115	0.115	ppb	0.115	40.37	25	2000	
Sn	120	3	115	0.337	ppb	0.337	37.52	628	2000	
Sb	121	3	115	0.182	ppb	0.182	13.65	228	1000	
Ba	137	3	115	250.326	ppb	250.326	2.55	52389	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-56.81	125	2000	
(Pb)	206	3	193	13.961	ppb	13.961	1.46	16299	100	
(Pb)	207	3	193	13.877	ppb	13.877	2.34	14218	100	
Pb	208	3	193	13.860	ppb	13.860	0.79	64995	5000	
Th	232	3	193	-0.106	ppb	-0.106	-47.88	3884	2000	
U	238	3	193	-0.035	ppb	-0.035	-15.89	1368	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3450351	3.28	3486335	98.97	60	120	
Sc (IS)	45	3	HMI He	499180	0.47	518733	96.23	60	120	
Ge Internal standard	72	2	HMI H2	1915152	2.21	1896849	100.96	60	120	
Ge Internal standard	72	3	HMI He	598756	0.77	606605	98.71	60	120	
In Internal Standard	115	3	HMI He	2307683	1.49	2408797	95.80	60	120	
Ir (IS)	193	3	HMI He	5109725	1.27	5218365	97.92	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-8-a
Data File Name	191SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:57:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	827.399	ppb	827.399	0.46	233142	400000	
Mg	24	3	45	7968.536	ppb	7968.536	0.67	450592	400000	
Al	27	3	45	5.168	ppb	5.168	0.83	150	400000	
K	39	3	45	7106.203	ppb	7106.203	0.62	304749	400000	
Ca	40	2	45	48881.536	ppb	48881.536	0.99	25202428	400000	
V	51	3	72	-0.180	ppb	-0.180	-24.90	142	2000	
Cr	52	3	72	-0.103	ppb	-0.103	-125.05	1234	5000	
Mn	55	3	72	5661.903	ppb	5661.903	2.56	2031103	10000	
Fe	56	2	72	151.646	ppb	151.646	2.35	209282	10000	
Co	59	3	72	0.029	ppb	0.029	78.98	63	2000	
Ni	60	3	72	0.562	ppb	0.562	12.32	260	5000	
Cu	63	3	72	74.143	ppb	74.143	1.49	63589	5000	
Zn	66	3	72	52.898	ppb	52.898	1.46	8040	5000	
As	75	3	72	1.338	ppb	1.338	35.82	168	2000	
Se	78	2	72	0.052	ppb	0.052	75.32	4	2000	
(Se)	78	3	72	2.161	ppb	2.161	96.84	28	2000	
Sr	88	3	72	247.486	ppb	247.486	1.14	119340	4000	
Mo	95	3	115	0.425	ppb	0.425	10.98	228	2000	
Ag	107	3	115	0.013	ppb	0.013	111.13	32	100	
Cd	111	3	115	0.016	ppb	0.016	86.60	3	2000	
Sn	120	3	115	0.215	ppb	0.215	13.80	545	2000	
Sb	121	3	115	0.101	ppb	0.101	42.64	173	1000	
Ba	137	3	115	268.171	ppb	268.171	1.30	55733	5000	
Tl	205	3	193	-0.016	ppb	-0.016	-30.11	105	2000	
(Pb)	206	3	193	2.922	ppb	2.922	2.43	3500	100	
(Pb)	207	3	193	2.961	ppb	2.961	2.79	3249	100	
Pb	208	3	193	2.966	ppb	2.966	0.49	14433	5000	
Th	232	3	193	-0.084	ppb	-0.084	-29.20	3997	2000	
U	238	3	193	-0.038	ppb	-0.038	-38.94	1356	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3435661	1.36	3486335	98.55	60	120	
Sc (IS)	45	3	HMI He	501932	0.54	518733	96.76	60	120	
Ge Internal standard	72	2	HMI H2	1954374	1.68	1896849	103.03	60	120	
Ge Internal standard	72	3	HMI He	607451	1.02	606605	100.14	60	120	
In Internal Standard	115	3	HMI He	2291354	1.47	2408797	95.12	60	120	
Ir (IS)	193	3	HMI He	5119442	1.23	5218365	98.10	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	192_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T19:59:50-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.298	ppb	3.170	2182	50	100.6	90	110	
Na	23	3	45	22.945	ppb	67.145	145387	51000	0.0	90	110	>+\-10%
Mg	24	3	45	936.449	ppb	0.879	55219	11000	8.5	90	110	>+\-10%
Al	27	3	45	1012.840	ppb	1.085	19126	1000	101.3	90	110	
K	39	3	45	1018.980	ppb	3.547	57274	11000	9.3	90	110	>+\-10%
Ca	40	2	45	960.630	ppb	2.227	575353	11000	8.7	90	110	>+\-10%
V	51	3	72	50.151	ppb	0.865	26537	50	100.3	90	110	
Cr	52	3	72	51.092	ppb	1.757	35325	50	102.2	90	110	
Mn	55	3	72	54.443	ppb	1.362	19075	50	108.9	90	110	
Fe	56	2	72	1049.823	ppb	1.840	1412129	1000	105.0	90	110	
Co	59	3	72	51.936	ppb	0.941	57393	50	103.9	90	110	
Ni	60	3	72	51.144	ppb	2.247	15851	50	102.3	90	110	
Cu	63	3	72	51.047	ppb	0.177	42644	50	102.1	90	110	
Zn	66	3	72	50.882	ppb	0.720	7527	50	101.8	90	110	
As	75	3	72	50.770	ppb	1.913	5068	50	101.5	90	110	
Se	78	2	72	51.469	ppb	2.187	2551	50	102.9	90	110	
(Se)	78	3	72	56.222	ppb	19.197	350	50	112.4	90	110	>+\-10%
Sr	88	3	72	98.388	ppb	0.386	47078	100	98.4	90	110	
Mo	95	3	115	52.354	ppb	2.473	23232	50	104.7	90	110	
Ag	107	3	115	52.179	ppb	2.650	77851	50	104.4	90	110	
Cd	111	3	115	50.975	ppb	3.155	11086	50	101.9	90	110	
Sn	120	3	115	51.531	ppb	2.232	33674	50	103.1	90	110	
Sb	121	3	115	51.393	ppb	1.499	33823	50	102.8	90	110	
Ba	137	3	115	51.984	ppb	4.530	10906	50	104.0	90	110	
Tl	205	3	193	49.636	ppb	0.109	173467	50	99.3	90	110	
(Pb)	206	3	193	49.648	ppb	0.828	58527	50	99.3	90	110	
(Pb)	207	3	193	50.131	ppb	1.294	51420	50	100.3	90	110	
Pb	208	3	193	49.601	ppb	0.467	234337	50	99.2	90	110	
Th	232	3	193	49.942	ppb	0.550	245100	50	99.9	90	110	
U	238	3	193	49.746	ppb	0.966	254284	50	99.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3526835	1.68	3486335	101.16	60	120	
Sc (IS)	45	3	HMI He	497719	0.87	518733	95.95	60	120	
Ge Internal standard	72	2	HMI H2	1945535	1.24	1896849	102.57	60	120	
Ge Internal standard	72	3	HMI He	590610	0.30	606605	97.36	60	120	
In Internal Standard	115	3	HMI He	2308258	1.78	2408797	95.83	60	120	
Ir (IS)	193	3	HMI He	5184132	0.45	5218365	99.34	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	193_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:01:42-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	#DIV/0!	0	0.5	
Na	23	3	45	-1100.287	ppb	-0.3	26030	25	
Mg	24	3	45	-51.461	ppb	-1.6	210	25	
Al	27	3	45	0.933	ppb	196.5	70	15	
K	39	3	45	-10.120	ppb	-262.2	16122	50	
V	51	3	72	-0.231	ppb	-15.6	110	1	
Cr	52	3	72	0.009	ppb	1091.9	1263	1	
Mn	55	3	72	3.066	ppb	11.8	1143	0.5	>RL
Co	59	3	72	0.015	ppb	110.6	45	0.5	
Ni	60	3	72	0.065	ppb	189.0	98	1	
Cu	63	3	72	-0.008	ppb	-260.8	245	1	
Zn	66	3	72	-0.355	ppb	-82.3	135	5	
As	75	3	72	-0.038	ppb	-448.8	27	1	
Se	78	2	72	0.014	ppb	296.6	2	1	
(Se)	78	3	72	-0.490	ppb	-201.5	12	1	
Sr	88	3	72	-3.249	ppb	-1.6	72	0.5	
Mo	95	3	115	0.071	ppb	22.9	73	0.5	
Ag	107	3	115	0.011	ppb	53.9	30	1	
Cd	111	3	115	0.000	ppb	#DIV/0!	0	0.5	
Sn	120	3	115	0.842	ppb	59.1	958	1	
Sb	121	3	115	0.024	ppb	127.5	125	0.6	
Ba	137	3	115	0.086	ppb	103.2	52	0.5	
Tl	205	3	193	-0.005	ppb	-156.9	145	0.1	
(Pb)	206	3	193	0.042	ppb	58.2	155	1	
(Pb)	207	3	193	0.013	ppb	201.1	282	1	
Pb	208	3	193	0.009	ppb	82.3	683	0.5	
Th	232	3	193	0.483	ppb	25.6	6775	1	
U	238	3	193	-0.008	ppb	-150.3	1528	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3512836	1.17	3486335	100.76	60	120	
Sc (IS)	45	3	HMI He	505781	1.89	518733	97.50	60	120	
Ge Internal standard	72	2	HMI H2	1885524	1.27	1896849	99.40	60	120	
Ge Internal standard	72	3	HMI He	584526	1.40	606605	96.36	60	120	
In Internal Standard	115	3	HMI He	2327407	2.57	2408797	96.62	60	120	
Ir (IS)	193	3	HMI He	5176738	2.12	5218365	99.20	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-9-a
Data File Name	194SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:03:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	173.21	2	2000	
Na	23	3	45	855.647	ppb	855.647	3.25	252527	400000	
Mg	24	3	45	7952.146	ppb	7952.146	1.42	480790	400000	
Al	27	3	45	5.809	ppb	5.809	18.13	174	400000	
K	39	3	45	7154.744	ppb	7154.744	0.37	327959	400000	
Ca	40	2	45	48266.373	ppb	48266.373	2.47	25378021	400000	
V	51	3	72	-0.167	ppb	-0.167	-26.72	160	2000	
Cr	52	3	72	-0.177	ppb	-0.177	-46.26	1274	5000	
Mn	55	3	72	5765.754	ppb	5765.754	2.38	2225342	10000	
Fe	56	2	72	154.192	ppb	154.192	1.33	216678	10000	
Co	59	3	72	0.058	ppb	0.058	39.73	103	2000	
Ni	60	3	72	0.972	ppb	0.972	10.45	420	5000	
Cu	63	3	72	190.324	ppb	190.324	1.11	175151	5000	
Zn	66	3	72	291.706	ppb	291.706	2.42	46761	5000	
As	75	3	72	1.374	ppb	1.374	6.37	185	2000	
Se	78	2	72	0.143	ppb	0.143	62.64	9	2000	
(Se)	78	3	72	0.056	ppb	0.056	3399.43	17	2000	
Sr	88	3	72	243.602	ppb	243.602	1.38	126393	4000	
Mo	95	3	115	0.309	ppb	0.309	23.76	192	2000	
Ag	107	3	115	0.024	ppb	0.024	21.36	52	100	
Cd	111	3	115	0.036	ppb	0.036	91.72	8	2000	
Sn	120	3	115	0.414	ppb	0.414	22.08	728	2000	
Sb	121	3	115	0.156	ppb	0.156	32.66	227	1000	
Ba	137	3	115	254.711	ppb	254.711	0.31	57273	5000	
Tl	205	3	193	-0.007	ppb	-0.007	-141.26	142	2000	
(Pb)	206	3	193	7.536	ppb	7.536	1.20	9422	100	
(Pb)	207	3	193	7.057	ppb	7.057	1.35	7842	100	
Pb	208	3	193	7.324	ppb	7.324	1.71	36893	5000	
Th	232	3	193	-0.031	ppb	-0.031	-144.53	4519	2000	
U	238	3	193	-0.020	ppb	-0.020	-57.29	1539	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3504662	2.36	3486335	100.53	60	120	
Sc (IS)	45	3	HMI He	536684	0.38	518733	103.46	60	120	
Ge Internal standard	72	2	HMI H2	1990744	2.02	1896849	104.95	60	120	
Ge Internal standard	72	3	HMI He	653503	0.77	606605	107.73	60	120	
In Internal Standard	115	3	HMI He	2478823	1.40	2408797	102.91	60	120	
Ir (IS)	193	3	HMI He	5442385	1.92	5218365	104.29	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-10-a
Data File Name	195SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:05:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	852.062	ppb	852.062	4.71	254181	400000	
Mg	24	3	45	8154.216	ppb	8154.216	1.43	496969	400000	
Al	27	3	45	4.110	ppb	4.110	36.22	140	400000	
K	39	3	45	7314.689	ppb	7314.689	1.10	337640	400000	
Ca	40	2	45	49826.232	ppb	49826.232	1.35	28047637	400000	
V	51	3	72	-0.173	ppb	-0.173	-32.69	157	2000	
Cr	52	3	72	-0.174	ppb	-0.174	-193.72	1278	5000	
Mn	55	3	72	5774.953	ppb	5774.953	1.35	2230597	10000	
Fe	56	2	72	154.648	ppb	154.648	3.28	232799	10000	
Co	59	3	72	0.028	ppb	0.028	44.41	67	2000	
Ni	60	3	72	0.226	ppb	0.226	44.97	165	5000	
Cu	63	3	72	67.321	ppb	67.321	1.00	62176	5000	
Zn	66	3	72	36.224	ppb	36.224	3.60	5993	5000	
As	75	3	72	1.828	ppb	1.828	15.72	235	2000	
Se	78	2	72	0.084	ppb	0.084	133.82	6	2000	
(Se)	78	3	72	0.311	ppb	0.311	707.54	18	2000	
Sr	88	3	72	254.005	ppb	254.005	1.35	131804	4000	
Mo	95	3	115	0.471	ppb	0.471	23.21	265	2000	
Ag	107	3	115	0.012	ppb	0.012	73.93	33	100	
Cd	111	3	115	0.015	ppb	0.015	86.60	3	2000	
Sn	120	3	115	0.391	ppb	0.391	33.04	703	2000	
Sb	121	3	115	0.078	ppb	0.078	46.42	170	1000	
Ba	137	3	115	276.780	ppb	276.780	0.96	61515	5000	
Tl	205	3	193	-0.007	ppb	-0.007	-180.05	145	2000	
(Pb)	206	3	193	2.344	ppb	2.344	4.91	3022	100	
(Pb)	207	3	193	2.206	ppb	2.206	1.53	2657	100	
Pb	208	3	193	2.266	ppb	2.266	3.59	11940	5000	
Th	232	3	193	-0.077	ppb	-0.077	-51.91	4302	2000	
U	238	3	193	-0.033	ppb	-0.033	-34.46	1476	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3750758	1.02	3486335	107.58	60	120	
Sc (IS)	45	3	HMI He	541086	0.34	518733	104.31	60	120	
Ge Internal standard	72	2	HMI H2	2133265	1.98	1896849	112.46	60	120	
Ge Internal standard	72	3	HMI He	653917	0.52	606605	107.80	60	120	
In Internal Standard	115	3	HMI He	2450226	1.45	2408797	101.72	60	120	
Ir (IS)	193	3	HMI He	5468716	0.18	5218365	104.80	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-11-a
Data File Name	196SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:07:23-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.074	ppb	0.074	86.61	3	2000	
Na	23	3	45	850.480	ppb	850.480	6.09	241723	400000	
Mg	24	3	45	7939.856	ppb	7939.856	1.81	460681	400000	
Al	27	3	45	4.099	ppb	4.099	28.87	133	400000	
K	39	3	45	7191.149	ppb	7191.149	2.62	316149	400000	
Ca	40	2	45	47982.656	ppb	47982.656	2.78	25980967	400000	
V	51	3	72	-0.242	ppb	-0.242	-15.92	112	2000	
Cr	52	3	72	-0.136	ppb	-0.136	-78.11	1248	5000	
Mn	55	3	72	5495.946	ppb	5495.946	1.86	2032779	10000	
Fe	56	2	72	142.858	ppb	142.858	1.85	203470	10000	
Co	59	3	72	0.044	ppb	0.044	10.28	83	2000	
Ni	60	3	72	1.132	ppb	1.132	11.89	453	5000	
Cu	63	3	72	130.317	ppb	130.317	1.21	115018	5000	
Zn	66	3	72	223.751	ppb	223.751	1.03	34429	5000	
As	75	3	72	0.906	ppb	0.906	37.49	127	2000	
Se	78	2	72	0.142	ppb	0.142	84.87	9	2000	
(Se)	78	3	72	-0.920	ppb	-0.920	-75.39	10	2000	
Sr	88	3	72	249.774	ppb	249.774	1.51	124144	4000	
Mo	95	3	115	0.421	ppb	0.421	27.51	233	2000	
Ag	107	3	115	0.022	ppb	0.022	16.38	47	100	
Cd	111	3	115	0.089	ppb	0.089	41.27	20	2000	
Sn	120	3	115	0.327	ppb	0.327	37.28	635	2000	
Sb	121	3	115	0.200	ppb	0.200	31.62	245	1000	
Ba	137	3	115	262.792	ppb	262.792	0.91	56072	5000	
Tl	205	3	193	-0.011	ppb	-0.011	-104.94	125	2000	
(Pb)	206	3	193	3.470	ppb	3.470	4.03	4240	100	
(Pb)	207	3	193	3.320	ppb	3.320	4.23	3700	100	
Pb	208	3	193	3.419	ppb	3.419	2.28	16966	5000	
Th	232	3	193	-0.116	ppb	-0.116	-8.66	3949	2000	
U	238	3	193	-0.026	ppb	-0.026	-71.29	1454	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3608559	1.47	3486335	103.51	60	120	
Sc (IS)	45	3	HMI He	515284	5.58	518733	99.34	60	120	
Ge Internal standard	72	2	HMI H2	2013643	0.87	1896849	106.16	60	120	
Ge Internal standard	72	3	HMI He	626558	6.25	606605	103.29	60	120	
In Internal Standard	115	3	HMI He	2351810	4.48	2408797	97.63	60	120	
Ir (IS)	193	3	HMI He	5255356	6.29	5218365	100.71	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-12-a
Data File Name	197SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:09:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	173.21	2	2000	
Na	23	3	45	973.605	ppb	973.605	3.69	271908	400000	
Mg	24	3	45	8288.445	ppb	8288.445	0.35	511910	400000	
Al	27	3	45	5.950	ppb	5.950	29.67	180	400000	
K	39	3	45	7446.326	ppb	7446.326	1.11	348019	400000	
Ca	40	2	45	50707.572	ppb	50707.572	1.53	29097747	400000	
V	51	3	72	-0.167	ppb	-0.167	-35.93	162	2000	
Cr	52	3	72	0.019	ppb	0.019	1070.24	1431	5000	
Mn	55	3	72	5795.681	ppb	5795.681	1.29	2256522	10000	
Fe	56	2	72	146.828	ppb	146.828	1.25	221133	10000	
Co	59	3	72	0.033	ppb	0.033	26.30	73	2000	
Ni	60	3	72	0.613	ppb	0.613	12.31	300	5000	
Cu	63	3	72	77.196	ppb	77.196	2.38	71826	5000	
Zn	66	3	72	54.335	ppb	54.335	3.75	8958	5000	
As	75	3	72	1.407	ppb	1.407	26.44	190	2000	
Se	78	2	72	0.107	ppb	0.107	19.48	7	2000	
(Se)	78	3	72	-0.472	ppb	-0.472	-240.33	13	2000	
Sr	88	3	72	262.273	ppb	262.273	0.50	137142	4000	
Mo	95	3	115	0.415	ppb	0.415	19.04	247	2000	
Ag	107	3	115	0.015	ppb	0.015	44.48	38	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.445	ppb	0.445	26.04	763	2000	
Sb	121	3	115	0.078	ppb	0.078	39.75	175	1000	
Ba	137	3	115	274.194	ppb	274.194	3.73	62829	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-48.13	143	2000	
(Pb)	206	3	193	2.527	ppb	2.527	4.24	3344	100	
(Pb)	207	3	193	2.625	ppb	2.625	6.05	3199	100	
Pb	208	3	193	2.558	ppb	2.558	3.55	13783	5000	
Th	232	3	193	-0.134	ppb	-0.134	-21.77	4132	2000	
U	238	3	193	-0.026	ppb	-0.026	-33.55	1558	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3824803	2.41	3486335	109.71	60	120	
Sc (IS)	45	3	HMI He	548378	0.64	518733	105.71	60	120	
Ge Internal standard	72	2	HMI H2	2130672	0.30	1896849	112.33	60	120	
Ge Internal standard	72	3	HMI He	659197	1.20	606605	108.67	60	120	
In Internal Standard	115	3	HMI He	2528102	3.22	2408797	104.95	60	120	
Ir (IS)	193	3	HMI He	5632123	2.60	5218365	107.93	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-13-a
Data File Name	198SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:11:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	861.428	ppb	861.428	3.19	250126	400000	
Mg	24	3	45	8129.805	ppb	8129.805	0.69	485560	400000	
Al	27	3	45	2.251	ppb	2.251	21.64	100	400000	
K	39	3	45	7312.940	ppb	7312.940	0.84	330815	400000	
Ca	40	2	45	51202.650	ppb	51202.650	3.44	26934568	400000	
V	51	3	72	-0.172	ppb	-0.172	-43.20	152	2000	
Cr	52	3	72	-0.113	ppb	-0.113	-101.14	1276	5000	
Mn	55	3	72	5777.983	ppb	5777.983	2.64	2152562	10000	
Fe	56	2	72	214.362	ppb	214.362	1.61	298922	10000	
Co	59	3	72	0.028	ppb	0.028	75.78	65	2000	
Ni	60	3	72	3.485	ppb	3.485	0.37	1233	5000	
Cu	63	3	72	153.750	ppb	153.750	0.72	136640	5000	
Zn	66	3	72	1917.244	ppb	1917.244	1.29	295572	5000	
As	75	3	72	1.654	ppb	1.654	4.24	208	2000	
Se	78	2	72	0.064	ppb	0.064	70.31	5	2000	
(Se)	78	3	72	0.410	ppb	0.410	296.22	18	2000	
Sr	88	3	72	254.618	ppb	254.618	1.18	127447	4000	
Mo	95	3	115	0.431	ppb	0.431	22.22	238	2000	
Ag	107	3	115	0.029	ppb	0.029	42.56	57	100	
Cd	111	3	115	0.148	ppb	0.148	66.82	33	2000	
Sn	120	3	115	0.470	ppb	0.470	45.69	733	2000	
Sb	121	3	115	0.095	ppb	0.095	44.72	175	1000	
Ba	137	3	115	277.696	ppb	277.696	1.72	59654	5000	
Tl	205	3	193	-0.010	ppb	-0.010	-60.74	127	2000	
(Pb)	206	3	193	6.800	ppb	6.800	2.62	8260	100	
(Pb)	207	3	193	6.889	ppb	6.889	4.62	7434	100	
Pb	208	3	193	6.838	ppb	6.838	1.80	33472	5000	
Th	232	3	193	-0.085	ppb	-0.085	-15.55	4115	2000	
U	238	3	193	-0.044	ppb	-0.044	-44.77	1369	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3506881	2.05	3486335	100.59	60	120	
Sc (IS)	45	3	HMI He	530241	1.43	518733	102.22	60	120	
Ge Internal standard	72	2	HMI H2	1988693	0.77	1896849	104.84	60	120	
Ge Internal standard	72	3	HMI He	630830	0.90	606605	103.99	60	120	
In Internal Standard	115	3	HMI He	2368400	1.83	2408797	98.32	60	120	
Ir (IS)	193	3	HMI He	5280647	1.87	5218365	101.19	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-14-a
Data File Name	199SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:13:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	173.21	2	2000	
Na	23	3	45	865.456	ppb	865.456	3.35	235166	400000	
Mg	24	3	45	8111.287	ppb	8111.287	2.10	454582	400000	
Al	27	3	45	2.404	ppb	2.404	14.87	97	400000	
K	39	3	45	7208.509	ppb	7208.509	1.99	306194	400000	
Ca	40	2	45	48375.972	ppb	48375.972	0.14	25622662	400000	
V	51	3	72	-0.197	ppb	-0.197	-33.66	130	2000	
Cr	52	3	72	-0.092	ppb	-0.092	-141.55	1219	5000	
Mn	55	3	72	5770.630	ppb	5770.630	1.60	2032643	10000	
Fe	56	2	72	249.317	ppb	249.317	0.98	337042	10000	
Co	59	3	72	0.024	ppb	0.024	41.68	57	2000	
Ni	60	3	72	0.144	ppb	0.144	9.51	125	5000	
Cu	63	3	72	67.345	ppb	67.345	0.70	56729	5000	
Zn	66	3	72	28.021	ppb	28.021	1.87	4270	5000	
As	75	3	72	1.636	ppb	1.636	27.24	195	2000	
Se	78	2	72	0.080	ppb	0.080	153.77	5	2000	
(Se)	78	3	72	1.957	ppb	1.957	24.74	27	2000	
Sr	88	3	72	252.979	ppb	252.979	0.27	119732	4000	
Mo	95	3	115	0.428	ppb	0.428	21.12	233	2000	
Ag	107	3	115	0.008	ppb	0.008	38.94	25	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.641	ppb	0.641	11.76	831	2000	
Sb	121	3	115	0.031	ppb	0.031	34.21	130	1000	
Ba	137	3	115	261.486	ppb	261.486	1.15	55213	5000	
Tl	205	3	193	-0.017	ppb	-0.017	-37.18	102	2000	
(Pb)	206	3	193	4.828	ppb	4.828	1.31	5705	100	
(Pb)	207	3	193	4.756	ppb	4.756	0.46	5049	100	
Pb	208	3	193	4.667	ppb	4.667	0.82	22308	5000	
Th	232	3	193	-0.109	ppb	-0.109	-12.43	3872	2000	
U	238	3	193	-0.031	ppb	-0.031	-54.41	1389	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3529098	0.89	3486335	101.23	60	120	
Sc (IS)	45	3	HMI He	497629	1.69	518733	95.93	60	120	
Ge Internal standard	72	2	HMI H2	1932866	1.04	1896849	101.90	60	120	
Ge Internal standard	72	3	HMI He	596384	0.60	606605	98.32	60	120	
In Internal Standard	115	3	HMI He	2327769	1.27	2408797	96.64	60	120	
Ir (IS)	193	3	HMI He	5110052	0.45	5218365	97.92	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-15-a
Data File Name	200SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:14:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	824.219	ppb	824.219	5.17	251372	400000	
Mg	24	3	45	8022.565	ppb	8022.565	1.24	489828	400000	
Al	27	3	45	1.655	ppb	1.655	0.89	90	400000	
K	39	3	45	7187.333	ppb	7187.333	1.01	332621	400000	
Ca	40	2	45	49109.561	ppb	49109.561	2.58	28466293	400000	
V	51	3	72	-0.176	ppb	-0.176	-41.12	155	2000	
Cr	52	3	72	-0.137	ppb	-0.137	-129.31	1304	5000	
Mn	55	3	72	5585.035	ppb	5585.035	1.32	2156990	10000	
Fe	56	2	72	210.548	ppb	210.548	1.97	312384	10000	
Co	59	3	72	0.040	ppb	0.040	77.22	82	2000	
Ni	60	3	72	1.265	ppb	1.265	5.11	520	5000	
Cu	63	3	72	220.401	ppb	220.401	0.98	202908	5000	
Zn	66	3	72	378.343	ppb	378.343	0.27	60629	5000	
As	75	3	72	1.782	ppb	1.782	7.38	230	2000	
Se	78	2	72	0.022	ppb	0.022	98.56	3	2000	
(Se)	78	3	72	0.553	ppb	0.553	234.05	20	2000	
Sr	88	3	72	246.572	ppb	246.572	0.93	127990	4000	
Mo	95	3	115	0.406	ppb	0.406	18.91	238	2000	
Ag	107	3	115	0.024	ppb	0.024	5.14	52	100	
Cd	111	3	115	0.057	ppb	0.057	109.35	13	2000	
Sn	120	3	115	0.597	ppb	0.597	3.90	856	2000	
Sb	121	3	115	0.244	ppb	0.244	41.01	290	1000	
Ba	137	3	115	266.793	ppb	266.793	1.61	60115	5000	
Tl	205	3	193	-0.019	ppb	-0.019	-48.58	100	2000	
(Pb)	206	3	193	9.740	ppb	9.740	3.12	12458	100	
(Pb)	207	3	193	9.583	ppb	9.583	3.33	10824	100	
Pb	208	3	193	9.566	ppb	9.566	0.74	49240	5000	
Th	232	3	193	-0.135	ppb	-0.135	-16.60	4094	2000	
U	238	3	193	-0.030	ppb	-0.030	-70.11	1524	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3863347	1.52	3486335	110.81	60	120	
Sc (IS)	45	3	HMI He	541981	0.34	518733	104.48	60	120	
Ge Internal standard	72	2	HMI H2	2115528	1.02	1896849	111.53	60	120	
Ge Internal standard	72	3	HMI He	653874	0.55	606605	107.79	60	120	
In Internal Standard	115	3	HMI He	2484510	1.87	2408797	103.14	60	120	
Ir (IS)	193	3	HMI He	5584374	1.13	5218365	107.01	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-15-b ms
Data File Name	201SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:16:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	39.758	ppb	39.758	5.56	1834	2000	
Na	23	3	45	1589.820	ppb	1589.820	0.75	338501	400000	
Mg	24	3	45	8692.092	ppb	8692.092	1.19	527616	400000	
Al	27	3	45	776.540	ppb	776.540	1.56	15895	400000	
K	39	3	45	7949.477	ppb	7949.477	1.75	364069	400000	
Ca	40	2	45	48898.241	ppb	48898.241	0.78	27717471	400000	
V	51	3	72	39.136	ppb	39.136	3.56	22781	2000	
Cr	52	3	72	40.702	ppb	40.702	2.02	31173	5000	
Mn	55	3	72	5652.858	ppb	5652.858	2.65	2164341	10000	
Fe	56	2	72	1035.384	ppb	1035.384	1.64	1492264	10000	
Co	59	3	72	39.376	ppb	39.376	2.79	47762	2000	
Ni	60	3	72	39.393	ppb	39.393	3.08	13418	5000	
Cu	63	3	72	260.509	ppb	260.509	1.64	237736	5000	
Zn	66	3	72	418.875	ppb	418.875	1.21	66530	5000	
As	75	3	72	40.997	ppb	40.997	4.68	4499	2000	
Se	78	2	72	41.821	ppb	41.821	2.41	2222	2000	
(Se)	78	3	72	36.794	ppb	36.794	14.54	257	2000	
Sr	88	3	72	325.352	ppb	325.352	1.53	166894	4000	
Mo	95	3	115	41.471	ppb	41.471	1.98	19464	2000	
Ag	107	3	115	41.207	ppb	41.207	0.17	65004	100	
Cd	111	3	115	39.852	ppb	39.852	0.56	9164	2000	
Sn	120	3	115	40.470	ppb	40.470	0.18	28052	2000	
Sb	121	3	115	40.317	ppb	40.317	1.99	28074	1000	
Ba	137	3	115	308.437	ppb	308.437	1.64	68253	5000	
Tl	205	3	193	39.911	ppb	39.911	2.24	146338	2000	
(Pb)	206	3	193	49.398	ppb	49.398	1.76	61086	100	
(Pb)	207	3	193	49.241	ppb	49.241	0.96	52989	100	
Pb	208	3	193	49.027	ppb	49.027	1.71	242984	5000	
Th	232	3	193	39.098	ppb	39.098	0.48	202322	2000	
U	238	3	193	39.423	ppb	39.423	2.19	211718	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3776985	0.50	3486335	108.34	60	120	
Sc (IS)	45	3	HMI He	539167	1.21	518733	103.94	60	120	
Ge Internal standard	72	2	HMI H2	2084886	1.37	1896849	109.91	60	120	
Ge Internal standard	72	3	HMI He	648409	1.96	606605	106.89	60	120	
In Internal Standard	115	3	HMI He	2439707	0.32	2408797	101.28	60	120	
Ir (IS)	193	3	HMI He	5439190	1.80	5218365	104.23	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-15-c msd
Data File Name	202SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:18:43-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.994	ppb	40.994	3.34	1874	2000	
Na	23	3	45	1668.209	ppb	1668.209	2.16	316017	400000	
Mg	24	3	45	8885.206	ppb	8885.206	1.23	490356	400000	
Al	27	3	45	764.425	ppb	764.425	2.47	14228	400000	
K	39	3	45	8106.291	ppb	8106.291	0.32	337294	400000	
Ca	40	2	45	49731.435	ppb	49731.435	0.47	27445169	400000	
V	51	3	72	39.893	ppb	39.893	1.40	21009	2000	
Cr	52	3	72	40.297	ppb	40.297	0.81	27936	5000	
Mn	55	3	72	5921.375	ppb	5921.375	0.62	2051286	10000	
Fe	56	2	72	999.597	ppb	999.597	0.81	1447663	10000	
Co	59	3	72	39.549	ppb	39.549	1.97	43405	2000	
Ni	60	3	72	39.992	ppb	39.992	0.66	12326	5000	
Cu	63	3	72	266.112	ppb	266.112	1.42	219691	5000	
Zn	66	3	72	426.180	ppb	426.180	2.00	61230	5000	
As	75	3	72	40.763	ppb	40.763	3.62	4047	2000	
Se	78	2	72	40.798	ppb	40.798	5.08	2176	2000	
(Se)	78	3	72	43.396	ppb	43.396	11.10	272	2000	
Sr	88	3	72	331.165	ppb	331.165	1.93	153647	4000	
Mo	95	3	115	41.793	ppb	41.793	2.80	17901	2000	
Ag	107	3	115	41.968	ppb	41.968	2.29	60418	100	
Cd	111	3	115	40.633	ppb	40.633	2.60	8527	2000	
Sn	120	3	115	41.944	ppb	41.944	3.38	26518	2000	
Sb	121	3	115	40.965	ppb	40.965	1.97	26031	1000	
Ba	137	3	115	316.759	ppb	316.759	2.02	63969	5000	
Tl	205	3	193	39.836	ppb	39.836	0.52	136345	2000	
(Pb)	206	3	193	49.162	ppb	49.162	1.00	56748	100	
(Pb)	207	3	193	49.308	ppb	49.308	1.21	49523	100	
Pb	208	3	193	49.030	ppb	49.030	0.71	226821	5000	
Th	232	3	193	39.392	ppb	39.392	0.82	190210	2000	
U	238	3	193	39.408	ppb	39.408	1.26	197563	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3677362	0.80	3486335	105.48	60	120	
Sc (IS)	45	3	HMI He	490242	0.57	518733	94.51	60	120	
Ge Internal standard	72	2	HMI H2	2094538	1.79	1896849	110.42	60	120	
Ge Internal standard	72	3	HMI He	586523	0.79	606605	96.69	60	120	
In Internal Standard	115	3	HMI He	2226746	0.76	2408797	92.44	60	120	
Ir (IS)	193	3	HMI He	5076000	0.51	5218365	97.27	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	203_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:20:34-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.544	ppb	5.209	2209	50	95.1	90	110	
Na	23	3	45	31.772	ppb	63.908	153065	51000	0.1	90	110	>+\-10%
Mg	24	3	45	950.784	ppb	0.551	58596	11000	8.6	90	110	>+\-10%
Al	27	3	45	1026.953	ppb	2.314	20282	1000	102.7	90	110	
K	39	3	45	1023.924	ppb	5.427	60125	11000	9.3	90	110	>+\-10%
Ca	40	2	45	973.148	ppb	3.514	606064	11000	8.8	90	110	>+\-10%
V	51	3	72	50.260	ppb	1.963	27932	50	100.5	90	110	
Cr	52	3	72	51.116	ppb	0.566	37123	50	102.2	90	110	
Mn	55	3	72	56.153	ppb	0.527	20663	50	112.3	90	110	>+\-10%
Fe	56	2	72	1051.453	ppb	1.250	1448801	1000	105.1	90	110	
Co	59	3	72	51.201	ppb	1.594	59434	50	102.4	90	110	
Ni	60	3	72	51.588	ppb	2.273	16792	50	103.2	90	110	
Cu	63	3	72	51.652	ppb	0.264	45321	50	103.3	90	110	
Zn	66	3	72	50.746	ppb	1.656	7885	50	101.5	90	110	
As	75	3	72	49.363	ppb	4.871	5178	50	98.7	90	110	
Se	78	2	72	52.071	ppb	4.194	2643	50	104.1	90	110	
(Se)	78	3	72	45.167	ppb	16.288	298	50	90.3	90	110	
Sr	88	3	72	97.527	ppb	0.873	49030	100	97.5	90	110	
Mo	95	3	115	52.062	ppb	2.459	23908	50	104.1	90	110	
Ag	107	3	115	52.784	ppb	1.078	81503	50	105.6	90	110	
Cd	111	3	115	51.219	ppb	2.063	11528	50	102.4	90	110	
Sn	120	3	115	52.295	ppb	1.692	35357	50	104.6	90	110	
Sb	121	3	115	51.747	ppb	1.829	35241	50	103.5	90	110	
Ba	137	3	115	51.476	ppb	1.882	11181	50	103.0	90	110	
Tl	205	3	193	50.465	ppb	0.587	181645	50	100.9	90	110	
(Pb)	206	3	193	50.800	ppb	0.926	61675	50	101.6	90	110	
(Pb)	207	3	193	50.820	ppb	0.226	53682	50	101.6	90	110	
Pb	208	3	193	50.611	ppb	0.228	246257	50	101.2	90	110	
Th	232	3	193	51.183	ppb	1.176	258592	50	102.4	90	110	
U	238	3	193	50.294	ppb	0.592	264775	50	100.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3674088	2.65	3486335	105.39	60	120	
Sc (IS)	45	3	HMI He	520635	0.73	518733	100.37	60	120	
Ge Internal standard	72	2	HMI H2	1993325	1.86	1896849	105.09	60	120	
Ge Internal standard	72	3	HMI He	620376	0.62	606605	102.27	60	120	
In Internal Standard	115	3	HMI He	2388268	1.04	2408797	99.15	60	120	
Ir (IS)	193	3	HMI He	5339420	0.22	5218365	102.32	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	204_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:22:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.038	ppb	173.2	2	0.5	
Na	23	3	45	-1093.196	ppb	-0.8	25916	25	
Mg	24	3	45	-51.204	ppb	-0.9	217	25	
Al	27	3	45	1.591	ppb	59.6	80	15	
K	39	3	45	3.575	ppb	556.9	16146	50	
V	51	3	72	-0.239	ppb	-30.6	100	1	
Cr	52	3	72	-0.036	ppb	-395.9	1168	1	
Mn	55	3	72	3.317	ppb	2.6	1164	0.5	>RL
Co	59	3	72	0.017	ppb	32.0	45	0.5	
Ni	60	3	72	0.179	ppb	59.7	127	1	
Cu	63	3	72	-0.016	ppb	-735.1	227	1	
Zn	66	3	72	-0.436	ppb	-20.3	117	5	
As	75	3	72	-0.041	ppb	-354.8	25	1	
Se	78	2	72	0.096	ppb	43.4	6	1	
(Se)	78	3	72	-1.291	ppb	-104.5	7	1	
Sr	88	3	72	-3.152	ppb	-2.7	110	0.5	
Mo	95	3	115	0.032	ppb	123.7	53	0.5	
Ag	107	3	115	0.022	ppb	41.1	43	1	
Cd	111	3	115	0.000	ppb	#DIV/0!	0	0.5	
Sn	120	3	115	0.487	ppb	14.3	700	1	
Sb	121	3	115	0.071	ppb	5.5	150	0.6	
Ba	137	3	115	0.136	ppb	78.1	60	0.5	
Tl	205	3	193	0.008	ppb	73.4	180	0.1	
(Pb)	206	3	193	0.015	ppb	143.4	118	1	
(Pb)	207	3	193	0.017	ppb	419.2	273	1	
Pb	208	3	193	0.016	ppb	114.8	688	0.5	
Th	232	3	193	0.573	ppb	30.3	6900	1	
U	238	3	193	-0.019	ppb	-99.4	1404	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3552622	0.11	3486335	101.90	60	120	
Sc (IS)	45	3	HMI He	489151	0.53	518733	94.30	60	120	
Ge Internal standard	72	2	HMI H2	1908517	0.40	1896849	100.62	60	120	
Ge Internal standard	72	3	HMI He	554013	1.23	606605	91.33	60	120	
In Internal Standard	115	3	HMI He	2230696	1.81	2408797	92.61	60	120	
Ir (IS)	193	3	HMI He	4956688	0.86	5218365	94.99	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-1-a
Data File Name	205SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:24:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.037	ppb	0.037	173.21	2	2000	
Na	23	3	45	2939.408	ppb	2939.408	0.26	476880	400000	
Mg	24	3	45	4678.140	ppb	4678.140	1.18	275400	400000	
Al	27	3	45	3.547	ppb	3.547	35.65	123	400000	
K	39	3	45	1719.931	ppb	1719.931	0.82	89322	400000	
Ca	40	2	45	18723.443	ppb	18723.443	1.44	10055025	400000	
V	51	3	72	-0.193	ppb	-0.193	-30.36	138	2000	
Cr	52	3	72	-0.071	ppb	-0.071	-130.23	1291	5000	
Mn	55	3	72	18.096	ppb	18.096	5.83	6758	10000	
Fe	56	2	72	25.388	ppb	25.388	2.11	40831	10000	
Co	59	3	72	0.015	ppb	0.015	71.35	48	2000	
Ni	60	3	72	0.851	ppb	0.851	25.18	361	5000	
Cu	63	3	72	251.178	ppb	251.178	1.09	220615	5000	
Zn	66	3	72	42.061	ppb	42.061	4.02	6608	5000	
As	75	3	72	0.151	ppb	0.151	39.77	48	2000	
Se	78	2	72	0.347	ppb	0.347	5.47	19	2000	
(Se)	78	3	72	0.984	ppb	0.984	264.16	22	2000	
Sr	88	3	72	99.653	ppb	99.653	2.31	50348	4000	
Mo	95	3	115	0.050	ppb	0.050	78.47	65	2000	
Ag	107	3	115	0.025	ppb	0.025	34.07	52	100	
Cd	111	3	115	0.022	ppb	0.022	100.71	5	2000	
Sn	120	3	115	0.175	ppb	0.175	17.05	538	2000	
Sb	121	3	115	0.086	ppb	0.086	45.85	170	1000	
Ba	137	3	115	14.549	ppb	14.549	5.65	3167	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-423.23	158	2000	
(Pb)	206	3	193	1.702	ppb	1.702	4.50	2159	100	
(Pb)	207	3	193	1.698	ppb	1.698	13.90	2046	100	
Pb	208	3	193	1.664	ppb	1.664	5.01	8685	5000	
Th	232	3	193	0.018	ppb	0.018	298.50	4652	2000	
U	238	3	193	-0.020	ppb	-0.020	-72.79	1498	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3563291	1.64	3486335	102.21	60	120	
Sc (IS)	45	3	HMI He	520051	1.42	518733	100.25	60	120	
Ge Internal standard	72	2	HMI H2	2028080	1.32	1896849	106.92	60	120	
Ge Internal standard	72	3	HMI He	623952	0.99	606605	102.86	60	120	
In Internal Standard	115	3	HMI He	2374543	1.13	2408797	98.58	60	120	
Ir (IS)	193	3	HMI He	5310874	2.56	5218365	101.77	60	120	

Sample Report

Sample Table

Sample Name	280-171741-a-2-a
Data File Name	206SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:26:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.072	ppb	0.072	86.60	3	2000	
Na	23	3	45	2878.539	ppb	2878.539	0.74	471953	400000	
Mg	24	3	45	4611.256	ppb	4611.256	1.29	272584	400000	
Al	27	3	45	5.712	ppb	5.712	42.39	167	400000	
K	39	3	45	1686.781	ppb	1686.781	3.99	88267	400000	
Ca	40	2	45	18104.431	ppb	18104.431	0.70	10208062	400000	
V	51	3	72	-0.137	ppb	-0.137	-22.36	168	2000	
Cr	52	3	72	0.185	ppb	0.185	40.83	1463	5000	
Mn	55	3	72	18.224	ppb	18.224	4.23	6765	10000	
Fe	56	2	72	27.414	ppb	27.414	2.64	43656	10000	
Co	59	3	72	0.035	ppb	0.035	17.80	72	2000	
Ni	60	3	72	1.296	ppb	1.296	10.51	503	5000	
Cu	63	3	72	241.424	ppb	241.424	0.35	210844	5000	
Zn	66	3	72	32.900	ppb	32.900	1.90	5182	5000	
As	75	3	72	0.185	ppb	0.185	28.93	52	2000	
Se	78	2	72	0.270	ppb	0.270	22.77	15	2000	
(Se)	78	3	72	-0.874	ppb	-0.874	-158.31	10	2000	
Sr	88	3	72	97.776	ppb	97.776	0.81	49152	4000	
Mo	95	3	115	0.064	ppb	0.064	49.50	72	2000	
Ag	107	3	115	0.023	ppb	0.023	31.28	48	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.140	ppb	0.140	80.53	515	2000	
Sb	121	3	115	0.059	ppb	0.059	50.24	152	1000	
Ba	137	3	115	13.739	ppb	13.739	5.78	2991	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-77.68	140	2000	
(Pb)	206	3	193	1.079	ppb	1.079	3.61	1386	100	
(Pb)	207	3	193	1.036	ppb	1.036	7.63	1334	100	
Pb	208	3	193	1.044	ppb	1.044	0.51	5601	5000	
Th	232	3	193	-0.049	ppb	-0.049	-65.20	4244	2000	
U	238	3	193	-0.005	ppb	-0.005	-351.57	1554	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3740189	0.07	3486335	107.28	60	120	
Sc (IS)	45	3	HMI He	522097	0.28	518733	100.65	60	120	
Ge Internal standard	72	2	HMI H2	2027797	0.88	1896849	106.90	60	120	
Ge Internal standard	72	3	HMI He	620354	0.54	606605	102.27	60	120	
In Internal Standard	115	3	HMI He	2374569	2.16	2408797	98.58	60	120	
Ir (IS)	193	3	HMI He	5220930	0.74	5218365	100.05	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-5-b
Data File Name	207SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:28:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	173.21	2	2000	
Na	23	3	45	3016.881	ppb	3016.881	2.16	499645	400000	
Mg	24	3	45	4699.277	ppb	4699.277	1.25	284668	400000	
Al	27	3	45	7.167	ppb	7.167	46.29	200	400000	
K	39	3	45	1710.019	ppb	1710.019	0.46	91491	400000	
Ca	40	2	45	18776.156	ppb	18776.156	1.86	10615430	400000	
V	51	3	72	-0.229	ppb	-0.229	-8.39	123	2000	
Cr	52	3	72	-0.172	ppb	-0.172	-64.01	1268	5000	
Mn	55	3	72	15.707	ppb	15.707	1.37	6108	10000	
Fe	56	2	72	47.282	ppb	47.282	1.11	76278	10000	
Co	59	3	72	0.030	ppb	0.030	21.16	68	2000	
Ni	60	3	72	3.572	ppb	3.572	7.68	1296	5000	
Cu	63	3	72	236.802	ppb	236.802	1.72	216180	5000	
Zn	66	3	72	59.436	ppb	59.436	1.07	9620	5000	
As	75	3	72	0.286	ppb	0.286	26.87	65	2000	
Se	78	2	72	0.324	ppb	0.324	41.26	19	2000	
(Se)	78	3	72	-0.190	ppb	-0.190	-789.90	15	2000	
Sr	88	3	72	99.062	ppb	99.062	1.52	52033	4000	
Mo	95	3	115	0.066	ppb	0.066	65.59	77	2000	
Ag	107	3	115	0.014	ppb	0.014	56.94	37	100	
Cd	111	3	115	0.007	ppb	0.007	173.21	2	2000	
Sn	120	3	115	0.307	ppb	0.307	11.39	661	2000	
Sb	121	3	115	0.138	ppb	0.138	16.52	217	1000	
Ba	137	3	115	14.030	ppb	14.030	1.70	3227	5000	
Tl	205	3	193	-0.014	ppb	-0.014	-62.78	117	2000	
(Pb)	206	3	193	1.942	ppb	1.942	3.20	2502	100	
(Pb)	207	3	193	1.909	ppb	1.909	2.04	2319	100	
Pb	208	3	193	1.951	ppb	1.951	2.28	10290	5000	
Th	232	3	193	-0.060	ppb	-0.060	-59.52	4357	2000	
U	238	3	193	-0.033	ppb	-0.033	-20.00	1464	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3751912	1.51	3486335	107.62	60	120	
Sc (IS)	45	3	HMI He	535178	0.97	518733	103.17	60	120	
Ge Internal standard	72	2	HMI H2	2166252	2.40	1896849	114.20	60	120	
Ge Internal standard	72	3	HMI He	648507	1.01	606605	106.91	60	120	
In Internal Standard	115	3	HMI He	2508977	1.09	2408797	104.16	60	120	
Ir (IS)	193	3	HMI He	5424705	0.33	5218365	103.95	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-5-c ms
Data File Name	208SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:30:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.690	ppb	40.690	5.66	1774	2000	
Na	23	3	45	3708.781	ppb	3708.781	1.41	539349	400000	
Mg	24	3	45	5360.280	ppb	5360.280	1.41	302069	400000	
Al	27	3	45	779.886	ppb	779.886	1.90	14763	400000	
K	39	3	45	2475.260	ppb	2475.260	1.61	116069	400000	
Ca	40	2	45	18874.272	ppb	18874.272	1.25	10165406	400000	
V	51	3	72	39.645	ppb	39.645	0.59	21437	2000	
Cr	52	3	72	39.775	ppb	39.775	3.55	28320	5000	
Mn	55	3	72	54.374	ppb	54.374	3.29	19424	10000	
Fe	56	2	72	841.862	ppb	841.862	1.40	1119711	10000	
Co	59	3	72	39.103	ppb	39.103	1.51	44060	2000	
Ni	60	3	72	41.382	ppb	41.382	0.66	13091	5000	
Cu	63	3	72	276.975	ppb	276.975	1.04	234752	5000	
Zn	66	3	72	93.725	ppb	93.725	3.74	13973	5000	
As	75	3	72	39.303	ppb	39.303	2.81	4009	2000	
Se	78	2	72	41.506	ppb	41.506	3.26	2033	2000	
(Se)	78	3	72	35.324	ppb	35.324	16.77	230	2000	
Sr	88	3	72	175.532	ppb	175.532	0.22	84375	4000	
Mo	95	3	115	41.046	ppb	41.046	2.63	18096	2000	
Ag	107	3	115	41.178	ppb	41.178	1.98	61011	100	
Cd	111	3	115	39.850	ppb	39.850	2.85	8607	2000	
Sn	120	3	115	40.400	ppb	40.400	0.35	26309	2000	
Sb	121	3	115	40.405	ppb	40.405	0.60	26430	1000	
Ba	137	3	115	54.206	ppb	54.206	1.25	11296	5000	
Tl	205	3	193	39.534	ppb	39.534	1.32	137219	2000	
(Pb)	206	3	193	41.175	ppb	41.175	1.51	48209	100	
(Pb)	207	3	193	41.505	ppb	41.505	0.99	42314	100	
Pb	208	3	193	41.397	ppb	41.397	0.25	194291	5000	
Th	232	3	193	38.783	ppb	38.783	0.41	189964	2000	
U	238	3	193	39.626	ppb	39.626	0.54	201434	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3573531	0.64	3486335	102.50	60	120	
Sc (IS)	45	3	HMI He	498536	0.50	518733	96.11	60	120	
Ge Internal standard	72	2	HMI H2	1922436	2.06	1896849	101.35	60	120	
Ge Internal standard	72	3	HMI He	602182	1.20	606605	99.27	60	120	
In Internal Standard	115	3	HMI He	2292011	1.80	2408797	95.15	60	120	
Ir (IS)	193	3	HMI He	5147261	0.42	5218365	98.64	60	120	

Sample Report

Sample Table

Sample Name	280-171739-a-5-d msd
Data File Name	209SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:31:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600571 200.8
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	41.457	ppb	41.457	5.14	1843	2000	
Na	23	3	45	3674.047	ppb	3674.047	2.98	550585	400000	
Mg	24	3	45	5339.142	ppb	5339.142	2.21	309278	400000	
Al	27	3	45	785.990	ppb	785.990	3.32	15297	400000	
K	39	3	45	2455.714	ppb	2455.714	3.57	118472	400000	
Ca	40	2	45	19014.698	ppb	19014.698	0.56	10261457	400000	
V	51	3	72	39.780	ppb	39.780	2.67	22127	2000	
Cr	52	3	72	40.286	ppb	40.286	2.87	29493	5000	
Mn	55	3	72	54.670	ppb	54.670	0.97	20100	10000	
Fe	56	2	72	849.462	ppb	849.462	1.15	1172286	10000	
Co	59	3	72	39.728	ppb	39.728	1.83	46057	2000	
Ni	60	3	72	42.404	ppb	42.404	0.33	13803	5000	
Cu	63	3	72	273.348	ppb	273.348	1.91	238349	5000	
Zn	66	3	72	96.802	ppb	96.802	4.00	14836	5000	
As	75	3	72	38.914	ppb	38.914	4.85	4082	2000	
Se	78	2	72	40.961	ppb	40.961	1.09	2081	2000	
(Se)	78	3	72	35.372	ppb	35.372	23.17	237	2000	
Sr	88	3	72	174.570	ppb	174.570	2.88	86319	4000	
Mo	95	3	115	40.942	ppb	40.942	2.45	18637	2000	
Ag	107	3	115	41.302	ppb	41.302	0.49	63178	100	
Cd	111	3	115	40.140	ppb	40.140	1.08	8950	2000	
Sn	120	3	115	40.306	ppb	40.306	0.52	27094	2000	
Sb	121	3	115	40.133	ppb	40.133	2.30	27094	1000	
Ba	137	3	115	54.723	ppb	54.723	2.25	11771	5000	
Tl	205	3	193	39.693	ppb	39.693	1.31	141909	2000	
(Pb)	206	3	193	41.354	ppb	41.354	2.81	49876	100	
(Pb)	207	3	193	41.243	ppb	41.243	1.56	43311	100	
Pb	208	3	193	41.294	ppb	41.294	2.56	199595	5000	
Th	232	3	193	39.472	ppb	39.472	2.73	199028	2000	
U	238	3	193	39.144	ppb	39.144	2.46	204954	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3580937	0.36	3486335	102.71	60	120	
Sc (IS)	45	3	HMI He	512676	3.14	518733	98.83	60	120	
Ge Internal standard	72	2	HMI H2	1994385	0.72	1896849	105.14	60	120	
Ge Internal standard	72	3	HMI He	619707	3.16	606605	102.16	60	120	
In Internal Standard	115	3	HMI He	2365682	1.25	2408797	98.21	60	120	
Ir (IS)	193	3	HMI He	5302961	2.61	5218365	101.62	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	210_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:33:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.072	ppb	2.079	2289	50	102.1	90	110	
Na	23	3	45	27.782	ppb	53.837	150168	51000	0.1	90	110	>+\-10%
Mg	24	3	45	942.535	ppb	0.532	57182	11000	8.6	90	110	>+\-10%
Al	27	3	45	1009.309	ppb	1.226	19613	1000	100.9	90	110	
K	39	3	45	992.818	ppb	0.445	57873	11000	9.0	90	110	>+\-10%
Ca	40	2	45	967.496	ppb	1.652	589565	11000	8.8	90	110	>+\-10%
V	51	3	72	51.792	ppb	1.978	27907	50	103.6	90	110	
Cr	52	3	72	51.025	ppb	0.468	35938	50	102.1	90	110	
Mn	55	3	72	53.140	ppb	2.421	18967	50	106.3	90	110	
Fe	56	2	72	1046.793	ppb	0.823	1454387	1000	104.7	90	110	
Co	59	3	72	51.218	ppb	1.379	57656	50	102.4	90	110	
Ni	60	3	72	50.613	ppb	2.133	15980	50	101.2	90	110	
Cu	63	3	72	52.344	ppb	0.453	44536	50	104.7	90	110	
Zn	66	3	72	49.474	ppb	3.064	7460	50	98.9	90	110	
As	75	3	72	49.722	ppb	1.647	5057	50	99.4	90	110	
Se	78	2	72	52.942	ppb	1.554	2710	50	105.9	90	110	
(Se)	78	3	72	52.123	ppb	4.269	332	50	104.2	90	110	
Sr	88	3	72	99.128	ppb	1.482	48300	100	99.1	90	110	
Mo	95	3	115	52.313	ppb	4.228	23661	50	104.6	90	110	
Ag	107	3	115	52.871	ppb	1.395	80416	50	105.7	90	110	
Cd	111	3	115	50.717	ppb	0.119	11246	50	101.4	90	110	
Sn	120	3	115	51.646	ppb	1.265	34405	50	103.3	90	110	
Sb	121	3	115	51.873	ppb	0.827	34798	50	103.7	90	110	
Ba	137	3	115	51.029	ppb	0.725	10917	50	102.1	90	110	
Tl	205	3	193	50.105	ppb	0.417	177827	50	100.2	90	110	
(Pb)	206	3	193	49.509	ppb	2.207	59264	50	99.0	90	110	
(Pb)	207	3	193	50.572	ppb	2.805	52666	50	101.1	90	110	
Pb	208	3	193	50.119	ppb	2.509	240430	50	100.2	90	110	
Th	232	3	193	50.974	ppb	1.875	253931	50	101.9	90	110	
U	238	3	193	50.257	ppb	2.160	260846	50	100.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3591155	1.75	3486335	103.01	60	120	
Sc (IS)	45	3	HMI He	512265	0.96	518733	98.75	60	120	
Ge Internal standard	72	2	HMI H2	2009589	1.48	1896849	105.94	60	120	
Ge Internal standard	72	3	HMI He	601603	0.51	606605	99.18	60	120	
In Internal Standard	115	3	HMI He	2352593	0.82	2408797	97.67	60	120	
Ir (IS)	193	3	HMI He	5264698	0.76	5218365	100.89	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	211_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-30T20:35:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	154CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.039	ppb	173.2	2	0.5	
Na	23	3	45	-1097.814	ppb	-0.3	25626	25	
Mg	24	3	45	-52.990	ppb	-0.3	120	25	
Al	27	3	45	1.909	ppb	56.6	87	15	
K	39	3	45	8.786	ppb	337.5	16470	50	
V	51	3	72	-0.183	ppb	-33.4	132	1	
Cr	52	3	72	-0.059	ppb	-203.6	1188	1	
Mn	55	3	72	1.308	ppb	13.8	521	0.5	>RL
Co	59	3	72	0.004	ppb	207.7	33	0.5	
Ni	60	3	72	0.101	ppb	72.7	107	1	
Cu	63	3	72	0.081	ppb	61.0	310	1	
Zn	66	3	72	-0.436	ppb	-47.7	120	5	
As	75	3	72	0.109	ppb	180.5	40	1	
Se	78	2	72	0.073	ppb	123.0	5	1	
(Se)	78	3	72	-0.165	ppb	-1307.6	13	1	
Sr	88	3	72	-3.265	ppb	-1.3	63	0.5	
Mo	95	3	115	0.025	ppb	121.6	52	0.5	
Ag	107	3	115	0.015	ppb	47.4	35	1	
Cd	111	3	115	0.000	ppb	#DIV/0!	0	0.5	
Sn	120	3	115	0.492	ppb	10.1	720	1	
Sb	121	3	115	0.061	ppb	25.9	147	0.6	
Ba	137	3	115	0.049	ppb	29.7	43	0.5	
Tl	205	3	193	0.011	ppb	45.9	197	0.1	
(Pb)	206	3	193	0.025	ppb	103.7	133	1	
(Pb)	207	3	193	0.004	ppb	328.5	268	1	
Pb	208	3	193	0.016	ppb	83.1	705	0.5	
Th	232	3	193	0.503	ppb	26.0	6768	1	
U	238	3	193	0.003	ppb	233.0	1558	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3431057	1.45	3486335	98.41	60	120	
Sc (IS)	45	3	HMI He	492828	0.71	518733	95.01	60	120	
Ge Internal standard	72	2	HMI H2	1835612	1.74	1896849	96.77	60	120	
Ge Internal standard	72	3	HMI He	570715	1.67	606605	94.08	60	120	
In Internal Standard	115	3	HMI He	2281049	1.83	2408797	94.70	60	120	
Ir (IS)	193	3	HMI He	5098326	1.49	5218365	97.70	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	212SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:25:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.082	ppb	0.082	86.63	3	2000	
Na	23	3	45	-1160.634	ppb	-1160.634	-0.49	17859	400000	
Mg	24	3	45	-53.819	ppb	-53.819	-0.32	70	400000	
Al	27	3	45	0.297	ppb	0.297	577.22	53	400000	
K	39	3	45	-37.165	ppb	-37.165	-36.49	13771	400000	
Ca	40	2	45	-114.522	ppb	-114.522	-0.78	7089	400000	
V	51	3	72	-0.334	ppb	-0.334	-7.41	52	2000	
Cr	52	3	72	-0.869	ppb	-0.869	-4.46	625	5000	
Mn	55	3	72	-0.083	ppb	-0.083	-41.02	50	10000	
Fe	56	2	72	-0.954	ppb	-0.954	-9.91	3591	10000	
Co	59	3	72	-0.007	ppb	-0.007	-155.84	20	2000	
Ni	60	3	72	-0.030	ppb	-0.030	-301.34	63	5000	
Cu	63	3	72	-0.166	ppb	-0.166	-20.64	105	5000	
Zn	66	3	72	-0.914	ppb	-0.914	-18.88	50	5000	
As	75	3	72	-0.071	ppb	-0.071	-224.49	22	2000	
Se	78	2	72	-0.013	ppb	-0.013	-186.85	1	2000	
(Se)	78	3	72	0.002	ppb	0.002	32649.77	13	2000	
Sr	88	3	72	-3.306	ppb	-3.306	-0.57	42	4000	
Mo	95	3	115	0.196	ppb	0.196	51.37	120	2000	
Ag	107	3	115	0.000	ppb	0.000	-1446.01	12	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.448	ppb	-0.448	-9.28	113	2000	
Sb	121	3	115	-0.149	ppb	-0.149	-5.13	10	1000	
Ba	137	3	115	-0.009	ppb	-0.009	-791.09	30	5000	
Tl	205	3	193	-0.019	ppb	-0.019	-31.87	92	2000	
(Pb)	206	3	193	-0.003	ppb	-0.003	-466.38	98	100	
(Pb)	207	3	193	0.621	ppb	0.621	7.60	861	100	
Pb	208	3	193	0.127	ppb	0.127	11.07	1184	5000	
Th	232	3	193	-0.161	ppb	-0.161	-25.90	3512	2000	
U	238	3	193	-0.064	ppb	-0.064	-36.41	1184	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3166644	2.78	3486335	90.83	60	120	
Sc (IS)	45	3	HMI He	463558	1.43	518733	89.36	60	120	
Ge Internal standard	72	2	HMI H2	1804357	1.45	1896849	95.12	60	120	
Ge Internal standard	72	3	HMI He	534925	1.50	606605	88.18	60	120	
In Internal Standard	115	3	HMI He	2173216	2.57	2408797	90.22	60	120	
Ir (IS)	193	3	HMI He	4949875	1.54	5218365	94.85	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	213SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:27:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	173.21	2	2000	
Na	23	3	45	-1171.277	ppb	-1171.277	-0.73	17916	400000	
Mg	24	3	45	-54.269	ppb	-54.269	-0.63	50	400000	
Al	27	3	45	-1.318	ppb	-1.318	-83.87	27	400000	
K	39	3	45	-52.696	ppb	-52.696	-29.41	14065	400000	
Ca	40	2	45	-116.418	ppb	-116.418	-0.22	6949	400000	
V	51	3	72	-0.361	ppb	-0.361	-6.13	42	2000	
Cr	52	3	72	-0.897	ppb	-0.897	-7.68	651	5000	
Mn	55	3	72	-0.104	ppb	-0.104	-32.54	47	10000	
Fe	56	2	72	-1.046	ppb	-1.046	-11.49	3728	10000	
Co	59	3	72	-0.005	ppb	-0.005	-282.54	23	2000	
Ni	60	3	72	-0.085	ppb	-0.085	-41.14	52	5000	
Cu	63	3	72	-0.165	ppb	-0.165	-18.37	113	5000	
Zn	66	3	72	-0.785	ppb	-0.785	-26.93	72	5000	
As	75	3	72	-0.156	ppb	-0.156	-56.81	15	2000	
Se	78	2	72	-0.014	ppb	-0.014	-159.46	1	2000	
(Se)	78	3	72	-1.032	ppb	-1.032	-129.35	8	2000	
Sr	88	3	72	-3.357	ppb	-3.357	-0.72	22	4000	
Mo	95	3	115	-0.026	ppb	-0.026	-120.42	30	2000	
Ag	107	3	115	-0.002	ppb	-0.002	-157.53	10	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.155	ppb	-0.155	-26.49	315	2000	
Sb	121	3	115	-0.148	ppb	-0.148	-3.23	12	1000	
Ba	137	3	115	-0.019	ppb	-0.019	-228.22	30	5000	
Tl	205	3	193	-0.012	ppb	-0.012	-99.53	120	2000	
(Pb)	206	3	193	-0.001	ppb	-0.001	-712.68	107	100	
(Pb)	207	3	193	0.328	ppb	0.328	10.35	616	100	
Pb	208	3	193	0.068	ppb	0.068	20.98	985	5000	
Th	232	3	193	-0.185	ppb	-0.185	-6.79	3640	2000	
U	238	3	193	-0.054	ppb	-0.054	-12.48	1323	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3553809	1.26	3486335	101.94	60	120	
Sc (IS)	45	3	HMI He	494562	2.35	518733	95.34	60	120	
Ge Internal standard	72	2	HMI H2	1933926	2.79	1896849	101.95	60	120	
Ge Internal standard	72	3	HMI He	573201	2.32	606605	94.49	60	120	
In Internal Standard	115	3	HMI He	2344067	2.73	2408797	97.31	60	120	
Ir (IS)	193	3	HMI He	5300577	2.59	5218365	101.58	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	214SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:28:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-1170.923	ppb	-1170.923	-0.68	17976	400000	
Mg	24	3	45	-53.973	ppb	-53.973	-0.71	67	400000	
Al	27	3	45	-1.151	ppb	-1.151	-39.41	30	400000	
K	39	3	45	-59.015	ppb	-59.015	-10.18	13854	400000	
Ca	40	2	45	-116.388	ppb	-116.388	-0.64	6945	400000	
V	51	3	72	-0.381	ppb	-0.381	-1.91	32	2000	
Cr	52	3	72	-0.922	ppb	-0.922	-12.71	645	5000	
Mn	55	3	72	-0.092	ppb	-0.092	-50.25	52	10000	
Fe	56	2	72	-0.903	ppb	-0.903	-12.07	4058	10000	
Co	59	3	72	-0.018	ppb	-0.018	-24.46	10	2000	
Ni	60	3	72	-0.083	ppb	-0.083	-72.81	53	5000	
Cu	63	3	72	-0.175	ppb	-0.175	-6.93	107	5000	
Zn	66	3	72	-0.945	ppb	-0.945	-2.54	50	5000	
As	75	3	72	-0.122	ppb	-0.122	-50.02	18	2000	
Se	78	2	72	0.011	ppb	0.011	349.95	2	2000	
(Se)	78	3	72	0.949	ppb	0.949	95.81	20	2000	
Sr	88	3	72	-3.333	ppb	-3.333	-0.40	33	4000	
Mo	95	3	115	-0.055	ppb	-0.055	-66.53	17	2000	
Ag	107	3	115	-0.003	ppb	-0.003	-59.73	8	100	
Cd	111	3	115	0.008	ppb	0.008	173.21	2	2000	
Sn	120	3	115	-0.300	ppb	-0.300	-23.13	217	2000	
Sb	121	3	115	-0.135	ppb	-0.135	-20.70	20	1000	
Ba	137	3	115	-0.052	ppb	-0.052	-219.07	23	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-134.55	132	2000	
(Pb)	206	3	193	0.001	ppb	0.001	2755.42	108	100	
(Pb)	207	3	193	0.146	ppb	0.146	52.78	423	100	
Pb	208	3	193	0.028	ppb	0.028	24.20	783	5000	
Th	232	3	193	-0.203	ppb	-0.203	-8.74	3512	2000	
U	238	3	193	-0.041	ppb	-0.041	-34.11	1374	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3546524	2.56	3486335	101.73	60	120	
Sc (IS)	45	3	HMI He	495489	5.09	518733	95.52	60	120	
Ge Internal standard	72	2	HMI H2	2003885	2.84	1896849	105.64	60	120	
Ge Internal standard	72	3	HMI He	580248	3.33	606605	95.66	60	120	
In Internal Standard	115	3	HMI He	2322990	4.05	2408797	96.44	60	120	
Ir (IS)	193	3	HMI He	5245906	3.03	5218365	100.53	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	215SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:30:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-1174.355	ppb	-1174.355	-0.40	17662	400000	
Mg	24	3	45	-53.670	ppb	-53.670	-1.63	83	400000	
Al	27	3	45	-1.844	ppb	-1.844	-60.90	17	400000	
K	39	3	45	-51.235	ppb	-51.235	-41.66	14171	400000	
Ca	40	2	45	-115.884	ppb	-115.884	-0.87	7286	400000	
V	51	3	72	-0.381	ppb	-0.381	-6.48	32	2000	
Cr	52	3	72	-0.981	ppb	-0.981	-4.82	605	5000	
Mn	55	3	72	-0.095	ppb	-0.095	-26.17	50	10000	
Fe	56	2	72	-1.010	ppb	-1.010	-3.63	3874	10000	
Co	59	3	72	-0.014	ppb	-0.014	-48.87	13	2000	
Ni	60	3	72	-0.021	ppb	-0.021	-483.89	72	5000	
Cu	63	3	72	-0.147	ppb	-0.147	-4.16	130	5000	
Zn	66	3	72	-0.816	ppb	-0.816	-16.24	68	5000	
As	75	3	72	-0.020	ppb	-0.020	-601.23	28	2000	
Se	78	2	72	0.025	ppb	0.025	91.82	3	2000	
(Se)	78	3	72	-0.766	ppb	-0.766	-110.70	10	2000	
Sr	88	3	72	-3.333	ppb	-3.333	-0.18	33	4000	
Mo	95	3	115	-0.036	ppb	-0.036	-57.19	25	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-64.22	5	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.384	ppb	-0.384	-13.49	160	2000	
Sb	121	3	115	-0.142	ppb	-0.142	-10.64	15	1000	
Ba	137	3	115	-0.079	ppb	-0.079	-98.21	17	5000	
Tl	205	3	193	-0.009	ppb	-0.009	-81.39	133	2000	
(Pb)	206	3	193	0.003	ppb	0.003	616.25	113	100	
(Pb)	207	3	193	0.065	ppb	0.065	46.71	345	100	
Pb	208	3	193	0.005	ppb	0.005	173.52	685	5000	
Th	232	3	193	-0.172	ppb	-0.172	-13.61	3735	2000	
U	238	3	193	-0.053	ppb	-0.053	-14.65	1334	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3580519	0.75	3486335	102.70	60	120	
Sc (IS)	45	3	HMI He	496113	0.96	518733	95.64	60	120	
Ge Internal standard	72	2	HMI H2	1985723	0.45	1896849	104.69	60	120	
Ge Internal standard	72	3	HMI He	580036	0.42	606605	95.62	60	120	
In Internal Standard	115	3	HMI He	2275918	1.53	2408797	94.48	60	120	
Ir (IS)	193	3	HMI He	5341586	2.39	5218365	102.36	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	216SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:32:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	#DIV/0!	0	2000	
Na	23	3	45	-1180.236	ppb	-1180.236	-0.12	17889	400000	
Mg	24	3	45	-54.021	ppb	-54.021	-1.29	67	400000	
Al	27	3	45	-0.881	ppb	-0.881	-117.99	37	400000	
K	39	3	45	-57.090	ppb	-57.090	-32.85	14639	400000	
Ca	40	2	45	-116.559	ppb	-116.559	-0.12	7266	400000	
V	51	3	72	-0.391	ppb	-0.391	-5.91	28	2000	
Cr	52	3	72	-0.893	ppb	-0.893	-13.40	701	5000	
Mn	55	3	72	-0.039	ppb	-0.039	-120.23	73	10000	
Fe	56	2	72	-1.181	ppb	-1.181	-13.62	3854	10000	
Co	59	3	72	-0.009	ppb	-0.009	-79.64	20	2000	
Ni	60	3	72	-0.034	ppb	-0.034	-227.20	72	5000	
Cu	63	3	72	-0.185	ppb	-0.185	-5.62	105	5000	
Zn	66	3	72	-0.765	ppb	-0.765	-4.38	80	5000	
As	75	3	72	0.029	ppb	0.029	449.84	35	2000	
Se	78	2	72	-0.003	ppb	-0.003	-747.10	1	2000	
(Se)	78	3	72	-0.593	ppb	-0.593	-156.12	12	2000	
Sr	88	3	72	-3.347	ppb	-3.347	-0.95	28	4000	
Mo	95	3	115	-0.047	ppb	-0.047	-37.29	22	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-599.86	12	100	
Cd	111	3	115	0.015	ppb	0.015	86.62	3	2000	
Sn	120	3	115	-0.365	ppb	-0.365	-22.60	183	2000	
Sb	121	3	115	-0.136	ppb	-0.136	-5.39	20	1000	
Ba	137	3	115	-0.032	ppb	-0.032	-169.21	28	5000	
Tl	205	3	193	-0.015	ppb	-0.015	-50.41	115	2000	
(Pb)	206	3	193	-0.004	ppb	-0.004	-200.75	108	100	
(Pb)	207	3	193	0.003	ppb	0.003	2163.16	290	100	
Pb	208	3	193	-0.017	ppb	-0.017	-110.16	600	5000	
Th	232	3	193	-0.154	ppb	-0.154	-15.47	3957	2000	
U	238	3	193	-0.030	ppb	-0.030	-28.16	1509	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3755922	0.51	3486335	107.73	60	120	
Sc (IS)	45	3	HMI He	521024	0.74	518733	100.44	60	120	
Ge Internal standard	72	2	HMI H2	2102599	0.56	1896849	110.85	60	120	
Ge Internal standard	72	3	HMI He	614442	0.55	606605	101.29	60	120	
In Internal Standard	115	3	HMI He	2431783	1.93	2408797	100.95	60	120	
Ir (IS)	193	3	HMI He	5528239	0.69	5218365	105.94	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	217SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:34:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	154CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	173.21	2	2000	
Na	23	3	45	-1166.173	ppb	-1166.173	-0.24	17679	400000	
Mg	24	3	45	-53.910	ppb	-53.910	-0.37	67	400000	
Al	27	3	45	-0.506	ppb	-0.506	-106.85	40	400000	
K	39	3	45	-35.418	ppb	-35.418	-76.54	14145	400000	
Ca	40	2	45	-116.022	ppb	-116.022	-0.34	7129	400000	
V	51	3	72	-0.371	ppb	-0.371	-0.22	35	2000	
Cr	52	3	72	-0.873	ppb	-0.873	-8.87	641	5000	
Mn	55	3	72	-0.062	ppb	-0.062	-34.61	58	10000	
Fe	56	2	72	-1.134	ppb	-1.134	-6.17	3651	10000	
Co	59	3	72	0.001	ppb	0.001	2128.14	28	2000	
Ni	60	3	72	-0.003	ppb	-0.003	-1540.93	73	5000	
Cu	63	3	72	-0.162	ppb	-0.162	-33.36	112	5000	
Zn	66	3	72	-0.952	ppb	-0.952	-7.77	47	5000	
As	75	3	72	-0.077	ppb	-0.077	-221.96	22	2000	
Se	78	2	72	-0.014	ppb	-0.014	-164.32	1	2000	
(Se)	78	3	72	0.818	ppb	0.818	59.23	18	2000	
Sr	88	3	72	-3.352	ppb	-3.352	-1.30	23	4000	
Mo	95	3	115	-0.063	ppb	-0.063	-38.36	13	2000	
Ag	107	3	115	0.002	ppb	0.002	541.03	15	100	
Cd	111	3	115	0.016	ppb	0.016	173.21	3	2000	
Sn	120	3	115	-0.320	ppb	-0.320	-24.24	200	2000	
Sb	121	3	115	-0.150	ppb	-0.150	-5.17	10	1000	
Ba	137	3	115	-0.038	ppb	-0.038	-126.82	25	5000	
Tl	205	3	193	-0.004	ppb	-0.004	-60.03	143	2000	
(Pb)	206	3	193	0.001	ppb	0.001	1059.98	105	100	
(Pb)	207	3	193	0.028	ppb	0.028	224.71	290	100	
Pb	208	3	193	-0.005	ppb	-0.005	-293.98	605	5000	
Th	232	3	193	-0.146	ppb	-0.146	-15.24	3660	2000	
U	238	3	193	-0.035	ppb	-0.035	-10.62	1356	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3537800	1.13	3486335	101.48	60	120	
Sc (IS)	45	3	HMI He	473414	1.72	518733	91.26	60	120	
Ge Internal standard	72	2	HMI H2	1957144	1.48	1896849	103.18	60	120	
Ge Internal standard	72	3	HMI He	551240	1.15	606605	90.87	60	120	
In Internal Standard	115	3	HMI He	2264852	0.15	2408797	94.02	60	120	
Ir (IS)	193	3	HMI He	5060838	1.12	5218365	96.98	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	218CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-31T08:36:27-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	17091	0.02
Mg	24	45	3	HMI He	73	28.38
Al	27	45	3	HMI He	53	101.39
K	39	45	3	HMI He	13483	0.05
Ca	40	45	2	HMI H2	9136	0.04
V	51	72	3	HMI He	180	6.73
Cr	52	72	3	HMI He	1131	0.16
Mn	55	72	3	HMI He	87	36.68
Fe	56	72	2	HMI H2	4535	0.10
Co	59	72	3	HMI He	20	433.01
Ni	60	72	3	HMI He	103	23.11
Cu	63	72	3	HMI He	232	6.21
Zn	66	72	3	HMI He	98	15.80
As	75	72	3	HMI He	18	309.78
Se	78	72	2	HMI H2	3	2078.46
(Se)	78	72	3	HMI He	15	384.81
Sr	88	72	3	HMI He	33	158.15
Mo	95	115	3	HMI He	50	60.04
Ag	107	115	3	HMI He	3	5196.15
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	530	1.55
Sb	121	115	3	HMI He	62	33.10
Ba	137	115	3	HMI He	43	120.13
Tl	205	193	3	HMI He	117	16.57
(Pb)	206	193	3	HMI He	125	16.64
(Pb)	207	193	3	HMI He	270	4.80
Pb	208	193	3	HMI He	615	1.50
Th	232	193	3	HMI He	4210	0.15
U	238	193	3	HMI He	1306	0.34

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	2988516	1.08
Sc (IS)	45	3	HMI He	453633	1.61
Ge Internal standard	72	2	HMI H2	1716556	1.12
Ge Internal standard	72	3	HMI He	532053	0.93
In Internal Standard	115	3	HMI He	2192912	3.30
Ir (IS)	193	3	HMI He	4975964	2.12

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	219CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T08:38:20-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	9136765	0.00
Mg	24	45	3	HMI He	957222	0.00
Al	27	45	3	HMI He	224	8.09
K	39	45	3	HMI He	673922	0.00
V	51	72	3	HMI He	130	7.83
Cr	52	72	3	HMI He	1119	0.28
Mn	55	72	3	HMI He	117	31.68
Co	59	72	3	HMI He	37	119.57
Ni	60	72	3	HMI He	105	9.07
Cu	63	72	3	HMI He	406	4.97
Zn	66	72	3	HMI He	287	2.46
As	75	72	3	HMI He	25	288.52
Se	78	72	2	HMI H2	2	5000.00
(Se)	78	72	3	HMI He	15	384.81
Sr	88	72	3	HMI He	323	2.46
Mo	95	115	3	HMI He	63	36.01
Ag	107	115	3	HMI He	38	171.37
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	716	1.04
Sb	121	115	3	HMI He	47	95.62
Ba	137	115	3	HMI He	97	11.14
Tl	205	193	3	HMI He	130	35.52
(Pb)	206	193	3	HMI He	142	24.21
(Pb)	207	193	3	HMI He	283	3.65
Pb	208	193	3	HMI He	741	1.39
Th	232	193	3	HMI He	3615	0.10
U	238	193	3	HMI He	1254	0.26

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3046739	3.30	2988516	101.95	60	120	
Sc (IS)	45	3	HMI He	421246	1.14	453633	92.86	60	120	
Ge Internal standard	72	2	HMI H2	1634094	2.21	1716556	95.20	60	120	
Ge Internal standard	72	3	HMI He	473836	1.58	532053	89.06	60	120	
In Internal Standard	115	3	HMI He	1994083	0.45	2192912	90.93	60	120	
Ir (IS)	193	3	HMI He	4657281	1.55	4975964	93.60	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	220CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T08:40:14-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3930	0.16
Na	23	45	3	HMI He	210072	0.00
Mg	24	45	3	HMI He	98626	0.00
Al	27	45	3	HMI He	34617	0.00
K	39	45	3	HMI He	83125	0.00
V	51	72	3	HMI He	47888	0.00
Cr	52	72	3	HMI He	61560	0.00
Mn	55	72	3	HMI He	32009	0.00
Co	59	72	3	HMI He	102148	0.00
Ni	60	72	3	HMI He	28126	0.01
Cu	63	72	3	HMI He	77806	0.00
Zn	66	72	3	HMI He	12865	0.01
As	75	72	3	HMI He	8993	0.03
Se	78	72	2	HMI H2	4521	0.12
(Se)	78	72	3	HMI He	466	1.78
Sr	88	72	3	HMI He	83723	0.00
Mo	95	115	3	HMI He	41994	0.00
Ag	107	115	3	HMI He	139483	0.00
Cd	111	115	3	HMI He	19698	0.02
Sn	120	115	3	HMI He	59747	0.00
Sb	121	115	3	HMI He	60051	0.00
Ba	137	115	3	HMI He	18809	0.02
Tl	205	193	3	HMI He	319974	0.00
(Pb)	206	193	3	HMI He	104998	0.00
(Pb)	207	193	3	HMI He	93300	0.00
Pb	208	193	3	HMI He	424947	0.00
Th	232	193	3	HMI He	441751	0.00
U	238	193	3	HMI He	471859	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3109125	4.12	2988516	104.04	60	120	
Sc (IS)	45	3	HMI He	441124	0.96	453633	97.24	60	120	
Ge Internal standard	72	2	HMI H2	1728118	5.37	1716556	100.67	60	120	
Ge Internal standard	72	3	HMI He	539974	1.02	532053	101.49	60	120	
In Internal Standard	115	3	HMI He	2133112	1.02	2192912	97.27	60	120	
Ir (IS)	193	3	HMI He	4916320	1.20	4975964	98.80	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	221_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:42:05-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.090	ppb	1.157	1698	40	100.2	90	110	
Na	23	3	45	13172.231	ppb	3.354	1336465	12800	102.9	90	110	
Mg	24	3	45	4556.863	ppb	1.824	239494	4800	94.9	90	110	
Al	27	3	45	762.203	ppb	1.573	13864	800	95.3	90	110	
K	39	3	45	4768.718	ppb	1.824	186877	4800	99.3	90	110	
Ca	40	2	45	5034.321	ppb	1.592	2475680	4800	104.9	90	110	
V	51	3	72	39.085	ppb	1.941	19786	40	97.7	90	110	
Cr	52	3	72	39.669	ppb	2.274	26390	40	99.2	90	110	
Mn	55	3	72	41.303	ppb	2.071	13947	40	103.3	90	110	
Fe	56	2	72	813.078	ppb	2.553	1102174	800	101.6	90	110	
Co	59	3	72	39.066	ppb	2.279	41949	40	97.7	90	110	
Ni	60	3	72	38.848	ppb	1.456	11549	40	97.1	90	110	
Cu	63	3	72	39.935	ppb	1.810	32801	40	99.8	90	110	
Zn	66	3	72	80.325	ppb	2.753	10879	80	100.4	90	110	
As	75	3	72	36.769	ppb	3.678	3487	40	91.9	90	110	
Se	78	2	72	40.823	ppb	6.803	1997	40	102.1	90	110	
(Se)	78	3	72	37.407	ppb	4.374	193	40	93.5	90	110	
Sr	88	3	72	117.380	ppb	1.267	51654	120	97.8	90	110	
Mo	95	3	115	40.281	ppb	1.362	17573	40	100.7	90	110	
Ag	107	3	115	80.818	ppb	1.241	116894	80	101.0	90	110	
Cd	111	3	115	39.259	ppb	2.271	8022	40	98.1	90	110	
Sn	120	3	115	40.172	ppb	3.442	25208	40	100.4	90	110	
Sb	121	3	115	41.253	ppb	3.956	25724	40	103.1	90	110	
Ba	137	3	115	41.337	ppb	1.138	8090	40	103.3	90	110	
Tl	205	3	193	40.801	ppb	3.252	132486	40	102.0	90	110	
(Pb)	206	3	193	41.458	ppb	3.055	44228	40	103.6	90	110	
(Pb)	207	3	193	40.790	ppb	3.592	38765	40	102.0	90	110	
Pb	208	3	193	41.253	ppb	2.997	178183	40	103.1	90	110	
Th	232	3	193	82.684	ppb	1.433	371285	80	103.4	90	110	
U	238	3	193	41.867	ppb	3.231	201142	40	104.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3264729	0.67	2988516	109.24	60	120	
Sc (IS)	45	3	HMI He	462382	0.88	453633	101.93	60	120	
Ge Internal standard	72	2	HMI H2	1868612	1.51	1716556	108.86	60	120	
Ge Internal standard	72	3	HMI He	567396	0.47	532053	106.64	60	120	
In Internal Standard	115	3	HMI He	2212037	1.32	2192912	100.87	60	120	
Ir (IS)	193	3	HMI He	4988597	1.88	4975964	100.25	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	222_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T08:43:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.372	ppb	9.935	2129	50	102.7	90	110	
Na	23	3	45	1180.550	ppb	1.887	132661	51000	2.3	90	110	>+\-10%
Mg	24	3	45	1014.563	ppb	0.791	52215	11000	9.2	90	110	>+\-10%
Al	27	3	45	1028.977	ppb	1.399	18290	1000	102.9	90	110	
K	39	3	45	1071.091	ppb	5.527	51486	11000	9.7	90	110	>+\-10%
Ca	40	2	45	1073.713	ppb	1.522	528834	11000	9.8	90	110	>+\-10%
V	51	3	72	51.857	ppb	2.504	25120	50	103.7	90	110	
Cr	52	3	72	52.711	ppb	3.508	33255	50	105.4	90	110	
Mn	55	3	72	51.349	ppb	1.927	16610	50	102.7	90	110	
Fe	56	2	72	1016.890	ppb	2.916	1363766	1000	101.7	90	110	
Co	59	3	72	51.370	ppb	2.233	52903	50	102.7	90	110	
Ni	60	3	72	52.303	ppb	0.289	14879	50	104.6	90	110	
Cu	63	3	72	50.967	ppb	2.676	40086	50	101.9	90	110	
Zn	66	3	72	55.914	ppb	2.837	7295	50	111.8	90	110	>+\-10%
As	75	3	72	50.268	ppb	4.076	4565	50	100.5	90	110	
Se	78	2	72	50.483	ppb	4.793	2445	50	101.0	90	110	
(Se)	78	3	72	59.984	ppb	12.714	288	50	120.0	90	110	>+\-10%
Sr	88	3	72	102.852	ppb	3.940	43414	100	102.9	90	110	
Mo	95	3	115	51.798	ppb	0.878	21843	50	103.6	90	110	
Ag	107	3	115	52.905	ppb	0.292	74022	50	105.8	90	110	
Cd	111	3	115	53.619	ppb	3.095	10596	50	107.2	90	110	
Sn	120	3	115	52.480	ppb	1.354	31700	50	105.0	90	110	
Sb	121	3	115	51.993	ppb	2.101	31351	50	104.0	90	110	
Ba	137	3	115	53.777	ppb	1.504	10167	50	107.6	90	110	
Tl	205	3	193	51.615	ppb	2.264	168419	50	103.2	90	110	
(Pb)	206	3	193	52.185	ppb	2.708	55915	50	104.4	90	110	
(Pb)	207	3	193	51.926	ppb	1.816	49525	50	103.9	90	110	
Pb	208	3	193	52.040	ppb	2.701	225735	50	104.1	90	110	
Th	232	3	193	53.392	ppb	2.300	242413	50	106.8	90	110	
U	238	3	193	51.007	ppb	3.266	245972	50	102.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3222087	0.19	2988516	107.82	60	120	
Sc (IS)	45	3	HMI He	452343	0.93	453633	99.72	60	120	
Ge Internal standard	72	2	HMI H2	1850627	2.10	1716556	107.81	60	120	
Ge Internal standard	72	3	HMI He	544301	0.71	532053	102.30	60	120	
In Internal Standard	115	3	HMI He	2139602	0.79	2192912	97.57	60	120	
Ir (IS)	193	3	HMI He	5013803	2.51	4975964	100.76	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	223_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:12:14-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.079	ppb	2.206	2121	50	102.2	90	110	
Na	23	3	45	51576.958	ppb	0.135	5046050	51000	101.1	90	110	
Mg	24	3	45	10517.790	ppb	1.132	538292	11000	95.6	90	110	
Al	27	3	45	992.154	ppb	2.277	17562	1000	99.2	90	110	
K	39	3	45	11103.606	ppb	0.858	405972	11000	100.9	90	110	
Ca	40	2	45	11417.066	ppb	2.858	5541681	11000	103.8	90	110	
V	51	3	72	52.066	ppb	3.036	24161	50	104.1	90	110	
Cr	52	3	72	52.713	ppb	2.373	31855	50	105.4	90	110	
Mn	55	3	72	51.496	ppb	3.527	15955	50	103.0	90	110	
Fe	56	2	72	1031.426	ppb	1.539	1332557	1000	103.1	90	110	
Co	59	3	72	50.718	ppb	3.342	50018	50	101.4	90	110	
Ni	60	3	72	51.501	ppb	2.948	14033	50	103.0	90	110	
Cu	63	3	72	51.288	ppb	2.665	38635	50	102.6	90	110	
Zn	66	3	72	68.749	ppb	2.806	8573	50	137.5	90	110	>+\-10%
As	75	3	72	53.422	ppb	4.135	4650	50	106.8	90	110	
Se	78	2	72	51.294	ppb	2.157	2393	50	102.6	90	110	
(Se)	78	3	72	56.688	ppb	6.309	262	50	113.4	90	110	>+\-10%
Sr	88	3	72	103.237	ppb	0.909	41758	100	103.2	90	110	
Mo	95	3	115	50.576	ppb	0.836	21078	50	101.2	90	110	
Ag	107	3	115	50.711	ppb	2.292	70092	50	101.4	90	110	
Cd	111	3	115	50.252	ppb	2.983	9814	50	100.5	90	110	
Sn	120	3	115	50.220	ppb	3.112	30004	50	100.4	90	110	
Sb	121	3	115	50.620	ppb	1.719	30157	50	101.2	90	110	
Ba	137	3	115	52.241	ppb	1.623	9762	50	104.5	90	110	
Tl	205	3	193	50.699	ppb	0.788	158232	50	101.4	90	110	
(Pb)	206	3	193	51.486	ppb	3.919	52735	50	103.0	90	110	
(Pb)	207	3	193	51.220	ppb	0.481	46728	50	102.4	90	110	
Pb	208	3	193	51.132	ppb	3.191	212061	50	102.3	90	110	
Th	232	3	193	52.327	ppb	1.492	227312	50	104.7	90	110	
U	238	3	193	50.401	ppb	2.376	232450	50	100.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3230141	0.57	2988516	108.09	60	120	
Sc (IS)	45	3	HMI He	450313	1.93	453633	99.27	60	120	
Ge Internal standard	72	2	HMI H2	1782390	1.12	1716556	103.84	60	120	
Ge Internal standard	72	3	HMI He	521581	3.51	532053	98.03	60	120	
In Internal Standard	115	3	HMI He	2114139	1.94	2192912	96.41	60	120	
Ir (IS)	193	3	HMI He	4794551	3.20	4975964	96.35	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	224_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:16:28-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.595	ppb	9.469	1794	50	91.2	90	110	
Na	23	3	45	51516.075	ppb	1.028	5069308	51000	101.0	90	110	
Mg	24	3	45	10498.308	ppb	1.713	540275	11000	95.4	90	110	
Al	27	3	45	927.481	ppb	1.628	16513	1000	92.7	90	110	
K	39	3	45	11072.291	ppb	0.932	407215	11000	100.7	90	110	
Ca	40	2	45	11300.650	ppb	4.314	5248178	11000	102.7	90	110	
V	51	3	72	46.269	ppb	0.833	21885	50	92.5	90	110	
Cr	52	3	72	47.142	ppb	1.792	29129	50	94.3	90	110	
Mn	55	3	72	47.871	ppb	2.305	15109	50	95.7	90	110	
Fe	56	2	72	935.252	ppb	3.515	1139646	1000	93.5	90	110	
Co	59	3	72	46.328	ppb	2.325	46536	50	92.7	90	110	
Ni	60	3	72	47.023	ppb	0.516	13060	50	94.0	90	110	
Cu	63	3	72	46.269	ppb	1.171	35521	50	92.5	90	110	
Zn	66	3	72	52.602	ppb	1.264	6700	50	105.2	90	110	
As	75	3	72	47.656	ppb	0.243	4224	50	95.3	90	110	
Se	78	2	72	46.182	ppb	1.757	2032	50	92.4	90	110	
(Se)	78	3	72	65.771	ppb	3.673	307	50	131.5	90	110	>+\-10%
Sr	88	3	72	94.624	ppb	2.779	38963	100	94.6	90	110	
Mo	95	3	115	45.682	ppb	2.955	19354	50	91.4	90	110	
Ag	107	3	115	45.981	ppb	1.249	64627	50	92.0	90	110	
Cd	111	3	115	47.971	ppb	1.256	9524	50	95.9	90	110	
Sn	120	3	115	45.620	ppb	0.275	27755	50	91.2	90	110	
Sb	121	3	115	46.219	ppb	0.699	28007	50	92.4	90	110	
Ba	137	3	115	46.346	ppb	1.171	8810	50	92.7	90	110	
Tl	205	3	193	46.698	ppb	2.483	147354	50	93.4	90	110	
(Pb)	206	3	193	47.312	ppb	2.395	49039	50	94.6	90	110	
(Pb)	207	3	193	46.345	ppb	0.057	42782	50	92.7	90	110	
Pb	208	3	193	46.690	ppb	1.605	195950	50	93.4	90	110	
Th	232	3	193	47.258	ppb	1.448	207980	50	94.5	90	110	
U	238	3	193	46.715	ppb	3.688	217964	50	93.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3094094	4.66	2988516	103.53	60	120	
Sc (IS)	45	3	HMI He	452911	1.10	453633	99.84	60	120	
Ge Internal standard	72	2	HMI H2	1681483	3.26	1716556	97.96	60	120	
Ge Internal standard	72	3	HMI He	530967	1.88	532053	99.80	60	120	
In Internal Standard	115	3	HMI He	2149546	1.64	2192912	98.02	60	120	
Ir (IS)	193	3	HMI He	4848157	2.17	4975964	97.43	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	225_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:48:57-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.002	ppb	-2833.9	2	0.5	
Na	23	3	45	24.278	ppb	9.6	20028	25	
Mg	24	3	45	2.222	ppb	49.9	194	25	
Al	27	3	45	4.104	ppb	2.7	130	15	
K	39	3	45	9.806	ppb	252.8	14235	50	
V	51	3	72	0.013	ppb	216.1	192	1	
Cr	52	3	72	-0.045	ppb	-137.1	1138	1	
Mn	55	3	72	0.208	ppb	59.0	157	0.5	
Co	59	3	72	0.043	ppb	53.4	65	0.5	
Ni	60	3	72	-0.022	ppb	-18.8	100	1	
Cu	63	3	72	0.004	ppb	617.6	242	1	
Zn	66	3	72	0.030	ppb	258.3	105	5	
As	75	3	72	0.123	ppb	78.8	30	1	
Se	78	2	72	-0.060	ppb	-41.7	1	1	
(Se)	78	3	72	-0.818	ppb	-75.1	12	1	
Sr	88	3	72	0.045	ppb	17.3	53	0.5	
Mo	95	3	115	0.051	ppb	45.8	72	0.5	
Ag	107	3	115	0.022	ppb	60.3	35	1	
Cd	111	3	115	0.033	ppb	42.9	7	0.5	
Sn	120	3	115	0.667	ppb	13.4	936	1	
Sb	121	3	115	0.004	ppb	1131.0	65	0.6	
Ba	137	3	115	-0.040	ppb	-80.1	35	0.5	
Tl	205	3	193	0.010	ppb	84.5	150	0.1	
(Pb)	206	3	193	-0.018	ppb	-118.2	107	1	
(Pb)	207	3	193	0.097	ppb	52.1	363	1	
Pb	208	3	193	0.036	ppb	59.6	773	0.5	
Th	232	3	193	0.840	ppb	22.2	7960	1	
U	238	3	193	0.025	ppb	42.7	1433	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3125771	1.08	2988516	104.59	60	120	
Sc (IS)	45	3	HMI He	466463	1.58	453633	102.83	60	120	
Ge Internal standard	72	2	HMI H2	1753397	1.09	1716556	102.15	60	120	
Ge Internal standard	72	3	HMI He	548162	1.18	532053	103.03	60	120	
In Internal Standard	115	3	HMI He	2192157	3.35	2192912	99.97	60	120	
Ir (IS)	193	3	HMI He	4998375	3.96	4975964	100.45	60	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA-7567583
Data File Name	226ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:50:48-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.043	ppb	0.0	0	0.5	
Na	23	3	45	94355.479	ppb	0.2	9517595	100000	
Mg	24	3	45	92265.302	ppb	1.4	4874377	100000	
Al	27	3	45	95681.272	ppb	1.5	1743357	100000	
K	39	3	45	96206.538	ppb	1.1	3526235	100000	
Ca	40	2	45	95444.660	ppb	2.7	46221477	100000	
V	51	3	72	-0.155	ppb	-28.2	113	1	
Cr	52	3	72	1.238	ppb	1.7	1987	1	>RL or LOD
Mn	55	3	72	0.710	ppb	19.9	330	0.95	
Fe	56	2	72	89080.882	ppb	0.3	118200048	100000	
Co	59	3	72	0.231	ppb	19.3	268	0.5	
Ni	60	3	72	0.256	ppb	15.7	185	1	
Cu	63	3	72	0.168	ppb	41.6	383	1	
Zn	66	3	72	1.085	ppb	26.0	250	1	>RL or LOD
As	75	3	72	0.183	ppb	34.4	37	1	
Se	78	2	72	-0.005	ppb	-488.3	3	1	
(Se)	78	3	72	0.180	ppb	1234.0	17	1	
Sr	88	3	72	0.664	ppb	11.2	327	1	
Mo	95	3	115	1992.782	ppb	2.1	839376	2000	
Ag	107	3	115	0.043	ppb	33.3	63	1	
Cd	111	3	115	0.244	ppb	37.1	48	1	
Sn	120	3	115	0.395	ppb	18.0	753	1	
Sb	121	3	115	0.121	ppb	7.3	133	1	
Ba	137	3	115	1.681	ppb	12.5	358	0.95	>RL or LOD
Tl	205	3	193	0.015	ppb	59.6	165	1	
(Pb)	206	3	193	0.154	ppb	23.5	288	1	
(Pb)	207	3	193	0.176	ppb	39.1	435	1	
Pb	208	3	193	0.169	ppb	13.1	1338	1	
Th	232	3	193	0.086	ppb	69.7	4590	1	
U	238	3	193	0.027	ppb	66.3	1436	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3228592	2.18	2988516	108.03	60	120	
Sc (IS)	45	3	HMI He	464972	1.56	453633	102.50	60	120	
Ge Internal standard	72	2	HMI H2	1836779	0.39	1716556	107.00	60	120	
Ge Internal standard	72	3	HMI He	565968	2.05	532053	106.37	60	120	
In Internal Standard	115	3	HMI He	2142718	3.62	2192912	97.71	60	120	
Ir (IS)	193	3	HMI He	4977912	1.81	4975964	100.04	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB-7569079
Data File Name	227ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:52:39-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	94.689	ppb	1.773	3912	100	94.7	80	120	
Na	23	3	45	101976.465	ppb	0.875	9858815	100	101976.5	80	120	>+\-20%
Mg	24	3	45	98173.196	ppb	1.700	4971795	100	98173.2	80	120	>+\-20%
Al	27	3	45	101124.221	ppb	2.086	1766199	100	101124.2	80	120	>+\-20%
K	39	3	45	104378.788	ppb	0.472	3666350	100	104378.8	80	120	>+\-20%
Ca	40	2	45	104141.393	ppb	1.903	51266048	100	104141.4	80	120	>+\-20%
V	51	3	72	97.910	ppb	1.140	46613	100	97.9	80	120	
Cr	52	3	72	99.120	ppb	1.659	60665	100	99.1	80	120	
Mn	55	3	72	98.645	ppb	1.023	31388	100	98.6	80	120	
Fe	56	2	72	94806.089	ppb	0.811	125462337	100	94806.1	80	120	>+\-20%
Co	59	3	72	92.882	ppb	1.692	94312	100	92.9	80	120	
Ni	60	3	72	94.331	ppb	0.526	26380	100	94.3	80	120	
Cu	63	3	72	94.541	ppb	1.155	73134	100	94.5	80	120	
Zn	66	3	72	94.157	ppb	3.309	12046	100	94.2	80	120	
As	75	3	72	93.211	ppb	0.846	8333	100	93.2	80	120	
Se	78	2	72	99.917	ppb	4.838	4786	100	99.9	80	120	
(Se)	78	3	72	106.240	ppb	2.716	491	100	106.2	80	120	
Sr	88	3	72	192.803	ppb	0.740	80240	100	192.8	80	120	>+\-20%
Mo	95	3	115	2155.402	ppb	0.737	861163	100	2155.4	80	120	>+\-20%
Ag	107	3	115	99.728	ppb	1.149	132477	100	99.7	80	120	
Cd	111	3	115	99.586	ppb	1.964	18685	100	99.6	80	120	
Sn	120	3	115	101.742	ppb	2.827	57886	100	101.7	80	120	
Sb	121	3	115	101.179	ppb	1.706	57873	100	101.2	80	120	
Ba	137	3	115	106.234	ppb	2.535	19031	100	106.2	80	120	
Tl	205	3	193	98.241	ppb	0.888	302332	100	98.2	80	120	
(Pb)	206	3	193	100.877	ppb	0.268	101875	100	100.9	80	120	
(Pb)	207	3	193	100.341	ppb	0.231	90047	100	100.3	80	120	
Pb	208	3	193	100.438	ppb	0.184	410534	100	100.4	80	120	
Th	232	3	193	101.115	ppb	0.565	429565	100	101.1	80	120	
U	238	3	193	101.421	ppb	0.823	460280	100	101.4	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3280848	1.22	2988516	109.78	60	120	
Sc (IS)	45	3	HMI He	445718	0.31	453633	98.26	60	120	
Ge Internal standard	72	2	HMI H2	1832030	1.78	1716556	106.73	60	120	
Ge Internal standard	72	3	HMI He	536768	0.84	532053	100.89	60	120	
In Internal Standard	115	3	HMI He	2031422	0.53	2192912	92.64	60	120	
Ir (IS)	193	3	HMI He	4728687	0.57	4975964	95.03	60	120	

Sample Report

Sample Table

Sample Name	rinse
Data File Name	228SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:54:28-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.003	ppb	-0.003	-2261.53	2	2000	
Na	23	3	45	57.140	ppb	57.140	8.26	23209	400000	
Mg	24	3	45	24.098	ppb	24.098	18.23	1345	400000	
Al	27	3	45	17.735	ppb	17.735	7.03	377	400000	
K	39	3	45	27.778	ppb	27.778	165.24	14803	400000	
Ca	40	2	45	35.544	ppb	35.544	7.45	27471	400000	
V	51	3	72	-0.176	ppb	-0.176	-19.96	102	2000	
Cr	52	3	72	-0.088	ppb	-0.088	-58.53	1129	5000	
Mn	55	3	72	0.013	ppb	0.013	176.39	95	10000	
Fe	56	2	72	30.397	ppb	30.397	7.96	44074	10000	
Co	59	3	72	0.009	ppb	0.009	113.33	30	2000	
Ni	60	3	72	-0.017	ppb	-0.017	-375.49	103	5000	
Cu	63	3	72	0.068	ppb	0.068	81.84	297	5000	
Zn	66	3	72	0.155	ppb	0.155	9.47	123	5000	
As	75	3	72	0.152	ppb	0.152	104.74	33	2000	
Se	78	2	72	0.039	ppb	0.039	330.38	5	2000	
(Se)	78	3	72	-0.500	ppb	-0.500	-122.74	13	2000	
Sr	88	3	72	0.008	ppb	0.008	376.08	38	4000	
Mo	95	3	115	2.775	ppb	2.775	20.08	1228	2000	
Ag	107	3	115	0.040	ppb	0.040	23.32	60	100	
Cd	111	3	115	0.050	ppb	0.050	132.11	10	2000	
Sn	120	3	115	0.019	ppb	0.019	401.09	535	2000	
Sb	121	3	115	0.114	ppb	0.114	20.90	130	1000	
Ba	137	3	115	-0.029	ppb	-0.029	-261.36	37	5000	
Tl	205	3	193	0.029	ppb	0.029	53.74	215	2000	
(Pb)	206	3	193	0.008	ppb	0.008	269.97	137	100	
(Pb)	207	3	193	0.042	ppb	0.042	79.20	315	100	
Pb	208	3	193	0.033	ppb	0.033	21.65	770	5000	
Th	232	3	193	0.664	ppb	0.664	32.78	7305	2000	
U	238	3	193	0.017	ppb	0.017	112.49	1413	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3275541	0.67	2988516	109.60	60	120	
Sc (IS)	45	3	HMI He	463776	0.64	453633	102.24	60	120	
Ge Internal standard	72	2	HMI H2	1791771	0.51	1716556	104.38	60	120	
Ge Internal standard	72	3	HMI He	557011	1.58	532053	104.69	60	120	
In Internal Standard	115	3	HMI He	2160578	0.96	2192912	98.53	60	120	
Ir (IS)	193	3	HMI He	5076702	1.69	4975964	102.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	229_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:56:21-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	42.624	ppb	1.614	1718	50	85.2	90	110	>+\-10%
Na	23	3	45	50931.446	ppb	2.774	4911736	51000	99.9	90	110	
Mg	24	3	45	10542.513	ppb	3.108	531694	11000	95.8	90	110	
Al	27	3	45	906.233	ppb	2.137	15815	1000	90.6	90	110	
K	39	3	45	11038.572	ppb	1.769	397953	11000	100.4	90	110	
Ca	40	2	45	10936.791	ppb	1.835	5307514	11000	99.4	90	110	
V	51	3	72	47.131	ppb	1.686	21800	50	94.3	90	110	
Cr	52	3	72	47.608	ppb	1.091	28765	50	95.2	90	110	
Mn	55	3	72	46.960	ppb	1.667	14500	50	93.9	90	110	
Fe	56	2	72	926.495	ppb	0.841	1179900	1000	92.6	90	110	
Co	59	3	72	46.108	ppb	2.668	45301	50	92.2	90	110	
Ni	60	3	72	45.841	ppb	0.772	12454	50	91.7	90	110	
Cu	63	3	72	45.943	ppb	2.063	34497	50	91.9	90	110	
Zn	66	3	72	54.114	ppb	0.945	6738	50	108.2	90	110	
As	75	3	72	46.324	ppb	3.141	4015	50	92.6	90	110	
Se	78	2	72	44.602	ppb	1.213	2051	50	89.2	90	110	>+\-10%
(Se)	78	3	72	53.866	ppb	23.070	248	50	107.7	90	110	
Sr	88	3	72	93.214	ppb	3.581	37540	100	93.2	90	110	
Mo	95	3	115	46.095	ppb	1.305	18967	50	92.2	90	110	
Ag	107	3	115	46.531	ppb	1.410	63506	50	93.1	90	110	
Cd	111	3	115	47.235	ppb	3.332	9104	50	94.5	90	110	
Sn	120	3	115	46.241	ppb	3.819	27298	50	92.5	90	110	
Sb	121	3	115	46.350	ppb	4.890	27261	50	92.7	90	110	
Ba	137	3	115	46.096	ppb	3.289	8505	50	92.2	90	110	
Tl	205	3	193	46.047	ppb	3.087	144269	50	92.1	90	110	
(Pb)	206	3	193	46.504	ppb	3.003	47858	50	93.0	90	110	
(Pb)	207	3	193	46.486	ppb	2.116	42605	50	93.0	90	110	
Pb	208	3	193	46.365	ppb	3.402	193159	50	92.7	90	110	
Th	232	3	193	46.906	ppb	1.816	205010	50	93.8	90	110	
U	238	3	193	46.050	ppb	3.821	213341	50	92.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3228976	0.35	2988516	108.05	60	120	
Sc (IS)	45	3	HMI He	443966	1.80	453633	97.87	60	120	
Ge Internal standard	72	2	HMI H2	1756120	0.96	1716556	102.30	60	120	
Ge Internal standard	72	3	HMI He	519292	0.84	532053	97.60	60	120	
In Internal Standard	115	3	HMI He	2087425	2.13	2192912	95.19	60	120	
Ir (IS)	193	3	HMI He	4814481	2.57	4975964	96.75	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	230_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T09:58:14-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.001	ppb	-5709.1	2	0.5	
Na	23	3	45	62.346	ppb	5.0	22360	25	>RL
Mg	24	3	45	10.530	ppb	6.3	594	25	
Al	27	3	45	8.524	ppb	40.8	197	15	
K	39	3	45	38.873	ppb	72.6	14345	50	
V	51	3	72	-0.116	ppb	-38.2	120	1	
Cr	52	3	72	-0.113	ppb	-98.8	1020	1	
Mn	55	3	72	0.212	ppb	59.6	147	0.5	
Co	59	3	72	0.037	ppb	15.3	55	0.5	
Ni	60	3	72	-0.084	ppb	-44.3	77	1	
Cu	63	3	72	-0.041	ppb	-63.8	192	1	
Zn	66	3	72	0.091	ppb	256.4	105	5	
As	75	3	72	0.049	ppb	180.4	22	1	
Se	78	2	72	0.001	ppb	2883.6	3	1	
(Se)	78	3	72	-0.629	ppb	-213.5	12	1	
Sr	88	3	72	0.041	ppb	69.4	48	0.5	
Mo	95	3	115	0.434	ppb	26.7	222	0.5	
Ag	107	3	115	0.031	ppb	22.5	45	1	
Cd	111	3	115	0.053	ppb	51.0	10	0.5	
Sn	120	3	115	0.585	ppb	22.2	833	1	
Sb	121	3	115	0.033	ppb	114.3	77	0.6	
Ba	137	3	115	0.027	ppb	191.4	45	0.5	
Tl	205	3	193	0.015	ppb	98.0	160	0.1	
(Pb)	206	3	193	0.024	ppb	63.4	145	1	
(Pb)	207	3	193	0.031	ppb	132.7	288	1	
Pb	208	3	193	0.035	ppb	41.3	740	0.5	
Th	232	3	193	0.467	ppb	26.4	6060	1	
U	238	3	193	0.019	ppb	130.9	1346	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3140483	2.96	2988516	105.09	60	120	
Sc (IS)	45	3	HMI He	436996	2.09	453633	96.33	60	120	
Ge Internal standard	72	2	HMI H2	1694683	1.84	1716556	98.73	60	120	
Ge Internal standard	72	3	HMI He	509541	0.97	532053	95.77	60	120	
In Internal Standard	115	3	HMI He	2057121	1.83	2192912	93.81	60	120	
Ir (IS)	193	3	HMI He	4805526	1.57	4975964	96.57	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600565/1-a
Data File Name	231_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:00:08-07:00
Sample Type	Blank
Dilution	1
Comment	600565 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.043	ppb	-1.51747E-06	0	0.5
Na	23	3	45	70.442	ppb	4.603337207	23573	25
Mg	24	3	45	8.211	ppb	18.72757956	487	25
Al	27	3	45	8.635	ppb	55.70942348	204	15
K	39	3	45	14.606	ppb	283.6135199	13747	50
V	51	3	72	-0.138	ppb	-40.05857762	113	1
Cr	52	3	72	0.065	ppb	267.7977082	1154	1
Mn	55	3	72	0.326	ppb	27.40640255	187	0.5
Co	59	3	72	0.010	ppb	50.27319754	30	0.5
Ni	60	3	72	-0.050	ppb	-155.6956798	88	1
Cu	63	3	72	0.655	ppb	8.483876189	723	1
Zn	66	3	72	0.668	ppb	10.2592873	180	5
As	75	3	72	0.194	ppb	77.49375628	35	1
(Se)	78	3	72	0.433	ppb	150.9221481	17	1
Sr	88	3	72	0.046	ppb	15.18088374	52	0.5
Mo	95	3	115	0.228	ppb	37.60526928	142	0.5
Ag	107	3	115	0.018	ppb	60.68189903	28	1
Cd	111	3	115	0.009	ppb	173.2050808	2	0.5
Sn	120	3	115	0.236	ppb	65.34809583	645	1
Sb	121	3	115	0.015	ppb	309.9533582	68	0.6
Ba	137	3	115	-0.014	ppb	-283.0490528	38	0.5
Tl	205	3	193	0.006	ppb	119.9931994	135	0.1
(Pb)	206	3	193	0.028	ppb	63.81799951	155	1
(Pb)	207	3	193	0.026	ppb	46.47714031	295	1
Pb	208	3	193	0.035	ppb	23.78705874	766	0.5
Th	232	3	193	0.012	ppb	208.7214251	4275	1
U	238	3	193	0.008	ppb	250.4229836	1346	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3331950	2.08	2988516	111.49	60	120	
Sc (IS)	45	3	HMI He	445361	1.12	453633	98.18	60	120	
Ge Internal standard	72	2	HMI H2	1966301	7.45	1716556	114.55	60	120	
Ge Internal standard	72	3	HMI He	525156	0.55	532053	98.70	60	120	
In Internal Standard	115	3	HMI He	2095459	0.35	2192912	95.56	60	120	
Ir (IS)	193	3	HMI He	4990933	0.58	4975964	100.30	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600565/2-a
Data File Name	232_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:02:03-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600565 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	-0.021	-0.021	ppb	-176.801	2	40	-0.1	80	120	>+/-20%
Na	23	3	45	-75.682	-75.682	ppb	-7.149	17989	40	-189.2	80	120	>+/-20%
Mg	24	3	45	-0.585	-0.585	ppb	-25.791	80	40	-1.5	80	120	>+/-20%
Al	27	3	45	-1.797	-1.797	ppb	-20.596	40	40	-4.5	80	120	>+/-20%
K	39	3	45	-203.887	-203.887	ppb	-8.674	11600	40	-509.7	80	120	>+/-20%
Ca	40	2	45	-11.521	-11.521	ppb	-4.550	8050	40	-28.8	80	120	>+/-20%
V	51	3	72	-0.341	-0.341	ppb	-8.025	37	40	-0.9	80	120	>+/-20%
Cr	52	3	72	-1.463	-1.463	ppb	-3.845	500	40	-3.7	80	120	>+/-20%
Mn	55	3	72	-0.167	-0.167	ppb	-18.472	65	40	-0.4	80	120	>+/-20%
Fe	56	2	72	-2.177	-2.177	ppb	-4.817	3614	40	-5.4	80	120	>+/-20%
(Fe)	56	3	72	-2.766	-2.766	ppb	-3.261	1825	40	-6.9	80	120	>+/-20%
Co	59	3	72	-0.011	-0.011	ppb	-10.438	18	40	0.0	80	120	>+/-20%
Ni	60	3	72	-0.248	-0.248	ppb	-18.701	67	40	-0.6	80	120	>+/-20%
Cu	63	3	72	-0.195	-0.195	ppb	-7.643	160	40	-0.5	80	120	>+/-20%
Zn	66	3	72	-0.430	-0.430	ppb	-3.730	85	40	-1.1	80	120	>+/-20%
As	75	3	72	-0.002	-0.002	ppb	-2464.625	35	40	0.0	80	120	>+/-20%
Se	78	2	72	-0.044	-0.044	ppb	-79.954	3	40	-0.1	80	120	>+/-20%
(Se)	78	3	72	-1.449	-1.449	ppb	-97.741	17	40	-3.6	80	120	>+/-20%
Sr	88	3	72	-0.039	-0.039	ppb	-63.318	33	40	-0.1	80	120	>+/-20%
Mo	95	3	115	-0.091	-0.091	ppb	-11.982	18	40	-0.2	80	120	>+/-20%
Ag	107	3	115	0.006	0.006	ppb	95.705	22	40	0.0	80	120	>+/-20%
Cd	111	3	115	0.005	0.005	ppb	173.205	2	40	0.0	80	120	>+/-20%
Sn	120	3	115	-0.734	-0.734	ppb	-4.045	148	40	-1.8	80	120	>+/-20%
Sb	121	3	115	-0.078	-0.078	ppb	-24.197	25	40	-0.2	80	120	>+/-20%
Ba	137	3	115	-0.112	-0.112	ppb	-45.639	37	40	-0.3	80	120	>+/-20%
Tl	205	3	193	-0.002	-0.002	ppb	-286.088	200	40	0.0	80	120	>+/-20%
(Pb)	206	3	193	-0.023	-0.023	ppb	-40.908	183	40	-0.1	80	120	>+/-20%
(Pb)	207	3	193	-0.006	-0.006	ppb	-715.693	473	40	0.0	80	120	>+/-20%
Pb	208	3	193	-0.002	-0.002	ppb	-478.483	1088	40	0.0	80	120	>+/-20%
Th	232	3	193	-0.124	-0.124	ppb	-11.646	6608	40	-0.3	80	120	>+/-20%
U	238	3	193	0.019	0.019	ppb	56.415	2529	40	0.0	80	120	>+/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6062987	0.62	2988516	202.88	60	120	IS Failed
Sc (IS)	45	3	HMI He	846832	5.58	453633	186.68	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3382647	1.71	1716556	197.06	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1024854	4.45	532053	192.62	60	120	IS Failed
In Internal Standard	115	3	HMI He	3830649	4.31	2192912	174.68	60	120	IS Failed
Ir (IS)	193	3	HMI He	8993326	6.29	4975964	180.74	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-1-A@50
Data File Name	233SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:03:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	-78.657	ppb	-78.657	-6.25	18076	400000	
Mg	24	3	45	-0.719	ppb	-0.719	-1.43	70	400000	
Al	27	3	45	-2.145	ppb	-2.145	-13.00	30	400000	
K	39	3	45	-209.479	ppb	-209.479	-7.49	11640	400000	
Ca	40	2	45	-11.019	ppb	-11.019	-3.51	8267	400000	
V	51	3	72	-0.358	ppb	-0.358	-0.83	23	2000	
Cr	52	3	72	-1.463	ppb	-1.463	-3.01	530	5000	
Mn	55	3	72	-0.150	ppb	-0.150	-29.09	80	10000	
Fe	56	2	72	-2.159	ppb	-2.159	-2.22	3537	10000	
Co	59	3	72	-0.009	ppb	-0.009	-92.05	22	2000	
Ni	60	3	72	-0.264	ppb	-0.264	-15.45	62	5000	
Cu	63	3	72	-0.203	ppb	-0.203	-6.00	155	5000	
Zn	66	3	72	-0.514	ppb	-0.514	-7.57	68	5000	
As	75	3	72	0.061	ppb	0.061	205.74	48	2000	
Se	78	2	72	-0.051	ppb	-0.051	-0.76	2	2000	
(Se)	78	3	72	-2.255	ppb	-2.255	-85.15	10	2000	
Sr	88	3	72	-0.039	ppb	-0.039	-26.80	35	4000	
Mo	95	3	115	-0.088	ppb	-0.088	-22.84	22	2000	
Ag	107	3	115	0.000	ppb	0.000	842.63	7	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.731	ppb	-0.731	-1.27	153	2000	
Sb	121	3	115	-0.082	ppb	-0.082	-10.22	20	1000	
Ba	137	3	115	-0.112	ppb	-0.112	-46.47	38	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-47.46	180	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-20.25	187	100	
(Pb)	207	3	193	-0.024	ppb	-0.024	-48.02	453	100	
Pb	208	3	193	-0.004	ppb	-0.004	-65.70	1093	5000	
Th	232	3	193	-0.123	ppb	-0.123	-11.33	6728	2000	
U	238	3	193	0.019	ppb	0.019	76.98	2564	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5891693	0.64	2988516	197.14	60	120	IS Failed
Sc (IS)	45	3	HMI He	876082	1.47	453633	193.13	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3269484	1.67	1716556	190.47	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1082431	0.65	532053	203.44	60	120	IS Failed
In Internal Standard	115	3	HMI He	3925006	2.61	2192912	178.99	60	120	IS Failed
Ir (IS)	193	3	HMI He	9131273	0.61	4975964	183.51	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-2-a@50
Data File Name	234SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:05:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	-75.450	ppb	-75.450	-3.85	18207	400000	
Mg	24	3	45	-0.768	ppb	-0.768	-54.82	63	400000	
Al	27	3	45	-1.519	ppb	-1.519	-20.26	50	400000	
K	39	3	45	-200.131	ppb	-200.131	-6.33	11971	400000	
Ca	40	2	45	-11.186	ppb	-11.186	-1.81	7717	400000	
V	51	3	72	-0.360	ppb	-0.360	-1.63	20	2000	
Cr	52	3	72	-1.428	ppb	-1.428	-2.24	543	5000	
Mn	55	3	72	-0.140	ppb	-0.140	-23.07	82	10000	
Fe	56	2	72	-2.203	ppb	-2.203	-3.36	3284	10000	
Co	59	3	72	-0.001	ppb	-0.001	-1328.96	37	2000	
Ni	60	3	72	-0.255	ppb	-0.255	-17.35	63	5000	
Cu	63	3	72	-0.199	ppb	-0.199	-12.79	153	5000	
Zn	66	3	72	-0.423	ppb	-0.423	-17.76	87	5000	
As	75	3	72	-0.021	ppb	-0.021	-220.22	32	2000	
Se	78	2	72	-0.066	ppb	-0.066	-21.46	1	2000	
(Se)	78	3	72	-2.591	ppb	-2.591	-12.18	7	2000	
Sr	88	3	72	-0.056	ppb	-0.056	-19.52	20	4000	
Mo	95	3	115	-0.106	ppb	-0.106	-3.54	7	2000	
Ag	107	3	115	0.004	ppb	0.004	68.23	17	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.723	ppb	-0.723	-4.53	157	2000	
Sb	121	3	115	-0.088	ppb	-0.088	-8.19	13	1000	
Ba	137	3	115	-0.107	ppb	-0.107	-41.47	38	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-49.51	177	2000	
(Pb)	206	3	193	0.008	ppb	0.008	250.38	240	100	
(Pb)	207	3	193	-0.026	ppb	-0.026	-81.18	441	100	
Pb	208	3	193	0.003	ppb	0.003	288.81	1126	5000	
Th	232	3	193	-0.096	ppb	-0.096	-9.38	6812	2000	
U	238	3	193	0.000	ppb	0.000	5385.56	2352	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5599405	1.17	2988516	187.36	60	120	IS Failed
Sc (IS)	45	3	HMI He	853439	1.16	453633	188.13	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3127281	0.33	1716556	182.18	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1027034	2.48	532053	193.03	60	120	IS Failed
In Internal Standard	115	3	HMI He	3787187	0.97	2192912	172.70	60	120	IS Failed
Ir (IS)	193	3	HMI He	8957036	0.66	4975964	180.01	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171689-e-3-a@50
Data File Name	235SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:07:44-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	-71.798	ppb	-71.798	-8.05	17752	400000	
Mg	24	3	45	-0.171	ppb	-0.171	-207.84	113	400000	
Al	27	3	45	-1.862	ppb	-1.862	-24.02	37	400000	
K	39	3	45	-188.553	ppb	-188.553	-12.41	11974	400000	
Ca	40	2	45	-11.076	ppb	-11.076	-2.67	7429	400000	
V	51	3	72	-0.367	ppb	-0.367	-1.01	13	2000	
Cr	52	3	72	-1.432	ppb	-1.432	-0.27	503	5000	
Mn	55	3	72	-0.164	ppb	-0.164	-14.62	63	10000	
Fe	56	2	72	-2.020	ppb	-2.020	-4.49	3457	10000	
Co	59	3	72	-0.001	ppb	-0.001	-431.52	35	2000	
Ni	60	3	72	-0.234	ppb	-0.234	-18.09	70	5000	
Cu	63	3	72	-0.188	ppb	-0.188	-1.19	158	5000	
Zn	66	3	72	-0.487	ppb	-0.487	-17.94	67	5000	
As	75	3	72	-0.010	ppb	-0.010	-897.16	32	2000	
Se	78	2	72	-0.031	ppb	-0.031	-130.00	3	2000	
(Se)	78	3	72	-1.899	ppb	-1.899	-39.05	12	2000	
Sr	88	3	72	-0.032	ppb	-0.032	-48.71	37	4000	
Mo	95	3	115	-0.097	ppb	-0.097	-7.79	13	2000	
Ag	107	3	115	0.009	ppb	0.009	38.27	27	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.737	ppb	-0.737	-3.51	137	2000	
Sb	121	3	115	-0.087	ppb	-0.087	-11.78	13	1000	
Ba	137	3	115	-0.165	ppb	-0.165	-18.70	18	5000	
Tl	205	3	193	-0.006	ppb	-0.006	-167.28	167	2000	
(Pb)	206	3	193	-0.019	ppb	-0.019	-27.47	180	100	
(Pb)	207	3	193	-0.041	ppb	-0.041	-29.39	396	100	
Pb	208	3	193	-0.012	ppb	-0.012	-55.72	970	5000	
Th	232	3	193	-0.145	ppb	-0.145	-9.71	6128	2000	
U	238	3	193	0.004	ppb	0.004	679.39	2274	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5326488	0.20	2988516	178.23	60	120	IS Failed
Sc (IS)	45	3	HMI He	803403	3.90	453633	177.10	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2925056	0.17	1716556	170.40	60	120	IS Failed
Ge Internal standard	72	3	HMI He	960287	2.91	532053	180.49	60	120	IS Failed
In Internal Standard	115	3	HMI He	3646561	2.19	2192912	166.29	60	120	IS Failed
Ir (IS)	193	3	HMI He	8553042	2.13	4975964	171.89	60	120	IS Failed

Sample Report

Sample Table

Sample Name	160-48522-a-5-a@50
Data File Name	236SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:09:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.085	ppb	0.085	1.07	5	2000	
Na	23	3	45	1717.879	ppb	1717.879	2.18	178550	400000	
Mg	24	3	45	1870.305	ppb	1870.305	2.31	92691	400000	
Al	27	3	45	37.039	ppb	37.039	3.60	684	400000	
K	39	3	45	158.359	ppb	158.359	23.94	18377	400000	
Ca	40	2	45	7763.825	ppb	7763.825	2.11	3567621	400000	
V	51	3	72	-0.098	ppb	-0.098	-25.13	127	2000	
Cr	52	3	72	0.252	ppb	0.252	47.82	1211	5000	
Mn	55	3	72	759.616	ppb	759.616	0.65	225956	10000	
Fe	56	2	72	8.702	ppb	8.702	0.75	15063	10000	
Co	59	3	72	3.838	ppb	3.838	1.79	3670	2000	
Ni	60	3	72	29.943	ppb	29.943	1.22	7913	5000	
Cu	63	3	72	552.708	ppb	552.708	0.54	399612	5000	
Zn	66	3	72	84.896	ppb	84.896	0.98	10187	5000	
As	75	3	72	0.093	ppb	0.093	233.39	25	2000	
Se	78	2	72	0.091	ppb	0.091	49.95	7	2000	
(Se)	78	3	72	-0.987	ppb	-0.987	-119.27	10	2000	
Sr	88	3	72	13.957	ppb	13.957	3.90	5472	4000	
Mo	95	3	115	0.288	ppb	0.288	5.73	162	2000	
Ag	107	3	115	0.015	ppb	0.015	28.23	23	100	
Cd	111	3	115	50.287	ppb	50.287	0.53	9465	2000	
Sn	120	3	115	0.317	ppb	0.317	23.12	673	2000	
Sb	121	3	115	-0.010	ppb	-0.010	-370.70	52	1000	
Ba	137	3	115	4.126	ppb	4.126	5.24	780	5000	
Tl	205	3	193	0.142	ppb	0.142	9.94	550	2000	
(Pb)	206	3	193	0.233	ppb	0.233	24.39	355	100	
(Pb)	207	3	193	0.228	ppb	0.228	17.65	461	100	
Pb	208	3	193	0.238	ppb	0.238	5.73	1559	5000	
Th	232	3	193	0.013	ppb	0.013	500.97	4067	2000	
U	238	3	193	0.105	ppb	0.105	20.97	1719	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3055518	0.97	2988516	102.24	60	120	
Sc (IS)	45	3	HMI He	435917	1.09	453633	96.09	60	120	
Ge Internal standard	72	2	HMI H2	1687435	3.70	1716556	98.30	60	120	
Ge Internal standard	72	3	HMI He	502993	0.45	532053	94.54	60	120	
In Internal Standard	115	3	HMI He	2037760	0.73	2192912	92.92	60	120	
Ir (IS)	193	3	HMI He	4738210	1.60	4975964	95.22	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aSD@250
Data File Name	237SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:11:33-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.006	ppb	0.006	1474.79	2	2000	
Na	23	3	45	362.751	ppb	362.751	3.90	52700	400000	
Mg	24	3	45	363.969	ppb	363.969	2.99	18825	400000	
Al	27	3	45	16.699	ppb	16.699	20.85	350	400000	
K	39	3	45	43.531	ppb	43.531	59.85	15037	400000	
Ca	40	2	45	1493.512	ppb	1493.512	1.96	647300	400000	
V	51	3	72	-0.126	ppb	-0.126	-36.42	125	2000	
Cr	52	3	72	0.086	ppb	0.086	26.43	1229	5000	
Mn	55	3	72	135.724	ppb	135.724	3.89	44427	10000	
Fe	56	2	72	8.881	ppb	8.881	11.20	13687	10000	
Co	59	3	72	0.638	ppb	0.638	1.74	688	2000	
Ni	60	3	72	5.348	ppb	5.348	5.58	1641	5000	
Cu	63	3	72	98.638	ppb	98.638	2.63	78570	5000	
Zn	66	3	72	18.332	ppb	18.332	5.63	2496	5000	
As	75	3	72	0.071	ppb	0.071	353.16	25	2000	
Se	78	2	72	0.029	ppb	0.029	191.49	4	2000	
(Se)	78	3	72	-1.546	ppb	-1.546	-43.38	8	2000	
Sr	88	3	72	2.454	ppb	2.454	7.28	1086	4000	
Mo	95	3	115	0.100	ppb	0.100	11.11	90	2000	
Ag	107	3	115	0.013	ppb	0.013	15.13	22	100	
Cd	111	3	115	9.780	ppb	9.780	4.47	1921	2000	
Sn	120	3	115	0.395	ppb	0.395	48.04	748	2000	
Sb	121	3	115	-0.031	ppb	-0.031	-70.09	42	1000	
Ba	137	3	115	0.847	ppb	0.847	22.20	200	5000	
Tl	205	3	193	0.026	ppb	0.026	53.99	202	2000	
(Pb)	206	3	193	0.057	ppb	0.057	56.95	185	100	
(Pb)	207	3	193	0.044	ppb	0.044	120.89	310	100	
Pb	208	3	193	0.059	ppb	0.059	11.85	866	5000	
Th	232	3	193	-0.079	ppb	-0.079	-38.57	3850	2000	
U	238	3	193	0.027	ppb	0.027	108.79	1433	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2852261	6.62	2988516	95.44	60	120	
Sc (IS)	45	3	HMI He	453420	0.36	453633	99.95	60	120	
Ge Internal standard	72	2	HMI H2	1512410	4.93	1716556	88.11	60	120	
Ge Internal standard	72	3	HMI He	553111	3.73	532053	103.96	60	120	
In Internal Standard	115	3	HMI He	2125824	0.60	2192912	96.94	60	120	
Ir (IS)	193	3	HMI He	4964287	0.56	4975964	99.77	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-b ms@50
Data File Name	238SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:13:26-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.929	ppb	0.929	22.05	38	2000	
Na	23	3	45	1698.897	ppb	1698.897	2.77	181693	400000	
Mg	24	3	45	1867.951	ppb	1867.951	1.45	95183	400000	
Al	27	3	45	47.363	ppb	47.363	11.08	884	400000	
K	39	3	45	159.939	ppb	159.939	14.62	18965	400000	
Ca	40	2	45	7877.041	ppb	7877.041	3.13	3721642	400000	
V	51	3	72	0.643	ppb	0.643	14.59	491	2000	
Cr	52	3	72	0.913	ppb	0.913	21.43	1708	5000	
Mn	55	3	72	717.916	ppb	717.916	0.49	230350	10000	
Fe	56	2	72	22.481	ppb	22.481	1.94	33133	10000	
Co	59	3	72	4.234	ppb	4.234	1.43	4365	2000	
Ni	60	3	72	28.366	ppb	28.366	0.89	8092	5000	
Cu	63	3	72	523.408	ppb	523.408	0.87	408203	5000	
Zn	66	3	72	77.215	ppb	77.215	2.24	10004	5000	
As	75	3	72	0.938	ppb	0.938	43.39	103	2000	
Se	78	2	72	0.986	ppb	0.986	20.26	49	2000	
(Se)	78	3	72	0.676	ppb	0.676	185.53	18	2000	
Sr	88	3	72	14.711	ppb	14.711	3.08	6220	4000	
Mo	95	3	115	0.851	ppb	0.851	14.86	403	2000	
Ag	107	3	115	0.873	ppb	0.873	7.48	1213	100	
Cd	111	3	115	52.786	ppb	52.786	2.05	10331	2000	
Sn	120	3	115	1.164	ppb	1.164	19.44	1198	2000	
Sb	121	3	115	0.730	ppb	0.730	7.65	495	1000	
Ba	137	3	115	4.513	ppb	4.513	2.02	883	5000	
Tl	205	3	193	1.014	ppb	1.014	0.60	3305	2000	
(Pb)	206	3	193	1.025	ppb	1.025	1.81	1179	100	
(Pb)	207	3	193	1.006	ppb	1.006	9.71	1183	100	
Pb	208	3	193	1.037	ppb	1.037	1.25	4928	5000	
Th	232	3	193	0.782	ppb	0.782	3.60	7459	2000	
U	238	3	193	0.932	ppb	0.932	3.13	5587	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3142626	2.28	2988516	105.16	60	120	
Sc (IS)	45	3	HMI He	448177	2.05	453633	98.80	60	120	
Ge Internal standard	72	2	HMI H2	1754965	1.06	1716556	102.24	60	120	
Ge Internal standard	72	3	HMI He	542547	0.50	532053	101.97	60	120	
In Internal Standard	115	3	HMI He	2118714	0.84	2192912	96.62	60	120	
Ir (IS)	193	3	HMI He	4838597	1.43	4975964	97.24	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-c msd@50
Data File Name	239SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:19:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.243	ppb	1.243	32.52	52	2000	
Na	23	3	45	1675.094	ppb	1675.094	2.07	186763	400000	
Mg	24	3	45	1841.655	ppb	1841.655	1.05	97689	400000	
Al	27	3	45	46.430	ppb	46.430	14.45	904	400000	
K	39	3	45	147.214	ppb	147.214	17.04	19263	400000	
Ca	40	2	45	7939.252	ppb	7939.252	3.31	3792585	400000	
V	51	3	72	0.702	ppb	0.702	26.92	535	2000	
Cr	52	3	72	0.911	ppb	0.911	6.47	1754	5000	
Mn	55	3	72	716.147	ppb	716.147	1.21	236195	10000	
Fe	56	2	72	19.894	ppb	19.894	3.22	31173	10000	
Co	59	3	72	4.134	ppb	4.134	2.73	4382	2000	
Ni	60	3	72	27.788	ppb	27.788	1.55	8150	5000	
Cu	63	3	72	516.719	ppb	516.719	0.47	414241	5000	
Zn	66	3	72	76.811	ppb	76.811	1.91	10229	5000	
As	75	3	72	0.817	ppb	0.817	28.50	95	2000	
Se	78	2	72	0.692	ppb	0.692	28.50	37	2000	
(Se)	78	3	72	-1.218	ppb	-1.218	-88.04	10	2000	
Sr	88	3	72	14.044	ppb	14.044	1.78	6105	4000	
Mo	95	3	115	0.792	ppb	0.792	8.35	391	2000	
Ag	107	3	115	0.864	ppb	0.864	14.44	1239	100	
Cd	111	3	115	50.791	ppb	50.791	6.00	10269	2000	
Sn	120	3	115	1.049	ppb	1.049	18.97	1168	2000	
Sb	121	3	115	0.754	ppb	0.754	6.96	526	1000	
Ba	137	3	115	4.901	ppb	4.901	2.81	988	5000	
Tl	205	3	193	0.956	ppb	0.956	3.36	3284	2000	
(Pb)	206	3	193	1.005	ppb	1.005	1.86	1219	100	
(Pb)	207	3	193	1.027	ppb	1.027	9.99	1264	100	
Pb	208	3	193	1.035	ppb	1.035	1.58	5175	5000	
Th	232	3	193	0.708	ppb	0.708	2.04	7515	2000	
U	238	3	193	0.912	ppb	0.912	4.27	5780	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3177676	2.17	2988516	106.33	60	120	
Sc (IS)	45	3	HMI He	466498	0.91	453633	102.84	60	120	
Ge Internal standard	72	2	HMI H2	1832654	1.20	1716556	106.76	60	120	
Ge Internal standard	72	3	HMI He	557696	0.40	532053	104.82	60	120	
In Internal Standard	115	3	HMI He	2190686	2.23	2192912	99.90	60	120	
Ir (IS)	193	3	HMI He	5090691	0.48	4975964	102.31	60	120	

Sample Report

Sample Table

Sample Name	160-48522-a-5-aPDS@50
Data File Name	240SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:21:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	188.764	ppb	188.764	0.61	7413	2000	
Na	23	3	45	11507.573	ppb	11507.573	1.07	1127669	400000	
Mg	24	3	45	3629.163	ppb	3629.163	3.16	183861	400000	
Al	27	3	45	1888.105	ppb	1888.105	0.47	33042	400000	
K	39	3	45	2086.662	ppb	2086.662	1.76	86300	400000	
Ca	40	2	45	9366.080	ppb	9366.080	2.14	4405516	400000	
V	51	3	72	190.701	ppb	190.701	1.48	90246	2000	
Cr	52	3	72	194.975	ppb	194.975	1.25	117751	5000	
Mn	55	3	72	880.852	ppb	880.852	0.63	278469	10000	
Fe	56	2	72	22.996	ppb	22.996	1.94	34280	10000	
Co	59	3	72	190.082	ppb	190.082	1.62	192197	2000	
Ni	60	3	72	213.441	ppb	213.441	2.02	59315	5000	
Cu	63	3	72	694.750	ppb	694.750	1.26	533766	5000	
Zn	66	3	72	275.317	ppb	275.317	1.42	34888	5000	
As	75	3	72	189.075	ppb	189.075	1.42	16819	2000	
Se	78	2	72	187.417	ppb	187.417	2.15	8727	2000	
(Se)	78	3	72	215.809	ppb	215.809	6.91	980	2000	
Sr	88	3	72	201.415	ppb	201.415	1.95	83470	4000	
Mo	95	3	115	191.814	ppb	191.814	2.28	79971	2000	
Ag	107	3	115	43.153	ppb	43.153	2.17	59789	100	
Cd	111	3	115	239.474	ppb	239.474	2.22	46867	2000	
Sn	120	3	115	192.388	ppb	192.388	1.93	113721	2000	
Sb	121	3	115	196.865	ppb	196.865	0.92	117415	1000	
Ba	137	3	115	203.868	ppb	203.868	2.12	38057	5000	
Tl	205	3	193	193.698	ppb	193.698	2.50	617363	2000	
(Pb)	206	3	193	197.072	ppb	197.072	2.84	206017	100	
(Pb)	207	3	193	195.108	ppb	195.108	2.41	181109	100	
Pb	208	3	193	195.975	ppb	195.975	2.89	829079	5000	
Th	232	3	193	205.365	ppb	205.365	5.18	899021	2000	
U	238	3	193	212.021	ppb	212.021	2.71	995243	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3129199	2.16	2988516	104.71	60	120	
Sc (IS)	45	3	HMI He	445871	2.11	453633	98.29	60	120	
Ge Internal standard	72	2	HMI H2	1781199	3.90	1716556	103.77	60	120	
Ge Internal standard	72	3	HMI He	534621	1.74	532053	100.48	60	120	
In Internal Standard	115	3	HMI He	2119450	2.44	2192912	96.65	60	120	
Ir (IS)	193	3	HMI He	4900020	2.59	4975964	98.47	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	241_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:23:45-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	46.776	ppb	9.780	1876	50	93.6	90	110	
Na	23	3	45	51362.343	ppb	1.409	5202532	51000	100.7	90	110	
Mg	24	3	45	10559.927	ppb	0.343	559503	11000	96.0	90	110	
Al	27	3	45	911.679	ppb	3.717	16710	1000	91.2	90	110	
K	39	3	45	11155.516	ppb	1.530	422237	11000	101.4	90	110	
Ca	40	2	45	11161.967	ppb	1.356	5496938	11000	101.5	90	110	
V	51	3	72	44.390	ppb	2.369	22634	50	88.8	90	110	>+\-10%
Cr	52	3	72	45.941	ppb	0.662	30628	50	91.9	90	110	
Mn	55	3	72	44.851	ppb	2.208	15261	50	89.7	90	110	>+\-10%
Fe	56	2	72	947.323	ppb	3.562	1236068	1000	94.7	90	110	
Co	59	3	72	44.318	ppb	1.247	47977	50	88.6	90	110	>+\-10%
Ni	60	3	72	44.277	ppb	1.368	13256	50	88.6	90	110	>+\-10%
Cu	63	3	72	45.060	ppb	1.997	37285	50	90.1	90	110	
Zn	66	3	72	51.324	ppb	1.044	7047	50	102.6	90	110	
As	75	3	72	47.819	ppb	0.860	4567	50	95.6	90	110	
Se	78	2	72	45.877	ppb	2.046	2163	50	91.8	90	110	
(Se)	78	3	72	42.038	ppb	18.976	217	50	84.1	90	110	>+\-10%
Sr	88	3	72	91.017	ppb	1.501	40396	100	91.0	90	110	
Mo	95	3	115	47.542	ppb	1.310	20599	50	95.1	90	110	
Ag	107	3	115	47.330	ppb	1.104	68012	50	94.7	90	110	
Cd	111	3	115	47.671	ppb	2.126	9675	50	95.3	90	110	
Sn	120	3	115	47.233	ppb	2.244	29364	50	94.5	90	110	
Sb	121	3	115	47.899	ppb	0.440	29673	50	95.8	90	110	
Ba	137	3	115	47.206	ppb	2.504	9170	50	94.4	90	110	
Tl	205	3	193	46.843	ppb	2.565	155483	50	93.7	90	110	
(Pb)	206	3	193	46.204	ppb	2.103	50383	50	92.4	90	110	
(Pb)	207	3	193	47.082	ppb	1.943	45704	50	94.2	90	110	
Pb	208	3	193	46.826	ppb	2.321	206698	50	93.7	90	110	
Th	232	3	193	48.018	ppb	1.873	222223	50	96.0	90	110	
U	238	3	193	47.055	ppb	2.640	230958	50	94.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3276793	1.90	2988516	109.65	60	120	
Sc (IS)	45	3	HMI He	466272	1.59	453633	102.79	60	120	
Ge Internal standard	72	2	HMI H2	1800445	2.79	1716556	104.89	60	120	
Ge Internal standard	72	3	HMI He	572169	1.78	532053	107.54	60	120	
In Internal Standard	115	3	HMI He	2197557	1.54	2192912	100.21	60	120	
Ir (IS)	193	3	HMI He	5100746	3.28	4975964	102.51	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	242_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:25:37-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	112677.1	2	0.5	
Na	23	3	45	40.727	ppb	16.3	21140	25	>RL
Mg	24	3	45	3.810	ppb	33.4	270	25	
Al	27	3	45	0.546	ppb	262.7	63	15	
K	39	3	45	4.416	ppb	777.5	13684	50	
V	51	3	72	-0.139	ppb	-26.3	118	1	
Cr	52	3	72	-0.133	ppb	-40.8	1085	1	
Mn	55	3	72	0.228	ppb	5.7	163	0.5	
Co	59	3	72	0.014	ppb	61.4	35	0.5	
Ni	60	3	72	0.018	ppb	98.4	112	1	
Cu	63	3	72	0.181	ppb	21.2	381	1	
Zn	66	3	72	0.248	ppb	87.5	133	5	
As	75	3	72	0.251	ppb	56.5	42	1	
Se	78	2	72	-0.015	ppb	-184.7	3	1	
(Se)	78	3	72	0.628	ppb	260.1	18	1	
Sr	88	3	72	0.005	ppb	517.0	37	0.5	
Mo	95	3	115	0.063	ppb	91.8	73	0.5	
Ag	107	3	115	0.025	ppb	76.2	37	1	
Cd	111	3	115	0.026	ppb	0.4	5	0.5	
Sn	120	3	115	0.252	ppb	50.4	651	1	
Sb	121	3	115	0.070	ppb	11.6	100	0.6	
Ba	137	3	115	0.059	ppb	52.7	52	0.5	
Tl	205	3	193	0.031	ppb	21.7	218	0.1	
(Pb)	206	3	193	0.064	ppb	14.7	193	1	
(Pb)	207	3	193	0.044	ppb	32.6	312	1	
Pb	208	3	193	0.046	ppb	28.0	811	0.5	
Th	232	3	193	0.512	ppb	21.6	6482	1	
U	238	3	193	0.037	ppb	50.8	1481	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3033488	3.51	2988516	101.50	60	120	
Sc (IS)	45	3	HMI He	454662	0.54	453633	100.23	60	120	
Ge Internal standard	72	2	HMI H2	1724288	2.65	1716556	100.45	60	120	
Ge Internal standard	72	3	HMI He	548431	0.98	532053	103.08	60	120	
In Internal Standard	115	3	HMI He	2086775	0.36	2192912	95.16	60	120	
Ir (IS)	193	3	HMI He	4976763	1.38	4975964	100.02	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600565/2-a
Data File Name	243_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:27:29-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600565 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	36.942	36.942	ppb	14.489	1503	40	92.4	80	120	
Na	23	3	45	809.381	809.381	ppb	1.286	95240	40	2023.5	80	120	>+/-20%
Mg	24	3	45	691.533	691.533	ppb	1.592	35219	40	1728.8	80	120	>+/-20%
Al	27	3	45	744.968	744.968	ppb	1.256	13109	40	1862.4	80	120	>+/-20%
K	39	3	45	811.336	811.336	ppb	7.946	41784	40	2028.3	80	120	>+/-20%
Ca	40	2	45	785.161	785.161	ppb	0.801	390569	40	1962.9	80	120	>+/-20%
V	51	3	72	36.161	36.161	ppb	1.187	18565	40	90.4	80	120	
Cr	52	3	72	38.068	38.068	ppb	0.288	25713	40	95.2	80	120	
Mn	55	3	72	39.841	39.841	ppb	3.176	13635	40	99.6	80	120	
Fe	56	2	72	769.513	769.513	ppb	1.482	1012024	40	1923.8	80	120	>+/-20%
(Fe)	56	3	72	697.047	697.047	ppb	0.590	409555	40	1742.6	80	120	>+/-20%
Co	59	3	72	36.535	36.535	ppb	1.588	39754	40	91.3	80	120	
Ni	60	3	72	36.504	36.504	ppb	0.442	11004	40	91.3	80	120	
Cu	63	3	72	38.948	38.948	ppb	0.713	32423	40	97.4	80	120	
Zn	66	3	72	39.634	39.634	ppb	1.660	5493	40	99.1	80	120	
As	75	3	72	35.084	35.084	ppb	3.021	3372	40	87.7	80	120	
Se	78	2	72	38.498	38.498	ppb	3.529	1827	40	96.2	80	120	
(Se)	78	3	72	44.511	44.511	ppb	9.781	230	40	111.3	80	120	
Sr	88	3	72	71.504	71.504	ppb	0.526	31900	40	178.8	80	120	>+/-20%
Mo	95	3	115	38.862	38.862	ppb	0.577	16190	40	97.2	80	120	
Ag	107	3	115	39.433	39.433	ppb	1.419	54464	40	98.6	80	120	
Cd	111	3	115	39.994	39.994	ppb	1.660	7803	40	100.0	80	120	
Sn	120	3	115	38.608	38.608	ppb	2.720	23155	40	96.5	80	120	
Sb	121	3	115	39.212	39.212	ppb	1.976	23357	40	98.0	80	120	
Ba	137	3	115	40.262	40.262	ppb	3.812	7527	40	100.7	80	120	
Tl	205	3	193	39.087	39.087	ppb	0.458	127200	40	97.7	80	120	
(Pb)	206	3	193	39.481	39.481	ppb	1.218	42212	40	98.7	80	120	
(Pb)	207	3	193	39.291	39.291	ppb	1.759	37427	40	98.2	80	120	
Pb	208	3	193	39.693	39.693	ppb	1.810	171825	40	99.2	80	120	
Th	232	3	193	38.346	38.346	ppb	0.999	174788	40	95.9	80	120	
U	238	3	193	38.349	38.349	ppb	1.910	184738	40	95.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3232085	1.28	2988516	108.15	60	120	
Sc (IS)	45	3	HMI He	447301	1.16	453633	98.60	60	120	
Ge Internal standard	72	2	HMI H2	1811900	0.80	1716556	105.55	60	120	
Ge Internal standard	72	3	HMI He	574979	0.40	532053	108.07	60	120	
In Internal Standard	115	3	HMI He	2112139	0.78	2192912	96.32	60	120	
Ir (IS)	193	3	HMI He	4997636	0.93	4975964	100.44	60	120	

Sample Report

Sample Table

Sample Name	280-171595-c-1-b@50
Data File Name	244SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:29:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.042	ppb	0.042	176.82	3	2000	
Na	23	3	45	6103.467	ppb	6103.467	0.78	581036	400000	
Mg	24	3	45	3213.770	ppb	3213.770	0.69	156166	400000	
Al	27	3	45	51.237	ppb	51.237	24.84	911	400000	
K	39	3	45	179.490	ppb	179.490	15.91	18748	400000	
Ca	40	2	45	8668.891	ppb	8668.891	0.89	4088291	400000	
V	51	3	72	0.009	ppb	0.009	1380.64	175	2000	
Cr	52	3	72	0.254	ppb	0.254	53.15	1219	5000	
Mn	55	3	72	1.208	ppb	1.208	5.72	443	10000	
Fe	56	2	72	38.401	ppb	38.401	3.47	54016	10000	
Co	59	3	72	0.090	ppb	0.090	8.32	105	2000	
Ni	60	3	72	0.140	ppb	0.140	53.70	135	5000	
Cu	63	3	72	0.233	ppb	0.233	50.73	388	5000	
Zn	66	3	72	2.650	ppb	2.650	9.58	410	5000	
As	75	3	72	0.091	ppb	0.091	172.18	25	2000	
Se	78	2	72	4.827	ppb	4.827	4.01	228	2000	
(Se)	78	3	72	5.304	ppb	5.304	32.03	37	2000	
Sr	88	3	72	121.133	ppb	121.133	1.33	47467	4000	
Mo	95	3	115	0.172	ppb	0.172	24.08	113	2000	
Ag	107	3	115	0.026	ppb	0.026	30.62	37	100	
Cd	111	3	115	0.054	ppb	0.054	131.63	10	2000	
Sn	120	3	115	0.659	ppb	0.659	4.28	855	2000	
Sb	121	3	115	0.071	ppb	0.071	77.88	97	1000	
Ba	137	3	115	1.474	ppb	1.474	5.30	300	5000	
Tl	205	3	193	0.039	ppb	0.039	15.40	230	2000	
(Pb)	206	3	193	0.077	ppb	0.077	41.94	197	100	
(Pb)	207	3	193	0.142	ppb	0.142	16.18	383	100	
Pb	208	3	193	0.112	ppb	0.112	14.36	1041	5000	
Th	232	3	193	0.511	ppb	0.511	26.96	6140	2000	
U	238	3	193	0.902	ppb	0.902	2.91	5320	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3136187	0.77	2988516	104.94	60	120	
Sc (IS)	45	3	HMI He	427457	2.25	453633	94.23	60	120	
Ge Internal standard	72	2	HMI H2	1778925	2.92	1716556	103.63	60	120	
Ge Internal standard	72	3	HMI He	505358	2.41	532053	94.98	60	120	
In Internal Standard	115	3	HMI He	2009335	1.69	2192912	91.63	60	120	
Ir (IS)	193	3	HMI He	4725541	1.74	4975964	94.97	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-2-b@50
Data File Name	245SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:31:12-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.038	ppb	0.038	368.52	3	2000	
Na	23	3	45	3219.940	ppb	3219.940	1.33	354338	400000	
Mg	24	3	45	473.736	ppb	473.736	2.10	26027	400000	
Al	27	3	45	13.241	ppb	13.241	20.26	307	400000	
K	39	3	45	272.403	ppb	272.403	7.12	24657	400000	
Ca	40	2	45	1430.232	ppb	1430.232	2.15	718424	400000	
V	51	3	72	-0.003	ppb	-0.003	-3694.92	203	2000	
Cr	52	3	72	-0.026	ppb	-0.026	-328.20	1273	5000	
Mn	55	3	72	1.200	ppb	1.200	21.58	530	10000	
Fe	56	2	72	15.163	ppb	15.163	2.71	26425	10000	
Co	59	3	72	0.056	ppb	0.056	24.99	87	2000	
Ni	60	3	72	0.140	ppb	0.140	27.10	162	5000	
Cu	63	3	72	0.343	ppb	0.343	13.81	563	5000	
Zn	66	3	72	3.678	ppb	3.678	6.81	640	5000	
As	75	3	72	0.239	ppb	0.239	34.97	45	2000	
Se	78	2	72	0.108	ppb	0.108	106.72	9	2000	
(Se)	78	3	72	-0.070	ppb	-0.070	-2181.21	17	2000	
Sr	88	3	72	7.348	ppb	7.348	5.80	3492	4000	
Mo	95	3	115	0.192	ppb	0.192	1.79	137	2000	
Ag	107	3	115	0.029	ppb	0.029	38.06	47	100	
Cd	111	3	115	0.056	ppb	0.056	64.46	12	2000	
Sn	120	3	115	0.716	ppb	0.716	11.98	998	2000	
Sb	121	3	115	0.049	ppb	0.049	35.04	95	1000	
Ba	137	3	115	3.434	ppb	3.434	6.08	728	5000	
Tl	205	3	193	0.025	ppb	0.025	37.17	210	2000	
(Pb)	206	3	193	0.078	ppb	0.078	64.92	222	100	
(Pb)	207	3	193	0.119	ppb	0.119	39.44	405	100	
Pb	208	3	193	0.090	ppb	0.090	16.31	1066	5000	
Th	232	3	193	0.072	ppb	0.072	117.09	4807	2000	
U	238	3	193	0.366	ppb	0.366	6.05	3240	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3301856	1.09	2988516	110.48	60	120	
Sc (IS)	45	3	HMI He	482128	0.73	453633	106.28	60	120	
Ge Internal standard	72	2	HMI H2	1944627	3.18	1716556	113.29	60	120	
Ge Internal standard	72	3	HMI He	606786	0.98	532053	114.05	60	120	
In Internal Standard	115	3	HMI He	2261861	1.04	2192912	103.14	60	120	
Ir (IS)	193	3	HMI He	5287678	1.36	4975964	106.26	60	120	

Sample Report

Sample Table

Sample Name	280-171658-a-3-b@50
Data File Name	246SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:33:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.003	ppb	-0.003	-2801.34	2	2000	
Na	23	3	45	2475.687	ppb	2475.687	0.60	265361	400000	
Mg	24	3	45	454.582	ppb	454.582	1.48	23961	400000	
Al	27	3	45	5.635	ppb	5.635	22.31	157	400000	
K	39	3	45	171.112	ppb	171.112	11.55	19964	400000	
Ca	40	2	45	1617.904	ppb	1617.904	1.66	816231	400000	
V	51	3	72	-0.071	ppb	-0.071	-73.44	158	2000	
Cr	52	3	72	0.060	ppb	0.060	186.13	1261	5000	
Mn	55	3	72	0.514	ppb	0.514	18.98	268	10000	
Fe	56	2	72	5.392	ppb	5.392	6.20	12094	10000	
Co	59	3	72	0.028	ppb	0.028	75.54	52	2000	
Ni	60	3	72	0.040	ppb	0.040	258.75	123	5000	
Cu	63	3	72	0.161	ppb	0.161	54.46	383	5000	
Zn	66	3	72	3.008	ppb	3.008	5.50	515	5000	
As	75	3	72	0.299	ppb	0.299	55.81	48	2000	
Se	78	2	72	0.050	ppb	0.050	144.98	6	2000	
(Se)	78	3	72	0.807	ppb	0.807	259.95	20	2000	
Sr	88	3	72	6.314	ppb	6.314	2.44	2849	4000	
Mo	95	3	115	0.159	ppb	0.159	41.18	117	2000	
Ag	107	3	115	0.022	ppb	0.022	62.92	35	100	
Cd	111	3	115	0.009	ppb	0.009	173.21	2	2000	
Sn	120	3	115	0.452	ppb	0.452	6.52	798	2000	
Sb	121	3	115	-0.002	ppb	-0.002	-1475.50	60	1000	
Ba	137	3	115	2.491	ppb	2.491	8.04	518	5000	
Tl	205	3	193	0.023	ppb	0.023	62.00	197	2000	
(Pb)	206	3	193	0.025	ppb	0.025	182.86	155	100	
(Pb)	207	3	193	0.023	ppb	0.023	105.86	298	100	
Pb	208	3	193	0.052	ppb	0.052	6.35	858	5000	
Th	232	3	193	-0.059	ppb	-0.059	-67.84	4054	2000	
U	238	3	193	0.203	ppb	0.203	5.50	2331	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3322270	3.28	2988516	111.17	60	120	
Sc (IS)	45	3	HMI He	462485	1.26	453633	101.95	60	120	
Ge Internal standard	72	2	HMI H2	1850427	0.69	1716556	107.80	60	120	
Ge Internal standard	72	3	HMI He	574798	0.52	532053	108.03	60	120	
In Internal Standard	115	3	HMI He	2169500	2.45	2192912	98.93	60	120	
Ir (IS)	193	3	HMI He	5104788	1.10	4975964	102.59	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-1-a@50
Data File Name	247SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:34:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	1196.514	ppb	1196.514	1.08	126896	400000	
Mg	24	3	45	733.054	ppb	733.054	1.69	35687	400000	
Al	27	3	45	4.152	ppb	4.152	14.48	120	400000	
K	39	3	45	49.150	ppb	49.150	85.60	14365	400000	
Ca	40	2	45	1384.151	ppb	1384.151	3.37	618890	400000	
V	51	3	72	-0.124	ppb	-0.124	-42.62	115	2000	
Cr	52	3	72	0.175	ppb	0.175	131.52	1171	5000	
Mn	55	3	72	0.478	ppb	0.478	25.80	225	10000	
Fe	56	2	72	4.612	ppb	4.612	5.84	9496	10000	
Co	59	3	72	0.032	ppb	0.032	99.57	50	2000	
Ni	60	3	72	0.103	ppb	0.103	110.98	125	5000	
Cu	63	3	72	0.154	ppb	0.154	46.50	332	5000	
Zn	66	3	72	2.979	ppb	2.979	31.07	448	5000	
As	75	3	72	0.169	ppb	0.169	171.12	32	2000	
Se	78	2	72	-0.042	ppb	-0.042	-65.54	1	2000	
(Se)	78	3	72	-1.778	ppb	-1.778	-39.45	7	2000	
Sr	88	3	72	21.308	ppb	21.308	1.84	8365	4000	
Mo	95	3	115	0.296	ppb	0.296	20.11	162	2000	
Ag	107	3	115	0.023	ppb	0.023	8.98	33	100	
Cd	111	3	115	0.036	ppb	0.036	42.48	7	2000	
Sn	120	3	115	0.371	ppb	0.371	11.50	690	2000	
Sb	121	3	115	0.013	ppb	0.013	301.71	63	1000	
Ba	137	3	115	1.305	ppb	1.305	9.62	268	5000	
Tl	205	3	193	0.016	ppb	0.016	24.20	162	2000	
(Pb)	206	3	193	0.077	ppb	0.077	45.15	198	100	
(Pb)	207	3	193	0.067	ppb	0.067	47.20	318	100	
Pb	208	3	193	0.060	ppb	0.060	14.91	835	5000	
Th	232	3	193	-0.068	ppb	-0.068	-17.10	3735	2000	
U	238	3	193	0.202	ppb	0.202	3.95	2166	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2938919	2.51	2988516	98.34	60	120	
Sc (IS)	45	3	HMI He	427616	0.53	453633	94.26	60	120	
Ge Internal standard	72	2	HMI H2	1590983	3.33	1716556	92.68	60	120	
Ge Internal standard	72	3	HMI He	504601	1.03	532053	94.84	60	120	
In Internal Standard	115	3	HMI He	1996977	0.76	2192912	91.07	60	120	
Ir (IS)	193	3	HMI He	4756797	0.29	4975964	95.60	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-2-a@50
Data File Name	248SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:36:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-3719.17	2	2000	
Na	23	3	45	1925.107	ppb	1925.107	2.06	203819	400000	
Mg	24	3	45	970.174	ppb	970.174	1.97	49503	400000	
Al	27	3	45	6.287	ppb	6.287	4.48	163	400000	
K	39	3	45	64.422	ppb	64.422	75.64	15574	400000	
Ca	40	2	45	1947.366	ppb	1947.366	2.12	987244	400000	
V	51	3	72	-0.117	ppb	-0.117	-71.71	125	2000	
Cr	52	3	72	0.144	ppb	0.144	167.62	1218	5000	
Mn	55	3	72	3.266	ppb	3.266	4.05	1118	10000	
Fe	56	2	72	5.982	ppb	5.982	2.04	12966	10000	
Co	59	3	72	0.054	ppb	0.054	15.78	75	2000	
Ni	60	3	72	0.098	ppb	0.098	89.85	130	5000	
Cu	63	3	72	0.206	ppb	0.206	34.65	391	5000	
Zn	66	3	72	3.627	ppb	3.627	23.30	556	5000	
As	75	3	72	0.211	ppb	0.211	72.63	37	2000	
Se	78	2	72	-0.006	ppb	-0.006	-421.06	3	2000	
(Se)	78	3	72	0.412	ppb	0.412	346.94	17	2000	
Sr	88	3	72	28.401	ppb	28.401	4.35	11781	4000	
Mo	95	3	115	0.212	ppb	0.212	46.46	137	2000	
Ag	107	3	115	0.023	ppb	0.023	35.85	35	100	
Cd	111	3	115	0.017	ppb	0.017	86.63	3	2000	
Sn	120	3	115	0.507	ppb	0.507	27.13	810	2000	
Sb	121	3	115	-0.002	ppb	-0.002	-354.28	58	1000	
Ba	137	3	115	1.667	ppb	1.667	18.58	351	5000	
Tl	205	3	193	0.017	ppb	0.017	22.54	172	2000	
(Pb)	206	3	193	0.037	ppb	0.037	132.08	163	100	
(Pb)	207	3	193	0.082	ppb	0.082	34.73	350	100	
Pb	208	3	193	0.057	ppb	0.057	4.52	865	5000	
Th	232	3	193	-0.106	ppb	-0.106	-16.37	3762	2000	
U	238	3	193	0.234	ppb	0.234	7.34	2439	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3344388	1.49	2988516	111.91	60	120	
Sc (IS)	45	3	HMI He	448607	3.37	453633	98.89	60	120	
Ge Internal standard	72	2	HMI H2	1862259	1.11	1716556	108.49	60	120	
Ge Internal standard	72	3	HMI He	534485	5.14	532053	100.46	60	120	
In Internal Standard	115	3	HMI He	2119694	4.16	2192912	96.66	60	120	
Ir (IS)	193	3	HMI He	5009592	5.30	4975964	100.68	60	120	

Sample Report

Sample Table

Sample Name	280-171689-e-3-a@50
Data File Name	249SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:38:39-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600565 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.003	ppb	-0.003	-2514.36	2	2000	
Na	23	3	45	2306.326	ppb	2306.326	0.85	245368	400000	
Mg	24	3	45	3225.793	ppb	3225.793	0.91	167515	400000	
Al	27	3	45	4.624	ppb	4.624	6.15	137	400000	
K	39	3	45	95.932	ppb	95.932	36.76	17024	400000	
Ca	40	2	45	4215.673	ppb	4215.673	3.71	2108194	400000	
V	51	3	72	-0.136	ppb	-0.136	-31.46	120	2000	
Cr	52	3	72	-0.023	ppb	-0.023	-486.58	1161	5000	
Mn	55	3	72	0.229	ppb	0.229	30.54	165	10000	
Fe	56	2	72	4.981	ppb	4.981	7.72	11463	10000	
Co	59	3	72	0.026	ppb	0.026	50.11	48	2000	
Ni	60	3	72	0.098	ppb	0.098	111.76	135	5000	
Cu	63	3	72	0.078	ppb	0.078	35.52	303	5000	
Zn	66	3	72	2.849	ppb	2.849	20.30	476	5000	
As	75	3	72	0.048	ppb	0.048	357.44	23	2000	
Se	78	2	72	0.007	ppb	0.007	1485.32	4	2000	
(Se)	78	3	72	-1.220	ppb	-1.220	-82.90	10	2000	
Sr	88	3	72	63.747	ppb	63.747	2.94	27362	4000	
Mo	95	3	115	0.060	ppb	0.060	80.22	75	2000	
Ag	107	3	115	0.020	ppb	0.020	9.68	32	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	0.348	ppb	0.348	32.51	736	2000	
Sb	121	3	115	0.014	ppb	0.014	51.47	70	1000	
Ba	137	3	115	0.527	ppb	0.527	9.37	143	5000	
Tl	205	3	193	0.017	ppb	0.017	122.94	173	2000	
(Pb)	206	3	193	0.019	ppb	0.019	71.17	147	100	
(Pb)	207	3	193	0.094	ppb	0.094	7.10	361	100	
Pb	208	3	193	0.053	ppb	0.053	18.86	848	5000	
Th	232	3	193	-0.108	ppb	-0.108	-20.32	3767	2000	
U	238	3	193	0.566	ppb	0.566	2.52	4039	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3319666	2.70	2988516	111.08	60	120	
Sc (IS)	45	3	HMI He	456864	0.78	453633	100.71	60	120	
Ge Internal standard	72	2	HMI H2	1837427	2.61	1716556	107.04	60	120	
Ge Internal standard	72	3	HMI He	553462	3.31	532053	104.02	60	120	
In Internal Standard	115	3	HMI He	2173109	0.95	2192912	99.10	60	120	
Ir (IS)	193	3	HMI He	5020882	0.61	4975964	100.90	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	250_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:40:32-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.919	ppb	6.481	1831	50	91.8	90	110	
Na	23	3	45	51890.960	ppb	0.908	5130647	51000	101.7	90	110	
Mg	24	3	45	10712.869	ppb	1.498	553985	11000	97.4	90	110	
Al	27	3	45	920.914	ppb	0.995	16476	1000	92.1	90	110	
K	39	3	45	11315.950	ppb	0.344	417906	11000	102.9	90	110	
Ca	40	2	45	11082.811	ppb	2.298	5289500	11000	100.8	90	110	
V	51	3	72	44.153	ppb	3.182	23023	50	88.3	90	110	>+\-10%
Cr	52	3	72	44.644	ppb	1.446	30471	50	89.3	90	110	>+\-10%
Mn	55	3	72	43.125	ppb	2.029	15012	50	86.3	90	110	>+\-10%
Fe	56	2	72	826.872	ppb	16.313	1174590	1000	82.7	90	110	>+\-10%
Co	59	3	72	43.237	ppb	1.700	47874	50	86.5	90	110	>+\-10%
Ni	60	3	72	43.318	ppb	0.904	13268	50	86.6	90	110	>+\-10%
Cu	63	3	72	43.519	ppb	2.225	36837	50	87.0	90	110	>+\-10%
Zn	66	3	72	48.811	ppb	1.497	6860	50	97.6	90	110	
As	75	3	72	43.023	ppb	5.122	4204	50	86.0	90	110	>+\-10%
Se	78	2	72	41.994	ppb	16.815	2152	50	84.0	90	110	>+\-10%
(Se)	78	3	72	50.140	ppb	8.138	262	50	100.3	90	110	
Sr	88	3	72	87.542	ppb	2.361	39733	100	87.5	90	110	>+\-10%
Mo	95	3	115	47.755	ppb	2.480	20257	50	95.5	90	110	
Ag	107	3	115	48.144	ppb	1.837	67753	50	96.3	90	110	
Cd	111	3	115	48.715	ppb	2.652	9682	50	97.4	90	110	
Sn	120	3	115	47.118	ppb	1.561	28682	50	94.2	90	110	
Sb	121	3	115	47.589	ppb	1.910	28867	50	95.2	90	110	
Ba	137	3	115	48.829	ppb	4.597	9287	50	97.7	90	110	
Tl	205	3	193	47.450	ppb	1.228	155840	50	94.9	90	110	
(Pb)	206	3	193	47.508	ppb	2.763	51241	50	95.0	90	110	
(Pb)	207	3	193	47.240	ppb	1.461	45367	50	94.5	90	110	
Pb	208	3	193	46.986	ppb	2.960	205172	50	94.0	90	110	
Th	232	3	193	47.505	ppb	3.028	217509	50	95.0	90	110	
U	238	3	193	47.055	ppb	2.624	228509	50	94.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3176500	2.05	2988516	106.29	60	120	
Sc (IS)	45	3	HMI He	455085	0.39	453633	100.32	60	120	
Ge Internal standard	72	2	HMI H2	1992288	16.10	1716556	116.06	60	120	
Ge Internal standard	72	3	HMI He	585162	0.66	532053	109.98	60	120	
In Internal Standard	115	3	HMI He	2152327	1.84	2192912	98.15	60	120	
Ir (IS)	193	3	HMI He	5045107	1.74	4975964	101.39	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	251_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:42:24-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.043	ppb	0.0	0	0.5	
Na	23	3	45	40.463	ppb	13.1	21401	25	>RL
Mg	24	3	45	2.590	ppb	44.8	210	25	
Al	27	3	45	0.129	ppb	1385.6	57	15	
K	39	3	45	-8.007	ppb	-335.9	13417	50	
V	51	3	72	-0.160	ppb	-50.9	113	1	
Cr	52	3	72	0.028	ppb	385.4	1243	1	
Mn	55	3	72	0.118	ppb	160.0	133	0.5	
Co	59	3	72	0.015	ppb	65.7	38	0.5	
Ni	60	3	72	-0.051	ppb	-103.2	97	1	
Cu	63	3	72	-0.083	ppb	-33.2	182	1	
Zn	66	3	72	0.333	ppb	43.5	152	5	
As	75	3	72	0.035	ppb	746.9	23	1	
Se	78	2	72	-0.021	ppb	-225.2	3	1	
(Se)	78	3	72	1.115	ppb	229.5	22	1	>RL
Sr	88	3	72	0.016	ppb	42.7	43	0.5	
Mo	95	3	115	0.028	ppb	154.8	62	0.5	
Ag	107	3	115	0.021	ppb	21.0	33	1	
Cd	111	3	115	0.008	ppb	173.2	2	0.5	
Sn	120	3	115	-0.016	ppb	-700.3	520	1	
Sb	121	3	115	0.021	ppb	193.1	75	0.6	
Ba	137	3	115	0.057	ppb	117.3	53	0.5	
Tl	205	3	193	0.014	ppb	20.6	165	0.1	
(Pb)	206	3	193	0.004	ppb	402.5	133	1	
(Pb)	207	3	193	-0.018	ppb	-301.0	260	1	
Pb	208	3	193	0.028	ppb	76.2	756	0.5	
Th	232	3	193	0.376	ppb	43.8	6045	1	
U	238	3	193	0.031	ppb	74.4	1498	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3237931	2.09	2988516	108.35	60	120	
Sc (IS)	45	3	HMI He	460908	0.50	453633	101.60	60	120	
Ge Internal standard	72	2	HMI H2	1871310	3.96	1716556	109.02	60	120	
Ge Internal standard	72	3	HMI He	576304	1.25	532053	108.32	60	120	
In Internal Standard	115	3	HMI He	2181546	2.70	2192912	99.48	60	120	
Ir (IS)	193	3	HMI He	5116997	2.28	4975964	102.83	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600256/1-a
Data File Name	252_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:44:18-07:00
Sample Type	Blank
Dilution	1
Comment	600256 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.043	ppb	-1.51747E-06	0	0.5
Na	23	3	45	-77.412	ppb	-1.869692794	18999	25
Mg	24	3	45	-0.711	ppb	-44.00785822	73	25
Al	27	3	45	-1.606	ppb	-31.77496043	50	15
K	39	3	45	-213.657	ppb	-5.547462476	11780	50
V	51	3	72	-0.353	ppb	-5.567145839	28	1
Cr	52	3	72	-1.443	ppb	-4.040730749	566	1
Mn	55	3	72	-0.130	ppb	-10.98268243	95	0.5
Co	59	3	72	-0.012	ppb	-45.16928438	17	0.5
Ni	60	3	72	-0.275	ppb	-19.02609756	57	1
Cu	63	3	72	-0.202	ppb	-2.292894093	160	1
Zn	66	3	72	-0.514	ppb	-16.77674801	70	5
As	75	3	72	0.001	ppb	5165.70981	38	1
(Se)	78	3	72	-1.929	ppb	-79.97574949	13	1
Sr	88	3	72	-0.046	ppb	-13.35869828	30	0.5
Mo	95	3	115	-0.101	ppb	-9.585287762	12	0.5
Ag	107	3	115	0.011	ppb	33.36457004	35	1
Cd	111	3	115	0.005	ppb	173.2050808	2	0.5
Sn	120	3	115	-0.718	ppb	-3.821531631	172	1
Sb	121	3	115	-0.080	ppb	-6.217927881	23	0.6
Ba	137	3	115	-0.118	ppb	-14.55564737	37	0.5
Tl	205	3	193	-0.002	ppb	-393.4407249	208	0.1
(Pb)	206	3	193	-0.007	ppb	-236.6356407	223	1
(Pb)	207	3	193	-0.008	ppb	-187.6654911	498	1
Pb	208	3	193	-0.003	ppb	-190.477379	1146	0.5
Th	232	3	193	-0.127	ppb	-24.62432089	6933	1
U	238	3	193	0.001	ppb	1488.668997	2492	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5851764	0.88	2988516	195.81	60	120	IS Failed
Sc (IS)	45	3	HMI He	908362	1.59	453633	200.24	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3298500	2.19	1716556	192.16	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1107015	0.91	532053	208.06	60	120	IS Failed
In Internal Standard	115	3	HMI He	3998082	1.08	2192912	182.32	60	120	IS Failed
Ir (IS)	193	3	HMI He	9465711	2.51	4975964	190.23	60	120	IS Failed

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600256/2-a
Data File Name	253_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:46:11-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600256 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.519	41.519	ppb	1.257	1656	40	103.8	80	120	
Na	23	3	45	779.938	779.938	ppb	1.808	95199	40	1949.8	80	120	>+/-20%
Mg	24	3	45	702.898	702.898	ppb	1.200	36885	40	1757.2	80	120	>+/-20%
Al	27	3	45	760.452	760.452	ppb	1.301	13787	40	1901.1	80	120	>+/-20%
K	39	3	45	764.613	764.613	ppb	1.437	41379	40	1911.5	80	120	>+/-20%
Ca	40	2	45	789.582	789.582	ppb	2.412	393299	40	1974.0	80	120	>+/-20%
V	51	3	72	37.743	37.743	ppb	0.632	19567	40	94.4	80	120	
Cr	52	3	72	38.980	38.980	ppb	2.516	26564	40	97.4	80	120	
Mn	55	3	72	38.355	38.355	ppb	2.737	13268	40	95.9	80	120	
Fe	56	2	72	733.678	733.678	ppb	1.505	995008	40	1834.2	80	120	>+/-20%
(Fe)	56	3	72	703.966	703.966	ppb	1.401	417794	40	1759.9	80	120	>+/-20%
Co	59	3	72	36.663	36.663	ppb	1.403	40298	40	91.7	80	120	
Ni	60	3	72	37.884	37.884	ppb	3.136	11529	40	94.7	80	120	
Cu	63	3	72	37.573	37.573	ppb	2.610	31600	40	93.9	80	120	
Zn	66	3	72	39.980	39.980	ppb	1.735	5597	40	99.9	80	120	
As	75	3	72	36.682	36.682	ppb	4.460	3560	40	91.7	80	120	
Se	78	2	72	37.590	37.590	ppb	6.852	1838	40	94.0	80	120	
(Se)	78	3	72	40.318	40.318	ppb	21.002	212	40	100.8	80	120	
Sr	88	3	72	75.435	75.435	ppb	2.047	33992	40	188.6	80	120	>+/-20%
Mo	95	3	115	38.347	38.347	ppb	2.986	16624	40	95.9	80	120	
Ag	107	3	115	38.945	38.945	ppb	1.705	55978	40	97.4	80	120	
Cd	111	3	115	39.596	39.596	ppb	4.341	8043	40	99.0	80	120	
Sn	120	3	115	38.824	38.824	ppb	2.258	24232	40	97.1	80	120	
Sb	121	3	115	38.718	38.718	ppb	2.866	24001	40	96.8	80	120	
Ba	137	3	115	40.959	40.959	ppb	1.353	7967	40	102.4	80	120	
Tl	205	3	193	40.225	40.225	ppb	0.203	131857	40	100.6	80	120	
(Pb)	206	3	193	40.657	40.657	ppb	0.620	43785	40	101.6	80	120	
(Pb)	207	3	193	40.264	40.264	ppb	1.577	38626	40	100.7	80	120	
Pb	208	3	193	40.785	40.785	ppb	0.732	177837	40	102.0	80	120	
Th	232	3	193	40.303	40.303	ppb	0.568	184833	40	100.8	80	120	
U	238	3	193	39.892	39.892	ppb	0.836	193529	40	99.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3237678	1.62	2988516	108.34	60	120	
Sc (IS)	45	3	HMI He	460903	0.94	453633	101.60	60	120	
Ge Internal standard	72	2	HMI H2	1868305	2.03	1716556	108.84	60	120	
Ge Internal standard	72	3	HMI He	580901	1.74	532053	109.18	60	120	
In Internal Standard	115	3	HMI He	2198411	1.64	2192912	100.25	60	120	
Ir (IS)	193	3	HMI He	5034011	1.09	4975964	101.17	60	120	

Sample Report

Sample Table

Sample Name	280-171347-e-1-a
Data File Name	254SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:48:05-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	154048.855	ppb	154048.855	1.02	15664887	400000	
Mg	24	3	45	58870.392	ppb	58870.392	1.41	3137817	400000	
Al	27	3	45	0.792	ppb	0.792	179.79	70	400000	
K	39	3	45	9707.183	ppb	9707.183	1.52	371485	400000	
Ca	40	2	45	312051.728	ppb	312051.728	0.63	151706718	400000	
V	51	3	72	-0.018	ppb	-0.018	-274.62	185	2000	
Cr	52	3	72	1.060	ppb	1.060	11.73	1903	5000	
Mn	55	3	72	0.603	ppb	0.603	12.76	298	10000	
Fe	56	2	72	6.020	ppb	6.020	3.37	13196	10000	
Co	59	3	72	0.101	ppb	0.101	11.66	132	2000	
Ni	60	3	72	1.488	ppb	1.488	14.67	555	5000	
Cu	63	3	72	0.912	ppb	0.912	3.37	1003	5000	
Zn	66	3	72	1.268	ppb	1.268	10.33	278	5000	
As	75	3	72	0.282	ppb	0.282	144.71	47	2000	
Se	78	2	72	3.182	ppb	3.182	9.72	161	2000	
(Se)	78	3	72	6.707	ppb	6.707	73.62	48	2000	
Sr	88	3	72	2677.719	ppb	2677.719	1.73	1192003	4000	
Mo	95	3	115	1.638	ppb	1.638	4.98	763	2000	
Ag	107	3	115	0.033	ppb	0.033	24.70	52	100	
Cd	111	3	115	0.065	ppb	0.065	22.49	13	2000	
Sn	120	3	115	-0.211	ppb	-0.211	-1.35	406	2000	
Sb	121	3	115	0.144	ppb	0.144	33.83	152	1000	
Ba	137	3	115	76.126	ppb	76.126	3.01	14869	5000	
Tl	205	3	193	0.025	ppb	0.025	48.83	200	2000	
(Pb)	206	3	193	0.009	ppb	0.009	80.03	137	100	
(Pb)	207	3	193	0.032	ppb	0.032	143.09	303	100	
Pb	208	3	193	0.020	ppb	0.020	80.15	708	5000	
Th	232	3	193	0.471	ppb	0.471	26.00	6365	2000	
U	238	3	193	104.966	ppb	104.966	1.03	506779	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3240590	1.60	2988516	108.43	60	120	
Sc (IS)	45	3	HMI He	469073	0.58	453633	103.40	60	120	
Ge Internal standard	72	2	HMI H2	1887786	0.74	1716556	109.98	60	120	
Ge Internal standard	72	3	HMI He	574406	0.49	532053	107.96	60	120	
In Internal Standard	115	3	HMI He	2213329	1.37	2192912	100.93	60	120	
Ir (IS)	193	3	HMI He	5030804	0.57	4975964	101.10	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-2-a
Data File Name	255SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:49:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	99780.480	ppb	99780.480	2.12	10046652	400000	
Mg	24	3	45	33320.664	ppb	33320.664	2.00	1757465	400000	
Al	27	3	45	3.242	ppb	3.242	89.94	113	400000	
K	39	3	45	6008.436	ppb	6008.436	1.19	232832	400000	
Ca	40	2	45	90889.130	ppb	90889.130	1.16	44512611	400000	
V	51	3	72	-0.084	ppb	-0.084	-55.12	148	2000	
Cr	52	3	72	1.307	ppb	1.307	12.78	2017	5000	
Mn	55	3	72	5.922	ppb	5.922	7.71	2059	10000	
Fe	56	2	72	13.622	ppb	13.622	2.85	23363	10000	
Co	59	3	72	0.206	ppb	0.206	22.62	240	2000	
Ni	60	3	72	2.842	ppb	2.842	5.85	938	5000	
Cu	63	3	72	0.794	ppb	0.794	3.02	886	5000	
Zn	66	3	72	2.202	ppb	2.202	24.97	396	5000	
As	75	3	72	0.168	ppb	0.168	54.94	35	2000	
Se	78	2	72	2.584	ppb	2.584	27.61	130	2000	
(Se)	78	3	72	3.372	ppb	3.372	65.17	32	2000	
Sr	88	3	72	943.338	ppb	943.338	0.98	411001	4000	
Mo	95	3	115	1.501	ppb	1.501	7.33	696	2000	
Ag	107	3	115	0.013	ppb	0.013	18.27	22	100	
Cd	111	3	115	0.041	ppb	0.041	35.24	8	2000	
Sn	120	3	115	-0.516	ppb	-0.516	-6.87	217	2000	
Sb	121	3	115	0.008	ppb	0.008	514.52	67	1000	
Ba	137	3	115	22.903	ppb	22.903	2.13	4462	5000	
Tl	205	3	193	-0.001	ppb	-0.001	-1648.78	113	2000	
(Pb)	206	3	193	-0.026	ppb	-0.026	-47.93	97	100	
(Pb)	207	3	193	0.011	ppb	0.011	170.74	277	100	
Pb	208	3	193	0.004	ppb	0.004	415.88	625	5000	
Th	232	3	193	0.026	ppb	0.026	197.90	4267	2000	
U	238	3	193	12.245	ppb	12.245	1.63	58831	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3264520	2.50	2988516	109.24	60	120	
Sc (IS)	45	3	HMI He	464267	1.25	453633	102.34	60	120	
Ge Internal standard	72	2	HMI H2	1871935	0.69	1716556	109.05	60	120	
Ge Internal standard	72	3	HMI He	562137	0.31	532053	105.65	60	120	
In Internal Standard	115	3	HMI He	2191813	2.04	2192912	99.95	60	120	
Ir (IS)	193	3	HMI He	4909338	0.33	4975964	98.66	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-3-a
Data File Name	256SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:51:50-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.040	ppb	0.040	180.85	3	2000	
Na	23	3	45	95324.855	ppb	95324.855	1.68	9760614	400000	
Mg	24	3	45	33095.619	ppb	33095.619	2.33	1774982	400000	
Al	27	3	45	3.117	ppb	3.117	26.70	113	400000	
K	39	3	45	6193.588	ppb	6193.588	2.35	243590	400000	
Ca	40	2	45	82996.262	ppb	82996.262	2.53	41561026	400000	
V	51	3	72	0.149	ppb	0.149	20.08	267	2000	
Cr	52	3	72	2.214	ppb	2.214	9.91	2611	5000	
Mn	55	3	72	71.864	ppb	71.864	1.09	24191	10000	
Fe	56	2	72	15.713	ppb	15.713	7.34	26860	10000	
Co	59	3	72	0.904	ppb	0.904	6.13	991	2000	
Ni	60	3	72	2.909	ppb	2.909	4.65	966	5000	
Cu	63	3	72	0.652	ppb	0.652	4.79	778	5000	
Zn	66	3	72	1.629	ppb	1.629	5.51	323	5000	
As	75	3	72	0.235	ppb	0.235	14.19	42	2000	
Se	78	2	72	1.242	ppb	1.242	14.25	66	2000	
(Se)	78	3	72	-0.907	ppb	-0.907	-133.18	12	2000	
Sr	88	3	72	918.915	ppb	918.915	1.23	403994	4000	
Mo	95	3	115	6.556	ppb	6.556	7.86	2897	2000	
Ag	107	3	115	0.017	ppb	0.017	51.08	28	100	
Cd	111	3	115	0.041	ppb	0.041	36.49	8	2000	
Sn	120	3	115	-0.403	ppb	-0.403	-2.44	288	2000	
Sb	121	3	115	0.064	ppb	0.064	78.09	102	1000	
Ba	137	3	115	29.268	ppb	29.268	3.15	5735	5000	
Tl	205	3	193	0.001	ppb	0.001	634.67	120	2000	
(Pb)	206	3	193	0.014	ppb	0.014	166.14	140	100	
(Pb)	207	3	193	-0.002	ppb	-0.002	-1918.83	268	100	
Pb	208	3	193	0.010	ppb	0.010	108.17	658	5000	
Th	232	3	193	-0.050	ppb	-0.050	-63.22	4004	2000	
U	238	3	193	15.768	ppb	15.768	0.91	76714	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3338576	2.47	2988516	111.71	60	120	
Sc (IS)	45	3	HMI He	472016	0.22	453633	104.05	60	120	
Ge Internal standard	72	2	HMI H2	1921257	2.24	1716556	111.93	60	120	
Ge Internal standard	72	3	HMI He	567273	1.07	532053	106.62	60	120	
In Internal Standard	115	3	HMI He	2210987	2.62	2192912	100.82	60	120	
Ir (IS)	193	3	HMI He	4996209	1.39	4975964	100.41	60	120	

Sample Report

Sample Table

Sample Name	280-171347-d-4-a
Data File Name	257SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:53:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	108479.838	ppb	108479.838	1.21	11549254	400000	
Mg	24	3	45	39305.609	ppb	39305.609	2.70	2192472	400000	
Al	27	3	45	2.191	ppb	2.191	72.11	100	400000	
K	39	3	45	6334.091	ppb	6334.091	0.55	258749	400000	
Ca	40	2	45	117058.360	ppb	117058.360	2.41	59123595	400000	
V	51	3	72	-0.061	ppb	-0.061	-112.11	173	2000	
Cr	52	3	72	0.820	ppb	0.820	18.04	1856	5000	
Mn	55	3	72	114.425	ppb	114.425	2.89	41349	10000	
Fe	56	2	72	6.049	ppb	6.049	6.02	13918	10000	
Co	59	3	72	0.136	ppb	0.136	15.68	180	2000	
Ni	60	3	72	2.015	ppb	2.015	5.28	756	5000	
Cu	63	3	72	0.564	ppb	0.564	7.05	760	5000	
Zn	66	3	72	1.001	ppb	1.001	37.16	257	5000	
As	75	3	72	0.138	ppb	0.138	2.31	35	2000	
Se	78	2	72	2.165	ppb	2.165	24.44	117	2000	
(Se)	78	3	72	0.566	ppb	0.566	179.65	20	2000	
Sr	88	3	72	1176.117	ppb	1176.117	0.63	555933	4000	
Mo	95	3	115	2.237	ppb	2.237	11.04	1050	2000	
Ag	107	3	115	0.012	ppb	0.012	40.58	22	100	
Cd	111	3	115	0.040	ppb	0.040	35.09	8	2000	
Sn	120	3	115	-0.428	ppb	-0.428	-5.36	280	2000	
Sb	121	3	115	0.085	ppb	0.085	60.03	118	1000	
Ba	137	3	115	30.028	ppb	30.028	3.99	6042	5000	
Tl	205	3	193	0.022	ppb	0.022	58.46	193	2000	
(Pb)	206	3	193	0.005	ppb	0.005	482.24	133	100	
(Pb)	207	3	193	0.011	ppb	0.011	326.60	287	100	
Pb	208	3	193	0.013	ppb	0.013	27.59	686	5000	
Th	232	3	193	-0.108	ppb	-0.108	-22.49	3817	2000	
U	238	3	193	31.837	ppb	31.837	2.77	156550	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3367154	1.69	2988516	112.67	60	120	
Sc (IS)	45	3	HMI He	490884	0.39	453633	108.21	60	120	
Ge Internal standard	72	2	HMI H2	1985841	2.36	1716556	115.69	60	120	
Ge Internal standard	72	3	HMI He	609894	0.92	532053	114.63	60	120	
In Internal Standard	115	3	HMI He	2270202	1.45	2192912	103.52	60	120	
Ir (IS)	193	3	HMI He	5094962	1.74	4975964	102.39	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-5-a
Data File Name	258SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:55:38-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.003	ppb	-0.003	-2514.30	2	2000	
Na	23	3	45	109165.713	ppb	109165.713	2.47	11452132	400000	
Mg	24	3	45	34817.050	ppb	34817.050	4.35	1913188	400000	
Al	27	3	45	2.086	ppb	2.086	114.73	97	400000	
K	39	3	45	6314.954	ppb	6314.954	1.22	254265	400000	
Ca	40	2	45	93555.233	ppb	93555.233	1.37	48660006	400000	
V	51	3	72	0.097	ppb	0.097	83.73	253	2000	
Cr	52	3	72	0.734	ppb	0.734	18.91	1763	5000	
Mn	55	3	72	16.937	ppb	16.937	4.27	6085	10000	
Fe	56	2	72	2.860	ppb	2.860	5.98	9446	10000	
Co	59	3	72	0.151	ppb	0.151	12.02	193	2000	
Ni	60	3	72	1.345	ppb	1.345	4.59	533	5000	
Cu	63	3	72	0.637	ppb	0.637	10.27	808	5000	
Zn	66	3	72	0.789	ppb	0.789	47.54	222	5000	
As	75	3	72	0.213	ppb	0.213	60.92	42	2000	
Se	78	2	72	2.151	ppb	2.151	7.79	117	2000	
(Se)	78	3	72	-0.028	ppb	-0.028	-8097.84	17	2000	
Sr	88	3	72	947.970	ppb	947.970	1.44	439251	4000	
Mo	95	3	115	3.587	ppb	3.587	2.47	1638	2000	
Ag	107	3	115	0.006	ppb	0.006	194.03	12	100	
Cd	111	3	115	0.024	ppb	0.024	100.32	5	2000	
Sn	120	3	115	-0.526	ppb	-0.526	-16.21	217	2000	
Sb	121	3	115	0.076	ppb	0.076	45.65	112	1000	
Ba	137	3	115	30.576	ppb	30.576	2.10	6097	5000	
Tl	205	3	193	0.011	ppb	0.011	89.14	157	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-616.17	127	100	
(Pb)	207	3	193	-0.025	ppb	-0.025	-157.46	252	100	
Pb	208	3	193	0.006	ppb	0.006	214.41	655	5000	
Th	232	3	193	-0.116	ppb	-0.116	-25.19	3790	2000	
U	238	3	193	22.956	ppb	22.956	0.24	113432	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3466382	1.06	2988516	115.99	60	120	
Sc (IS)	45	3	HMI He	483787	1.32	453633	106.65	60	120	
Ge Internal standard	72	2	HMI H2	2006583	1.45	1716556	116.90	60	120	
Ge Internal standard	72	3	HMI He	597878	0.89	532053	112.37	60	120	
In Internal Standard	115	3	HMI He	2249411	0.56	2192912	102.58	60	120	
Ir (IS)	193	3	HMI He	5101436	0.78	4975964	102.52	60	120	

Sample Report

Sample Table

Sample Name	280-171348-d-6-a
Data File Name	259SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:57:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	105798.062	ppb	105798.062	1.38	11345236	400000	
Mg	24	3	45	35519.918	ppb	35519.918	0.86	1995455	400000	
Al	27	3	45	12.489	ppb	12.489	18.45	300	400000	
K	39	3	45	5468.372	ppb	5468.372	1.38	226993	400000	
Ca	40	2	45	108135.863	ppb	108135.863	1.75	56273695	400000	
V	51	3	72	-0.082	ppb	-0.082	-45.15	158	2000	
Cr	52	3	72	2.498	ppb	2.498	5.84	2927	5000	
Mn	55	3	72	65.817	ppb	65.817	1.67	23243	10000	
Fe	56	2	72	14.296	ppb	14.296	2.72	25603	10000	
Co	59	3	72	0.156	ppb	0.156	8.00	198	2000	
Ni	60	3	72	2.923	ppb	2.923	4.14	1018	5000	
Cu	63	3	72	0.767	ppb	0.767	9.22	915	5000	
Zn	66	3	72	1.364	ppb	1.364	8.62	302	5000	
As	75	3	72	0.148	ppb	0.148	137.52	35	2000	
Se	78	2	72	2.263	ppb	2.263	4.76	121	2000	
(Se)	78	3	72	0.664	ppb	0.664	155.89	20	2000	
Sr	88	3	72	1150.225	ppb	1150.225	0.65	530347	4000	
Mo	95	3	115	2.508	ppb	2.508	11.71	1176	2000	
Ag	107	3	115	0.004	ppb	0.004	131.78	10	100	
Cd	111	3	115	0.024	ppb	0.024	99.52	5	2000	
Sn	120	3	115	-0.333	ppb	-0.333	-9.70	342	2000	
Sb	121	3	115	0.011	ppb	0.011	52.11	72	1000	
Ba	137	3	115	27.263	ppb	27.263	3.37	5515	5000	
Tl	205	3	193	0.013	ppb	0.013	18.69	163	2000	
(Pb)	206	3	193	0.008	ppb	0.008	211.32	138	100	
(Pb)	207	3	193	0.050	ppb	0.050	57.69	328	100	
Pb	208	3	193	0.034	ppb	0.034	21.31	786	5000	
Th	232	3	193	-0.096	ppb	-0.096	-26.46	3922	2000	
U	238	3	193	17.642	ppb	17.642	3.29	88393	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3469117	2.04	2988516	116.08	60	120	
Sc (IS)	45	3	HMI He	494402	0.58	453633	108.99	60	120	
Ge Internal standard	72	2	HMI H2	1974409	0.50	1716556	115.02	60	120	
Ge Internal standard	72	3	HMI He	594915	0.76	532053	111.81	60	120	
In Internal Standard	115	3	HMI He	2280252	1.40	2192912	103.98	60	120	
Ir (IS)	193	3	HMI He	5157317	2.98	4975964	103.64	60	120	

Sample Report

Sample Table

Sample Name	280-171348-c-7-a
Data File Name	260SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T10:59:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.004	ppb	-0.004	-1883.50	2	2000	
Na	23	3	45	124133.502	ppb	124133.502	4.84	13140492	400000	
Mg	24	3	45	34325.808	ppb	34325.808	3.81	1904635	400000	
Al	27	3	45	15.652	ppb	15.652	16.09	357	400000	
K	39	3	45	12294.875	ppb	12294.875	5.33	485800	400000	
Ca	40	2	45	85735.388	ppb	85735.388	3.66	45038789	400000	
V	51	3	72	0.115	ppb	0.115	35.41	253	2000	
Cr	52	3	72	4.658	ppb	4.658	3.23	4230	5000	
Mn	55	3	72	19.610	ppb	19.610	1.57	6780	10000	
Fe	56	2	72	36.924	ppb	36.924	2.53	57051	10000	
Co	59	3	72	0.277	ppb	0.277	16.89	323	2000	
Ni	60	3	72	10.005	ppb	10.005	4.78	3102	5000	
Cu	63	3	72	2.033	ppb	2.033	11.88	1929	5000	
Zn	66	3	72	4.984	ppb	4.984	6.64	785	5000	
As	75	3	72	0.160	ppb	0.160	62.37	35	2000	
Se	78	2	72	0.514	ppb	0.514	38.24	30	2000	
(Se)	78	3	72	0.522	ppb	0.522	464.65	18	2000	
Sr	88	3	72	978.200	ppb	978.200	5.11	436590	4000	
Mo	95	3	115	1.727	ppb	1.727	3.84	833	2000	
Ag	107	3	115	0.008	ppb	0.008	76.25	15	100	
Cd	111	3	115	0.070	ppb	0.070	85.81	15	2000	
Sn	120	3	115	-0.357	ppb	-0.357	-18.38	328	2000	
Sb	121	3	115	0.276	ppb	0.276	14.21	243	1000	
Ba	137	3	115	130.541	ppb	130.541	4.81	26448	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-316.08	110	2000	
(Pb)	206	3	193	0.094	ppb	0.094	27.50	227	100	
(Pb)	207	3	193	0.071	ppb	0.071	29.44	338	100	
Pb	208	3	193	0.076	ppb	0.076	27.84	948	5000	
Th	232	3	193	-0.073	ppb	-0.073	-35.48	3914	2000	
U	238	3	193	4.177	ppb	4.177	3.31	21341	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3502234	1.53	2988516	117.19	60	120	
Sc (IS)	45	3	HMI He	488762	3.66	453633	107.74	60	120	
Ge Internal standard	72	2	HMI H2	1946820	2.08	1716556	113.41	60	120	
Ge Internal standard	72	3	HMI He	576894	5.35	532053	108.43	60	120	
In Internal Standard	115	3	HMI He	2300819	3.50	2192912	104.92	60	120	
Ir (IS)	193	3	HMI He	5011177	2.38	4975964	100.71	60	120	

Sample Report

Sample Table

Sample Name	280-171630-d-1-a@10
Data File Name	261SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:01:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600256 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.079	ppb	0.079	3.29	5	2000	
Na	23	3	45	73173.244	ppb	73173.244	1.40	7423987	400000	
Mg	24	3	45	5259.072	ppb	5259.072	2.71	279317	400000	
Al	27	3	45	3230.939	ppb	3230.939	2.98	59213	400000	
K	39	3	45	1112.470	ppb	1112.470	2.52	54721	400000	
Ca	40	2	45	9843.245	ppb	9843.245	1.84	4878701	400000	
V	51	3	72	7.812	ppb	7.812	1.83	4095	2000	
Cr	52	3	72	5.278	ppb	5.278	2.40	4545	5000	
Mn	55	3	72	51.479	ppb	51.479	2.46	17314	10000	
Fe	56	2	72	3992.243	ppb	3992.243	1.30	5413245	10000	
Co	59	3	72	1.638	ppb	1.638	2.86	1774	2000	
Ni	60	3	72	4.476	ppb	4.476	10.72	1423	5000	
Cu	63	3	72	3.486	ppb	3.486	7.35	3077	5000	
Zn	66	3	72	17.421	ppb	17.421	1.19	2434	5000	
As	75	3	72	1.681	ppb	1.681	35.13	178	2000	
Se	78	2	72	0.987	ppb	0.987	11.51	52	2000	
(Se)	78	3	72	2.272	ppb	2.272	52.28	27	2000	
Sr	88	3	72	211.725	ppb	211.725	1.80	92854	4000	
Mo	95	3	115	0.838	ppb	0.838	9.69	408	2000	
Ag	107	3	115	0.032	ppb	0.032	54.97	48	100	
Cd	111	3	115	0.066	ppb	0.066	94.67	13	2000	
Sn	120	3	115	0.318	ppb	0.318	34.37	720	2000	
Sb	121	3	115	0.256	ppb	0.256	21.99	218	1000	
Ba	137	3	115	15.637	ppb	15.637	4.68	3039	5000	
Tl	205	3	193	0.041	ppb	0.041	36.39	248	2000	
(Pb)	206	3	193	3.806	ppb	3.806	8.18	4165	100	
(Pb)	207	3	193	3.580	ppb	3.580	2.74	3639	100	
Pb	208	3	193	3.677	ppb	3.677	2.30	16403	5000	
Th	232	3	193	1.398	ppb	1.398	5.61	10399	2000	
U	238	3	193	0.567	ppb	0.567	4.62	4004	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3297582	1.26	2988516	110.34	60	120	
Sc (IS)	45	3	HMI He	467475	2.97	453633	103.05	60	120	
Ge Internal standard	72	2	HMI H2	1875506	0.93	1716556	109.26	60	120	
Ge Internal standard	72	3	HMI He	565775	2.11	532053	106.34	60	120	
In Internal Standard	115	3	HMI He	2177570	1.13	2192912	99.30	60	120	
Ir (IS)	193	3	HMI He	4973363	1.42	4975964	99.95	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	262_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:03:05-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.232	ppb	3.525	1961	50	94.5	90	110	
Na	23	3	45	51439.942	ppb	1.387	5182102	51000	100.9	90	110	
Mg	24	3	45	10397.299	ppb	1.781	547799	11000	94.5	90	110	
Al	27	3	45	881.757	ppb	1.686	16075	1000	88.2	90	110	>+\-10%
K	39	3	45	10963.265	ppb	0.923	412934	11000	99.7	90	110	
Ca	40	2	45	11364.234	ppb	0.740	5763596	11000	103.3	90	110	
V	51	3	72	46.576	ppb	1.768	22682	50	93.2	90	110	
Cr	52	3	72	47.610	ppb	4.491	30269	50	95.2	90	110	
Mn	55	3	72	47.669	ppb	1.522	15496	50	95.3	90	110	
Fe	56	2	72	954.166	ppb	3.457	1266781	1000	95.4	90	110	
Co	59	3	72	45.649	ppb	2.639	47217	50	91.3	90	110	
Ni	60	3	72	45.766	ppb	3.479	13096	50	91.5	90	110	
Cu	63	3	72	45.598	ppb	2.372	36047	50	91.2	90	110	
Zn	66	3	72	53.641	ppb	2.409	7035	50	107.3	90	110	
As	75	3	72	46.486	ppb	4.026	4240	50	93.0	90	110	
Se	78	2	72	47.883	ppb	4.003	2296	50	95.8	90	110	
(Se)	78	3	72	49.019	ppb	20.979	240	50	98.0	90	110	
Sr	88	3	72	93.752	ppb	1.796	39756	100	93.8	90	110	
Mo	95	3	115	46.473	ppb	5.364	19918	50	92.9	90	110	
Ag	107	3	115	46.893	ppb	1.633	66670	50	93.8	90	110	
Cd	111	3	115	46.974	ppb	5.011	9430	50	93.9	90	110	
Sn	120	3	115	45.559	ppb	3.135	28025	50	91.1	90	110	
Sb	121	3	115	47.049	ppb	1.937	28833	50	94.1	90	110	
Ba	137	3	115	48.533	ppb	1.329	9327	50	97.1	90	110	
Tl	205	3	193	46.842	ppb	0.821	151528	50	93.7	90	110	
(Pb)	206	3	193	47.827	ppb	1.763	50798	50	95.7	90	110	
(Pb)	207	3	193	46.587	ppb	1.142	44071	50	93.2	90	110	
Pb	208	3	193	47.207	ppb	1.350	203004	50	94.4	90	110	
Th	232	3	193	47.785	ppb	1.854	215465	50	95.6	90	110	
U	238	3	193	46.645	ppb	0.655	223102	50	93.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3375131	2.72	2988516	112.94	60	120	
Sc (IS)	45	3	HMI He	463629	1.10	453633	102.20	60	120	
Ge Internal standard	72	2	HMI H2	1832265	3.80	1716556	106.74	60	120	
Ge Internal standard	72	3	HMI He	546922	3.61	532053	102.79	60	120	
In Internal Standard	115	3	HMI He	2173900	2.00	2192912	99.13	60	120	
Ir (IS)	193	3	HMI He	4968365	3.07	4975964	99.85	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	263_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:04:58-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.079	ppb	154.4	5	0.5	
Na	23	3	45	60.821	ppb	11.6	24188	25	>RL
Mg	24	3	45	2.723	ppb	37.5	224	25	
Al	27	3	45	0.028	ppb	1239.2	57	15	
K	39	3	45	9.525	ppb	406.7	14519	50	
V	51	3	72	-0.128	ppb	-58.4	127	1	
Cr	52	3	72	0.018	ppb	177.6	1213	1	
Mn	55	3	72	0.174	ppb	19.7	150	0.5	
Co	59	3	72	0.002	ppb	736.2	23	0.5	
Ni	60	3	72	-0.005	ppb	-861.6	108	1	
Cu	63	3	72	-0.026	ppb	-170.6	225	1	
Zn	66	3	72	0.218	ppb	84.5	133	5	
As	75	3	72	0.219	ppb	2.4	40	1	
Se	78	2	72	-0.032	ppb	-133.3	2	1	
(Se)	78	3	72	0.500	ppb	523.8	18	1	
Sr	88	3	72	0.018	ppb	126.3	43	0.5	
Mo	95	3	115	-0.011	ppb	-174.5	45	0.5	
Ag	107	3	115	0.015	ppb	24.6	25	1	
Cd	111	3	115	0.008	ppb	173.2	2	0.5	
Sn	120	3	115	-0.007	ppb	-1196.2	528	1	
Sb	121	3	115	0.112	ppb	26.4	132	0.6	
Ba	137	3	115	-0.007	ppb	-171.4	42	0.5	
Tl	205	3	193	0.004	ppb	267.1	132	0.1	
(Pb)	206	3	193	0.000	ppb	615.0	128	1	
(Pb)	207	3	193	-0.025	ppb	-179.4	252	1	
Pb	208	3	193	0.010	ppb	146.5	671	0.5	
Th	232	3	193	0.431	ppb	26.2	6255	1	
U	238	3	193	0.019	ppb	30.0	1426	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3295340	3.14	2988516	110.27	60	120	
Sc (IS)	45	3	HMI He	475876	1.58	453633	104.90	60	120	
Ge Internal standard	72	2	HMI H2	1820692	2.93	1716556	106.07	60	120	
Ge Internal standard	72	3	HMI He	565051	1.25	532053	106.20	60	120	
In Internal Standard	115	3	HMI He	2199656	1.43	2192912	100.31	60	120	
Ir (IS)	193	3	HMI He	5086201	1.09	4975964	102.22	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600416/1-b
Data File Name	264_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:06:51-07:00
Sample Type	Blank
Dilution	1
Comment	600476 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.043	ppb	-1.51747E-06	0	0.5
Na	23	3	45	60.819	ppb	17.28902829	23115	25
Mg	24	3	45	2.129	ppb	53.1095439	184	25
Al	27	3	45	-0.771	ppb	-145.3724314	40	15
K	39	3	45	22.049	ppb	182.5721272	14308	50
V	51	3	72	-0.133	ppb	-31.77207134	122	1
Cr	52	3	72	0.019	ppb	908.7962546	1183	1
Mn	55	3	72	0.185	ppb	24.52192864	150	0.5
Co	59	3	72	0.010	ppb	173.9765289	32	0.5
Ni	60	3	72	0.000	ppb	-14687.3143	107	1
Cu	63	3	72	0.078	ppb	19.25837298	302	1
Zn	66	3	72	0.742	ppb	34.42638188	198	5
As	75	3	72	0.048	ppb	63.5169946	23	1
(Se)	78	3	72	0.287	ppb	1237.82268	17	1
Sr	88	3	72	0.040	ppb	96.51555633	52	0.5
Mo	95	3	115	-0.017	ppb	-179.2120931	42	0.5
Ag	107	3	115	0.008	ppb	43.71638472	15	1
Cd	111	3	115	0.008	ppb	173.2050808	2	0.5
Sn	120	3	115	-0.041	ppb	-194.4882024	495	1
Sb	121	3	115	0.065	ppb	19.07614652	100	0.6
Ba	137	3	115	0.034	ppb	91.25682162	48	0.5
Tl	205	3	193	0.001	ppb	238.5472839	120	0.1
(Pb)	206	3	193	0.004	ppb	95.19492116	128	1
(Pb)	207	3	193	0.067	ppb	35.65116064	330	1
Pb	208	3	193	0.026	ppb	9.500168024	721	0.5
Th	232	3	193	-0.020	ppb	-308.501116	4090	1
U	238	3	193	-0.013	ppb	-77.87869177	1234	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3241908	1.56	2988516	108.48	60	120	
Sc (IS)	45	3	HMI He	454637	0.17	453633	100.22	60	120	
Ge Internal standard	72	2	HMI H2	1776945	0.98	1716556	103.52	60	120	
Ge Internal standard	72	3	HMI He	551288	1.84	532053	103.62	60	120	
In Internal Standard	115	3	HMI He	2142370	1.18	2192912	97.70	60	120	
Ir (IS)	193	3	HMI He	4936722	1.29	4975964	99.21	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600256/1-a
Data File Name	265_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:09:10-07:00
Sample Type	Blank
Dilution	1
Comment	600256 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.043	ppb	-1.51747E-06	0	0.5
Na	23	3	45	53.517	ppb	8.292149095	22871	25
Mg	24	3	45	7.054	ppb	13.20373394	447	25
Al	27	3	45	4.494	ppb	26.50170412	137	15
K	39	3	45	6.383	ppb	806.75708	14024	50
V	51	3	72	-0.301	ppb	-8.595661013	40	1
Cr	52	3	72	0.773	ppb	3.735558011	1653	1
Mn	55	3	72	0.793	ppb	19.25246815	348	0.5
Co	59	3	72	0.002	ppb	126.2919069	23	0.5
Ni	60	3	72	0.050	ppb	83.10332473	122	1
Cu	63	3	72	-0.072	ppb	-47.28682697	183	1
Zn	66	3	72	0.647	ppb	22.58132881	187	5
As	75	3	72	-0.116	ppb	-96.11970557	8	1
(Se)	78	3	72	-0.459	ppb	-547.8287691	13	1
Sr	88	3	72	0.110	ppb	41.33402016	82	0.5
Mo	95	3	115	0.035	ppb	213.6294105	63	0.5
Ag	107	3	115	0.010	ppb	58.73143064	17	1
Cd	111	3	115	0.008	ppb	173.2050808	2	0.5
Sn	120	3	115	-0.438	ppb	-32.63014605	260	1
Sb	121	3	115	-0.032	ppb	-39.8386386	42	0.6
Ba	137	3	115	0.780	ppb	10.08451949	190	0.5
Tl	205	3	193	0.000	ppb	24885.53649	118	0.1
(Pb)	206	3	193	-0.001	ppb	-1772.423878	125	1
(Pb)	207	3	193	0.019	ppb	163.6822411	290	1
Pb	208	3	193	0.012	ppb	60.90627392	673	0.5
Th	232	3	193	-0.088	ppb	-15.61647079	3850	1
U	238	3	193	0.011	ppb	150.149922	1373	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3289297	1.03	2988516	110.06	60	120	
Sc (IS)	45	3	HMI He	464236	1.38	453633	102.34	60	120	
Ge Internal standard	72	2	HMI H2	1859431	0.77	1716556	108.32	60	120	
Ge Internal standard	72	3	HMI He	552643	2.50	532053	103.87	60	120	
In Internal Standard	115	3	HMI He	2153763	1.58	2192912	98.21	60	120	
Ir (IS)	193	3	HMI He	5016913	2.75	4975964	100.82	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600416/2-b
Data File Name	266_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:14:10-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600476 6020B
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.989	40.989	ppb	3.579	1646	40	102.5	80	120	
Na	23	3	45	793.978	793.978	ppb	1.260	99617	40	1984.9	80	120	>+/-20%
Mg	24	3	45	701.268	701.268	ppb	1.605	37945	40	1753.2	80	120	>+/-20%
Al	27	3	45	769.658	769.658	ppb	3.045	14389	40	1924.1	80	120	>+/-20%
K	39	3	45	793.542	793.542	ppb	5.833	43762	40	1983.9	80	120	>+/-20%
Ca	40	2	45	791.636	791.636	ppb	0.772	407781	40	1979.1	80	120	>+/-20%
V	51	3	72	39.150	39.150	ppb	2.083	20143	40	97.9	80	120	
Cr	52	3	72	40.106	40.106	ppb	2.949	27103	40	100.3	80	120	
Mn	55	3	72	40.655	40.655	ppb	5.815	13950	40	101.6	80	120	
Fe	56	2	72	792.057	792.057	ppb	3.233	1071765	40	1980.1	80	120	>+/-20%
(Fe)	56	3	72	761.019	761.019	ppb	2.119	448243	40	1902.5	80	120	>+/-20%
Co	59	3	72	38.747	38.747	ppb	1.387	42292	40	96.9	80	120	
Ni	60	3	72	39.042	39.042	ppb	2.258	11796	40	97.6	80	120	
Cu	63	3	72	39.384	39.384	ppb	1.025	32884	40	98.5	80	120	
Zn	66	3	72	40.503	40.503	ppb	4.084	5628	40	101.3	80	120	
As	75	3	72	38.554	38.554	ppb	2.567	3715	40	96.4	80	120	
Se	78	2	72	39.332	39.332	ppb	1.380	1921	40	98.3	80	120	
(Se)	78	3	72	46.726	46.726	ppb	13.988	242	40	116.8	80	120	
Sr	88	3	72	79.450	79.450	ppb	2.855	35544	40	198.6	80	120	>+/-20%
Mo	95	3	115	39.030	39.030	ppb	4.190	17339	40	97.6	80	120	
Ag	107	3	115	40.007	40.007	ppb	2.981	58934	40	100.0	80	120	
Cd	111	3	115	41.582	41.582	ppb	1.192	8655	40	104.0	80	120	
Sn	120	3	115	39.275	39.275	ppb	3.939	25113	40	98.2	80	120	
Sb	121	3	115	39.063	39.063	ppb	2.813	24817	40	97.7	80	120	
Ba	137	3	115	42.407	42.407	ppb	2.389	8452	40	106.0	80	120	
Tl	205	3	193	40.581	40.581	ppb	1.631	134962	40	101.5	80	120	
(Pb)	206	3	193	41.479	41.479	ppb	1.547	45320	40	103.7	80	120	
(Pb)	207	3	193	40.731	40.731	ppb	0.616	39649	40	101.8	80	120	
Pb	208	3	193	41.203	41.203	ppb	1.557	182279	40	103.0	80	120	
Th	232	3	193	39.874	39.874	ppb	2.187	185577	40	99.7	80	120	
U	238	3	193	40.068	40.068	ppb	2.265	197211	40	100.2	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3347816	2.11	2988516	112.02	60	120	
Sc (IS)	45	3	HMI He	475299	0.90	453633	104.78	60	120	
Ge Internal standard	72	2	HMI H2	1864805	0.90	1716556	108.64	60	120	
Ge Internal standard	72	3	HMI He	576787	1.18	532053	108.41	60	120	
In Internal Standard	115	3	HMI He	2253522	2.00	2192912	102.76	60	120	
Ir (IS)	193	3	HMI He	5108043	1.12	4975964	102.65	60	120	

Sample Report

Sample Table

Sample Name	280-171348-a-2-b@50
Data File Name	267SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:16:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.004	ppb	-0.004	-1781.71	2	2000	
Na	23	3	45	156024.985	ppb	156024.985	1.80	15808944	400000	
Mg	24	3	45	661.143	ppb	661.143	1.39	35172	400000	
Al	27	3	45	26.058	ppb	26.058	11.05	534	400000	
K	39	3	45	3674.250	ppb	3674.250	2.76	148632	400000	
Ca	40	2	45	473.417	ppb	473.417	2.93	246042	400000	
V	51	3	72	-0.019	ppb	-0.019	-140.37	177	2000	
Cr	52	3	72	0.362	ppb	0.362	40.35	1393	5000	
Mn	55	3	72	7.200	ppb	7.200	4.32	2431	10000	
Fe	56	2	72	49.540	ppb	49.540	1.51	69798	10000	
Co	59	3	72	0.121	ppb	0.121	28.87	147	2000	
Ni	60	3	72	0.176	ppb	0.176	35.07	157	5000	
Cu	63	3	72	1.563	ppb	1.563	10.06	1474	5000	
Zn	66	3	72	11.447	ppb	11.447	2.78	1589	5000	
As	75	3	72	0.102	ppb	0.102	131.77	28	2000	
Se	78	2	72	-0.004	ppb	-0.004	-2399.51	3	2000	
(Se)	78	3	72	-0.128	ppb	-0.128	-2174.82	15	2000	
Sr	88	3	72	4.862	ppb	4.862	1.43	2106	4000	
Mo	95	3	115	0.102	ppb	0.102	13.32	93	2000	
Ag	107	3	115	0.043	ppb	0.043	23.03	65	100	
Cd	111	3	115	0.016	ppb	0.016	86.64	3	2000	
Sn	120	3	115	0.403	ppb	0.403	17.69	771	2000	
Sb	121	3	115	0.196	ppb	0.196	7.25	182	1000	
Ba	137	3	115	4.188	ppb	4.188	6.45	846	5000	
Tl	205	3	193	0.006	ppb	0.006	182.10	137	2000	
(Pb)	206	3	193	0.031	ppb	0.031	96.78	160	100	
(Pb)	207	3	193	0.082	ppb	0.082	79.27	351	100	
Pb	208	3	193	0.065	ppb	0.065	39.63	908	5000	
Th	232	3	193	0.503	ppb	0.503	27.24	6528	2000	
U	238	3	193	0.022	ppb	0.022	18.56	1433	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3322303	2.12	2988516	111.17	60	120	
Sc (IS)	45	3	HMI He	467363	4.38	453633	103.03	60	120	
Ge Internal standard	72	2	HMI H2	1816662	2.55	1716556	105.83	60	120	
Ge Internal standard	72	3	HMI He	549692	2.52	532053	103.32	60	120	
In Internal Standard	115	3	HMI He	2178233	2.37	2192912	99.33	60	120	
Ir (IS)	193	3	HMI He	5047479	0.69	4975964	101.44	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-b@50
Data File Name	268SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:17:58-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	597.025	ppb	597.025	177.39	126849	400000	
Mg	24	3	45	39.558	ppb	39.558	176.08	3435	400000	
Al	27	3	45	-1.205	ppb	-1.205	-120.11	57	400000	
K	39	3	45	-166.051	ppb	-166.051	-34.22	13958	400000	
Ca	40	2	45	-11.277	ppb	-11.277	-2.24	8641	400000	
V	51	3	72	-0.335	ppb	-0.335	-15.42	38	2000	
Cr	52	3	72	-1.237	ppb	-1.237	-26.23	730	5000	
Mn	55	3	72	-0.025	ppb	-0.025	-1177.61	135	10000	
Fe	56	2	72	-2.257	ppb	-2.257	-1.85	3461	10000	
Co	59	3	72	-0.007	ppb	-0.007	-14.46	25	2000	
Ni	60	3	72	-0.223	ppb	-0.223	-22.92	78	5000	
Cu	63	3	72	-0.167	ppb	-0.167	-31.24	193	5000	
Zn	66	3	72	-0.145	ppb	-0.145	-377.19	142	5000	
As	75	3	72	-0.026	ppb	-0.026	-229.21	30	2000	
Se	78	2	72	-0.053	ppb	-0.053	-70.72	2	2000	
(Se)	78	3	72	-2.071	ppb	-2.071	-63.41	10	2000	
Sr	88	3	72	2.104	ppb	2.104	176.79	1448	4000	
Mo	95	3	115	0.015	ppb	0.015	1012.01	88	2000	
Ag	107	3	115	0.013	ppb	0.013	90.89	35	100	
Cd	111	3	115	0.015	ppb	0.015	108.43	5	2000	
Sn	120	3	115	-0.626	ppb	-0.626	-40.35	238	2000	
Sb	121	3	115	-0.008	ppb	-0.008	-1365.47	90	1000	
Ba	137	3	115	0.251	ppb	0.251	217.59	143	5000	
Tl	205	3	193	-0.002	ppb	-0.002	-402.64	192	2000	
(Pb)	206	3	193	-0.022	ppb	-0.022	-39.48	178	100	
(Pb)	207	3	193	-0.011	ppb	-0.011	-110.28	461	100	
Pb	208	3	193	-0.008	ppb	-0.008	-130.54	1021	5000	
Th	232	3	193	0.012	ppb	0.012	2244.87	7350	2000	
U	238	3	193	0.013	ppb	0.013	112.93	2414	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	6331399	1.33	2988516	211.86	60	120	IS Failed
Sc (IS)	45	3	HMI He	853909	12.12	453633	188.24	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3423743	3.31	1716556	199.45	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1032164	15.19	532053	194.00	60	120	IS Failed
In Internal Standard	115	3	HMI He	3830911	13.16	2192912	174.70	60	120	IS Failed
Ir (IS)	193	3	HMI He	8811658	14.38	4975964	177.08	60	120	IS Failed

Sample Report

Sample Table

Sample Name	280-171456-g-9-bSD@250
Data File Name	269SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:19:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	1336.487	ppb	1336.487	0.79	153203	400000	
Mg	24	3	45	90.844	ppb	90.844	7.08	4916	400000	
Al	27	3	45	1.533	ppb	1.533	76.52	83	400000	
K	39	3	45	51.445	ppb	51.445	58.97	15842	400000	
Ca	40	2	45	332.919	ppb	332.919	2.55	181416	400000	
V	51	3	72	-0.088	ppb	-0.088	-109.02	142	2000	
Cr	52	3	72	0.268	ppb	0.268	63.37	1324	5000	
Mn	55	3	72	0.433	ppb	0.433	25.25	228	10000	
Fe	56	2	72	2.897	ppb	2.897	12.72	9049	10000	
Co	59	3	72	0.001	ppb	0.001	302.22	22	2000	
Ni	60	3	72	0.090	ppb	0.090	78.10	132	5000	
Cu	63	3	72	0.102	ppb	0.102	60.83	318	5000	
Zn	66	3	72	2.235	ppb	2.235	21.67	390	5000	
As	75	3	72	0.141	ppb	0.141	77.42	32	2000	
Se	78	2	72	-0.048	ppb	-0.048	-48.13	1	2000	
(Se)	78	3	72	-0.434	ppb	-0.434	-299.96	13	2000	
Sr	88	3	72	4.357	ppb	4.357	3.98	1879	4000	
Mo	95	3	115	0.061	ppb	0.061	83.72	75	2000	
Ag	107	3	115	0.022	ppb	0.022	15.33	35	100	
Cd	111	3	115	0.017	ppb	0.017	173.21	3	2000	
Sn	120	3	115	0.158	ppb	0.158	61.41	620	2000	
Sb	121	3	115	0.078	ppb	0.078	45.53	108	1000	
Ba	137	3	115	0.661	ppb	0.661	11.40	168	5000	
Tl	205	3	193	0.005	ppb	0.005	188.10	135	2000	
(Pb)	206	3	193	-0.003	ppb	-0.003	-555.48	123	100	
(Pb)	207	3	193	0.032	ppb	0.032	196.14	303	100	
Pb	208	3	193	0.013	ppb	0.013	167.77	680	5000	
Th	232	3	193	-0.085	ppb	-0.085	-24.20	3882	2000	
U	238	3	193	0.018	ppb	0.018	25.17	1411	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3424080	2.17	2988516	114.57	60	120	
Sc (IS)	45	3	HMI He	468455	2.10	453633	103.27	60	120	
Ge Internal standard	72	2	HMI H2	1912005	1.52	1716556	111.39	60	120	
Ge Internal standard	72	3	HMI He	546453	2.37	532053	102.71	60	120	
In Internal Standard	115	3	HMI He	2165263	1.22	2192912	98.74	60	120	
Ir (IS)	193	3	HMI He	5039154	0.87	4975964	101.27	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-c ms@50
Data File Name	270SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:21:45-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	1.154	ppb	1.154	21.62	48	2000	
Na	23	3	45	6372.756	ppb	6372.756	2.36	663129	400000	
Mg	24	3	45	410.902	ppb	410.902	0.72	21922	400000	
Al	27	3	45	19.935	ppb	19.935	9.16	420	400000	
K	39	3	45	184.429	ppb	184.429	8.62	20699	400000	
Ca	40	2	45	1589.933	ppb	1589.933	3.04	792007	400000	
V	51	3	72	0.622	ppb	0.622	21.74	498	2000	
Cr	52	3	72	0.996	ppb	0.996	13.08	1819	5000	
Mn	55	3	72	1.894	ppb	1.894	9.66	720	10000	
Fe	56	2	72	19.260	ppb	19.260	3.32	29678	10000	
Co	59	3	72	0.912	ppb	0.912	9.74	990	2000	
Ni	60	3	72	0.987	ppb	0.987	2.18	396	5000	
Cu	63	3	72	0.929	ppb	0.929	15.33	995	5000	
Zn	66	3	72	3.238	ppb	3.238	19.51	533	5000	
As	75	3	72	0.561	ppb	0.561	20.23	72	2000	
Se	78	2	72	1.062	ppb	1.062	4.45	53	2000	
(Se)	78	3	72	2.312	ppb	2.312	104.93	27	2000	
Sr	88	3	72	22.113	ppb	22.113	3.65	9655	4000	
Mo	95	3	115	1.414	ppb	1.414	9.99	655	2000	
Ag	107	3	115	0.867	ppb	0.867	3.78	1238	100	
Cd	111	3	115	0.779	ppb	0.779	8.43	157	2000	
Sn	120	3	115	0.937	ppb	0.937	13.22	1093	2000	
Sb	121	3	115	1.008	ppb	1.008	12.77	678	1000	
Ba	137	3	115	3.959	ppb	3.959	5.26	801	5000	
Tl	205	3	193	0.922	ppb	0.922	8.25	3124	2000	
(Pb)	206	3	193	0.895	ppb	0.895	5.17	1083	100	
(Pb)	207	3	193	0.879	ppb	0.879	5.26	1105	100	
Pb	208	3	193	0.912	ppb	0.912	3.15	4561	5000	
Th	232	3	193	0.752	ppb	0.752	4.38	7590	2000	
U	238	3	193	0.901	ppb	0.901	5.45	5637	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3277354	1.84	2988516	109.66	60	120	
Sc (IS)	45	3	HMI He	467898	1.79	453633	103.14	60	120	
Ge Internal standard	72	2	HMI H2	1793810	3.62	1716556	104.50	60	120	
Ge Internal standard	72	3	HMI He	561397	0.85	532053	105.52	60	120	
In Internal Standard	115	3	HMI He	2177677	2.74	2192912	99.31	60	120	
Ir (IS)	193	3	HMI He	5009882	0.74	4975964	100.68	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-d msd@50
Data File Name	271SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:23:41-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.761	ppb	0.761	67.35	32	2000	
Na	23	3	45	6203.967	ppb	6203.967	3.91	695759	400000	
Mg	24	3	45	406.902	ppb	406.902	4.40	23379	400000	
Al	27	3	45	17.456	ppb	17.456	18.89	404	400000	
K	39	3	45	143.878	ppb	143.878	16.32	20676	400000	
Ca	40	2	45	1544.360	ppb	1544.360	0.60	736475	400000	
V	51	3	72	0.746	ppb	0.746	19.47	605	2000	
Cr	52	3	72	1.065	ppb	1.065	21.97	2012	5000	
Mn	55	3	72	1.928	ppb	1.928	5.37	790	10000	
Fe	56	2	72	18.146	ppb	18.146	4.06	27986	10000	
Co	59	3	72	0.883	ppb	0.883	5.11	1036	2000	
Ni	60	3	72	0.975	ppb	0.975	29.97	425	5000	
Cu	63	3	72	0.879	ppb	0.879	16.15	1030	5000	
Zn	66	3	72	3.067	ppb	3.067	19.96	551	5000	
As	75	3	72	1.032	ppb	1.032	16.00	125	2000	
Se	78	2	72	0.858	ppb	0.858	11.13	43	2000	
(Se)	78	3	72	0.584	ppb	0.584	171.43	20	2000	
Sr	88	3	72	20.815	ppb	20.815	0.52	9822	4000	
Mo	95	3	115	1.427	ppb	1.427	5.52	706	2000	
Ag	107	3	115	0.868	ppb	0.868	3.19	1326	100	
Cd	111	3	115	0.866	ppb	0.866	10.19	187	2000	
Sn	120	3	115	0.977	ppb	0.977	6.52	1196	2000	
Sb	121	3	115	0.858	ppb	0.858	8.80	628	1000	
Ba	137	3	115	4.038	ppb	4.038	7.23	873	5000	
Tl	205	3	193	0.842	ppb	0.842	4.38	3079	2000	
(Pb)	206	3	193	0.890	ppb	0.890	4.66	1159	100	
(Pb)	207	3	193	0.848	ppb	0.848	4.18	1156	100	
Pb	208	3	193	0.893	ppb	0.893	2.18	4821	5000	
Th	232	3	193	0.736	ppb	0.736	6.85	8090	2000	
U	238	3	193	0.877	ppb	0.877	2.65	5940	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3137605	1.57	2988516	104.99	60	120	
Sc (IS)	45	3	HMI He	503972	1.42	453633	111.10	60	120	
Ge Internal standard	72	2	HMI H2	1777852	2.35	1716556	103.57	60	120	
Ge Internal standard	72	3	HMI He	606516	1.13	532053	114.00	60	120	
In Internal Standard	115	3	HMI He	2330311	1.90	2192912	106.27	60	120	
Ir (IS)	193	3	HMI He	5389178	1.19	4975964	108.30	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-bPDS@50
Data File Name	272SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:25:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	204.468	ppb	204.468	2.95	8710	2000	
Na	23	3	45	16025.487	ppb	16025.487	1.06	1693288	400000	
Mg	24	3	45	2299.949	ppb	2299.949	2.45	126190	400000	
Al	27	3	45	1897.824	ppb	1897.824	1.97	35945	400000	
K	39	3	45	2155.821	ppb	2155.821	0.68	96069	400000	
Ca	40	2	45	3715.570	ppb	3715.570	2.68	1932367	400000	
V	51	3	72	191.719	ppb	191.719	3.88	101281	2000	
Cr	52	3	72	194.815	ppb	194.815	1.72	131397	5000	
Mn	55	3	72	194.805	ppb	194.805	2.70	68832	10000	
Fe	56	2	72	20.904	ppb	20.904	1.84	35337	10000	
Co	59	3	72	186.846	ppb	186.846	1.50	211005	2000	
Ni	60	3	72	189.493	ppb	189.493	2.15	58817	5000	
Cu	63	3	72	192.083	ppb	192.083	3.20	164942	5000	
Zn	66	3	72	204.849	ppb	204.849	1.68	29018	5000	
As	75	3	72	189.805	ppb	189.805	2.49	18849	2000	
Se	78	2	72	195.473	ppb	195.473	0.38	10182	2000	
(Se)	78	3	72	217.248	ppb	217.248	4.73	1099	2000	
Sr	88	3	72	209.230	ppb	209.230	2.76	96816	4000	
Mo	95	3	115	203.050	ppb	203.050	2.16	90311	2000	
Ag	107	3	115	45.141	ppb	45.141	1.96	66725	100	
Cd	111	3	115	204.197	ppb	204.197	2.84	42628	2000	
Sn	120	3	115	203.589	ppb	203.589	2.33	128337	2000	
Sb	121	3	115	203.915	ppb	203.915	2.32	129710	1000	
Ba	137	3	115	207.979	ppb	207.979	3.65	41402	5000	
Tl	205	3	193	199.034	ppb	199.034	0.66	675806	2000	
(Pb)	206	3	193	203.446	ppb	203.446	0.82	226576	100	
(Pb)	207	3	193	200.573	ppb	200.573	0.81	198335	100	
Pb	208	3	193	202.390	ppb	202.390	1.04	912149	5000	
Th	232	3	193	301.579	ppb	301.579	0.65	1404958	2000	
U	238	3	193	220.176	ppb	220.176	1.35	1100949	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3447560	2.37	2988516	115.36	60	120	
Sc (IS)	45	3	HMI He	482698	1.71	453633	106.41	60	120	
Ge Internal standard	72	2	HMI H2	1991805	1.16	1716556	116.03	60	120	
Ge Internal standard	72	3	HMI He	597181	3.23	532053	112.24	60	120	
In Internal Standard	115	3	HMI He	2261240	3.07	2192912	103.12	60	120	
Ir (IS)	193	3	HMI He	5218038	1.41	4975964	104.86	60	120	

Sample Report

Sample Table

Sample Name	280-171456-g-9-b@50
Data File Name	273SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:27:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600476 6020B
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.036	ppb	0.036	379.51	3	2000	
Na	23	3	45	6674.204	ppb	6674.204	0.86	698263	400000	
Mg	24	3	45	420.386	ppb	420.386	1.73	22567	400000	
Al	27	3	45	4.396	ppb	4.396	18.50	137	400000	
K	39	3	45	163.108	ppb	163.108	21.12	20038	400000	
Ca	40	2	45	1634.934	ppb	1634.934	2.39	819981	400000	
V	51	3	72	-0.074	ppb	-0.074	-85.77	152	2000	
Cr	52	3	72	0.055	ppb	0.055	31.69	1218	5000	
Mn	55	3	72	1.300	ppb	1.300	9.48	518	10000	
Fe	56	2	72	3.865	ppb	3.865	9.52	10144	10000	
Co	59	3	72	0.058	ppb	0.058	41.36	82	2000	
Ni	60	3	72	0.214	ppb	0.214	49.61	170	5000	
Cu	63	3	72	0.222	ppb	0.222	23.83	420	5000	
Zn	66	3	72	3.458	ppb	3.458	23.02	558	5000	
As	75	3	72	0.315	ppb	0.315	52.12	48	2000	
Se	78	2	72	0.172	ppb	0.172	27.98	12	2000	
(Se)	78	3	72	-0.496	ppb	-0.496	-126.21	13	2000	
Sr	88	3	72	21.087	ppb	21.087	1.84	9134	4000	
Mo	95	3	115	0.895	ppb	0.895	15.46	436	2000	
Ag	107	3	115	0.040	ppb	0.040	10.22	60	100	
Cd	111	3	115	0.016	ppb	0.016	173.21	3	2000	
Sn	120	3	115	0.629	ppb	0.629	26.51	915	2000	
Sb	121	3	115	0.121	ppb	0.121	26.37	137	1000	
Ba	137	3	115	3.288	ppb	3.288	10.51	678	5000	
Tl	205	3	193	0.047	ppb	0.047	31.39	275	2000	
(Pb)	206	3	193	0.101	ppb	0.101	13.02	237	100	
(Pb)	207	3	193	0.081	ppb	0.081	117.57	353	100	
Pb	208	3	193	0.081	ppb	0.081	17.33	980	5000	
Th	232	3	193	1.601	ppb	1.601	29.27	11523	2000	
U	238	3	193	0.073	ppb	0.073	32.07	1686	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3302339	2.44	2988516	110.50	60	120	
Sc (IS)	45	3	HMI He	470905	1.05	453633	103.81	60	120	
Ge Internal standard	72	2	HMI H2	1868423	2.91	1716556	108.85	60	120	
Ge Internal standard	72	3	HMI He	556705	0.48	532053	104.63	60	120	
In Internal Standard	115	3	HMI He	2193157	1.42	2192912	100.01	60	120	
Ir (IS)	193	3	HMI He	5073290	0.47	4975964	101.96	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	274_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:29:21-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	43.587	ppb	5.483	1906	50	87.2	90	110	>+\-10%
Na	23	3	45	51265.997	ppb	1.289	5551738	51000	100.5	90	110	
Mg	24	3	45	10462.415	ppb	1.900	592479	11000	95.1	90	110	
Al	27	3	45	871.591	ppb	2.997	17081	1000	87.2	90	110	>+\-10%
K	39	3	45	10982.135	ppb	2.928	444516	11000	99.8	90	110	
Ca	40	2	45	11113.047	ppb	2.555	5923940	11000	101.0	90	110	
V	51	3	72	45.524	ppb	2.745	24693	50	91.0	90	110	
Cr	52	3	72	45.571	ppb	3.133	32333	50	91.1	90	110	
Mn	55	3	72	43.886	ppb	0.608	15901	50	87.8	90	110	>+\-10%
Fe	56	2	72	895.070	ppb	3.626	1302260	1000	89.5	90	110	>+\-10%
Co	59	3	72	44.412	ppb	2.113	51164	50	88.8	90	110	>+\-10%
Ni	60	3	72	44.842	ppb	2.745	14284	50	89.7	90	110	>+\-10%
Cu	63	3	72	43.675	ppb	1.802	38466	50	87.3	90	110	>+\-10%
Zn	66	3	72	50.947	ppb	1.861	7445	50	101.9	90	110	
As	75	3	72	46.327	ppb	5.167	4707	50	92.7	90	110	
Se	78	2	72	44.733	ppb	1.666	2350	50	89.5	90	110	>+\-10%
(Se)	78	3	72	44.870	ppb	19.041	245	50	89.7	90	110	>+\-10%
Sr	88	3	72	89.300	ppb	3.124	42164	100	89.3	90	110	>+\-10%
Mo	95	3	115	47.275	ppb	0.391	21553	50	94.5	90	110	
Ag	107	3	115	47.610	ppb	1.049	71998	50	95.2	90	110	
Cd	111	3	115	47.047	ppb	2.782	10049	50	94.1	90	110	
Sn	120	3	115	47.086	ppb	2.424	30797	50	94.2	90	110	
Sb	121	3	115	47.428	ppb	2.303	30917	50	94.9	90	110	
Ba	137	3	115	48.305	ppb	2.243	9875	50	96.6	90	110	
Tl	205	3	193	46.635	ppb	1.678	162248	50	93.3	90	110	
(Pb)	206	3	193	47.353	ppb	3.117	54092	50	94.7	90	110	
(Pb)	207	3	193	47.268	ppb	2.901	48074	50	94.5	90	110	
Pb	208	3	193	46.931	ppb	3.220	217036	50	93.9	90	110	
Th	232	3	193	48.473	ppb	2.533	235019	50	96.9	90	110	
U	238	3	193	47.011	ppb	3.163	241764	50	94.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3547799	1.80	2988516	118.71	60	120	
Sc (IS)	45	3	HMI He	498447	2.31	453633	109.88	60	120	
Ge Internal standard	72	2	HMI H2	2006277	1.45	1716556	116.88	60	120	
Ge Internal standard	72	3	HMI He	609030	2.84	532053	114.47	60	120	
In Internal Standard	115	3	HMI He	2312609	0.85	2192912	105.46	60	120	
Ir (IS)	193	3	HMI He	5345337	3.41	4975964	107.42	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	275_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:31:14-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.037	ppb	188.0	3	0.5	
Na	23	3	45	57.776	ppb	17.6	22567	25	>RL
Mg	24	3	45	1.580	ppb	15.2	153	25	
Al	27	3	45	0.558	ppb	305.3	63	15	
K	39	3	45	20.588	ppb	112.5	14135	50	
V	51	3	72	-0.119	ppb	-88.2	128	1	
Cr	52	3	72	-0.037	ppb	-439.4	1143	1	
Mn	55	3	72	0.028	ppb	290.4	98	0.5	
Co	59	3	72	0.039	ppb	47.8	62	0.5	
Ni	60	3	72	0.035	ppb	277.2	117	1	
Cu	63	3	72	-0.083	ppb	-37.3	173	1	
Zn	66	3	72	0.531	ppb	18.4	170	5	
As	75	3	72	0.067	ppb	239.3	25	1	
Se	78	2	72	0.038	ppb	169.2	5	1	
(Se)	78	3	72	-1.915	ppb	-30.9	7	1	
Sr	88	3	72	0.001	ppb	3012.2	35	0.5	
Mo	95	3	115	0.024	ppb	192.0	58	0.5	
Ag	107	3	115	0.029	ppb	49.4	43	1	
Cd	111	3	115	0.008	ppb	173.2	2	0.5	
Sn	120	3	115	0.049	ppb	219.3	540	1	
Sb	121	3	115	0.025	ppb	188.3	75	0.6	
Ba	137	3	115	-0.008	ppb	-1275.8	40	0.5	
Tl	205	3	193	0.013	ppb	25.1	157	0.1	
(Pb)	206	3	193	0.019	ppb	60.5	145	1	
(Pb)	207	3	193	0.029	ppb	154.9	295	1	
Pb	208	3	193	0.033	ppb	11.4	753	0.5	
Th	232	3	193	0.498	ppb	31.7	6372	1	
U	238	3	193	0.021	ppb	110.1	1399	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3320611	0.75	2988516	111.11	60	120	
Sc (IS)	45	3	HMI He	450130	3.41	453633	99.23	60	120	
Ge Internal standard	72	2	HMI H2	1811723	1.39	1716556	105.54	60	120	
Ge Internal standard	72	3	HMI He	547908	2.66	532053	102.98	60	120	
In Internal Standard	115	3	HMI He	2110988	3.32	2192912	96.26	60	120	
Ir (IS)	193	3	HMI He	4946922	1.94	4975964	99.42	60	120	

Sample Report

Sample Table

Sample Name	TCLP CK
Data File Name	276SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:33:08-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	48.734	ppb	48.734	4.47	21598	400000	
Mg	24	3	45	1.397	ppb	1.397	7.92	143	400000	
Al	27	3	45	1.547	ppb	1.547	37.47	80	400000	
K	39	3	45	23.056	ppb	23.056	235.20	14121	400000	
Ca	40	2	45	6.297	ppb	6.297	17.33	12809	400000	
V	51	3	72	-0.094	ppb	-0.094	-51.05	133	2000	
Cr	52	3	72	1081.283	ppb	1081.283	1.75	633085	5000	
Mn	55	3	72	0.808	ppb	0.808	20.92	335	10000	
Fe	56	2	72	42.339	ppb	42.339	3.08	58579	10000	
Co	59	3	72	0.046	ppb	0.046	38.87	65	2000	
Ni	60	3	72	0.050	ppb	0.050	39.68	115	5000	
Cu	63	3	72	432.905	ppb	432.905	1.97	325095	5000	
Zn	66	3	72	1.041	ppb	1.041	18.23	225	5000	
As	75	3	72	646.713	ppb	646.713	2.51	56160	2000	
Se	78	2	72	210.577	ppb	210.577	3.89	9706	2000	
(Se)	78	3	72	238.926	ppb	238.926	9.71	1058	2000	
Sr	88	3	72	0.104	ppb	0.104	47.41	75	4000	
Mo	95	3	115	-0.002	ppb	-0.002	-2534.37	47	2000	
Ag	107	3	115	198.176	ppb	198.176	3.87	272747	100	
Cd	111	3	115	211.141	ppb	211.141	2.25	41064	2000	
Sn	120	3	115	0.169	ppb	0.169	46.73	610	2000	
Sb	121	3	115	0.057	ppb	0.057	92.13	93	1000	
Ba	137	3	115	2127.194	ppb	2127.194	3.99	394056	5000	
Tl	205	3	193	0.017	ppb	0.017	73.23	168	2000	
(Pb)	206	3	193	1122.551	ppb	1122.551	3.76	1180485	100	>LDR
(Pb)	207	3	193	1123.564	ppb	1123.564	3.65	1048482	100	>LDR
Pb	208	3	193	1133.613	ppb	1133.613	3.39	4824160	5000	
Th	232	3	193	-0.027	ppb	-0.027	-271.90	4057	2000	
U	238	3	193	0.013	ppb	0.013	130.73	1354	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3203134	2.02	2988516	107.18	60	120	
Sc (IS)	45	3	HMI He	447841	0.80	453633	98.72	60	120	
Ge Internal standard	72	2	HMI H2	1763816	2.54	1716556	102.75	60	120	
Ge Internal standard	72	3	HMI He	522436	1.37	532053	98.19	60	120	
In Internal Standard	115	3	HMI He	2106476	3.35	2192912	96.06	60	120	
Ir (IS)	193	3	HMI He	4933576	3.62	4975964	99.15	60	120	

Sample Report

Sample Table

Sample Name	171655-2
Data File Name	277SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:35:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.033	ppb	0.033	199.38	3	2000	
Na	23	3	45	5853735.164	ppb	5853735.164	1.35	692627316	400000	>LDR
Mg	24	3	45	389656.216	ppb	389656.216	1.88	24191399	400000	
Al	27	3	45	7.098	ppb	7.098	54.10	217	400000	
K	39	3	45	19681.180	ppb	19681.180	4.01	860543	400000	
Ca	40	2	45	1764694.264	ppb	1764694.264	1.14	973046098	400000	
V	51	3	72	0.399	ppb	0.399	18.61	430	2000	
Cr	52	3	72	2.557	ppb	2.557	7.42	3104	5000	
Mn	55	3	72	113.092	ppb	113.092	2.05	41715	10000	
Fe	56	2	72	4.618	ppb	4.618	94.44	12271	10000	
Co	59	3	72	0.116	ppb	0.116	23.60	160	2000	
Ni	60	3	72	4.747	ppb	4.747	6.32	1654	5000	
Cu	63	3	72	0.440	ppb	0.440	23.04	665	5000	
Zn	66	3	72	14.079	ppb	14.079	9.41	2186	5000	
As	75	3	72	0.856	ppb	0.856	35.23	110	2000	
Se	78	2	72	3.084	ppb	3.084	11.61	168	2000	
(Se)	78	3	72	3.689	ppb	3.689	30.89	37	2000	
Sr	88	3	72	26026.966	ppb	26026.966	1.49	12554885	4000	>LDR
Mo	95	3	115	4.256	ppb	4.256	5.54	1974	2000	
Ag	107	3	115	0.421	ppb	0.421	9.51	636	100	
Cd	111	3	115	0.219	ppb	0.219	31.04	47	2000	
Sn	120	3	115	0.051	ppb	0.051	173.02	590	2000	
Sb	121	3	115	0.083	ppb	0.083	14.63	118	1000	
Ba	137	3	115	31.655	ppb	31.655	6.17	6442	5000	
Tl	205	3	193	0.224	ppb	0.224	7.92	786	2000	
(Pb)	206	3	193	1.008	ppb	1.008	6.55	1118	100	
(Pb)	207	3	193	0.951	ppb	0.951	11.82	1090	100	
Pb	208	3	193	0.990	ppb	0.990	10.21	4550	5000	
Th	232	3	193	-0.054	ppb	-0.054	-29.90	3715	2000	
U	238	3	193	133.043	ppb	133.043	2.63	593895	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3675461	1.67	2988516	122.99	60	120	IS Failed
Sc (IS)	45	3	HMI He	546450	1.22	453633	120.46	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	2033148	2.84	1716556	118.44	60	120	
Ge Internal standard	72	3	HMI He	622435	0.60	532053	116.99	60	120	
In Internal Standard	115	3	HMI He	2297970	2.06	2192912	104.79	60	120	
Ir (IS)	193	3	HMI He	4654800	0.95	4975964	93.55	60	120	

Sample Report

Sample Table

Sample Name	280-171748-b-1-a
Data File Name	278SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:36:55-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	10273.764	ppb	10273.764	1.03	1060792	400000	
Mg	24	3	45	2661.121	ppb	2661.121	3.07	141809	400000	
Al	27	3	45	12.767	ppb	12.767	21.11	290	400000	
K	39	3	45	1010.566	ppb	1010.566	3.74	51164	400000	
Ca	40	2	45	12299.928	ppb	12299.928	1.76	6371402	400000	
V	51	3	72	-0.007	ppb	-0.007	-1075.67	190	2000	
Cr	52	3	72	-0.016	ppb	-0.016	-366.97	1209	5000	
Mn	55	3	72	0.751	ppb	0.751	18.20	348	10000	
Fe	56	2	72	12.290	ppb	12.290	3.70	22835	10000	
Co	59	3	72	0.008	ppb	0.008	159.71	30	2000	
Ni	60	3	72	0.135	ppb	0.135	26.08	152	5000	
Cu	63	3	72	59.996	ppb	59.996	0.69	49688	5000	
Zn	66	3	72	1.699	ppb	1.699	28.26	337	5000	
As	75	3	72	0.265	ppb	0.265	51.99	45	2000	
Se	78	2	72	0.041	ppb	0.041	161.26	6	2000	
(Se)	78	3	72	-0.586	ppb	-0.586	-97.54	13	2000	
Sr	88	3	72	68.533	ppb	68.533	1.24	30504	4000	
Mo	95	3	115	0.493	ppb	0.493	13.66	252	2000	
Ag	107	3	115	0.030	ppb	0.030	43.01	45	100	
Cd	111	3	115	0.034	ppb	0.034	44.39	7	2000	
Sn	120	3	115	0.651	ppb	0.651	17.82	890	2000	
Sb	121	3	115	0.043	ppb	0.043	106.40	85	1000	
Ba	137	3	115	22.012	ppb	22.012	2.68	4115	5000	
Tl	205	3	193	0.003	ppb	0.003	261.76	118	2000	
(Pb)	206	3	193	0.210	ppb	0.210	17.44	328	100	
(Pb)	207	3	193	0.169	ppb	0.169	44.00	405	100	
Pb	208	3	193	0.210	ppb	0.210	12.61	1433	5000	
Th	232	3	193	-0.088	ppb	-0.088	-39.83	3605	2000	
U	238	3	193	1.045	ppb	1.045	4.42	5930	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3447362	0.61	2988516	115.35	60	120	
Sc (IS)	45	3	HMI He	468872	1.31	453633	103.36	60	120	
Ge Internal standard	72	2	HMI H2	1983343	2.84	1716556	115.54	60	120	
Ge Internal standard	72	3	HMI He	573581	1.37	532053	107.81	60	120	
In Internal Standard	115	3	HMI He	2102761	1.02	2192912	95.89	60	120	
Ir (IS)	193	3	HMI He	4697855	1.08	4975964	94.41	60	120	

Sample Report

Sample Table

Sample Name	280-171757-a-2-a
Data File Name	279SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:38:49-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	112082.654	ppb	112082.654	1.06	11404636	400000	
Mg	24	3	45	19139.386	ppb	19139.386	2.50	1020335	400000	
Al	27	3	45	19.859	ppb	19.859	22.04	420	400000	
K	39	3	45	14890.824	ppb	14890.824	0.40	562583	400000	
Ca	40	2	45	53297.260	ppb	53297.260	1.73	26487467	400000	
V	51	3	72	0.691	ppb	0.691	20.92	540	2000	
Cr	52	3	72	1.194	ppb	1.194	6.14	1971	5000	
Mn	55	3	72	77.694	ppb	77.694	1.41	26230	10000	
Fe	56	2	72	51.654	ppb	51.654	1.71	74923	10000	
Co	59	3	72	0.420	ppb	0.420	8.35	473	2000	
Ni	60	3	72	1.014	ppb	1.014	3.84	410	5000	
Cu	63	3	72	4.070	ppb	4.070	2.13	3575	5000	
Zn	66	3	72	45.394	ppb	45.394	2.20	6212	5000	
As	75	3	72	0.444	ppb	0.444	44.08	62	2000	
Se	78	2	72	0.959	ppb	0.959	35.07	51	2000	
(Se)	78	3	72	0.837	ppb	0.837	122.24	20	2000	
Sr	88	3	72	493.189	ppb	493.189	1.38	217556	4000	
Mo	95	3	115	2.090	ppb	2.090	9.07	941	2000	
Ag	107	3	115	0.021	ppb	0.021	34.36	33	100	
Cd	111	3	115	0.025	ppb	0.025	101.22	5	2000	
Sn	120	3	115	1.074	ppb	1.074	3.42	1173	2000	
Sb	121	3	115	0.446	ppb	0.446	21.04	333	1000	
Ba	137	3	115	40.854	ppb	40.854	4.81	7842	5000	
Tl	205	3	193	0.007	ppb	0.007	155.01	133	2000	
(Pb)	206	3	193	0.341	ppb	0.341	1.75	465	100	
(Pb)	207	3	193	0.352	ppb	0.352	8.29	573	100	
Pb	208	3	193	0.359	ppb	0.359	2.16	2057	5000	
Th	232	3	193	-0.081	ppb	-0.081	-13.90	3670	2000	
U	238	3	193	0.481	ppb	0.481	5.55	3427	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3311854	1.63	2988516	110.82	60	120	
Sc (IS)	45	3	HMI He	469211	1.06	453633	103.43	60	120	
Ge Internal standard	72	2	HMI H2	1875412	1.25	1716556	109.25	60	120	
Ge Internal standard	72	3	HMI He	569098	0.83	532053	106.96	60	120	
In Internal Standard	115	3	HMI He	2170509	1.86	2192912	98.98	60	120	
Ir (IS)	193	3	HMI He	4743571	1.66	4975964	95.33	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	280_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:40:41-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	44.246	ppb	5.323	1858	50	88.5	90	110	>+\-10%
Na	23	3	45	50753.079	ppb	1.502	4784740	51000	99.5	90	110	
Mg	24	3	45	10405.251	ppb	2.225	512990	11000	94.6	90	110	
Al	27	3	45	909.420	ppb	1.867	15514	1000	90.9	90	110	
K	39	3	45	11126.918	ppb	2.051	391975	11000	101.2	90	110	
Ca	40	2	45	11192.233	ppb	0.874	5593223	11000	101.7	90	110	
V	51	3	72	47.469	ppb	2.003	20987	50	94.9	90	110	
Cr	52	3	72	49.069	ppb	1.432	28310	50	98.1	90	110	
Mn	55	3	72	47.243	ppb	2.973	13943	50	94.5	90	110	
Fe	56	2	72	891.780	ppb	1.751	1204993	1000	89.2	90	110	>+\-10%
Co	59	3	72	47.250	ppb	2.461	44380	50	94.5	90	110	
Ni	60	3	72	46.250	ppb	2.648	12011	50	92.5	90	110	
Cu	63	3	72	46.498	ppb	2.058	33379	50	93.0	90	110	
Zn	66	3	72	54.268	ppb	4.789	6460	50	108.5	90	110	
As	75	3	72	48.916	ppb	5.073	4052	50	97.8	90	110	
Se	78	2	72	44.874	ppb	3.628	2188	50	89.7	90	110	>+\-10%
(Se)	78	3	72	65.359	ppb	11.840	285	50	130.7	90	110	>+\-10%
Sr	88	3	72	97.324	ppb	1.404	37474	100	97.3	90	110	
Mo	95	3	115	45.937	ppb	0.310	18283	50	91.9	90	110	
Ag	107	3	115	45.861	ppb	1.474	60539	50	91.7	90	110	
Cd	111	3	115	45.131	ppb	1.107	8415	50	90.3	90	110	
Sn	120	3	115	45.169	ppb	1.839	25810	50	90.3	90	110	
Sb	121	3	115	46.969	ppb	1.333	26727	50	93.9	90	110	
Ba	137	3	115	47.063	ppb	2.504	8402	50	94.1	90	110	
Tl	205	3	193	47.290	ppb	0.949	138227	50	94.6	90	110	
(Pb)	206	3	193	47.262	ppb	1.766	45375	50	94.5	90	110	
(Pb)	207	3	193	47.083	ppb	1.168	40245	50	94.2	90	110	
Pb	208	3	193	47.527	ppb	0.678	184730	50	95.1	90	110	
Th	232	3	193	47.027	ppb	1.021	191708	50	94.1	90	110	
U	238	3	193	47.241	ppb	0.823	204181	50	94.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3325303	0.58	2988516	111.27	60	120	
Sc (IS)	45	3	HMI He	433976	2.03	453633	95.67	60	120	
Ge Internal standard	72	2	HMI H2	1863273	1.95	1716556	108.55	60	120	
Ge Internal standard	72	3	HMI He	496478	1.27	532053	93.31	60	120	
In Internal Standard	115	3	HMI He	2018760	1.27	2192912	92.06	60	120	
Ir (IS)	193	3	HMI He	4489529	0.34	4975964	90.22	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	281_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:42:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	218CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.043	ppb	0.0	0	0.5	
Na	23	3	45	213.323	ppb	6.7	39812	25	>RL
Mg	24	3	45	5.574	ppb	16.9	377	25	
Al	27	3	45	0.204	ppb	440.9	60	15	
K	39	3	45	22.830	ppb	110.5	14976	50	
V	51	3	72	-0.121	ppb	-53.3	132	1	
Cr	52	3	72	-0.106	ppb	-98.1	1144	1	
Mn	55	3	72	0.076	ppb	141.7	118	0.5	
Co	59	3	72	0.023	ppb	97.2	47	0.5	
Ni	60	3	72	-0.132	ppb	-18.7	72	1	
Cu	63	3	72	-0.030	ppb	-131.8	223	1	
Zn	66	3	72	0.642	ppb	18.7	192	5	
As	75	3	72	0.110	ppb	1.4	30	1	
Se	78	2	72	0.054	ppb	161.7	6	1	
(Se)	78	3	72	0.138	ppb	1166.5	17	1	
Sr	88	3	72	0.149	ppb	4.9	102	0.5	
Mo	95	3	115	-0.020	ppb	-126.6	42	0.5	
Ag	107	3	115	0.023	ppb	44.2	37	1	
Cd	111	3	115	0.008	ppb	173.2	2	0.5	
Sn	120	3	115	0.101	ppb	119.3	598	1	
Sb	121	3	115	0.087	ppb	42.6	117	0.6	
Ba	137	3	115	0.036	ppb	385.0	50	0.5	
Tl	205	3	193	0.014	ppb	56.1	163	0.1	
(Pb)	206	3	193	0.026	ppb	69.4	153	1	
(Pb)	207	3	193	0.035	ppb	188.3	305	1	
Pb	208	3	193	0.048	ppb	17.7	825	0.5	
Th	232	3	193	0.483	ppb	40.3	6387	1	
U	238	3	193	0.051	ppb	54.0	1559	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3191278	2.57	2988516	106.78	60	120	
Sc (IS)	45	3	HMI He	474793	1.17	453633	104.66	60	120	
Ge Internal standard	72	2	HMI H2	1804853	2.66	1716556	105.14	60	120	
Ge Internal standard	72	3	HMI He	569852	0.48	532053	107.10	60	120	
In Internal Standard	115	3	HMI He	2212988	2.08	2192912	100.92	60	120	
Ir (IS)	193	3	HMI He	5010572	1.42	4975964	100.70	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	283SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:46:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	106.394	ppb	106.394	12.47	31326	400000	
Mg	24	3	45	1.370	ppb	1.370	42.56	163	400000	
Al	27	3	45	-0.537	ppb	-0.537	-98.10	50	400000	
K	39	3	45	-5.043	ppb	-5.043	-559.47	15150	400000	
Ca	40	2	45	-5.225	ppb	-5.225	-6.76	8391	400000	
V	51	3	72	-0.325	ppb	-0.325	-3.29	32	2000	
Cr	52	3	72	-0.933	ppb	-0.933	-5.76	670	5000	
Mn	55	3	72	-0.134	ppb	-0.134	-16.25	52	10000	
Fe	56	2	72	-1.059	ppb	-1.059	-13.75	3908	10000	
Co	59	3	72	0.007	ppb	0.007	173.71	32	2000	
Ni	60	3	72	-0.197	ppb	-0.197	-6.29	57	5000	
Cu	63	3	72	-0.136	ppb	-0.136	-13.62	148	5000	
Zn	66	3	72	-0.280	ppb	-0.280	-11.05	73	5000	
As	75	3	72	-0.046	ppb	-0.046	-215.41	17	2000	
Se	78	2	72	-0.062	ppb	-0.062	-33.91	1	2000	
(Se)	78	3	72	-2.065	ppb	-2.065	-28.48	7	2000	
Sr	88	3	72	0.016	ppb	0.016	184.42	47	4000	
Mo	95	3	115	-0.063	ppb	-0.063	-0.98	25	2000	
Ag	107	3	115	0.012	ppb	0.012	63.06	23	100	
Cd	111	3	115	0.030	ppb	0.030	42.42	7	2000	
Sn	120	3	115	-0.665	ppb	-0.665	-7.43	140	2000	
Sb	121	3	115	-0.029	ppb	-0.029	-58.23	48	1000	
Ba	137	3	115	-0.128	ppb	-0.128	-36.47	20	5000	
Tl	205	3	193	0.008	ppb	0.008	97.84	150	2000	
(Pb)	206	3	193	0.007	ppb	0.007	199.01	142	100	
(Pb)	207	3	193	-0.036	ppb	-0.036	-65.83	252	100	
Pb	208	3	193	0.007	ppb	0.007	111.55	685	5000	
Th	232	3	193	-0.133	ppb	-0.133	-35.37	3855	2000	
U	238	3	193	0.009	ppb	0.009	192.31	1438	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3692162	2.22	2988516	123.55	60	120	IS Failed
Sc (IS)	45	3	HMI He	516112	1.38	453633	113.77	60	120	
Ge Internal standard	72	2	HMI H2	2083236	0.81	1716556	121.36	60	120	IS Failed
Ge Internal standard	72	3	HMI He	618266	2.03	532053	116.20	60	120	
In Internal Standard	115	3	HMI He	2424377	1.17	2192912	110.56	60	120	
Ir (IS)	193	3	HMI He	5300637	2.33	4975964	106.52	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	284SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:48:16-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	84.710	ppb	84.710	10.85	28597	400000	
Mg	24	3	45	0.769	ppb	0.769	96.12	127	400000	
Al	27	3	45	-0.679	ppb	-0.679	-116.30	47	400000	
K	39	3	45	-3.113	ppb	-3.113	-1024.92	15090	400000	
Ca	40	2	45	-5.394	ppb	-5.394	-4.30	8127	400000	
V	51	3	72	-0.342	ppb	-0.342	-5.72	22	2000	
Cr	52	3	72	-0.903	ppb	-0.903	-9.41	678	5000	
Mn	55	3	72	-0.145	ppb	-0.145	-6.70	47	10000	
Fe	56	2	72	-1.116	ppb	-1.116	-20.73	3801	10000	
Co	59	3	72	-0.006	ppb	-0.006	-111.89	17	2000	
Ni	60	3	72	-0.215	ppb	-0.215	-9.27	50	5000	
Cu	63	3	72	-0.204	ppb	-0.204	-0.41	87	5000	
Zn	66	3	72	-0.491	ppb	-0.491	-2.48	42	5000	
As	75	3	72	-0.011	ppb	-0.011	-1209.75	20	2000	
Se	78	2	72	-0.050	ppb	-0.050	-42.76	1	2000	
(Se)	78	3	72	-0.091	ppb	-0.091	-521.46	17	2000	
Sr	88	3	72	0.032	ppb	0.032	109.97	53	4000	
Mo	95	3	115	-0.066	ppb	-0.066	-48.68	23	2000	
Ag	107	3	115	0.010	ppb	0.010	131.76	20	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.644	ppb	-0.644	-3.75	150	2000	
Sb	121	3	115	-0.075	ppb	-0.075	-11.92	17	1000	
Ba	137	3	115	-0.126	ppb	-0.126	-1.83	20	5000	
Tl	205	3	193	0.007	ppb	0.007	55.57	145	2000	
(Pb)	206	3	193	-0.002	ppb	-0.002	-269.76	130	100	
(Pb)	207	3	193	-0.017	ppb	-0.017	-272.88	267	100	
Pb	208	3	193	0.003	ppb	0.003	267.71	661	5000	
Th	232	3	193	-0.111	ppb	-0.111	-30.22	3920	2000	
U	238	3	193	0.006	ppb	0.006	371.34	1403	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3616953	0.82	2988516	121.03	60	120	IS Failed
Sc (IS)	45	3	HMI He	510811	2.49	453633	112.60	60	120	
Ge Internal standard	72	2	HMI H2	2073560	1.81	1716556	120.80	60	120	IS Failed
Ge Internal standard	72	3	HMI He	607718	2.76	532053	114.22	60	120	
In Internal Standard	115	3	HMI He	2363131	2.36	2192912	107.76	60	120	
Ir (IS)	193	3	HMI He	5240860	2.83	4975964	105.32	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	285SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:50:09-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	78.622	ppb	78.622	8.31	27327	400000	
Mg	24	3	45	0.227	ppb	0.227	246.00	93	400000	
Al	27	3	45	-0.794	ppb	-0.794	-102.76	43	400000	
K	39	3	45	8.079	ppb	8.079	270.04	15180	400000	
Ca	40	2	45	-5.488	ppb	-5.488	-12.28	7790	400000	
V	51	3	72	-0.329	ppb	-0.329	-10.20	28	2000	
Cr	52	3	72	-0.919	ppb	-0.919	-9.25	656	5000	
Mn	55	3	72	-0.082	ppb	-0.082	-44.38	68	10000	
Fe	56	2	72	-0.838	ppb	-0.838	-8.65	4061	10000	
Co	59	3	72	0.005	ppb	0.005	261.55	28	2000	
Ni	60	3	72	-0.225	ppb	-0.225	-26.61	47	5000	
Cu	63	3	72	-0.173	ppb	-0.173	-3.23	112	5000	
Zn	66	3	72	-0.251	ppb	-0.251	-35.83	75	5000	
As	75	3	72	-0.037	ppb	-0.037	-350.88	17	2000	
Se	78	2	72	-0.023	ppb	-0.023	-194.88	3	2000	
(Se)	78	3	72	0.654	ppb	0.654	167.54	20	2000	
Sr	88	3	72	-0.024	ppb	-0.024	-95.37	27	4000	
Mo	95	3	115	-0.075	ppb	-0.075	-14.66	18	2000	
Ag	107	3	115	0.011	ppb	0.011	87.78	20	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.626	ppb	-0.626	-4.82	158	2000	
Sb	121	3	115	-0.047	ppb	-0.047	-65.72	35	1000	
Ba	137	3	115	-0.040	ppb	-0.040	-107.78	37	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-8.62	93	2000	
(Pb)	206	3	193	-0.023	ppb	-0.023	-40.18	105	100	
(Pb)	207	3	193	-0.026	ppb	-0.026	-123.21	255	100	
Pb	208	3	193	-0.012	ppb	-0.012	-108.26	585	5000	
Th	232	3	193	-0.127	ppb	-0.127	-28.03	3804	2000	
U	238	3	193	0.010	ppb	0.010	58.62	1411	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3487082	1.34	2988516	116.68	60	120	
Sc (IS)	45	3	HMI He	499708	1.44	453633	110.16	60	120	
Ge Internal standard	72	2	HMI H2	1995140	1.41	1716556	116.23	60	120	
Ge Internal standard	72	3	HMI He	598483	2.88	532053	112.49	60	120	
In Internal Standard	115	3	HMI He	2304868	3.74	2192912	105.11	60	120	
Ir (IS)	193	3	HMI He	5187508	1.01	4975964	104.25	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	286SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:52:03-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	73.048	ppb	73.048	13.49	25977	400000	
Mg	24	3	45	0.017	ppb	0.017	1709.96	80	400000	
Al	27	3	45	-0.734	ppb	-0.734	-86.24	43	400000	
K	39	3	45	7.034	ppb	7.034	402.94	14736	400000	
Ca	40	2	45	-5.970	ppb	-5.970	-23.06	7660	400000	
V	51	3	72	-0.337	ppb	-0.337	-2.80	23	2000	
Cr	52	3	72	-0.898	ppb	-0.898	-6.80	650	5000	
Mn	55	3	72	-0.085	ppb	-0.085	-30.89	65	10000	
Fe	56	2	72	-0.860	ppb	-0.860	-6.15	4078	10000	
Co	59	3	72	-0.003	ppb	-0.003	-164.96	18	2000	
Ni	60	3	72	-0.256	ppb	-0.256	-13.15	35	5000	
Cu	63	3	72	-0.150	ppb	-0.150	-15.97	127	5000	
Zn	66	3	72	-0.231	ppb	-0.231	-54.20	75	5000	
As	75	3	72	0.021	ppb	0.021	432.39	22	2000	
Se	78	2	72	-0.011	ppb	-0.011	-218.45	3	2000	
(Se)	78	3	72	-0.276	ppb	-0.276	-977.23	15	2000	
Sr	88	3	72	-0.018	ppb	-0.018	-148.49	28	4000	
Mo	95	3	115	-0.068	ppb	-0.068	-18.67	22	2000	
Ag	107	3	115	0.014	ppb	0.014	57.03	25	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.665	ppb	-0.665	-2.59	133	2000	
Sb	121	3	115	-0.075	ppb	-0.075	-14.28	17	1000	
Ba	137	3	115	-0.132	ppb	-0.132	-29.60	18	5000	
Tl	205	3	193	0.001	ppb	0.001	369.08	123	2000	
(Pb)	206	3	193	-0.012	ppb	-0.012	-284.64	113	100	
(Pb)	207	3	193	-0.005	ppb	-0.005	-725.58	270	100	
Pb	208	3	193	0.009	ppb	0.009	143.58	663	5000	
Th	232	3	193	-0.110	ppb	-0.110	-15.77	3777	2000	
U	238	3	193	0.015	ppb	0.015	40.14	1396	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3543788	0.49	2988516	118.58	60	120	
Sc (IS)	45	3	HMI He	486238	4.82	453633	107.19	60	120	
Ge Internal standard	72	2	HMI H2	2018640	2.97	1716556	117.60	60	120	
Ge Internal standard	72	3	HMI He	579348	4.19	532053	108.89	60	120	
In Internal Standard	115	3	HMI He	2319945	4.08	2192912	105.79	60	120	
Ir (IS)	193	3	HMI He	5044962	4.96	4975964	101.39	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	287SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T11:53:56-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	218CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.043	ppb	-0.043	0.00	0	2000	
Na	23	3	45	63.252	ppb	63.252	4.16	25458	400000	
Mg	24	3	45	0.177	ppb	0.177	3.09	90	400000	
Al	27	3	45	-1.299	ppb	-1.299	-91.74	33	400000	
K	39	3	45	-4.816	ppb	-4.816	-513.40	14556	400000	
Ca	40	2	45	-6.022	ppb	-6.022	-8.74	7730	400000	
V	51	3	72	-0.337	ppb	-0.337	-7.20	23	2000	
Cr	52	3	72	-0.985	ppb	-0.985	-7.73	595	5000	
Mn	55	3	72	-0.100	ppb	-0.100	-78.18	60	10000	
Fe	56	2	72	-0.919	ppb	-0.919	-1.53	3881	10000	
Co	59	3	72	0.000	ppb	0.000	-2585.56	22	2000	
Ni	60	3	72	-0.196	ppb	-0.196	-38.79	53	5000	
Cu	63	3	72	-0.151	ppb	-0.151	-8.82	127	5000	
Zn	66	3	72	-0.356	ppb	-0.356	-11.21	58	5000	
As	75	3	72	-0.017	ppb	-0.017	-474.33	18	2000	
Se	78	2	72	-0.036	ppb	-0.036	-107.52	2	2000	
(Se)	78	3	72	0.409	ppb	0.409	379.51	18	2000	
Sr	88	3	72	-0.033	ppb	-0.033	-39.80	22	4000	
Mo	95	3	115	-0.059	ppb	-0.059	-50.86	25	2000	
Ag	107	3	115	0.002	ppb	0.002	233.64	7	100	
Cd	111	3	115	0.000	ppb	0.000	#DIV/0!	0	2000	
Sn	120	3	115	-0.663	ppb	-0.663	-1.80	132	2000	
Sb	121	3	115	-0.046	ppb	-0.046	-107.11	35	1000	
Ba	137	3	115	-0.130	ppb	-0.130	-62.29	18	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-316.23	110	2000	
(Pb)	206	3	193	-0.034	ppb	-0.034	-103.24	92	100	
(Pb)	207	3	193	-0.038	ppb	-0.038	-97.17	240	100	
Pb	208	3	193	-0.015	ppb	-0.015	-76.21	565	5000	
Th	232	3	193	-0.121	ppb	-0.121	-22.91	3775	2000	
U	238	3	193	0.019	ppb	0.019	132.93	1434	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3588375	4.16	2988516	120.07	60	120	IS Failed
Sc (IS)	45	3	HMI He	495585	0.34	453633	109.25	60	120	
Ge Internal standard	72	2	HMI H2	1962129	1.79	1716556	114.31	60	120	
Ge Internal standard	72	3	HMI He	580378	0.85	532053	109.08	60	120	
In Internal Standard	115	3	HMI He	2264063	0.55	2192912	103.24	60	120	
Ir (IS)	193	3	HMI He	5115666	1.17	4975964	102.81	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	288CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-31T11:55:48-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	26535	0.00
Mg	24	45	3	HMI He	247	9.04
Al	27	45	3	HMI He	50	105.72
K	39	45	3	HMI He	14562	0.06
Ca	40	45	2	HMI H2	11369	0.02
V	51	72	3	HMI He	132	24.20
Cr	52	72	3	HMI He	1116	1.00
Mn	55	72	3	HMI He	122	16.67
Fe	56	72	2	HMI H2	5013	0.12
Co	59	72	3	HMI He	33	187.40
Ni	60	72	3	HMI He	103	28.24
Cu	63	72	3	HMI He	258	5.10
Zn	66	72	3	HMI He	112	14.09
As	75	72	3	HMI He	27	107.43
Se	78	72	2	HMI H2	2	5000.00
(Se)	78	72	3	HMI He	22	123.10
Sr	88	72	3	HMI He	82	11.46
Mo	95	115	3	HMI He	48	32.71
Ag	107	115	3	HMI He	30	200.42
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	480	1.70
Sb	121	115	3	HMI He	70	30.63
Ba	137	115	3	HMI He	38	70.87
Tl	205	193	3	HMI He	100	44.46
(Pb)	206	193	3	HMI He	160	11.89
(Pb)	207	193	3	HMI He	265	6.21
Pb	208	193	3	HMI He	706	1.55
Th	232	193	3	HMI He	3997	0.13
U	238	193	3	HMI He	1396	0.59

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	3194552	0.61
Sc (IS)	45	3	HMI He	453900	1.40
Ge Internal standard	72	2	HMI H2	1772348	2.36
Ge Internal standard	72	3	HMI He	534883	1.28
In Internal Standard	115	3	HMI He	2119186	1.53
Ir (IS)	193	3	HMI He	4848024	2.07

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	289CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T11:57:41-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	0	#VALUE!
Na	23	45	3	HMI He	25325	0.02
Mg	24	45	3	HMI He	267	11.95
Al	27	45	3	HMI He	40	272.16
K	39	45	3	HMI He	13280	0.07
V	51	72	3	HMI He	27	40.63
Cr	52	72	3	HMI He	481	1.80
Mn	55	72	3	HMI He	65	31.32
Co	59	72	3	HMI He	22	61.55
Ni	60	72	3	HMI He	48	44.57
Cu	63	72	3	HMI He	138	19.62
Zn	66	72	3	HMI He	80	34.07
As	75	72	3	HMI He	33	170.43
Se	78	72	2	HMI H2	3	3247.60
(Se)	78	72	3	HMI He	17	207.80
Sr	88	72	3	HMI He	28	95.18
Mo	95	115	3	HMI He	35	389.47
Ag	107	115	3	HMI He	15	384.99
Cd	111	115	3	HMI He	0	#VALUE!
Sn	120	115	3	HMI He	183	2.27
Sb	121	115	3	HMI He	30	147.05
Ba	137	115	3	HMI He	32	115.19
Tl	205	193	3	HMI He	198	8.47
(Pb)	206	193	3	HMI He	165	4.86
(Pb)	207	193	3	HMI He	448	3.17
Pb	208	193	3	HMI He	1041	0.64
Th	232	193	3	HMI He	6512	0.05
U	238	193	3	HMI He	2347	0.14

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5771721	0.69	3194552	180.67	60	120	IS Failed
Sc (IS)	45	3	HMI He	879803	2.25	453900	193.83	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3200563	1.74	1772348	180.58	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1028637	1.63	534883	192.31	60	120	IS Failed
In Internal Standard	115	3	HMI He	3857594	1.78	2119186	182.03	60	120	IS Failed
Ir (IS)	193	3	HMI He	8878841	1.56	4848024	183.14	60	120	IS Failed

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	290CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T11:59:32-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	4155	0.04
Na	23	45	3	HMI He	227201	0.00
Mg	24	45	3	HMI He	102145	0.00
Al	27	45	3	HMI He	36243	0.01
K	39	45	3	HMI He	88348	0.00
V	51	72	3	HMI He	51225	0.00
Cr	52	72	3	HMI He	65708	0.00
Mn	55	72	3	HMI He	34108	0.01
Co	59	72	3	HMI He	105838	0.00
Ni	60	72	3	HMI He	29555	0.01
Cu	63	72	3	HMI He	80191	0.00
Zn	66	72	3	HMI He	13802	0.02
As	75	72	3	HMI He	9550	0.03
Se	78	72	2	HMI H2	4817	0.08
(Se)	78	72	3	HMI He	565	0.68
Sr	88	72	3	HMI He	86708	0.00
Mo	95	115	3	HMI He	43274	0.00
Ag	107	115	3	HMI He	148039	0.00
Cd	111	115	3	HMI He	21321	0.00
Sn	120	115	3	HMI He	65040	0.00
Sb	121	115	3	HMI He	64011	0.00
Ba	137	115	3	HMI He	20698	0.00
Tl	205	193	3	HMI He	330526	0.00
(Pb)	206	193	3	HMI He	112404	0.00
(Pb)	207	193	3	HMI He	98285	0.00
Pb	208	193	3	HMI He	450478	0.00
Th	232	193	3	HMI He	472740	0.00
U	238	193	3	HMI He	484722	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3311668	0.56	3194552	103.67	60	120	
Sc (IS)	45	3	HMI He	473684	1.68	453900	104.36	60	120	
Ge Internal standard	72	2	HMI H2	1912477	0.52	1772348	107.91	60	120	
Ge Internal standard	72	3	HMI He	580015	1.72	534883	108.44	60	120	
In Internal Standard	115	3	HMI He	2194753	0.49	2119186	103.57	60	120	
Ir (IS)	193	3	HMI He	5023931	3.04	4848024	103.63	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	291_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:01:25-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.203	ppb	8.232	1574	40	100.5	90	110	
Na	23	3	45	-9621950.893	ppb	-0.566	1300613	12800	-75171.5	90	110	>+\-10%
Mg	24	3	45	-43465062.629	ppb	-1.231	231883	4800	-905522.1	90	110	>+\-10%
Al	27	3	45	816.095	ppb	1.143	13988	800	102.0	90	110	
K	39	3	45	-449586.545	ppb	-1.422	185074	4800	-9366.4	90	110	>+\-10%
Ca	40	2	45	517540.841	ppb	2.802	2328796	4800	10782.1	90	110	>+\-10%
V	51	3	72	40.707	ppb	1.860	19469	40	101.8	90	110	
Cr	52	3	72	41.301	ppb	1.282	25901	40	103.3	90	110	
Mn	55	3	72	41.324	ppb	2.267	13176	40	103.3	90	110	
Fe	56	2	72	869.267	ppb	2.586	1009778	800	108.7	90	110	
Co	59	3	72	41.087	ppb	2.811	40496	40	102.7	90	110	
Ni	60	3	72	40.088	ppb	1.304	11084	40	100.2	90	110	
Cu	63	3	72	42.050	ppb	2.742	31532	40	105.1	90	110	
Zn	66	3	72	82.828	ppb	1.670	10647	80	103.5	90	110	
As	75	3	72	41.334	ppb	5.467	3690	40	103.3	90	110	
Se	78	2	72	44.559	ppb	4.766	1907	40	111.4	90	110	>+\-10%
(Se)	78	3	72	44.210	ppb	13.840	245	40	110.5	90	110	>+\-10%
Sr	88	3	72	126.653	ppb	2.061	51114	120	105.5	90	110	
Mo	95	3	115	41.257	ppb	3.936	17304	40	103.1	90	110	
Ag	107	3	115	78.420	ppb	3.831	112358	80	98.0	90	110	
Cd	111	3	115	40.280	ppb	3.773	8312	40	100.7	90	110	
Sn	120	3	115	39.112	ppb	3.737	24911	40	97.8	90	110	
Sb	121	3	115	40.660	ppb	5.080	25230	40	101.6	90	110	
Ba	137	3	115	39.027	ppb	5.364	7842	40	97.6	90	110	
Tl	205	3	193	40.699	ppb	1.253	131832	40	101.7	90	110	
(Pb)	206	3	193	38.326	ppb	1.717	42316	40	95.8	90	110	
(Pb)	207	3	193	40.496	ppb	2.054	39144	40	101.2	90	110	
Pb	208	3	193	39.349	ppb	1.398	174129	40	98.4	90	110	
Th	232	3	193	78.453	ppb	0.761	363979	80	98.1	90	110	
U	238	3	193	40.422	ppb	0.838	192777	40	101.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3054957	3.32	3194552	95.63	60	120	
Sc (IS)	45	3	HMI He	446810	4.52	453900	98.44	60	120	
Ge Internal standard	72	2	HMI H2	1698784	0.23	1772348	95.85	60	120	
Ge Internal standard	72	3	HMI He	539445	4.28	534883	100.85	60	120	
In Internal Standard	115	3	HMI He	2123242	1.26	2119186	100.19	60	120	
Ir (IS)	193	3	HMI He	4917808	4.50	4848024	101.44	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	292_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:03:18-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.843	ppb	8.077	1833	50	91.7	90	110	
Na	23	3	45	-37677353.990	ppb	-1.749	4986909	51000	-73877.2	90	110	>+\-10%
Mg	24	3	45	-101771825.919	ppb	-1.943	539109	11000	-925198.4	90	110	>+\-10%
Al	27	3	45	909.170	ppb	4.292	15484	1000	90.9	90	110	
K	39	3	45	-1014334.871	ppb	-0.674	397026	11000	-9221.2	90	110	>+\-10%
Ca	40	2	45	1150691.255	ppb	1.957	5316060	11000	10460.8	90	110	>+\-10%
V	51	3	72	47.645	ppb	1.760	21933	50	95.3	90	110	
Cr	52	3	72	48.176	ppb	2.608	28921	50	96.4	90	110	
Mn	55	3	72	47.156	ppb	2.722	14472	50	94.3	90	110	
Fe	56	2	72	997.033	ppb	5.551	1166024	1000	99.7	90	110	
Co	59	3	72	47.734	ppb	2.066	45281	50	95.5	90	110	
Ni	60	3	72	47.412	ppb	1.220	12606	50	94.8	90	110	
Cu	63	3	72	47.757	ppb	3.238	34429	50	95.5	90	110	
Zn	66	3	72	52.373	ppb	1.623	6528	50	104.7	90	110	
As	75	3	72	47.511	ppb	4.269	4079	50	95.0	90	110	
Se	78	2	72	49.301	ppb	5.966	2125	50	98.6	90	110	
(Se)	78	3	72	51.589	ppb	9.845	272	50	103.2	90	110	
Sr	88	3	72	97.720	ppb	1.076	38001	100	97.7	90	110	
Mo	95	3	115	46.460	ppb	2.790	18989	50	92.9	90	110	
Ag	107	3	115	45.639	ppb	2.656	63744	50	91.3	90	110	
Cd	111	3	115	43.342	ppb	3.871	8715	50	86.7	90	110	>+\-10%
Sn	120	3	115	45.352	ppb	4.012	28077	50	90.7	90	110	
Sb	121	3	115	45.556	ppb	1.334	27548	50	91.1	90	110	
Ba	137	3	115	45.184	ppb	0.738	8844	50	90.4	90	110	
Tl	205	3	193	45.628	ppb	0.591	143533	50	91.3	90	110	
(Pb)	206	3	193	45.366	ppb	1.122	48610	50	90.7	90	110	
(Pb)	207	3	193	44.663	ppb	0.901	41918	50	89.3	90	110	>+\-10%
Pb	208	3	193	45.209	ppb	0.820	194196	50	90.4	90	110	
Th	232	3	193	46.073	ppb	1.739	209318	50	92.1	90	110	
U	238	3	193	45.371	ppb	2.217	210023	50	90.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3142912	0.62	3194552	98.38	60	120	
Sc (IS)	45	3	HMI He	444180	1.98	453900	97.86	60	120	
Ge Internal standard	72	2	HMI H2	1712773	2.89	1772348	96.64	60	120	
Ge Internal standard	72	3	HMI He	519707	2.23	534883	97.16	60	120	
In Internal Standard	115	3	HMI He	2070730	2.02	2119186	97.71	60	120	
Ir (IS)	193	3	HMI He	4778179	1.35	4848024	98.56	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	293_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:05:12-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.001	ppb	10444.3	2	0.5	
Na	23	3	45	-6101.088	ppb	-27.8	26715	25	
Mg	24	3	45	-8155.782	ppb	-131.8	284	25	
Al	27	3	45	4.590	ppb	44.4	127	15	
K	39	3	45	257.861	ppb	855.0	14131	50	>RL
V	51	3	72	0.026	ppb	276.9	140	1	
Cr	52	3	72	0.136	ppb	27.0	1163	1	
Mn	55	3	72	0.280	ppb	37.9	203	0.5	
Co	59	3	72	0.008	ppb	133.4	40	0.5	
Ni	60	3	72	0.327	ppb	20.2	187	1	
Cu	63	3	72	0.038	ppb	68.7	278	1	
Zn	66	3	72	0.678	ppb	27.1	192	5	
As	75	3	72	0.028	ppb	599.2	28	1	
Se	78	2	72	-0.014	ppb	-191.0	1	1	
(Se)	78	3	72	-1.245	ppb	-165.4	15	1	
Sr	88	3	72	-0.093	ppb	-70.1	43	0.5	
Mo	95	3	115	0.061	ppb	32.9	72	0.5	
Ag	107	3	115	0.015	ppb	23.4	50	1	
Cd	111	3	115	0.042	ppb	119.0	10	0.5	
Sn	120	3	115	0.819	ppb	17.3	963	1	
Sb	121	3	115	0.017	ppb	29.1	78	0.6	
Ba	137	3	115	0.031	ppb	207.8	43	0.5	
Tl	205	3	193	0.022	ppb	29.1	168	0.1	
(Pb)	206	3	193	-0.004	ppb	-206.9	153	1	
(Pb)	207	3	193	0.035	ppb	75.1	293	1	
Pb	208	3	193	0.011	ppb	123.3	745	0.5	
Th	232	3	193	0.501	ppb	26.8	6168	1	
U	238	3	193	0.010	ppb	109.6	1418	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3185103	0.32	3194552	99.70	60	120	
Sc (IS)	45	3	HMI He	443215	0.64	453900	97.65	60	120	
Ge Internal standard	72	2	HMI H2	1738124	2.23	1772348	98.07	60	120	
Ge Internal standard	72	3	HMI He	519445	0.11	534883	97.11	60	120	
In Internal Standard	115	3	HMI He	2062231	0.63	2119186	97.31	60	120	
Ir (IS)	193	3	HMI He	4771427	1.53	4848024	98.42	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL-7569078
Data File Name	294LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:07:04-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.629	ppb	48.953	27	1	62.9	70	130	>+/-30%
Na	23	3	45	-12518.278	ppb	-57.965	27748	50	-25036.6	70	130	>+/-30%
Mg	24	3	45	-405634.274	ppb	-6.080	2403	50	-811268.5	70	130	>+/-30%
Al	27	3	45	50.994	ppb	27.235	924	50	102.0	70	130	
K	39	3	45	-8542.989	ppb	-36.185	17579	100	-8543.0	70	130	>+/-30%
V	51	3	72	4.884	ppb	7.868	2367	5	97.7	70	130	
Cr	52	3	72	2.136	ppb	8.500	2321	2	106.8	70	130	
Mn	55	3	72	1.049	ppb	26.676	436	1	104.9	70	130	
Co	59	3	72	1.099	ppb	3.422	1075	1	109.9	70	130	
Ni	60	3	72	1.902	ppb	20.221	601	2	95.1	70	130	
Cu	63	3	72	1.992	ppb	4.549	1676	2	99.6	70	130	
Zn	66	3	72	10.211	ppb	3.825	1361	10	102.1	70	130	
As	75	3	72	5.356	ppb	6.253	483	5	107.1	70	130	
Se	78	2	72	4.871	ppb	8.738	221	5	97.4	70	130	
(Se)	78	3	72	2.193	ppb	120.309	32	5	43.9	70	130	>+/-30%
Sr	88	3	72	1.051	ppb	14.041	488	1	105.1	70	130	
Mo	95	3	115	1.866	ppb	9.336	818	2	93.3	70	130	
Ag	107	3	115	1.021	ppb	7.678	1474	1	102.1	70	130	
Cd	111	3	115	0.998	ppb	10.872	205	1	99.8	70	130	
Sn	120	3	115	9.364	ppb	2.445	6250	10	93.6	70	130	
Sb	121	3	115	1.880	ppb	10.227	1218	2	94.0	70	130	
Ba	137	3	115	0.903	ppb	19.209	217	1	90.3	70	130	
Tl	205	3	193	0.989	ppb	4.448	3214	1	98.9	70	130	
(Pb)	206	3	193	0.942	ppb	3.011	1168	1	94.2	70	130	
(Pb)	207	3	193	0.938	ppb	9.891	1139	1	93.8	70	130	
Pb	208	3	193	0.968	ppb	5.433	4858	1	96.8	70	130	
Th	232	3	193	1.837	ppb	3.597	12160	2	91.8	70	130	
U	238	3	193	0.974	ppb	1.321	5875	1	97.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3092523	1.42	3194552	96.81	60	120	
Sc (IS)	45	3	HMI He	446601	3.12	453900	98.39	60	120	
Ge Internal standard	72	2	HMI H2	1784994	1.88	1772348	100.71	60	120	
Ge Internal standard	72	3	HMI He	519708	2.96	534883	97.16	60	120	
In Internal Standard	115	3	HMI He	2096927	1.51	2119186	98.95	60	120	
Ir (IS)	193	3	HMI He	4792022	3.18	4848024	98.84	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-2-a
Data File Name	295SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:09:00-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.002	ppb	0.002	4881.21	2	2000	
Na	23	3	45	-27646152.241	ppb	-27646152.241	-0.85	3834952	400000	
Mg	24	3	45	-290055854.951	ppb	-290055854.951	-1.47	1606794	400000	
Al	27	3	45	6.135	ppb	6.135	9.80	160	400000	
K	39	3	45	-334199.327	ppb	-334199.327	-2.24	146818	400000	
Ca	40	2	45	6584471.962	ppb	6584471.962	0.65	30067106	400000	>LDR
V	51	3	72	1.462	ppb	1.462	10.99	866	2000	
Cr	52	3	72	1.087	ppb	1.087	5.59	1861	5000	
Mn	55	3	72	625.436	ppb	625.436	1.11	206914	10000	
Fe	56	2	72	122.015	ppb	122.015	2.00	154111	10000	
Co	59	3	72	2.658	ppb	2.658	3.37	2772	2000	
Ni	60	3	72	6.284	ppb	6.284	6.55	1909	5000	
Cu	63	3	72	0.324	ppb	0.324	9.49	525	5000	
Zn	66	3	72	3.044	ppb	3.044	9.92	523	5000	
As	75	3	72	0.669	ppb	0.669	65.31	90	2000	
Se	78	2	72	0.059	ppb	0.059	46.00	5	2000	
(Se)	78	3	72	-3.068	ppb	-3.068	-35.81	7	2000	
Sr	88	3	72	608.789	ppb	608.789	0.95	256710	4000	
Mo	95	3	115	1.915	ppb	1.915	12.12	876	2000	
Ag	107	3	115	0.003	ppb	0.003	205.03	35	100	
Cd	111	3	115	0.023	ppb	0.023	59.65	7	2000	
Sn	120	3	115	-0.381	ppb	-0.381	-30.42	252	2000	
Sb	121	3	115	0.265	ppb	0.265	8.83	242	1000	
Ba	137	3	115	128.079	ppb	128.079	3.17	26470	5000	
Tl	205	3	193	0.060	ppb	0.060	7.80	290	2000	
(Pb)	206	3	193	0.020	ppb	0.020	142.49	182	100	
(Pb)	207	3	193	0.077	ppb	0.077	68.11	337	100	
Pb	208	3	193	0.043	ppb	0.043	30.23	891	5000	
Th	232	3	193	0.088	ppb	0.088	71.41	4380	2000	
U	238	3	193	0.355	ppb	0.355	10.25	3046	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3111806	1.87	3194552	97.41	60	120	
Sc (IS)	45	3	HMI He	464530	0.45	453900	102.34	60	120	
Ge Internal standard	72	2	HMI H2	1795024	1.53	1772348	101.28	60	120	
Ge Internal standard	72	3	HMI He	564480	0.74	534883	105.53	60	120	
In Internal Standard	115	3	HMI He	2193078	1.81	2119186	103.49	60	120	
Ir (IS)	193	3	HMI He	4837024	1.61	4848024	99.77	60	120	

Sample Report

Sample Table

Sample Name	280-171373-b-3-a
Data File Name	296SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.000	ppb	0.000	16340.65	2	2000	
Na	23	3	45	-52795.179	ppb	-52795.179	-1.52	32617	400000	
Mg	24	3	45	-88050.946	ppb	-88050.946	-20.04	701	400000	
Al	27	3	45	3.863	ppb	3.863	36.73	113	400000	
K	39	3	45	-47.405	ppb	-47.405	-7408.82	14145	400000	
Ca	40	2	45	7391.473	ppb	7391.473	3.68	46423	400000	
V	51	3	72	-0.212	ppb	-0.212	-18.21	32	2000	
Cr	52	3	72	1.158	ppb	1.158	19.61	1781	5000	
Mn	55	3	72	0.533	ppb	0.533	12.81	285	10000	
Fe	56	2	72	13.185	ppb	13.185	0.57	20673	10000	
Co	59	3	72	-0.001	ppb	-0.001	-441.49	32	2000	
Ni	60	3	72	0.067	ppb	0.067	145.28	120	5000	
Cu	63	3	72	0.029	ppb	0.029	191.22	277	5000	
Zn	66	3	72	1.002	ppb	1.002	15.76	235	5000	
As	75	3	72	-0.073	ppb	-0.073	-78.01	20	2000	
Se	78	2	72	-0.015	ppb	-0.015	-178.42	1	2000	
(Se)	78	3	72	-1.291	ppb	-1.291	-78.52	15	2000	
Sr	88	3	72	0.151	ppb	0.151	10.76	140	4000	
Mo	95	3	115	0.093	ppb	0.093	37.50	85	2000	
Ag	107	3	115	0.005	ppb	0.005	144.27	37	100	
Cd	111	3	115	0.008	ppb	0.008	169.51	3	2000	
Sn	120	3	115	-0.197	ppb	-0.197	-53.20	350	2000	
Sb	121	3	115	-0.042	ppb	-0.042	-39.23	43	1000	
Ba	137	3	115	0.953	ppb	0.953	24.54	223	5000	
Tl	205	3	193	0.017	ppb	0.017	81.12	147	2000	
(Pb)	206	3	193	-0.001	ppb	-0.001	-1347.01	152	100	
(Pb)	207	3	193	-0.008	ppb	-0.008	-293.32	245	100	
Pb	208	3	193	-0.004	ppb	-0.004	-205.50	656	5000	
Th	232	3	193	-0.044	ppb	-0.044	-47.51	3610	2000	
U	238	3	193	0.007	ppb	0.007	141.52	1356	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3224680	2.68	3194552	100.94	60	120	
Sc (IS)	45	3	HMI He	440060	0.79	453900	96.95	60	120	
Ge Internal standard	72	2	HMI H2	1751146	1.20	1772348	98.80	60	120	
Ge Internal standard	72	3	HMI He	527679	1.04	534883	98.65	60	120	
In Internal Standard	115	3	HMI He	2072942	2.16	2119186	97.82	60	120	
Ir (IS)	193	3	HMI He	4611117	0.33	4848024	95.11	60	120	

Sample Report

Sample Table

Sample Name	mb 280-599849/1-a
Data File Name	297SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:13:13-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.041	ppb	-0.041	0.00	0	2000	
Na	23	3	45	-33685.466	ppb	-33685.466	-16.60	30209	400000	
Mg	24	3	45	-132602.793	ppb	-132602.793	-6.36	938	400000	
Al	27	3	45	7.993	ppb	7.993	11.62	184	400000	
K	39	3	45	-4106.988	ppb	-4106.988	-74.73	15715	400000	
Ca	40	2	45	8864.503	ppb	8864.503	7.21	55445	400000	
V	51	3	72	-0.079	ppb	-0.079	-32.77	93	2000	
Cr	52	3	72	1.168	ppb	1.168	3.55	1784	5000	
Mn	55	3	72	0.707	ppb	0.707	28.74	338	10000	
Fe	56	2	72	22.175	ppb	22.175	1.91	33253	10000	
Co	59	3	72	0.011	ppb	0.011	57.49	43	2000	
Ni	60	3	72	2.327	ppb	2.327	4.87	725	5000	
Cu	63	3	72	1.257	ppb	1.257	3.34	1168	5000	
Zn	66	3	72	2.625	ppb	2.625	10.76	436	5000	
As	75	3	72	0.006	ppb	0.006	2101.71	27	2000	
Se	78	2	72	-0.003	ppb	-0.003	-2486.03	2	2000	
(Se)	78	3	72	-1.970	ppb	-1.970	-78.92	12	2000	
Sr	88	3	72	0.320	ppb	0.320	38.71	207	4000	
Mo	95	3	115	0.135	ppb	0.135	26.46	100	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-390.37	27	100	
Cd	111	3	115	-0.008	ppb	-0.008	0.00	0	2000	
Sn	120	3	115	11.260	ppb	11.260	6.58	7148	2000	
Sb	121	3	115	-0.031	ppb	-0.031	-53.28	48	1000	
Ba	137	3	115	0.552	ppb	0.552	5.40	142	5000	
Tl	205	3	193	0.005	ppb	0.005	145.86	112	2000	
(Pb)	206	3	193	0.097	ppb	0.097	66.89	257	100	
(Pb)	207	3	193	0.116	ppb	0.116	94.05	360	100	
Pb	208	3	193	0.102	ppb	0.102	6.13	1109	5000	
Th	232	3	193	-0.075	ppb	-0.075	-14.60	3525	2000	
U	238	3	193	0.001	ppb	0.001	315.23	1351	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3348904	2.37	3194552	104.83	60	120	
Sc (IS)	45	3	HMI He	441432	1.76	453900	97.25	60	120	
Ge Internal standard	72	2	HMI H2	1855259	2.35	1772348	104.68	60	120	
Ge Internal standard	72	3	HMI He	527061	2.22	534883	98.54	60	120	
In Internal Standard	115	3	HMI He	2021188	1.38	2119186	95.38	60	120	
Ir (IS)	193	3	HMI He	4673956	3.64	4848024	96.41	60	120	

Sample Report

Sample Table

Sample Name	lcs 280-599849/2-a
Data File Name	298SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:15:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	181.352	ppb	181.352	4.20	7167	2000	
Na	23	3	45	-2703198.665	ppb	-2703198.665	-1.69	375979	400000	
Mg	24	3	45	-33565055.052	ppb	-33565055.052	-1.11	175205	400000	
Al	27	3	45	3740.977	ppb	3740.977	3.04	62557	400000	
K	39	3	45	-344652.361	ppb	-344652.361	-1.59	142042	400000	
Ca	40	2	45	401116.719	ppb	401116.719	1.17	1862505	400000	
V	51	3	72	183.194	ppb	183.194	2.10	85184	2000	
Cr	52	3	72	190.148	ppb	190.148	2.44	112549	5000	
Mn	55	3	72	185.731	ppb	185.731	0.66	57461	10000	
Fe	56	2	72	3807.171	ppb	3807.171	2.65	4542850	10000	
Co	59	3	72	188.985	ppb	188.985	1.22	181768	2000	
Ni	60	3	72	187.908	ppb	187.908	1.83	50366	5000	
Cu	63	3	72	189.708	ppb	189.708	0.48	138016	5000	
Zn	66	3	72	188.299	ppb	188.299	2.56	23513	5000	
As	75	3	72	184.137	ppb	184.137	4.03	15958	2000	
Se	78	2	72	191.594	ppb	191.594	1.77	8449	2000	
(Se)	78	3	72	188.116	ppb	188.116	4.72	946	2000	
Sr	88	3	72	385.887	ppb	385.887	1.44	151962	4000	
Mo	95	3	115	185.853	ppb	185.853	2.88	73633	2000	
Ag	107	3	115	184.288	ppb	184.288	3.79	249899	100	
Cd	111	3	115	182.468	ppb	182.468	2.74	35639	2000	
Sn	120	3	115	194.476	ppb	194.476	2.53	115456	2000	
Sb	121	3	115	186.594	ppb	186.594	3.10	109358	1000	
Ba	137	3	115	187.758	ppb	187.758	2.15	35570	5000	
Tl	205	3	193	188.880	ppb	188.880	2.02	569506	2000	
(Pb)	206	3	193	187.015	ppb	187.015	2.55	191705	100	
(Pb)	207	3	193	188.363	ppb	188.363	2.72	168725	100	
Pb	208	3	193	187.852	ppb	187.852	2.84	771729	5000	
Th	232	3	193	188.271	ppb	188.271	2.21	808638	2000	
U	238	3	193	202.041	ppb	202.041	2.57	892403	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3147087	3.15	3194552	98.51	60	120	
Sc (IS)	45	3	HMI He	437166	0.90	453900	96.31	60	120	
Ge Internal standard	72	2	HMI H2	1752113	2.68	1772348	98.86	60	120	
Ge Internal standard	72	3	HMI He	527085	1.87	534883	98.54	60	120	
In Internal Standard	115	3	HMI He	2010860	1.03	2119186	94.89	60	120	
Ir (IS)	193	3	HMI He	4582172	0.82	4848024	94.52	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	299_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:16:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.989	ppb	5.227	1889	50	92.0	90	110	
Na	23	3	45	-38012819.270	ppb	-1.484	4986879	51000	-74534.9	90	110	>+\-10%
Mg	24	3	45	-101150456.783	ppb	-2.565	531034	11000	-919549.6	90	110	>+\-10%
Al	27	3	45	933.371	ppb	1.250	15755	1000	93.3	90	110	
K	39	3	45	-1037310.273	ppb	-1.898	402100	11000	-9430.1	90	110	>+\-10%
Ca	40	2	45	1131998.483	ppb	3.638	5495117	11000	10290.9	90	110	>+\-10%
V	51	3	72	47.335	ppb	1.931	21965	50	94.7	90	110	
Cr	52	3	72	47.474	ppb	0.603	28744	50	94.9	90	110	
Mn	55	3	72	48.494	ppb	1.355	14996	50	97.0	90	110	
Fe	56	2	72	963.487	ppb	0.968	1192998	1000	96.3	90	110	
Co	59	3	72	47.746	ppb	1.327	45664	50	95.5	90	110	
Ni	60	3	72	46.308	ppb	3.269	12406	50	92.6	90	110	
Cu	63	3	72	47.774	ppb	1.310	34723	50	95.5	90	110	
Zn	66	3	72	54.642	ppb	1.545	6860	50	109.3	90	110	
As	75	3	72	47.596	ppb	4.728	4122	50	95.2	90	110	
Se	78	2	72	47.245	ppb	0.671	2156	50	94.5	90	110	
(Se)	78	3	72	44.991	ppb	23.252	242	50	90.0	90	110	>+\-10%
Sr	88	3	72	98.429	ppb	2.634	38577	100	98.4	90	110	
Mo	95	3	115	46.972	ppb	1.890	19006	50	93.9	90	110	
Ag	107	3	115	45.529	ppb	2.511	62930	50	91.1	90	110	
Cd	111	3	115	45.499	ppb	1.486	9057	50	91.0	90	110	
Sn	120	3	115	46.472	ppb	2.495	28459	50	92.9	90	110	
Sb	121	3	115	46.422	ppb	2.046	27773	50	92.8	90	110	
Ba	137	3	115	45.771	ppb	1.691	8864	50	91.5	90	110	
Tl	205	3	193	46.988	ppb	1.419	146104	50	94.0	90	110	
(Pb)	206	3	193	45.384	ppb	2.641	48059	50	90.8	90	110	
(Pb)	207	3	193	45.415	ppb	2.691	42119	50	90.8	90	110	
Pb	208	3	193	45.773	ppb	1.492	194337	50	91.5	90	110	
Th	232	3	193	47.227	ppb	1.600	212000	50	94.5	90	110	
U	238	3	193	46.397	ppb	0.887	212358	50	92.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3304350	2.64	3194552	103.44	60	120	
Sc (IS)	45	3	HMI He	440293	2.90	453900	97.00	60	120	
Ge Internal standard	72	2	HMI H2	1811759	1.90	1772348	102.22	60	120	
Ge Internal standard	72	3	HMI He	523727	2.10	534883	97.91	60	120	
In Internal Standard	115	3	HMI He	2049314	2.66	2119186	96.70	60	120	
Ir (IS)	193	3	HMI He	4724125	2.87	4848024	97.44	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	300_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:18:51-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.002	ppb	4397.3	2	0.5	
Na	23	3	45	17647.884	ppb	27.1	24432	25	>RL
Mg	24	3	45	10171.504	ppb	53.8	194	25	>RL
Al	27	3	45	6.058	ppb	48.5	157	15	
K	39	3	45	1727.044	ppb	208.3	14065	50	>RL
V	51	3	72	-0.088	ppb	-7.6	92	1	
Cr	52	3	72	-0.059	ppb	-64.0	1098	1	
Mn	55	3	72	0.376	ppb	20.0	243	0.5	
Co	59	3	72	0.016	ppb	31.4	50	0.5	
Ni	60	3	72	0.362	ppb	43.2	205	1	
Cu	63	3	72	0.021	ppb	152.5	278	1	
Zn	66	3	72	0.466	ppb	33.6	173	5	
As	75	3	72	0.070	ppb	168.6	33	1	
Se	78	2	72	0.125	ppb	72.5	7	1	
(Se)	78	3	72	-0.718	ppb	-287.6	18	1	
Sr	88	3	72	-0.052	ppb	-71.9	62	0.5	
Mo	95	3	115	0.001	ppb	9843.8	50	0.5	
Ag	107	3	115	0.011	ppb	162.0	47	1	
Cd	111	3	115	0.007	ppb	363.7	3	0.5	
Sn	120	3	115	0.928	ppb	2.9	1080	1	
Sb	121	3	115	0.072	ppb	38.0	117	0.6	
Ba	137	3	115	0.110	ppb	81.2	62	0.5	
Tl	205	3	193	0.028	ppb	32.0	192	0.1	
(Pb)	206	3	193	-0.001	ppb	-4097.0	162	1	
(Pb)	207	3	193	-0.005	ppb	-734.5	265	1	
Pb	208	3	193	0.000	ppb	3073.6	721	0.5	
Th	232	3	193	0.555	ppb	30.1	6632	1	
U	238	3	193	-0.003	ppb	-337.3	1408	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3104983	2.83	3194552	97.20	60	120	
Sc (IS)	45	3	HMI He	459032	1.02	453900	101.13	60	120	
Ge Internal standard	72	2	HMI H2	1707517	4.81	1772348	96.34	60	120	
Ge Internal standard	72	3	HMI He	543113	0.62	534883	101.54	60	120	
In Internal Standard	115	3	HMI He	2163114	2.03	2119186	102.07	60	120	
Ir (IS)	193	3	HMI He	4938779	0.92	4848024	101.87	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL-7569078
Data File Name	301LCCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:20:44-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	0.603	ppb	35.359	25	1	60.3	70	130	>+/-30%
Na	23	3	45	-7398.166	ppb	-86.863	27417	50	-14796.3	70	130	>+/-30%
Mg	24	3	45	-407004.546	ppb	-2.711	2439	50	-814009.1	70	130	>+/-30%
Al	27	3	45	50.049	ppb	19.297	914	50	100.1	70	130	
K	39	3	45	-8592.396	ppb	-42.655	17813	100	-8592.4	70	130	>+/-30%
V	51	3	72	4.692	ppb	1.935	2389	5	93.8	70	130	
Cr	52	3	72	1.890	ppb	9.001	2284	2	94.5	70	130	
Mn	55	3	72	0.906	ppb	15.341	413	1	90.6	70	130	
Co	59	3	72	1.027	ppb	10.805	1056	1	102.7	70	130	
Ni	60	3	72	1.758	ppb	13.682	593	2	87.9	70	130	
Cu	63	3	72	1.962	ppb	4.282	1738	2	98.1	70	130	
Zn	66	3	72	10.047	ppb	8.591	1406	10	100.5	70	130	
As	75	3	72	4.293	ppb	7.574	411	5	85.9	70	130	
Se	78	2	72	5.727	ppb	4.859	239	5	114.5	70	130	
(Se)	78	3	72	2.221	ppb	104.093	33	5	44.4	70	130	>+/-30%
Sr	88	3	72	1.056	ppb	12.501	513	1	105.6	70	130	
Mo	95	3	115	1.989	ppb	4.212	876	2	99.4	70	130	
Ag	107	3	115	0.927	ppb	2.896	1353	1	92.7	70	130	
Cd	111	3	115	0.950	ppb	13.191	197	1	95.0	70	130	
Sn	120	3	115	9.654	ppb	3.128	6482	10	96.5	70	130	
Sb	121	3	115	1.991	ppb	4.149	1296	2	99.6	70	130	
Ba	137	3	115	0.979	ppb	13.454	233	1	97.9	70	130	
Tl	205	3	193	0.953	ppb	3.500	3187	1	95.3	70	130	
(Pb)	206	3	193	1.015	ppb	2.035	1279	1	101.5	70	130	
(Pb)	207	3	193	1.073	ppb	7.934	1299	1	107.3	70	130	
Pb	208	3	193	1.007	ppb	3.001	5158	1	100.7	70	130	
Th	232	3	193	1.859	ppb	4.523	12593	2	93.0	70	130	
U	238	3	193	1.000	ppb	0.734	6153	1	100.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2974090	1.96	3194552	93.10	60	120	
Sc (IS)	45	3	HMI He	452078	0.92	453900	99.60	60	120	
Ge Internal standard	72	2	HMI H2	1643687	3.12	1772348	92.74	60	120	
Ge Internal standard	72	3	HMI He	545514	1.95	534883	101.99	60	120	
In Internal Standard	115	3	HMI He	2115123	1.75	2119186	99.81	60	120	
Ir (IS)	193	3	HMI He	4921124	0.28	4848024	101.51	60	120	

Sample Report

Sample Table

Sample Name	280-171148-a-1-k
Data File Name	302SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:22:37-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	3.597	ppb	3.597	8.57	147	2000	
Na	23	3	45	-126610.653	ppb	-126610.653	-4.19	43001	400000	
Mg	24	3	45	-19861861.646	ppb	-19861861.646	-1.09	106333	400000	
Al	27	3	45	171776.505	ppb	171776.505	1.65	2940301	400000	
K	39	3	45	-129621.554	ppb	-129621.554	-2.64	63718	400000	
Ca	40	2	45	764201.566	ppb	764201.566	1.72	3607715	400000	
V	51	3	72	349.120	ppb	349.120	1.59	164677	2000	
Cr	52	3	72	159.196	ppb	159.196	1.50	95850	5000	
Mn	55	3	72	423.295	ppb	423.295	1.00	132792	10000	
Fe	56	2	72	141111.935	ppb	141111.935	2.04	169544247	10000	>LDR
Co	59	3	72	10.749	ppb	10.749	1.43	10527	2000	
Ni	60	3	72	46.067	ppb	46.067	2.35	12613	5000	
Cu	63	3	72	73.777	ppb	73.777	1.91	54640	5000	
Zn	66	3	72	150.534	ppb	150.534	1.70	19109	5000	
As	75	3	72	28.689	ppb	28.689	1.67	2547	2000	
Se	78	2	72	2.626	ppb	2.626	11.93	119	2000	
(Se)	78	3	72	4.692	ppb	4.692	58.57	45	2000	
Sr	88	3	72	61.665	ppb	61.665	1.23	24722	4000	
Mo	95	3	115	7.669	ppb	7.669	2.95	3147	2000	
Ag	107	3	115	0.071	ppb	0.071	37.18	127	100	
Cd	111	3	115	0.474	ppb	0.474	28.08	97	2000	
Sn	120	3	115	17.830	ppb	17.830	3.75	11226	2000	
Sb	121	3	115	1.933	ppb	1.933	2.78	1224	1000	
Ba	137	3	115	243.819	ppb	243.819	0.73	47157	5000	
Tl	205	3	193	0.721	ppb	0.721	4.42	2347	2000	
(Pb)	206	3	193	93.480	ppb	93.480	1.74	99324	100	
(Pb)	207	3	193	88.572	ppb	88.572	1.11	82308	100	
Pb	208	3	193	91.012	ppb	91.012	1.21	387612	5000	
Th	232	3	193	61.625	ppb	61.625	0.25	276816	2000	
U	238	3	193	8.991	ppb	8.991	2.18	42438	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3208506	1.30	3194552	100.44	60	120	
Sc (IS)	45	3	HMI He	447950	0.89	453900	98.69	60	120	
Ge Internal standard	72	2	HMI H2	1765749	2.01	1772348	99.63	60	120	
Ge Internal standard	72	3	HMI He	535139	1.71	534883	100.05	60	120	
In Internal Standard	115	3	HMI He	2053309	2.12	2119186	96.89	60	120	
Ir (IS)	193	3	HMI He	4746257	1.30	4848024	97.90	60	120	

Sample Report

Sample Table

Sample Name	280-171148-a-1-kSD@5
Data File Name	303SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:24:35-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.479	ppb	0.479	28.07	20	2000	
Na	23	3	45	-17089.899	ppb	-17089.899	-9.63	27594	400000	
Mg	24	3	45	-4597386.150	ppb	-4597386.150	-3.28	24041	400000	
Al	27	3	45	37400.439	ppb	37400.439	1.26	620795	400000	
K	39	3	45	-30006.030	ppb	-30006.030	-5.13	25017	400000	
Ca	40	2	45	175717.444	ppb	175717.444	4.26	775640	400000	
V	51	3	72	80.529	ppb	80.529	2.38	36568	2000	
Cr	52	3	72	36.589	ppb	36.589	2.10	21978	5000	
Mn	55	3	72	99.442	ppb	99.442	2.89	30041	10000	
Fe	56	2	72	33106.733	ppb	33106.733	2.11	36452330	10000	
Co	59	3	72	2.579	ppb	2.579	3.24	2449	2000	
Ni	60	3	72	11.282	ppb	11.282	5.32	3040	5000	
Cu	63	3	72	17.296	ppb	17.296	3.10	12491	5000	
Zn	66	3	72	37.987	ppb	37.987	2.19	4710	5000	
As	75	3	72	6.495	ppb	6.495	15.12	573	2000	
Se	78	2	72	0.758	ppb	0.758	65.79	33	2000	
(Se)	78	3	72	-0.176	ppb	-0.176	-1173.95	20	2000	
Sr	88	3	72	14.248	ppb	14.248	1.80	5545	4000	
Mo	95	3	115	1.649	ppb	1.649	3.39	693	2000	
Ag	107	3	115	0.017	ppb	0.017	41.53	52	100	
Cd	111	3	115	0.095	ppb	0.095	46.08	20	2000	
Sn	120	3	115	4.629	ppb	4.629	5.46	3164	2000	
Sb	121	3	115	0.452	ppb	0.452	15.26	328	1000	
Ba	137	3	115	56.007	ppb	56.007	3.25	10546	5000	
Tl	205	3	193	0.156	ppb	0.156	10.68	586	2000	
(Pb)	206	3	193	20.424	ppb	20.424	2.07	21856	100	
(Pb)	207	3	193	20.063	ppb	20.063	1.71	18871	100	
Pb	208	3	193	20.116	ppb	20.116	1.61	86332	5000	
Th	232	3	193	14.019	ppb	14.019	3.50	66080	2000	
U	238	3	193	2.005	ppb	2.005	2.15	10539	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2969838	1.96	3194552	92.97	60	120	
Sc (IS)	45	3	HMI He	434341	0.74	453900	95.69	60	120	
Ge Internal standard	72	2	HMI H2	1617689	0.20	1772348	91.27	60	120	
Ge Internal standard	72	3	HMI He	513838	1.25	534883	96.07	60	120	
In Internal Standard	115	3	HMI He	1993806	1.58	2119186	94.08	60	120	
Ir (IS)	193	3	HMI He	4752549	0.61	4848024	98.03	60	120	

Sample Report

Sample Table

Sample Name	280-171148-a-1-I ms
Data File Name	304SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:26:29-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	185.303	ppb	185.303	1.16	7358	2000	
Na	23	3	45	-2700527.876	ppb	-2700527.876	-2.41	378103	400000	
Mg	24	3	45	-63160667.244	ppb	-63160667.244	-2.04	331676	400000	
Al	27	3	45	267776.368	ppb	267776.368	1.26	4502937	400000	
K	39	3	45	-565514.891	ppb	-565514.891	-2.41	225545	400000	
Ca	40	2	45	1282720.149	ppb	1282720.149	1.07	5928049	400000	
V	51	3	72	562.474	ppb	562.474	0.89	254415	2000	
Cr	52	3	72	385.648	ppb	385.648	2.36	221176	5000	
Mn	55	3	72	719.789	ppb	719.789	1.55	216485	10000	
Fe	56	2	72	172255.653	ppb	172255.653	1.92	197442666	10000	>LDR
Co	59	3	72	202.723	ppb	202.723	1.40	189850	2000	
Ni	60	3	72	274.098	ppb	274.098	2.53	71478	5000	
Cu	63	3	72	287.822	ppb	287.822	1.48	203775	5000	
Zn	66	3	72	474.530	ppb	474.530	2.92	57531	5000	
As	75	3	72	204.954	ppb	204.954	1.21	17299	2000	
Se	78	2	72	181.629	ppb	181.629	1.49	7703	2000	
(Se)	78	3	72	183.426	ppb	183.426	7.19	898	2000	
Sr	88	3	72	490.591	ppb	490.591	1.69	188101	4000	
Mo	95	3	115	182.775	ppb	182.775	2.23	72494	2000	
Ag	107	3	115	180.357	ppb	180.357	2.41	244816	100	
Cd	111	3	115	180.135	ppb	180.135	1.53	35225	2000	
Sn	120	3	115	199.674	ppb	199.674	2.16	118643	2000	
Sb	121	3	115	162.578	ppb	162.578	1.16	95414	1000	
Ba	137	3	115	560.982	ppb	560.982	2.45	106302	5000	
Tl	205	3	193	183.826	ppb	183.826	1.89	566459	2000	
(Pb)	206	3	193	297.469	ppb	297.469	1.68	311497	100	
(Pb)	207	3	193	293.275	ppb	293.275	1.10	268310	100	
Pb	208	3	193	295.416	ppb	295.416	1.46	1239757	5000	
Th	232	3	193	263.163	ppb	263.163	0.91	1153511	2000	
U	238	3	193	209.023	ppb	209.023	3.97	943157	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3145054	2.44	3194552	98.45	60	120	
Sc (IS)	45	3	HMI He	440063	1.29	453900	96.95	60	120	
Ge Internal standard	72	2	HMI H2	1684441	1.25	1772348	95.04	60	120	
Ge Internal standard	72	3	HMI He	513361	3.65	534883	95.98	60	120	
In Internal Standard	115	3	HMI He	2013644	3.68	2119186	95.02	60	120	
Ir (IS)	193	3	HMI He	4682148	2.17	4848024	96.58	60	120	

Sample Report

Sample Table

Sample Name	280-171148-a-1-m msd
Data File Name	305SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:28:21-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	183.737	ppb	183.737	2.59	7567	2000	
Na	23	3	45	-2770354.542	ppb	-2770354.542	-1.09	387060	400000	
Mg	24	3	45	-60608067.528	ppb	-60608067.528	-1.33	318131	400000	
Al	27	3	45	282345.427	ppb	282345.427	0.49	4746682	400000	
K	39	3	45	-538623.373	ppb	-538623.373	-0.87	215445	400000	
Ca	40	2	45	1101645.717	ppb	1101645.717	2.14	5363249	400000	
V	51	3	72	598.736	ppb	598.736	0.23	270176	2000	
Cr	52	3	72	398.715	ppb	398.715	1.31	228110	5000	
Mn	55	3	72	703.312	ppb	703.312	0.32	211062	10000	
Fe	56	2	72	165840.490	ppb	165840.490	1.86	198355065	10000	>LDR
Co	59	3	72	212.125	ppb	212.125	0.81	198200	2000	
Ni	60	3	72	279.907	ppb	279.907	0.03	72848	5000	
Cu	63	3	72	293.828	ppb	293.828	0.69	207524	5000	
Zn	66	3	72	361.364	ppb	361.364	1.96	43747	5000	
As	75	3	72	209.707	ppb	209.707	2.19	17656	2000	
Se	78	2	72	184.838	ppb	184.838	1.44	8179	2000	
(Se)	78	3	72	198.257	ppb	198.257	4.66	968	2000	
Sr	88	3	72	482.108	ppb	482.108	0.82	184427	4000	
Mo	95	3	115	189.612	ppb	189.612	3.02	75530	2000	
Ag	107	3	115	186.197	ppb	186.197	1.99	253897	100	
Cd	111	3	115	187.705	ppb	187.705	0.90	36871	2000	
Sn	120	3	115	206.461	ppb	206.461	1.58	123219	2000	
Sb	121	3	115	170.010	ppb	170.010	2.30	100196	1000	
Ba	137	3	115	466.691	ppb	466.691	2.25	88846	5000	
Tl	205	3	193	194.254	ppb	194.254	3.07	591545	2000	
(Pb)	206	3	193	306.365	ppb	306.365	3.19	317071	100	
(Pb)	207	3	193	302.447	ppb	302.447	2.42	273507	100	
Pb	208	3	193	304.394	ppb	304.394	3.03	1262539	5000	
Th	232	3	193	267.066	ppb	267.066	3.45	1156897	2000	
U	238	3	193	215.962	ppb	215.962	3.92	963236	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3312777	2.70	3194552	103.70	60	120	
Sc (IS)	45	3	HMI He	439923	0.70	453900	96.92	60	120	
Ge Internal standard	72	2	HMI H2	1757581	0.96	1772348	99.17	60	120	
Ge Internal standard	72	3	HMI He	512058	1.04	534883	95.73	60	120	
In Internal Standard	115	3	HMI He	2022163	1.78	2119186	95.42	60	120	
Ir (IS)	193	3	HMI He	4631059	3.54	4848024	95.52	60	120	

Sample Report

Sample Table

Sample Name	280-171148-a-1-k PDS
Data File Name	306SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:30:15-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	200.547	ppb	200.547	2.60	7745	2000	
Na	23	3	45	-7476487.939	ppb	-7476487.939	-1.67	1070357	400000	
Mg	24	3	45	-38098944.680	ppb	-38098944.680	-1.12	213970	400000	
Al	27	3	45	168915.295	ppb	168915.295	1.84	3036756	400000	
K	39	3	45	-309750.074	ppb	-309750.074	-1.47	138917	400000	
Ca	40	2	45	956525.965	ppb	956525.965	0.24	4375017	400000	
V	51	3	72	538.357	ppb	538.357	0.78	268284	2000	
Cr	52	3	72	357.530	ppb	357.530	1.05	226024	5000	
Mn	55	3	72	612.385	ppb	612.385	0.97	202962	10000	
Fe	56	2	72	142888.904	ppb	142888.904	3.68	161947672	10000	>LDR
Co	59	3	72	212.935	ppb	212.935	2.20	219721	2000	
Ni	60	3	72	245.704	ppb	245.704	1.09	70629	5000	
Cu	63	3	72	277.729	ppb	277.729	0.96	216637	5000	
Zn	66	3	72	356.336	ppb	356.336	0.70	47641	5000	
As	75	3	72	221.310	ppb	221.310	1.67	20577	2000	
Se	78	2	72	217.841	ppb	217.841	4.92	9131	2000	
(Se)	78	3	72	220.160	ppb	220.160	4.75	1184	2000	
Sr	88	3	72	264.777	ppb	264.777	1.09	111898	4000	
Mo	95	3	115	212.823	ppb	212.823	3.15	90296	2000	
Ag	107	3	115	45.074	ppb	45.074	1.16	65498	100	
Cd	111	3	115	196.695	ppb	196.695	3.08	41142	2000	
Sn	120	3	115	216.160	ppb	216.160	1.48	137390	2000	
Sb	121	3	115	203.190	ppb	203.190	1.63	127548	1000	
Ba	137	3	115	437.842	ppb	437.842	1.23	88794	5000	
Tl	205	3	193	203.444	ppb	203.444	0.46	666326	2000	
(Pb)	206	3	193	289.692	ppb	289.692	0.08	322486	100	
(Pb)	207	3	193	286.840	ppb	286.840	0.55	278942	100	
Pb	208	3	193	289.456	ppb	289.456	0.46	1291294	5000	
Th	232	3	193	274.726	ppb	274.726	9.16	1279678	2000	
U	238	3	193	228.378	ppb	228.378	1.21	1095643	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3110213	0.19	3194552	97.36	60	120	
Sc (IS)	45	3	HMI He	470466	0.62	453900	103.65	60	120	
Ge Internal standard	72	2	HMI H2	1666233	2.31	1772348	94.01	60	120	
Ge Internal standard	72	3	HMI He	565468	0.21	534883	105.72	60	120	
In Internal Standard	115	3	HMI He	2153794	1.30	2119186	101.63	60	120	
Ir (IS)	193	3	HMI He	4977356	0.40	4848024	102.67	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	307_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:32:07-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	46.991	ppb	2.699	1776	50	94.0	90	110	
Na	23	3	45	-37643353.633	ppb	-1.871	5036245	51000	-73810.5	90	110	>+\-10%
Mg	24	3	45	-100451233.423	ppb	-2.245	537849	11000	-913193.0	90	110	>+\-10%
Al	27	3	45	965.421	ppb	5.098	16610	1000	96.5	90	110	
K	39	3	45	-1022640.924	ppb	-1.276	404454	11000	-9296.7	90	110	>+\-10%
Ca	40	2	45	1153129.564	ppb	3.279	5021572	11000	10483.0	90	110	>+\-10%
V	51	3	72	47.126	ppb	0.756	22338	50	94.3	90	110	
Cr	52	3	72	47.758	ppb	2.634	29528	50	95.5	90	110	
Mn	55	3	72	47.543	ppb	1.480	15022	50	95.1	90	110	
Fe	56	2	72	1074.620	ppb	0.675	1175845	1000	107.5	90	110	
Co	59	3	72	47.469	ppb	3.046	46358	50	94.9	90	110	
Ni	60	3	72	47.551	ppb	2.302	13013	50	95.1	90	110	
Cu	63	3	72	47.674	ppb	2.165	35391	50	95.3	90	110	
Zn	66	3	72	53.200	ppb	1.327	6825	50	106.4	90	110	
As	75	3	72	47.132	ppb	8.797	4169	50	94.3	90	110	
Se	78	2	72	48.141	ppb	0.648	1942	50	96.3	90	110	
(Se)	78	3	72	56.316	ppb	16.286	303	50	112.6	90	110	>+\-10%
Sr	88	3	72	98.232	ppb	1.760	39329	100	98.2	90	110	
Mo	95	3	115	47.534	ppb	2.790	19701	50	95.1	90	110	
Ag	107	3	115	46.761	ppb	1.563	66236	50	93.5	90	110	
Cd	111	3	115	46.404	ppb	1.149	9467	50	92.8	90	110	
Sn	120	3	115	45.623	ppb	2.910	28641	50	91.2	90	110	
Sb	121	3	115	45.732	ppb	3.277	28037	50	91.5	90	110	
Ba	137	3	115	44.904	ppb	3.818	8910	50	89.8	90	110	>+\-10%
Tl	205	3	193	46.892	ppb	0.706	148214	50	93.8	90	110	
(Pb)	206	3	193	46.526	ppb	1.999	50082	50	93.1	90	110	
(Pb)	207	3	193	46.326	ppb	1.392	43667	50	92.7	90	110	
Pb	208	3	193	46.173	ppb	1.693	199236	50	92.3	90	110	
Th	232	3	193	47.170	ppb	0.391	215256	50	94.3	90	110	
U	238	3	193	47.080	ppb	3.376	218867	50	94.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2963893	2.25	3194552	92.78	60	120	
Sc (IS)	45	3	HMI He	448940	1.28	453900	98.91	60	120	
Ge Internal standard	72	2	HMI H2	1601578	1.16	1772348	90.36	60	120	
Ge Internal standard	72	3	HMI He	534999	1.34	534883	100.02	60	120	
In Internal Standard	115	3	HMI He	2099697	1.29	2119186	99.08	60	120	
Ir (IS)	193	3	HMI He	4801049	2.18	4848024	99.03	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	308_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:33:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	288CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.019	ppb	-203.2	2	0.5	
Na	23	3	45	108437.492	ppb	3.9	22801	25	>RL
Mg	24	3	45	2551.549	ppb	291.9	444	25	>RL
Al	27	3	45	26.211	ppb	40.2	964	15	>RL
K	39	3	45	20628.324	ppb	7.7	12635	50	>RL
V	51	3	72	-0.162	ppb	-7.6	108	1	
Cr	52	3	72	-1.317	ppb	-3.1	650	1	
Mn	55	3	72	-0.184	ppb	-10.3	125	0.5	
Co	59	3	72	0.024	ppb	31.0	110	0.5	
Ni	60	3	72	-0.250	ppb	-25.4	70	1	
Cu	63	3	72	-0.187	ppb	-14.8	235	1	
Zn	66	3	72	-0.436	ppb	-40.4	110	5	
As	75	3	72	-0.069	ppb	-151.9	40	1	
Se	78	2	72	0.003	ppb	711.1	4	1	
(Se)	78	3	72	-1.763	ppb	-31.9	25	1	
Sr	88	3	72	-0.073	ppb	-42.8	102	0.5	
Mo	95	3	115	-0.048	ppb	-66.2	52	0.5	
Ag	107	3	115	0.017	ppb	50.1	98	1	
Cd	111	3	115	0.023	ppb	145.2	12	0.5	
Sn	120	3	115	-0.531	ppb	-4.7	272	1	
Sb	121	3	115	-0.016	ppb	-166.9	110	0.6	
Ba	137	3	115	-0.042	ppb	-58.3	55	0.5	
Tl	205	3	193	0.050	ppb	12.3	476	0.1	
(Pb)	206	3	193	0.021	ppb	141.1	337	1	
(Pb)	207	3	193	0.043	ppb	61.4	561	1	
Pb	208	3	193	0.042	ppb	30.0	1634	0.5	
Th	232	3	193	-0.036	ppb	-71.4	7037	1	
U	238	3	193	0.032	ppb	99.3	2841	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5931335	0.68	3194552	185.67	60	120	IS Failed
Sc (IS)	45	3	HMI He	866857	1.34	453900	190.98	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3302283	1.33	1772348	186.32	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1043256	4.45	534883	195.04	60	120	IS Failed
In Internal Standard	115	3	HMI He	3878885	1.34	2119186	183.04	60	120	IS Failed
Ir (IS)	193	3	HMI He	8901651	0.21	4848024	183.61	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	309SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:35:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.035	ppb	0.035	375.81	3	2000	
Na	23	3	45	54246.271	ppb	54246.271	7.95	20866	400000	
Mg	24	3	45	-14614.195	ppb	-14614.195	-75.03	354	400000	
Al	27	3	45	73.546	ppb	73.546	9.97	1438	400000	
K	39	3	45	4767.470	ppb	4767.470	37.49	13821	400000	
Ca	40	2	45	-490.347	ppb	-490.347	-13.94	9613	400000	
V	51	3	72	-0.057	ppb	-0.057	-76.07	117	2000	
Cr	52	3	72	-0.716	ppb	-0.716	-7.89	766	5000	
Mn	55	3	72	0.004	ppb	0.004	1391.98	137	10000	
Fe	56	2	72	25.932	ppb	25.932	24.94	39035	10000	
Co	59	3	72	0.087	ppb	0.087	25.21	132	2000	
Ni	60	3	72	-0.106	ppb	-0.106	-58.99	83	5000	
Cu	63	3	72	-0.068	ppb	-0.068	-86.90	232	5000	
Zn	66	3	72	-0.372	ppb	-0.372	-56.32	72	5000	
As	75	3	72	-0.032	ppb	-0.032	-393.44	27	2000	
Se	78	2	72	0.024	ppb	0.024	262.42	3	2000	
(Se)	78	3	72	-2.520	ppb	-2.520	-71.91	10	2000	
Sr	88	3	72	-0.001	ppb	-0.001	-1750.21	90	4000	
Mo	95	3	115	0.014	ppb	0.014	244.23	58	2000	
Ag	107	3	115	0.049	ppb	0.049	18.13	108	100	
Cd	111	3	115	0.082	ppb	0.082	26.79	20	2000	
Sn	120	3	115	-0.412	ppb	-0.412	-5.85	240	2000	
Sb	121	3	115	0.014	ppb	0.014	176.58	85	1000	
Ba	137	3	115	0.002	ppb	0.002	3457.17	42	5000	
Tl	205	3	193	0.101	ppb	0.101	8.59	456	2000	
(Pb)	206	3	193	0.053	ppb	0.053	39.65	235	100	
(Pb)	207	3	193	0.134	ppb	0.134	15.24	423	100	
Pb	208	3	193	0.090	ppb	0.090	20.84	1184	5000	
Th	232	3	193	0.013	ppb	0.013	198.72	4379	2000	
U	238	3	193	0.067	ppb	0.067	20.43	1848	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3386272	1.31	3194552	106.00	60	120	
Sc (IS)	45	3	HMI He	492431	1.06	453900	108.49	60	120	
Ge Internal standard	72	2	HMI H2	1910980	1.86	1772348	107.82	60	120	
Ge Internal standard	72	3	HMI He	594116	1.63	534883	111.07	60	120	
In Internal Standard	115	3	HMI He	2283638	0.95	2119186	107.76	60	120	
Ir (IS)	193	3	HMI He	5236225	1.14	4848024	108.01	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	310SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:38:02-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.002	ppb	-0.002	-3119.85	2	2000	
Na	23	3	45	55563.166	ppb	55563.166	5.16	19573	400000	
Mg	24	3	45	19749.360	ppb	19749.360	22.72	143	400000	
Al	27	3	45	38.991	ppb	38.991	12.76	747	400000	
K	39	3	45	3394.774	ppb	3394.774	79.76	13610	400000	
Ca	40	2	45	-827.974	ppb	-827.974	-8.03	8201	400000	
V	51	3	72	-0.091	ppb	-0.091	-32.01	92	2000	
Cr	52	3	72	-0.725	ppb	-0.725	-19.63	706	5000	
Mn	55	3	72	-0.083	ppb	-0.083	-105.03	98	10000	
Fe	56	2	72	8.819	ppb	8.819	25.75	17242	10000	
Co	59	3	72	0.012	ppb	0.012	54.65	47	2000	
Ni	60	3	72	-0.113	ppb	-0.113	-61.61	75	5000	
Cu	63	3	72	-0.202	ppb	-0.202	-11.00	113	5000	
Zn	66	3	72	-0.265	ppb	-0.265	-120.36	80	5000	
As	75	3	72	-0.100	ppb	-0.100	-36.70	18	2000	
Se	78	2	72	-0.031	ppb	-0.031	-75.26	1	2000	
(Se)	78	3	72	-2.056	ppb	-2.056	-30.30	12	2000	
Sr	88	3	72	-0.087	ppb	-0.087	-56.64	48	4000	
Mo	95	3	115	0.000	ppb	0.000	-12612.24	48	2000	
Ag	107	3	115	0.021	ppb	0.021	99.74	62	100	
Cd	111	3	115	0.033	ppb	0.033	158.31	8	2000	
Sn	120	3	115	-0.499	ppb	-0.499	-3.29	170	2000	
Sb	121	3	115	-0.006	ppb	-0.006	-319.97	67	1000	
Ba	137	3	115	0.016	ppb	0.016	502.23	42	5000	
Tl	205	3	193	0.041	ppb	0.041	15.18	240	2000	
(Pb)	206	3	193	0.026	ppb	0.026	107.67	195	100	
(Pb)	207	3	193	0.003	ppb	0.003	2009.23	275	100	
Pb	208	3	193	0.035	ppb	0.035	42.76	886	5000	
Th	232	3	193	-0.028	ppb	-0.028	-116.58	4000	2000	
U	238	3	193	0.012	ppb	0.012	166.54	1501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3499695	1.84	3194552	109.55	60	120	
Sc (IS)	45	3	HMI He	466221	2.28	453900	102.71	60	120	
Ge Internal standard	72	2	HMI H2	1951015	0.37	1772348	110.08	60	120	
Ge Internal standard	72	3	HMI He	550418	2.88	534883	102.90	60	120	
In Internal Standard	115	3	HMI He	2137623	2.70	2119186	100.87	60	120	
Ir (IS)	193	3	HMI He	5013295	4.12	4848024	103.41	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	311SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:39:57-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.037	ppb	0.037	368.79	3	2000	
Na	23	3	45	59163.677	ppb	59163.677	7.62	19523	400000	
Mg	24	3	45	25622.262	ppb	25622.262	10.02	113	400000	
Al	27	3	45	13.542	ppb	13.542	14.79	300	400000	
K	39	3	45	4755.815	ppb	4755.815	47.23	13383	400000	
Ca	40	2	45	-888.278	ppb	-888.278	-8.18	7483	400000	
V	51	3	72	-0.150	ppb	-0.150	-15.62	65	2000	
Cr	52	3	72	-0.881	ppb	-0.881	-12.58	626	5000	
Mn	55	3	72	-0.172	ppb	-0.172	-27.20	72	10000	
Fe	56	2	72	0.098	ppb	0.098	163.48	5323	10000	
Co	59	3	72	-0.002	ppb	-0.002	-431.85	33	2000	
Ni	60	3	72	-0.189	ppb	-0.189	-11.61	55	5000	
Cu	63	3	72	-0.185	ppb	-0.185	-43.46	130	5000	
Zn	66	3	72	-0.439	ppb	-0.439	-40.44	60	5000	
As	75	3	72	-0.124	ppb	-0.124	-51.61	17	2000	
Se	78	2	72	-0.002	ppb	-0.002	-2585.55	2	2000	
(Se)	78	3	72	-2.461	ppb	-2.461	-99.67	10	2000	
Sr	88	3	72	-0.137	ppb	-0.137	-9.43	28	4000	
Mo	95	3	115	-0.048	ppb	-0.048	-99.17	30	2000	
Ag	107	3	115	0.006	ppb	0.006	169.65	40	100	
Cd	111	3	115	0.000	ppb	0.000	-5717.28	2	2000	
Sn	120	3	115	-0.491	ppb	-0.491	-14.85	183	2000	
Sb	121	3	115	-0.060	ppb	-0.060	-25.21	35	1000	
Ba	137	3	115	-0.082	ppb	-0.082	-44.79	23	5000	
Tl	205	3	193	0.021	ppb	0.021	25.70	175	2000	
(Pb)	206	3	193	-0.020	ppb	-0.020	-51.52	145	100	
(Pb)	207	3	193	-0.020	ppb	-0.020	-37.32	258	100	
Pb	208	3	193	-0.005	ppb	-0.005	-315.63	720	5000	
Th	232	3	193	-0.055	ppb	-0.055	-54.29	3930	2000	
U	238	3	193	-0.021	ppb	-0.021	-90.73	1363	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3316821	0.78	3194552	103.83	60	120	
Sc (IS)	45	3	HMI He	477309	2.55	453900	105.16	60	120	
Ge Internal standard	72	2	HMI H2	1836166	1.08	1772348	103.60	60	120	
Ge Internal standard	72	3	HMI He	565439	2.65	534883	105.71	60	120	
In Internal Standard	115	3	HMI He	2242407	2.56	2119186	105.81	60	120	
Ir (IS)	193	3	HMI He	5085512	2.51	4848024	104.90	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	312SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:41:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.041	ppb	-0.041	0.00	0	2000	
Na	23	3	45	61721.205	ppb	61721.205	2.11	19299	400000	
Mg	24	3	45	33323.376	ppb	33323.376	5.28	70	400000	
Al	27	3	45	6.377	ppb	6.377	39.23	170	400000	
K	39	3	45	4209.902	ppb	4209.902	80.30	13701	400000	
Ca	40	2	45	-919.850	ppb	-919.850	-4.88	7453	400000	
V	51	3	72	-0.225	ppb	-0.225	-6.76	28	2000	
Cr	52	3	72	-0.895	ppb	-0.895	-1.85	643	5000	
Mn	55	3	72	-0.185	ppb	-0.185	-14.52	70	10000	
Fe	56	2	72	-0.409	ppb	-0.409	-64.29	4726	10000	
Co	59	3	72	0.003	ppb	0.003	323.19	40	2000	
Ni	60	3	72	-0.202	ppb	-0.202	-32.21	53	5000	
Cu	63	3	72	-0.205	ppb	-0.205	-36.97	118	5000	
Zn	66	3	72	-0.287	ppb	-0.287	-42.12	83	5000	
As	75	3	72	-0.098	ppb	-0.098	-88.39	20	2000	
Se	78	2	72	-0.002	ppb	-0.002	-1796.66	2	2000	
(Se)	78	3	72	-2.213	ppb	-2.213	-24.18	12	2000	
Sr	88	3	72	-0.132	ppb	-0.132	-13.54	32	4000	
Mo	95	3	115	-0.046	ppb	-0.046	-111.84	32	2000	
Ag	107	3	115	-0.006	ppb	-0.006	-88.49	23	100	
Cd	111	3	115	0.022	ppb	0.022	118.22	7	2000	
Sn	120	3	115	-0.510	ppb	-0.510	-8.88	175	2000	
Sb	121	3	115	-0.068	ppb	-0.068	-30.05	30	1000	
Ba	137	3	115	-0.037	ppb	-0.037	-130.57	33	5000	
Tl	205	3	193	0.019	ppb	0.019	31.81	170	2000	
(Pb)	206	3	193	-0.061	ppb	-0.061	-19.56	100	100	
(Pb)	207	3	193	0.024	ppb	0.024	118.85	305	100	
Pb	208	3	193	-0.014	ppb	-0.014	-96.69	683	5000	
Th	232	3	193	-0.085	ppb	-0.085	-56.59	3829	2000	
U	238	3	193	-0.022	ppb	-0.022	-35.72	1371	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3374944	2.94	3194552	105.65	60	120	
Sc (IS)	45	3	HMI He	480533	1.23	453900	105.87	60	120	
Ge Internal standard	72	2	HMI H2	1849071	2.56	1772348	104.33	60	120	
Ge Internal standard	72	3	HMI He	588816	1.25	534883	110.08	60	120	
In Internal Standard	115	3	HMI He	2287223	2.61	2119186	107.93	60	120	
Ir (IS)	193	3	HMI He	5143268	1.39	4848024	106.09	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	313SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:43:48-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	288CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.041	ppb	-0.041	0.00	0	2000	
Na	23	3	45	64682.536	ppb	64682.536	1.87	18935	400000	
Mg	24	3	45	28151.245	ppb	28151.245	11.91	100	400000	
Al	27	3	45	3.980	ppb	3.980	78.98	127	400000	
K	39	3	45	3917.769	ppb	3917.769	51.84	13868	400000	
Ca	40	2	45	-929.713	ppb	-929.713	-0.67	7383	400000	
V	51	3	72	-0.234	ppb	-0.234	-8.74	23	2000	
Cr	52	3	72	-0.735	ppb	-0.735	-11.30	730	5000	
Mn	55	3	72	-0.191	ppb	-0.191	-26.82	67	10000	
Fe	56	2	72	-0.459	ppb	-0.459	-33.82	4702	10000	
Co	59	3	72	0.001	ppb	0.001	4000.33	37	2000	
Ni	60	3	72	-0.158	ppb	-0.158	-22.26	65	5000	
Cu	63	3	72	-0.191	ppb	-0.191	-15.39	127	5000	
Zn	66	3	72	-0.333	ppb	-0.333	-38.97	75	5000	
As	75	3	72	-0.057	ppb	-0.057	-190.83	23	2000	
Se	78	2	72	-0.031	ppb	-0.031	-78.37	1	2000	
(Se)	78	3	72	-1.229	ppb	-1.229	-45.29	17	2000	
Sr	88	3	72	-0.146	ppb	-0.146	-8.16	25	4000	
Mo	95	3	115	-0.074	ppb	-0.074	-17.79	18	2000	
Ag	107	3	115	0.002	ppb	0.002	503.72	35	100	
Cd	111	3	115	0.007	ppb	0.007	366.29	3	2000	
Sn	120	3	115	-0.571	ppb	-0.571	-6.92	130	2000	
Sb	121	3	115	-0.072	ppb	-0.072	-40.21	27	1000	
Ba	137	3	115	-0.050	ppb	-0.050	-171.74	30	5000	
Tl	205	3	193	0.011	ppb	0.011	94.74	142	2000	
(Pb)	206	3	193	-0.035	ppb	-0.035	-106.17	128	100	
(Pb)	207	3	193	-0.034	ppb	-0.034	-124.73	243	100	
Pb	208	3	193	-0.032	ppb	-0.032	-17.16	593	5000	
Th	232	3	193	-0.060	ppb	-0.060	-62.43	3904	2000	
U	238	3	193	-0.011	ppb	-0.011	-100.36	1408	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3363440	2.27	3194552	105.29	60	120	
Sc (IS)	45	3	HMI He	481957	0.77	453900	106.18	60	120	
Ge Internal standard	72	2	HMI H2	1866031	2.03	1772348	105.29	60	120	
Ge Internal standard	72	3	HMI He	574793	0.56	534883	107.46	60	120	
In Internal Standard	115	3	HMI He	2229060	0.96	2119186	105.18	60	120	
Ir (IS)	193	3	HMI He	5081107	0.39	4848024	104.81	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	314CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-31T12:45:42-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	19289	0.01
Mg	24	45	3	HMI He	120	25.01
Al	27	45	3	HMI He	501	2.80
K	39	45	3	HMI He	13113	0.06
Ca	40	45	2	HMI H2	10010	0.05
V	51	72	3	HMI He	107	15.44
Cr	52	72	3	HMI He	1119	0.86
Mn	55	72	3	HMI He	103	2.71
Fe	56	72	2	HMI H2	13076	0.07
Co	59	72	3	HMI He	65	54.26
Ni	60	72	3	HMI He	112	32.43
Cu	63	72	3	HMI He	222	7.91
Zn	66	72	3	HMI He	102	10.07
As	75	72	3	HMI He	23	265.31
Se	78	72	2	HMI H2	3	1039.23
(Se)	78	72	3	HMI He	12	561.05
Sr	88	72	3	HMI He	57	23.79
Mo	95	115	3	HMI He	52	75.73
Ag	107	115	3	HMI He	45	42.80
Cd	111	115	3	HMI He	10	499.83
Sn	120	115	3	HMI He	611	1.74
Sb	121	115	3	HMI He	82	30.31
Ba	137	115	3	HMI He	52	39.01
Tl	205	193	3	HMI He	185	11.96
(Pb)	206	193	3	HMI He	170	4.58
(Pb)	207	193	3	HMI He	288	5.59
Pb	208	193	3	HMI He	761	0.05
Th	232	193	3	HMI He	4637	0.26
U	238	193	3	HMI He	1336	0.77

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	2926360	1.81
Sc (IS)	45	3	HMI He	414540	1.71
Ge Internal standard	72	2	HMI H2	1605102	0.15
Ge Internal standard	72	3	HMI He	486042	1.71
In Internal Standard	115	3	HMI He	1945623	1.60
Ir (IS)	193	3	HMI He	4515171	2.83

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	315CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T12:47:37-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	5196.15
Na	23	45	3	HMI He	9101952	0.00
Mg	24	45	3	HMI He	965919	0.00
Al	27	45	3	HMI He	1211	0.56
K	39	45	3	HMI He	696068	0.00
V	51	72	3	HMI He	138	12.89
Cr	52	72	3	HMI He	1183	0.64
Mn	55	72	3	HMI He	168	3.67
Co	59	72	3	HMI He	85	24.96
Ni	60	72	3	HMI He	125	36.36
Cu	63	72	3	HMI He	307	7.38
Zn	66	72	3	HMI He	262	9.54
As	75	72	3	HMI He	32	103.85
Se	78	72	2	HMI H2	5	1060.44
(Se)	78	72	3	HMI He	22	221.73
Sr	88	72	3	HMI He	347	3.59
Mo	95	115	3	HMI He	72	5.61
Ag	107	115	3	HMI He	68	16.36
Cd	111	115	3	HMI He	10	499.83
Sn	120	115	3	HMI He	745	1.68
Sb	121	115	3	HMI He	77	49.14
Ba	137	115	3	HMI He	90	32.09
Tl	205	193	3	HMI He	267	4.58
(Pb)	206	193	3	HMI He	250	8.00
(Pb)	207	193	3	HMI He	361	3.91
Pb	208	193	3	HMI He	1045	0.08
Th	232	193	3	HMI He	4025	0.07
U	238	193	3	HMI He	1409	0.12

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3009865	2.23	2926360	102.85	60	120	
Sc (IS)	45	3	HMI He	446497	2.30	414540	107.71	60	120	
Ge Internal standard	72	2	HMI H2	1589380	1.48	1605102	99.02	60	120	
Ge Internal standard	72	3	HMI He	511067	1.06	486042	105.15	60	120	
In Internal Standard	115	3	HMI He	2050342	2.20	1945623	105.38	60	120	
Ir (IS)	193	3	HMI He	4799246	3.00	4515171	106.29	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	316CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T12:49:31-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3882	0.12
Na	23	45	3	HMI He	211455	0.00
Mg	24	45	3	HMI He	97320	0.00
Al	27	45	3	HMI He	35089	0.00
K	39	45	3	HMI He	83621	0.00
V	51	72	3	HMI He	48126	0.00
Cr	52	72	3	HMI He	62144	0.00
Mn	55	72	3	HMI He	31974	0.00
Co	59	72	3	HMI He	101522	0.00
Ni	60	72	3	HMI He	27984	0.00
Cu	63	72	3	HMI He	76640	0.00
Zn	66	72	3	HMI He	12863	0.01
As	75	72	3	HMI He	8947	0.00
Se	78	72	2	HMI H2	4545	0.01
(Se)	78	72	3	HMI He	546	1.19
Sr	88	72	3	HMI He	83610	0.00
Mo	95	115	3	HMI He	42166	0.00
Ag	107	115	3	HMI He	141041	0.00
Cd	111	115	3	HMI He	20088	0.01
Sn	120	115	3	HMI He	60649	0.00
Sb	121	115	3	HMI He	60537	0.00
Ba	137	115	3	HMI He	19471	0.01
Tl	205	193	3	HMI He	318141	0.00
(Pb)	206	193	3	HMI He	106876	0.00
(Pb)	207	193	3	HMI He	93841	0.00
Pb	208	193	3	HMI He	428858	0.00
Th	232	193	3	HMI He	447472	0.00
U	238	193	3	HMI He	465352	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3121816	0.51	2926360	106.68	60	120	
Sc (IS)	45	3	HMI He	451904	0.38	414540	109.01	60	120	
Ge Internal standard	72	2	HMI H2	1771017	1.00	1605102	110.34	60	120	
Ge Internal standard	72	3	HMI He	547415	2.32	486042	112.63	60	120	
In Internal Standard	115	3	HMI He	2111907	1.10	1945623	108.55	60	120	
Ir (IS)	193	3	HMI He	4802695	3.15	4515171	106.37	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	317_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:51:25-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.981	ppb	0.189	1558	40	105.0	90	110	
Na	23	3	45	13906.756	ppb	1.019	1315755	12800	108.6	90	110	
Mg	24	3	45	4701.370	ppb	0.740	232763	4800	97.9	90	110	
Al	27	3	45	757.326	ppb	2.759	13797	800	94.7	90	110	
K	39	3	45	4864.786	ppb	0.858	184440	4800	101.3	90	110	
Ca	40	2	45	5109.804	ppb	2.320	2270720	4800	106.5	90	110	
V	51	3	72	41.042	ppb	2.489	19359	40	102.6	90	110	
Cr	52	3	72	42.096	ppb	3.080	26263	40	105.2	90	110	
Mn	55	3	72	42.544	ppb	1.546	13351	40	106.4	90	110	
Fe	56	2	72	854.965	ppb	5.710	1003415	800	106.9	90	110	
Co	59	3	72	41.349	ppb	1.175	41052	40	103.4	90	110	
Ni	60	3	72	40.435	ppb	2.494	11124	40	101.1	90	110	
Cu	63	3	72	41.598	ppb	1.323	31285	40	104.0	90	110	
Zn	66	3	72	82.484	ppb	4.048	10375	80	103.1	90	110	
As	75	3	72	40.247	ppb	7.034	3530	40	100.6	90	110	
Se	78	2	72	43.833	ppb	7.127	1865	40	109.6	90	110	
(Se)	78	3	72	44.001	ppb	21.721	242	40	110.0	90	110	>+\-10%
Sr	88	3	72	125.375	ppb	1.974	51217	120	104.5	90	110	
Mo	95	3	115	41.004	ppb	4.219	17214	40	102.5	90	110	
Ag	107	3	115	80.579	ppb	2.303	112953	80	100.7	90	110	
Cd	111	3	115	39.750	ppb	1.427	7942	40	99.4	90	110	
Sn	120	3	115	40.822	ppb	1.378	24998	40	102.1	90	110	
Sb	121	3	115	41.388	ppb	3.716	24946	40	103.5	90	110	
Ba	137	3	115	40.176	ppb	3.617	7807	40	100.4	90	110	
Tl	205	3	193	40.298	ppb	3.532	129226	40	100.7	90	110	
(Pb)	206	3	193	40.404	ppb	3.837	43600	40	101.0	90	110	
(Pb)	207	3	193	40.340	ppb	1.243	38317	40	100.8	90	110	
Pb	208	3	193	40.604	ppb	3.309	175885	40	101.5	90	110	
Th	232	3	193	80.570	ppb	0.945	364240	80	100.7	90	110	
U	238	3	193	41.322	ppb	3.416	194567	40	103.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3086238	1.20	2926360	105.46	60	120	
Sc (IS)	45	3	HMI He	457546	0.51	414540	110.37	60	120	
Ge Internal standard	72	2	HMI H2	1657205	2.78	1605102	103.25	60	120	
Ge Internal standard	72	3	HMI He	534593	2.44	486042	109.99	60	120	
In Internal Standard	115	3	HMI He	2098860	1.00	1945623	107.88	60	120	
Ir (IS)	193	3	HMI He	4837799	3.72	4515171	107.15	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	318_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T12:58:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	-0.046	ppb	0.000	0	50	-0.1	90	110	>+\-10%
Na	23	3	45	-112.111	ppb	-3.237	19356	51000	-0.2	90	110	>+\-10%
Mg	24	3	45	-1.239	ppb	-11.828	127	11000	0.0	90	110	>+\-10%
Al	27	3	45	-31.053	ppb	-1.608	17	1000	-3.1	90	110	>+\-10%
K	39	3	45	-217.051	ppb	-12.993	12288	11000	-2.0	90	110	>+\-10%
Ca	40	2	45	-14.104	ppb	-0.482	7873	11000	-0.1	90	110	>+\-10%
V	51	3	72	-0.223	ppb	-3.228	23	50	-0.4	90	110	>+\-10%
Cr	52	3	72	-1.587	ppb	-4.028	520	50	-3.2	90	110	>+\-10%
Mn	55	3	72	-0.286	ppb	-8.339	45	50	-0.6	90	110	>+\-10%
Fe	56	2	72	-9.980	ppb	-1.011	3614	1000	-1.0	90	110	>+\-10%
Co	59	3	72	-0.059	ppb	-6.564	23	50	-0.1	90	110	>+\-10%
Ni	60	3	72	-0.353	ppb	-11.589	48	50	-0.7	90	110	>+\-10%
Cu	63	3	72	-0.217	ppb	-2.836	148	50	-0.4	90	110	>+\-10%
Zn	66	3	72	-0.565	ppb	-17.790	75	50	-1.1	90	110	>+\-10%
As	75	3	72	-0.094	ppb	-107.748	32	50	-0.2	90	110	>+\-10%
Se	78	2	72	-0.039	ppb	-37.345	3	50	-0.1	90	110	>+\-10%
(Se)	78	3	72	1.070	ppb	65.760	33	50	2.1	90	110	>+\-10%
Sr	88	3	72	-0.122	ppb	-5.417	23	100	-0.1	90	110	>+\-10%
Mo	95	3	115	-0.115	ppb	-9.254	13	50	-0.2	90	110	>+\-10%
Ag	107	3	115	-0.027	ppb	-8.256	18	50	-0.1	90	110	>+\-10%
Cd	111	3	115	-0.054	ppb	0.000	0	50	-0.1	90	110	>+\-10%
Sn	120	3	115	-0.968	ppb	-1.054	143	50	-1.9	90	110	>+\-10%
Sb	121	3	115	-0.126	ppb	-9.272	22	50	-0.3	90	110	>+\-10%
Ba	137	3	115	-0.161	ppb	-25.379	43	50	-0.3	90	110	>+\-10%
Tl	205	3	193	-0.022	ppb	-42.234	217	50	0.0	90	110	>+\-10%
(Pb)	206	3	193	-0.052	ppb	-30.898	215	50	-0.1	90	110	>+\-10%
(Pb)	207	3	193	-0.070	ppb	-24.264	415	50	-0.1	90	110	>+\-10%
Pb	208	3	193	-0.053	ppb	-4.528	1003	50	-0.1	90	110	>+\-10%
Th	232	3	193	-0.284	ppb	-5.712	6305	50	-0.6	90	110	>+\-10%
U	238	3	193	-0.030	ppb	-61.734	2207	50	-0.1	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5614810	0.45	2926360	191.87	60	120	IS Failed
Sc (IS)	45	3	HMI He	815906	1.95	414540	196.82	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3095060	0.27	1605102	192.83	60	120	IS Failed
Ge Internal standard	72	3	HMI He	969300	3.53	486042	199.43	60	120	IS Failed
In Internal Standard	115	3	HMI He	3664069	1.32	1945623	188.32	60	120	IS Failed
Ir (IS)	193	3	HMI He	8245323	1.54	4515171	182.61	60	120	IS Failed

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	319_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:00:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.021	ppb	-201.3	2	0.5	
Na	23	3	45	-114.055	ppb	-3.1	19887	25	
Mg	24	3	45	-1.191	ppb	-72.8	137	25	
Al	27	3	45	-29.954	ppb	-2.1	53	15	
K	39	3	45	-226.041	ppb	-4.9	12258	50	
V	51	3	72	-0.223	ppb	-4.9	25	1	
Cr	52	3	72	-1.607	ppb	-1.6	531	1	
Mn	55	3	72	-0.265	ppb	-12.3	60	0.5	
Co	59	3	72	-0.054	ppb	-15.1	33	0.5	
Ni	60	3	72	-0.356	ppb	-9.7	50	1	
Cu	63	3	72	-0.219	ppb	-8.3	153	1	
Zn	66	3	72	-0.572	ppb	-6.1	78	5	
As	75	3	72	0.004	ppb	4070.9	50	1	
Se	78	2	72	-0.031	ppb	-82.0	4	1	
(Se)	78	3	72	-1.482	ppb	-31.8	10	1	
Sr	88	3	72	-0.104	ppb	-20.5	38	0.5	
Mo	95	3	115	-0.115	ppb	-3.7	13	0.5	
Ag	107	3	115	-0.022	ppb	-37.0	32	1	
Cd	111	3	115	-0.045	ppb	-17.6	3	0.5	
Sn	120	3	115	-0.941	ppb	-4.2	177	1	
Sb	121	3	115	-0.125	ppb	-9.5	23	0.6	
Ba	137	3	115	-0.189	ppb	-19.5	35	0.5	
Tl	205	3	193	-0.023	ppb	-5.1	225	0.1	
(Pb)	206	3	193	-0.059	ppb	-39.0	217	1	
(Pb)	207	3	193	-0.074	ppb	-53.0	433	1	
Pb	208	3	193	-0.038	ppb	-21.9	1181	0.5	
Th	232	3	193	-0.298	ppb	-8.5	6603	1	
U	238	3	193	-0.014	ppb	-67.5	2487	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5596856	0.82	2926360	191.26	60	120	IS Failed
Sc (IS)	45	3	HMI He	852551	0.78	414540	205.66	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3140858	1.43	1605102	195.68	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1031708	3.13	486042	212.27	60	120	IS Failed
In Internal Standard	115	3	HMI He	3793954	3.45	1945623	195.00	60	120	IS Failed
Ir (IS)	193	3	HMI He	8778660	1.98	4515171	194.43	60	120	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	320_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:03:21-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	45.402	ppb	5.009	1804	50	90.8	90	110	
Na	23	3	45	1173.967	ppb	2.014	126183	51000	2.3	90	110	>+\-10%
Mg	24	3	45	1021.452	ppb	2.123	48973	11000	9.3	90	110	>+\-10%
Al	27	3	45	964.808	ppb	4.317	16847	1000	96.5	90	110	
K	39	3	45	1033.691	ppb	3.428	48894	11000	9.4	90	110	>+\-10%
Ca	40	2	45	1056.989	ppb	1.677	491532	11000	9.6	90	110	>+\-10%
V	51	3	72	50.737	ppb	1.765	23476	50	101.5	90	110	
Cr	52	3	72	50.662	ppb	1.502	30800	50	101.3	90	110	
Mn	55	3	72	51.984	ppb	3.085	15990	50	104.0	90	110	
Fe	56	2	72	980.443	ppb	1.274	1246418	1000	98.0	90	110	
Co	59	3	72	51.424	ppb	1.757	50114	50	102.8	90	110	
Ni	60	3	72	51.479	ppb	1.762	13877	50	103.0	90	110	
Cu	63	3	72	51.086	ppb	1.478	37666	50	102.2	90	110	
Zn	66	3	72	52.703	ppb	2.385	6552	50	105.4	90	110	
As	75	3	72	51.396	ppb	3.198	4422	50	102.8	90	110	
Se	78	2	72	47.570	ppb	2.371	2194	50	95.1	90	110	
(Se)	78	3	72	49.952	ppb	11.568	268	50	99.9	90	110	
Sr	88	3	72	102.443	ppb	2.150	41106	100	102.4	90	110	
Mo	95	3	115	49.279	ppb	4.750	20293	50	98.6	90	110	
Ag	107	3	115	49.725	ppb	2.172	68453	50	99.4	90	110	
Cd	111	3	115	49.721	ppb	3.894	9747	50	99.4	90	110	
Sn	120	3	115	50.085	ppb	1.937	29962	50	100.2	90	110	
Sb	121	3	115	49.769	ppb	2.984	29433	50	99.5	90	110	
Ba	137	3	115	49.677	ppb	4.009	9464	50	99.4	90	110	
Tl	205	3	193	49.224	ppb	0.134	154493	50	98.4	90	110	
(Pb)	206	3	193	49.606	ppb	1.112	52368	50	99.2	90	110	
(Pb)	207	3	193	49.571	ppb	0.971	46000	50	99.1	90	110	
Pb	208	3	193	49.571	ppb	0.851	210029	50	99.1	90	110	
Th	232	3	193	50.650	ppb	0.078	225834	50	101.3	90	110	
U	238	3	193	49.535	ppb	1.060	228070	50	99.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3172973	1.67	2926360	108.43	60	120	
Sc (IS)	45	3	HMI He	442256	1.12	414540	106.69	60	120	
Ge Internal standard	72	2	HMI H2	1796662	3.46	1605102	111.93	60	120	
Ge Internal standard	72	3	HMI He	524911	1.43	486042	108.00	60	120	
In Internal Standard	115	3	HMI He	2061109	2.51	1945623	105.94	60	120	
Ir (IS)	193	3	HMI He	4732184	0.57	4515171	104.81	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	321_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:05:13-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.002	ppb	2522.0	3	0.5	
Na	23	3	45	-118.348	ppb	-7.6	19707	25	
Mg	24	3	45	-1.023	ppb	-14.8	157	25	
Al	27	3	45	-29.802	ppb	-1.1	60	15	
K	39	3	45	-232.799	ppb	-9.5	12171	50	
V	51	3	72	-0.218	ppb	-7.3	30	1	
Cr	52	3	72	-1.522	ppb	-2.3	633	1	
Mn	55	3	72	-0.233	ppb	-27.4	80	0.5	
Co	59	3	72	-0.034	ppb	-32.9	73	0.5	
Ni	60	3	72	-0.352	ppb	-14.1	53	1	
Cu	63	3	72	-0.195	ppb	-11.3	190	1	
Zn	66	3	72	-0.519	ppb	-11.5	92	5	
As	75	3	72	-0.139	ppb	-10.0	27	1	
Se	78	2	72	-0.021	ppb	-284.1	5	1	
(Se)	78	3	72	-1.979	ppb	-24.4	5	1	
Sr	88	3	72	-0.071	ppb	-55.9	65	0.5	
Mo	95	3	115	-0.098	ppb	-26.9	27	0.5	
Ag	107	3	115	-0.008	ppb	-99.7	68	1	
Cd	111	3	115	-0.036	ppb	-22.5	7	0.5	
Sn	120	3	115	-0.910	ppb	-3.9	213	1	
Sb	121	3	115	-0.112	ppb	-13.9	38	0.6	
Ba	137	3	115	-0.162	ppb	-8.4	45	0.5	
Tl	205	3	193	-0.008	ppb	-134.9	318	0.1	
(Pb)	206	3	193	-0.039	ppb	-3.5	258	1	
(Pb)	207	3	193	-0.050	ppb	-99.4	483	1	
Pb	208	3	193	-0.027	ppb	-37.8	1291	0.5	
Th	232	3	193	-0.266	ppb	-2.7	6965	1	
U	238	3	193	-0.011	ppb	-126.2	2551	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5656826	2.78	2926360	193.31	60	120	IS Failed
Sc (IS)	45	3	HMI He	879627	4.31	414540	212.19	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3086303	2.09	1605102	192.28	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1037247	2.07	486042	213.41	60	120	IS Failed
In Internal Standard	115	3	HMI He	3855375	1.09	1945623	198.16	60	120	IS Failed
Ir (IS)	193	3	HMI He	8915397	2.18	4515171	197.45	60	120	IS Failed

Sample Report

Sample Table

Sample Name	TCLP CK
Data File Name	322SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:07:06-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	0.00	0	2000	
Na	23	3	45	4.330	ppb	4.330	75.37	20906	400000	
Mg	24	3	45	11.531	ppb	11.531	9.65	677	400000	
Al	27	3	45	-22.880	ppb	-22.880	-1.73	147	400000	
K	39	3	45	18.013	ppb	18.013	152.57	14562	400000	
Ca	40	2	45	10.431	ppb	10.431	13.22	15277	400000	
V	51	3	72	0.078	ppb	0.078	48.89	147	2000	
Cr	52	3	72	583.464	ppb	583.464	3.06	332272	5000	
Mn	55	3	72	0.000	ppb	0.000	-9865.36	108	10000	
Fe	56	2	72	-1.930	ppb	-1.930	-11.57	11443	10000	
Co	59	3	72	0.054	ppb	0.054	79.07	118	2000	
Ni	60	3	72	0.030	ppb	0.030	430.13	125	5000	
Cu	63	3	72	236.897	ppb	236.897	1.41	168918	5000	
Zn	66	3	72	0.383	ppb	0.383	121.63	152	5000	
As	75	3	72	349.546	ppb	349.546	1.83	29088	2000	
Se	78	2	72	119.807	ppb	119.807	1.86	5174	2000	
(Se)	78	3	72	106.348	ppb	106.348	9.49	541	2000	
Sr	88	3	72	0.370	ppb	0.370	28.46	203	4000	
Mo	95	3	115	0.323	ppb	0.323	3.31	187	2000	
Ag	107	3	115	102.904	ppb	102.904	2.60	141050	100	
Cd	111	3	115	111.180	ppb	111.180	3.78	21698	2000	
Sn	120	3	115	15.207	ppb	15.207	1.37	9512	2000	
Sb	121	3	115	0.166	ppb	0.166	37.20	183	1000	
Ba	137	3	115	1101.898	ppb	1101.898	2.43	207968	5000	
Tl	205	3	193	0.172	ppb	0.172	16.98	738	2000	
(Pb)	206	3	193	534.136	ppb	534.136	1.33	565702	100	>LDR
(Pb)	207	3	193	535.031	ppb	535.031	0.77	496662	100	>LDR
Pb	208	3	193	564.592	ppb	564.592	1.30	2398892	5000	
Th	232	3	193	0.867	ppb	0.867	13.86	8699	2000	
U	238	3	193	0.152	ppb	0.152	44.39	2111	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3107433	1.72	2926360	106.19	60	120	
Sc (IS)	45	3	HMI He	440909	1.25	414540	106.36	60	120	
Ge Internal standard	72	2	HMI H2	1683133	1.44	1605102	104.86	60	120	
Ge Internal standard	72	3	HMI He	510190	2.19	486042	104.97	60	120	
In Internal Standard	115	3	HMI He	2052952	2.11	1945623	105.52	60	120	
Ir (IS)	193	3	HMI He	4762351	1.45	4515171	105.47	60	120	

Sample Report

Sample Table

Sample Name	280-171748-b-1-a
Data File Name	323SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:08:59-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	0.00	0	2000	
Na	23	3	45	7627.600	ppb	7627.600	1.76	718638	400000	
Mg	24	3	45	2536.550	ppb	2536.550	2.04	123468	400000	
Al	27	3	45	-9.467	ppb	-9.467	-58.51	380	400000	
K	39	3	45	935.220	ppb	935.220	6.16	46346	400000	
Ca	40	2	45	11353.781	ppb	11353.781	1.31	5310564	400000	
V	51	3	72	0.020	ppb	0.020	519.40	132	2000	
Cr	52	3	72	1.714	ppb	1.714	8.30	2327	5000	
Mn	55	3	72	0.629	ppb	0.629	11.15	320	10000	
Fe	56	2	72	5.111	ppb	5.111	16.50	21732	10000	
Co	59	3	72	-0.010	ppb	-0.010	-139.49	63	2000	
Ni	60	3	72	0.063	ppb	0.063	127.52	145	5000	
Cu	63	3	72	61.430	ppb	61.430	3.41	47665	5000	
Zn	66	3	72	1.884	ppb	1.884	14.03	358	5000	
As	75	3	72	1.403	ppb	1.403	21.21	153	2000	
Se	78	2	72	0.212	ppb	0.212	48.44	14	2000	
(Se)	78	3	72	0.323	ppb	0.323	505.99	15	2000	
Sr	88	3	72	59.723	ppb	59.723	1.60	25271	4000	
Mo	95	3	115	0.527	ppb	0.527	11.99	273	2000	
Ag	107	3	115	0.409	ppb	0.409	3.67	615	100	
Cd	111	3	115	0.301	ppb	0.301	16.72	70	2000	
Sn	120	3	115	0.655	ppb	0.655	17.45	1038	2000	
Sb	121	3	115	0.013	ppb	0.013	211.71	95	1000	
Ba	137	3	115	24.091	ppb	24.091	1.25	4654	5000	
Tl	205	3	193	-0.008	ppb	-0.008	-204.55	172	2000	
(Pb)	206	3	193	2.209	ppb	2.209	20.30	2506	100	
(Pb)	207	3	193	2.162	ppb	2.162	19.14	2299	100	
Pb	208	3	193	2.187	ppb	2.187	19.60	10045	5000	
Th	232	3	193	-0.066	ppb	-0.066	-76.17	4587	2000	
U	238	3	193	0.107	ppb	0.107	41.48	1901	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3257412	2.36	2926360	111.31	60	120	
Sc (IS)	45	3	HMI He	449592	1.66	414540	108.46	60	120	
Ge Internal standard	72	2	HMI H2	1855400	2.58	1605102	115.59	60	120	
Ge Internal standard	72	3	HMI He	552826	0.81	486042	113.74	60	120	
In Internal Standard	115	3	HMI He	2075741	2.09	1945623	106.69	60	120	
Ir (IS)	193	3	HMI He	4752162	2.32	4515171	105.25	60	120	

Sample Report

Sample Table

Sample Name	280-171757-a-2-a
Data File Name	324SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:10:53-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600573 200.8
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.005	ppb	-0.005	-1431.80	2	2000	
Na	23	3	45	114756.913	ppb	114756.913	0.77	10231030	400000	
Mg	24	3	45	19682.499	ppb	19682.499	2.16	931079	400000	
Al	27	3	45	-11.265	ppb	-11.265	-57.65	340	400000	
K	39	3	45	14805.277	ppb	14805.277	1.02	508282	400000	
Ca	40	2	45	54015.469	ppb	54015.469	5.19	24882364	400000	
V	51	3	72	0.702	ppb	0.702	17.10	445	2000	
Cr	52	3	72	1.136	ppb	1.136	13.11	1901	5000	
Mn	55	3	72	77.067	ppb	77.067	2.62	23999	10000	
Fe	56	2	72	46.504	ppb	46.504	4.14	73417	10000	
Co	59	3	72	0.404	ppb	0.404	12.68	470	2000	
Ni	60	3	72	0.963	ppb	0.963	13.36	383	5000	
Cu	63	3	72	4.212	ppb	4.212	1.28	3374	5000	
Zn	66	3	72	44.226	ppb	44.226	3.66	5598	5000	
As	75	3	72	0.799	ppb	0.799	32.02	95	2000	
Se	78	2	72	0.953	ppb	0.953	18.85	48	2000	
(Se)	78	3	72	0.709	ppb	0.709	410.33	17	2000	
Sr	88	3	72	487.712	ppb	487.712	2.16	198302	4000	
Mo	95	3	115	2.100	ppb	2.100	6.30	906	2000	
Ag	107	3	115	0.028	ppb	0.028	13.13	85	100	
Cd	111	3	115	-0.002	ppb	-0.002	-1135.54	10	2000	
Sn	120	3	115	1.015	ppb	1.015	5.72	1224	2000	
Sb	121	3	115	0.501	ppb	0.501	19.60	376	1000	
Ba	137	3	115	37.400	ppb	37.400	1.73	7047	5000	
Tl	205	3	193	-0.015	ppb	-0.015	-109.43	145	2000	
(Pb)	206	3	193	0.257	ppb	0.257	13.16	446	100	
(Pb)	207	3	193	0.240	ppb	0.240	28.49	521	100	
Pb	208	3	193	0.274	ppb	0.274	1.82	1946	5000	
Th	232	3	193	-0.232	ppb	-0.232	-34.47	3827	2000	
U	238	3	193	0.273	ppb	0.273	8.08	2637	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3217143	3.96	2926360	109.94	60	120	
Sc (IS)	45	3	HMI He	437391	0.88	414540	105.51	60	120	
Ge Internal standard	72	2	HMI H2	1806114	2.61	1605102	112.52	60	120	
Ge Internal standard	72	3	HMI He	532556	1.69	486042	109.57	60	120	
In Internal Standard	115	3	HMI He	2033254	1.77	1945623	104.50	60	120	
Ir (IS)	193	3	HMI He	4708697	0.48	4515171	104.29	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	325_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:12:46-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	18.356	ppb	9.804	706	50	36.7	90	110	>+\-10%
Na	23	3	45	79776.876	ppb	0.126	7303917	51000	156.4	90	110	>+\-10%
Mg	24	3	45	15688.719	ppb	1.344	761604	11000	142.6	90	110	>+\-10%
Al	27	3	45	329.893	ppb	1.146	6201	1000	33.0	90	110	>+\-10%
K	39	3	45	15737.708	ppb	0.194	553469	11000	143.1	90	110	>+\-10%
Ca	40	2	45	16605.138	ppb	2.985	7366528	11000	151.0	90	110	>+\-10%
V	51	3	72	18.261	ppb	1.536	8448	50	36.5	90	110	>+\-10%
Cr	52	3	72	18.407	ppb	3.319	11852	50	36.8	90	110	>+\-10%
Mn	55	3	72	19.059	ppb	2.275	5880	50	38.1	90	110	>+\-10%
Fe	56	2	72	355.858	ppb	2.661	443131	1000	35.6	90	110	>+\-10%
Co	59	3	72	18.163	ppb	2.059	17591	50	36.3	90	110	>+\-10%
Ni	60	3	72	18.520	ppb	3.769	5027	50	37.0	90	110	>+\-10%
Cu	63	3	72	18.386	ppb	0.823	13588	50	36.8	90	110	>+\-10%
Zn	66	3	72	21.741	ppb	6.360	2742	50	43.5	90	110	>+\-10%
As	75	3	72	17.661	ppb	1.369	1523	50	35.3	90	110	>+\-10%
Se	78	2	72	18.616	ppb	5.538	827	50	37.2	90	110	>+\-10%
(Se)	78	3	72	17.222	ppb	8.568	100	50	34.4	90	110	>+\-10%
Sr	88	3	72	39.088	ppb	4.555	15590	100	39.1	90	110	>+\-10%
Mo	95	3	115	17.259	ppb	1.951	7310	50	34.5	90	110	>+\-10%
Ag	107	3	115	17.436	ppb	3.756	24565	50	34.9	90	110	>+\-10%
Cd	111	3	115	17.377	ppb	3.601	3492	50	34.8	90	110	>+\-10%
Sn	120	3	115	17.394	ppb	4.533	11066	50	34.8	90	110	>+\-10%
Sb	121	3	115	17.588	ppb	2.429	10696	50	35.2	90	110	>+\-10%
Ba	137	3	115	17.042	ppb	0.551	3357	50	34.1	90	110	>+\-10%
Tl	205	3	193	17.396	ppb	1.391	55448	50	34.8	90	110	>+\-10%
(Pb)	206	3	193	17.105	ppb	3.664	18408	50	34.2	90	110	>+\-10%
(Pb)	207	3	193	17.438	ppb	3.074	16589	50	34.9	90	110	>+\-10%
Pb	208	3	193	17.375	ppb	2.617	75105	50	34.7	90	110	>+\-10%
Th	232	3	193	16.982	ppb	1.895	79984	50	34.0	90	110	>+\-10%
U	238	3	193	17.475	ppb	1.623	82436	50	34.9	90	110	>+\-10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3092369	2.31	2926360	105.67	60	120	
Sc (IS)	45	3	HMI He	448765	1.74	414540	108.26	60	120	
Ge Internal standard	72	2	HMI H2	1725054	3.16	1605102	107.47	60	120	
Ge Internal standard	72	3	HMI He	520249	2.10	486042	107.04	60	120	
In Internal Standard	115	3	HMI He	2106983	2.31	1945623	108.29	60	120	
Ir (IS)	193	3	HMI He	4795943	2.90	4515171	106.22	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	326_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:14:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.046	ppb	0.0	0	0.5	
Na	23	3	45	301.451	ppb	13.8	47728	25	>RL
Mg	24	3	45	54.206	ppb	13.9	2723	25	>RL
Al	27	3	45	-27.253	ppb	-2.5	73	15	
K	39	3	45	66.160	ppb	44.7	16222	50	>RL
V	51	3	72	0.054	ppb	54.8	138	1	
Cr	52	3	72	-0.144	ppb	-49.6	1113	1	
Mn	55	3	72	0.066	ppb	164.6	130	0.5	
Co	59	3	72	0.020	ppb	128.6	88	0.5	
Ni	60	3	72	-0.093	ppb	-50.6	95	1	
Cu	63	3	72	-0.068	ppb	-97.7	187	1	
Zn	66	3	72	0.024	ppb	498.2	112	5	
As	75	3	72	0.137	ppb	48.1	37	1	
Se	78	2	72	-0.036	ppb	-123.2	2	1	
(Se)	78	3	72	0.826	ppb	72.1	17	1	
Sr	88	3	72	0.121	ppb	34.4	108	0.5	
Mo	95	3	115	0.100	ppb	32.9	97	0.5	
Ag	107	3	115	0.069	ppb	50.0	145	1	
Cd	111	3	115	0.030	ppb	129.3	17	0.5	
Sn	120	3	115	-0.030	ppb	-365.9	636	1	
Sb	121	3	115	0.036	ppb	145.1	108	0.6	
Ba	137	3	115	-0.001	ppb	-11709.7	55	0.5	
Tl	205	3	193	0.097	ppb	31.3	503	0.1	
(Pb)	206	3	193	0.051	ppb	54.3	233	1	
(Pb)	207	3	193	0.042	ppb	125.5	343	1	
Pb	208	3	193	0.063	ppb	59.5	1071	0.5	
Th	232	3	193	0.147	ppb	47.0	5537	1	
U	238	3	193	0.075	ppb	27.7	1761	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3108466	2.45	2926360	106.22	60	120	
Sc (IS)	45	3	HMI He	442272	1.16	414540	106.69	60	120	
Ge Internal standard	72	2	HMI H2	1683569	5.55	1605102	104.89	60	120	
Ge Internal standard	72	3	HMI He	519109	1.40	486042	106.80	60	120	
In Internal Standard	115	3	HMI He	2082701	1.96	1945623	107.05	60	120	
Ir (IS)	193	3	HMI He	4763864	0.96	4515171	105.51	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	327_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:17:02-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	50.091	ppb	2.713	1966	50	100.2	90	110	
Na	23	3	45	1224.473	ppb	0.802	132184	51000	2.4	90	110	>+\-10%
Mg	24	3	45	1036.197	ppb	1.259	50232	11000	9.4	90	110	>+\-10%
Al	27	3	45	971.586	ppb	1.913	17144	1000	97.2	90	110	
K	39	3	45	1069.177	ppb	4.553	50645	11000	9.7	90	110	>+\-10%
Ca	40	2	45	1070.320	ppb	2.314	497011	11000	9.7	90	110	>+\-10%
V	51	3	72	50.141	ppb	1.996	23949	50	100.3	90	110	
Cr	52	3	72	50.683	ppb	2.473	31800	50	101.4	90	110	
Mn	55	3	72	51.254	ppb	0.540	16278	50	102.5	90	110	
Fe	56	2	72	977.828	ppb	1.454	1237509	1000	97.8	90	110	
Co	59	3	72	50.721	ppb	1.257	51023	50	101.4	90	110	
Ni	60	3	72	50.747	ppb	0.634	14120	50	101.5	90	110	
Cu	63	3	72	50.400	ppb	0.781	38361	50	100.8	90	110	
Zn	66	3	72	54.137	ppb	3.772	6943	50	108.3	90	110	
As	75	3	72	50.913	ppb	4.206	4522	50	101.8	90	110	
Se	78	2	72	48.443	ppb	1.409	2225	50	96.9	90	110	
(Se)	78	3	72	53.000	ppb	13.930	293	50	106.0	90	110	
Sr	88	3	72	100.886	ppb	3.092	41783	100	100.9	90	110	
Mo	95	3	115	49.005	ppb	1.055	20774	50	98.0	90	110	
Ag	107	3	115	49.633	ppb	2.984	70281	50	99.3	90	110	
Cd	111	3	115	50.289	ppb	2.218	10144	50	100.6	90	110	
Sn	120	3	115	49.852	ppb	3.196	30677	50	99.7	90	110	
Sb	121	3	115	50.051	ppb	2.361	30451	50	100.1	90	110	
Ba	137	3	115	50.651	ppb	2.952	9925	50	101.3	90	110	
Tl	205	3	193	49.084	ppb	2.307	157619	50	98.2	90	110	
(Pb)	206	3	193	49.269	ppb	3.808	53210	50	98.5	90	110	
(Pb)	207	3	193	49.511	ppb	2.110	47014	50	99.0	90	110	
Pb	208	3	193	49.513	ppb	2.600	214644	50	99.0	90	110	
Th	232	3	193	49.210	ppb	2.813	224620	50	98.4	90	110	
U	238	3	193	49.711	ppb	2.444	234165	50	99.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3169622	0.77	2926360	108.31	60	120	
Sc (IS)	45	3	HMI He	447143	0.61	414540	107.86	60	120	
Ge Internal standard	72	2	HMI H2	1788223	0.83	1605102	111.41	60	120	
Ge Internal standard	72	3	HMI He	541780	0.92	486042	111.47	60	120	
In Internal Standard	115	3	HMI He	2120130	2.20	1945623	108.97	60	120	
Ir (IS)	193	3	HMI He	4843208	2.03	4515171	107.27	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	328_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:18:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	52.794	ppb	3.819	1971	50	105.6	90	110	
Na	23	3	45	1214.936	ppb	1.130	129809	51000	2.4	90	110	>+\-10%
Mg	24	3	45	1024.829	ppb	0.667	49114	11000	9.3	90	110	>+\-10%
Al	27	3	45	953.616	ppb	1.793	16643	1000	95.4	90	110	
K	39	3	45	1060.086	ppb	2.609	49764	11000	9.6	90	110	>+\-10%
Ca	40	2	45	1121.662	ppb	2.729	485833	11000	10.2	90	110	>+\-10%
V	51	3	72	51.025	ppb	0.472	23695	50	102.0	90	110	
Cr	52	3	72	51.833	ppb	2.732	31597	50	103.7	90	110	
Mn	55	3	72	51.704	ppb	1.759	15963	50	103.4	90	110	
Fe	56	2	72	1052.944	ppb	0.233	1227665	1000	105.3	90	110	
Co	59	3	72	50.874	ppb	2.778	49754	50	101.7	90	110	
Ni	60	3	72	51.679	ppb	0.843	13978	50	103.4	90	110	
Cu	63	3	72	51.410	ppb	1.097	38042	50	102.8	90	110	
Zn	66	3	72	53.935	ppb	2.725	6727	50	107.9	90	110	
As	75	3	72	51.448	ppb	6.230	4442	50	102.9	90	110	
Se	78	2	72	54.079	ppb	0.547	2290	50	108.2	90	110	
(Se)	78	3	72	45.875	ppb	23.898	248	50	91.7	90	110	
Sr	88	3	72	102.344	ppb	2.272	41213	100	102.3	90	110	
Mo	95	3	115	48.837	ppb	2.572	20647	50	97.7	90	110	
Ag	107	3	115	49.431	ppb	0.988	69827	50	98.9	90	110	
Cd	111	3	115	49.691	ppb	0.944	9999	50	99.4	90	110	
Sn	120	3	115	49.346	ppb	1.362	30299	50	98.7	90	110	
Sb	121	3	115	50.365	ppb	0.435	30566	50	100.7	90	110	
Ba	137	3	115	48.746	ppb	2.680	9532	50	97.5	90	110	
Tl	205	3	193	49.595	ppb	2.004	158328	50	99.2	90	110	
(Pb)	206	3	193	49.187	ppb	1.780	52822	50	98.4	90	110	
(Pb)	207	3	193	49.743	ppb	0.938	46955	50	99.5	90	110	
Pb	208	3	193	49.622	ppb	1.315	213867	50	99.2	90	110	
Th	232	3	193	50.181	ppb	1.489	227636	50	100.4	90	110	
U	238	3	193	49.554	ppb	1.656	232066	50	99.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2959586	2.46	2926360	101.14	60	120	
Sc (IS)	45	3	HMI He	442001	0.28	414540	106.62	60	120	
Ge Internal standard	72	2	HMI H2	1648955	2.09	1605102	102.73	60	120	
Ge Internal standard	72	3	HMI He	526750	0.74	486042	108.38	60	120	
In Internal Standard	115	3	HMI He	2114227	0.24	1945623	108.67	60	120	
Ir (IS)	193	3	HMI He	4813876	0.87	4515171	106.62	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	329_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:20:46-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.046	ppb	0.0	0	0.5	
Na	23	3	45	-115.861	ppb	-3.0	20218	25	
Mg	24	3	45	-1.797	ppb	-9.4	83	25	
Al	27	3	45	-29.299	ppb	-4.8	77	15	
K	39	3	45	-218.618	ppb	-5.5	13186	50	
V	51	3	72	-0.213	ppb	-4.8	35	1	
Cr	52	3	72	-1.563	ppb	-4.9	603	1	
Mn	55	3	72	-0.247	ppb	-11.9	73	0.5	
Co	59	3	72	-0.045	ppb	-15.2	53	0.5	
Ni	60	3	72	-0.351	ppb	-7.1	55	1	
Cu	63	3	72	-0.210	ppb	-9.4	173	1	
Zn	66	3	72	-0.576	ppb	-21.8	80	5	
As	75	3	72	-0.152	ppb	-68.6	25	1	
Se	78	2	72	-0.032	ppb	-8.3	4	1	
(Se)	78	3	72	-0.555	ppb	-144.0	20	1	
Sr	88	3	72	-0.116	ppb	-5.4	30	0.5	
Mo	95	3	115	-0.096	ppb	-17.7	28	0.5	
Ag	107	3	115	-0.010	ppb	-47.0	63	1	
Cd	111	3	115	-0.040	ppb	-33.2	5	0.5	
Sn	120	3	115	-0.934	ppb	-1.4	188	1	
Sb	121	3	115	-0.118	ppb	-16.0	32	0.6	
Ba	137	3	115	-0.190	ppb	-15.9	35	0.5	
Tl	205	3	193	-0.019	ppb	-38.9	255	0.1	
(Pb)	206	3	193	-0.058	ppb	-21.6	222	1	
(Pb)	207	3	193	-0.058	ppb	-10.1	470	1	
Pb	208	3	193	-0.051	ppb	-6.1	1103	0.5	
Th	232	3	193	-0.291	ppb	-15.3	6773	1	
U	238	3	193	-0.022	ppb	-57.5	2461	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5660517	5.32	2926360	193.43	60	120	IS Failed
Sc (IS)	45	3	HMI He	881101	3.28	414540	212.55	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3170204	5.48	1605102	197.51	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1068077	1.35	486042	219.75	60	120	IS Failed
In Internal Standard	115	3	HMI He	3866416	2.13	1945623	198.72	60	120	IS Failed
Ir (IS)	193	3	HMI He	8932762	2.66	4515171	197.84	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	330SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:22:42-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	0.00	0	2000	
Na	23	3	45	-15.165	ppb	-15.165	-107.78	20856	400000	
Mg	24	3	45	0.809	ppb	0.809	141.91	180	400000	
Al	27	3	45	-29.586	ppb	-29.586	-2.31	37	400000	
K	39	3	45	-33.956	ppb	-33.956	-118.31	13941	400000	
Ca	40	2	45	-7.991	ppb	-7.991	-9.09	7870	400000	
V	51	3	72	-0.181	ppb	-0.181	-29.61	35	2000	
Cr	52	3	72	-1.085	ppb	-1.085	-3.62	631	5000	
Mn	55	3	72	-0.186	ppb	-0.186	-55.89	60	10000	
Fe	56	2	72	-8.395	ppb	-8.395	-1.42	4475	10000	
Co	59	3	72	-0.042	ppb	-0.042	-15.42	32	2000	
Ni	60	3	72	-0.190	ppb	-0.190	-20.28	77	5000	
Cu	63	3	72	-0.183	ppb	-0.183	-17.29	115	5000	
Zn	66	3	72	-0.390	ppb	-0.390	-19.74	68	5000	
As	75	3	72	-0.154	ppb	-0.154	-21.31	13	2000	
Se	78	2	72	-0.028	ppb	-0.028	-165.09	3	2000	
(Se)	78	3	72	0.195	ppb	0.195	892.58	15	2000	
Sr	88	3	72	-0.050	ppb	-0.050	-26.89	45	4000	
Mo	95	3	115	-0.070	ppb	-0.070	-51.83	28	2000	
Ag	107	3	115	-0.005	ppb	-0.005	-60.73	45	100	
Cd	111	3	115	-0.054	ppb	-0.054	0.00	0	2000	
Sn	120	3	115	-0.857	ppb	-0.857	-5.24	160	2000	
Sb	121	3	115	-0.082	ppb	-0.082	-40.73	42	1000	
Ba	137	3	115	-0.138	ppb	-0.138	-40.19	32	5000	
Tl	205	3	193	-0.007	ppb	-0.007	-47.33	183	2000	
(Pb)	206	3	193	-0.054	ppb	-0.054	-13.85	130	100	
(Pb)	207	3	193	-0.046	ppb	-0.046	-64.34	278	100	
Pb	208	3	193	-0.028	ppb	-0.028	-25.01	728	5000	
Th	232	3	193	-0.269	ppb	-0.269	-3.90	3949	2000	
U	238	3	193	-0.009	ppb	-0.009	-102.59	1463	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3455493	1.08	2926360	118.08	60	120	
Sc (IS)	45	3	HMI He	480632	2.35	414540	115.94	60	120	
Ge Internal standard	72	2	HMI H2	1966654	0.99	1605102	122.53	60	120	IS Failed
Ge Internal standard	72	3	HMI He	575843	2.11	486042	118.48	60	120	
In Internal Standard	115	3	HMI He	2274853	2.14	1945623	116.92	60	120	
Ir (IS)	193	3	HMI He	5072370	0.98	4515171	112.34	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	331SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:24:36-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.005	ppb	-0.005	-1457.48	2	2000	
Na	23	3	45	-23.991	ppb	-23.991	-27.37	19937	400000	
Mg	24	3	45	-0.224	ppb	-0.224	-183.93	127	400000	
Al	27	3	45	-28.496	ppb	-28.496	-4.41	57	400000	
K	39	3	45	-36.035	ppb	-36.035	-118.07	13827	400000	
Ca	40	2	45	-8.034	ppb	-8.034	-4.74	7453	400000	
V	51	3	72	-0.224	ppb	-0.224	-6.80	13	2000	
Cr	52	3	72	-1.136	ppb	-1.136	-1.02	603	5000	
Mn	55	3	72	-0.187	ppb	-0.187	-42.42	60	10000	
Fe	56	2	72	-8.595	ppb	-8.595	-0.83	4005	10000	
Co	59	3	72	-0.057	ppb	-0.057	-4.59	17	2000	
Ni	60	3	72	-0.266	ppb	-0.266	-19.02	55	5000	
Cu	63	3	72	-0.186	ppb	-0.186	-14.94	113	5000	
Zn	66	3	72	-0.405	ppb	-0.405	-31.81	67	5000	
As	75	3	72	-0.085	ppb	-0.085	-60.07	20	2000	
Se	78	2	72	-0.067	ppb	-0.067	-36.76	1	2000	
(Se)	78	3	72	1.372	ppb	1.372	136.16	22	2000	
Sr	88	3	72	-0.070	ppb	-0.070	-67.02	37	4000	
Mo	95	3	115	-0.071	ppb	-0.071	-38.57	28	2000	
Ag	107	3	115	-0.012	ppb	-0.012	-29.25	35	100	
Cd	111	3	115	-0.046	ppb	-0.046	-29.04	2	2000	
Sn	120	3	115	-0.835	ppb	-0.835	-3.17	175	2000	
Sb	121	3	115	-0.096	ppb	-0.096	-4.25	33	1000	
Ba	137	3	115	-0.130	ppb	-0.130	-27.53	33	5000	
Tl	205	3	193	-0.020	ppb	-0.020	-78.74	143	2000	
(Pb)	206	3	193	-0.080	ppb	-0.080	-31.30	102	100	
(Pb)	207	3	193	-0.060	ppb	-0.060	-17.62	267	100	
Pb	208	3	193	-0.056	ppb	-0.056	-13.67	608	5000	
Th	232	3	193	-0.303	ppb	-0.303	-7.11	3820	2000	
U	238	3	193	-0.015	ppb	-0.015	-74.06	1443	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3280881	2.26	2926360	112.11	60	120	
Sc (IS)	45	3	HMI He	478702	0.75	414540	115.48	60	120	
Ge Internal standard	72	2	HMI H2	1873844	2.26	1605102	116.74	60	120	
Ge Internal standard	72	3	HMI He	580000	1.06	486042	119.33	60	120	
In Internal Standard	115	3	HMI He	2277147	0.95	1945623	117.04	60	120	
Ir (IS)	193	3	HMI He	5114602	1.11	4515171	113.28	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	332SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:26:30-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	314CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.004	ppb	-0.004	-1717.52	2	2000	
Na	23	3	45	-18.161	ppb	-18.161	-10.87	20064	400000	
Mg	24	3	45	0.364	ppb	0.364	398.44	153	400000	
Al	27	3	45	-29.172	ppb	-29.172	-1.04	43	400000	
K	39	3	45	-30.515	ppb	-30.515	-84.90	13731	400000	
Ca	40	2	45	-8.401	ppb	-8.401	-9.61	7449	400000	
V	51	3	72	-0.213	ppb	-0.213	-5.30	18	2000	
Cr	52	3	72	-1.017	ppb	-1.017	-10.64	663	5000	
Mn	55	3	72	-0.224	ppb	-0.224	-16.88	47	10000	
Fe	56	2	72	-8.615	ppb	-8.615	-1.41	3921	10000	
Co	59	3	72	-0.048	ppb	-0.048	-19.63	25	2000	
Ni	60	3	72	-0.220	ppb	-0.220	-33.80	67	5000	
Cu	63	3	72	-0.184	ppb	-0.184	-23.74	112	5000	
Zn	66	3	72	-0.430	ppb	-0.430	-33.92	62	5000	
As	75	3	72	-0.080	ppb	-0.080	-177.03	20	2000	
Se	78	2	72	-0.081	ppb	-0.081	0.00	0	2000	
(Se)	78	3	72	0.258	ppb	0.258	927.92	15	2000	
Sr	88	3	72	-0.045	ppb	-0.045	-108.14	47	4000	
Mo	95	3	115	-0.079	ppb	-0.079	-39.32	23	2000	
Ag	107	3	115	-0.021	ppb	-0.021	-2.53	20	100	
Cd	111	3	115	-0.046	ppb	-0.046	-29.44	2	2000	
Sn	120	3	115	-0.761	ppb	-0.761	-2.80	213	2000	
Sb	121	3	115	-0.082	ppb	-0.082	-29.44	40	1000	
Ba	137	3	115	-0.179	ppb	-0.179	-35.23	22	5000	
Tl	205	3	193	-0.024	ppb	-0.024	-48.97	127	2000	
(Pb)	206	3	193	-0.050	ppb	-0.050	-59.44	133	100	
(Pb)	207	3	193	-0.054	ppb	-0.054	-101.86	267	100	
Pb	208	3	193	-0.030	ppb	-0.030	-28.32	710	5000	
Th	232	3	193	-0.306	ppb	-0.306	-14.64	3732	2000	
U	238	3	193	-0.031	ppb	-0.031	-89.95	1333	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3357452	1.37	2926360	114.73	60	120	
Sc (IS)	45	3	HMI He	468418	1.38	414540	113.00	60	120	
Ge Internal standard	72	2	HMI H2	1847539	1.99	1605102	115.10	60	120	
Ge Internal standard	72	3	HMI He	565809	1.51	486042	116.41	60	120	
In Internal Standard	115	3	HMI He	2176147	3.76	1945623	111.85	60	120	
Ir (IS)	193	3	HMI He	5014118	2.89	4515171	111.05	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	333CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-31T13:28:22-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	19804	0.01
Mg	24	45	3	HMI He	120	31.79
Al	27	45	3	HMI He	63	51.85
K	39	45	3	HMI He	13757	0.04
Ca	40	45	2	HMI H2	9386	0.01
V	51	72	3	HMI He	87	47.25
Cr	52	72	3	HMI He	1090	0.23
Mn	55	72	3	HMI He	67	46.86
Fe	56	72	2	HMI H2	4736	0.11
Co	59	72	3	HMI He	42	92.61
Ni	60	72	3	HMI He	127	4.76
Cu	63	72	3	HMI He	165	8.42
Zn	66	72	3	HMI He	98	10.77
As	75	72	3	HMI He	25	80.06
Se	78	72	2	HMI H2	2	0.00
(Se)	78	72	3	HMI He	8	415.69
Sr	88	72	3	HMI He	45	49.41
Mo	95	115	3	HMI He	35	81.67
Ag	107	115	3	HMI He	32	160.36
Cd	111	115	3	HMI He	2	10392.30
Sn	120	115	3	HMI He	635	1.30
Sb	121	115	3	HMI He	43	100.85
Ba	137	115	3	HMI He	33	207.95
Tl	205	193	3	HMI He	132	11.66
(Pb)	206	193	3	HMI He	172	11.92
(Pb)	207	193	3	HMI He	268	7.43
Pb	208	193	3	HMI He	736	1.58
Th	232	193	3	HMI He	7777	0.13
U	238	193	3	HMI He	1221	0.46

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	2889190	1.69
Sc (IS)	45	3	HMI He	434959	3.35
Ge Internal standard	72	2	HMI H2	1562061	3.24
Ge Internal standard	72	3	HMI He	506946	6.10
In Internal Standard	115	3	HMI He	2020064	4.44
Ir (IS)	193	3	HMI He	4640582	3.42

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	334CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T13:30:14-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	2	10392.30
Na	23	45	3	HMI He	8980632	0.00
Mg	24	45	3	HMI He	939118	0.00
Al	27	45	3	HMI He	290	12.52
K	39	45	3	HMI He	689305	0.00
V	51	72	3	HMI He	85	18.31
Cr	52	72	3	HMI He	1153	1.00
Mn	55	72	3	HMI He	135	13.72
Co	59	72	3	HMI He	55	75.77
Ni	60	72	3	HMI He	113	11.90
Cu	63	72	3	HMI He	245	4.64
Zn	66	72	3	HMI He	287	3.57
As	75	72	3	HMI He	33	103.98
Se	78	72	2	HMI H2	2	0.00
(Se)	78	72	3	HMI He	18	227.24
Sr	88	72	3	HMI He	340	2.25
Mo	95	115	3	HMI He	50	52.94
Ag	107	115	3	HMI He	60	63.68
Cd	111	115	3	HMI He	5	0.00
Sn	120	115	3	HMI He	655	2.18
Sb	121	115	3	HMI He	57	47.60
Ba	137	115	3	HMI He	120	19.34
Tl	205	193	3	HMI He	135	8.24
(Pb)	206	193	3	HMI He	202	8.64
(Pb)	207	193	3	HMI He	348	0.24
Pb	208	193	3	HMI He	1028	0.35
Th	232	193	3	HMI He	4842	0.16
U	238	193	3	HMI He	1321	0.32

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2979067	0.65	2889190	103.11	60	120	
Sc (IS)	45	3	HMI He	448796	3.26	434959	103.18	60	120	
Ge Internal standard	72	2	HMI H2	1632868	3.40	1562061	104.53	60	120	
Ge Internal standard	72	3	HMI He	522746	3.71	506946	103.12	60	120	
In Internal Standard	115	3	HMI He	2093304	3.59	2020064	103.63	60	120	
Ir (IS)	193	3	HMI He	4734701	4.49	4640582	102.03	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	335CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T13:32:05-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3609	0.09
Na	23	45	3	HMI He	199598	0.00
Mg	24	45	3	HMI He	90001	0.00
Al	27	45	3	HMI He	31768	0.00
K	39	45	3	HMI He	79094	0.00
V	51	72	3	HMI He	45216	0.00
Cr	52	72	3	HMI He	58366	0.00
Mn	55	72	3	HMI He	30086	0.00
Co	59	72	3	HMI He	94421	0.00
Ni	60	72	3	HMI He	26182	0.01
Cu	63	72	3	HMI He	70969	0.00
Zn	66	72	3	HMI He	12271	0.01
As	75	72	3	HMI He	8432	0.02
Se	78	72	2	HMI H2	4250	0.01
(Se)	78	72	3	HMI He	505	0.52
Sr	88	72	3	HMI He	77496	0.00
Mo	95	115	3	HMI He	38853	0.00
Ag	107	115	3	HMI He	130589	0.00
Cd	111	115	3	HMI He	18500	0.01
Sn	120	115	3	HMI He	57058	0.00
Sb	121	115	3	HMI He	55991	0.00
Ba	137	115	3	HMI He	17937	0.01
Tl	205	193	3	HMI He	294695	0.00
(Pb)	206	193	3	HMI He	99902	0.00
(Pb)	207	193	3	HMI He	86989	0.00
Pb	208	193	3	HMI He	397230	0.00
Th	232	193	3	HMI He	418997	0.00
U	238	193	3	HMI He	431738	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2998690	1.33	2889190	103.79	60	120	
Sc (IS)	45	3	HMI He	432718	1.43	434959	99.48	60	120	
Ge Internal standard	72	2	HMI H2	1718866	1.07	1562061	110.04	60	120	
Ge Internal standard	72	3	HMI He	531678	1.50	506946	104.88	60	120	
In Internal Standard	115	3	HMI He	2034939	1.29	2020064	100.74	60	120	
Ir (IS)	193	3	HMI He	4671645	0.75	4640582	100.67	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	336_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:33:56-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.897	ppb	1.250	1459	40	102.2	90	110	
Na	23	3	45	14222.097	ppb	1.769	1259084	12800	111.1	90	110	>+\-10%
Mg	24	3	45	4799.059	ppb	1.598	219248	4800	100.0	90	110	
Al	27	3	45	798.025	ppb	2.614	12822	800	99.8	90	110	
K	39	3	45	4849.985	ppb	0.293	172924	4800	101.0	90	110	
Ca	40	2	45	5143.898	ppb	3.866	2173429	4800	107.2	90	110	
V	51	3	72	42.809	ppb	0.799	18523	40	107.0	90	110	
Cr	52	3	72	43.139	ppb	2.645	24641	40	107.8	90	110	
Mn	55	3	72	43.742	ppb	1.120	12598	40	109.4	90	110	
Fe	56	2	72	847.639	ppb	0.583	947068	800	106.0	90	110	
Co	59	3	72	43.066	ppb	1.747	38825	40	107.7	90	110	
Ni	60	3	72	42.558	ppb	2.805	10715	40	106.4	90	110	
Cu	63	3	72	44.052	ppb	0.734	29931	40	110.1	90	110	>+\-10%
Zn	66	3	72	85.364	ppb	3.189	10007	80	106.7	90	110	
As	75	3	72	41.837	ppb	2.708	3384	40	104.6	90	110	
Se	78	2	72	42.433	ppb	5.168	1706	40	106.1	90	110	
(Se)	78	3	72	40.325	ppb	14.756	200	40	100.8	90	110	
Sr	88	3	72	131.798	ppb	0.890	48744	120	109.8	90	110	
Mo	95	3	115	41.012	ppb	3.992	16028	40	102.5	90	110	
Ag	107	3	115	81.591	ppb	1.548	106999	80	102.0	90	110	
Cd	111	3	115	40.679	ppb	0.741	7560	40	101.7	90	110	
Sn	120	3	115	40.742	ppb	1.898	23726	40	101.9	90	110	
Sb	121	3	115	41.312	ppb	0.293	23254	40	103.3	90	110	
Ba	137	3	115	41.392	ppb	0.915	7477	40	103.5	90	110	
Tl	205	3	193	41.490	ppb	2.625	122561	40	103.7	90	110	
(Pb)	206	3	193	41.210	ppb	3.336	41333	40	103.0	90	110	
(Pb)	207	3	193	41.400	ppb	1.832	36244	40	103.5	90	110	
Pb	208	3	193	41.665	ppb	3.902	166161	40	104.2	90	110	
Th	232	3	193	82.721	ppb	2.191	348600	80	103.4	90	110	
U	238	3	193	42.264	ppb	4.110	183431	40	105.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	2941446	1.69	2889190	101.81	60	120	
Sc (IS)	45	3	HMI He	436334	1.98	434959	100.32	60	120	
Ge Internal standard	72	2	HMI H2	1624960	1.50	1562061	104.03	60	120	
Ge Internal standard	72	3	HMI He	507443	3.64	506946	100.10	60	120	
In Internal Standard	115	3	HMI He	2043486	1.84	2020064	101.16	60	120	
Ir (IS)	193	3	HMI He	4683443	4.99	4640582	100.92	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	337_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:35:49-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	46.915	ppb	5.601	1764	50	93.8	90	110	
Na	23	3	45	52698.827	ppb	1.511	4735084	51000	103.3	90	110	
Mg	24	3	45	10696.488	ppb	0.523	501687	11000	97.2	90	110	
Al	27	3	45	948.277	ppb	0.275	15634	1000	94.8	90	110	
K	39	3	45	10742.159	ppb	2.139	376110	11000	97.7	90	110	
Ca	40	2	45	10992.952	ppb	2.032	4883244	11000	99.9	90	110	
V	51	3	72	49.564	ppb	0.473	22020	50	99.1	90	110	
Cr	52	3	72	49.264	ppb	2.753	28759	50	98.5	90	110	
Mn	55	3	72	49.806	ppb	2.825	14726	50	99.6	90	110	
Fe	56	2	72	974.272	ppb	4.600	1137743	1000	97.4	90	110	
Co	59	3	72	49.766	ppb	3.655	46085	50	99.5	90	110	
Ni	60	3	72	48.963	ppb	3.662	12635	50	97.9	90	110	
Cu	63	3	72	50.217	ppb	3.312	35022	50	100.4	90	110	
Zn	66	3	72	51.217	ppb	2.709	6212	50	102.4	90	110	
As	75	3	72	48.765	ppb	2.877	4045	50	97.5	90	110	
Se	78	2	72	50.404	ppb	5.377	2120	50	100.8	90	110	
(Se)	78	3	72	51.324	ppb	7.810	258	50	102.6	90	110	
Sr	88	3	72	102.416	ppb	2.201	38921	100	102.4	90	110	
Mo	95	3	115	47.189	ppb	2.098	18922	50	94.4	90	110	
Ag	107	3	115	48.422	ppb	0.809	65207	50	96.8	90	110	
Cd	111	3	115	46.776	ppb	4.438	8922	50	93.6	90	110	
Sn	120	3	115	46.400	ppb	2.598	27648	50	92.8	90	110	
Sb	121	3	115	47.822	ppb	0.741	27625	50	95.6	90	110	
Ba	137	3	115	49.326	ppb	2.558	9139	50	98.7	90	110	
Tl	205	3	193	47.712	ppb	2.584	143431	50	95.4	90	110	
(Pb)	206	3	193	48.558	ppb	2.113	49555	50	97.1	90	110	
(Pb)	207	3	193	47.880	ppb	2.103	42612	50	95.8	90	110	
Pb	208	3	193	48.618	ppb	2.680	197294	50	97.2	90	110	
Th	232	3	193	49.208	ppb	0.660	214348	50	98.4	90	110	
U	238	3	193	48.772	ppb	3.103	215319	50	97.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3099379	2.39	2889190	107.28	60	120	
Sc (IS)	45	3	HMI He	448131	1.00	434959	103.03	60	120	
Ge Internal standard	72	2	HMI H2	1700941	2.91	1562061	108.89	60	120	
Ge Internal standard	72	3	HMI He	521296	1.52	506946	102.83	60	120	
In Internal Standard	115	3	HMI He	2097642	0.22	2020064	103.84	60	120	
Ir (IS)	193	3	HMI He	4764287	1.83	4640582	102.67	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	338_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:37:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	0.000	ppb	117666.8	3	0.5	
Na	23	3	45	-97.356	ppb	-2.2	22711	25	
Mg	24	3	45	0.724	ppb	127.7	307	25	
Al	27	3	45	-2.507	ppb	-18.5	47	15	
K	39	3	45	-230.679	ppb	-4.4	12401	50	
V	51	3	72	-0.156	ppb	-8.0	38	1	
Cr	52	3	72	-1.496	ppb	-3.6	570	1	
Mn	55	3	72	-0.100	ppb	-26.2	77	0.5	
Co	59	3	72	-0.018	ppb	-10.1	53	0.5	
Ni	60	3	72	-0.406	ppb	-3.7	53	1	
Cu	63	3	72	-0.099	ppb	-16.7	203	1	
Zn	66	3	72	-0.509	ppb	-9.0	82	5	
As	75	3	72	0.044	ppb	228.9	58	1	
Se	78	2	72	0.009	ppb	480.5	5	1	
(Se)	78	3	72	-0.040	ppb	-704.4	17	1	
Sr	88	3	72	-0.049	ppb	-49.1	57	0.5	
Mo	95	3	115	-0.059	ppb	-24.7	23	0.5	
Ag	107	3	115	0.008	ppb	28.0	82	1	
Cd	111	3	115	0.011	ppb	156.7	7	0.5	
Sn	120	3	115	-0.940	ppb	-2.0	207	1	
Sb	121	3	115	-0.037	ppb	-23.8	43	0.6	
Ba	137	3	115	-0.061	ppb	-50.3	42	0.5	
Tl	205	3	193	0.003	ppb	245.7	268	0.1	
(Pb)	206	3	193	-0.056	ppb	-0.4	220	1	
(Pb)	207	3	193	-0.048	ppb	-65.7	433	1	
Pb	208	3	193	-0.031	ppb	-26.9	1169	0.5	
Th	232	3	193	-1.052	ppb	-3.2	6697	1	
U	238	3	193	0.015	ppb	72.9	2461	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	5788378	4.55	2889190	200.35	60	120	IS Failed
Sc (IS)	45	3	HMI He	869128	1.18	434959	199.82	60	120	IS Failed
Ge Internal standard	72	2	HMI H2	3181966	4.49	1562061	203.70	60	120	IS Failed
Ge Internal standard	72	3	HMI He	1043236	1.51	506946	205.79	60	120	IS Failed
In Internal Standard	115	3	HMI He	3838745	2.36	2020064	190.03	60	120	IS Failed
Ir (IS)	193	3	HMI He	8873844	0.22	4640582	191.22	60	120	IS Failed

Sample Report

Sample Table

Sample Name	rinse
Data File Name	339SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:39:51-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.047	ppb	-0.047	0.00	0	2000	
Na	23	3	45	13.748	ppb	13.748	55.24	21174	400000	
Mg	24	3	45	-0.397	ppb	-0.397	-86.40	103	400000	
Al	27	3	45	-0.852	ppb	-0.852	-146.43	50	400000	
K	39	3	45	11.924	ppb	11.924	281.15	14245	400000	
Ca	40	2	45	0.333	ppb	0.333	340.60	10167	400000	
V	51	3	72	0.009	ppb	0.009	1064.77	88	2000	
Cr	52	3	72	0.016	ppb	0.016	1214.60	1093	5000	
Mn	55	3	72	0.058	ppb	0.058	165.06	82	10000	
Fe	56	2	72	0.149	ppb	0.149	157.23	5273	10000	
Co	59	3	72	0.002	ppb	0.002	1046.54	43	2000	
Ni	60	3	72	-0.092	ppb	-0.092	-64.94	103	5000	
Cu	63	3	72	0.009	ppb	0.009	884.82	170	5000	
Zn	66	3	72	-0.187	ppb	-0.187	-88.00	77	5000	
As	75	3	72	0.005	ppb	0.005	1431.04	25	2000	
Se	78	2	72	-0.019	ppb	-0.019	-144.58	1	2000	
(Se)	78	3	72	0.363	ppb	0.363	495.82	10	2000	
Sr	88	3	72	-0.032	ppb	-0.032	-103.70	33	4000	
Mo	95	3	115	0.063	ppb	0.063	43.57	60	2000	
Ag	107	3	115	0.007	ppb	0.007	161.03	42	100	
Cd	111	3	115	0.000	ppb	0.000	4272.09	2	2000	
Sn	120	3	115	0.013	ppb	0.013	1237.12	648	2000	
Sb	121	3	115	0.003	ppb	0.003	1400.06	45	1000	
Ba	137	3	115	0.057	ppb	0.057	143.05	43	5000	
Tl	205	3	193	-0.005	ppb	-0.005	-19.96	118	2000	
(Pb)	206	3	193	-0.035	ppb	-0.035	-101.33	138	100	
(Pb)	207	3	193	-0.022	ppb	-0.022	-199.24	252	100	
Pb	208	3	193	-0.014	ppb	-0.014	-42.41	686	5000	
Th	232	3	193	0.283	ppb	0.283	93.73	9071	2000	
U	238	3	193	0.023	ppb	0.023	31.58	1338	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3083437	1.52	2889190	106.72	60	120	
Sc (IS)	45	3	HMI He	438240	0.41	434959	100.75	60	120	
Ge Internal standard	72	2	HMI H2	1685054	3.30	1562061	107.87	60	120	
Ge Internal standard	72	3	HMI He	503087	1.72	506946	99.24	60	120	
In Internal Standard	115	3	HMI He	2042510	4.06	2020064	101.11	60	120	
Ir (IS)	193	3	HMI He	4696874	1.03	4640582	101.21	60	120	

Linear Range Sample (LRS) Report

Sample Table

Sample Name	lra-7526066
Data File Name	340_LR.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:41:44-07:00
Sample Type	LR
Dilution	1
Comment	
ISTD Ref File Name	333CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	2080.991	ppb	2.464	83107	2000	104.0	90	110	
Al	27	3	45	4.077	ppb	87.935	140	50000	0.0	90	110	LRS Main CR1 Failed
V	51	3	72	2232.658	ppb	3.112	1068091	2000	111.6	90	110	LRS Main CR1 Failed
Cr	52	3	72	5279.620	ppb	1.800	3203355	5000	105.6	90	110	
Mn	55	3	72	10548.119	ppb	2.541	3357238	10000	105.5	90	110	
Co	59	3	72	2168.856	ppb	1.362	2170152	2000	108.4	90	110	
Ni	60	3	72	5338.498	ppb	1.538	1474551	5000	106.8	90	110	
Cu	63	3	72	5648.773	ppb	1.593	4239678	5000	113.0	90	110	LRS Main CR1 Failed
Zn	66	3	72	5212.124	ppb	1.530	672447	5000	104.2	90	110	
As	75	3	72	2073.209	ppb	0.969	184808	2000	103.7	90	110	
Se	78	2	72	2169.895	ppb	1.543	100019	2000	108.5	90	110	
(Se)	78	3	72	2081.097	ppb	1.553	10956	2000	104.1	90	110	
Sr	88	3	72	5393.953	ppb	3.544	2212986	2000	269.7	90	110	LRS Main CR1 Failed
Mo	95	3	115	1977.067	ppb	3.844	850208	2000	98.9	90	110	
Cd	111	3	115	2021.314	ppb	1.133	414279	2000	101.1	90	110	
Sn	120	3	115	2136.826	ppb	1.115	1336586	2000	106.8	90	110	
Sb	121	3	115	1003.793	ppb	1.052	622189	1000	100.4	90	110	
Ba	137	3	115	5232.581	ppb	1.475	1038257	5000	104.7	90	110	
Tl	205	3	193	1091.093	ppb	2.543	3542480	1000	109.1	90	110	
(Pb)	206	3	193	5285.073	ppb	1.177	5810706	5000	105.7	90	110	
(Pb)	207	3	193	5340.028	ppb	1.612	5104880	5000	106.8	90	110	
Pb	208	3	193	5415.121	ppb	1.159	23669419	5000	108.3	90	110	
Th	232	3	193	1043.305	ppb	2.741	4736102	1000	104.3	90	110	
U	238	3	193	2170.303	ppb	2.373	10299332	2000	108.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3364913	2.68	2889190	116.47	60	120	
Sc (IS)	45	3	HMI He	474274	2.76	434959	109.04	60	120	
Ge Internal standard	72	2	HMI H2	1865335	1.13	1562061	119.41	60	120	
Ge Internal standard	72	3	HMI He	563657	2.56	506946	111.19	60	120	
In Internal Standard	115	3	HMI He	2254530	1.58	2020064	111.61	60	120	
Ir (IS)	193	3	HMI He	5150553	2.51	4640582	110.99	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	342SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:46:22-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	0.037	ppb	0.037	396.11	3	2000	
Na	23	3	45	-20.718	ppb	-20.718	-15.09	19907	400000	
Mg	24	3	45	-0.271	ppb	-0.271	-252.21	120	400000	
Al	27	3	45	83.950	ppb	83.950	16.27	1545	400000	
K	39	3	45	-32.284	ppb	-32.284	-88.96	14024	400000	
Ca	40	2	45	-6.404	ppb	-6.404	-2.96	7710	400000	
V	51	3	72	-0.030	ppb	-0.030	-115.11	82	2000	
Cr	52	3	72	-0.632	ppb	-0.632	-13.88	843	5000	
Mn	55	3	72	0.803	ppb	0.803	12.11	333	10000	
Fe	56	2	72	-1.153	ppb	-1.153	-15.50	4111	10000	
Co	59	3	72	0.121	ppb	0.121	14.66	170	2000	
Ni	60	3	72	-0.040	ppb	-0.040	-245.54	132	5000	
Cu	63	3	72	0.158	ppb	0.158	32.47	307	5000	
Zn	66	3	72	-0.124	ppb	-0.124	-68.71	95	5000	
As	75	3	72	0.132	ppb	0.132	79.61	40	2000	
Se	78	2	72	0.050	ppb	0.050	129.23	5	2000	
(Se)	78	3	72	2.317	ppb	2.317	62.64	22	2000	
Sr	88	3	72	0.154	ppb	0.154	38.10	115	4000	
Mo	95	3	115	0.675	ppb	0.675	22.62	328	2000	
Ag	107	3	115	-0.017	ppb	-0.017	-23.94	12	100	
Cd	111	3	115	0.130	ppb	0.130	21.84	28	2000	
Sn	120	3	115	-0.616	ppb	-0.616	-6.56	323	2000	
Sb	121	3	115	0.084	ppb	0.084	75.71	100	1000	
Ba	137	3	115	0.161	ppb	0.161	31.06	68	5000	
Tl	205	3	193	0.083	ppb	0.083	8.44	415	2000	
(Pb)	206	3	193	0.218	ppb	0.218	3.51	428	100	
(Pb)	207	3	193	0.245	ppb	0.245	23.23	530	100	
Pb	208	3	193	0.261	ppb	0.261	10.57	1951	5000	
Th	232	3	193	-0.945	ppb	-0.945	-2.98	4357	2000	
U	238	3	193	0.214	ppb	0.214	12.04	2364	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3305613	2.69	2889190	114.41	60	120	
Sc (IS)	45	3	HMI He	480417	1.64	434959	110.45	60	120	
Ge Internal standard	72	2	HMI H2	1833750	3.79	1562061	117.39	60	120	
Ge Internal standard	72	3	HMI He	570917	1.46	506946	112.62	60	120	
In Internal Standard	115	3	HMI He	2247481	0.73	2020064	111.26	60	120	
Ir (IS)	193	3	HMI He	5133418	0.56	4640582	110.62	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	343SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:48:17-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.005	ppb	-0.005	-1501.35	2	2000	
Na	23	3	45	-27.118	ppb	-27.118	-22.99	18988	400000	
Mg	24	3	45	-0.415	ppb	-0.415	-221.08	110	400000	
Al	27	3	45	21.081	ppb	21.081	11.31	434	400000	
K	39	3	45	-31.248	ppb	-31.248	-102.46	13854	400000	
Ca	40	2	45	-7.446	ppb	-7.446	-2.31	7353	400000	
V	51	3	72	-0.122	ppb	-0.122	-25.61	37	2000	
Cr	52	3	72	-0.797	ppb	-0.797	-5.80	731	5000	
Mn	55	3	72	0.384	ppb	0.384	30.33	195	10000	
Fe	56	2	72	-1.211	ppb	-1.211	-21.18	4155	10000	
Co	59	3	72	0.033	ppb	0.033	80.07	80	2000	
Ni	60	3	72	-0.214	ppb	-0.214	-32.78	82	5000	
Cu	63	3	72	0.076	ppb	0.076	61.34	242	5000	
Zn	66	3	72	-0.077	ppb	-0.077	-219.29	100	5000	
As	75	3	72	0.045	ppb	0.045	311.60	32	2000	
Se	78	2	72	-0.009	ppb	-0.009	-462.86	2	2000	
(Se)	78	3	72	2.360	ppb	2.360	43.77	22	2000	
Sr	88	3	72	0.052	ppb	0.052	74.82	72	4000	
Mo	95	3	115	0.186	ppb	0.186	18.10	118	2000	
Ag	107	3	115	-0.015	ppb	-0.015	-49.38	13	100	
Cd	111	3	115	0.024	ppb	0.024	153.68	7	2000	
Sn	120	3	115	-0.730	ppb	-0.730	-7.92	252	2000	
Sb	121	3	115	0.027	ppb	0.027	42.33	65	1000	
Ba	137	3	115	0.118	ppb	0.118	106.09	60	5000	
Tl	205	3	193	0.020	ppb	0.020	48.20	208	2000	
(Pb)	206	3	193	0.124	ppb	0.124	29.14	322	100	
(Pb)	207	3	193	0.117	ppb	0.117	15.79	403	100	
Pb	208	3	193	0.114	ppb	0.114	8.06	1298	5000	
Th	232	3	193	-1.010	ppb	-1.010	-0.61	4020	2000	
U	238	3	193	0.086	ppb	0.086	14.09	1741	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3366967	0.23	2889190	116.54	60	120	
Sc (IS)	45	3	HMI He	473068	2.47	434959	108.76	60	120	
Ge Internal standard	72	2	HMI H2	1885418	0.93	1562061	120.70	60	120	IS Failed
Ge Internal standard	72	3	HMI He	562925	2.12	506946	111.04	60	120	
In Internal Standard	115	3	HMI He	2241065	3.00	2020064	110.94	60	120	
Ir (IS)	193	3	HMI He	5077114	1.42	4640582	109.41	60	120	

Sample Report

Sample Table

Sample Name	rinse-7555127
Data File Name	344SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:50:11-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	333CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.047	ppb	-0.047	0.00	0	2000	
Na	23	3	45	-22.185	ppb	-22.185	-23.91	19282	400000	
Mg	24	3	45	-0.408	ppb	-0.408	-50.60	110	400000	
Al	27	3	45	7.856	ppb	7.856	27.18	204	400000	
K	39	3	45	-43.322	ppb	-43.322	-70.90	13273	400000	
Ca	40	2	45	-7.456	ppb	-7.456	-3.90	7516	400000	
V	51	3	72	-0.136	ppb	-0.136	-12.77	30	2000	
Cr	52	3	72	-0.896	ppb	-0.896	-7.22	668	5000	
Mn	55	3	72	0.307	ppb	0.307	28.19	170	10000	
Fe	56	2	72	-1.407	ppb	-1.407	-11.69	3998	10000	
Co	59	3	72	0.015	ppb	0.015	192.06	62	2000	
Ni	60	3	72	-0.208	ppb	-0.208	-65.00	83	5000	
Cu	63	3	72	0.023	ppb	0.023	178.33	200	5000	
Zn	66	3	72	-0.512	ppb	-0.512	-12.73	43	5000	
As	75	3	72	-0.049	ppb	-0.049	-396.24	23	2000	
Se	78	2	72	-0.024	ppb	-0.024	-197.46	1	2000	
(Se)	78	3	72	2.087	ppb	2.087	49.14	20	2000	
Sr	88	3	72	-0.020	ppb	-0.020	-251.19	42	4000	
Mo	95	3	115	0.077	ppb	0.077	8.29	72	2000	
Ag	107	3	115	-0.020	ppb	-0.020	-9.69	7	100	
Cd	111	3	115	0.016	ppb	0.016	4.47	5	2000	
Sn	120	3	115	-0.845	ppb	-0.845	-6.72	178	2000	
Sb	121	3	115	-0.005	ppb	-0.005	-277.05	45	1000	
Ba	137	3	115	0.002	ppb	0.002	2656.17	37	5000	
Tl	205	3	193	0.015	ppb	0.015	67.23	188	2000	
(Pb)	206	3	193	0.042	ppb	0.042	105.82	228	100	
(Pb)	207	3	193	0.055	ppb	0.055	194.87	340	100	
Pb	208	3	193	0.057	ppb	0.057	31.26	1030	5000	
Th	232	3	193	-1.015	ppb	-1.015	-1.80	3924	2000	
U	238	3	193	0.042	ppb	0.042	57.03	1501	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3443824	1.11	2889190	119.20	60	120	
Sc (IS)	45	3	HMI He	468907	3.08	434959	107.80	60	120	
Ge Internal standard	72	2	HMI H2	1933573	0.99	1562061	123.78	60	120	IS Failed
Ge Internal standard	72	3	HMI He	559944	1.94	506946	110.45	60	120	
In Internal Standard	115	3	HMI He	2229773	2.85	2020064	110.38	60	120	
Ir (IS)	193	3	HMI He	4982511	3.09	4640582	107.37	60	120	

Calibration Blank Report

Sample Table

Sample Name2	ICIS-7569070
Data File Name	345CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Method	
Acq Date Time	2023-01-31T13:52:04-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	3	2598.08
Na	23	45	3	HMI He	20278	0.01
Mg	24	45	3	HMI He	133	17.17
Al	27	45	3	HMI He	130	10.24
K	39	45	3	HMI He	14469	0.01
Ca	40	45	2	HMI H2	10665	0.04
V	51	72	3	HMI He	123	26.79
Cr	52	72	3	HMI He	1274	0.39
Mn	55	72	3	HMI He	250	11.79
Fe	56	72	2	HMI H2	4993	0.07
Co	59	72	3	HMI He	108	28.38
Ni	60	72	3	HMI He	112	19.79
Cu	63	72	3	HMI He	371	4.04
Zn	66	72	3	HMI He	133	27.62
As	75	72	3	HMI He	28	143.94
Se	78	72	2	HMI H2	2	0.00
(Se)	78	72	3	HMI He	8	415.69
Sr	88	72	3	HMI He	80	13.55
Mo	95	115	3	HMI He	92	29.37
Ag	107	115	3	HMI He	30	96.25
Cd	111	115	3	HMI He	8	415.69
Sn	120	115	3	HMI He	923	0.22
Sb	121	115	3	HMI He	110	14.32
Ba	137	115	3	HMI He	62	20.10
Tl	205	193	3	HMI He	190	3.67
(Pb)	206	193	3	HMI He	418	2.72
(Pb)	207	193	3	HMI He	521	1.71
Pb	208	193	3	HMI He	1811	0.08
Th	232	193	3	HMI He	16975	0.13
U	238	193	3	HMI He	1629	0.23

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc (IS)	45	2	HMI H2	3174786	0.92
Sc (IS)	45	3	HMI He	479501	0.43
Ge Internal standard	72	2	HMI H2	1728837	0.58
Ge Internal standard	72	3	HMI He	565766	2.31
In Internal Standard	115	3	HMI He	2246723	1.22
Ir (IS)	193	3	HMI He	5134604	0.61

Calibration Standard Report

Sample Table

Sample Name	IC-7569072
Data File Name	346CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T13:53:57-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	7	649.52
Na	23	45	3	HMI He	9400484	0.00
Mg	24	45	3	HMI He	1008684	0.00
Al	27	45	3	HMI He	467	2.17
K	39	45	3	HMI He	709623	0.00
V	51	72	3	HMI He	100	21.81
Cr	52	72	3	HMI He	1279	0.50
Mn	55	72	3	HMI He	222	6.14
Co	59	72	3	HMI He	110	46.95
Ni	60	72	3	HMI He	117	14.85
Cu	63	72	3	HMI He	433	2.03
Zn	66	72	3	HMI He	302	3.13
As	75	72	3	HMI He	28	129.71
Se	78	72	2	HMI H2	1	12990.38
(Se)	78	72	3	HMI He	13	162.22
Sr	88	72	3	HMI He	381	3.00
Mo	95	115	3	HMI He	117	2.12
Ag	107	115	3	HMI He	58	51.63
Cd	111	115	3	HMI He	7	1718.96
Sn	120	115	3	HMI He	813	0.68
Sb	121	115	3	HMI He	143	17.27
Ba	137	115	3	HMI He	138	6.04
Tl	205	193	3	HMI He	210	6.90
(Pb)	206	193	3	HMI He	352	4.46
(Pb)	207	193	3	HMI He	458	1.10
Pb	208	193	3	HMI He	1539	0.20
Th	232	193	3	HMI He	8032	0.21
U	238	193	3	HMI He	1581	0.20

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3174226	0.82	3174786	99.98	60	120	
Sc (IS)	45	3	HMI He	457856	3.50	479501	95.49	60	120	
Ge Internal standard	72	2	HMI H2	1674930	2.33	1728837	96.88	60	120	
Ge Internal standard	72	3	HMI He	531115	1.86	565766	93.88	60	120	
In Internal Standard	115	3	HMI He	2162731	2.78	2246723	96.26	60	120	
Ir (IS)	193	3	HMI He	4966223	2.05	5134604	96.72	60	120	

Calibration Standard Report

Sample Table

Sample Name	IC-7569071
Data File Name	347CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
method	
Acq Date Time	2023-01-31T13:56:11-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Be	9	6	2	HMI H2	4039	0.01
Na	23	45	3	HMI He	217892	0.00
Mg	24	45	3	HMI He	99002	0.00
Al	27	45	3	HMI He	35166	0.01
K	39	45	3	HMI He	86948	0.00
V	51	72	3	HMI He	48864	0.01
Cr	52	72	3	HMI He	63817	0.01
Mn	55	72	3	HMI He	32826	0.01
Co	59	72	3	HMI He	104622	0.00
Ni	60	72	3	HMI He	28949	0.00
Cu	63	72	3	HMI He	78736	0.01
Zn	66	72	3	HMI He	13573	0.03
As	75	72	3	HMI He	9374	0.02
Se	78	72	2	HMI H2	4617	0.02
(Se)	78	72	3	HMI He	508	1.18
Sr	88	72	3	HMI He	86608	0.00
Mo	95	115	3	HMI He	42462	0.00
Ag	107	115	3	HMI He	145260	0.00
Cd	111	115	3	HMI He	20564	0.01
Sn	120	115	3	HMI He	62802	0.00
Sb	121	115	3	HMI He	62922	0.00
Ba	137	115	3	HMI He	20509	0.01
Tl	205	193	3	HMI He	323686	0.00
(Pb)	206	193	3	HMI He	110119	0.00
(Pb)	207	193	3	HMI He	96140	0.00
Pb	208	193	3	HMI He	442491	0.00
Th	232	193	3	HMI He	458057	0.00
U	238	193	3	HMI He	480252	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3335488	3.77	3174786	105.06	60	120	
Sc (IS)	45	3	HMI He	475771	4.66	479501	99.22	60	120	
Ge Internal standard	72	2	HMI H2	1908564	0.92	1728837	110.40	60	120	
Ge Internal standard	72	3	HMI He	583876	2.36	565766	103.20	60	120	
In Internal Standard	115	3	HMI He	2239092	5.09	2246723	99.66	60	120	
Ir (IS)	193	3	HMI He	5184810	4.57	5134604	100.98	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV-7569077
Data File Name	348_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T13:58:18-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	41.689	ppb	4.659	1621	40	104.2	90	110	
Na	23	3	45	13347.290	ppb	2.134	1213526	12800	104.3	90	110	
Mg	24	3	45	4443.096	ppb	1.360	214004	4800	92.6	90	110	
Al	27	3	45	807.785	ppb	3.356	13116	800	101.0	90	110	
K	39	3	45	4746.423	ppb	3.556	170763	4800	98.9	90	110	
Ca	40	2	45	4958.759	ppb	1.480	2279213	4800	103.3	90	110	
V	51	3	72	42.130	ppb	2.093	17999	40	105.3	90	110	
Cr	52	3	72	41.882	ppb	2.539	23959	40	104.7	90	110	
Mn	55	3	72	42.174	ppb	1.224	12194	40	105.4	90	110	
Fe	56	2	72	857.570	ppb	1.468	995498	800	107.2	90	110	
Co	59	3	72	41.112	ppb	0.473	37547	40	102.8	90	110	
Ni	60	3	72	41.099	ppb	0.955	10432	40	102.7	90	110	
Cu	63	3	72	42.462	ppb	0.561	29323	40	106.2	90	110	
Zn	66	3	72	82.813	ppb	1.805	9820	80	103.5	90	110	
As	75	3	72	39.336	ppb	6.928	3230	40	98.3	90	110	
Se	78	2	72	43.415	ppb	2.944	1804	40	108.5	90	110	
(Se)	78	3	72	46.896	ppb	9.378	212	40	117.2	90	110	>+\-10%
Sr	88	3	72	124.193	ppb	1.012	46902	120	103.5	90	110	
Mo	95	3	115	40.689	ppb	1.431	15796	40	101.7	90	110	
Ag	107	3	115	78.693	ppb	2.619	104144	80	98.4	90	110	
Cd	111	3	115	40.113	ppb	2.695	7522	40	100.3	90	110	
Sn	120	3	115	39.765	ppb	2.198	23267	40	99.4	90	110	
Sb	121	3	115	40.610	ppb	0.139	23342	40	101.5	90	110	
Ba	137	3	115	37.665	ppb	4.204	7075	40	94.2	90	110	
Tl	205	3	193	40.855	ppb	0.554	119261	40	102.1	90	110	
(Pb)	206	3	193	40.151	ppb	2.163	40055	40	100.4	90	110	
(Pb)	207	3	193	40.403	ppb	1.070	35280	40	101.0	90	110	
Pb	208	3	193	40.550	ppb	1.485	162636	40	101.4	90	110	
Th	232	3	193	81.455	ppb	1.975	338931	80	101.8	90	110	
U	238	3	193	41.720	ppb	2.497	181355	40	104.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3222087	1.42	3174786	101.49	60	120	
Sc (IS)	45	3	HMI He	436987	2.08	479501	91.13	60	120	
Ge Internal standard	72	2	HMI H2	1716250	1.36	1728837	99.27	60	120	
Ge Internal standard	72	3	HMI He	508873	1.45	565766	89.94	60	120	
In Internal Standard	115	3	HMI He	2038642	0.34	2246723	90.74	60	120	
Ir (IS)	193	3	HMI He	4667651	1.21	5134604	90.91	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	349_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:01:53-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	51.019	ppb	4.212	1972	50	102.0	90	110	
Na	23	3	45	52016.599	ppb	0.638	5051987	51000	102.0	90	110	
Mg	24	3	45	10480.539	ppb	0.498	545245	11000	95.3	90	110	
Al	27	3	45	977.348	ppb	0.934	17124	1000	97.7	90	110	
K	39	3	45	10789.601	ppb	2.026	401387	11000	98.1	90	110	
Ca	40	2	45	11873.194	ppb	5.292	5365971	11000	107.9	90	110	
V	51	3	72	51.208	ppb	3.952	23924	50	102.4	90	110	
Cr	52	3	72	49.852	ppb	1.284	30984	50	99.7	90	110	
Mn	55	3	72	48.523	ppb	0.806	15321	50	97.0	90	110	
Fe	56	2	72	1027.525	ppb	3.730	1234322	1000	102.8	90	110	
Co	59	3	72	48.641	ppb	0.941	48602	50	97.3	90	110	
Ni	60	3	72	48.574	ppb	1.565	13477	50	97.1	90	110	
Cu	63	3	72	49.082	ppb	1.551	37041	50	98.2	90	110	
Zn	66	3	72	50.109	ppb	0.485	6555	50	100.2	90	110	
As	75	3	72	48.948	ppb	3.654	4392	50	97.9	90	110	
Se	78	2	72	50.557	ppb	6.518	2176	50	101.1	90	110	
(Se)	78	3	72	52.863	ppb	23.588	260	50	105.7	90	110	
Sr	88	3	72	98.744	ppb	1.176	40832	100	98.7	90	110	
Mo	95	3	115	48.435	ppb	1.793	20077	50	96.9	90	110	
Ag	107	3	115	48.776	ppb	1.408	68992	50	97.6	90	110	
Cd	111	3	115	48.247	ppb	2.059	9667	50	96.5	90	110	
Sn	120	3	115	48.868	ppb	0.702	30353	50	97.7	90	110	
Sb	121	3	115	47.930	ppb	2.737	29419	50	95.9	90	110	
Ba	137	3	115	47.873	ppb	3.347	9592	50	95.7	90	110	
Tl	205	3	193	48.077	ppb	0.654	152788	50	96.2	90	110	
(Pb)	206	3	193	47.634	ppb	0.245	51673	50	95.3	90	110	
(Pb)	207	3	193	48.618	ppb	1.596	46119	50	97.2	90	110	
Pb	208	3	193	47.599	ppb	0.687	207582	50	95.2	90	110	
Th	232	3	193	49.579	ppb	0.717	231235	50	99.2	90	110	
U	238	3	193	47.570	ppb	1.203	224951	50	95.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3181499	4.60	3174786	100.21	60	120	
Sc (IS)	45	3	HMI He	472074	0.53	479501	98.45	60	120	
Ge Internal standard	72	2	HMI H2	1778724	3.86	1728837	102.89	60	120	
Ge Internal standard	72	3	HMI He	556995	0.29	565766	98.45	60	120	
In Internal Standard	115	3	HMI He	2178668	0.64	2246723	96.97	60	120	
Ir (IS)	193	3	HMI He	5082777	1.07	5134604	98.99	60	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB-7569070
Data File Name	350_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:03:45-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Be	9	2	6	-0.045	ppb	-153.9	2	0.5	
Na	23	3	45	23.213	ppb	18.7	23102	25	
Mg	24	3	45	1.726	ppb	47.0	230	25	
Al	27	3	45	1.123	ppb	146.8	153	15	
K	39	3	45	-7.542	ppb	-571.5	14542	50	
V	51	3	72	0.023	ppb	211.7	140	1	
Cr	52	3	72	-0.216	ppb	-33.6	1198	1	
Mn	55	3	72	-0.228	ppb	-48.9	187	0.5	
Co	59	3	72	-0.022	ppb	-4.6	90	0.5	
Ni	60	3	72	0.091	ppb	41.3	143	1	
Cu	63	3	72	-0.210	ppb	-9.9	222	1	
Zn	66	3	72	0.047	ppb	190.9	147	5	
As	75	3	72	0.074	ppb	285.8	37	1	
Se	78	2	72	-0.019	ppb	-126.4	1	1	
(Se)	78	3	72	0.254	ppb	771.6	10	1	
Sr	88	3	72	-0.054	ppb	-73.6	60	0.5	
Mo	95	3	115	-0.014	ppb	-535.2	88	0.5	
Ag	107	3	115	0.015	ppb	24.1	53	1	
Cd	111	3	115	-0.025	ppb	-106.1	3	0.5	
Sn	120	3	115	-0.135	ppb	-9.9	870	1	
Sb	121	3	115	-0.031	ppb	-45.0	93	0.6	
Ba	137	3	115	0.029	ppb	129.7	70	0.5	
Tl	205	3	193	-0.001	ppb	-1405.7	195	0.1	
(Pb)	206	3	193	-0.201	ppb	-8.2	208	1	
(Pb)	207	3	193	-0.156	ppb	-9.8	390	1	
Pb	208	3	193	-0.179	ppb	-9.4	1071	0.5	
Th	232	3	193	-1.493	ppb	-21.1	10901	1	
U	238	3	193	-0.020	ppb	-74.0	1598	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3401764	1.01	3174786	107.15	60	120	
Sc (IS)	45	3	HMI He	491065	0.97	479501	102.41	60	120	
Ge Internal standard	72	2	HMI H2	1935965	0.73	1728837	111.98	60	120	
Ge Internal standard	72	3	HMI He	592858	1.18	565766	104.79	60	120	
In Internal Standard	115	3	HMI He	2328760	1.96	2246723	103.65	60	120	
Ir (IS)	193	3	HMI He	5348423	1.85	5134604	104.16	60	120	

Blank Report

Sample Table

Sample Name	mb 280-600679/1-a
Data File Name	351_BLK.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:05:39-07:00
Sample Type	Blank
Dilution	1
Comment	600679 6020B
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Be	9	2	6	-0.085	ppb	0	0	0.5
Na	23	3	45	20.451	ppb	6.370581787	22648	25
Mg	24	3	45	0.457	ppb	105.4343347	160	25
Al	27	3	45	-2.909	ppb	-18.57126958	80	15
K	39	3	45	3.399	ppb	654.7367015	14829	50
V	51	3	72	-0.086	ppb	-77.27767207	83	1
Cr	52	3	72	-0.377	ppb	-28.95533248	1061	1
Mn	55	3	72	-0.241	ppb	-22.18633791	177	0.5
Co	59	3	72	-0.043	ppb	-29.53553597	65	0.5
Ni	60	3	72	-0.045	ppb	-105.2084104	100	1
Cu	63	3	72	-0.198	ppb	-22.09932841	223	1
Zn	66	3	72	0.034	ppb	936.1896029	140	5
As	75	3	72	0.014	ppb	774.8103986	30	1
(Se)	78	3	72	3.045	ppb	84.68442713	23	1
Sr	88	3	72	-0.062	ppb	-35.58950354	55	0.5
Mo	95	3	115	-0.079	ppb	-49.52433988	58	0.5
Ag	107	3	115	0.000	ppb	-4597.891289	30	1
Cd	111	3	115	-0.040	ppb	-1.6271E-06	0	0.5
Sn	120	3	115	-0.235	ppb	-54.5317627	786	1
Sb	121	3	115	-0.072	ppb	-11.93078906	65	0.6
Ba	137	3	115	-0.149	ppb	-77.03588741	32	0.5
Tl	205	3	193	-0.022	ppb	-4.452236699	122	0.1
(Pb)	206	3	193	-0.175	ppb	-11.04579559	232	1
(Pb)	207	3	193	-0.173	ppb	-37.67555932	363	1
Pb	208	3	193	-0.183	ppb	-8.535415107	1028	0.5
Th	232	3	193	-2.654	ppb	-2.018129828	5479	1
U	238	3	193	-0.051	ppb	-16.56610771	1408	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3519813	0.26	3174786	110.87	60	120	
Sc (IS)	45	3	HMI He	487227	0.64	479501	101.61	60	120	
Ge Internal standard	72	2	HMI H2	1946643	2.39	1728837	112.60	60	120	
Ge Internal standard	72	3	HMI He	573864	1.17	565766	101.43	60	120	
In Internal Standard	115	3	HMI He	2273920	1.83	2246723	101.21	60	120	
Ir (IS)	193	3	HMI He	5215013	0.64	5134604	101.57	60	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	lcs 280-600679/2-a
Data File Name	352_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:07:34-07:00
Sample Type	LCS
Dilution	1
Analyst	Denver Metals
Comment	600679 6020B
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	2	6	40.157	40.157	ppb	4.345	1483	40	100.4	80	120	
Na	23	3	45	806.582	806.582	ppb	2.081	95767	40	2016.5	80	120	>+/-20%
Mg	24	3	45	665.019	665.019	ppb	0.934	33935	40	1662.5	80	120	>+/-20%
Al	27	3	45	743.528	743.528	ppb	3.202	12762	40	1858.8	80	120	>+/-20%
K	39	3	45	742.473	742.473	ppb	2.374	39963	40	1856.2	80	120	>+/-20%
Ca	40	2	45	779.574	779.574	ppb	1.937	354817	40	1948.9	80	120	>+/-20%
V	51	3	72	39.553	39.553	ppb	0.568	18031	40	98.9	80	120	
Cr	52	3	72	39.953	39.953	ppb	2.591	24434	40	99.9	80	120	
Mn	55	3	72	40.863	40.863	ppb	3.658	12611	40	102.2	80	120	
Fe	56	2	72	894.776	894.776	ppb	3.136	1016460	40	2236.9	80	120	>+/-20%
(Fe)	56	3	72	830.933	830.933	ppb	1.242	423084	40	2077.3	80	120	>+/-20%
Co	59	3	72	39.095	39.095	ppb	1.373	38075	40	97.7	80	120	
Ni	60	3	72	39.934	39.934	ppb	1.763	10814	40	99.8	80	120	
Cu	63	3	72	40.194	40.194	ppb	0.551	29615	40	100.5	80	120	
Zn	66	3	72	42.352	42.352	ppb	3.087	5418	40	105.9	80	120	
As	75	3	72	37.467	37.467	ppb	3.917	3280	40	93.7	80	120	
Se	78	2	72	41.420	41.420	ppb	6.520	1684	40	103.6	80	120	
(Se)	78	3	72	49.315	49.315	ppb	12.239	237	40	123.3	80	120	>+/-20%
Sr	88	3	72	76.964	76.964	ppb	1.558	31018	40	192.4	80	120	>+/-20%
Mo	95	3	115	37.972	37.972	ppb	4.528	15368	40	94.9	80	120	
Ag	107	3	115	37.806	37.806	ppb	2.756	52171	40	94.5	80	120	
Cd	111	3	115	38.669	38.669	ppb	0.784	7563	40	96.7	80	120	
Sn	120	3	115	35.903	35.903	ppb	2.968	21984	40	89.8	80	120	
Sb	121	3	115	37.989	37.989	ppb	2.018	22775	40	95.0	80	120	
Ba	137	3	115	38.749	38.749	ppb	4.141	7583	40	96.9	80	120	
Tl	205	3	193	38.537	38.537	ppb	2.117	120076	40	96.3	80	120	
(Pb)	206	3	193	37.750	37.750	ppb	2.087	40225	40	94.4	80	120	
(Pb)	207	3	193	37.865	37.865	ppb	0.869	35323	40	94.7	80	120	
Pb	208	3	193	37.889	37.889	ppb	1.592	162324	40	94.7	80	120	
Th	232	3	193	35.343	35.343	ppb	1.126	166313	40	88.4	80	120	
U	238	3	193	37.734	37.734	ppb	0.062	175253	40	94.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3111751	1.92	3174786	98.01	60	120	
Sc (IS)	45	3	HMI He	461376	0.76	479501	96.22	60	120	
Ge Internal standard	72	2	HMI H2	1680764	2.55	1728837	97.22	60	120	
Ge Internal standard	72	3	HMI He	542636	1.24	565766	95.91	60	120	
In Internal Standard	115	3	HMI He	2126148	2.71	2246723	94.63	60	120	
Ir (IS)	193	3	HMI He	4982535	1.46	5134604	97.04	60	120	

Sample Report

Sample Table

Sample Name	280-171347-c-2-e
Data File Name	353SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:09:27-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.085	ppb	-0.085	0.00	0	2000	
Na	23	3	45	21436.986	ppb	21436.986	2.89	2071509	400000	
Mg	24	3	45	6537.730	ppb	6537.730	1.29	336617	400000	
Al	27	3	45	23.010	ppb	23.010	19.21	524	400000	
K	39	3	45	1237.697	ppb	1237.697	2.99	58041	400000	
Ca	40	2	45	18582.555	ppb	18582.555	0.65	8645288	400000	
V	51	3	72	0.005	ppb	0.005	953.24	127	2000	
Cr	52	3	72	3.375	ppb	3.375	14.03	3364	5000	
Mn	55	3	72	1.842	ppb	1.842	13.57	845	10000	
Fe	56	2	72	53.312	ppb	53.312	4.08	71723	10000	
Co	59	3	72	0.076	ppb	0.076	84.51	187	2000	
Ni	60	3	72	2.236	ppb	2.236	7.62	748	5000	
Cu	63	3	72	0.472	ppb	0.472	13.94	741	5000	
Zn	66	3	72	1.065	ppb	1.065	10.58	277	5000	
As	75	3	72	0.196	ppb	0.196	107.23	47	2000	
Se	78	2	72	0.773	ppb	0.773	11.90	37	2000	
(Se)	78	3	72	0.957	ppb	0.957	153.33	13	2000	
Sr	88	3	72	190.721	ppb	190.721	2.38	81229	4000	
Mo	95	3	115	0.428	ppb	0.428	31.74	272	2000	
Ag	107	3	115	0.008	ppb	0.008	122.27	42	100	
Cd	111	3	115	-0.008	ppb	-0.008	-506.67	7	2000	
Sn	120	3	115	-0.195	ppb	-0.195	-72.58	795	2000	
Sb	121	3	115	0.023	ppb	0.023	88.77	123	1000	
Ba	137	3	115	4.383	ppb	4.383	4.01	953	5000	
Tl	205	3	193	-0.014	ppb	-0.014	-47.46	142	2000	
(Pb)	206	3	193	-0.166	ppb	-0.166	-20.49	233	100	
(Pb)	207	3	193	-0.118	ppb	-0.118	-49.23	401	100	
Pb	208	3	193	-0.150	ppb	-0.150	-12.94	1133	5000	
Th	232	3	193	-1.661	ppb	-1.661	-13.66	9532	2000	
U	238	3	193	2.447	ppb	2.447	1.32	12944	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3272519	1.64	3174786	103.08	60	120	
Sc (IS)	45	3	HMI He	467192	2.05	479501	97.43	60	120	
Ge Internal standard	72	2	HMI H2	1851664	3.41	1728837	107.10	60	120	
Ge Internal standard	72	3	HMI He	574529	3.79	565766	101.55	60	120	
In Internal Standard	115	3	HMI He	2226382	1.68	2246723	99.09	60	120	
Ir (IS)	193	3	HMI He	5023121	2.98	5134604	97.83	60	120	

Sample Report

Sample Table

Sample Name	280-171331-e-1-e
Data File Name	354SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:11:20-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	-150.91	2	2000	
Na	23	3	45	8182.826	ppb	8182.826	1.86	823968	400000	
Mg	24	3	45	3496.959	ppb	3496.959	1.90	184820	400000	
Al	27	3	45	770.803	ppb	770.803	5.16	13748	400000	
K	39	3	45	691.070	ppb	691.070	4.80	39642	400000	
Ca	40	2	45	8682.248	ppb	8682.248	1.97	4316645	400000	
V	51	3	72	2.252	ppb	2.252	10.33	1259	2000	
Cr	52	3	72	0.824	ppb	0.824	17.19	1884	5000	
Mn	55	3	72	218.131	ppb	218.131	1.25	73393	10000	
Fe	56	2	72	1086.766	ppb	1086.766	3.43	1486216	10000	
Co	59	3	72	0.474	ppb	0.474	11.77	625	2000	
Ni	60	3	72	1.375	ppb	1.375	14.52	526	5000	
Cu	63	3	72	2.402	ppb	2.402	2.74	2331	5000	
Zn	66	3	72	11.712	ppb	11.712	9.23	1763	5000	
As	75	3	72	0.276	ppb	0.276	102.95	57	2000	
Se	78	2	72	0.048	ppb	0.048	100.44	5	2000	
(Se)	78	3	72	2.179	ppb	2.179	161.74	20	2000	
Sr	88	3	72	84.422	ppb	84.422	1.83	37685	4000	
Mo	95	3	115	0.644	ppb	0.644	17.02	370	2000	
Ag	107	3	115	0.001	ppb	0.001	942.97	32	100	
Cd	111	3	115	0.039	ppb	0.039	187.68	17	2000	
Sn	120	3	115	-0.344	ppb	-0.344	-32.85	716	2000	
Sb	121	3	115	0.169	ppb	0.169	39.77	218	1000	
Ba	137	3	115	18.176	ppb	18.176	3.61	3834	5000	
Tl	205	3	193	-0.003	ppb	-0.003	-152.99	178	2000	
(Pb)	206	3	193	0.424	ppb	0.424	17.71	875	100	
(Pb)	207	3	193	0.346	ppb	0.346	33.80	846	100	
Pb	208	3	193	0.410	ppb	0.410	6.52	3585	5000	
Th	232	3	193	-2.283	ppb	-2.283	-2.49	6982	2000	
U	238	3	193	0.439	ppb	0.439	7.62	3695	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3492576	2.10	3174786	110.01	60	120	
Sc (IS)	45	3	HMI He	479395	1.95	479501	99.98	60	120	
Ge Internal standard	72	2	HMI H2	2024721	1.47	1728837	117.11	60	120	
Ge Internal standard	72	3	HMI He	601078	0.64	565766	106.24	60	120	
In Internal Standard	115	3	HMI He	2270535	1.67	2246723	101.06	60	120	
Ir (IS)	193	3	HMI He	5110995	1.57	5134604	99.54	60	120	

Sample Report

Sample Table

Sample Name	280-171444-e-1-g
Data File Name	355SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:13:14-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.001	ppb	-0.001	-5176.66	3	2000	
Na	23	3	45	28404.506	ppb	28404.506	1.95	2834110	400000	
Mg	24	3	45	1539.889	ppb	1539.889	3.47	82132	400000	
Al	27	3	45	56.969	ppb	56.969	26.63	1148	400000	
K	39	3	45	376.867	ppb	376.867	5.88	28421	400000	
Ca	40	2	45	4134.648	ppb	4134.648	1.85	2024173	400000	
V	51	3	72	0.093	ppb	0.093	91.62	177	2000	
Cr	52	3	72	-0.279	ppb	-0.279	-55.34	1173	5000	
Mn	55	3	72	1.224	ppb	1.224	16.30	673	10000	
Fe	56	2	72	87.564	ppb	87.564	0.70	117794	10000	
Co	59	3	72	-0.052	ppb	-0.052	-6.64	58	2000	
Ni	60	3	72	0.095	ppb	0.095	115.78	147	5000	
Cu	63	3	72	0.020	ppb	0.020	277.89	410	5000	
Zn	66	3	72	1.207	ppb	1.207	40.06	310	5000	
As	75	3	72	0.263	ppb	0.263	56.25	55	2000	
Se	78	2	72	0.214	ppb	0.214	43.56	12	2000	
(Se)	78	3	72	0.528	ppb	0.528	264.79	12	2000	
Sr	88	3	72	52.431	ppb	52.431	2.30	23363	4000	
Mo	95	3	115	1.677	ppb	1.677	6.23	803	2000	
Ag	107	3	115	0.008	ppb	0.008	88.80	42	100	
Cd	111	3	115	-0.016	ppb	-0.016	-152.71	5	2000	
Sn	120	3	115	-0.269	ppb	-0.269	-8.42	753	2000	
Sb	121	3	115	0.249	ppb	0.249	21.12	267	1000	
Ba	137	3	115	8.340	ppb	8.340	2.19	1769	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-8.51	132	2000	
(Pb)	206	3	193	-0.199	ppb	-0.199	-8.93	202	100	
(Pb)	207	3	193	-0.216	ppb	-0.216	-7.65	317	100	
Pb	208	3	193	-0.179	ppb	-0.179	-5.94	1030	5000	
Th	232	3	193	-2.847	ppb	-2.847	-1.77	4540	2000	
U	238	3	193	0.155	ppb	0.155	17.59	2359	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3427827	2.51	3174786	107.97	60	120	
Sc (IS)	45	3	HMI He	483288	1.44	479501	100.79	60	120	
Ge Internal standard	72	2	HMI H2	1905571	2.49	1728837	110.22	60	120	
Ge Internal standard	72	3	HMI He	599479	3.52	565766	105.96	60	120	
In Internal Standard	115	3	HMI He	2239882	1.69	2246723	99.70	60	120	
Ir (IS)	193	3	HMI He	5123834	2.20	5134604	99.79	60	120	

Sample Report

Sample Table

Sample Name	280-171444-e-1-gSD@5
Data File Name	356SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:15:07-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	-0.046	ppb	-0.046	-149.76	2	2000	
Na	23	3	45	5615.158	ppb	5615.158	0.84	578353	400000	
Mg	24	3	45	324.493	ppb	324.493	4.32	17468	400000	
Al	27	3	45	8.701	ppb	8.701	32.60	287	400000	
K	39	3	45	85.073	ppb	85.073	18.89	17766	400000	
Ca	40	2	45	838.811	ppb	838.811	3.21	422856	400000	
V	51	3	72	-0.015	ppb	-0.015	-247.99	120	2000	
Cr	52	3	72	-0.039	ppb	-0.039	-213.86	1296	5000	
Mn	55	3	72	-0.059	ppb	-0.059	-248.61	240	10000	
Fe	56	2	72	15.715	ppb	15.715	2.20	26465	10000	
Co	59	3	72	-0.030	ppb	-0.030	-55.98	80	2000	
Ni	60	3	72	0.045	ppb	0.045	117.12	128	5000	
Cu	63	3	72	-0.141	ppb	-0.141	-35.81	273	5000	
Zn	66	3	72	2.984	ppb	2.984	5.09	541	5000	
As	75	3	72	0.131	ppb	0.131	116.35	42	2000	
Se	78	2	72	0.078	ppb	0.078	54.51	6	2000	
(Se)	78	3	72	1.602	ppb	1.602	143.56	17	2000	
Sr	88	3	72	11.456	ppb	11.456	1.86	5062	4000	
Mo	95	3	115	0.243	ppb	0.243	3.79	195	2000	
Ag	107	3	115	-0.001	ppb	-0.001	-357.44	28	100	
Cd	111	3	115	-0.040	ppb	-0.040	0.00	0	2000	
Sn	120	3	115	-0.095	ppb	-0.095	-6.95	865	2000	
Sb	121	3	115	0.005	ppb	0.005	477.18	113	1000	
Ba	137	3	115	1.637	ppb	1.637	5.87	398	5000	
Tl	205	3	193	-0.018	ppb	-0.018	-57.65	133	2000	
(Pb)	206	3	193	-0.225	ppb	-0.225	-10.08	175	100	
(Pb)	207	3	193	-0.224	ppb	-0.224	-26.86	312	100	
Pb	208	3	193	-0.214	ppb	-0.214	-10.13	881	5000	
Th	232	3	193	-2.947	ppb	-2.947	-0.60	4147	2000	
U	238	3	193	-0.003	ppb	-0.003	-238.02	1626	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3453867	1.11	3174786	108.79	60	120	
Sc (IS)	45	3	HMI He	484804	0.45	479501	101.11	60	120	
Ge Internal standard	72	2	HMI H2	1965771	0.98	1728837	113.70	60	120	
Ge Internal standard	72	3	HMI He	586537	0.33	565766	103.67	60	120	
In Internal Standard	115	3	HMI He	2248703	0.57	2246723	100.09	60	120	
Ir (IS)	193	3	HMI He	5176896	1.02	5134604	100.82	60	120	

Sample Report

Sample Table

Sample Name	280-171444-e-1-h ms
Data File Name	357SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:17:01-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	37.698	ppb	37.698	10.56	1506	2000	
Na	23	3	45	29174.844	ppb	29174.844	0.96	2846024	400000	
Mg	24	3	45	2257.440	ppb	2257.440	0.56	117696	400000	
Al	27	3	45	832.004	ppb	832.004	0.66	14616	400000	
K	39	3	45	1160.545	ppb	1160.545	2.30	55957	400000	
Ca	40	2	45	5074.210	ppb	5074.210	0.79	2374058	400000	
V	51	3	72	39.490	ppb	39.490	0.84	19542	2000	
Cr	52	3	72	39.221	ppb	39.221	1.41	26060	5000	
Mn	55	3	72	41.052	ppb	41.052	0.19	13748	10000	
Fe	56	2	72	864.886	ppb	864.886	2.30	1099167	10000	
Co	59	3	72	38.603	ppb	38.603	2.52	40798	2000	
Ni	60	3	72	39.035	ppb	39.035	1.99	11477	5000	
Cu	63	3	72	39.252	ppb	39.252	2.49	31392	5000	
Zn	66	3	72	40.515	ppb	40.515	3.35	5628	5000	
As	75	3	72	37.459	ppb	37.459	3.83	3560	2000	
Se	78	2	72	41.464	ppb	41.464	4.72	1886	2000	
(Se)	78	3	72	34.819	ppb	34.819	28.26	185	2000	
Sr	88	3	72	130.334	ppb	130.334	1.65	56954	4000	
Mo	95	3	115	40.379	ppb	40.379	2.20	16999	2000	
Ag	107	3	115	39.420	ppb	39.420	1.12	56584	100	
Cd	111	3	115	38.513	ppb	38.513	4.80	7832	2000	
Sn	120	3	115	38.726	ppb	38.726	0.75	24594	2000	
Sb	121	3	115	38.679	ppb	38.679	2.69	24113	1000	
Ba	137	3	115	46.142	ppb	46.142	2.02	9384	5000	
Tl	205	3	193	39.949	ppb	39.949	0.30	129226	2000	
(Pb)	206	3	193	39.412	ppb	39.412	2.90	43561	100	
(Pb)	207	3	193	39.484	ppb	39.484	0.09	38214	100	
Pb	208	3	193	39.236	ppb	39.236	1.12	174416	5000	
Th	232	3	193	36.874	ppb	36.874	1.34	179357	2000	
U	238	3	193	38.929	ppb	38.929	0.89	187621	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3279705	1.76	3174786	103.30	60	120	
Sc (IS)	45	3	HMI He	472669	0.84	479501	98.58	60	120	
Ge Internal standard	72	2	HMI H2	1879277	1.65	1728837	108.70	60	120	
Ge Internal standard	72	3	HMI He	589058	2.75	565766	104.12	60	120	
In Internal Standard	115	3	HMI He	2210482	0.48	2246723	98.39	60	120	
Ir (IS)	193	3	HMI He	5172056	2.06	5134604	100.73	60	120	

Sample Report

Sample Table

Sample Name	280-171444-e-1-i msd
Data File Name	358SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:18:54-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	40.607	ppb	40.607	1.58	1536	2000	
Na	23	3	45	28386.321	ppb	28386.321	2.21	2779317	400000	
Mg	24	3	45	2163.846	ppb	2163.846	1.52	113209	400000	
Al	27	3	45	847.160	ppb	847.160	4.31	14933	400000	
K	39	3	45	1133.903	ppb	1133.903	4.67	55193	400000	
Ca	40	2	45	4901.262	ppb	4901.262	1.01	2203960	400000	
V	51	3	72	38.958	ppb	38.958	2.19	19247	2000	
Cr	52	3	72	38.360	ppb	38.360	1.38	25476	5000	
Mn	55	3	72	40.781	ppb	40.781	3.01	13640	10000	
Fe	56	2	72	875.112	ppb	875.112	0.62	1045815	10000	
Co	59	3	72	37.786	ppb	37.786	1.23	39891	2000	
Ni	60	3	72	38.701	ppb	38.701	2.12	11362	5000	
Cu	63	3	72	39.897	ppb	39.897	1.45	31861	5000	
Zn	66	3	72	41.416	ppb	41.416	1.18	5745	5000	
As	75	3	72	36.742	ppb	36.742	4.30	3489	2000	
Se	78	2	72	41.834	ppb	41.834	2.77	1789	2000	
(Se)	78	3	72	49.364	ppb	49.364	17.81	257	2000	
Sr	88	3	72	127.127	ppb	127.127	1.60	55475	4000	
Mo	95	3	115	40.277	ppb	40.277	4.21	16849	2000	
Ag	107	3	115	38.929	ppb	38.929	2.12	55550	100	
Cd	111	3	115	38.770	ppb	38.770	3.53	7837	2000	
Sn	120	3	115	37.085	ppb	37.085	4.38	23441	2000	
Sb	121	3	115	38.660	ppb	38.660	2.21	23958	1000	
Ba	137	3	115	46.248	ppb	46.248	2.12	9350	5000	
Tl	205	3	193	41.041	ppb	41.041	1.75	127343	2000	
(Pb)	206	3	193	40.201	ppb	40.201	1.89	42630	100	
(Pb)	207	3	193	40.140	ppb	40.140	0.77	37263	100	
Pb	208	3	193	40.228	ppb	40.228	1.75	171517	5000	
Th	232	3	193	38.561	ppb	38.561	2.33	179189	2000	
U	238	3	193	40.797	ppb	40.797	2.26	188533	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3152075	1.73	3174786	99.28	60	120	
Sc (IS)	45	3	HMI He	474327	0.85	479501	98.92	60	120	
Ge Internal standard	72	2	HMI H2	1767222	2.32	1728837	102.22	60	120	
Ge Internal standard	72	3	HMI He	588107	1.09	565766	103.95	60	120	
In Internal Standard	115	3	HMI He	2198493	3.23	2246723	97.85	60	120	
Ir (IS)	193	3	HMI He	4962291	1.81	5134604	96.64	60	120	

Sample Report

Sample Table

Sample Name	280-171444-e-1-g PDS
Data File Name	359SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:20:52-07:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	600679 6020B
ISTD Ref FileName	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Be	9	2	6	198.965	ppb	198.965	3.45	8195	2000	
Na	23	3	45	37599.084	ppb	37599.084	1.78	3797501	400000	
Mg	24	3	45	3392.096	ppb	3392.096	1.62	183364	400000	
Al	27	3	45	2008.561	ppb	2008.561	2.55	36397	400000	
K	39	3	45	2398.032	ppb	2398.032	3.11	104121	400000	
Ca	40	2	45	6179.018	ppb	6179.018	2.25	3008709	400000	
V	51	3	72	188.123	ppb	188.123	0.80	100056	2000	
Cr	52	3	72	185.291	ppb	185.291	1.49	127664	5000	
Mn	55	3	72	190.993	ppb	190.993	1.84	68055	10000	
Fe	56	2	72	79.819	ppb	79.819	3.26	110922	10000	
Co	59	3	72	184.420	ppb	184.420	1.55	210156	2000	
Ni	60	3	72	184.092	ppb	184.092	1.03	58004	5000	
Cu	63	3	72	188.688	ppb	188.688	2.21	161466	5000	
Zn	66	3	72	189.076	ppb	189.076	0.98	27841	5000	
As	75	3	72	178.099	ppb	178.099	2.49	18166	2000	
Se	78	2	72	206.838	ppb	206.838	1.22	9804	2000	
(Se)	78	3	72	210.143	ppb	210.143	8.53	1151	2000	
Sr	88	3	72	231.416	ppb	231.416	2.26	109174	4000	
Mo	95	3	115	202.907	ppb	202.907	1.56	87819	2000	
Ag	107	3	115	41.993	ppb	41.993	1.75	62234	100	
Cd	111	3	115	195.925	ppb	195.925	1.86	41099	2000	
Sn	120	3	115	197.458	ppb	197.458	2.45	125629	2000	
Sb	121	3	115	192.562	ppb	192.562	2.05	123498	1000	
Ba	137	3	115	199.912	ppb	199.912	2.14	41770	5000	
Tl	205	3	193	201.916	ppb	201.916	1.09	653561	2000	
(Pb)	206	3	193	200.191	ppb	200.191	1.50	220041	100	
(Pb)	207	3	193	202.933	ppb	202.933	1.71	194590	100	
Pb	208	3	193	200.964	ppb	200.964	1.07	887577	5000	
Th	232	3	193	86.952	ppb	86.952	2.47	400515	2000	
U	238	3	193	216.674	ppb	216.674	0.85	1038703	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3416619	0.57	3174786	107.62	60	120	
Sc (IS)	45	3	HMI He	490293	2.38	479501	102.25	60	120	
Ge Internal standard	72	2	HMI H2	1959725	0.61	1728837	113.36	60	120	
Ge Internal standard	72	3	HMI He	636465	3.43	565766	112.50	60	120	
In Internal Standard	115	3	HMI He	2282566	1.12	2246723	101.60	60	120	
Ir (IS)	193	3	HMI He	5181119	1.01	5134604	100.91	60	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV-7569074
Data File Name	360_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\79_012923.b
Acq Date Time	2023-01-31T14:22:44-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	345CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	2	6	47.366	ppb	5.029	1774	50	94.7	90	110	
Na	23	3	45	51162.995	ppb	1.208	5216825	51000	100.3	90	110	
Mg	24	3	45	10184.029	ppb	0.981	556190	11000	92.6	90	110	
Al	27	3	45	949.080	ppb	3.237	17455	1000	94.9	90	110	
K	39	3	45	10834.063	ppb	1.792	422966	11000	98.5	90	110	
Ca	40	2	45	11343.676	ppb	0.931	4990553	11000	103.1	90	110	
V	51	3	72	48.032	ppb	0.648	24860	50	96.1	90	110	
Cr	52	3	72	47.736	ppb	0.645	32912	50	95.5	90	110	
Mn	55	3	72	46.905	ppb	2.905	16407	50	93.8	90	110	
Fe	56	2	72	1037.133	ppb	3.106	1176250	1000	103.7	90	110	
Co	59	3	72	46.914	ppb	0.570	51914	50	93.8	90	110	
Ni	60	3	72	46.608	ppb	1.377	14324	50	93.2	90	110	
Cu	63	3	72	46.877	ppb	0.539	39194	50	93.8	90	110	
Zn	66	3	72	47.388	ppb	1.348	6873	50	94.8	90	110	
As	75	3	72	46.808	ppb	3.549	4652	50	93.6	90	110	
Se	78	2	72	53.516	ppb	5.093	2174	50	107.0	90	110	
(Se)	78	3	72	48.225	ppb	26.278	263	50	96.4	90	110	
Sr	88	3	72	94.452	ppb	0.970	43254	100	94.5	90	110	
Mo	95	3	115	48.178	ppb	0.197	21206	50	96.4	90	110	
Ag	107	3	115	47.785	ppb	1.085	71773	50	95.6	90	110	
Cd	111	3	115	47.075	ppb	2.112	10014	50	94.2	90	110	
Sn	120	3	115	47.117	ppb	0.473	31109	50	94.2	90	110	
Sb	121	3	115	48.903	ppb	0.845	31874	50	97.8	90	110	
Ba	137	3	115	45.079	ppb	3.027	9595	50	90.2	90	110	
Tl	205	3	193	49.884	ppb	0.423	163171	50	99.8	90	110	
(Pb)	206	3	193	48.135	ppb	1.157	53740	50	96.3	90	110	
(Pb)	207	3	193	48.416	ppb	0.343	47278	50	96.8	90	110	
Pb	208	3	193	48.517	ppb	0.509	217749	50	97.0	90	110	
Th	232	3	193	48.693	ppb	1.691	234064	50	97.4	90	110	
U	238	3	193	49.517	ppb	0.863	240951	50	99.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc (IS)	45	2	HMI H2	3092325	1.30	3174786	97.40	60	120	
Sc (IS)	45	3	HMI He	495529	1.09	479501	103.34	60	120	
Ge Internal standard	72	2	HMI H2	1679444	3.52	1728837	97.14	60	120	
Ge Internal standard	72	3	HMI He	616814	1.00	565766	109.02	60	120	
In Internal Standard	115	3	HMI He	2313285	0.87	2246723	102.96	60	120	
Ir (IS)	193	3	HMI He	5231555	0.32	5134604	101.89	60	120	

Shipping and Receiving Documents

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins

Client Information	Sampler: TAYLOR SALSBURG	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 280-125598-34976.1
Client Contact: Ms. Shane Lowe	Phone: 585-880-5157	E-Mail: Patrick.McEntee@et.eurofinsus.com	State of Origin: IOWA	Page: 1 of 1
Company: Jacobs Engineering Group, Inc	PWSID:			Job #:

Address: 501 N Broadway	Due Date Requested:	Analysis Requested
City: St. Louis	TAT Requested (days): Standard	
State, Zip: MO 63102	Compliance Project: Δ Yes Δ No	
Phone: 618-410-1263(Tel)	PO #: 148029842	
Email: shane.lowe@jacobs.com	WO #:	
Project Name: Iowa Army Ammunition Plant RI/FS, IA	Project #: 28022660	
Site: OU11 January GW 2023	SSOW#:	

280-171373 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A_DOD5 - Total Mn	6020A_DOD5 - Diss Mn (FF)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D		
OU11-T-21-011123	1/11/23	1530	G	W	4	4	✓	✓	2	
OU11-T-21-011123-MS		1530	G	W	4	4	✓	✓	2	
OU11-T-21-011123-MSD		1530	G	W	4	4	✓	✓	2	
OU11-FB01-011123		1230	G	W	4		✓	✓	2	
EB01-011123	↓	0715	G	W	4		✓	✓	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 1/12/23	Time: 1200	Method of Shipment: FEDEX

Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
	1/12/23 1200	JACOBS	FEDEX	1/12/23 1200	FEDEX
Relinquished by	Date/Time	Company	Received by	Date/Time:	Company
				1-13-23 0920	ETHDEN
Relinquished by	Date/Time	Company	Received by	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 2061717	Cooler Temperature(s) °C and Other Remarks: 0.4 CF 0.0 IR12

Ver: 01/16/2019

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3/6/2023 5:00 PM

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 280-171373-1

Login Number: 171373
List Number: 1
Creator: Roehsner, Karen P

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C
Human Health Risk Assessment Update

TABLE 2.1.RME
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Scenario Timeframe: Future (Site Worker and Hypothetical Resident)
Medium: Groundwater (Line 6)
Exposure Medium: Tapwater

Exposure Point	CAS Number	Chemical	Minimum Concentration Qualifier	Maximum Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (3)	Potential ARAR/TBC Value (4)	Potential ARAR/TBC Source (4)	COPC Flag	Rationale for Selection or Deletion (5)
Tapwater	7439-96-5	Manganese	2.3E+01	6.2E+02	µg/L	T-21	7 / 7	0.51 - 0.95	6.2E+02	5.8E+02	4.3E+01 nc	3.0E+02	LHA	Yes	ASL
Line 6	7439-96-5	Manganese, Dissolved	3.0E+01 J	6.6E+02 J1	µg/L	T-19, T-31	7 / 7	0.51 - 0.95	6.6E+02	5.8E+02	4.3E+01 nc	3.0E+02	LHA	Yes	ASL

Notes:

(1) Maximum concentration is used for screening.

(2) Source: *Evaluation of Background Concentrations of Metals in Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa* . Prepared for U.S. Army Corps of Engineers Louisville District (CH2M, February 2020).

(3) Regional Screening Levels (RSL) for Tap Water (November 2022). Concentrations based on non-carcinogenic health effects are based on HI=0.1.

(4) Values are the Federal Maximum Contaminant Levels (MCLs) and if no MCL was available, the EPA's (March 2018) Office of Water Lifetime Health Advisory (LHA) was provided.

(5) Rationale Codes Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Below Screening Level (BSL)

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
B = Inorganic, metals results detected below the RL. The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
c = carcinogenic
COPC = Chemical of Potential Concern
HI = hazard index
L = lead action level
LHA = Lifetime Health Advisory
MCL = Maximum Contaminant Level
NA = not available
nc = noncarcinogenic
NE = not established
µg/L= microgram per liter

TABLE 2.2.RME
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Scenario Timeframe: Future (Construction/Utility Worker)
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater in a Trench

Exposure Point	CAS Number	Chemical	Minimum Concentration Qualifier	Maximum Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source (5)	COPC Flag	Rationale for Selection or Deletion (5)
Groundwater Shallow Groundwater in a Trench Line 6	7439-96-5 7439-96-5	Manganese Manganese, Dissolved	2.3E+01 3.0E+01 J	6.2E+02 6.6E+02 J1	µg/L µg/L	T-21 T-19, T-31	7 / 7 7 / 7	0.51 - 0.95 0.51 - 0.95	6.2E+02 6.6E+02	5.8E+02 5.8E+02	4.3E+01 nc 4.3E+01 nc	3.0E+02 3.0E+02	LHA LHA	Yes Yes	ASL ASL

Notes:

(1) Maximum concentration is used for screening.

(2) Source: *Evaluation of Background Concentrations of Metals in Groundwater, Iowa Army Ammunition Plant, Middletown, Iowa*. Prepared for U.S. Army Corps of Engineers Louisville District (CH2M, February 2020).

(3) Regional Screening Levels (RSL) for Tap Water (November 2022). Concentrations based on non-carcinogenic health effects are based on HI=0.1.

(4) Values are the Federal Maximum Contaminant Levels (MCLs) and if no MCL was available, the EPA's (March 2018) Office of Water Lifetime Health Advisory (LHA) was provided.

(5) Rationale Codes: Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Below Screening Level (BSL)

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
c = carcinogenic
COPC = Chemical of Potential Concern
HI = hazard index
LHA = Lifetime Health Advisory
NA = not available
nc = noncarcinogenic
µg/L= microgram per liter

TABLE 3.1.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Scenario Timeframe: Future (Hypothetical Resident)
Medium: Groundwater (Line 6)
Exposure Medium: Tapwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (NR/T/G)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tapwater Line 6	Manganese	µg/L	3.44E+02	NA	6.20E+02	6.20E+02	µg/L	MAX	1
	Manganese, Dissolved	µg/L	3.54E+02	NA	6.60E+02 J1	6.60E+02	µg/L	MAX	1

Notes:
ProUCL, Version 5.2.0 used to determine distribution of data (normal, lognormal, gamma distribution, or nonparametric) and estimate upper confidence limits (UCLs). ProUCL used to calculate RME EP(following recommendations based on distribution and standard deviation in users guide (EPA. April 2022. ProUCL, Version 5.2.0 Prepared by Neptune and Company, Inc).
Statistics: Max - Maximum Detected Value

(1) The maximum detected concentration was used as the EPC because there were less than 8 samples available.

µg/L = microgram per liter
NA = Not available or not applicable
UCL = Upper confidence limit
J1 = Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese	6.2E+02	µg/L	NA	NA	NA	NA	NA	1.9E-02	mg/kg/day	2.4E-02	mg/kg/day	7.7E-01
			Exp. Route Total								NA					7.7E-01
			Dermal	Manganese	6.2E+02	µg/L	NA	NA	NA	NA	NA	1.0E-04	mg/kg/day	9.6E-04	mg/kg/day	1.1E-01
			Exp. Route Total								NA					1.1E-01
		Exposure Point Total									NA					8.8E-01
	Exposure Medium Total										NA					8.8E-01
Groundwater Total											NA					8.8E-01
Receptor Total											NA					9E-01

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.1.RME SUPPLEMENT
CALCULATION OF DAEVENT (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)
REASONABLE MAXIMUM EXPOSURE
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Chemical of Potential Concern	Groundwater Concentration (CW) (ug/L)	Permeability Coefficient (Kp) (cm/hr)	B (dimensionless)	Lag Time (τ_{event}) (hr)	t* (hr)	Fraction Absorbed Water (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Manganese	6.2E+02	1.0E-03	NA	NA	NA	NA	0.71	4.4E-07	1

Inorganics: DAevent (mg/cm^2-event) =

$$DA_{event} = Kp \times CW \times tevent \times 0.001\ mg/ug \times 0.001\ l/cm^3 \qquad \text{(Eq 1)}$$

Notes:

B - Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (dimensionless).

cm/hr - centimeter per hour

hr - hour

mg/cm^2-event - milligram per square centimeter per event

µg/L - microgram per liter

NA - Not applicable

t* - Time to reach steady-state

CF1 - Conversion Factor 1 (0.001 mg/µg), CF2 - Conversion Factor 2 ($0.001\ L/cm^3$)

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese	6.2E+02	µg/L	NA	NA	NA	NA	NA	3.1E-02	mg/kg/day	2.4E-02	mg/kg/day	1.3E+00
			Exp. Route Total								NA					1.3E+00
			Dermal	Manganese	6.20E+02	µg/L	NA	NA	NA	NA	NA	1.4E-04	mg/kg/day	9.6E-04	mg/kg/day	1.4E-01
			Exp. Route Total								NA					1.4E-01
		Exposure Point Total									NA					1.4E+00
	Exposure Medium Total										NA					1.4E+00
Groundwater Total											NA					1.4E+00
Receptor Total											NA					1E+00

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.2.RME SUPPLEMENT
CALCULATION OF DAEVENT (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)
REASONABLE MAXIMUM EXPOSURE
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Chemical of Potential Concern	Groundwater Concentration (CW) (ug/L)	Permeability Coefficient (Kp) (cm/hr)	B (dimensionless)	Lag Time (τ_{event}) (hr)	t* (hr)	Fraction Absorbed Water (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Manganese	6.2E+02	1.0E-03	NA	NA	NA	NA	0.54	3.3E-07	1

Inorganics: DAevent (mg/cm^2-event) =

$$DA_{event} = Kp \times CW \times tevent \times 0.001\ mg/ug \times 0.001\ l/cm^3 \qquad \text{(Eq 1)}$$

Notes:
B - Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (dimensionless).
cm/hr - centimeter per hour
hr - hour
mg/cm^2-event - milligram per square centimeter per event
µg/L - microgram per liter
NA - Not applicable
t* - Time to reach steady-state
CF1 - Conversion Factor 1 (0.001 mg/µg), CF2 - Conversion Factor 2 (0.001 L/cm^3)

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Adult/Child Aggregate

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese	6.2E+02	µg/L	8.0E-03	mg/kg/day	NA	NA	NA	NA	NA	NA	NA	NA
			Exp. Route Total								NA					NA
			Dermal	Manganese	6.2E+02	µg/L	4.1E-05	mg/kg/day	NA	NA	NA	NA	NA	NA	NA	NA
			Exp. Route Total								NA					NA
		Exposure Point Total									NA					NA
	Exposure Medium Total										NA					NA
Groundwater Total											NA					NA
Receptor Total											NA					NA

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.3.RME SUPPLEMENT

CALCULATION OF CHEMICAL CANCER RISKS FOR COPC WITH MUTAGENIC MODE OF ACTION (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult/Child Aggregate

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations										
							Intake					CSF/Unit Risk					
							Value				Units	Value				Units	Cancer Risk
					Value	Units	0-2 yrs	2-6 yrs	6-16 yrs	16-26 yrs		0-2 yrs (ADAF=10)	2-6 yrs (ADAF=3)	6-16 yrs (ADAF=3)	16-26 yrs (ADAF=1)		
Groundwater	Tapwater	Tapwater	Ingestion	Chromium	#N/A	ug/L	#N/A	#N/A	#N/A	#N/A	mg/kg-day	5.0E+00	1.5E+00	1.5E+00	5.0E-01	1/(mg/kg-day)	#N/A
			Dermal	Chromium	#N/A	ug/L	#N/A	#N/A	#N/A	#N/A	mg/kg-day	2.0E+02	6.0E+01	6.0E+01	2.0E+01	1/(mg/kg-day)	#N/A

Notes:

ADAF = Age-dependent adjustment factor
CSF = Cancer slope factor
EPC = Exposure point concentration
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese, Dissolved	6.6E+02	µg/L	NA	NA	NA	NA	NA	2.0E-02	mg/kg/day	2.4E-02	mg/kg/day	8.2E-01
			Exp. Route Total								NA					8.2E-01
			Dermal	Manganese, Dissolved	6.6E+02	µg/L	NA	NA	NA	NA	NA	1.0E-04	mg/kg/day	9.6E-04	mg/kg/day	1.1E-01
			Exp. Route Total								NA					1.1E-01
		Exposure Point Total									NA					9.3E-01
	Exposure Medium Total										NA					9.3E-01
Groundwater Total											NA					9.3E-01
Receptor Total											NA					9E-01

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.4.RME SUPPLEMENT
CALCULATION OF DAEVENT (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)
REASONABLE MAXIMUM EXPOSURE
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Chemical of Potential Concern	Groundwater Concentration (CW) (ug/L)	Permeability Coefficient (Kp) (cm/hr)	B (dimensionless)	Lag Time (τ_{event}) (hr)	t* (hr)	Fraction Absorbed Water (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Manganese, Dissolved	6.2E+02	1.0E-03	NA	NA	NA	NA	0.71	4.4E-07	1

Inorganics: DAevent (mg/cm^2-event) =

$$DA_{event} = Kp \times CW \times tevent \times 0.001\ mg/ug \times 0.001\ l/cm^3 \qquad \text{(Eq 1)}$$

Notes:
B - Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (dimensionless).
cm/hr - centimeter per hour
hr - hour
mg/cm^2-event - milligram per square centimeter per event
µg/L - microgram per liter
NA - Not applicable
t* - Time to reach steady-state
CF1 - Conversion Factor 1 (0.001 mg/µg), CF2 - Conversion Factor 2 (0.001 L/cm^3)

TABLE 7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese, Dissolved	6.6E+02	µg/L	NA	NA	NA	NA	NA	3.3E-02	mg/kg/day	2.4E-02	mg/kg/day	1.4E+00
			Exp. Route Total								NA					1.4E+00
			Dermal	Manganese, Dissolved	6.60E+02	µg/L	NA	NA	NA	NA	NA	1.5E-04	mg/kg/day	9.6E-04	mg/kg/day	1.5E-01
			Exp. Route Total								NA					1.5E-01
		Exposure Point Total									NA					1.5E+00
	Exposure Medium Total										NA					1.5E+00
Groundwater Total											NA					1.5E+00
Receptor Total											NA					2E+00

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day

TABLE 7.5.RME SUPPLEMENT
CALCULATION OF DAEVENT (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)
REASONABLE MAXIMUM EXPOSURE
Iowa Army Ammunition Plant, Line 6
Middletown, Iowa

Chemical of Potential Concern	Groundwater Concentration (CW) (ug/L)	Permeability Coefficient (Kp) (cm/hr)	B (dimensionless)	Lag Time (τ_{event}) (hr)	t* (hr)	Fraction Absorbed Water (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Manganese, Dissolved	6.6E+02	1.0E-03	NA	NA	NA	NA	0.54	3.6E-07	1

Inorganics: DAevent (mg/cm^2-event) =

$$DA_{event} = Kp \times CW \times tevent \times 0.001\ mg/ug \times 0.001\ l/cm^3 \qquad \text{(Eq 1)}$$

Notes:

B - Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (dimensionless).

cm/hr - centimeter per hour

hr - hour

mg/cm^2-event - milligram per square centimeter per event

µg/L - microgram per liter

NA - Not applicable

t* - Time to reach steady-state

CF1 - Conversion Factor 1 (0.001 mg/µg), CF2 - Conversion Factor 2 (0.001 L/cm^3)

TABLE 7.6.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS (SITE-RELATED COPCS AND NATURALLY-OCCURRING CHEMICALS)

REASONABLE MAXIMUM EXPOSURE

Iowa Army Ammunition Plant, Line 6

Middletown, Iowa

Scenario Timeframe: Future
Receptor Population: Hypothetical Resident
Receptor Age: Adult/Child Aggregate

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Tapwater	Tapwater	Ingestion	Manganese, Dissolved	6.6E+02	µg/L	8.5E-03	mg/kg/day	NA	NA	NA	NA	NA	NA	NA	NA
			Exp. Route Total								NA					NA
			Dermal	Manganese, Dissolved	6.6E+02	µg/L	4.2E-05	mg/kg/day	NA	NA	NA	NA	NA	NA	NA	NA
			Exp. Route Total								NA					NA
		Exposure Point Total									NA					NA
	Exposure Medium Total										NA					NA
Groundwater Total											NA					NA
Receptor Total											NA					NA

Notes:
CSF = Cancer slope factor
EPC = Exposure point concentration
NA = Not applicable/Not available
RfC = Reference concentration
RfD = Reference dose
µg/L = microgram per liter
mg/kg/day = milligram per kilogram per day