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January 31, 2022

Mr. Justin Starr, Project Manager
NYSDEC Region 3, Division of Environmental Remediation
21 S Putt Corners Road
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(518) 660-1347
Justin.Starr@dec.ny.gov

**Re: Supplementary Investigation Report #1 (SIR #1)
 Former Excelsior Bag (BCP Site No. C360190)
 City of Yonkers, Westchester County, NY**

Dear Mr. Starr:

This Supplementary Investigation Report #1 (SIR #1) has been prepared by AKRF, Inc. (AKRF) on behalf of Extell Hudson Waterfront, LLC (the Volunteer) for the Former Excelsior Bag site located at 25, 35 and 45 Riverside Drive (f/k/a 159 Alexander Street), in Yonkers, New York (the Site). This SIR #1 summarizes the results of field activities conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Supplementary Investigation Work Plan #1 (SIWP #1), dated December 1, 2021 (provided as Attachment A).

Site Background

The Site is part of a larger Extell Hudson Waterfront redevelopment plan approved by the City of Yonkers Planning Board on April 11, 2018, for which the final subdivision map was filed with the Westchester County Clerk's office on January 24, 2020. The Site is now identified by the City of Yonkers Tax Map as Section 2, Block 2620, Lot 2, portion of Lot 9, Lots 10, 11 and 12, Fisherman Way, Colman Way, and portion of Riverside Drive. The Site consists of an approximately 243,952-square foot vacant property with concrete/asphalt paved surfaces, a landscaped area (to the north), and revetment stone (along the western boundary adjacent to the Hudson River). A Site Location Map is provided as Figure 1.

The Volunteer was accepted into the NYSDEC Brownfield Cleanup Program (BCP) as a Volunteer (BCP Site No. C360190), and a NYSDEC Brownfield Cleanup Agreement (BCA) (BCA Index No. C360190-04-20) was executed on April 30, 2020. A Remedial Investigation Work Plan (RIWP) was prepared by AKRF in July 2020 and approved by NYSDEC on August 4, 2020, and subsequent investigation activities were conducted in September 2020 and April 2021. A draft Remedial Investigation Report (RIR) was submitted to NYSDEC on July 9, 2021, and preliminary comments on the draft July 2021 RIR were provided by NYSDEC to AKRF (on behalf of the Volunteer) via email on July 29, 2021. A formal RIR comment letter was issued by NYSDEC on September 7, 2021. Based upon NYSDEC comments, a Supplemental Remedial Investigation (SRI) was conducted in August 2021. The final RIR, which incorporated the results of the September 2020/April 2021 remedial investigation (RI) and the August 2021 SRI field activities, was submitted to NYSDEC on October 8, 2021 and approved by NYSDEC (with modifications) on October 29, 2021.

Proposed development of the Site includes two low-rise residential buildings (referred to as Building E and Building F), a portion of a third low-rise residential building (Building D), surrounding access roadways, and a waterfront esplanade. The first phase of construction (Phase I Construction), which includes components on both the Site and the north adjacent Former BICC Cables site [NYSDEC Brownfield Cleanup Program (BCP) Site No. C360051], began on September 13, 2021. Phase I Construction at the Site (which is being conducted in conformance with Supplemental Environmental Management Documentation submitted to NYSDEC on June 23, 2021) includes construction of a portion of Building D, surrounding access roadways, and the esplanade.

Based upon recent correspondence with NYSDEC, it is anticipated the Site will be remediated to achieve site-specific Track 4 soil cleanup objectives (SCOs), which will be detailed in a future Remedial Action Work Plan (RAWP). Prior to preparation of the RAWP, it is anticipated that interim remedial measures (IRMs) [e.g., removal of hazardous metals hotspots (if identified), removal of the suspected underground storage tank (UST), and removal of shallow fill materials with elevated concentrations of SVOCs] will be conducted to facilitate the construction schedule. Therefore, the Volunteer elected to conduct this Supplementary Investigation #1 (SI #1) to further evaluate potential areas of concern (PAOCs) for metals identified during the RI. On October 12, 2021, AKRF submitted a letter to NYSDEC detailing proposed Track 4 site-specific SCOs for metals, which were accepted by NYSDEC in a letter issued on November 9, 2021.

As detailed in the October 12, 2021 letter prepared by AKRF (and as further detailed in Section 5.3.5 of the October 2021 RIR), several shallow fill material samples across the Site contained elevated total metal concentrations above Restricted Residential (RR) SCOs and/or Protection of Groundwater (PGW) SCOs, including arsenic, cadmium, copper, lead, mercury, nickel, and selenium; however, the remedial investigation did not identify the presence of an exposure pathway (since the Site is capped and there is not metals contamination in groundwater). With the exception of selenium detected in one groundwater sample slightly above its NYSDEC Ambient Water Quality Standards and Guidance Value (AWQSGV), none of the metals detected in soil above RRSCOs and/or PGWSCOs were detected above AWQSGVs in site-wide groundwater.

Although an exposure pathway for metals found in shallow fill materials was not identified during the recent RI, the elevated total metal concentrations documented in shallow fill materials (specifically lead and mercury) were considered PAOCs based on their potential to represent source areas for hazardous substances [defined in DER-10§1.3(70); 6 NYCRR 375 §1.2(au)].

Based on this evaluation, total metal concentrations exceeding established site-specific thresholds (detailed below) were further evaluated as potential source areas (PSAs) for hazardous waste via Toxicity Characteristic Leaching Procedure (TCLP) sampling as part of this SI #1; and only soils exceeding hazardous waste criteria¹ would be considered source areas, necessitating removal as part of the forthcoming IRM Work Plan remedy.

A summary of SI #1 field activities and soil sample results are further detailed below. All work was completed in accordance with applicable protocols detailed in the NYSDEC-approved December 2021 SIWP #1 and July 2020 RIWP, including the associated Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP).

¹ I.e., TCLP concentrations exceeding the Environmental Protection Agency (EPA) Maximum Concentrations established for the Resource Conservation and Recovery Act (RCRA) eight heavy metals (commonly referred to as the "RCRA 8") (e.g., TCLP lead concentrations above 5.0 mg/L)

Threshold Criteria for Identifying Hazardous Metal PSAs

The following threshold criteria for identifying hazardous metals PSAs (displayed in In-Text Table 1) were proposed by AKRF in a letter dated October 12, 2021, which was accepted by NYSDEC in a letter dated November 9, 2021.

In-Text Table 1 - Total Metal Concentration Thresholds for Hazardous Metals PSAs

Metal	EPA Maximum TCLP Concentrations for RCRA 8 (mg/l)	Total Metals Thresholds (mg/kg)
Arsenic	5.0	100
Barium	100	2000
Cadmium	1.0	20
Chromium	5.0	100
Lead	5.0	1000
Mercury	0.2	4
Selenium	1.0	20
Silver	5.0	100

Notes:

mg/l = milligrams per liter

mg/kg = milligrams per kilogram

Based upon these concentration thresholds, eight shallow fill soil samples, collected and analyzed from seven soil boring locations advanced during the RI, identified total metal concentrations (specifically lead and mercury) that warranted additional sampling and analysis for their respective hazardous waste criteria as part of this SI #1. In-Text Table 2 summarizes the eight shallow fill soil sample intervals (collected from seven RI soil boring locations) (hereinafter referred to as “hazardous metals PSAs”) that were further evaluated as part of the SI #1 field activities. The hazardous metals PSAs are also displayed on the attached Figure 2.

In-Text Table 2 - Hazardous Metals PSAs

Hazardous Metal PSAs	Representative RI Soil Boring ID	RI Sample Interval (feet bgs)	Metal Contaminant of Concern	RI Total Metal Concentration (mg/kg)	SI #1 TCLP Sampling
PSA-RISB04	RI-SB-04	1-3	Mercury	17	TCLP Mercury
		4-6	Mercury	17	TCLP Mercury
PSA-RISB12	RI-SB-12	5-7	Lead	2,080	TCLP Lead
PSA-RISB14	RI-SB-14	6-8	Mercury	9.99 J	TCLP Mercury
PSA-RISB19	RI-SB-19	4-6	Lead	3,250	TCLP Lead
PSA-RISB20	RI-SB-20	5-7	Mercury	14	TCLP Mercury
PSA-RISB22	RI-SB-22	0-2	Lead	1,260 J	TCLP Lead
PSA-RISB23	RI-SB-23	0-2	Mercury	4.5	TCLP Mercury

Notes:

bgs = below ground surface

mg/kg = milligrams per kilogram

J = The concentration given is an estimated value

The hazardous metals PSAs identified in the In-Text Table 2 and displayed on the attached Figure 2 were further evaluated for hazardous criteria as summarized below.

SI #1 Field Program Summary

SI #1 field activities included the following:

- The advancement of seven shallow soil borings (SI-PSA-RISB04, SI-PSA-RISB12, SI-PSA-RISB14, SI-PSA-RISB19, SI-PSA-RISB20, SI-PSA-RISB22, and SI-PSA-RISB23) to depths

between 5 and 10 feet below ground surface (bgs) (to evaluate the seven hazardous metals PSAs); and

- The collection and laboratory analysis of eight shallow fill soil samples and associated quality assurance and quality control (QA/QC) samples. One sample was collected at each soil boring at the one discrete depth interval shown on In-Text Table 2, with the exception of SI-PSA-RISB04, which included the collections of samples at two discrete depth intervals shown on In-Text Table 2.

Geophysical Survey (Conducted as Part of RI)

A geophysical survey utilizing ground penetrating radar (GPR) and an electromagnetic (EM) utility locating system was conducted by NOVA Geophysical Engineering Services (NOVA) as part of RI field activities at the Site on April 5, 2021. The geophysical survey included a site-wide GPR grid scan (using 5-foot by 5-foot grid line spacing), with additional GPR lines collected in the vicinity of RI boring locations and other features of interest. The EM utility locator was used in conjunction with the GPR throughout the surveyed areas. A copy of the April 5, 2021, Geophysical Survey Report, prepared by NOVA is provided as an attachment within the SIWP #1 (Attachment A). Utilities and other identified anomalies were displayed on the survey plan within the report.

In addition, electric, gas, sewer, and water utilities were disconnected/abandoned in-place at the Site in February 2021 prior to building demolition, a required prerequisite to obtain a City of Yonkers Demolition Permit.

All SI #1 boring locations were positioned adjacent to soil borings advanced during the RI. RI soil boring locations were cleared by the previous geophysical investigation noted above; therefore, an additional geophysical survey was not warranted for this investigation.

SI #1 Soil Boring Advancement, Soil Sampling, and Chemical Analysis

Prior to soil boring advancement, the previously advanced RI soil borings noted in In-Text Table 2 were field surveyed by PS&S, a New York State-licensed surveyor, on December 2, 2021, using survey data obtained during the RI. SI #1 soil borings were advanced directly adjacent to the surveyed point (i.e., within 1 to 2 feet).

Seven soil borings (SI-PSA-RISB04, SI-PSA-RISB12, SI-PSA-RISB14, SI-PSA-RISB19, SI-PSA-RISB20, SI-PSA-RISB22, and SI-PSA-RISB23) were advanced during SI #1 field activities. The seven soil borings were advanced by Eastern Environmental Solutions, Inc. of Manorville, NY (Eastern) on December 6, 2021 using a track mounted Geoprobe® Direct-Push Probe (DPP) drill rig. Soil borings were advanced up to 8 feet bgs, as outlined in In-Text Table 2. Soil samples were continuously obtained in a 2-inch diameter, stainless steel, macro-core sampler. All soil cores were inspected by AKRF field personnel for evidence of contamination (e.g., odors, staining, etc.), screened for the presence of volatile organic compounds (VOCs) with a calibrated photoionization detector (PID), and logged using the Modified Burmister Soil Classification System. Soil boring logs are provided as Attachment B.

At each of the soil boring locations, one to two soil samples were submitted for laboratory analysis [at the sample depth interval(s) noted in In-Text Table 2]. Soil samples slated for laboratory analysis were placed in laboratory-supplied containers and shipped in accordance with appropriate EPA protocols to Alpha Analytical of Westborough, MA (Alpha), a New York State Department of Health (NYSDOH)-certified laboratory. The soil samples were analyzed for either lead or mercury (depending on the PAOC noted in In-Text Table 2) by TCLP analysis.

As required by the Category B sampling techniques, additional analyses were included for QA/QC measures. One QA/QC sample for soil was collected as one field blank, one matrix spike/matrix spike duplicate (MS/MSD), and one blind duplicate sample [no trip blank for VOCs required]. The blind duplicate and MS/MSD sample was analyzed by TCLP analysis for the same analyte as the accompanying sample. The field blank aqueous sample was analyzed for total concentration of the same analyte as the

accompanying sample.

A 10-business day standard TCLP analysis turnaround time was requested from the laboratory. The Category B data deliverable provided by Alpha for soil and QA/QC samples analyzed as part of this SI #1 is provided as Attachment C. In addition, third-party data validation was performed by L.A.B. Validation Corp., and a Data Usability Summary Report (DUSR) was prepared for the data generated during this SI #1. The DUSR concluded that the overall assessment of the data generated was of acceptable quality. The DUSR is provided as Attachment D.

Management of Investigation Derived Waste

No evidence of contamination was observed during soil sampling activities; therefore, after each boring was completed, the boreholes were filled with the boring soil cuttings in accordance with Section 3.3(e) of DER-10. No investigation derived waste was generated during SI #1 field activities. Disposable sampling equipment that came in contact with environmental media was disposed of as municipal trash as non-hazardous refuse.

Community Air Monitoring Plan (CAMP) Implementation

Community air monitoring was conducted during SI #1 intrusive Site activities in compliance with the CAMP (detailed in the NYSDEC-approved July 2020 RIWP).

CAMP equipment was calibrated according to manufacturer specifications at the start of each day of fieldwork. CAMP summary reports were prepared and submitted to NYSDEC and NYSDOH as part of the December 6, 2021 daily field report.

Soil Sample TCLP Analytical Results

A total of nine soil samples (inclusive of one blind duplicate sample) were collected for laboratory analysis from SI #1 soil borings SI-PSA-RISB04, SI-PSA-RISB12, SI-PSA-RISB14, SI-PSA-RISB19, SI-PSA-RISB20, SI-PSA-RISB22, and SI-PSA-RISB23. One sample was collected at each soil boring at the one discrete depth interval shown on In-Text Table 2, with the exception of SI-PSA-RISB04, which contained two samples collected at the two discrete depth intervals shown on In-Text Table 2. The soil samples were analyzed for either lead or mercury (depending on the PAOC noted in In-Text Table 2) by TCLP analysis. Sample results were compared to EPA Maximum TCLP Concentrations established for lead (5.0 mg/l) and mercury (0.2 mg/l). As summarized in the In-Text Tables 3 below, none of the TCLP lead or mercury sample results exceeded their respective EPA Maximum TCLP Concentrations. Sample results are also shown on Figure 3.

In-Text Table 3 – SI #1 Soil Analytical Results

Hazardous Metal PSAs	SI #1 Sample ID	SI #1 Sample Interval (feet bgs)	Analysis	SI #1 TCLP Metal Concentration (mg/l)
PSA-RISB04	SI-PSA-RISB04_1-3_20211206	1-3	TCLP Mercury	ND
	SI-PSA-RISB04_4-6_20211206	4-6	TCLP Mercury	0.0025
PSA-RISB12	SI-PSA-RISB12_5-7_20211206	5-7	TCLP Lead	0.444 J
PSA-RISB14	SI-PSA-RISB14_6-8_20211206	6-8	TCLP Mercury	ND
PSA-RISB19	SI-PSA-RISB19_4-6_20211206	4-6	TCLP Lead	0.726
PSA-RISB20	SI-PSA-RISB20_5-7_20211206	5-7	TCLP Mercury	ND
PSA-RISB22	SI-PSA-RISB22_0-2_20211206	0-2	TCLP Lead	4.53
PSA-RISB23	SI-PSA-RISB23_0-2_20211206	0-2	TCLP Mercury	ND

Notes:

bgs = below grade surface

mg/kg = milligrams per kilogram

ND = Non-detection

J = The concentration given is an estimated value.

Hazardous Metals PSA Evaluation and Conclusions

Based on the findings of this SI #1, the seven Hazardous Metals PSAs evaluated herein are not proposed to be considered source areas necessitating removal as part of the Site remedy. It is proposed that the remedy detailed in the forthcoming IRM Work Plan will be limited to excavation and removal of the suspected UST and removal of shallow fill materials with elevated concentrations of SVOCs (identified during the RI in the southeastern corner of the Site). The IRM Work Plan will also detail environmental monitoring and other health and safety measures to protect workers and the surrounding community during implementation of the IRM Work Plan; excavation endpoint sampling; and soil material management (import and export) procedures.

The project team appreciates your expedited review of this SIWP #1. Please contact Marc at (914) 922-2356 or Scott at (914) 922-2354 if you have any questions or require additional information.

Sincerely,
AKRF, Inc.



Marc S. Godick, LEP
Sr. Vice President



Scott Caporizzo
Technical Director

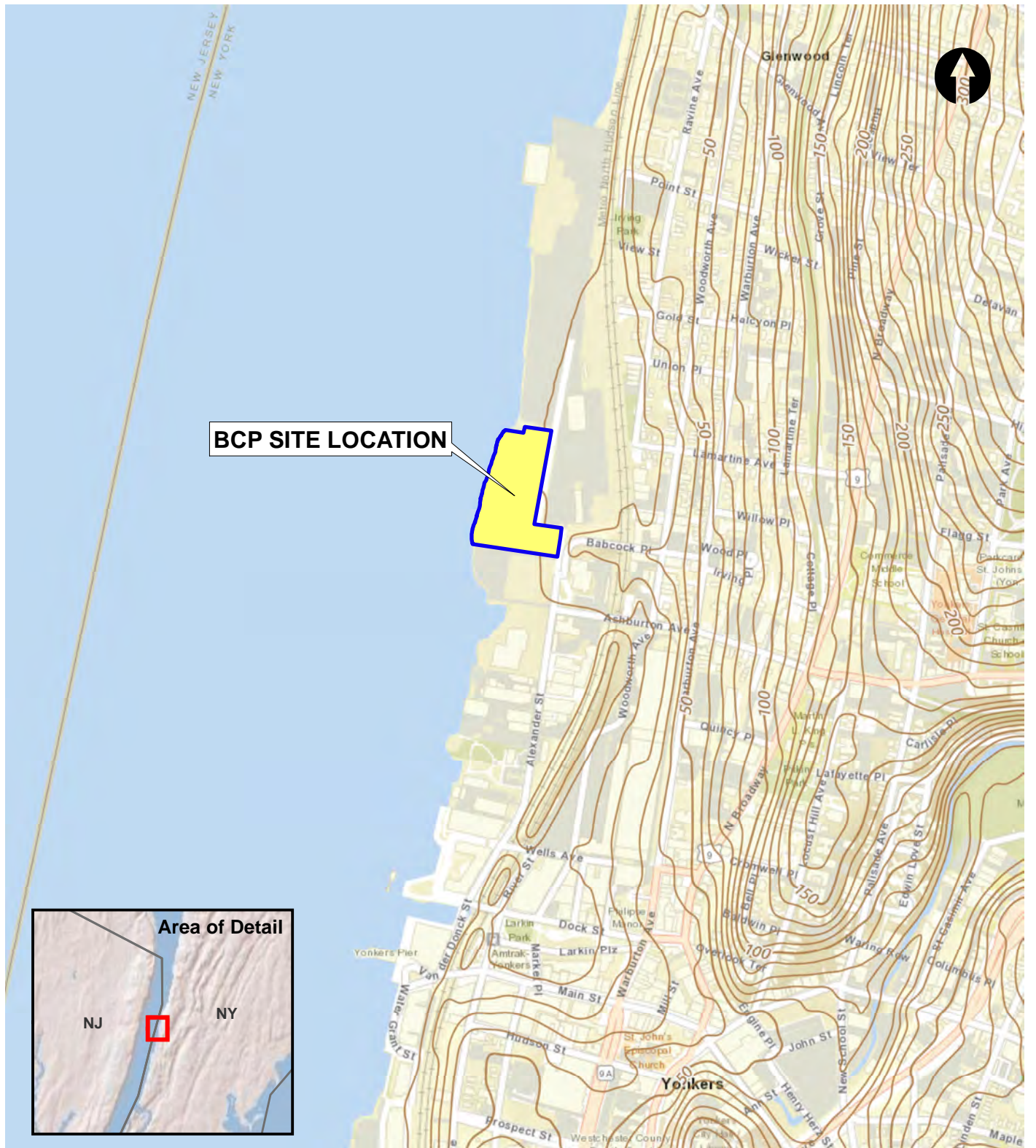
cc: Amen Omorogbe – NYSDEC
Jack Mandelbaum, Chanie Rosenberg, Ryan Masters, Moshe Botnick – Extell
Christine Leas – SPR

Enclosed:

- Figure 1 – BCP Site Location
- Figure 2 – Potential Source Areas (PSAs) for Hazardous Metals
- Figure 3 – Soil Sample TCLP Concentrations
- Attachment A – Supplementary Investigation Work Plan #1 (SIWP #1)
- Attachment B – Soil Boring Logs
- Attachment C – Soil Sample Category B Data Deliverable
- Attachment D – Data Usability Summary Report

FIGURES

© 2021 AKRF Q:\Projects\200131 - EXTELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\IR\200131 Fig 1 BCP site loc map.mxd/10/2021 10:43:31 AM mveilleux



Service Layer Credits: ESRI Worldwide Street Map data: 2019.

Map Source - BCP Site Boundary from Ward Carpenter Engineers, Inc. "Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.



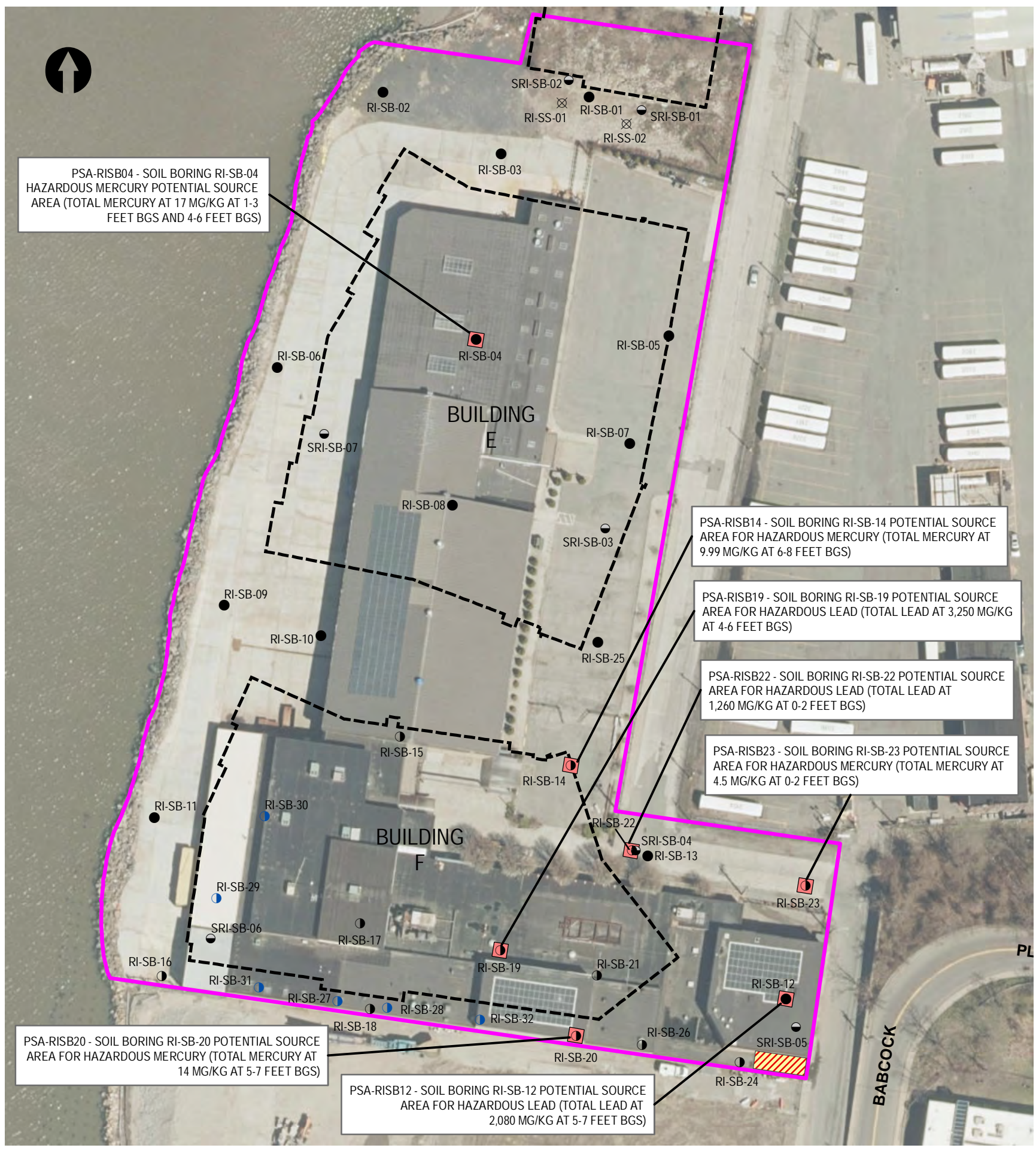
440 Park Avenue South, New York, NY 10016

FORMER EXCELSIOR BAG
Yonkers, New York

BCP SITE LOCATION

DATE	1/12/2022
PROJECT NO.	200131
FIGURE	1

©2021 AKRF W:\Projects\200131 - EXTCELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\RAWP\200131 Fig 1 Potential Source Areas - Excavations.mxd 09/28/2021 4:56:50 PM mvelieux



PSA-RISB04 - SOIL BORING RI-SB-04 HAZARDOUS MERCURY POTENTIAL SOURCE AREA (TOTAL MERCURY AT 17 MG/KG AT 1-3 FEET BGS AND 4-6 FEET BGS)

PSA-RISB20 - SOIL BORING RI-SB-20 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 14 MG/KG AT 5-7 FEET BGS)

PSA-RISB12 - SOIL BORING RI-SB-12 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 2,080 MG/KG AT 5-7 FEET BGS)










PSA-RISB14 - SOIL BORING RI-SB-14 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 9.99 MG/KG AT 6-8 FEET BGS)

PSA-RISB19 - SOIL BORING RI-SB-19 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 3,250 MG/KG AT 4-6 FEET BGS)

PSA-RISB22 - SOIL BORING RI-SB-22 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 1,260 MG/KG AT 0-2 FEET BGS)

PSA-RISB23 - SOIL BORING RI-SB-23 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 4.5 MG/KG AT 0-2 FEET BGS)

LEGEND

-  BCP SITE BOUNDARY
-  PROPOSED LOCATION OF FUTURE BUILDING
-  SUSPECTED ABANDONED IN-PLACE UST
-  SHALLOW SOIL BORING LOCATION
-  INTERMEDIATE SOIL BORING LOCATION
-  DEEP SOIL BORING LOCATION
-  SURFACE SOIL SAMPLE LOCATION
-  DNAPL DELINEATION SOIL BORING LOCATION
-  POTENTIAL SOURCE AREA (PSA) FOR HAZARDOUS METALS

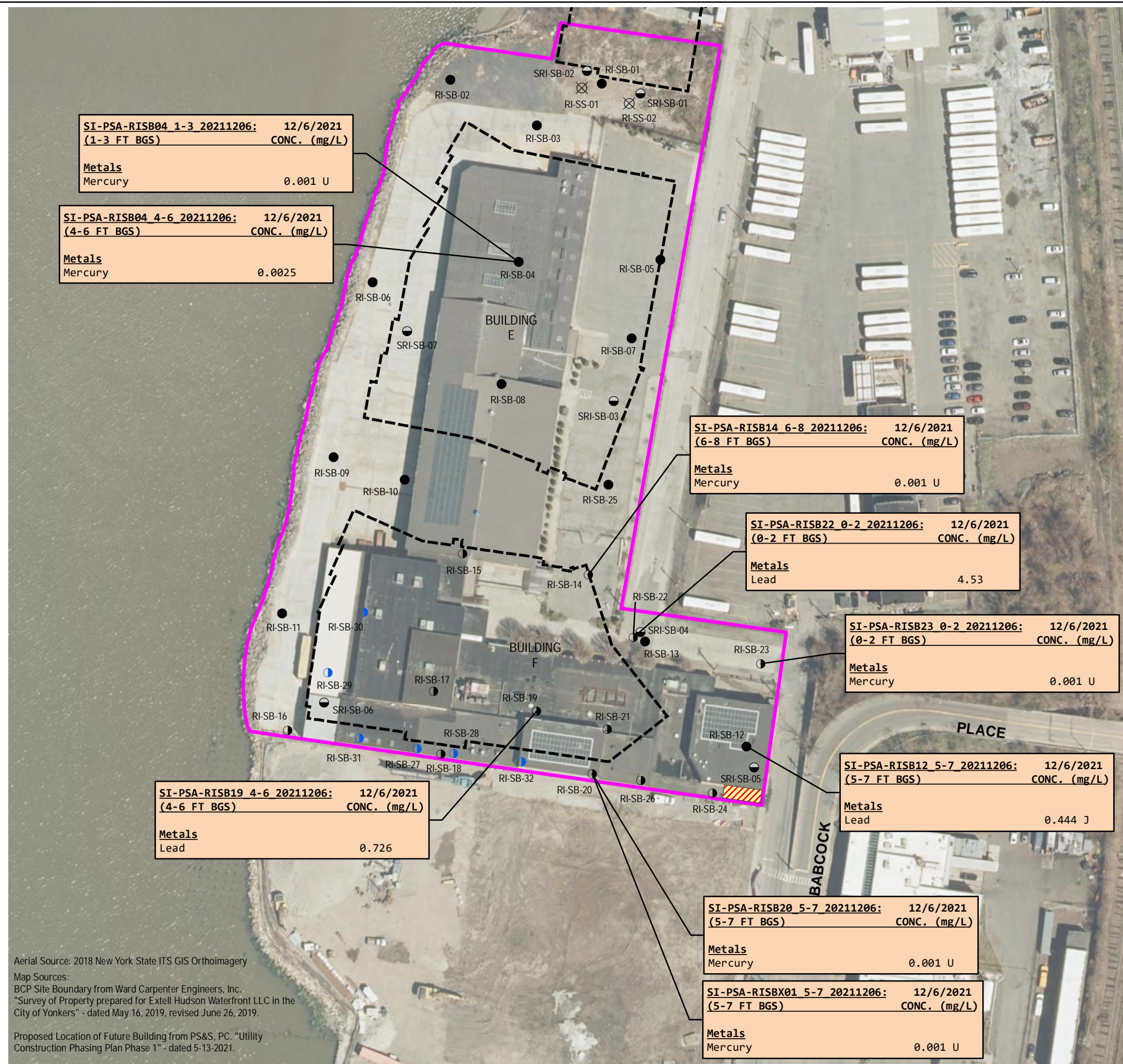
Aerial Source:
2018 New York State ITS GIS Orthimagery
Map Sources:
BCP Site Boundary from Ward Carpenter Engineers, Inc.
"Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

Proposed Location of Future Building from PS&S, PC. "Utility Construction Phasing Plan Phase 1" - dated 5-13-2021.

Boring locations obtained from PS&S survey "Sample Location Map, dated 6/2/21 (revised 9/20/21)



©2022 AKRF. W:\Projects\2001131 - EXTELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\BCP\2001131 Fig 3 SIR #1 Soil Sample Concentrations.mxd/13/2022 5:08:49 PM mveilleux



Aerial Source: 2018 New York State ITS GIS Orthoimagery
 Map Sources:
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LEGEND

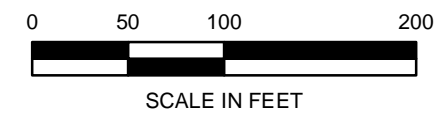
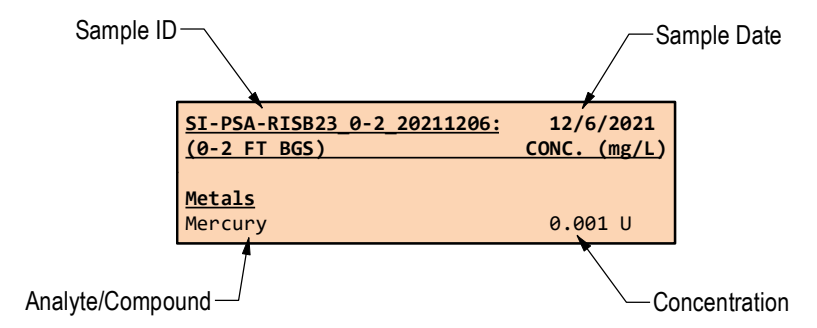
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- DNAPL DELINEATION SOIL BORING LOCATION
- SURFACE SOIL SAMPLE LOCATION
- SUSPECTED ABANDONED IN-PLACE UST



EPA Maximum TCLP Concentration	
mg/l	
Metals	
Lead	5
Mercury	0.2

- EPA Maximum TCLP Concentration: Environmental Protection Agency (EPA) Maximum Toxicity Characteristic Leaching Procedure (TCLP) concentrations established for the Resource Conservation and Recovery Act (RCRA) eight heavy metals ("RCRA 8") corresponding to hazardous waste.
- No exceedances of the EPA Hazardous Waste Criteria were reported.

mg/l: milligrams per liter = parts per million (ppm)
 J: The concentration given is an estimated value.
 U: The analyte was not detected at the indicated concentration.



FORMER EXCELSIOR BAG
 Yonkers, New York
SIR #1 SOIL SAMPLE TCLP CONCENTRATIONS

ATTACHMENT A
SUPPLEMENTARY REMEDIAL INVESTIGATION WORK PLAN #1 (SIWP #1)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
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www.dec.ny.gov

Transmitted via e-mail

December 1, 2021

Extell Hudson Waterfront LLC
Attn: Jack Mandelbaum
805 Third Avenue, 7th Floor
New York, NY 10022
jmandelbaum@extell.com

Re: Supplementary Investigation Work Plan #1 (SIWP #1)
Former Excelsior Bag
NYSDEC Site no. C360190

Dear Jack Mandelbaum,

The New York State Department of Environmental Conservation (DEC) and New York State Department of Health (NYSDOH) have reviewed the Supplementary Investigation Work Plan #1 (Work Plan) for the Former Excelsior Bag site. The Work Plan is hereby approved with the following modifications:

SI #1 Field Program Summary, second bullet: To clarify the number of samples per boring, this bullet should be revised to:

“The collection and TCLP laboratory analysis of eight shallow fill soil samples and associated quality assurance and quality control (QA/QC) samples. One (1) sample is to be collected at each boring at the one discrete depth interval shown on In-Text Table 2, with the exception of RI-SB-04, which will have two (2) samples collected at the two discrete depth intervals shown on In-Text Table 2.”

SI #1 Soil Boring Advancement and Soil Sampling, third paragraph: The word “up” located in the first sentence should be removed.

In accordance with the Brownfield Cleanup Agreement and 6NYCRR 375-1.6(d), please indicate within 15 days whether you will modify the Work Plan and submit the modified Work Plan within 30 days. The modified Work Plan should be submitted to the parties and in the formats specified in the Brownfield Cleanup Agreement. If you have any questions, please feel free to contact me at justin.starr@dec.ny.gov or 518-402-9662.

Sincerely,



Justin C. Starr, P.G.
Assistant Geologist, Remedial Bureau C
Division of Environmental Remediation

cc: S. Caporizzo, AKRF (scaporizzo@akrf.com)
E. O'Neil, NYSDOH (eamonn.ONeil@health.ny.gov)
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December 1, 2021 (Rev. 1)

Mr. Justin Starr, Project Manager
NYSDEC Region 3, Division of Environmental Remediation
21 S Putt Corners Road
New Paltz, NY 12561
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Justin.Starr@dec.ny.gov

**Re: Supplementary Investigation Work Plan #1 (SIWP #1)
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 City of Yonkers, Westchester County, NY**

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Site Background

The Site is part of a larger Extell Hudson Waterfront redevelopment plan approved by the City of Yonkers Planning Board on April 11, 2018, for which the final subdivision map was filed with the Westchester County Clerk's office on January 24, 2020. The Site is now identified by the City of Yonkers Tax Map as Section 2, Block 2620, Lot 2, portion of Lot 9, Lots 10, 11 and 12, Fisherman Way, Colman Way, and portion of Riverside Drive. The Site consists of an approximately 243,952-square foot vacant property with concrete/asphalt paved surfaces, a landscaped area (to the north), and revetment stone (along the western boundary adjacent to the Hudson River).

The Volunteer was accepted into the NYSDEC BCP as a Volunteer (BCP Site No. C360190), and a NYSDEC Brownfield Cleanup Agreement (BCA) (BCA Index No. C360190-04-20) was executed on April 30, 2020. A Remedial Investigation Work Plan (RIWP) was prepared by AKRF in July 2020 and approved by NYSDEC on August 4, 2020, and subsequent investigation activities were conducted in September 2020 and April 2021. A draft Remedial Investigation Report (RIR) was submitted to NYSDEC on July 9, 2021, and preliminary comments on the draft July 2021 RIR were provided by NYSDEC to AKRF (on behalf of the Volunteer) via email on July 29, 2021. A formal RIR comment letter was issued by NYSDEC on September 7, 2021. Based upon NYSDEC comments, a SRI was conducted in August 2021. The final RIR, which incorporated the results of the September 2020/April 2021 RI and the August 2021 SRI field activities, was submitted to NYSDEC on October 8, 2021, and approved by NYSDEC (with modifications) on October 29, 2021.

Proposed development of the Site includes two low-rise residential buildings (referred to as Building E and Building F), a portion of a third low-rise residential building (Building D), surrounding access roadways, and a waterfront esplanade. The first phase of construction (Phase I Construction), which includes components on both the Site and the north adjacent Former BICC Cables site [NYSDEC Brownfield Cleanup Program (BCP) Site No. C360051], began on September 13, 2021. Phase I Construction at the Site (which is being conducted in compliance with Supplemental Environmental Management Documentation submitted to NYSDEC on June 23, 2021) includes construction of a portion of Building D, surrounding access roadways, and the esplanade.

Based upon recent correspondences with NYSDEC, it is anticipated the Site will be remediated to achieve site-specific Track 4 soil cleanup objectives (SCOs), which will be detailed in the future Remedial Action Work Plan (RAWP). Prior to preparation of the RAWP, it is anticipated that IRMs [e.g., removal of hazardous metals hotspots (if identified), removal of the suspected underground storage tank (UST), utility excavations, etc.] will be conducted to facilitate the construction schedule. Therefore, Volunteer has elected to conduct this Supplementary Investigation #1 (SI #1) to further evaluate PAOCs for metals identified during the RI, and to determine which metals source areas, if any, will be remediated as part of an IRM Work Plan. On October 12, 2021, AKRF submitted a letter to NYSDEC detailing proposed Track 4 site-specific SCOs for metals, which were accepted by NYSDEC in a letter issued on November 9, 2021. The October 12, 2021 letter, prepared by AKRF, and the November 9, 2021 letter, prepared by NYSDEC, are provided as Attachment A.

As detailed in the October 12, 2021 letter prepared by AKRF (and as further detailed in Section 5.3.5 of the October 2021 RIR), several shallow fill material samples across the Site contained elevated total metal concentrations above Restricted Residential (RR) SCOs and/or Protection of Groundwater (PGW) SCOs, including arsenic, cadmium, copper, lead, mercury, nickel, and selenium; however, the remedial investigation did not identify the presence of an exposure pathway (e.g., documented metals contamination in groundwater). With the exception of selenium detected in one groundwater sample slightly above its NYSDEC Ambient Water Quality Standards and Guidance Value (AWQSGV), none of the metals detected in soil above RRSCOs and/or PGWSCOs were detected above AWQSGVs in site-wide groundwater.

Although an exposure pathway for metals found in shallow fill materials was not identified during the recent RI, the elevated total metal concentrations documented in shallow fill materials (specifically lead and mercury) are considered PAOCs based on their potential to represent source areas for hazardous substances [defined in DER-10§1.3(70); 6 NYCRR 375 §1.2(au)].

Based on this evaluation, total metal concentrations exceeding established site-specific thresholds will be further evaluated as potential source areas (PSAs) for hazardous waste via Toxicity Characteristic Leaching Procedure (TCLP) sampling; and only soils exceeding hazardous waste criteria¹ will be considered source areas, necessitating removal as part of the forthcoming IRM Work Plan remedy.

This SIWP #1 details the total metal concentration threshold criteria for identifying hazardous metals PSAs and the sampling/analytical procedures to be implemented to further evaluate the hazardous metals PSAs. All work will be completed in accordance with applicable protocols detailed in the NYSDEC-approved July 2020 RIWP, including the associated Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP). The HASP and CAMP will be implemented during all subsurface investigation activities involving soil disturbance at the Site.

¹ I.e., TCLP concentrations exceeding the Environmental Protection Agency (EPA) Maximum Concentrations established for the Resource Conservation and Recovery Act (RCRA) eight heavy metals (commonly referred to as the "RCRA 8") (e.g., TCLP lead concentrations above 5.0 mg/L)

Threshold Criteria for Identifying Hazardous Metal PSAs

The following threshold criteria for identifying hazardous metals PSAs were proposed by AKRF in a letter dated October 12, 2021, which was accepted by NYSDEC in a letter dated November 9, 2021 (refer to Attachment A).

AKRF will employ the industry-standard “Rule of 20” as the threshold for identifying shallow fill materials that constitute PSAs for RCRA 8 metals (with the exception of lead as noted below). The “Rule of 20” notes that the maximum theoretical leachate concentration that can yield from a TCLP analysis performed on a waste that is 100% physically solid is 1/20 of the total concentration in the waste. In other words, in order to yield hazardous results, total metals concentrations must be at least 20 times higher than their respective EPA allowable limit. The “Rule of 20” is a conservative approach for assessing potentially hazardous levels of metals because it assumes 100% of the total concentration will be leached into the extraction fluid during the TCLP process.

Based on prior experience sampling for hazardous lead in shallow fill materials at neighboring BCP sites, total lead concentrations less than 1,000 mg/kg are unlikely to yield hazardous results. Therefore, a total lead concentration of 1,000 mg/kg will be utilized as the threshold for identifying shallow fill material PSAs for lead at the Site.

Based on the methodology identified above, the total metal concentrations that would constitute PSAs are displayed in the In-Text Table 1 below.

In-Text Table 1 - Proposed Total Metal Concentration Thresholds for Hazardous Metal PSAs

Metal	RCRA EPA Allowable Limit (mg/l)	Total Metals Thresholds (mg/kg)
Arsenic	5.0	100
Barium	100	2000
Cadmium	1.0	20
Chromium	5.0	100
Lead	5.0	1000
Mercury	0.2	4
Selenium	1.0	20
Silver	5.0	100

Based upon these concentration thresholds, eight shallow fill soil samples, collected and analyzed from seven soil borings advanced during the RI, identified total metal concentrations (specifically lead and mercury) that would warrant additional sampling and analysis for their respective hazardous waste criteria. In-Text Table 2 summarizes the eight shallow fill soil sample intervals (collected from seven RI soil boring locations) (hereinafter referred to as “hazardous metals PSAs”) planned for further evaluation. The hazardous metals PSAs are also displayed on the attached Figure 1.

In-Text Table 2 - Proposed Hazardous Metal PSAs

Hazardous Metal PSAs	Representative RI Soil Boring ID	RI Sample Interval (feet bgs)	Metal Contaminant of Concern	Total Metal Concentration (mg/kg)	Additional Sampling Proposed
PSA-RISB04	RI-SB-04	1-3	Mercury	17	TCLP Mercury
		4-6	Mercury	17	TCLP Mercury
PSA-RISB12	RI-SB-12	5-7	Lead	2,080	TCLP Lead
PSA-RISB14	RI-SB-14	6-8	Mercury	9.99 J	TCLP Mercury
PSA-RISB19	RI-SB-19	4-6	Lead	3,250	TCLP Lead
PSA-RISB20	RI-SB-20	5-7	Mercury	14	TCLP Mercury
PSA-RISB22	RI-SB-22	0-2	Lead	1,260 J	TCLP Lead
PSA-RISB23	RI-SB-23	0-2	Mercury	4.5	TCLP Mercury

The hazardous metal PSAs identified in the In-Text Table 2 and displayed on the attached Figure 1 will be further evaluated for hazardous criteria as summarized below.

SI #1 Field Program Summary

SI #1 field activities, will include the following:

- The advancement of seven shallow soil borings up to 8 feet below ground surface (bgs) (to evaluate the seven hazardous metals PSAs); and
- The collection and TCLP laboratory analysis of eight shallow fill soil samples and associated quality assurance and quality control (QA/QC) samples. One sample will be collected at each soil boring at the one discrete depth interval shown on In-Text Table 2, with the exception of RI-SB-04, which will have two samples collected at the two discrete depth intervals shown on In-Text Table 2.

Geophysical Survey

A geophysical survey utilizing ground penetrating radar (GPR) and an electromagnetic (EM) utility locating system was conducted by NOVA Geophysical Engineering Services (NOVA) as part of RI field activities at the Site on April 5, 2021. The geophysical survey included a site-wide GPR grid scan (using 5-foot by 5-foot grid line spacing), with additional GPR lines collected in the vicinity of RI boring locations and other features of interest. The EM utility locator was used in conjunction with the GPR throughout the surveyed areas. A copy of the April 5, 2021, Geophysical Survey Report, prepared by NOVA is provided as Attachment B. Utilities and other identified anomalies are displayed on the survey plan within the report.

In addition, electric, gas, sewer, and water utilities were disconnected/abandoned in-place at the Site in February 2021 prior to building demolition, a required prerequisite to obtain a City of Yonkers Demolition Permit.

All proposed SI #1 boring locations will be positioned adjacent to soil borings advanced during the RI. RI soil boring locations were cleared by the previous geophysical investigation noted above; therefore, an additional geophysical survey is not warranted for this investigation.

SI #1 Soil Boring Advancement and Soil Sampling

Prior to soil boring advancement, the previously advanced RI soil borings noted in In-Text Table 2 will be field surveyed by a New York State-licensed surveyor using survey data obtained during the RI. SI #1 soil borings will be advanced directly adjacent to the surveyed point (i.e., within 1 to 2 feet).

To advance the shallow soil borings, AKRF proposes to use a track mounted Geoprobe[®] Direct-Push Probe (DPP) drill rig. Shallow soil borings will be advanced up to 8 feet bgs, as outlined in In-Text Table 2. Soil samples will be continuously obtained in a 2-inch diameter, stainless steel, macro-core sampler. All soil cores will be inspected by AKRF field personnel for evidence of contamination (e.g., odors, staining, etc.), screened for the presence of volatile organic compounds (VOCs) with a calibrated photoionization detector (PID), and logged using the Modified Burmister Soil Classification System,.

At each of the proposed soil boring locations, one to two soil samples will be submitted for laboratory analysis (at the sample depth intervals noted in In-Text Table 2). Soil samples slated for laboratory analysis will be placed in laboratory-supplied containers and shipped in accordance with appropriate EPA protocols to a New York State Department of Health (NYSDOH)-certified laboratory. The soil samples will be analyzed for either lead or mercury (depending on the PAOC noted in In-Text Table 2) by TCLP analysis.

A 10-business day standard TCLP analysis turnaround time will be requested from the laboratory. As required by the Category B sampling techniques, additional analysis will be included for quality assurance/quality control (QA/QC) measures. One QA/QC sample for soil will be collected as one field blank, one matrix spike/matrix spike duplicate (MS/MSD), and one blind duplicate sample [no trip blank for VOCs required]. The blind duplicate and MS/MSD sample will be analyzed by TCLP analysis for the

same analyte as the accompanying sample. The field blank aqueous sample will be analyzed for total concentration of the same analyte as the accompanying sample. A data usability summary report (DUSR), as required by NYSDEC, will be generated by a third-party data validator.

After each boring is completed, the boreholes will be filled with the boring soil cuttings (if not noticeably contaminated) in accordance with Section 3.3(e) of DER-10. Soil cuttings displaying field evidence of contamination [e.g., odors, elevated PID readings, and/or visible non-aqueous phase liquids (NAPL)] will be containerized in properly labeled Department of Transportation (DOT)-approved 55-gallon drums for waste characterization sampling and off-site disposal at a permitted facility. Boreholes that require drill cutting disposal will be filled with hydrated granular bentonite or bentonite chips. Disposable sampling equipment that comes in contact with environmental media will be disposed of as municipal trash as non-hazardous refuse.

Supplementary Investigation Report #1 (SIR #1)

After completion of the SI #1 field activities, AKRF will prepare an SIR #1 including, if warranted, an IRM Work Plan for submission to NYSDEC. As previously noted, it is anticipated that IRMs will be conducted to facilitate the construction schedule. The SIR #1 and IRM Work Plan will summarize the results of the SI #1 field activities, compare the analytical results to the EPA hazardous waste criteria for lead and mercury, and detail the interim remedial scope of work that will be required, including but not limited to: excavation of any identified hazardous metal source areas; excavation and removal of the suspected UST and associated contaminated soil (identified during the RI in the southeastern corner of the Site), environmental monitoring and other health and safety measures to protect workers and the surrounding community during implementation of the IRM Work Plan; excavation endpoint sampling; and post-remediation engineering and/or institutional controls, including installation of a Site cap.

The project team appreciates your expedited review of this SIWP #1. Please contact me at (914) 922-2356 or Scott Caporizzo at (914) 922-2354 if you have any questions or require additional information.

Sincerely,
AKRF, Inc.



Marc S. Godick, LEP
Sr. Vice President

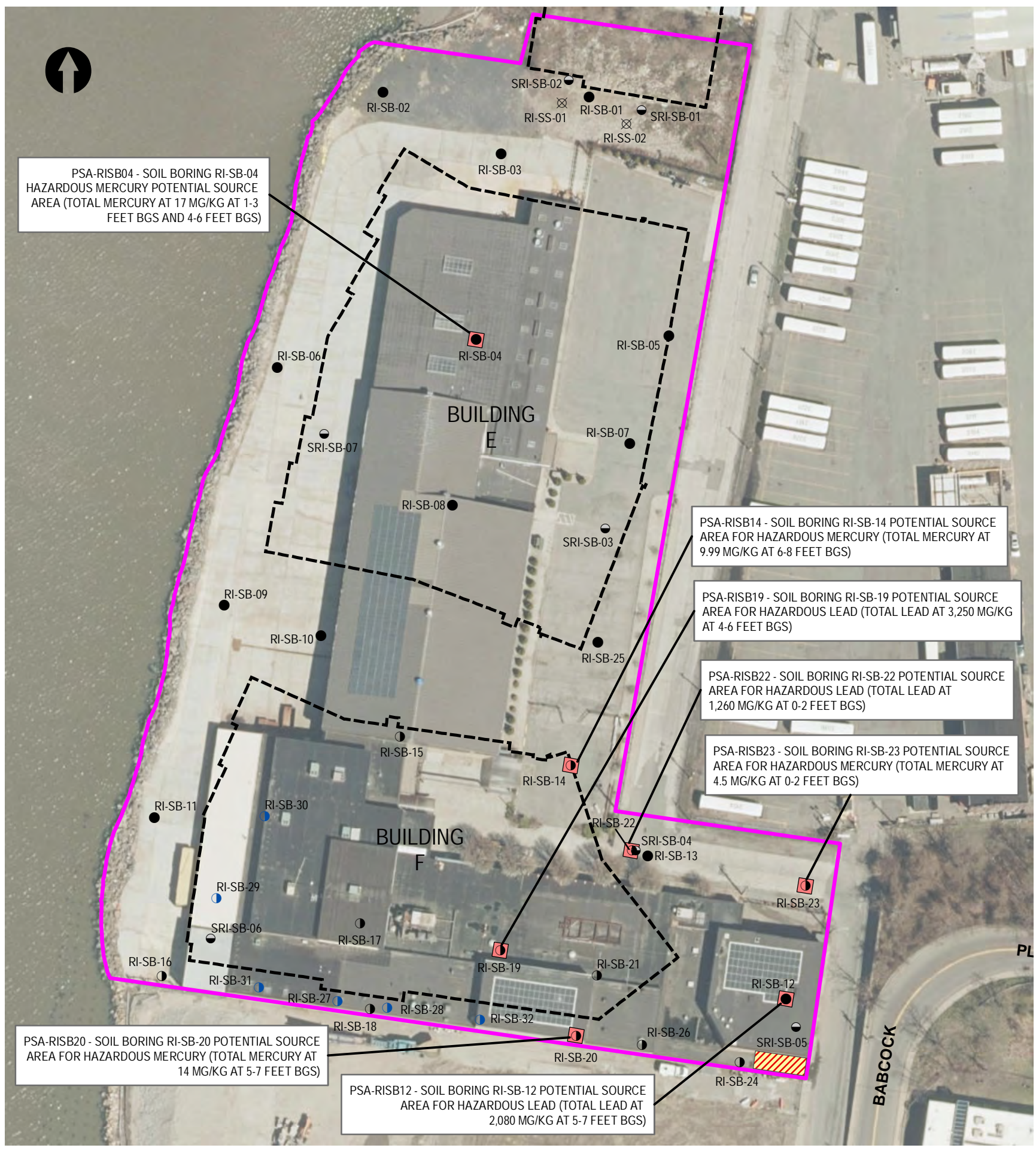
cc: Amen Omorogbe – NYSDEC
Jack Mandelbaum, Chanie Rosenberg, Ryan Masters, Moshe Botnick – Extell
Christine Leas – SPR
Scott Caporizzo – AKRF

Enclosed:

Figure 1 – Proposed Hazardous Metals Potential Source Areas (PSAs)
Attachment A – October 12, 2021 Proposed Metals Track 4 Remedy Site-Specific SCOs for Metals Letter (AKRF); and November 9, 2021 Acceptance Letter (NYSDEC)
Attachment B – April 5, 2021, Geophysical Survey Report (NOVA)

FIGURES

©2021 AKRF, V:\Projects\200131 - EXTELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\RAWP\200131 Fig 1 Potential Source Areas - Excavations.mxd/09/28/2021 4:56:50 PM mvelilleux



PSA-RISB04 - SOIL BORING RI-SB-04 HAZARDOUS MERCURY POTENTIAL SOURCE AREA (TOTAL MERCURY AT 17 MG/KG AT 1-3 FEET BGS AND 4-6 FEET BGS)

PSA-RISB20 - SOIL BORING RI-SB-20 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 14 MG/KG AT 5-7 FEET BGS)

PSA-RISB12 - SOIL BORING RI-SB-12 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 2,080 MG/KG AT 5-7 FEET BGS)

PSA-RISB14 - SOIL BORING RI-SB-14 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 9.99 MG/KG AT 6-8 FEET BGS)

PSA-RISB19 - SOIL BORING RI-SB-19 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 3,250 MG/KG AT 4-6 FEET BGS)

PSA-RISB22 - SOIL BORING RI-SB-22 POTENTIAL SOURCE AREA FOR HAZARDOUS LEAD (TOTAL LEAD AT 1,260 MG/KG AT 0-2 FEET BGS)

PSA-RISB23 - SOIL BORING RI-SB-23 POTENTIAL SOURCE AREA FOR HAZARDOUS MERCURY (TOTAL MERCURY AT 4.5 MG/KG AT 0-2 FEET BGS)

LEGEND

- BCP SITE BOUNDARY
- PROPOSED LOCATION OF FUTURE BUILDING
- SUSPECTED ABANDONED IN-PLACE UST
- SHALLOW SOIL BORING LOCATION
- INTERMEDIATE SOIL BORING LOCATION
- DEEP SOIL BORING LOCATION
- SURFACE SOIL SAMPLE LOCATION
- DNAPL DELINEATION SOIL BORING LOCATION
- POTENTIAL SOURCE AREA (PSA) FOR HAZARDOUS METALS

Aerial Source:
2018 New York State ITS GIS Orthimagery
Map Sources:
BCP Site Boundary from Ward Carpenter Engineers, Inc.
"Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

Proposed Location of Future Building from PS&S, PC. "Utility Construction Phasing Plan Phase 1" - dated 5-13-2021.

Boring locations obtained from PS&S survey "Sample Location Map, dated 6/2/21 (revised 9/20/21)



FORMER EXCELSIOR BAG
Yonkers, New York

POTENTIAL SOURCE AREAS (PSAs) FOR HAZARDOUS METALS

DATE	11/5/2021
PROJECT NO.	200131
FIGURE	1

ATTACHMENT A

**OCTOBER 12, 2021 PROPOSED METALS TRACK 4 REMEDY SITE-SPECIFIC SCOs FOR METALS
LETTER (AKRF); AND NOVEMBER 9, 2021 ACCEPTANCE LETTER (NYSDEC)**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 12th Floor, Albany, NY 12233-7014
P: (518) 402-9662 | F: (518) 402-9679
www.dec.ny.gov

Transmitted via e-mail

November 9, 2021

Extell Hudson Waterfront LLC
Attn: Jack Mandelbaum
805 Third Avenue, 7th Floor
New York, NY 10022
jmandelbaum@extell.com

Re: Remedial Action Work Plan (RAWP) - Proposed Track 4 Remedy Site-Specific Soil Cleanup Objectives (SCOs) for Metals
Former Excelsior Bag
NYSDEC Site no. C360190

Dear Jack Mandelbaum,

The New York State Department of Environmental Conservation (DEC) has reviewed the Remedial Action Work Plan (RAWP) - Proposed Track 4 Remedy Site-Specific Soil Cleanup Objectives (SCOs) for Metals Letter for the Former Excelsior Bag site. It is DEC's understanding that the proposed 1,000 part-per-million (ppm) and 4 ppm for lead and mercury, respectively, will be used as a guide to evaluate potential source areas of each contaminant. Each potential source area would then be analyzed via a Toxicity Characteristic Leaching Procedure analysis, and those soils that contain exceedances of the Resource Conservation and Recovery Act (RCRA) Environmental Protection Agency (EPA) allowable limits for lead or mercury will be removed from the site and properly disposed of at an appropriately permitted treatment, storage, and disposal facility. Since these targeted excavations will mitigate the potential for lead and mercury hazardous waste generation at the site, and since the groundwater generally does not appear to be impacted by these contaminants, DEC finds the proposed SCOs and preliminary remedial approach for lead and mercury in soils acceptable.

If you have any questions, please feel free to contact me at justin.starr@dec.ny.gov or 518-402-9662.

Sincerely,



Justin C. Starr, P.G.
Assistant Geologist, Remedial Bureau C
Division of Environmental Remediation

ec: S. Caporizzo, AKRF (scaporizzo@akrf.com)
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October 12, 2021

Mr. Justin Starr, Project Manager
NYSDEC Region 3, Division of Environmental Remediation
21 S Putt Corners Road
New Paltz, NY 12561
(518) 660-1347
Justin.Starr@dec.ny.gov

**Re: Remedial Action Work Plan (RAWP) - Proposed Track 4 Remedy Site-Specific Soil Cleanup Objectives (SCOs) for Metals
Former Excelsior Bag (BCP Site No. C360190)
City of Yonkers, Westchester County, NY**

Dear Mr. Starr:

This letter has been prepared by AKRF, Inc. (AKRF) on behalf of Extell Hudson Waterfront, LLC (the Volunteer) for the Former Excelsior Bag site (BCP Site No. C360190) (the "Site") to outline proposed Track 4 site-specific soil cleanup objectives (SCOs) for metals. Notwithstanding any additional feedback from the New York State Department of Environmental Conservation (NYSDEC) following review of this letter, the proposed remedial design criteria detailed herein will be described in further detail in the forthcoming Remedial Action Work Plan (RAWP) and/or Pre-Design Investigation (PDI) Work Plan..

Background

As discussed during the August 31, 2021 remedial investigation results/pre-remedial design coordination call between NYSDEC, the Volunteer, and AKRF, it is anticipated that the Site will be remediated to achieve site-specific Track 4 restricted-residential soil cleanup objectives (SCOs). As detailed further herein, it is proposed to utilize similar site-specific SCOs for metals established for the 57 Alexander Street site NYSDEC-approved Track 4 remedy (BCP No. C360194, located less than ¼ mile south of the Site), where it was determined appropriate to focus on hazardous criteria as part of the evaluation to determine whether potential areas of concern (PAOCs) for metals required remediation. At the 57 Alexander Street site, several shallow fill material samples across the site contained elevated total metal concentrations above background conditions (primarily lead and mercury); however, the results of the remedial investigation did not identify the presence of an exposure pathway (e.g., documented metals contamination in groundwater). Although no exposure pathways were identified, the elevated concentrations of lead and mercury were still considered PAOCs based on their potential to represent source areas due to the potential presence of hazardous substances [defined in DER-10§1.3(70); 6 NYCRR 375 §1.2(au)].

Based on this evaluation, the NYSDEC-approved RAWP for 57 Alexander Street required shallow fill materials (that would remain below the site cover system and above the groundwater table) with total metal concentrations exceeding established site-specific thresholds (i.e., lead exceeding 1,000 mg/kg) be further evaluated as potential source areas (PSAs) for hazardous metals via Toxicity Characteristic Leaching

Procedure (TCLP) sampling. Only soils exceeding hazardous criteria¹ were considered source areas, necessitating removal as part of the Track 4 remedy.

Based on the similar nature of metals contamination documented at the Former Excelsior Bag Site and the 57 Alexander Street BCP site, AKRF proposes to use a similar strategy to establish Track 4 criteria for determining whether metals contamination warrant remediation at the Site.

As further detailed in Section 5.3.5 of the Remedial Investigation Report (RIR) prepared for the Site, several shallow fill material samples across the site contained elevated total metal concentrations above Restricted Residential (RR) SCOs and/or Protection of Groundwater (PGW) SCOs, including arsenic, cadmium, copper, lead, mercury, nickel, and selenium; however, similar to the conditions documented at 57 Alexander Street, the remedial investigation did not identify the presence of an exposure pathway (e.g., documented metals contamination in groundwater). With the exception of selenium detected in one groundwater sample slightly above its NYSDEC Ambient Water Quality Standards and Guidance Value (AWQSGV), none of the metals detected in soil above RRSCOs and/or PGWSCOs were detected above AWQSGVs in site-wide groundwater.

Although an exposure pathway for metals found in shallow fill materials was not identified during the recent remedial investigation, based upon recent TCLP sampling conducted on shallow fill materials at 57 Alexander, it is anticipated that elevated total metal concentrations documented in shallow fill materials (specifically lead and mercury) have the potential to represent hazardous waste. The proposed remedial criteria and evaluation procedures for identifying hazardous metal PSAs is further detailed below.

Proposed Threshold Criteria for Identifying Hazardous Metal PSAs

AKRF proposes to employ the industry-standard “Rule of 20” as the threshold for identifying shallow fill materials that constitute PSAs for RCRA 8 metals (with the exception of lead as noted below). The “Rule of 20” notes that the maximum theoretical leachate concentration that can yield from a TCLP analysis performed on a waste that is 100% physically solid is 1/20 of the total concentration in the waste. In other words, in order to yield hazardous results, total metals concentrations must be at least 20 times higher than their respective EPA allowable limit. The “Rule of 20” is a conservative approach for assessing potentially hazardous levels of metals because it assumes 100% of the total concentration will be leached into the extraction fluid during the TCLP process.

Based on prior experience sampling for hazardous lead in shallow fill materials at neighboring BCP sites, total lead concentrations less than 1,000 mg/kg are typically unlikely to yield hazardous results. Also, as noted above, a total lead concentration of 1,000 mg/kg was the NYSDEC-approved hazardous evaluation threshold established for the remedy implemented at 57 Alexander Street. Therefore, a total lead concentration of 1,000 mg/kg is proposed as the threshold for identifying shallow fill material PSAs for lead at the Site.

Based on the proposed thresholds identified above, the total metal concentrations that would constitute PSAs are displayed in the In-Text Table 1 below.

¹ I.e., TCLP concentrations exceeding the Environmental Protection Agency (EPA) Maximum Concentrations established for the Resource Conservation and Recovery Act (RCRA) eight heavy metals (commonly referred to as the “RCRA 8”)] (e.g., TCLP lead concentrations above 5.0 mg/L)

In-Text Table 1
Proposed Total Metal Concentration Thresholds for Hazardous Metal PSAs

Metal	RCRA EPA Allowable Limit (mg/l)	Total Metals Thresholds (mg/kg)
Arsenic	5.0	100
Barium	100	2000
Cadmium	1.0	20
Chromium	5.0	100
Lead	5.0	1000
Mercury	0.2	4
Selenium	1.0	20
Silver	5.0	100

Eight shallow fill soil samples collected and analyzed from seven soil borings advanced during the remedial investigation identified total metal concentrations (specifically lead and mercury) exceeding the above thresholds. In-Text Table 2 summarizes the remedial investigation shallow fill material soil samples proposed for further evaluation under the RAWP to determine whether the identified PSAs contain hazardous waste warranting remediation as part of the Track 4 remedy. The proposed hazardous metal PSAs are also displayed on the attached Figure 1.

In-Text Table 2
Proposed Hazardous Metal PSAs

Hazardous Metal PSAs	Representative Soil Boring ID	Sample Interval (feet bgs)	Metal Contaminant of Concern	Total Metal Concentration (mg/kg)	Additional Sampling Proposed
PSA-RISB04	RI-SB-04	1-3	Mercury	17	TCLP Mercury
		4-6	Mercury	17	TCLP Mercury
PSA-RISB12	RI-SB-12	5-7	Lead	2,080	TCLP Lead
PSA-RISB14	RI-SB-14	6-8	Mercury	9.99 J	TCLP Mercury
PSA-RISB19	RI-SB-19	4-6	Lead	3,250	TCLP Lead
PSA-RISB20	RI-SB-20	5-7	Mercury	14	TCLP Mercury
PSA-RISB22	RI-SB-22	0-2	Lead	1,260 J	TCLP Lead
PSA-RISB23	RI-SB-23	0-2	Mercury	4.5	TCLP Mercury

Proposed Hazardous Metal PSA Evaluation Soil Sampling and Excavation Procedures

The hazardous metal PSAs identified in the In-Text Table 2 above and displayed on the attached Figure 1 will be further evaluated for hazardous conditions as part of the Pre-Design Investigation (PDI) that will be included in the forthcoming RAWP to refine the remedy. In summary, soil samples would be collected at the same sample intervals displayed in In-Text Table 2 and analyzed for hazardous lead or mercury via TCLP analysis.

Metals identified as hazardous (based upon TCLP sampling and analysis) will be targeted for removal during remedial activities. An approximate 10-foot by 10-foot (100-square foot) area surrounding the sample location would be excavated vertically to 1 foot below the deepest sampling interval that exceeded the hazardous criteria, or to the observed groundwater table, whichever is encountered first.

Sidewall and bottom of excavation confirmatory endpoint sampling would be included as a component of the remedy to confirm hazardous criteria thresholds are met prior to backfilling.

As discussed, AKRF requests NYSDEC review and preliminary feedback on the proposed remedial approach for addressing potential metals source areas prior to development and submission of the forthcoming draft RAWP (planned for submission late-October 2021).

In the meantime, please contact me at (914) 922-2354 or Marc Godick at (914) 922-2356 if you have any questions or require additional information.

Sincerely,
AKRF, Inc.

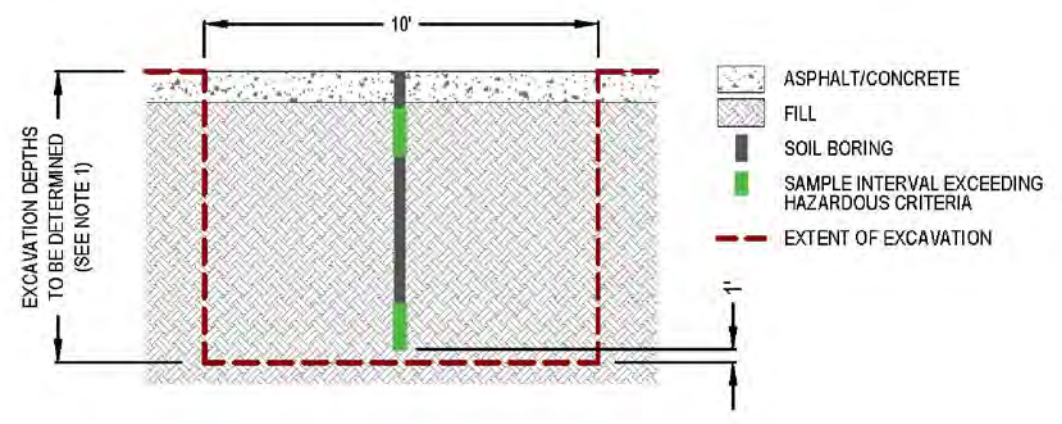
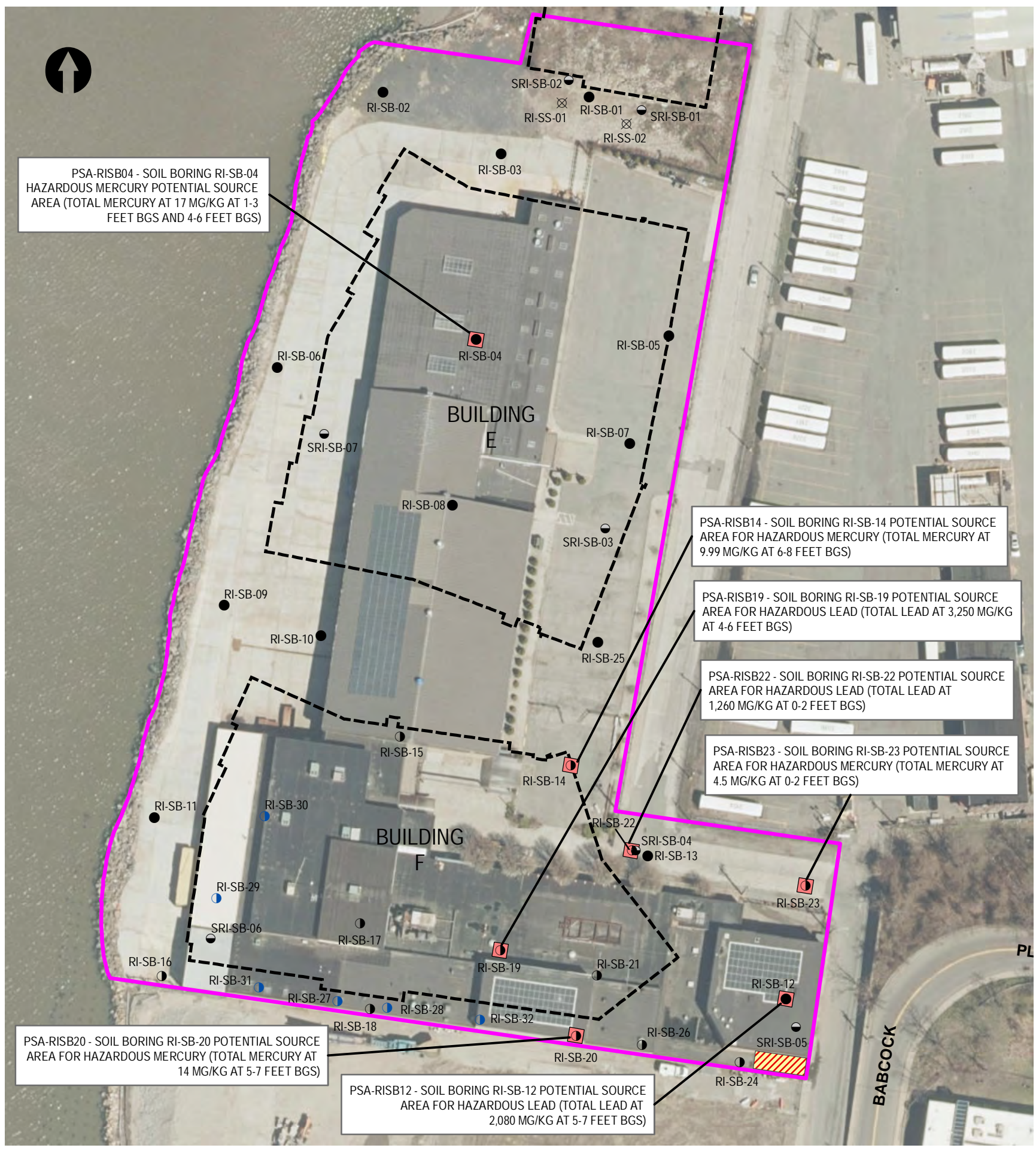
Scott Caporizzo, E.I.T.
Technical Director

cc: William Bennet – NYSDEC
Amen Omorogbe – NYSDEC
Jack Mandelbaum – Extell
Chanie Rosenberg – Extell
Ryan Masters – Extell
Moshe Botnick – Extell
Christine Leas – SPR
Marc Godick – AKRF

Enclosed: Figure 1 – Proposed Hazardous Metal Potential Source Areas (PSAs)

FIGURES

©2021 AKRF. V:\Projects\200131 - EXTCELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\RAWP\200131 Fig 1 Potential Source Areas - Excavations.mxd 9/28/2021 4:56:50 PM mvelleux



DETAIL 1 - TYPICAL HAZARDOUS METALS PSA EXCAVATION

Notes:

1. Metals identified as hazardous (based upon future TCLP sampling and analysis) will be targeted for removal during remedial activities. An approximate 10-foot by 10-foot (100-square foot) area centered on sample location will be excavated vertically to one foot below the deepest sampling interval which exceeded hazardous criteria, or to the observed groundwater table, whichever is encountered first.
2. Sidewall and bottom of excavation confirmatory endpoint sampling would be conducted following excavation to confirm hazardous thresholds are met prior to backfilling."

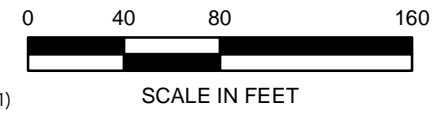
LEGEND

- BCP SITE BOUNDARY
- PROPOSED LOCATION OF FUTURE BUILDING
- SUSPECTED ABANDONED IN-PLACE UST
- SHALLOW SOIL BORING LOCATION
- INTERMEDIATE SOIL BORING LOCATION
- DEEP SOIL BORING LOCATION
- ⊗ SURFACE SOIL SAMPLE LOCATION
- DNAPL DELINEATION SOIL BORING LOCATION
- POTENTIAL SOURCE AREA (PSA) EXCAVATION FOR HAZARDOUS METALS

Aerial Source:
2018 New York State ITS GIS Orthoimagery
Map Sources:
BCP Site Boundary from Ward Carpenter Engineers, Inc.
"Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

Proposed Location of Future Building from PS&S, PC. "Utility Construction Phasing Plan Phase 1" - dated 5-13-2021.

Boring locations obtained from PS&S survey "Sample Location Map, dated 6/2/21 (revised 9/20/21)



440 Park Avenue South, New York, NY 10016

FORMER EXCELSIOR BAG
Yonkers, New York

POTENTIAL SOURCE AREAS (PSAs) FOR HAZARDOUS METALS

DATE	9/28/2021
PROJECT NO.	200131
FIGURE	1

ATTACHMENT B
APRIL 5, 2021, GEOPHYSICAL SURVEY REPORT (NOVA)

GEOPHYSICAL ENGINEERING SURVEY REPORT

Industrial Site

159 Alexander Street,
Yonkers, New York 10701

NOVA PROJECT NUMBER:

21-2205

DATED:

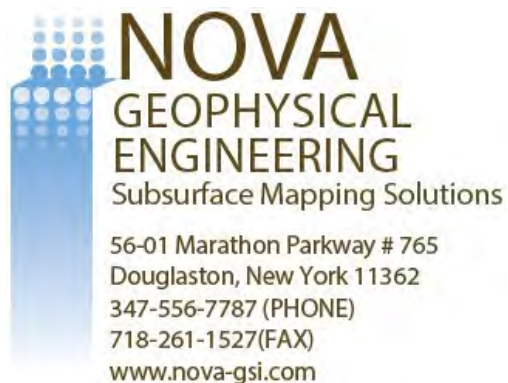
April 12, 2021

PREPARED FOR:

AKRF

Environmental, Planning, and Engineering Consultants
34 South Broadway, Suite 401, White Plains, NY 10601
www.akrf.com

PREPARED BY:



NOVA GEOPHYSICAL SERVICES

SUBSURFACE MAPPING SOLUTIONS
56-01 Marathon Parkway #765, Douglaston, New York 11362
Ph. 347-556-7787 Fax. 718-261-1527
www.nova-gsi.com

April 12, 2021

Scott P. Caporizzo, E.I.T.
Environmental Engineer

AKRF, INC.

Environmental, Planning, and Engineering Consultants

34 South Broadway, Suite 401, White Plains, NY 10601

New York, New York 10001-2727

P: 914.922.2354 | E: scaporizzo@akrf.com

Re: Geophysical Engineering Survey (GES) Report
Industrial Site
159 Alexander Street,
Yonkers, New York 10701

Dear Mr. Caporizzo,

Nova Geophysical Services (NOVA) is pleased to provide the findings of the geophysical engineering survey (GES) at the above referenced project site: 159 Alexander Street, Yonkers, New York 10701 (the "Site").

INTRODUCTION TO GEOPHYSICAL ENGINEERING SURVEY (GES)

NOVA performed a geophysical engineering survey (GES) consisting of a Ground Penetrating Radar (GPR) and Electromagnetic (EM) survey at the site. The purpose of this survey is to locate and identify utilities, underground storage tanks and other substructures on April 5th & 7th, 2021.

The equipment selected for this investigation was a Sensors and Software Noggin 250 MHz ground penetrating radar (GPR) and a GSSI UtilityScan 350 MHz GPR both with shielded antennas and a Radio Detection RD7100 Electromagnetic utility locator.

A GPR system consists of a radar control unit, control cable, and transducer (antenna). The control unit transmits a trigger pulse at a normal repetition rate of 250/350 MHz. The trigger pulse is sent to the transmitter electronics in the transducer via the control cable. The transmitter electronics amplify the trigger pulse into bipolar pulses that are radiated to the surface. The transformed pulses vary in shape and frequency according to the transducer used. In the subsurface, variations of the signal occur at boundaries

where there is a dielectric contrast (void, steel, soil type, etc.). Signal reflections travel back to the control unit and are represented as color graphic images for interpolation.

A typical electromagnetic (EM) utility locating system consists of a transmitter unit and a receiver unit. The receiver unit can be used independently of the transmitter unit in order to detect utility lines with an inherent EM signature (electric utility lines, water lines, etc.). If needed a current at a specific frequency can also be placed on a utility that is being located. This can be done via the transmitter unit by either direct connection or induction via an EM field varying at specific frequency. The receiver unit is then set to the selected frequency and the electromagnetic field created by the current running through the utility can be located allowing the utility to be marked.

GEOPHYSICAL METHODS

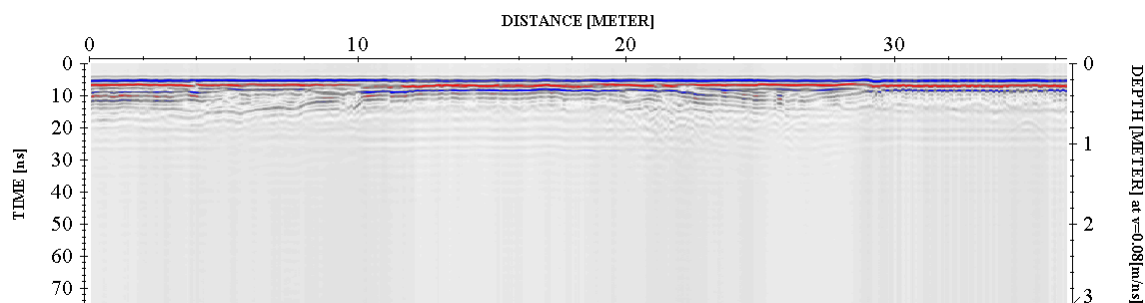
The project site was screened using GPR to search the specified area and inspected for reflections, which could be indicative of substructures and utilities within the subsurface. An EM utility locator was used to help determine the locations of utilities within the survey area.

EM data was collected and interpreted on site and suspected utilities marked as needed. GPR data profiles were collected for the areas of the Site specified by the client and processed as specified below.

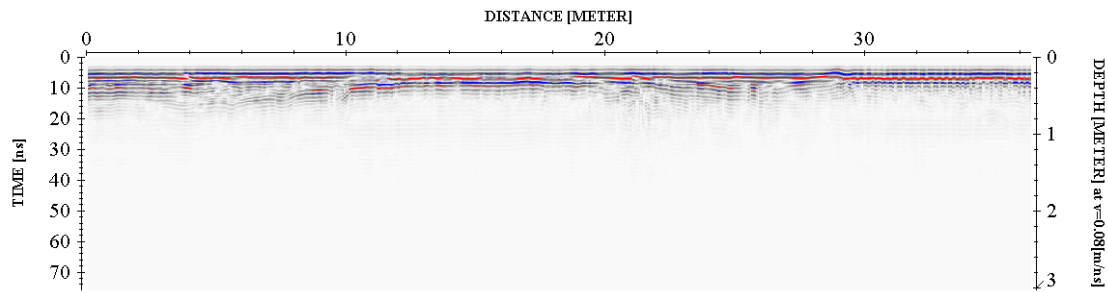
DATA PROCESSING

In order to improve the quality of the results and to better identify anomalies NOVA processed the collected data. The processing work flow is briefly described in this section.

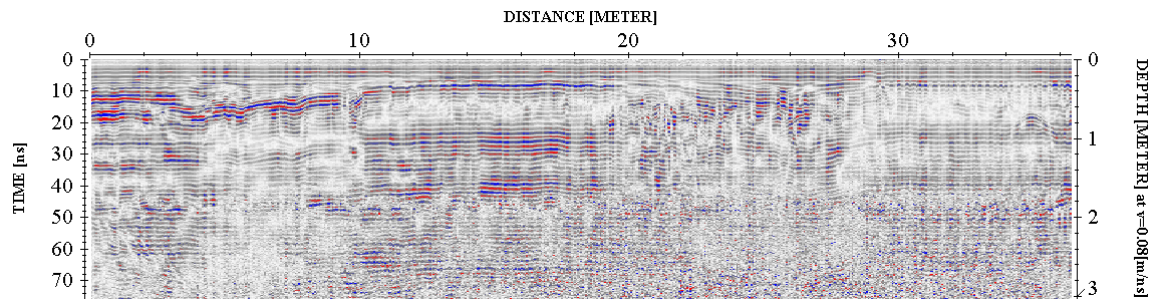
Step 1. Import Raw RAMAC data to standard processing format



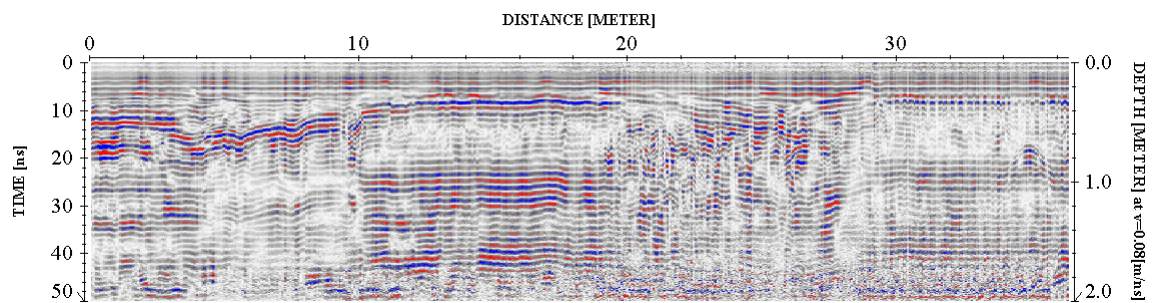
Step 2. Remove instrument noise (dewow)



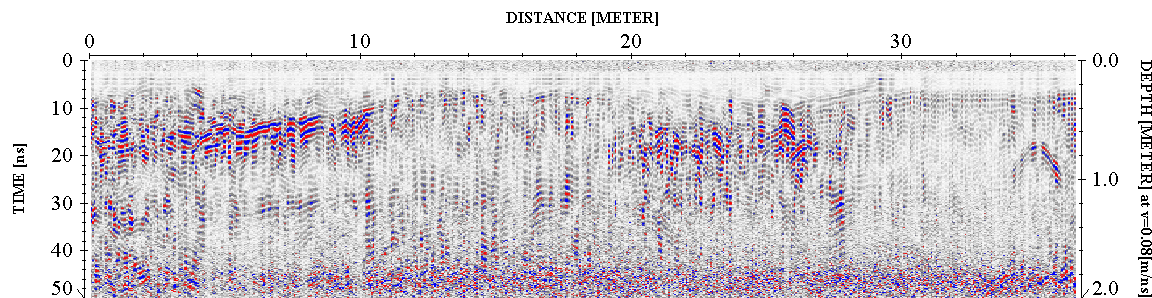
Step 3. Correct for attenuation losses (energy decay function)



Step 4. Remove static from bottom of profile (time cut)



Step 5. Mute horizontal ringing/noise (subtracting average)



The above example shows the significance of data processing. The last image (step 5) has higher resolution than the starting image (raw data – step 1) and represents the subsurface anomalies much more accurately.

PHYSICAL SETTINGS

NOVA observed the following physical conditions at the time of the survey.

Weather: Clear, Wind

Temperature: 60° F

Surface: Concrete, Asphalt, Fill

Survey Parameters: A GPR grid scan was conducted throughout the site, as shown in the survey plan. The approximate line spacing of the grid survey was approximately 5'. Additional GPR lines were collected in the vicinity of proposed boring locations and other features of interest. An EM utility locator was used in conjunction with the GPR throughout the surveyed areas.

Limitations: The geophysical noise level (GNL) was high at the site. The noise was a result of the site being in an urban environment, reinforced concrete, and multiple layers of pavement. Portions of the site were covered with debris at the time of the survey and could not be effectively surveyed with GPR.

RESULTS

The results of the geophysical engineering survey (GES) identified the following at the project site:

- Anomalies resembling potential subsurface utilities (such as sewer, water, electric, and gas) were identified during the GES along with associated surface features. The approximate locations are shown in the survey plan.
- 2 large geophysical anomalies resembling underground storage tanks were identified during the GES. Shown in the survey plan.
- All detected subsurface anomalies were marked in the onsite mark out.
- All cleared boring locations were marked in the onsite mark out.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

NOVA Geophysical Services



Levent Eskicakit, P.G., E.P.

Project Engineer

Attachments:

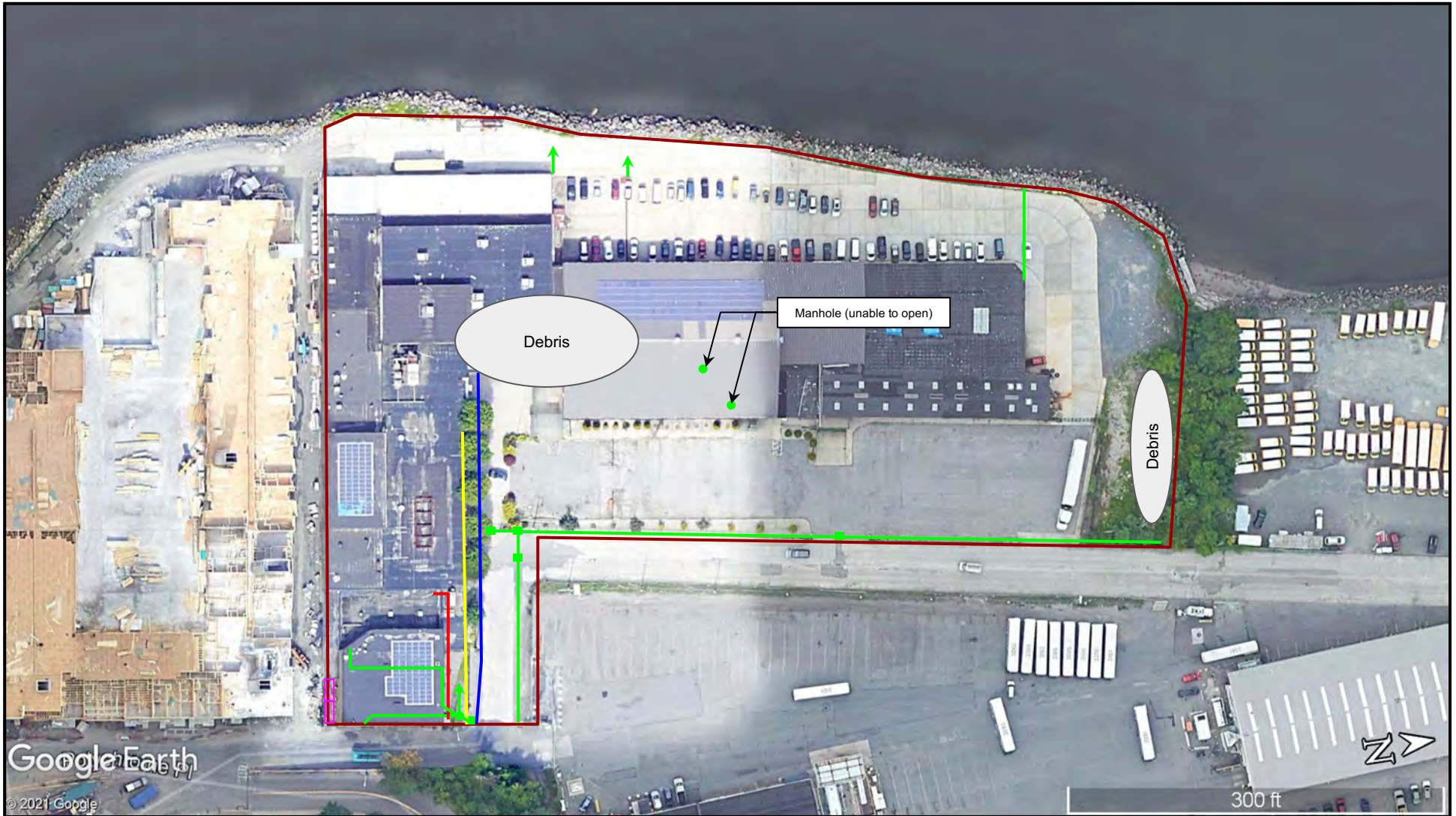
Location Map

Survey Plan

Geophysical Images



<p style="text-align: center;">NOVA Geophysical Services</p> <p style="text-align: center;">Subsurface Mapping Solutions 56-01 Marathon Parkway, # 765 Douglaston, New York 11362 Phone (347) 556-7787 * Fax (718) 261-1527 www.novagsi.com</p>	<p>Location Map</p>	<p>LEGEND</p>
	<p>SITE: Industrial Site 159 Alexander Street, Yonkers, New York 10701</p> <p>CLIENT: AKRF</p> <p>DATE: April 5th & 7th, 2021</p> <p>AUTH: Chris Steinley</p>	



		SURVEY PLAN	LEGEND	
<p style="text-align: center;">NOVA Geophysical Services</p> <p style="text-align: center;"><i>Subsurface Mapping Solutions</i> 56-01 Marathon Parkway, # 765 Douglaston, New York 11362 Phone (347) 556-7787 * Fax (718) 261-1527 www.novagsi.com</p>	<p>SITE: Industrial Site 159 Alexander Street, Yonkers, New York 10701</p>	<p> Survey Area</p>	<p>■ Drain</p>	
	<p>CLIENT: AKRF</p>	<p>— Gas</p>	<p> UST</p>	
	<p>DATE: April 5th & 7th, 2021</p>	<p>— Sewer</p>		
	<p>AUTH: Chris Steinley</p>	<p>— Water</p>		
		<p>— Electric</p>		

GEOPHYSICAL IMAGES

Industrial Site

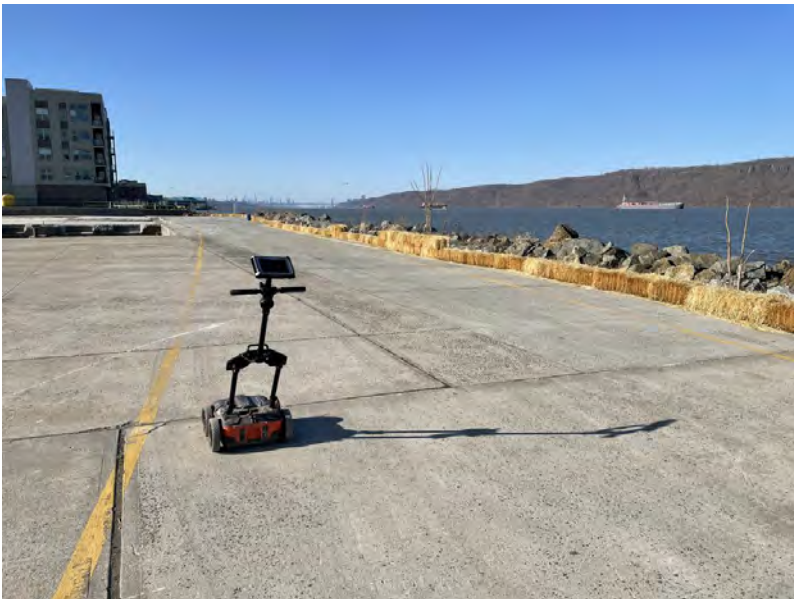
159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

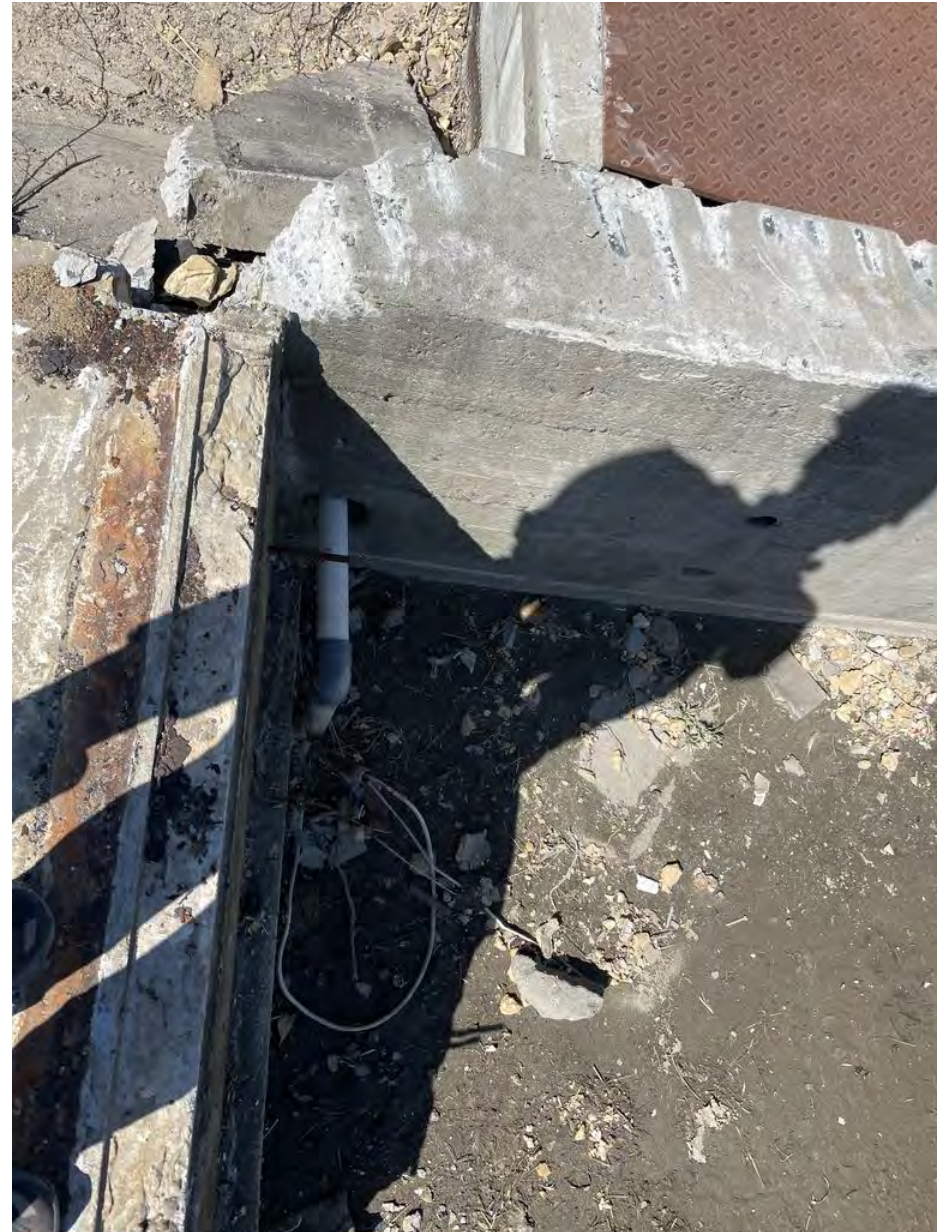
159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

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April 5th & 7th, 2021



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April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

159 Alexander Street,
Yonkers, New York 10701

April 5th & 7th, 2021



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Industrial Site

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Yonkers, New York 10701
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GEOPHYSICAL IMAGES

Industrial Site

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Yonkers, New York 10701
April 5th & 7th, 2021



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April 5th & 7th, 2021



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April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

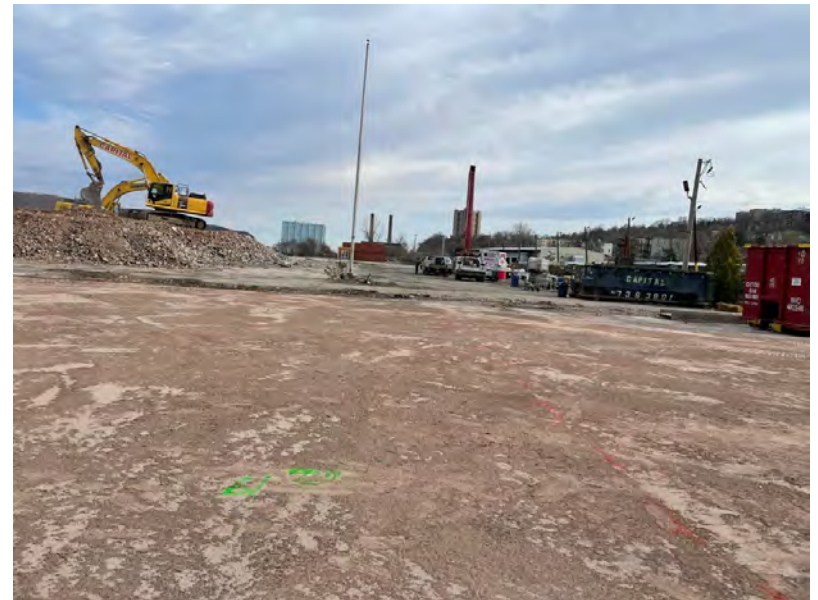
159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



GEOPHYSICAL IMAGES

Industrial Site

159 Alexander Street,
Yonkers, New York 10701
April 5th & 7th, 2021



ATTACHMENT B
SOIL BORING LOGS

SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB04		
		AKRF 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method: Geoprobe 7822 DT	Drilling			
		Sampling Method: 5' Acetate Liner	Start Time: 12:30		Finish Time: 12:40			
		Driller: Eastern	Date: 12/6/2021					
		Weather: Rain/Overcast 42/62 °F						
		Logged By: C. Bearden						
Depth (feet)	Recovery (inches)	Surface Condition: Concrete		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	22	Top 8": CONCRETE.		ND	Dry	ND	ND	SI-PSA-RISB04_1-3_20211206
2		Next 8": Brown SAND, trace Gravel, Brick (FILL).			Moist			
3		Next 3": CONCRETE (FILL).			Dry			
4		Bottom 3": Dark Brown SAND, trace Gravel, Silt (FILL).			Moist			
5								
6	36	Top 7": Light Greyish Brown SAND, trace Gravel, Silt (FILL).		ND	Moist	ND	ND	SI-PSA-RISB04_4-6_20211206
7		Bottom 29": Black SAND, little Silt, trace Gravel			Wet @ 7'			
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								


Notes: Soil samples analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Mercury (7470A).


Groundwater encountered at approximately 7 feet below grade.


End of soil boring at 10 feet below grade.


PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.


SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB12		
 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method:	Geoprobe 7822 DT	Drilling				
		Sampling Method:	5' Acetate Liner	Start Time: 11:15		Finish Time: 11:25		
		Driller:	Eastern	Date: 12/6/2021				
		Weather:	Rain/Overcast 42/62 °F					
Logged By:	C. Bearden							
Depth (feet)	Recovery (Inches)	Surface Condition: Concrete		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	22	Top 12": CONCRETE. Next 2": Dark Brown-Black SAND, trace Gravel, Silt (FILL). Bottom 8": Brown and Grey SAND, trace Gravel, Silt (FILL).		ND	Dry Moist Moist	ND	ND	
2								
3								
4								
5								
6	38	Brown and Grey SAND, trace Gravel, Silt, Wood (FILL).		ND	Moist Wet @ 7'	ND	ND	SI-PSA-RISB12_5-7_20211206
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Notes: Soil sample analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Lead (6010D). Groundwater encountered at approximately 6 feet below grade. End of soil boring at 10 feet below grade. PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected <i>Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.</i>								

SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB14		
 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method:	Geoprobe 7822 DT	Drilling				
		Sampling Method:	5' Acetate Liner	Start Time: 8:50		Finish Time: 9:10		
		Driller:	Eastern	Date: 12/6/2021				
		Weather:	Rain/Overcast 42/62 °F					
Logged By:	C. Bearden							
Depth (feet)	Recovery (inches)	Surface Condition: Asphalt		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	18	Brown SAND, trace Gravel (FILL).		ND	Wet	ND	ND	
2								
3								
4								
5								
6	20	Dark Brown SAND, trace Silt, Gravel, Wood (FILL).		ND	Wet	ND	ND	
7								SI-PSA-RISB14_6-8_20211206
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Notes: Soil sample analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Mercury (7470A). Groundwater depth could not be determined. End of soil boring at 10 feet below grade. PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected <i>Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.</i>								

SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB19		
 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method:	Geoprobe 7822 DT	Drilling				
		Sampling Method:	5' Acetate Liner	Start Time: 9:20		Finish Time: 9:30		
		Driller:	Eastern	Date: 12/6/2021				
		Weather:	Rain/Overcast 42/62 °F					
Logged By:	C. Bearden							
Depth (feet)	Recovery (Inches)	Surface Condition: Concrete		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	34	Top 10": Brown SAND, trace Gravel, Brick, Silt (FILL). Next 3": GRAVEL (FILL). Bottom 21": Grey and Dark Brown-Black SAND, trace Gravel (FILL).		ND	Moist	ND	ND	
2								
3								
4								
5								
6	42	Top 16": Dark Brown-Black SAND, trace Gravel, Silt (FILL). Bottom 26": Dark and Light Grey SAND, trace Gravel, Concrete, Brick, Silt (FILL).		ND	Moist Wet @ 6'	ND	ND	SI-PSA-RISB19_4-6_20211206
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Notes: Soil sample analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Lead (6010D). Groundwater encountered at approximately 6 feet below grade. End of soil boring at 10 feet below grade.								
PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected								
<i>Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.</i>								

SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB20		
 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method:	Geoprobe 7822 DT	Drilling				
		Sampling Method:	5' Acetate Liner	Start Time: 9:50		Finish Time: 10:15		
		Driller:	Eastern	Date: 12/6/2021				
		Weather:	Rain/Overcast 42/62 °F					
Logged By:	C. Bearden							
Depth (feet)	Recovery (Inches)	Surface Condition: Concrete		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	24	Top 12": CONCRETE. Bottom 12": Dark Brown SAND, trace Silt, Gravel (FILL).		ND	Dry Moist	ND	ND	
2								
3								
4								
5								
6	24	Top 12": Brown SAND, trace Silt, Gravel (FILL). Bottom 12": Grey SAND, trace Silt, Gravel (FILL).		ND	Moist Wet @ 8'	ND	ND	SI-PSA-RISB20_5-7_20211206
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Notes: Soil samples analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Mercury (7470A). Groundwater encountered at approximately 8 feet below grade. End of soil boring at 10 feet below grade. PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected <i>Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.</i>								

SOIL BORING LOG	Excelsior Bag Yonkers, NY AKRF Project Number: 210309	Soil Boring ID:	SI-PSA-RISB22
		Sheet 1 of 1	


 440 Park Avenue South, 7 th Floor New York, NY 10016	Drilling Method:	Geoprobe 7822 DT	Drilling	
	Sampling Method:	5' Acetate Liner	Start Time: 10:45	Finish Time: 10:50
	Driller:	Eastern		
	Weather:	Rain/Overcast 42/62 °F	Date: 12/6/2021	
	Logged By:	C. Bearden		

Depth (feet)	Recovery (Inches)	Surface Condition: Asphalt	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	36	Top 4": ASPHALT.	ND	Dry Moist	ND	ND	SI-PSA-RISB22_0-2_20211206
2		Next 10": CONCRETE.					
3		Next 12": Dark Brown-Black SAND, trace Gravel, Silt, Brick (FILL).					
4		Bottom 9": CONCRETE.					
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: Soil sample analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Lead (6010D).
 Groundwater was not encountered.
 End of soil boring at 5 feet below grade.

PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG		Excelsior Bag Yonkers, NY AKRF Project Number: 210309		Soil Boring ID: Sheet 1 of 1		SI-PSA-RISB23		
 440 Park Avenue South, 7 th Floor New York, NY 10016		Drilling Method:	Geoprobe 7822 DT	Drilling				
		Sampling Method:	5' Acetate Liner	Start Time: 11:00		Finish Time: 11:05		
		Driller:	Eastern	Date: 12/6/2021				
		Weather:	Rain/Overcast 42/62 °F					
Logged By:	C. Bearden							
Depth (feet)	Recovery (Inches)	Surface Condition: Concrete		Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	25	Top 13": Light Brown SAND, trace Gravel (FILL). Bottom 12": Dark Brown SILT, little Sand, trace Gravel (FILL).		ND	Moist	ND	ND	SI-PSA-RISB23_0-2_20211206
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Notes: Soil samples analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Mercury (7470A). Groundwater was not encountered. End of soil boring at 5 feet below grade.								
PID = photoionization detector ppm = parts per million NAPL = non-aqueous phase liquid ND = not detected								
<i>Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.</i>								

ATTACHMENT C
SOIL SAMPLE CATEGORY B DATA DELIVERABLE

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Alpha Analytical

Laboratory Code: 11148

SDG Number: L2166777

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Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2166777-01	SI-PSA-RISB14_6-8_20211206	SOIL	YONKERS, NY	12/06/21 09:15	12/06/21
L2166777-02	SI-PSA-RISB19_4-6_20211206	SOIL	YONKERS, NY	12/06/21 09:40	12/06/21
L2166777-03	SI-PSA-RISB20_5-7_20211206	SOIL	YONKERS, NY	12/06/21 10:20	12/06/21
L2166777-04	SI-PSA-RISBX01_5-7_20211206	SOIL	YONKERS, NY	12/06/21 10:25	12/06/21
L2166777-05	SI-PSA-RISB22_0-2_20211206	SOIL	YONKERS, NY	12/06/21 10:55	12/06/21
L2166777-06	SI-PSA-RISB23_0-2_20211206	SOIL	YONKERS, NY	12/06/21 11:10	12/06/21
L2166777-07	SI-PSA-RISB12_5-7_20211206	SOIL	YONKERS, NY	12/06/21 11:40	12/06/21
L2166777-08	SI-PSA-RISB04_1-3_20211206	SOIL	YONKERS, NY	12/06/21 12:50	12/06/21
L2166777-09	SI-PSA-RISB04_4-6_20211206	SOIL	YONKERS, NY	12/06/21 12:55	12/06/21
L2166777-10	SI-PSA-FB01_20211206	WATER	YONKERS, NY	12/06/21 12:00	12/06/21

Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Case Narrative (continued)

Report Revision

December 21, 2021: The Client ID was amended on L2166777-05.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: *Cristen Walker*

Report Date: 12/21/21

Title: Technical Director/Representative



GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.

Report Format: DU Report with 'J' Qualifiers



Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Data Qualifiers

- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers





Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)
Purge time: 11 min

Columns (length x ID x df):
RTX-VMS 20m x 0.18mm x 1um
RTX-VMS 30m x 0.25mm x 1.4um
RTX-502.2 40m x 0.18mm x 1um

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon (or equivalent)
Autosampler: EST Centurion (or equivalent)

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 um
ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar Velocity / EST Encon
Autosampler: Varian Archon / EST Centurion
Purge time: 11 min

Column Type: DB-VRX
Column Length: 60 Meters
df: 1.40 um
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

Column Type: Haysep S Column
Column Length: 2 Meters packed
(100/200 mesh)

Autosampler: LEAP Headspace

Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200
Autosampler: Entech 7016CA or 7016D

Column Type: Restek RTX-1
Column Length: 60 Meters
df: 1.00 um
ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material

Trap 2: Tenax: manufacturer-Entech: 20 cm packing material



Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary



Alpha Job Number : L2166777

Received : 06-DEC-2021

Account Name : AKRF, Inc.

Reviewer : Craig Green

Project Number : 200131

Project Name : EXCELSIOR BAG

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	5.3	

Condition Information

- 1) All samples on COC received? **YES**
- 2) Extra samples received? **NO**
- 3) Are there any sample container discrepancies? **NO**
- 4) Are there any discrepancies between sample labels & COC? **NO**
- 5) Are samples in appropriate containers for requested analysis? **YES**
- 6) Are samples properly preserved for requested analysis? **YES**
- 7) Are samples within holding time for requested analysis? **YES**
- 8) All sampling equipment returned? **NA**

Volatile Organics/VPH

- 1) Reagent Water Vials Frozen by Client? **NA**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Dec 21 2021, 04:16 pm

Login Number: L2166777
Account: AKRF-M-2 AKRF, Inc. Project: 200131
Received: 06DEC21 Due Date: 20DEC21

Sample #	Client ID	Mat	PR	Collected
L2166777-01	SI-PSA-RISB14_6-8_20211206	3	S0	06DEC21 09:15
PREPC - Metals (Hg) ASP-B Package Due Date: 12/21/21				
ASP-B, HG-C, PREPC				
L2166777-02	SI-PSA-RISB19_4-6_20211206	3	S0	06DEC21 09:40
PREPC - Metals (Pb) Package Due Date: 12/21/21				
PB-CI, PREPC				
L2166777-03	SI-PSA-RISB20_5-7_20211206	3	S0	06DEC21 10:20
PREPC - Metals (Hg) Package Due Date: 12/21/21				
HG-C, PREPC				
L2166777-04	SI-PSA-RISBX01_5-7_20211206	3	S0	06DEC21 10:25
PREPC - Metals (Hg) Package Due Date: 12/21/21				
HG-C, PREPC				
L2166777-05	SI-PSA-RISB22_0-2_20211206	3	S0	06DEC21 10:55
PREPC - Metals (Pb) Package Due Date: 12/21/21				
PB-CI, PREPC				
L2166777-06	SI-PSA-RISB23_0-2_20211206	3	S0	06DEC21 11:10
PREPC - Metals (Hg) Package Due Date: 12/21/21				
HG-C, PREPC				
L2166777-07	SI-PSA-RISB12_5-7_20211206	3	S0	06DEC21 11:40
PREPC - Metals (Pb) L2166777-07 MS L2166777-07 MSD Package Due Date: 12/21/21				

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Dec 21 2021, 04:16 pm

Login Number: L2166777
Account: AKRF-M-2 AKRF, Inc. Project: 200131
Received: 06DEC21 Due Date: 20DEC21

Sample #	Client ID	Mat PR Collected
MS/MSD, PB-CI, PREPC		
L2166777-08	SI-PSA-RISB04_1-3_20211206	3 S0 06DEC21 12:50
PREPC - Metals (Hg) Package Due Date: 12/21/21		
HG-C, PREPC		
L2166777-09	SI-PSA-RISB04_4-6_20211206	3 S0 06DEC21 12:55
PREPC - Metals (Hg) Package Due Date: 12/21/21		
HG-C, PREPC		
L2166777-10	SI-PSA-FB01_20211206	1 S0 06DEC21 12:00
Package Due Date: 12/21/21		
PB-6020T, PREPT		



**NEW YORK
CHAIN OF
CUSTODY**

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page

1 of 1

Date Rec'd
In Lab

12/6/21

ALPHA Job #

L2166777

Project Information

Project Name: Excelsior Bay
Project Location: Yonkers NY

Project # 200131

(Use Project name as Project #)

Project Manager: Scott Caporizzo

ALPHAQuote #:

Turn-Around Time

Standard Due Date:
Rush (only if pre approved) # of Days:

Deliverables

ASP-A ASP-B
 EQUIS (1 File) EQUIS (4 File)
 Other

Billing Information

Same as Client Info
PO #

Client Information

Client: AKRF
Address: 440 Park Ave S.
NY NY
Phone: 203-252-4015
Fax:
Email: Scaporizzo@akrf.com

Regulatory Requirement

NY TOGS NY Part 375
 AWQ Standards NY CP-51
 NY Restricted Use Other RCRA
 NY Unrestricted Use
 NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
 NJ NY
 Other:

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

AKRF EQUIS EDDS

Please specify Metals or TAL.

ANALYSIS

TCLP Lead
TCLP Mercury
Total Arsenic CB

Sample Filtration

Done
 Lab to do
Preservation
 Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	TCLP Lead	TCLP Mercury	Total Arsenic CB				Sample Specific Comments
		Date	Time									
66777-01	SI-PSA-RISB14-6B-2021206	12/6/21	9:15	Soil	CB		X					
-02	SI-PSA-RISB19-4-6-2021206		9:40				X					
-03	SI-PSA-RISB20-5-7-2021206		10:20				X					
-04	SI-PSA-RISBX01-5-7-2021206		10:25				X					
-05	SI-PSA-RISB13-0-2-2021206		10:55				X					
-06	SI-PSA-RISB23-0-2-2021206		11:10				X					
-07	SI-PSA-RISB12-5-7-2021206		11:40				X					MS/MSD
-08	SI-PSA-RISB04-1-3-2021206		12:50				X					
-09	SI-PSA-RISB04-4-6-2021206		12:55				X					
-10	SI-PSA-FB01-2021206		12:00					X				

Preservative Code:
A = None
B = HCl
C = HNO₃
D = H₂SO₄
E = NaOH
F = MeOH
G = NaHSO₄
H = Na₂S₂O₇
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: A A P
Preservative: A A C

Relinquished By:	Date/Time	Received By:	Date/Time
<u>Claire Boudier</u>	<u>12/6/21 13:43</u>	<u>WASHINGTON AAL</u>	<u>12/6/21 13:43</u>
<u>WASHINGTON</u>	<u>12/6/21 15:00</u>	<u>J. [Signature]</u>	<u>12/6/21 17:20</u>
<u>J. [Signature]</u>	<u>12/6/21</u>	<u>J. [Signature]</u>	<u>12/6/21</u>

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Metals

Inorganic Data (ICP Analysis)

Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-02
Client ID : SI-PSA-RISB19_4-6_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,6010D
Lab File ID : WG1585416.pdf
Sample Amount : 5ml
Digestion Method : EPA 3015

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 09:40
Date Received : 12/06/21
Date Analyzed : 12/20/21 14:13
Dilution Factor : 1
Analyst : EW
Instrument ID : TRACE5
%Solids : NA
Date Digested : 12/15/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	0.726	0.500	0.027	



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-05
 Client ID : SI-PSA-RISB22_0-2_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : SOIL
 Analytical Method : 1,6010D
 Lab File ID : WG1585416.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 3015

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 10:55
 Date Received : 12/06/21
 Date Analyzed : 12/20/21 14:17
 Dilution Factor : 1
 Analyst : EW
 Instrument ID : TRACE5
 %Solids : NA
 Date Digested : 12/15/21
 Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	4.53	0.500	0.027	



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-07
Client ID : SI-PSA-RISB12_5-7_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,6010D
Lab File ID : WG1585416.pdf
Sample Amount : 5ml
Digestion Method : EPA 3015

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 11:40
Date Received : 12/06/21
Date Analyzed : 12/20/21 12:50
Dilution Factor : 1
Analyst : EW
Instrument ID : TRACE5
%Solids : NA
Date Digested : 12/15/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	0.444	0.500	0.027	J



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : WG1583508-1
 Client ID : WG1583508-1BLANK
 Sample Location :
 Sample Matrix : SOIL
 Analytical Method : 1,6010D
 Lab File ID : WG1585416.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 3015

Lab Number : L2166777
 Project Number : 200131
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 12/20/21 14:04
 Dilution Factor : 1
 Analyst : EW
 Instrument ID : TRACE5
 %Solids : NA
 Date Digested : 12/15/21
 Date Extracted : 12/08/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	ND	0.500	0.027	U



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)							
	True	Found	%R	True	Found	%R	Found	%R	Found	%R	
Lead	0.500	0.4889	98	0.5000	0.473	95	0.461	92	0.481	96	

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Lead				0.5000	0.475	95	0.485	97	0.488	98

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration		Continuing Calibration				Preparation			
	Blank		Blank(s)				Blank			
Lab ID	: R1514933-4		R1514933-7		R1514933-9		R1514933-11		WG1583508-1	
Date Analyzed:	12/20/21 09:41		12/20/21 10:59		12/20/21 11:59		12/20/21 12:15		12/20/21 14:04	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Lead	0.00270	U	0.00270	U	0.00270	U	0.00270	U	0.027	U



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	Q	
Lab ID :			R1514933-13		R1514933-15		R1514933-17	
Date Analyzed:			12/20/21 13:07		12/20/21 14:00		12/20/21 14:26	
Lead			0.00270	U	0.00270	U	0.00270	U



Form 4a Interference Check Sample

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5

Lab Number : L2166777
 Project Number : 200131
 Concentration Units : mg/L

Analyte	True		Initial Found		Final Found					
	Sol.	Sol.	Sol.	%R	Sol.	%R	Sol.	%R		
	A	AB	A	%R	AB	%R	A	%R	AB	%R
Lead										

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%



Form 5a Matrix Spike

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Client Sample ID : SI-PSA-RISB12_5-7_20211206
Lab Sample ID : L2166777-07
Matrix Spike : WG1583508-3
Matrix Spike Dup : WG1583508-4

Lab Number : L2166777
Project Number : 200131
Matrix : SOIL
MS Analysis Date : 12/20/21 12:54
MSD Analysis Date : 12/20/21 12:59

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample			Matrix Spike Duplicate			RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R			
Lead, TCLP	0.444J	5.3	5.24	99	5.3	5.17	98	1	75-125	20



Form 7

Laboratory Control Sample

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Client Sample ID : NA
Lab Sample ID : WG1583508-2
Dup Sample ID :

Lab Number : L2166777
Project Number : 200131
Matrix : SOIL
LCS Analysis Date : 12/20/21 14:08
LCSD Analysis Date:

Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Lead, TCLP	5.30	4.80	90.					75-125	20



U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	___
Aluminum	396.15	0.0000000	0.0000020	-0.0000310	-0.0000090	
Antimony	206.83	-0.0000020	0.0000040	-0.0000110	-0.0000050	
Arsenic	189.04	0.0000090	-0.0000010	-0.0000700	0.0000000	
Barium	455.40	-0.0000040	-0.0000020	-0.0000110	-0.0000010	
Beryllium	313.40	-0.0000020	-0.0000020	-0.0000050	0.0000000	
Cadmium	214.44	0.0000000	-0.0000030	0.0000000	-0.0000010	
Calcium	315.89	0.0000780	0.0000000	-0.0000170	0.0000710	
Chromium	267.72	0.0000050	-0.0000020	0.0000120	0.0000000	
Cobalt	228.62	-0.0000120	-0.0000060	-0.0000250	-0.0000020	
Copper	324.75	-0.0000030	-0.0000020	-0.0000040	0.0000110	
Iron	259.94	0.0000180	-0.0000120	0.0000000	-0.0000030	
Lead	220.35	0.0001100	-0.0000010	0.0000180	-0.0000010	
Magnesium	279.08	-0.0000540	-0.0000280	0.0000190	0.0000000	
Manganese	257.61	-0.0000030	-0.0000020	-0.0000080	0.0000020	
Mercury						
Nickel	231.60	-0.0000130	-0.0000050	-0.0000240	-0.0000020	
Potassium	766.49	-0.0012590	-0.0007040	-0.0028490	-0.0002350	
Selenium	196.09	-0.0000200	0.0000000	-0.0000290	-0.0000010	
Silver	328.07	-0.0000040	-0.0000020	-0.0000090	-0.0000010	
Sodium	589.59	-0.0006160	-0.0005220	-0.0020960	-0.0001600	
Thallium	190.86	-0.0000060	-0.0000040	-0.0000050	-0.0000010	
Vanadium	292.40	-0.0000050	-0.0000030	0.0000100	-0.0000020	
Zinc	206.20	0.0002750	0.0000030	-0.0007990	-0.0000040	

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	-0.0022950	-0.0018570
Antimony	206.83	0.0000000	0.0000000	0.0000000	-0.0003900	-0.0000120
Arsenic	189.04	0.0000000	0.0000000	0.0000210	-0.0001780	-0.0001730
Barium	455.40	0.0000000	0.0000000	0.0000000	-0.0002050	-0.0002030
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000860
Cadmium	214.44	0.0000000	0.0000000	0.0000000	-0.0002090	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	-0.0020880	-0.0018790
Chromium	267.72	0.0000000	0.0000000	0.0000000	-0.0002010	-0.0003100
Cobalt	228.62	0.0000000	0.0000000	0.0000000	-0.0004810	-0.0004970
Copper	324.75	0.0000000	0.0000000	0.0000000	-0.0002330	-0.0002260
Iron	259.94	0.0000000	0.0000000	0.0000000	-0.0012310	-0.0009570
Lead	220.35	0.0000000	0.0000000	0.0000000	-0.0001700	-0.0001850
Magnesium	279.08	0.0000000	0.0000000	0.0000000	-0.0022440	-0.0017830
Manganese	257.61	0.0000000	0.0000000	0.0000000	-0.0001950	-0.0002020
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	-0.0005490	-0.0005200
Potassium	766.49	0.0000000	0.0000000	0.0000000	-0.0522980	-0.0517110
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000060	0.0000030
Silver	328.07	0.0000000	0.0000000	0.0000000	-0.0001740	-0.0001560
Sodium	589.59	0.0000000	0.0000000	0.0000000	-0.0417330	-0.0407400
Thallium	190.86	0.0000000	0.0000000	0.0000000	-0.0002650	-0.0002240
Vanadium	292.40	0.0000000	0.0000000	0.0000000	-0.0002090	-0.0002040
Zinc	206.20	0.0000000	0.0000000	0.0000000	-0.0000320	-0.0009250

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Co	Cu	Pb	Mn
Aluminum	396.15	-0.0020320	-0.0005350	-0.0005960	0.0000000	-0.0003930
Antimony	206.83	0.0049920	-0.0001600	-0.0001410	0.0000000	-0.0001780
Arsenic	189.04	0.0002670	-0.0001290	-0.0000570	0.0000000	-0.0000030
Barium	455.40	-0.0002000	-0.0000500	-0.0000660	0.0000000	-0.0000350
Beryllium	313.40	-0.0000900	-0.0000220	-0.0000300	0.0000000	-0.0000110
Cadmium	214.44	-0.0000290	-0.0000520	-0.0000680	0.0000000	-0.0000270
Calcium	315.89	-0.0020720	0.0009940	-0.0005720	0.0000000	-0.0000920
Chromium	267.72	0.0000000	-0.0000480	-0.0000690	0.0000000	0.0001140
Cobalt	228.62	-0.0005870	0.0000000	-0.0001660	0.0000000	-0.0000740
Copper	324.75	-0.0002130	-0.0000490	0.0000000	0.0000000	0.0000300
Iron	259.94	-0.0010370	-0.0002940	-0.0003760	0.0000000	-0.0001890
Lead	220.35	-0.0001960	-0.0003260	0.0002710	0.0000000	0.0000640
Magnesium	279.08	-0.0024620	-0.0005640	-0.0008730	0.0000000	-0.0069760
Manganese	257.61	-0.0002060	-0.0000480	-0.0000750	0.0000000	0.0000000
Mercury						
Nickel	231.60	-0.0005230	-0.0002210	-0.0001810	0.0000000	-0.0000730
Potassium	766.49	-0.0512430	-0.0126240	-0.0178480	0.0000000	-0.0089880
Selenium	196.09	-0.0000520	0.0000530	-0.0000240	0.0000000	0.0003780
Silver	328.07	-0.0001430	-0.0000370	-0.0000450	0.0000000	0.0001940
Sodium	589.59	-0.0407180	-0.0097580	-0.0137660	0.0000000	-0.0070470
Thallium	190.86	-0.0000390	0.0020440	-0.0000840	-0.0000200	0.0003990
Vanadium	292.40	-0.0002210	-0.0000500	-0.0000650	0.0000000	0.0001060
Zinc	206.20	-0.0012900	0.0000070	0.0003430	0.0001200	-0.0001520

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Ni	K	Se	Ag	Na
Aluminum	396.15	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.83	0.000000	0.000000	0.000000	0.000000	0.000000
Arsenic	189.04	0.000000	0.000000	0.000000	0.000000	0.000000
Barium	455.40	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.40	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.44	0.000000	0.000000	0.000000	0.000000	0.000000
Calcium	315.89	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.72	0.000000	0.000000	0.000000	0.000000	0.000000
Cobalt	228.62	0.000000	0.000000	0.000000	0.000000	0.000000
Copper	324.75	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	259.94	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.35	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.08	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.61	0.000000	0.000000	0.000000	0.000000	0.000000
Mercury						
Nickel	231.60	0.000000	0.000000	0.000000	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.09	0.000000	0.000000	0.000000	0.000000	0.000000
Silver	328.07	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.59	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.86	0.000000	0.000000	0.000000	0.000000	0.000000
Vanadium	292.40	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.20	0.000000	0.000000	0.000000	0.000000	0.000000

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	-0.0000310	0.0000000	0.0000000	0.0000000	0.0009550
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000010	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0003010	0.0000000	0.0000210	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000310	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0003850	-0.0000480	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20					

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	-0.0003720	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	-0.0017200	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0002820	0.0000000		
Vanadium	292.40	0.0000000	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	-0.0000310	0.0000000	0.0000000	0.0000000	0.0009550
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000010	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0003010	0.0000000	0.0000210	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000310	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0003850	-0.0000480	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20					

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	-0.0003720	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	-0.0017200	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0002820	0.0000000		
Vanadium	292.40	0.0000000	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	0.0001500	0.0000000	-0.0004550	0.0000000	0.0038670
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000380	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Lead	220.35	0.0001750	0.0000000	0.0002100	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	-0.0000350	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000100	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0017890	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____
 Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____
 ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	0.0000000	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	0.0000000	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0000000	0.0000000		
Vanadium	292.40	0.0011610	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

Linear Dynamic Range Summary (ICP)

Last Updated
5/14/2019

	High Cal Standard	Lowest LDR	90% Limit *	Trace 4 5/12/2016	Trace 5 3/20/2018	Trace 6 12/28/2016	Trace 7 4/12/2016
Aluminum	25	700	630	5000	1000	750	700
Antimony	1	5	4.5	25	100	100	5
Arsenic	1	50	45	100	50	100	100
Barium	1	15	13.5	100	100	20	15
Beryllium	1	10	9	50	10	10	10
Boron	1	10	9	500	100	10	50
Cadmium	1	10	9	25	50	10	100
Calcium	10	100	90	500	100	750	1000
Chromium	1	10	9	50	100	10	50
Cobalt	1	25	22.5	100	50	100	25
Copper	1	50	45	100	100	50	100
Iron	25	100	90	750	100	500	500
Lead	1	100	90	500	100	100	100
Magnesium	10	500	450	500	1000	750	1000
Manganese	1	100	90	100	100	100	100
Molybdenum	1	10	9	100	50	10	25
Nickel	1	25	22.5	100	100	50	25
Potassium	25	750	675	1000	1000	750	1000
Selenium	1	25	22.5	100	100	100	25
Silica	10	25	22.5	50	100	25	
Silver	1	10	9	100	100	10	15
Sodium	25	450	405	1000	1000	500	450
Strontium	1	2	1.8	50	100	2	10
Thallium	1	25	22.5	200	100	100	25
Tin	1	15	13.5	100	200	15	25
Titanium	1	10	9	100	100	10	100
Vanadium	1	100	90	100	100	100	100
Zinc	1	25	22.5	50	100	50	25

All values are in mg/l (ppm)

* Results above this value must be diluted

Form 12 Preparation Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Matrix : SOIL

Lab Number : L2166777
Project Number : 200131
Prep Method : EPA 3015

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2166777-02	12/15/21 10:03	-	5
L2166777-05	12/15/21 10:03	-	5
L2166777-07	12/15/21 10:03	-	5
WG1583508-1	12/15/21 10:03	-	5
WG1583508-2	12/15/21 10:03	-	5
WG1583508-3	12/15/21 10:03	-	5
WG1583508-4	12/15/21 10:03	-	5



Form 13 Analysis Run Log

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : TRACE5
 Start Date : 12/20/21 09:36

Lab Number : L2166777
 Project Number : 200131
 Analysis Method : 1,6010D
 End Date : 12/20/21 14:26

Sample Number	Dilution Factor	Analysis Time	Lead, TCLP																	
R1514933-3 ICV	1	09:36:00	X																	
R1514933-4 ICB	1	09:41:00	X																	
R1514933-5 ICSA	1	10:03:00	X																	
R1514933-6 CCV	1	10:54:00	X																	
R1514933-7 CCB	1	10:59:00	X																	
R1514933-8 CCV	1	11:55:00	X																	
R1514933-9 CCB	1	11:59:00	X																	
R1514933-10 CCV	1	12:11:00	X																	
R1514933-11 CCB	1	12:15:00	X																	
L2166777-07	1	12:50:00	X																	
WG1583508-3 MS	1	12:54:00	X																	
WG1583508-4 MSD	1	12:59:00	X																	
R1514933-12 CCV	1	13:03:00	X																	
R1514933-13 CCB	1	13:07:00	X																	
R1514933-14 CCV	1	13:55:00	X																	
R1514933-15 CCB	1	14:00:00	X																	
WG1583508-1 BLANK	1	14:04:00	X																	
WG1583508-2 LCS	1	14:08:00	X																	
L2166777-02	1	14:13:00	X																	
L2166777-05	1	14:17:00	X																	
R1514933-16 CCV	1	14:22:00	X																	
R1514933-17 CCB	1	14:26:00	X																	





Date Created: 11/04/16
 Created By: Jason Hebert
 File: PM2960-2
 Page: 1

METALS by 200.7, 6010C (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Aluminum	7429-90-5	0.1	0.0318	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Antimony	7440-36-0	0.05	0.0071	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Arsenic	7440-38-2	0.005	0.0019	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Barium	7440-39-3	0.01	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Beryllium	7440-41-7	0.005	0.0009	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cadmium	7440-43-9	0.005	0.001	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Calcium	7440-70-2	0.1	0.035	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Chromium	7440-47-3	0.01	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cobalt	7440-48-4	0.02	0.0017	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Copper	7440-50-8	0.01	0.0022	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Iron	7439-89-6	0.05	0.009	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Lead	7439-92-1	0.01	0.0027	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Magnesium	7439-95-4	0.1	0.0153	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Manganese	7439-96-5	0.01	0.0016	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Nickel	7440-02-0	0.025	0.0024	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Potassium	7440-09-7	2.5	0.237	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Selenium	7782-49-2	0.01	0.0035	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Silver	7440-22-4	0.007	0.0028	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Sodium	7440-23-5	2	0.12	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Thallium	7440-28-0	0.02	0.0025	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Vanadium	7440-62-2	0.01	0.002	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Zinc	7440-66-6	0.05	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
 Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



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METALS by 6010C (SOIL)

Table with columns: Analyte, CAS #, RL, MDL, Units, LCS Criteria, LCS RPD, MS Criteria, MS RPD, Duplicate RPD, Surrogate Criteria, Holding Time, Container/Sample Preservation. Lists various metals like Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc.

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



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Sample Name: Std 0 Acquired: 12/20/2021 9:02:32 Type: Cal
 Method: Trace_5_E200.7_SW6010(v148) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0003	-0.0005	.0000	.0013	.0121	.0049	-0.0041	.0027	.0017	.0018
Stddev	.0002	.0009	.0001	.0004	.0050	.0023	.0012	.0008	.0002	.0006
%RSD	72.55	189.6	605.5	33.03	41.54	47.18	28.12	31.40	12.96	30.99
#1	-0.0006	-0.0014	-0.0001	.0017	.0167	.0069	-0.0029	.0033	.0016	.0015
#2	-0.0003	-0.0003	.0002	.0014	.0068	.0055	-0.0052	.0017	.0016	.0015
#3	-0.0001	.0003	-0.0000	.0008	.0128	.0024	-0.0043	.0031	.0020	.0025

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0011	.0070	.0033	.0022	.0015	.0002	-0.0001	.0242	.0062	-0.0043
Stddev	.0001	.0002	.0005	.0044	.0011	.0006	.0002	.0032	.0003	.0004
%RSD	10.18	3.129	14.33	198.1	72.21	261.4	251.2	13.11	5.021	9.499
#1	-0.0010	.0068	.0038	-0.0005	.0023	-0.0003	-0.0000	.0254	.0062	-0.0041
#2	-0.0013	.0072	.0029	-0.0002	.0003	.0001	-0.0004	.0206	.0066	-0.0040
#3	-0.0011	.0069	.0031	.0073	.0018	.0008	.0001	.0265	.0059	-0.0047

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0021	-0.0012	.0022	-0.0005	-0.0283	-0.0019	-0.0005	.0004	.0009
Stddev	.0001	.0004	.0001	.0002	.0011	.0002	.0003	.0001	.0002
%RSD	5.566	28.50	4.725	41.95	3.882	9.417	66.85	27.18	25.62
#1	-0.0023	-0.0014	.0022	-0.0007	-0.0272	-0.0017	-0.0006	.0004	.0009
#2	-0.0021	-0.0015	.0021	-0.0005	-0.0284	-0.0020	-0.0007	.0003	.0010
#3	-0.0020	-0.0008	.0023	-0.0003	-0.0294	-0.0020	-0.0001	.0004	.0006

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2318.4	32633.	3553.5
Stddev	8.3	34.	36.1
%RSD	.35615	.10434	1.0173
#1	2317.4	32671.	3595.1
#2	2327.2	32605.	3535.8
#3	2310.7	32624.	3529.5

Sample Name: ICAL Acquired: 12/20/2021 9:06:57 Type: Cal
 Method: Trace_5_E200.7_SW6010(v148) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4241	.0568	.1496	.8534	9.874	225.4	-.0071	.1168	8.006	3.789
Stddev	.0006	.0017	.0008	.0037	.204	2.2	.0004	.0013	.033	.013
%RSD	.1513	3.052	.5433	.4389	2.068	.9579	5.795	1.081	.4176	.3453
#1	.4234	.0572	.1489	.8524	9.640	223.0	-.0071	.1153	7.986	3.781
#2	.4244	.0549	.1496	.8503	9.969	227.1	-.0066	.1177	7.987	3.782
#3	.4246	.0583	.1505	.8576	10.01	226.1	-.0075	.1172	8.044	3.804

Elem	Cr2677	Cu3247	Fe2599	Mg2790	Mn2576R	Mo2020	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4175	.6967	.1927	.5055	1.278	1.736	2.277	.6996	.3216	.1784
Stddev	.0004	.0024	.0033	.0076	.026	.009	.008	.0027	.0030	.0007
%RSD	.1038	.3442	1.723	1.508	2.011	.5378	.3643	.3867	.9468	.4124
#1	.4174	.6947	.1893	.4969	1.249	1.730	2.275	.6999	.3199	.1775
#2	.4171	.6994	.1929	.5082	1.290	1.731	2.271	.6968	.3199	.1787
#3	.4179	.6961	.1960	.5114	1.296	1.746	2.287	.7022	.3252	.1789

Elem	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2405	.3932	8.719	.7346	.1731	.1895	2.566
Stddev	.0010	.0015	.134	.0013	.0007	.0003	.013
%RSD	.4044	.3788	1.535	.1743	.4272	.1324	.4927
#1	.2405	.3922	8.569	.7338	.1724	.1892	2.558
#2	.2395	.3923	8.761	.7361	.1730	.1897	2.558
#3	.2415	.3949	8.826	.7339	.1739	.1895	2.580

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2263.9	32326.	3528.0
Stddev	8.2	73.	50.3
%RSD	.36277	.22527	1.4268
#1	2265.5	32358.	3586.1
#2	2271.1	32243.	3500.2
#3	2255.0	32377.	3497.7

Sample Name: 25: Fe K Na Si Acquired: 12/20/2021 9:11:19 Type: Cal
 Method: Trace_5_E200.7_SW6010(v148) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Al3961	Fe2599	K_7664	Na5895	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.358	4.755	2.266	3.030	3.804
Stddev	.022	.054	.024	.049	.029
%RSD	1.659	1.139	1.068	1.631	.7583
#1	1.334	4.693	2.239	2.975	3.773
#2	1.378	4.793	2.287	3.071	3.810
#3	1.363	4.778	2.271	3.043	3.830

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	2242.1	3445.9
Stddev	16.3	30.1
%RSD	.72819	.87332
#1	2259.3	3475.1
#2	2240.2	3414.9
#3	2226.9	3447.7

Sample Name: 10: Ca Mg Si Acquired: 12/20/2021 9:15:44 Type: Cal
 Method: Trace_5_E200.7_SW6010(v148) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ca3158	Mg2790	Si2124
Units	Cts/S	Cts/S	Cts/S
Avg	1.166	5.250	1.960
Stddev	.005	.045	.005
%RSD	.4262	.8634	.2673
#1	1.163	5.226	1.954
#2	1.172	5.302	1.960
#3	1.163	5.221	1.965

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	2257.4	3404.2
Stddev	2.4	25.7
%RSD	.10733	.75423
#1	2260.1	3416.0
#2	2256.3	3374.7
#3	2255.7	3421.9

Sample Name: ICV Acquired: 12/20/2021 9:20:08 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5011	F .5688	.5159	.5061	.5032	.5247	.2054	.4978	.4965	.5012
Stddev	.0024	.0458	.0026	.0027	.0033	.0041	.2417	.0086	.0034	.0032
%RSD	.4781	8.044	.5051	.5357	.6484	.7901	117.7	1.727	.6822	.6458
#1	.4997	.5964	.5130	.5039	.5003	.5236	.2597	.4920	.4936	.4983
#2	.4997	.5941	.5165	.5051	.5068	.5292	.4154	.4937	.4956	.5007
#3	.5038	.5160	.5182	.5091	.5026	.5212	-.0588	.5077	.5002	.5047

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit		.5524								
Low Limit		.4476								

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5004	.5160	.4967	5.234	.5004	.5093	.5022	10.25	.5026	.5020
Stddev	.0025	.0018	.0065	.048	.0039	.0030	.0039	.11	.0033	.0030
%RSD	.4979	.3483	1.317	.9168	.7861	.5967	.7821	1.057	.6489	.6065
#1	.4999	.5173	.4924	5.188	.4961	.5066	.4986	10.15	.4993	.4988
#2	.4982	.5139	.5043	5.284	.5037	.5126	.5016	10.24	.5026	.5024
#3	.5031	.5167	.4935	5.229	.5015	.5087	.5064	10.37	.5059	.5048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4953	.5174	5.401	.5054	.4907	.5079	.5000	.4835	.5164
Stddev	.0044	.0019	.039	.0039	.0036	.0008	.0038	.0021	.0031
%RSD	.8922	.3676	.7297	.7621	.7309	.1618	.7616	.4284	.5956
#1	.4929	.5158	5.370	.5020	.4866	.5086	.4959	.4828	.5135
#2	.4925	.5170	5.389	.5047	.4932	.5070	.5008	.4819	.5162
#3	.5004	.5195	5.446	.5096	.4923	.5082	.5034	.4859	.5196

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2221.2	31274.	3396.9
Stddev	9.4	138.	15.9
%RSD	.42310	.44268	.46695
#1	2229.9	31166.	3409.3
#2	2222.5	31430.	3379.0
#3	2211.2	31225.	3402.3

Sample Name: ICB Acquired: 12/20/2021 9:24:33 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0004	.0229	.0007	.0000	.0001	.0003	-.2690	-.0067	.0002	.0004
Stddev	.0005	.0281	.0011	.0002	.0001	.0000	.2022	.0049	.0001	.0002
%RSD	112.1	122.6	151.8	2280.	216.8	14.90	75.19	73.14	51.27	44.84
#1	.0001	.0471	.0001	.0003	-.0001	.0002	-.5022	-.0096	.0003	.0006
#2	-.0007	.0293	.0001	-.0002	.0001	.0002	-.1421	-.0010	.0002	.0002
#3	-.0006	-.0078	.0020	-.0000	.0002	.0003	-.1627	-.0096	.0001	.0005

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0001	-0.0009	.0116	-.0134	-.0008	.0005	.0021	.0229	.0005	-.0006
Stddev	.0005	.0002	.0004	.0252	.0026	.0003	.0003	.0377	.0004	.0009
%RSD	391.1	22.28	3.539	188.4	312.1	63.51	16.38	164.8	74.15	152.7
#1	-.0006	-.0007	.0120	.0133	.0019	.0004	.0025	.0607	.0008	.0000
#2	.0004	-.0011	.0114	-.0166	-.0011	.0003	.0019	.0228	.0005	-.0002
#3	-.0002	-.0008	.0113	-.0368	-.0034	.0009	.0018	-.0148	.0001	-.0016

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Ti1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0068	-0.0005	.0027	.0007	.0000	.0007	-.0014	-.0033	.0000
Stddev	.0009	.0018	.0019	.0008	.0003	.0005	.0024	.0008	.0001
%RSD	13.15	329.7	68.66	116.7	19990.	77.10	168.1	25.04	1434.
#1	.0072	-.0026	.0047	.0011	.0001	.0001	-.0040	-.0036	.0001
#2	.0058	.0005	.0024	.0012	-.0004	.0011	-.0011	-.0023	-.0001
#3	.0075	.0005	.0011	-.0002	.0002	.0009	.0008	-.0038	-.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2243.6	31673.	3401.7
Stddev	6.1	112.	39.2
%RSD	.27167	.35347	1.1529
#1	2247.7	31798.	3446.7
#2	2246.5	31640.	3383.7
#3	2236.6	31582.	3374.8

Sample Name: ICV Acquired: 12/20/2021 9:36:41 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4803	.5060	.4961	.4754	.4942	.5078	.4450	.4902	.4809	.4889
Stddev	.0012	.0335	.0005	.0006	.0058	.0072	.1421	.0049	.0016	.0005
%RSD	.2591	6.622	.0957	.1351	1.175	1.411	31.93	1.002	.3279	.1054
#1	.4817	.4997	.4956	.4746	.4881	.5006	.4918	.4892	.4823	.4891
#2	.4793	.4762	.4964	.4756	.4950	.5080	.2854	.4859	.4792	.4883
#3	.4799	.5423	.4964	.4758	.4996	.5149	.5577	.4956	.4812	.4892

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4919	.5092	.4884	5.143	.4827	.5015	.4977	10.17	.4883	.4889
Stddev	.0022	.0035	.0031	.054	.0063	.0052	.0014	.03	.0007	.0012
%RSD	.4421	.6890	.6276	1.054	1.302	1.041	.2882	.3294	.1523	.2470
#1	.4942	.5120	.4849	5.081	.4754	.4960	.4984	10.14	.4891	.4897
#2	.4899	.5103	.4904	5.169	.4863	.5022	.4961	10.17	.4877	.4875
#3	.4915	.5053	.4901	5.180	.4863	.5064	.4987	10.20	.4882	.4894

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4858	.4841	5.309	.4982	.4898	.5040	.4843	.4797	.4958
Stddev	.0036	.0011	.007	.0027	.0023	.0007	.0014	.0032	.0008
%RSD	.7327	.2345	.1327	.5440	.4789	.1448	.2813	.6770	.1548
#1	.4837	.4832	5.317	.4994	.4876	.5047	.4859	.4806	.4960
#2	.4838	.4837	5.304	.4951	.4896	.5032	.4833	.4760	.4950
#3	.4899	.4854	5.306	.5001	.4923	.5041	.4837	.4823	.4965

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2244.7	31635.	3421.4
Stddev	3.1	28.	36.9
%RSD	.13797	.08718	1.0781
#1	2241.7	31657.	3458.7
#2	2247.8	31604.	3420.5
#3	2244.6	31646.	3384.9

Sample Name: ICB Acquired: 12/20/2021 9:41:07 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0013	.0009	.0001	-0.0007	.0001	.0004	-0.0996	-0.0199	.0002	.0002
Stddev	.0005	.0155	.0009	.0005	.0001	.0000	.0973	.0013	.0001	.0001
%RSD	40.19	1740.	639.1	81.54	78.17	11.38	97.69	6.620	50.60	51.02
#1	-0.0015	-0.0094	.0000	-0.0001	.0002	.0004	-0.0388	-0.0214	.0004	.0002
#2	-0.0007	-0.0067	.0011	-0.0012	.0000	.0005	-0.0482	-0.0189	.0003	.0004
#3	-0.0016	.0187	-0.0007	-0.0007	.0002	.0005	-0.2119	-0.0193	.0001	.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0002	-0.0001	.0158	-0.0864	-0.0025	.0012	.0012	-0.0159	.0003	.0005
Stddev	.0003	.0002	.0026	.0703	.0028	.0002	.0004	.0332	.0001	.0016
%RSD	123.0	252.8	16.19	81.35	114.3	20.72	30.35	208.6	33.03	315.0
#1	-0.0002	-0.0003	.0149	-.1079	-.0057	.0009	.0016	.0224	.0004	-.0007
#2	-0.0006	-0.0001	.0187	-.1434	-.0011	.0014	.0011	-.0361	.0002	-.0001
#3	.0000	.0002	.0139	-0.0079	-0.0006	.0013	.0009	-.0340	.0004	.0023

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0047	.0024	.0024	.0004	.0002	.0005	-0.0017	-0.0021	.0000
Stddev	.0024	.0017	.0013	.0004	.0003	.0003	.0008	.0002	.0000
%RSD	50.80	73.01	53.95	106.5	126.0	66.53	47.61	9.791	978.4
#1	.0024	.0044	.0039	.0006	.0001	.0004	-0.0011	-0.0023	.0000
#2	.0046	.0015	.0020	.0006	.0000	.0008	-0.0014	-0.0020	.0000
#3	.0072	.0012	.0014	-0.0001	.0006	.0002	-0.0027	-0.0019	-0.0000

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2310.7	32516.	3480.5
Stddev	13.6	88.	11.6
%RSD	.58823	.27137	.33350
#1	2311.1	32613.	3489.9
#2	2324.0	32441.	3467.6
#3	2296.9	32495.	3484.2

Sample Name: 0.005 Acquired: 12/20/2021 9:45:34 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: Custom ID2: Trace4 Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0033	-.0212	.0040	.0039	.0052	.0053	-.1510	-.0023	.0050	.0053
Stddev	.0002	.0329	.0005	.0007	.0002	.0001	.1486	.0144	.0000	.0002
%RSD	5.626	154.9	11.99	17.12	4.279	1.691	98.44	637.0	.8075	3.934

#1	.0032	-.0492	.0038	.0041	.0051	.0052	.0206	-.0031	.0049	.0055
#2	.0035	-.0295	.0046	.0031	.0054	.0053	-.2392	-.0163	.0050	.0053
#3	.0032	.0150	.0037	.0043	.0050	.0054	-.2342	.0125	.0050	.0051

Check ?	Chk Fail	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass	None
High Limit	.0066									
Low Limit	.0034									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.0045	-.0181	.0240	.0033	.0054	.0056	-.0537	.0051	.0047
Stddev	.0000	.0007	.0022	.0462	.0014	.0001	.0003	.0060	.0003	.0016
%RSD	.7276	15.47	11.94	192.2	42.42	1.064	4.954	11.22	4.945	34.43

#1	.0056	.0052	-.0162	.0627	.0038	.0055	.0056	-.0509	.0052	.0040
#2	.0056	.0038	-.0204	-.0271	.0044	.0054	.0059	-.0606	.0049	.0036
#3	.0055	.0044	-.0177	.0365	.0017	.0055	.0053	-.0496	.0054	.0066

Check ?	None	None	None	None	None	None	None	None	None	None
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059	.0052	.0043	.0047	.0052	.0055	.0067	.0030	.0048
Stddev	.0017	.0008	.0008	.0008	.0003	.0002	.0000	.0005	.0002
%RSD	29.57	15.47	17.78	16.53	5.724	2.936	.6102	17.61	4.766

#1	.0066	.0051	.0035	.0049	.0054	.0057	.0067	.0033	.0048
#2	.0039	.0045	.0050	.0039	.0048	.0054	.0067	.0024	.0046
#3	.0071	.0061	.0043	.0054	.0052	.0054	.0067	.0033	.0051

Check ?	None	None	None	None	None	None	None	None	None
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2321.7	32372.	3497.4
Stddev	24.8	144.	62.5
%RSD	1.0697	.44504	1.7876

#1	2342.8	32381.	3567.5
#2	2328.0	32511.	3477.4
#3	2294.3	32223.	3447.4

Sample Name: 0.01 Acquired: 12/20/2021 9:49:57 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: Custom ID2: Trace4 Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	.0039	.0112	.0100	.0103	.0109	F .1313	.0062	.0103	.0107
Stddev	.0001	.0198	.0004	.0005	.0001	.0000	.1163	.0109	.0001	.0001
%RSD	1.002	504.0	3.469	5.332	.8883	.3192	88.53	175.1	.6780	1.348
#1	.0089	-.0137	.0113	.0099	.0103	.0109	.2646	.0141	.0104	.0106
#2	.0088	.0253	.0115	.0105	.0104	.0109	.0505	-.0062	.0103	.0106
#3	.0088	.0002	.0108	.0095	.0102	.0109	.0789	.0108	.0103	.0109

Check ?	None	None	None	Chk Pass	Chk Pass	None	Chk Fail	None	None	Chk Pass
Value							.0131			
Range							.0070			

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0105	.0095	-.0133	.0825	.0083	.0111	.0105	.0316	.0106	.0110
Stddev	.0002	.0001	.0023	.0263	.0015	.0002	.0001	.0230	.0001	.0008
%RSD	2.072	1.550	17.60	31.87	17.46	1.902	1.378	72.86	.8359	7.174
#1	.0108	.0096	-.0133	.0732	.0069	.0113	.0105	.0335	.0105	.0101
#2	.0105	.0093	-.0156	.1122	.0083	.0109	.0104	.0077	.0106	.0112
#3	.0103	.0095	-.0110	.0622	.0098	.0112	.0107	.0536	.0107	.0116

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value										
Range										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0119	.0102	.0061	.0097	.0105	.0108	.0087	W .0070	.0104
Stddev	.0015	.0009	.0012	.0010	.0001	.0004	.0005	.0007	.0001
%RSD	12.57	9.116	20.32	10.30	.8015	3.429	5.592	10.45	1.245
#1	.0107	.0108	.0062	.0107	.0106	.0106	.0092	.0077	.0105
#2	.0136	.0105	.0049	.0087	.0104	.0105	.0084	.0071	.0105
#3	.0115	.0091	.0074	.0098	.0106	.0112	.0084	.0063	.0103

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	None
Value								.0121	
Range								.0080	

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2325.0	32538.	3502.9
Stddev	5.6	48.	18.3
%RSD	.24228	.14601	.52355
#1	2328.5	32484.	3518.1
#2	2328.1	32561.	3482.5
#3	2318.5	32570.	3507.9

Sample Name: 0.05 Acquired: 12/20/2021 9:54:21 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: Custom ID2: Trace4 Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0484	.0499	.0505	.0500	.0510	.0506	.0933	.0430	.0491	.0507
Stddev	.0004	.0515	.0014	.0012	.0010	.0009	.1594	.0131	.0005	.0005
%RSD	.8748	103.2	2.821	2.441	2.042	1.844	170.8	30.46	.9941	.9863
#1	.0489	-.0085	.0521	.0513	.0499	.0496	.1960	.0301	.0495	.0513
#2	.0481	.0695	.0497	.0490	.0511	.0509	-.0903	.0563	.0486	.0503
#3	.0483	.0887	.0495	.0496	.0520	.0514	.1743	.0426	.0493	.0505

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass	None	None
Value										
Range										

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0519	.0500	F .0287	2.654	.0481	.0516	.0510	2.071	.0506	.0504
Stddev	.0008	.0007	.0029	.044	.0017	.0002	.0003	.055	.0007	.0009
%RSD	1.445	1.392	9.970	1.648	3.480	.3890	.6592	2.668	1.378	1.689
#1	.0511	.0494	.0294	2.648	.0499	.0513	.0514	2.027	.0514	.0514
#2	.0520	.0498	.0255	2.614	.0466	.0516	.0509	2.133	.0501	.0498
#3	.0526	.0508	.0311	2.701	.0477	.0517	.0507	2.054	.0504	.0501

Check ?	None	None	Chk Fail	Chk Pass	Chk Pass	None	None	Chk Pass	None	None
Value			.0652							
Range			.0348							

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0502	.0501	.5424	.0488	.0504	.0513	.0496	.0472	.0497
Stddev	.0014	.0013	.0053	.0008	.0006	.0002	.0003	.0007	.0003
%RSD	2.797	2.576	.9829	1.543	1.288	.3628	.6499	1.403	.5299
#1	.0486	.0502	.5481	.0488	.0497	.0511	.0499	.0473	.0500
#2	.0510	.0488	.5375	.0481	.0510	.0515	.0492	.0478	.0495
#3	.0511	.0514	.5414	.0496	.0505	.0514	.0496	.0465	.0497

Check ?	Chk Pass	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value									
Range									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2290.9	32290.	3516.5
Stddev	14.8	118.	56.4
%RSD	.64573	.36409	1.6034
#1	2274.9	32425.	3573.6
#2	2304.0	32228.	3515.0
#3	2293.7	32216.	3460.8

Sample Name: IPC Acquired: 12/20/2021 9:58:43 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	-.0924	F .0059	-.0010	-.0002	-.0011	-1.502	-.1416	-.0001	.0004
Stddev	.0006	.0060	.0013	.0003	.0000	.0000	.101	.0089	.0000	.0001
%RSD	27.25	6.458	22.64	26.04	16.14	2.102	6.749	6.312	35.61	36.47

#1	.0030	-.0939	.0070	-.0011	-.0002	-.0011	-1.387	-.1320	-.0001	.0005
#2	.0022	-.0859	.0044	-.0007	-.0002	-.0011	-1.576	-.1496	-.0001	.0002
#3	.0018	-.0975	.0064	-.0013	-.0002	-.0011	-1.544	-.1433	-.0002	.0003

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit			.0050							
Low Limit			-.0100							

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.09	-.0010	-.0081	.0006	-.1318	10.05	.0004	-.0003	.0002	.0001
Stddev	.09	.0001	.0029	.0482	.0017	.11	.0001	.0392	.0003	.0004
%RSD	.8643	10.08	35.87	7701.	1.255	1.133	28.89	14140.	151.0	255.8

#1	10.11	-.0010	-.0070	-.0165	-.1332	9.921	.0004	.0305	.0004	-.0003
#2	9.991	-.0010	-.0060	-.0367	-.1322	10.13	.0005	-.0444	.0003	.0003
#3	10.16	-.0012	-.0114	.0551	-.1300	10.10	.0003	.0131	-.0001	.0005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0008	-.2433	.0000	-.0000	.0021	-.0095	10.56	-.0019
Stddev	.0013	.0024	.0012	.0003	.0003	.0007	.0008	.06	.0001
%RSD	132.6	317.8	.5083	13620.	807.1	33.47	8.905	.6014	4.216

#1	.0021	-.0006	-.2437	.0002	-.0000	.0029	-.0094	10.55	-.0019
#2	-.0005	.0016	-.2420	.0001	-.0003	.0016	-.0103	10.51	-.0020
#3	.0014	-.0033	-.2444	-.0003	.0003	.0018	-.0087	10.63	-.0018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2171.5	32848.	3501.0
Stddev	29.2	246.	41.8
%RSD	1.3447	.74775	1.1935

#1	2184.4	32723.	3549.1
#2	2192.1	33131.	3480.2
#3	2138.1	32690.	3473.7

Sample Name: ICSA Acquired: 12/20/2021 10:03:09 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	272.7	.0001	-.0018	.0035	-.0001	-.7163	235.8	-.0048	-.0002
Stddev	.0008	4.6	.0019	.0009	.0005	.0000	.4120	2.6	.0000	.0002
%RSD	1194.	1.681	2955.	47.53	13.22	24.09	57.51	1.106	.1859	118.7
#1	-.0001	267.5	.0008	-.0008	.0029	-.0000	-.7866	232.8	-.0048	-.0000
#2	-.0006	274.5	-.0021	-.0022	.0036	-.0001	-.2738	237.6	-.0048	-.0005
#3	.0009	276.2	.0014	-.0024	.0038	-.0000	-1.089	237.0	-.0048	-.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0018	.0012	96.97	-.1277	231.8	.0032	-.0006	.0449	-.0031	-.0182
Stddev	.0006	.0006	1.04	.0204	2.0	.0007	.0003	.0172	.0002	.0006
%RSD	31.61	48.57	1.077	15.95	.8811	23.08	43.65	38.26	7.654	3.511
#1	-.0025	.0018	95.77	-.1499	229.8	.0041	-.0009	.0547	-.0032	-.0177
#2	-.0015	.0011	97.45	-.1098	231.7	.0030	-.0005	.0550	-.0028	-.0179
#3	-.0015	.0006	97.69	-.1235	233.9	.0026	-.0004	.0251	-.0032	-.0189

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0032	.0006	.0035	.0014	.0024	.0041	.0035	.0056	.0012
Stddev	.0029	.0021	.0022	.0010	.0003	.0006	.0025	.0013	.0001
%RSD	89.15	352.7	63.66	73.41	12.05	14.49	71.88	22.42	9.856
#1	-.0027	.0028	.0040	.0006	.0026	.0044	.0062	.0070	.0013
#2	-.0007	.0003	.0011	.0010	.0021	.0046	.0012	.0049	.0011
#3	-.0064	-.0013	.0054	.0025	.0026	.0035	.0031	.0048	.0013

Check ? Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2097.2	29155.	3303.6
Stddev	14.1	98.	34.0
%RSD	.67351	.33769	1.0286
#1	2103.4	29042.	3341.0
#2	2107.1	29208.	3295.2
#3	2081.0	29216.	3274.6

Sample Name: 0.005 Acquired: 12/20/2021 10:13:05 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .0036	.0726	.0057	.0043	.0040	.0052	-.1295	.0785	.0053	.0055
Stddev	.0006	.0447	.0017	.0002	.0001	.0003	.2106	.0137	.0001	.0001
%RSD	16.18	61.63	29.81	5.038	2.780	5.936	162.6	17.40	1.662	2.227

#1	.0039	.0844	.0045	.0045	.0041	.0048	-.1610	.0703	.0052	.0055
#2	.0029	.0231	.0049	.0040	.0039	.0053	-.3226	.0710	.0053	.0054
#3	.0040	.1102	.0076	.0043	.0040	.0054	.0951	.0943	.0054	.0056

Check ?	Chk Warn	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass	None
High Limit	.0060									
Low Limit	.0040									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058	.0039	.0133	.1781	.0996	.0067	.0054	.1555	.0055	.0059
Stddev	.0007	.0004	.0052	.0729	.0133	.0003	.0001	.0198	.0003	.0010
%RSD	12.13	9.027	39.24	40.91	13.39	3.799	2.752	12.75	5.068	17.14

#1	.0053	.0035	.0131	.0984	.0854	.0065	.0052	.1332	.0052	.0066
#2	.0055	.0041	.0082	.1947	.1016	.0067	.0054	.1624	.0058	.0047
#3	.0066	.0041	.0187	.2413	.1118	.0070	.0055	.1710	.0054	.0063

Check ?	None	None	None	None	None	None	None	None	None	None
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064	.0056	.0699	.0047	.0041	.0051	.0040	.0041	.0055
Stddev	.0011	.0034	.0008	.0003	.0003	.0003	.0006	.0007	.0001
%RSD	17.20	60.01	1.084	5.832	7.912	5.509	14.04	17.19	1.389

#1	.0071	.0095	.0690	.0047	.0038	.0048	.0034	.0048	.0056
#2	.0070	.0040	.0704	.0049	.0043	.0052	.0044	.0042	.0054
#3	.0051	.0034	.0702	.0044	.0043	.0053	.0043	.0034	.0056

Check ?	None	None	None	None	None	None	None	None	None
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2329.7	32591.	3503.6
Stddev	6.7	130.	36.6
%RSD	.28796	.39834	1.0448

#1	2336.2	32737.	3544.2
#2	2330.0	32547.	3473.1
#3	2322.8	32489.	3493.4

Sample Name: 0.01 Acquired: 12/20/2021 10:17:30 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	.0327	.0121	.0098	.0098	.0102	F -.2803	.0228	.0098	.0104
Stddev	.0005	.0209	.0008	.0003	.0002	.0002	.1248	.0126	.0001	.0002
%RSD	6.705	63.93	6.618	2.958	1.938	1.940	44.54	55.25	1.441	1.622
#1	.0077	.0384	.0130	.0095	.0099	.0099	-.4126	.0087	.0097	.0102
#2	.0087	.0501	.0114	.0099	.0098	.0103	-.2639	.0265	.0097	.0104
#3	.0080	.0095	.0118	.0100	.0096	.0103	-.1645	.0330	.0099	.0104

Check ?	None	None	None	Chk Pass	Chk Pass	None	Chk Fail	None	None	Chk Pass
Value							.0131			
Range							.0070			

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0108	.0088	-.0021	.4886	.0371	.0114	.0103	.4214	.0104	.0109
Stddev	.0002	.0001	.0038	.0341	.0016	.0006	.0002	.0118	.0006	.0004
%RSD	2.033	.8049	175.7	6.969	4.425	5.203	2.184	2.809	5.359	4.087
#1	.0109	.0088	-.0036	.4805	.0370	.0107	.0104	.4275	.0108	.0104
#2	.0106	.0087	-.0049	.5260	.0355	.0117	.0100	.4289	.0098	.0112
#3	.0110	.0089	.0021	.4594	.0388	.0117	.0104	.4077	.0107	.0111

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value										
Range										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0109	.0110	.1197	.0087	.0099	.0101	.0093	W .0076	.0101
Stddev	.0015	.0024	.0018	.0007	.0003	.0001	.0009	.0004	.0002
%RSD	13.75	21.49	1.487	7.760	2.676	.5519	9.232	4.944	2.174
#1	.0116	.0090	.1202	.0080	.0097	.0102	.0102	.0075	.0099
#2	.0092	.0136	.1178	.0093	.0102	.0101	.0085	.0073	.0101
#3	.0120	.0104	.1212	.0089	.0099	.0101	.0093	.0080	.0104

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	None
Value								.0121	
Range								.0080	

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2329.8	32720.	3514.7
Stddev	24.3	88.	58.5
%RSD	1.0437	.26791	1.6639
#1	2339.4	32700.	3581.4
#2	2347.8	32817.	3472.2
#3	2302.1	32645.	3490.6

Sample Name: 0.05 Acquired: 12/20/2021 10:21:54 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0497	F .0308	.0509	.0464	.0551	.0543	-.1752	F .0653	.0469	.0500
Stddev	.0001	.0224	.0011	.0004	.0008	.0005	.1557	.0085	.0009	.0007
%RSD	.1008	72.80	2.257	.8650	1.465	.9969	88.88	13.06	1.836	1.384

#1	.0497	.0489	.0515	.0469	.0544	.0537	-.3462	.0650	.0478	.0507
#2	.0496	.0057	.0517	.0463	.0560	.0546	-.1376	.0741	.0469	.0499
#3	.0497	.0378	.0496	.0462	.0550	.0546	-.0417	.0570	.0461	.0493

Check ?	None	Chk Fail	None	None	None	None	None	Chk Fail	None	None
Value		.0652						.0652		
Range		.0348						.0348		

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0531	.0543	W .0387	F .4876	W .0650	.0578	.0503	F 1.106	.0501	.0509
Stddev	.0004	.0003	.0030	.0185	.0047	.0007	.0007	.021	.0011	.0001
%RSD	.7809	.5094	7.721	3.794	7.252	1.187	1.386	1.859	2.221	.1501

#1	.0532	.0546	.0417	.4755	.0605	.0576	.0511	1.088	.0513	.0510
#2	.0526	.0540	.0358	.5089	.0646	.0586	.0501	1.102	.0498	.0509
#3	.0534	.0543	.0386	.4785	.0699	.0573	.0497	1.128	.0491	.0508

Check ?	None	None	Chk Warn	Chk Fail	Chk Warn	None	None	Chk Fail	None	None
Value			.0602	3.262	.0602			2.610		
Range			.0398	1.738	.0398			1.390		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0478	.0507	.5371	.0487	.0537	.0538	.0464	.0489	.0502
Stddev	.0014	.0030	.0095	.0005	.0004	.0003	.0016	.0005	.0011
%RSD	2.827	5.976	1.768	1.127	.7270	.5036	3.476	1.122	2.221

#1	.0488	.0488	.5462	.0493	.0537	.0541	.0471	.0489	.0514
#2	.0482	.0542	.5378	.0486	.0541	.0536	.0476	.0483	.0501
#3	.0462	.0490	.5272	.0482	.0533	.0536	.0446	.0494	.0492

Check ?	Chk Pass	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value									
Range									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2348.7	32499.	3496.4
Stddev	9.1	86.	51.1
%RSD	.38935	.26383	1.4624

#1	2340.0	32572.	3554.7
#2	2347.9	32520.	3475.3
#3	2358.2	32404.	3459.2

Sample Name: IPC Acquired: 12/20/2021 10:26:14 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	-1.1037	F .0083	-0.0020	.0000	-0.0010	-1.389	-1.1208	-0.0001	.0003
Stddev	.0006	.0042	.0019	.0003	.0003	.0000	.104	.0078	.0000	.0002
%RSD	20.72	4.094	22.31	14.32	1315.	4.183	7.501	6.472	24.43	63.58
#1	.0032	-.1067	.0083	-.0019	.0004	-.0011	-1.449	-.1240	-.0001	.0005
#2	.0030	-.0988	.0065	-.0023	.0000	-.0010	-1.268	-.1265	-.0001	.0001
#3	.0021	-.1055	.0102	-.0018	-.0003	-.0010	-1.449	-.1119	-.0001	.0005

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit			.0050							
Low Limit			-.0100							

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.18	-0.0015	.0036	-0.0545	-1.1109	10.04	.0002	-0.0068	.0003	-0.0003
Stddev	.01	.0001	.0024	.0327	.0018	.11	.0002	.0471	.0006	.0005
%RSD	.1007	5.885	65.19	59.96	1.619	1.127	64.54	696.2	233.2	142.6
#1	10.17	-.0016	.0017	-.0911	-.1113	9.914	.0004	-.0290	.0005	-.0008
#2	10.19	-.0015	.0030	-.0437	-.1089	10.11	.0001	-.0387	.0007	-.0003
#3	10.18	-.0014	.0063	-.0285	-.1124	10.11	.0002	.0474	-.0004	.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0051	.0005	-0.2457	-0.0000	.0000	.0022	-0.0110	10.58	-0.0014
Stddev	.0028	.0018	.0013	.0008	.0002	.0002	.0017	.03	.0002
%RSD	55.30	325.6	.5284	1692.	846.2	11.06	15.42	.2803	14.51
#1	-.0024	.0011	-.2467	-.0001	-.0001	.0019	-.0092	10.57	-.0014
#2	-.0080	-.0014	-.2462	-.0009	.0002	.0023	-.0113	10.62	-.0012
#3	-.0049	.0020	-.2443	.0008	-.0001	.0023	-.0126	10.56	-.0016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2208.4	32461.	3459.3
Stddev	4.3	104.	33.9
%RSD	.19488	.32164	.97918
#1	2206.0	32397.	3498.0
#2	2205.8	32404.	3445.3
#3	2213.4	32581.	3434.7

Sample Name: 10-V Acquired: 12/20/2021 10:32:40 Type: QC
 Method: Trace_5_E200.7_SW6010(v148) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0070	F .0036	-.0019	-.0002	-.0010	.9339	-.0052	-.0000	.0005
Stddev	.0005	.0322	.0004	.0005	.0003	.0000	.0661	.0086	.0000	.0001
%RSD	89.52	458.0	10.41	26.77	170.5	2.731	7.073	165.7	48.90	12.72
#1	.0009	-.0234	.0037	-.0024	-.0004	-.0011	.9474	.0003	-.0000	.0006
#2	.0007	.0407	.0032	-.0018	.0002	-.0010	.9921	-.0150	-.0001	.0005
#3	-.0000	.0038	.0040	-.0014	-.0002	-.0010	.8621	-.0008	-.0000	.0005

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit			.0025							
Low Limit			-.0025							

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055	-.0022	-.0184	-.0762	F -.1200	.0024	-.0000	.0012	.0000	-.0010
Stddev	.0006	.0007	.0009	.0136	.0014	.0004	.0001	.0724	.0001	.0012
%RSD	11.19	30.32	4.668	17.90	1.200	17.22	291.6	6176.	330.4	118.1
#1	.0048	-.0014	-.0191	-.0918	-.1216	.0019	-.0001	.0326	.0000	-.0003
#2	.0057	-.0024	-.0175	-.0666	-.1190	.0026	.0000	.0526	.0001	-.0024
#3	.0060	-.0026	-.0188	-.0701	-.1193	.0026	-.0000	-.0816	-.0000	-.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.1000					
Low Limit					-.1000					

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0024	-.2523	-.0000	-.0006	.0006	F -.0106	F 10.45	-.0003
Stddev	.0012	.0006	.0018	.0013	.0002	.0009	.0007	.07	.0001
%RSD	81.93	25.78	.7248	2666.	40.41	159.7	6.207	.6995	45.68
#1	.0001	.0023	-.2542	.0004	-.0006	.0011	-.0099	10.54	-.0004
#2	.0020	.0031	-.2506	.0009	-.0003	-.0005	-.0109	10.41	-.0002
#3	.0023	.0018	-.2519	-.0015	-.0008	.0010	-.0110	10.42	-.0002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit							.0050	.0100	
Low Limit							-.0050	-.0100	

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2317.2	32381.	3443.7
Stddev	17.9	71.	25.7
%RSD	.77359	.21917	.74503
#1	2324.7	32313.	3473.3
#2	2330.1	32373.	3427.2
#3	2296.7	32455.	3430.6

Sample Name: IPC Acquired: 12/20/2021 10:37:08 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	-.1203	.0031	-.0020	.0000	-.0010	-1.576	-.1382	-.0001	.0004
Stddev	.0006	.0172	.0011	.0004	.0001	.0000	.254	.0055	.0001	.0003
%RSD	22.25	14.31	35.65	19.70	416.6	3.354	16.11	3.957	65.32	64.25
#1	.0025	-.1005	.0037	-.0017	-.0001	-.0010	-1.444	-.1339	-.0001	.0003
#2	.0035	-.1320	.0018	-.0018	.0000	-.0009	-1.415	-.1364	-.0000	.0008
#3	.0023	-.1283	.0038	-.0024	.0002	-.0009	-1.869	-.1444	-.0001	.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.22	-.0010	-.0018	-.0359	.0008	10.17	.0002	-.0196	.0007	.0001
Stddev	.01	.0003	.0056	.0192	.0032	.11	.0002	.0209	.0002	.0015
%RSD	.0799	31.03	319.8	53.43	385.6	1.106	89.65	106.7	21.28	1127.
#1	10.23	-.0010	-.0031	-.0557	.0016	10.04	.0004	-.0202	.0006	.0001
#2	10.22	-.0007	.0044	-.0346	-.0027	10.21	.0001	.0016	.0009	.0016
#3	10.22	-.0013	-.0066	-.0174	.0036	10.25	.0001	-.0402	.0007	-.0013

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0054	.0006	-.2419	-.0005	-.0002	.0026	.0033	10.47	-.0015
Stddev	.0014	.0006	.0015	.0008	.0002	.0008	.0019	.03	.0003
%RSD	26.21	99.60	.6097	154.4	111.7	29.63	57.27	.2606	20.10
#1	-.0038	.0012	-.2408	-.0011	-.0004	.0029	.0037	10.48	-.0011
#2	-.0061	-.0000	-.2414	.0004	-.0001	.0017	.0050	10.43	-.0017
#3	-.0064	.0007	-.2436	-.0008	-.0001	.0031	.0013	10.49	-.0016

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2172.1	32022.	3405.4
Stddev	16.2	91.	28.7
%RSD	.74659	.28349	.84241
#1	2184.5	32014.	3433.7
#2	2153.8	31935.	3406.0
#3	2178.1	32116.	3376.4

Sample Name: CCV Acquired: 12/20/2021 10:54:34 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4639	.5399	.4810	.4595	.4848	.4995	.2710	.4806	.4534	.4729
Stddev	.0018	.0499	.0013	.0012	.0080	.0078	.1803	.0023	.0010	.0013
%RSD	.3885	9.239	.2803	.2699	1.649	1.566	66.52	.4689	.2245	.2643
#1	.4619	.4845	.4802	.4583	.4756	.4921	.3248	.4823	.4523	.4716
#2	.4653	.5540	.4802	.4593	.4882	.4986	.0700	.4814	.4536	.4731
#3	.4645	.5812	.4826	.4608	.4904	.5077	.4183	.4780	.4544	.4741

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4797	.4966	.4783	5.027	.4840	.4901	.4834	9.520	.4747	.4730
Stddev	.0018	.0015	.0047	.095	.0092	.0084	.0017	.114	.0017	.0031
%RSD	.3800	.3071	.9754	1.886	1.902	1.719	.3505	1.201	.3658	.6577
#1	.4777	.4982	.4738	4.923	.4753	.4804	.4819	9.389	.4732	.4697
#2	.4811	.4965	.4781	5.047	.4831	.4950	.4830	9.566	.4744	.4735
#3	.4805	.4952	.4831	5.110	.4936	.4948	.4852	9.603	.4766	.4759

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4636	.4690	5.131	.4708	.4712	.4892	.4569	.4556	.4813
Stddev	.0026	.0006	.016	.0030	.0073	.0001	.0018	.0027	.0013
%RSD	.5648	.1251	.3111	.6398	1.554	.0271	.4004	.5914	.2801
#1	.4620	.4684	5.115	.4687	.4627	.4894	.4576	.4532	.4799
#2	.4622	.4691	5.133	.4694	.4757	.4891	.4584	.4551	.4814
#3	.4666	.4696	5.147	.4742	.4750	.4891	.4549	.4585	.4826

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2325.1	32627.	3488.1
Stddev	7.6	88.	43.9
%RSD	.32834	.27034	1.2595
#1	2333.3	32554.	3535.7
#2	2323.9	32603.	3479.4
#3	2318.1	32725.	3449.2

Sample Name: CCB Acquired: 12/20/2021 10:59:00 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0009	.0144	.0007	-0.0016	.0002	.0004	-0.2929	-0.0033	.0002	.0003
Stddev	.0003	.0274	.0005	.0004	.0001	.0000	.0870	.0093	.0000	.0001
%RSD	31.85	189.8	76.32	26.96	66.00	7.301	29.72	278.9	17.21	35.94
#1	-0.0013	.0037	.0012	-0.0012	.0002	.0004	-0.2906	-0.0136	.0002	.0004
#2	-0.0008	.0456	.0002	-0.0015	.0000	.0004	-0.3811	.0047	.0002	.0002
#3	-0.0007	-0.0060	.0006	-0.0021	.0002	.0004	-0.2070	-0.0011	.0002	.0002

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	-0.0013	.0113	-0.0441	-0.0003	.0018	.0010	-0.0064	.0001	-0.0003
Stddev	.0003	.0006	.0040	.0336	.0017	.0003	.0003	.0214	.0004	.0019
%RSD	13.62	43.46	35.42	76.07	492.5	18.28	26.66	337.4	268.1	651.3
#1	.0021	-0.0011	.0068	-0.0218	-0.0005	.0015	.0013	-0.0299	.0005	.0015
#2	.0027	-0.0008	.0125	-0.0278	.0014	.0020	.0009	-0.0012	-0.0002	-0.0023
#3	.0026	-0.0019	.0145	-0.0827	-0.0019	.0021	.0008	.0121	.0001	-0.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Ti1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0038	.0010	.0016	.0004	.0003	.0008	-0.0010	.0030	.0000
Stddev	.0001	.0003	.0005	.0006	.0003	.0001	.0010	.0013	.0001
%RSD	3.521	27.50	32.56	163.7	110.8	11.95	105.3	42.80	859.7
#1	.0037	.0008	.0017	.0009	.0006	.0009	.0001	.0039	.0001
#2	.0037	.0008	.0020	.0006	.0004	.0009	-0.0010	.0035	-0.0001
#3	.0040	.0013	.0010	-0.0003	-0.0001	.0007	-0.0020	.0015	-0.0000

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2369.3	33119.	3546.4
Stddev	18.7	159.	59.7
%RSD	.79085	.47868	1.6843
#1	2387.2	33291.	3615.3
#2	2349.9	33088.	3511.2
#3	2370.9	32979.	3512.5

Sample Name: WG1584355-1,C Acquired: 12/20/2021 11:11:50 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0013	-0.0119	.0004	.0009	.0006	.0000	-0.0936	-0.0057	.0000	.0001
Stddev	.0001	.0787	.0009	.0006	.0002	.0000	.3334	.0101	.0001	.0001
%RSD	11.06	661.3	199.4	67.55	29.05	13.73	356.2	177.2	234.8	74.30
#1	-0.0012	-0.1020	-0.0002	.0016	.0004	.0000	-0.4335	.0020	-0.0000	.0000
#2	-0.0015	.0227	.0014	.0008	.0005	.0001	.2329	-0.0020	.0001	.0002
#3	-0.0013	.0436	.0001	.0004	.0007	.0000	-0.0801	-0.0172	.0000	.0002

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0002	.0057	.0977	-0.0006	.0013	-0.0000	148.1	.0013	-0.0010
Stddev	.0004	.0004	.0023	.0202	.0004	.0008	.0001	2.5	.0002	.0013
%RSD	251.5	259.6	40.23	20.69	69.34	60.39	496.0	1.684	16.61	129.4
#1	-0.0002	-0.0003	.0037	.0988	-0.0009	.0014	-0.0000	145.2	.0015	.0000
#2	.0005	.0002	.0052	.1174	-0.0006	.0020	-0.0001	149.2	.0011	-0.0024
#3	.0002	.0005	.0082	.0770	-0.0001	.0004	.0001	149.8	.0013	-0.0006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	-0.0004	.0182	.0012	-0.0002	-0.0004	-0.0005	-0.0023	.0025
Stddev	.0009	.0012	.0005	.0005	.0001	.0003	.0002	.0009	.0002
%RSD	48.29	323.7	2.492	40.54	45.40	71.73	38.43	38.02	8.602
#1	.0022	-0.0010	.0182	.0018	-0.0002	-0.0007	-0.0007	-0.0032	.0026
#2	.0008	.0010	.0178	.0011	-0.0003	-0.0001	-0.0003	-0.0023	.0023
#3	.0023	-0.0011	.0187	.0008	-0.0001	-0.0004	-0.0005	-0.0014	.0027

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2238.0	30993.	3400.3
Stddev	11.3	193.	38.0
%RSD	.50449	.62263	1.1183
#1	2228.3	30942.	3440.5
#2	2250.4	31207.	3395.3
#3	2235.2	30831.	3364.9

Sample Name: WG1585191-1,C Acquired: 12/20/2021 11:16:17 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0017	.0020	.0005	.0005	.0006	.0000	.0325	.0296	-0.0000	.0000
Stddev	.0009	.0494	.0015	.0006	.0001	.0000	.2315	.0093	.0000	.0001
%RSD	52.65	2428.	286.9	115.4	14.49	7.149	711.8	31.53	146.1	408.8
#1	-0.0013	-0.0137	.0013	.0010	.0007	.0000	-.0358	.0192	.0000	.0000
#2	-0.0011	-.0376	.0014	-.0002	.0005	.0000	.2905	.0323	-.0000	-.0001
#3	-0.0027	.0574	-.0012	.0008	.0005	.0000	-.1572	.0373	-.0001	.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-0.0010	-0.0147	-0.0217	.0005	.0005	-0.0000	.4086	.0001	-0.0003
Stddev	.0002	.0005	.0013	.0441	.0031	.0006	.0004	.0155	.0001	.0013
%RSD	42.24	50.50	8.911	203.3	653.3	116.6	1014.	3.787	40.95	492.3
#1	.0003	-0.0013	-.0161	-.0241	-.0011	-.0000	.0002	.3986	.0001	-.0017
#2	.0002	-0.0014	-.0135	-.0645	.0040	.0011	-.0005	.4007	.0002	.0008
#3	.0005	-0.0004	-.0145	.0236	-.0015	.0003	.0002	.4264	.0002	.0001

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0021	.0037	.0006	-0.0001	.0008	-0.0020	-0.0005	.0031
Stddev	.0018	.0033	.0010	.0001	.0002	.0002	.0021	.0006	.0001
%RSD	108.6	155.5	27.17	14.75	245.4	25.13	107.4	100.6	2.601
#1	.0029	.0003	.0037	.0005	.0001	.0010	.0003	-.0000	.0031
#2	.0023	.0001	.0027	.0007	-.0000	.0006	-.0024	-.0011	.0031
#3	-0.0004	.0059	.0048	.0006	-.0003	.0008	-.0038	-.0005	.0032

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2344.2	32872.	3523.3
Stddev	18.2	88.	43.6
%RSD	.77747	.26810	1.2373
#1	2361.3	32772.	3572.7
#2	2346.1	32938.	3507.0
#3	2325.0	32907.	3490.2

Sample Name: WG1585191-2,C Acquired: 12/20/2021 11:20:43 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0464	2.033	.1220	.9847	2.060	.0523	.1729	10.02	.0483	.4540
Stddev	.0004	.051	.0024	.0145	.015	.0004	.0560	.03	.0008	.0074
%RSD	.7904	2.486	1.998	1.468	.7317	.8006	32.39	.2836	1.608	1.630
#1	.0463	1.999	.1221	.9768	2.055	.0526	.1186	10.01	.0482	.4510
#2	.0468	2.009	.1195	.9760	2.077	.0525	.1696	10.05	.0476	.4485
#3	.0460	2.091	.1244	1.001	2.049	.0518	.2305	9.994	.0491	.4624

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1931	.2468	1.048	10.57	9.924	.4975	.9874	9.994	.4682	.5032
Stddev	.0004	.0006	.006	.06	.111	.0029	.0174	.113	.0075	.0092
%RSD	.2229	.2246	.5723	.5416	1.123	.5734	1.759	1.133	1.592	1.838
#1	.1934	.2465	1.047	10.55	10.01	.4969	.9776	9.936	.4648	.5009
#2	.1934	.2465	1.055	10.63	9.970	.5007	.9771	10.12	.4631	.4954
#3	.1926	.2475	1.043	10.52	9.797	.4951	1.007	9.922	.4768	.5134

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4774	.1199	.7009	.9544	.9727	.9912	.1090	.4585	.4752
Stddev	.0075	.0027	.0136	.0111	.0063	.0002	.0023	.0021	.0079
%RSD	1.571	2.247	1.939	1.162	.6496	.0167	2.096	.4498	1.659
#1	.4732	.1175	.6947	.9512	.9697	.9911	.1088	.4607	.4720
#2	.4729	.1193	.6915	.9452	.9799	.9914	.1069	.4583	.4694
#3	.4860	.1228	.7164	.9667	.9684	.9911	.1114	.4565	.4842

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2311.5	32467.	3454.8
Stddev	37.7	129.	27.3
%RSD	1.6296	.39755	.79101
#1	2326.5	32600.	3446.3
#2	2339.3	32342.	3432.7
#3	2268.6	32459.	3485.3

Sample Name: WG1584355-2,C Acquired: 12/20/2021 11:24:58 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0450	2.046	.1233	.9860	1.996	.0515	.2285	9.841	.0478	.4445
Stddev	.0004	.038	.0016	.0061	.022	.0005	.1596	.153	.0004	.0035
%RSD	.9803	1.855	1.328	.6206	1.125	1.013	69.88	1.556	.9017	.7812
#1	.0449	2.003	.1235	.9803	1.974	.0509	.3119	9.665	.0474	.4413
#2	.0455	2.073	.1216	.9852	2.019	.0518	.3291	9.947	.0478	.4441
#3	.0446	2.063	.1249	.9924	1.994	.0518	.0444	9.909	.0483	.4482

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1918	.2411	.9886	10.37	9.430	.4800	.9789	156.3	.4587	.4856
Stddev	.0009	.0014	.0116	.19	.085	.0060	.0077	2.5	.0030	.0034
%RSD	.4637	.5724	1.174	1.836	.8989	1.259	.7844	1.618	.6475	.7095
#1	.1928	.2426	.9792	10.16	9.332	.4739	.9720	153.5	.4558	.4827
#2	.1912	.2408	1.002	10.52	9.474	.4860	.9777	158.4	.4585	.4847
#3	.1915	.2399	.9849	10.43	9.484	.4803	.9872	157.1	.4617	.4894

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4767	.1216	.9732	.9478	.9631	1.005	.1026	.4697	.4761
Stddev	.0050	.0009	.0071	.0081	.0132	.003	.0004	.0040	.0035
%RSD	1.039	.7696	.7244	.8586	1.373	.2913	.3424	.8527	.7436
#1	.4710	.1226	.9672	.9443	.9486	1.009	.1028	.4732	.4728
#2	.4795	.1209	.9715	.9419	.9744	1.003	.1022	.4653	.4757
#3	.4797	.1211	.9810	.9571	.9664	1.004	.1029	.4705	.4799

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2296.6	31709.	3476.5
Stddev	9.4	151.	40.8
%RSD	.40931	.47774	1.1744
#1	2307.0	31608.	3520.5
#2	2294.0	31635.	3439.9
#3	2288.8	31883.	3469.2

Sample Name: L2168163-01,C Acquired: 12/20/2021 11:29:15 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0006	.0310	.0022	.0238	.0038	.0000	-.0502	.1905	-.0000	.0006
Stddev	.0006	.0276	.0012	.0003	.0006	.0000	.1917	.0094	.0000	.0001
%RSD	96.70	88.99	55.17	1.180	14.90	9.790	381.6	4.953	76.74	16.04
#1	-0.0001	.0371	.0019	.0238	.0031	.0000	-.0112	.1828	-.0000	.0006
#2	-0.0005	.0550	.0011	.0241	.0040	.0000	.1189	.2010	-.0000	.0006
#3	-.0012	.0009	.0035	.0236	.0041	.0000	-.2584	.1877	-.0000	.0005

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0176	.0520	.0563	.0649	.0070	.0028	143.9	.0009	.0028
Stddev	.0002	.0005	.0036	.0016	.0034	.0002	.0004	3.1	.0003	.0008
%RSD	2144.	2.673	6.993	2.779	5.168	2.565	13.39	2.164	30.55	27.14
#1	-0.0002	.0172	.0480	.0577	.0623	.0068	.0030	140.6	.0006	.0037
#2	-0.0000	.0181	.0528	.0567	.0637	.0071	.0030	144.3	.0011	.0021
#3	.0002	.0174	.0551	.0546	.0687	.0071	.0024	146.8	.0009	.0027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0018	.0417	.0038	.0014	.0010	-.0035	-.0023	.0254
Stddev	.0027	.0006	.0021	.0004	.0003	.0005	.0012	.0005	.0004
%RSD	214.9	34.68	4.979	10.85	17.88	47.72	35.28	21.00	1.379
#1	-0.0019	.0025	.0394	.0034	.0013	.0010	-.0041	-.0022	.0252
#2	.0026	.0014	.0433	.0038	.0012	.0014	-.0021	-.0028	.0253
#3	.0030	.0014	.0425	.0042	.0017	.0005	-.0042	-.0018	.0258

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2344.3	32485.	3604.0
Stddev	23.7	372.	87.1
%RSD	1.0107	1.1445	2.4176
#1	2323.8	32510.	3690.2
#2	2370.2	32844.	3605.9
#3	2338.7	32101.	3516.0

Sample Name: L2169404-01,C Acquired: 12/20/2021 11:33:40 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0007	.0401	.0036	.0092	.0452	-0.0000	-0.2531	210.6	-0.0000	.0003
Stddev	.0009	.0522	.0020	.0009	.0002	.0000	.1528	.9	.0000	.0002
%RSD	139.6	130.2	55.97	9.545	.4120	15.28	60.36	.4401	89.25	87.82
#1	.0004	.0918	.0018	.0100	.0451	-0.0000	-0.1020	209.5	-0.0000	.0005
#2	-0.0012	.0410	.0058	.0095	.0450	-0.0000	-0.2499	211.1	-0.0001	.0000
#3	-0.0012	-0.0126	.0032	.0083	.0454	-0.0000	-0.4074	211.1	-0.0001	.0003

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0143	.0017	.0033	2.940	2.965	.0006	.0025	1.195	.0003	.0008
Stddev	.0007	.0009	.0037	.047	.025	.0004	.0002	.045	.0005	.0008
%RSD	4.590	49.65	113.3	1.594	.8490	58.36	6.511	3.773	140.3	103.6
#1	.0149	.0011	.0001	2.889	2.951	.0002	.0023	1.143	.0003	.0014
#2	.0136	.0014	.0023	2.949	2.949	.0009	.0025	1.223	-0.0001	-0.0001
#3	.0144	.0027	.0073	2.982	2.994	.0008	.0026	1.219	.0008	.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0015	3.764	.0012	.3279	.0032	-0.0021	.0028	.0012
Stddev	.0013	.0008	.018	.0005	.0025	.0004	.0010	.0005	.0001
%RSD	156.8	56.43	.4703	45.80	.7506	11.26	50.92	18.82	9.727
#1	-0.0007	.0022	3.755	.0016	.3251	.0028	-0.0009	.0026	.0012
#2	.0015	.0016	3.753	.0014	.3294	.0033	-0.0028	.0034	.0011
#3	.0016	.0006	3.784	.0006	.3293	.0035	-0.0025	.0024	.0013

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2353.3	32731.	3619.5
Stddev	10.4	130.	27.2
%RSD	.44298	.39605	.75094
#1	2359.3	32583.	3645.3
#2	2359.3	32783.	3622.0
#3	2341.2	32826.	3591.1

Sample Name: WG1585191-3,C Acquired: 12/20/2021 11:38:02 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0449	1.960	.1205	.9459	1.889	.0469	.0902	210.5	.0444	.4149
Stddev	.0006	.050	.0013	.0069	.029	.0006	.2425	3.4	.0003	.0028
%RSD	1.368	2.531	1.041	.7271	1.549	1.267	268.8	1.592	.7798	.6782
#1	.0455	1.903	.1191	.9422	1.855	.0462	.0508	206.7	.0443	.4130
#2	.0443	1.996	.1213	.9417	1.908	.0473	-.1302	212.3	.0441	.4136
#3	.0451	1.981	.1212	.9538	1.904	.0471	.3500	212.6	.0447	.4182

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1937	.2301	.9212	12.63	11.67	.4447	.9266	10.16	.4271	.4582
Stddev	.0010	.0004	.0183	.22	.15	.0088	.0080	.11	.0029	.0050
%RSD	.5316	.1692	1.991	1.776	1.268	1.972	.8615	1.066	.6822	1.096
#1	.1925	.2297	.9000	12.39	11.51	.4347	.9213	10.04	.4257	.4538
#2	.1944	.2305	.9329	12.69	11.78	.4483	.9226	10.21	.4252	.4571
#3	.1942	.2301	.9306	12.83	11.74	.4510	.9358	10.24	.4305	.4636

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4566	.1142	4.425	.8817	1.225	.9301	.0980	.4471	.4372
Stddev	.0040	.0000	.031	.0076	.019	.0012	.0017	.0010	.0028
%RSD	.8818	.0254	.7071	.8638	1.578	.1268	1.774	.2274	.6324
#1	.4552	.1142	4.406	.8775	1.202	.9307	.0978	.4466	.4361
#2	.4535	.1142	4.408	.8771	1.234	.9287	.0998	.4463	.4351
#3	.4612	.1141	4.461	.8905	1.237	.9308	.0963	.4482	.4403

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2328.3	32641.	3641.9
Stddev	16.1	39.	45.2
%RSD	.69214	.11930	1.2418
#1	2332.8	32664.	3693.1
#2	2341.7	32663.	3607.5
#3	2310.4	32596.	3625.1

Sample Name: WG1585191-4,C Acquired: 12/20/2021 11:42:16 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0021	.1114	.0021	.0118	.0453	-0.0000	-.1316	210.0	-0.0000	.0006
Stddev	.0006	.0036	.0015	.0003	.0005	.0000	.0789	1.0	.0000	.0001
%RSD	27.30	3.187	70.96	2.374	1.177	25.90	59.95	.4641	529.8	11.59
#1	-0.0020	.1074	.0010	.0120	.0451	-0.0000	-.2021	209.1	-0.0000	.0005
#2	-0.0028	.1142	.0015	.0120	.0460	-0.0000	-.1465	211.0	.0000	.0006
#3	-0.0016	.1126	.0038	.0115	.0450	-0.0000	-.0464	209.9	-0.0000	.0006

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0145	.0026	.0881	2.916	2.989	.0015	.0041	1.058	.0009	-.0013
Stddev	.0009	.0002	.0033	.024	.026	.0001	.0002	.060	.0003	.0009
%RSD	6.409	8.875	3.695	.8078	.8580	9.890	6.110	5.643	33.80	70.27
#1	.0147	.0029	.0917	2.891	2.973	.0013	.0041	.9941	.0006	-0.0002
#2	.0153	.0024	.0853	2.919	3.018	.0016	.0043	1.112	.0008	-0.0019
#3	.0135	.0026	.0872	2.938	2.975	.0016	.0038	1.068	.0012	-0.0017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0024	3.704	.0012	.3269	.0033	-.0015	.0037	.0019
Stddev	.0018	.0018	.020	.0007	.0010	.0005	.0004	.0000	.0001
%RSD	166.8	76.91	.5443	61.05	.3189	14.32	22.81	.9565	4.291
#1	.0021	.0043	3.689	.0004	.3258	.0032	-.0020	.0037	.0018
#2	-0.0010	.0020	3.697	.0019	.3278	.0029	-.0013	.0037	.0020
#3	.0021	.0007	3.727	.0012	.3271	.0038	-.0014	.0036	.0019

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2318.4	32042.	3515.6
Stddev	12.6	145.	21.0
%RSD	.54407	.45163	.59839
#1	2331.5	31897.	3531.3
#2	2317.5	32186.	3491.7
#3	2306.3	32041.	3523.7

Sample Name: WG1585191-5,C Acquired: 12/20/2021 11:46:39 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0448	2.052	.1184	.9462	1.941	.0478	.0962	214.3	.0441	.4148
Stddev	.0007	.020	.0017	.0040	.021	.0007	.2734	3.0	.0001	.0015
%RSD	1.608	.9656	1.423	.4247	1.066	1.399	284.2	1.419	.3168	.3713
#1	.0450	2.075	.1196	.9432	1.917	.0471	.2777	210.8	.0441	.4134
#2	.0454	2.039	.1164	.9446	1.953	.0484	.2291	215.9	.0440	.4145
#3	.0440	2.041	.1191	.9508	1.952	.0480	-.2182	216.2	.0443	.4165

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1966	.2352	.9588	12.98	11.86	.4561	.9149	10.53	.4278	.4567
Stddev	.0006	.0009	.0101	.15	.21	.0048	.0040	.11	.0009	.0029
%RSD	.3279	.3715	1.056	1.192	1.798	1.046	.4371	1.072	.2076	.6405
#1	.1961	.2360	.9476	12.80	11.63	.4507	.9120	10.41	.4276	.4539
#2	.1973	.2343	.9615	13.09	12.05	.4599	.9133	10.59	.4270	.4565
#3	.1964	.2354	.9673	13.04	11.90	.4576	.9195	10.61	.4287	.4597

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4541	.1145	4.791	.8826	1.256	.9476	.1002	.4487	.4367
Stddev	.0023	.0013	.020	.0019	.015	.0007	.0038	.0024	.0015
%RSD	.5172	1.155	.4113	.2124	1.203	.0764	3.764	.5345	.3409
#1	.4532	.1160	4.773	.8814	1.239	.9484	.1000	.4466	.4363
#2	.4524	.1136	4.788	.8848	1.266	.9472	.0965	.4513	.4354
#3	.4568	.1139	4.812	.8817	1.265	.9471	.1040	.4481	.4383

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2291.3	32022.	3557.3
Stddev	7.1	228.	48.6
%RSD	.31184	.71113	1.3669
#1	2294.8	31990.	3612.8
#2	2296.0	32264.	3536.9
#3	2283.1	31812.	3522.1

Sample Name: WG1585191-6,C,5 Acquired: 12/20/2021 11:50:55 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment: 10

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0019	.0259	.0026	.0020	.0097	.0000	-.0514	43.64	-.0000	.0003
Stddev	.0004	.0370	.0010	.0006	.0001	.0000	.1011	.71	.0001	.0002
%RSD	21.68	142.7	39.21	31.22	.9967	43.68	196.8	1.617	172.5	81.83
#1	-0.0014	-0.0102	.0038	.0027	.0097	.0000	-.1646	42.84	.0000	.0004
#2	-0.0021	.0636	.0018	.0016	.0099	.0000	-.0190	43.93	-.0001	.0004
#3	-0.0021	.0243	.0024	.0017	.0097	.0000	.0296	44.16	-.0000	.0000

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	-.0008	-.0067	.5637	.6733	.0013	.0026	.2724	.0004	.0014
Stddev	.0003	.0001	.0014	.0102	.0151	.0003	.0006	.0343	.0001	.0009
%RSD	8.458	9.526	21.48	1.811	2.240	23.69	24.38	12.57	17.75	64.14
#1	.0036	-0.0007	-0.0051	.5646	.6559	.0016	.0031	.2377	.0005	.0016
#2	.0033	-0.0008	-0.0071	.5735	.6803	.0010	.0029	.2732	.0004	.0021
#3	.0030	-0.0008	-0.0079	.5531	.6835	.0014	.0019	.3062	.0004	.0004

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	.0025	.8133	-.0009	.0686	.0018	-.0034	.0011	.0006
Stddev	.0017	.0020	.0033	.0003	.0010	.0001	.0040	.0013	.0002
%RSD	64.72	79.50	.4004	36.10	1.522	4.770	116.7	115.2	33.17
#1	.0045	.0044	.8116	-.0005	.0675	.0019	-.0008	.0008	.0009
#2	.0022	.0028	.8112	-.0010	.0689	.0017	-.0014	.0025	.0005
#3	.0012	.0004	.8170	-.0011	.0695	.0017	-.0080	-.0000	.0006

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2403.6	33554.	3673.9
Stddev	8.1	268.	36.0
%RSD	.33691	.79791	.97873
#1	2405.0	33667.	3713.6
#2	2410.9	33748.	3643.7
#3	2394.9	33249.	3664.3

Sample Name: CCV Acquired: 12/20/2021 11:55:20 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4557	.5148	.4699	.4506	.4704	.4861	.3238	.4913	F .4335	.4621
Stddev	.0016	.0085	.0017	.0026	.0053	.0059	.1852	.0056	.0015	.0021
%RSD	.3473	1.649	.3628	.5803	1.134	1.211	57.21	1.146	.3442	.4489
#1	.4562	.5172	.4701	.4531	.4653	.4835	.1760	.4865	.4348	.4639
#2	.4570	.5218	.4716	.4479	.4760	.4929	.2638	.4975	.4319	.4599
#3	.4539	.5054	.4682	.4508	.4700	.4820	.5316	.4898	.4339	.4626

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Fail Chk Pass
 High Limit
 Low Limit .5524 .4476

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4694	.4823	.4650	4.918	.4711	.4756	.4744	9.185	.4635	.4609
Stddev	.0015	.0013	.0037	.026	.0063	.0059	.0027	.091	.0020	.0026
%RSD	.3279	.2611	.7865	.5280	1.333	1.251	.5604	.9931	.4401	.5642
#1	.4678	.4818	.4618	4.895	.4649	.4694	.4763	9.083	.4655	.4639
#2	.4697	.4814	.4689	4.946	.4775	.4813	.4713	9.260	.4614	.4597
#3	.4708	.4838	.4642	4.913	.4709	.4759	.4755	9.211	.4635	.4591

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4506	.4646	4.994	.4525	.4618	.4784	F .4341	F .4437	.4725
Stddev	.0018	.0025	.023	.0012	.0050	.0011	.0049	.0035	.0018
%RSD	.3934	.5436	.4567	.2630	1.085	.2200	1.131	.7894	.3832
#1	.4507	.4671	5.015	.4533	.4562	.4783	.4364	.4397	.4742
#2	.4488	.4621	4.969	.4511	.4659	.4774	.4285	.4464	.4706
#3	.4523	.4646	4.996	.4531	.4633	.4795	.4375	.4450	.4727

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Fail Chk Fail Chk Pass
 High Limit .5524 .5524
 Low Limit .4476 .4476

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2408.1	33740.	3641.2
Stddev	7.7	93.	38.6
%RSD	.31982	.27621	1.0604
#1	2401.7	33818.	3673.9
#2	2416.7	33765.	3598.6
#3	2406.0	33637.	3651.2

Sample Name: CCB Acquired: 12/20/2021 11:59:46 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0029	-.0006	-.0010	.0003	.0003	-.3098	.0051	.0000	.0004
Stddev	.0000	.0134	.0013	.0006	.0002	.0000	.1276	.0064	.0001	.0002
%RSD	9.795	462.6	231.3	60.40	58.15	1.408	41.18	124.4	222.1	64.32
#1	.0003	-.0107	.0005	-.0003	.0004	.0003	-.4517	.0113	.0001	.0006
#2	.0004	.0162	-.0020	-.0014	.0002	.0003	-.2736	.0054	.0001	.0002
#3	.0004	.0032	-.0002	-.0011	.0002	.0003	-.2043	-.0014	-.0000	.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0014	.0014	-.0643	-.0014	.0005	.0012	.0443	-.0000	.0013
Stddev	.0003	.0003	.0035	.0500	.0020	.0003	.0002	.0267	.0003	.0014
%RSD	123.6	18.59	245.7	77.75	144.6	55.39	19.49	60.38	665.3	107.4
#1	.0004	-.0016	.0025	-.0309	-.0012	.0007	.0014	.0277	.0002	.0005
#2	-.0001	-.0011	-.0025	-.0402	.0005	.0004	.0012	.0752	.0000	.0029
#3	.0004	-.0015	.0043	-.1218	-.0034	.0003	.0010	.0301	-.0003	.0005

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0050	.0026	.0000	.0002	.0002	.0007	.0003	-.0028	-.0001
Stddev	.0018	.0002	.0013	.0005	.0001	.0002	.0050	.0010	.0001
%RSD	36.42	6.133	9892.	211.9	73.41	25.13	1941.	35.60	194.8
#1	.0066	.0024	.0013	.0001	.0003	.0005	-.0034	-.0021	.0001
#2	.0030	.0026	.0000	-.0002	.0002	.0007	-.0019	-.0023	-.0001
#3	.0055	.0027	-.0013	.0007	.0000	.0009	.0060	-.0039	-.0002

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2417.4	33807.	3610.4
Stddev	20.4	65.	36.5
%RSD	.84276	.19241	1.0103
#1	2393.9	33844.	3652.1
#2	2429.5	33732.	3584.5
#3	2428.9	33846.	3594.6

Sample Name: CCV Acquired: 12/20/2021 12:11:13 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4864	.4807	.4920	.4829	.4896	.5156	.4088	.4790	.4575	.4795
Stddev	.0028	.0077	.0019	.0009	.0026	.0029	.2981	.0060	.0014	.0003
%RSD	.5721	1.606	.3830	.1932	.5381	.5706	72.92	1.259	.3063	.0567
#1	.4892	.4859	.4901	.4818	.4870	.5133	.7103	.4771	.4589	.4792
#2	.4863	.4718	.4921	.4835	.4896	.5189	.4017	.4741	.4561	.4796
#3	.4836	.4843	.4938	.4833	.4923	.5147	.1143	.4857	.4576	.4796

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4875	.5014	.4815	5.146	.5000	.4958	.4828	9.700	.4829	.4809
Stddev	.0031	.0009	.0017	.023	.0023	.0040	.0012	.103	.0004	.0023
%RSD	.6323	.1738	.3464	.4482	.4571	.8147	.2502	1.067	.0805	.4735
#1	.4907	.5016	.4800	5.122	.4975	.4918	.4818	9.581	.4827	.4822
#2	.4873	.5004	.4812	5.148	.5019	.4958	.4825	9.751	.4827	.4782
#3	.4846	.5021	.4833	5.168	.5006	.4998	.4842	9.769	.4833	.4822

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4676	.4974	5.127	.4699	.4764	.4948	.4556	.4591	.4975
Stddev	.0018	.0020	.006	.0022	.0035	.0011	.0006	.0040	.0003
%RSD	.3823	.4014	.1115	.4774	.7413	.2303	.1396	.8727	.0551
#1	.4658	.4984	5.121	.4711	.4728	.4958	.4549	.4631	.4972
#2	.4677	.4988	5.127	.4673	.4766	.4949	.4558	.4590	.4977
#3	.4694	.4951	5.132	.4712	.4798	.4936	.4561	.4551	.4976

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2332.0	32310.	3466.4
Stddev	3.3	19.	34.5
%RSD	.14310	.05969	.99525
#1	2329.9	32291.	3506.1
#2	2335.8	32308.	3448.5
#3	2330.2	32330.	3444.4

Sample Name: CCB Acquired: 12/20/2021 12:15:40 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0017	.0161	.0023	-0.0017	.0001	.0003	-0.2478	-0.0173	.0002	.0003
Stddev	.0011	.0389	.0016	.0007	.0001	.0000	.1710	.0102	.0000	.0003
%RSD	62.84	241.9	70.20	42.00	95.27	8.327	69.03	58.82	15.88	124.7
#1	-0.0022	-0.0286	.0032	-0.0011	.0001	.0003	-0.0570	-0.0075	.0002	.0004
#2	-0.0005	.0417	.0033	-0.0024	.0000	.0004	-0.3875	-0.0278	.0002	.0005
#3	-0.0025	.0351	.0004	-0.0014	.0002	.0003	-0.2988	-0.0165	.0002	-0.0001

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **None** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-0.0012	.0011	-0.0059	-0.0025	.0006	.0019	.0374	.0002	-0.0003
Stddev	.0004	.0009	.0021	.0196	.0027	.0005	.0004	.0363	.0002	.0011
%RSD	155.2	77.42	188.9	332.1	105.5	79.97	18.69	97.21	94.90	345.3
#1	-0.0001	-0.0022	.0014	-0.0237	-0.0017	.0009	.0023	.0424	.0003	-0.0015
#2	.0002	-0.0005	-0.0011	.0152	-0.0004	.0010	.0019	-0.0012	.0002	.0007
#3	.0007	-0.0008	.0031	-0.0092	-0.0055	.0000	.0016	.0709	-0.0000	-0.0001

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058	.0009	.0026	.0008	-0.0000	.0004	.0001	-0.0020	-0.0002
Stddev	.0016	.0022	.0003	.0008	.0002	.0001	.0009	.0002	.0002
%RSD	27.67	243.4	12.76	100.3	1148.	34.77	1078.	8.740	120.2
#1	.0071	.0033	.0023	-0.0001	.0001	.0003	.0007	-0.0019	.0001
#2	.0040	-0.0010	.0025	.0014	.0001	.0005	.0006	-0.0018	-0.0003
#3	.0063	.0005	.0029	.0010	-0.0003	.0003	-0.0010	-0.0021	-0.0002

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2344.5	32330.	3434.4
Stddev	6.4	99.	46.3
%RSD	.27147	.30729	1.3490
#1	2351.8	32415.	3487.7
#2	2340.9	32221.	3411.2
#3	2340.7	32354.	3404.2

Sample Name: WG1585179-1,C Acquired: 12/20/2021 12:20:07 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0019	-0.0174	.0005	.0016	.0003	.0001	-.0268	.0251	.0001	.0003
Stddev	.0008	.0602	.0005	.0003	.0005	.0000	.1060	.0077	.0001	.0002
%RSD	39.45	346.0	99.06	19.99	151.3	16.50	394.8	30.79	123.3	73.47
#1	-0.0025	.0513	.0002	.0016	.0004	.0001	.0894	.0339	.0002	.0001
#2	-0.0022	-.0607	.0002	.0020	-.0002	.0001	-.0518	.0193	-.0000	.0002
#3	-.0011	-.0429	.0010	.0013	.0008	.0001	-.1181	.0222	.0001	.0005

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0000	-0.0009	-.0036	.0210	.0008	.0011	.0006	142.4	.0003	.0001
Stddev	.0003	.0003	.0012	.0543	.0049	.0003	.0000	2.2	.0002	.0010
%RSD	1353.	33.32	32.51	258.9	611.0	28.52	7.138	1.572	58.02	899.6
#1	-0.0002	-0.0011	-0.0029	.0717	.0045	.0008	.0006	140.2	.0005	-.0011
#2	.0003	-0.0011	-0.0029	-.0363	.0027	.0014	.0006	144.7	.0001	.0007
#3	-0.0002	-0.0006	-0.0049	.0275	-.0048	.0010	.0005	142.3	.0004	.0008

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	.0013	.0154	.0002	.0000	.0005	-.0030	-.0020	.0028
Stddev	.0006	.0018	.0011	.0002	.0005	.0005	.0015	.0003	.0001
%RSD	20.46	136.2	6.906	127.6	7488.	97.62	48.80	13.68	3.398
#1	.0026	.0028	.0162	.0002	-.0000	-.0000	-.0047	-.0017	.0028
#2	.0035	-.0007	.0142	.0003	.0005	.0006	-.0019	-.0019	.0030
#3	.0025	.0019	.0157	-.0001	-.0005	.0010	-.0025	-.0022	.0028

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2232.9	31024.	3334.4
Stddev	29.9	30.	38.9
%RSD	1.3378	.09677	1.1652
#1	2256.3	30992.	3379.3
#2	2243.1	31052.	3311.2
#3	2199.3	31029.	3312.8

Sample Name: WG1585179-2,C Acquired: 12/20/2021 12:24:33 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0465	2.047	.1202	.9635	1.941	.0511	.2321	9.680	.0458	.4357
Stddev	.0004	.038	.0019	.0034	.019	.0008	.4182	.092	.0002	.0025
%RSD	.8532	1.866	1.617	.3513	.9834	1.595	180.2	.9472	.4783	.5746
#1	.0467	2.006	.1213	.9608	1.919	.0502	-.2491	9.579	.0455	.4338
#2	.0460	2.082	.1180	.9624	1.950	.0515	.4367	9.706	.0458	.4347
#3	.0467	2.054	.1214	.9673	1.954	.0517	.5086	9.757	.0459	.4385

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1907	.2381	.9750	10.16	9.339	.4711	.9665	153.0	.4496	.4747
Stddev	.0013	.0011	.0109	.12	.192	.0045	.0062	.8	.0017	.0020
%RSD	.6829	.4429	1.116	1.173	2.051	.9500	.6421	.5179	.3785	.4151
#1	.1895	.2379	.9626	10.05	9.120	.4662	.9617	152.1	.4483	.4743
#2	.1905	.2372	.9829	10.15	9.425	.4721	.9644	153.4	.4490	.4730
#3	.1921	.2392	.9795	10.29	9.473	.4749	.9735	153.5	.4515	.4768

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4632	.1195	.6910	.9004	.9402	.9842	.0979	.4619	.4691
Stddev	.0031	.0009	.0019	.0046	.0086	.0037	.0013	.0037	.0027
%RSD	.6598	.7259	.2767	.5130	.9140	.3770	1.322	.7923	.5791
#1	.4609	.1191	.6903	.8960	.9305	.9809	.0968	.4577	.4672
#2	.4620	.1205	.6896	.9000	.9433	.9835	.0976	.4639	.4679
#3	.4667	.1189	.6932	.9052	.9469	.9882	.0993	.4642	.4722

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2311.3	31394.	3435.4
Stddev	17.2	43.	36.4
%RSD	.74307	.13573	1.0598
#1	2327.4	31345.	3477.4
#2	2313.1	31416.	3415.6
#3	2293.2	31422.	3413.2

Sample Name: L2168105-01,C Acquired: 12/20/2021 12:28:49 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0016	.0427	.0005	.0102	.0533	.0001	-.1435	34.08	.0007	.0022
Stddev	.0006	.0172	.0012	.0005	.0008	.0000	.1357	.54	.0001	.0002
%RSD	34.60	40.14	254.6	5.101	1.429	12.03	94.51	1.586	15.48	8.893
#1	-0.0019	.0621	-0.0007	.0107	.0525	.0001	-.0715	33.46	.0008	.0023
#2	-0.0020	.0366	.0018	.0102	.0540	.0001	-.3000	34.43	.0006	.0020
#3	-0.0010	.0295	.0004	.0097	.0534	.0001	-.0591	34.35	.0008	.0024

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0107	-0.0004	.5829	.3920	.1927	.0022	138.3	.0030	.0120
Stddev	.0001	.0007	.0032	.0465	.0029	.0018	.0003	1.5	.0001	.0008
%RSD	15.03	6.175	749.4	7.980	.7362	.9574	13.76	1.099	4.702	6.246
#1	.0004	.0101	-0.0013	.5888	.3894	.1906	.0025	136.6	.0029	.0113
#2	.0004	.0108	.0031	.5338	.3915	.1940	.0021	138.9	.0032	.0119
#3	.0003	.0114	-0.0031	.6262	.3951	.1936	.0019	139.5	.0030	.0128

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036	.0014	.4662	.0004	.1005	.0012	-.0012	.0000	.1730
Stddev	.0007	.0018	.0024	.0004	.0013	.0003	.0017	.0006	.0010
%RSD	18.41	129.4	.5185	106.8	1.250	23.14	144.1	7735.	.5835
#1	.0038	.0020	.4651	.0001	.0991	.0016	-.0014	-.0001	.1726
#2	.0029	.0028	.4645	.0009	.1010	.0011	-.0028	-.0005	.1723
#3	.0042	-.0006	.4689	.0002	.1014	.0010	.0006	.0007	.1742

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2332.4	31501.	3533.9
Stddev	19.0	167.	47.1
%RSD	.81387	.52900	1.3335
#1	2340.4	31679.	3587.7
#2	2346.2	31349.	3514.1
#3	2310.8	31474.	3499.8

Sample Name: WG1585179-3,C Acquired: 12/20/2021 12:33:12 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0454	1.971	.1193	.9443	1.901	.0489	.4607	42.34	.0449	.4238
Stddev	.0008	.036	.0025	.0010	.038	.0009	.2233	.80	.0002	.0008
%RSD	1.716	1.816	2.135	.1039	2.007	1.769	48.47	1.881	.3417	.1835
#1	.0455	1.940	.1188	.9449	1.857	.0479	.6053	41.46	.0451	.4243
#2	.0447	2.010	.1170	.9432	1.920	.0495	.5733	42.54	.0448	.4229
#3	.0462	1.963	.1220	.9448	1.925	.0493	.2035	43.01	.0448	.4243

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1857	.2421	.9407	10.29	9.279	.6353	.9411	144.5	.4388	.4745
Stddev	.0005	.0008	.0165	.22	.164	.0129	.0019	2.9	.0009	.0018
%RSD	.2496	.3276	1.759	2.121	1.766	2.037	.2051	2.000	.1944	.3883
#1	.1853	.2424	.9221	10.06	9.091	.6204	.9409	141.3	.4396	.4743
#2	.1862	.2428	.9462	10.33	9.391	.6416	.9393	145.2	.4379	.4728
#3	.1857	.2413	.9538	10.49	9.354	.6439	.9432	146.9	.4389	.4765

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4506	.1169	1.141	.8733	.9951	.9598	.0948	.4487	.6222
Stddev	.0020	.0014	.003	.0010	.0195	.0008	.0008	.0024	.0014
%RSD	.4473	1.157	.2654	.1091	1.959	.0845	.8590	.5372	.2320
#1	.4488	.1180	1.145	.8740	.9736	.9599	.0944	.4496	.6214
#2	.4528	.1154	1.139	.8722	.9998	.9605	.0942	.4505	.6213
#3	.4501	.1172	1.141	.8736	1.012	.9589	.0957	.4459	.6239

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2277.3	31287.	3490.0
Stddev	6.5	90.	65.2
%RSD	.28658	.28834	1.8689
#1	2282.1	31355.	3565.0
#2	2280.0	31321.	3458.6
#3	2269.9	31185.	3446.4

Sample Name: WG1585179-4,C Acquired: 12/20/2021 12:37:28 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0013	.0368	.0034	.0116	.0527	.0000	-.1141	33.99	.0007	.0023
Stddev	.0011	.0016	.0008	.0003	.0004	.0000	.1327	.45	.0000	.0000
%RSD	86.13	4.302	24.11	2.340	.8386	6.919	116.3	1.324	.7913	1.833
#1	-0.0000	.0356	.0034	.0113	.0522	.0000	-.2165	33.47	.0007	.0024
#2	-.0021	.0363	.0043	.0118	.0531	.0000	.0358	34.21	.0007	.0024
#3	-.0017	.0386	.0026	.0115	.0529	.0001	-.1615	34.28	.0007	.0023

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0107	-.0007	.5432	.3969	.1912	.0024	138.4	.0035	.0126
Stddev	.0003	.0005	.0047	.0601	.0045	.0024	.0007	2.2	.0002	.0007
%RSD	63.85	4.691	704.4	11.06	1.122	1.231	26.95	1.619	5.042	5.939
#1	.0003	.0109	.0045	.4928	.3923	.1888	.0031	135.8	.0035	.0135
#2	.0003	.0101	-.0049	.5271	.4012	.1935	.0025	139.5	.0033	.0121
#3	.0008	.0110	-.0016	.6096	.3972	.1914	.0018	139.9	.0036	.0122

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.0014	.4726	.0007	.1004	.0015	-.0015	-.0010	.1758
Stddev	.0008	.0010	.0043	.0005	.0017	.0005	.0015	.0004	.0013
%RSD	43.80	69.20	.9186	80.30	1.729	36.40	100.8	39.24	.7525
#1	.0026	.0015	.4681	.0001	.0984	.0017	-.0021	-.0011	.1743
#2	.0013	.0004	.4729	.0008	.1011	.0019	-.0026	-.0006	.1764
#3	.0013	.0024	.4768	.0011	.1017	.0009	.0002	-.0013	.1767

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2277.8	31291.	3436.6
Stddev	20.9	205.	35.8
%RSD	.91913	.65619	1.0415
#1	2300.6	31137.	3465.4
#2	2273.5	31212.	3396.5
#3	2259.4	31525.	3448.0

Sample Name: WG1585179-5,C Acquired: 12/20/2021 12:41:52 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0456	2.028	.1191	.9379	1.964	.0502	.2805	43.73	.0443	.4217
Stddev	.0004	.017	.0027	.0099	.032	.0008	.0219	.68	.0005	.0040
%RSD	.8542	.8380	2.283	1.055	1.648	1.542	7.815	1.547	1.149	.9477
#1	.0460	2.026	.1168	.9376	1.926	.0493	.3036	42.94	.0440	.4206
#2	.0452	2.012	.1183	.9281	1.982	.0505	.2778	44.11	.0440	.4183
#3	.0457	2.046	.1221	.9479	1.983	.0508	.2600	44.12	.0449	.4261

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1906	.2471	.9709	10.58	9.563	.6571	.9259	147.2	.4361	.4680
Stddev	.0017	.0018	.0155	.16	.134	.0108	.0105	1.9	.0042	.0038
%RSD	.9173	.7206	1.600	1.474	1.396	1.640	1.138	1.307	.9636	.8035
#1	.1887	.2452	.9530	10.40	9.413	.6446	.9225	145.1	.4350	.4675
#2	.1920	.2472	.9812	10.65	9.609	.6633	.9174	147.7	.4327	.4644
#3	.1913	.2488	.9784	10.69	9.667	.6633	.9377	148.9	.4408	.4719

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4478	.1146	1.464	.8713	1.032	.9843	.0963	.4585	.6193
Stddev	.0055	.0022	.014	.0076	.014	.0061	.0014	.0014	.0064
%RSD	1.228	1.908	.9554	.8773	1.380	.6229	1.427	.3128	1.031
#1	.4474	.1162	1.463	.8686	1.016	.9778	.0953	.4569	.6169
#2	.4425	.1121	1.450	.8653	1.039	.9851	.0958	.4594	.6145
#3	.4535	.1155	1.478	.8799	1.042	.9900	.0979	.4593	.6265

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2276.6	30473.	3385.5
Stddev	12.6	168.	52.6
%RSD	.55562	.55002	1.5532
#1	2286.5	30633.	3443.9
#2	2281.0	30488.	3370.7
#3	2262.4	30299.	3341.9

Sample Name: WG1585179-6,C,5 Acquired: 12/20/2021 12:46:07 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment: 7

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0004	.0071	.0018	.0026	.0120	.0000	-.1967	7.245	.0001	.0009
Stddev	.0009	.0372	.0019	.0009	.0008	.0000	.2082	.217	.0000	.0001
%RSD	253.9	520.8	104.1	32.49	6.610	18.56	105.8	3.000	36.37	16.30
#1	.0007	-.0252	.0014	.0028	.0111	.0000	-.2796	7.025	.0001	.0007
#2	-.0008	-.0011	.0002	.0034	.0123	.0000	.0402	7.253	.0001	.0009
#3	-.0010	.0478	.0039	.0017	.0125	.0000	-.3508	7.459	.0000	.0010

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0001	.0016	-.0147	.0871	.0958	.0419	.0025	29.20	.0010	.0042
Stddev	.0003	.0003	.0050	.0216	.0039	.0015	.0004	.78	.0003	.0008
%RSD	277.5	17.75	34.07	24.80	4.107	3.685	16.63	2.670	28.91	19.30
#1	-.0002	.0014	-.0172	.0775	.0917	.0403	.0028	28.38	.0012	.0045
#2	.0002	.0019	-.0089	.0719	.0964	.0421	.0025	29.30	.0011	.0033
#3	-.0003	.0014	-.0179	.1118	.0995	.0433	.0020	29.93	.0007	.0048

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.0006	.1111	.0008	.0216	.0011	-.0003	-.0016	.0383
Stddev	.0015	.0036	.0015	.0006	.0005	.0000	.0008	.0006	.0002
%RSD	40.63	554.7	1.388	67.83	2.457	4.085	258.8	38.51	.5621
#1	.0054	.0043	.1118	.0003	.0210	.0011	-.0012	-.0017	.0383
#2	.0033	-.0028	.1094	.0014	.0218	.0011	.0003	-.0010	.0381
#3	.0024	.0005	.1122	.0007	.0220	.0011	-.0000	-.0022	.0385

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2371.1	32484.	3493.7
Stddev	21.6	53.	31.3
%RSD	.91223	.16340	.89497
#1	2380.3	32455.	3526.5
#2	2386.7	32452.	3490.2
#3	2346.4	32545.	3464.3

Sample Name: L2166777-07,C Acquired: 12/20/2021 12:50:29 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0016	.0631	.0033	.0091	.0489	.0000	-.0571	41.65	.0004	.0047
Stddev	.0009	.0240	.0014	.0009	.0002	.0000	.1514	.05	.0000	.0000
%RSD	55.16	38.07	42.75	9.729	.4897	99.59	265.2	.1183	6.637	.4542
#1	-0.0012	.0880	.0048	.0088	.0486	.0000	.1120	41.61	.0004	.0047
#2	-0.0011	.0400	.0028	.0084	.0490	.0000	-.1031	41.70	.0004	.0047
#3	-0.0027	.0614	.0021	.0101	.0490	.0000	-.1801	41.64	.0004	.0047

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0012	-.0041	.5588	1.220	.2455	.0009	141.9	.0058	.0444
Stddev	.0004	.0004	.0017	.0536	.003	.0009	.0002	.3	.0002	.0003
%RSD	116.3	34.68	40.55	9.583	.2572	.3756	24.60	.2281	3.059	.7242
#1	-0.0000	.0007	-.0036	.5177	1.218	.2447	.0009	141.7	.0057	.0445
#2	.0003	.0015	-.0027	.5394	1.224	.2465	.0007	141.8	.0060	.0440
#3	.0009	.0015	-.0059	.6194	1.218	.2453	.0012	142.3	.0056	.0446

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.0026	1.613	.0006	.1766	.0015	-.0021	-.0013	.2343
Stddev	.0022	.0005	.005	.0005	.0008	.0001	.0013	.0015	.0015
%RSD	59.24	17.90	.3088	74.62	.4615	7.107	62.48	108.4	.6539
#1	.0062	.0031	1.610	.0012	.1760	.0016	-.0027	-.0010	.2338
#2	.0031	.0022	1.610	.0002	.1775	.0014	-.0006	-.0029	.2331
#3	.0019	.0025	1.619	.0005	.1763	.0014	-.0031	-.0001	.2360

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2229.2	31009.	3425.7
Stddev	30.3	54.	13.0
%RSD	1.3576	.17512	.37900
#1	2246.6	30980.	3420.3
#2	2246.8	30975.	3416.3
#3	2194.3	31072.	3440.5

Sample Name: WG1583508-3,C Acquired: 12/20/2021 12:54:50 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0487	2.088	.1253	.9759	1.999	.0521	.3080	50.99	.0461	.4441
Stddev	.0008	.039	.0013	.0042	.036	.0009	.0576	.77	.0002	.0017
%RSD	1.570	1.868	1.003	.4329	1.816	1.768	18.69	1.516	.3405	.3821
#1	.0495	2.049	.1256	.9757	1.958	.0512	.2597	50.10	.0463	.4431
#2	.0479	2.090	.1239	.9718	2.014	.0520	.3717	51.43	.0460	.4432
#3	.0487	2.127	.1264	.9803	2.026	.0530	.2925	51.44	.0462	.4461

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1964	.2417	.9885	10.80	10.76	.7157	.9683	150.4	.4587	.5235
Stddev	.0008	.0009	.0169	.18	.19	.0115	.0035	1.9	.0021	.0020
%RSD	.3979	.3520	1.706	1.702	1.771	1.614	.3626	1.272	.4479	.3735
#1	.1967	.2424	.9693	10.61	10.57	.7026	.9666	148.3	.4584	.5226
#2	.1955	.2420	1.001	10.83	10.74	.7200	.9659	151.1	.4569	.5221
#3	.1970	.2408	.9953	10.97	10.95	.7245	.9723	152.0	.4609	.5257

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4715	.1219	2.590	.9082	1.127	1.007	.0980	.4744	.7034
Stddev	.0030	.0018	.009	.0009	.016	.005	.0015	.0027	.0023
%RSD	.6392	1.455	.3471	.0961	1.440	.4967	1.524	.5739	.3274
#1	.4684	.1213	2.588	.9072	1.108	1.011	.0997	.4770	.7028
#2	.4744	.1205	2.582	.9087	1.135	1.008	.0969	.4745	.7014
#3	.4718	.1239	2.600	.9088	1.137	1.001	.0973	.4716	.7059

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2254.9	30692.	3380.7
Stddev	4.9	241.	49.9
%RSD	.21806	.78399	1.4762
#1	2260.3	30563.	3435.1
#2	2253.4	30544.	3370.1
#3	2250.8	30970.	3336.9

Sample Name: WG1583508-4,C Acquired: 12/20/2021 12:59:05 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment: 10

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0472	2.073	.1238	.9674	1.971	.0510	.4317	50.54	.0454	.4392
Stddev	.0010	.070	.0010	.0042	.042	.0011	.1795	1.03	.0001	.0015
%RSD	2.184	3.394	.7937	.4338	2.106	2.234	41.59	2.046	.1399	.3436
#1	.0482	1.993	.1229	.9704	1.925	.0498	.5919	49.38	.0454	.4409
#2	.0461	2.101	.1235	.9693	1.982	.0511	.4657	50.85	.0455	.4387
#3	.0474	2.125	.1248	.9627	2.006	.0521	.2376	51.38	.0453	.4380

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1927	.2392	.9727	10.68	10.51	.7069	.9600	148.5	.4536	.5174
Stddev	.0006	.0013	.0159	.19	.21	.0144	.0022	3.1	.0014	.0010
%RSD	.3330	.5343	1.634	1.797	2.015	2.033	.2291	2.110	.3077	.1948
#1	.1934	.2399	.9544	10.46	10.28	.6909	.9623	145.1	.4548	.5182
#2	.1921	.2377	.9813	10.76	10.54	.7111	.9598	149.3	.4539	.5177
#3	.1927	.2400	.9825	10.82	10.70	.7187	.9579	151.2	.4521	.5163

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4647	.1213	2.568	.8940	1.113	.9935	.0967	.4636	.6962
Stddev	.0018	.0014	.006	.0025	.023	.0051	.0027	.0041	.0020
%RSD	.3827	1.146	.2169	.2756	2.059	.5174	2.746	.8769	.2857
#1	.4652	.1219	2.570	.8954	1.088	.9958	.0939	.4680	.6983
#2	.4662	.1223	2.573	.8953	1.117	.9876	.0992	.4599	.6957
#3	.4628	.1197	2.562	.8911	1.133	.9971	.0970	.4628	.6944

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2227.4	30560.	3389.6
Stddev	2.3	55.	72.6
%RSD	.10283	.17977	2.1425
#1	2230.0	30545.	3469.3
#2	2225.5	30620.	3372.2
#3	2226.7	30514.	3327.2

Sample Name: CCV Acquired: 12/20/2021 13:03:22 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4891	.5264	.4867	.4803	.4914	.5236	.3258	.5087	F .4373	.4743
Stddev	.0003	.0220	.0041	.0028	.0020	.0037	.1163	.0184	.0018	.0021
%RSD	.0596	4.189	.8424	.5842	.4110	.7161	35.68	3.611	.4199	.4533
#1	.4894	.5194	.4832	.4775	.4891	.5216	.2689	.4960	.4351	.4719
#2	.4889	.5087	.4857	.4802	.4922	.5279	.2490	.5297	.4383	.4747
#3	.4889	.5511	.4912	.4831	.4929	.5213	.4595	.5002	.4383	.4761

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Fail Chk Pass
 High Limit
 Low Limit .5524 .4476

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4899	.5012	.4888	5.265	.5127	.4996	.4821	9.664	.4802	.4752
Stddev	.0010	.0005	.0025	.070	.0030	.0027	.0022	.056	.0025	.0028
%RSD	.2004	.1021	.5098	1.333	.5845	.5336	.4577	.5822	.5292	.5925
#1	.4895	.5006	.4859	5.187	.5093	.4973	.4799	9.607	.4774	.4723
#2	.4891	.5017	.4900	5.288	.5135	.4991	.4820	9.720	.4808	.4753
#3	.4910	.5013	.4904	5.321	.5151	.5025	.4844	9.663	.4823	.4779

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4589	.4948	5.071	.4499	.4802	.4968	F .4333	.4532	.4943
Stddev	.0046	.0033	.023	.0016	.0018	.0019	.0027	.0013	.0027
%RSD	1.006	.6737	.4560	.3513	.3792	.3907	.6261	.2835	.5534
#1	.4538	.4923	5.044	.4481	.4787	.4954	.4334	.4522	.4914
#2	.4600	.4935	5.082	.4511	.4822	.4990	.4306	.4547	.4949
#3	.4628	.4986	5.085	.4505	.4798	.4960	.4360	.4528	.4968

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Fail Chk Pass Chk Pass
 High Limit
 Low Limit .5524 .4476

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2362.1	32301.	3444.2
Stddev	9.9	62.	13.6
%RSD	.41721	.19071	.39384
#1	2370.6	32345.	3457.1
#2	2364.5	32327.	3430.1
#3	2351.3	32230.	3445.3

Sample Name: CCB Acquired: 12/20/2021 13:07:48 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0014	-0.0119	.0010	.0007	.0005	.0003	-.0834	-.0016	.0002	.0006
Stddev	.0007	.0279	.0021	.0007	.0004	.0000	.2060	.0108	.0001	.0003
%RSD	49.90	234.6	206.0	102.4	73.48	4.121	247.1	655.1	21.41	47.82
#1	-0.0007	-0.0425	-0.0011	.0013	.0002	.0003	.0174	.0108	.0002	.0008
#2	-0.0021	-0.0054	.0011	.0008	.0009	.0003	.0529	-.0073	.0003	.0003
#3	-0.0013	.0122	.0031	-.0001	.0004	.0003	-.3203	-.0084	.0003	.0005

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **None** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	-.0017	.0022	-.0192	-.0012	.0005	.0025	.1499	.0003	.0012
Stddev	.0004	.0004	.0007	.0360	.0029	.0003	.0005	.0442	.0002	.0008
%RSD	49.58	25.67	31.76	187.8	241.0	55.19	18.83	29.52	64.49	70.94
#1	.0010	-.0014	.0029	.0196	.0019	.0004	.0027	.1831	.0004	.0004
#2	.0012	-.0014	.0015	-.0255	-.0016	.0003	.0027	.0997	.0005	.0020
#3	.0004	-.0022	.0020	-.0515	-.0040	.0008	.0019	.1669	.0001	.0011

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.0022	.0024	.0008	.0003	.0007	-.0002	-.0005	.0000
Stddev	.0001	.0007	.0009	.0003	.0004	.0003	.0004	.0007	.0001
%RSD	2.586	32.02	39.42	38.52	132.4	49.72	200.6	143.4	254.0
#1	.0057	.0022	.0017	.0004	.0005	.0010	-.0005	.0003	.0001
#2	.0057	.0015	.0035	.0010	.0005	.0003	-.0003	-.0012	-.0000
#3	.0054	.0030	.0020	.0010	-.0001	.0007	.0002	-.0006	.0000

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2405.2	32916.	3456.1
Stddev	30.8	19.	16.1
%RSD	1.2815	.05861	.46546
#1	2396.7	32908.	3472.8
#2	2379.6	32938.	3440.7
#3	2439.4	32901.	3454.9

Sample Name: WG1585365-1,C Acquired: 12/20/2021 13:12:15 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0012	-0.0176	.0010	.0007	.0013	.0001	-.0666	.0366	.0001	.0003
Stddev	.0006	.0157	.0033	.0004	.0002	.0000	.0179	.0106	.0001	.0001
%RSD	53.04	89.00	322.8	53.32	15.16	20.02	26.86	29.03	112.8	23.79
#1	-0.0014	-0.0055	-0.0022	.0010	.0016	.0001	-.0872	.0419	.0001	.0003
#2	-0.0017	-0.0121	.0009	.0003	.0013	.0001	-.0557	.0435	.0001	.0003
#3	-0.0005	-0.0353	.0044	.0007	.0011	.0001	-.0568	.0243	-.0000	.0002

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0007	.0197	.0251	.0013	.0009	.0011	140.7	.0005	-.0001
Stddev	.0005	.0005	.0051	.0291	.0034	.0007	.0002	1.5	.0001	.0004
%RSD	199.4	75.39	25.95	116.3	259.9	84.72	18.63	1.031	26.85	433.0
#1	.0006	-0.0008	.0179	.0494	.0032	.0009	.0013	139.3	.0006	-0.0001
#2	.0004	-0.0001	.0254	.0331	.0034	.0016	.0010	142.2	.0004	.0003
#3	-0.0003	-0.0011	.0157	-.0073	-.0026	.0001	.0009	140.7	.0004	-0.0006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034	.0013	.0197	.0010	-.0002	.0006	-.0028	-.0018	.0023
Stddev	.0012	.0014	.0003	.0003	.0001	.0003	.0008	.0011	.0000
%RSD	34.71	103.7	1.419	31.96	22.79	48.88	28.22	64.37	1.671
#1	.0043	.0015	.0195	.0014	-.0002	.0004	-.0025	-.0006	.0023
#2	.0038	.0025	.0201	.0007	-.0002	.0010	-.0022	-.0018	.0023
#3	.0021	-0.0001	.0196	.0010	-.0003	.0006	-.0037	-.0029	.0023

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2285.6	31381.	3422.9
Stddev	27.4	79.	29.4
%RSD	1.2009	.25309	.85810
#1	2316.5	31440.	3453.6
#2	2276.1	31291.	3395.0
#3	2264.1	31413.	3420.3

Sample Name: WG1585365-2,C Acquired: 12/20/2021 13:16:42 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0463	2.122	.1265	1.002	1.998	.0519	.1930	9.969	.0475	.4549
Stddev	.0011	.029	.0010	.006	.036	.0015	.0519	.185	.0002	.0024
%RSD	2.358	1.362	.8229	.6398	1.787	2.969	26.90	1.859	.4704	.5246
#1	.0475	2.149	.1257	.9990	1.959	.0506	.2158	9.771	.0473	.4536
#2	.0455	2.092	.1277	.9981	2.004	.0514	.2297	9.997	.0474	.4534
#3	.0457	2.127	.1261	1.010	2.030	.0536	.1336	10.14	.0477	.4576

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2002	.2484	1.002	10.50	9.483	.4844	1.011	154.6	.4701	.4947
Stddev	.0011	.0013	.021	.12	.278	.0073	.007	2.4	.0025	.0015
%RSD	.5732	.5313	2.081	1.146	2.934	1.506	.6815	1.556	.5385	.2996
#1	.2006	.2487	.9837	10.39	9.277	.4763	1.007	152.3	.4691	.4941
#2	.2011	.2496	.9967	10.49	9.373	.4866	1.007	154.3	.4683	.4936
#3	.1989	.2470	1.024	10.63	9.799	.4904	1.019	157.1	.4730	.4964

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4807	.1234	.7622	.9358	.9641	1.032	1.009	.4791	.4905
Stddev	.0023	.0019	.0054	.0048	.0146	.002	.0003	.0027	.0019
%RSD	.4684	1.543	.7026	.5179	1.511	.1596	.3465	.5687	.3882
#1	.4804	.1235	.7590	.9314	.9484	1.034	.1013	.4798	.4894
#2	.4786	.1214	.7591	.9350	.9667	1.032	.1006	.4813	.4895
#3	.4831	.1252	.7683	.9410	.9772	1.031	.1009	.4761	.4927

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2174.0	29063.	3292.7
Stddev	10.7	67.	97.0
%RSD	.49112	.23134	2.9453
#1	2166.9	28993.	3372.2
#2	2186.2	29070.	3321.2
#3	2168.8	29127.	3184.7

Sample Name: L2168097-01,C Acquired: 12/20/2021 13:20:59 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0015	.0643	.0023	.0061	.0721	.0001	-.0375	23.87	.0006	.0026
Stddev	.0006	.0485	.0005	.0003	.0014	.0000	.2719	.40	.0001	.0001
%RSD	39.31	75.45	22.62	4.976	1.947	20.49	724.8	1.692	13.81	2.566
#1	-0.0012	.0817	.0029	.0062	.0705	.0001	-.2247	23.41	.0007	.0025
#2	-0.0011	.1017	.0020	.0064	.0727	.0001	-.1622	24.04	.0006	.0026
#3	-0.0021	.0095	.0020	.0058	.0730	.0001	.2744	24.17	.0006	.0026

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0065	.0747	.3761	.9820	.3924	.0027	142.2	.0034	.2114
Stddev	.0004	.0000	.0050	.0437	.0097	.0069	.0006	2.9	.0004	.0009
%RSD	56.74	.3122	6.743	11.62	.9849	1.765	21.60	2.036	12.42	.4057
#1	.0003	.0065	.0695	.4192	.9724	.3845	.0034	138.8	.0039	.2106
#2	.0011	.0065	.0795	.3772	.9818	.3951	.0024	143.6	.0031	.2113
#3	.0006	.0065	.0751	.3318	.9918	.3975	.0024	144.1	.0032	.2123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	.0005	.2446	.0011	.0523	.0017	-.0010	-.0013	.3346
Stddev	.0018	.0016	.0015	.0005	.0010	.0003	.0032	.0003	.0015
%RSD	62.76	313.4	.6018	47.13	1.852	16.20	318.8	20.38	.4520
#1	.0049	.0005	.2435	.0009	.0512	.0019	-.0039	-.0012	.3338
#2	.0021	.0021	.2440	.0007	.0524	.0017	-.0016	-.0011	.3338
#3	.0016	-.0011	.2463	.0016	.0532	.0014	.0025	-.0016	.3364

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2222.7	30294.	3359.1
Stddev	12.6	42.	41.5
%RSD	.56581	.13763	1.2357
#1	2208.8	30300.	3406.5
#2	2233.3	30332.	3329.0
#3	2225.9	30249.	3342.0

Sample Name: L2167957-01,C Acquired: 12/20/2021 13:25:20 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0018	.0639	.0035	.0030	.0733	.0000	-.0466	23.63	.0004	.0005
Stddev	.0005	.0622	.0006	.0003	.0012	.0000	.1079	.44	.0000	.0001
%RSD	25.64	97.29	17.07	8.405	1.624	29.61	231.6	1.861	9.382	10.63
#1	-0.0016	.1069	.0035	.0032	.0721	.0000	-.1365	23.17	.0004	.0006
#2	-0.0015	-.0074	.0029	.0030	.0732	.0000	.0730	23.67	.0004	.0005
#3	-0.0023	.0923	.0041	.0027	.0745	.0000	-.0763	24.05	.0004	.0006

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0012	-.0075	.3996	.2984	.0465	.0005	149.0	.0013	.0389
Stddev	.0003	.0005	.0064	.0133	.0045	.0006	.0004	2.8	.0003	.0001
%RSD	120.0	45.82	84.54	3.320	1.516	1.228	89.59	1.908	20.91	.2652
#1	.0004	.0006	-.0004	.3988	.2972	.0458	.0009	145.7	.0011	.0388
#2	-.0001	.0017	-.0127	.3868	.2946	.0466	.0004	150.3	.0016	.0390
#3	.0004	.0013	-.0094	.4133	.3034	.0469	.0001	150.9	.0011	.0389

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0024	.3553	.0005	.0286	.0009	-.0011	-.0029	.0786
Stddev	.0008	.0012	.0007	.0003	.0006	.0002	.0007	.0005	.0006
%RSD	39.04	50.66	.1891	65.21	2.007	23.68	60.22	15.59	.8142
#1	.0026	.0036	.3555	.0003	.0280	.0007	-.0016	-.0025	.0789
#2	.0021	.0023	.3558	.0008	.0288	.0012	-.0003	-.0034	.0791
#3	.0011	.0012	.3545	.0003	.0291	.0009	-.0014	-.0029	.0779

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2248.3	30591.	3413.3
Stddev	23.3	172.	39.8
%RSD	1.0377	.56372	1.1673
#1	2234.2	30545.	3454.5
#2	2235.4	30447.	3410.6
#3	2275.2	30782.	3375.0

Sample Name: WG1585365-3,C Acquired: 12/20/2021 13:29:41 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0486	2.076	.1236	.9879	2.031	.0509	.1367	32.08	.0460	.4418
Stddev	.0006	.081	.0019	.0031	.025	.0011	.1185	.54	.0002	.0018
%RSD	1.248	3.885	1.566	.3103	1.232	2.225	86.70	1.676	.4757	.4168
#1	.0488	1.985	.1213	.9914	2.003	.0497	.2448	31.46	.0463	.4439
#2	.0479	2.138	.1247	.9856	2.042	.0512	.1554	32.41	.0458	.4405
#3	.0490	2.105	.1247	.9866	2.049	.0519	.0100	32.36	.0460	.4410

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1944	.2467	1.000	10.68	9.516	.5192	.9887	150.6	.4565	.5161
Stddev	.0008	.0007	.016	.13	.248	.0076	.0032	3.0	.0017	.0007
%RSD	.3897	.2886	1.628	1.188	2.607	1.466	.3285	1.959	.3819	.1312
#1	.1943	.2462	.9815	10.53	9.253	.5104	.9921	147.2	.4583	.5164
#2	.1937	.2475	1.012	10.78	9.551	.5238	.9856	152.4	.4548	.5166
#3	.1952	.2464	1.007	10.72	9.745	.5235	.9884	152.3	.4565	.5154

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4736	.1224	1.088	.9041	.9780	1.008	.0985	.4731	.5446
Stddev	.0011	.0010	.002	.0043	.0166	.003	.0021	.0047	.0024
%RSD	.2365	.8203	.2192	.4771	1.698	.2629	2.153	.9896	.4393
#1	.4724	.1234	1.091	.9085	.9588	1.006	.1001	.4702	.5471
#2	.4746	.1225	1.087	.8999	.9881	1.007	.0961	.4706	.5424
#3	.4737	.1214	1.086	.9040	.9870	1.011	.0994	.4785	.5441

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2343.4	32044.	3591.7
Stddev	20.8	31.	72.6
%RSD	.88606	.09763	2.0225
#1	2322.5	32078.	3673.8
#2	2364.0	32016.	3565.5
#3	2343.9	32040.	3535.8

Sample Name: WG1585365-4,C Acquired: 12/20/2021 13:33:55 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0014	.0059	.0015	.0038	.0682	.0000	-.2970	22.32	.0004	.0008
Stddev	.0000	.0161	.0009	.0003	.0008	.0000	.1523	.27	.0001	.0001
%RSD	2.031	272.6	58.45	8.673	1.175	13.09	51.27	1.205	12.90	15.54
#1	-0.0014	.0213	.0007	.0041	.0673	.0000	-.1533	22.01	.0005	.0006
#2	-0.0014	.0072	.0024	.0035	.0685	.0000	-.4566	22.48	.0004	.0008
#3	-0.0014	-.0108	.0014	.0036	.0688	.0000	-.2810	22.48	.0003	.0008

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0009	.0064	.3785	.2904	.0433	.0023	140.6	.0014	.0371
Stddev	.0005	.0004	.0026	.0235	.0032	.0008	.0004	1.8	.0002	.0009
%RSD	110.1	48.20	39.87	6.219	1.094	1.918	18.31	1.314	12.31	2.532
#1	.0007	.0004	.0072	.3730	.2896	.0424	.0026	138.5	.0014	.0368
#2	.0007	.0011	.0036	.3582	.2939	.0440	.0024	141.1	.0016	.0364
#3	-.0001	.0011	.0085	.4043	.2877	.0436	.0018	142.1	.0012	.0382

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0022	.3504	.0011	.0278	.0013	-.0010	-.0002	.0757
Stddev	.0013	.0005	.0019	.0003	.0004	.0003	.0034	.0005	.0004
%RSD	66.66	23.32	.5425	29.04	1.464	19.67	348.3	322.2	.5022
#1	.0032	.0016	.3485	.0014	.0274	.0015	-.0008	.0004	.0758
#2	.0007	.0026	.3523	.0009	.0279	.0010	-.0044	-.0002	.0753
#3	.0017	.0024	.3502	.0009	.0282	.0015	.0023	-.0007	.0761

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2357.9	32382.	3644.7
Stddev	2.6	219.	34.2
%RSD	.10899	.67529	.93828
#1	2357.4	32527.	3682.7
#2	2360.6	32489.	3616.4
#3	2355.6	32131.	3635.1

Sample Name: WG1585365-5,C Acquired: 12/20/2021 13:38:17 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0464	2.039	.1261	.9950	1.993	.0503	.4129	31.99	.0460	.4427
Stddev	.0009	.030	.0023	.0087	.029	.0005	.0474	.48	.0001	.0021
%RSD	2.014	1.468	1.788	.8706	1.439	.8995	11.49	1.513	.2686	.4648
#1	.0470	2.010	.1246	.9853	1.960	.0498	.4092	31.44	.0460	.4405
#2	.0453	2.070	.1250	.9978	2.008	.0507	.3673	32.24	.0459	.4430
#3	.0469	2.037	.1287	1.002	2.012	.0505	.4620	32.31	.0462	.4446

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1921	.2423	.9832	10.05	9.401	.5112	.9758	149.8	.4575	.5214
Stddev	.0005	.0004	.0137	.27	.102	.0082	.0054	2.3	.0019	.0029
%RSD	.2849	.1479	1.394	2.706	1.086	1.607	.5489	1.556	.4049	.5645
#1	.1923	.2427	.9679	9.743	9.284	.5018	.9700	147.1	.4555	.5191
#2	.1925	.2422	.9943	10.12	9.472	.5153	.9768	150.9	.4578	.5205
#3	.1914	.2420	.9875	10.27	9.447	.5166	.9806	151.4	.4592	.5248

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4737	.1238	1.415	.9052	.9565	.9943	.1015	.4606	.5487
Stddev	.0025	.0014	.008	.0016	.0195	.0025	.0058	.0021	.0021
%RSD	.5370	1.167	.5661	.1778	2.035	.2557	5.757	.4665	.3818
#1	.4709	.1222	1.406	.9070	.9340	.9946	.0955	.4595	.5466
#2	.4742	.1250	1.416	.9038	.9664	.9916	.1072	.4593	.5489
#3	.4759	.1241	1.422	.9048	.9690	.9966	.1018	.4631	.5508

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2271.5	31434.	3520.2
Stddev	5.0	77.	30.9
%RSD	.21934	.24369	.87795
#1	2273.6	31467.	3554.5
#2	2275.1	31489.	3494.7
#3	2265.8	31346.	3511.3

Sample Name: WG1585365-6,C,5 Acquired: 12/20/2021 13:42:32 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0013	-0.0316	.0009	.0003	.0143	.0000	-0.2271	4.533	.0001	.0002
Stddev	.0009	.0404	.0012	.0007	.0005	.0000	.1106	.181	.0000	.0001
%RSD	75.16	127.6	142.2	253.5	3.156	30.92	48.69	3.999	27.93	39.73
#1	-0.0004	-0.0243	.0015	.0007	.0138	.0000	-0.3208	4.328	.0001	.0003
#2	-0.0010	.0046	-0.0006	.0006	.0144	.0000	-0.2552	4.595	.0001	.0001
#3	-0.0023	-0.0752	.0017	-0.0005	.0147	.0000	-0.1051	4.674	.0000	.0003

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-0.0008	-0.0172	.0974	.0674	.0094	.0023	28.49	.0002	.0082
Stddev	.0001	.0001	.0031	.0140	.0035	.0005	.0004	.93	.0002	.0005
%RSD	18.11	6.667	17.86	14.41	5.241	5.260	17.72	3.265	107.7	5.836
#1	.0003	-0.0008	-0.0203	.0833	.0662	.0091	.0028	27.49	.0003	.0086
#2	.0004	-0.0007	-0.0141	.1114	.0646	.0092	.0023	28.64	.0003	.0083
#3	.0003	-0.0008	-0.0173	.0975	.0713	.0100	.0019	29.33	-0.0000	.0077

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053	.0012	.0792	.0002	.0058	.0010	-0.0007	-0.0014	.0164
Stddev	.0009	.0017	.0008	.0004	.0002	.0003	.0022	.0006	.0002
%RSD	16.23	140.9	.9591	222.0	3.614	26.77	309.2	41.41	1.326
#1	.0049	-0.0004	.0800	.0001	.0056	.0009	-0.0033	-0.0012	.0162
#2	.0063	.0011	.0785	-0.0002	.0060	.0009	.0005	-0.0010	.0164
#3	.0047	.0029	.0792	.0006	.0059	.0013	.0007	-0.0021	.0166

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2404.4	32979.	3622.4
Stddev	7.4	59.	53.3
%RSD	.30893	.17897	1.4714
#1	2404.3	33032.	3683.7
#2	2411.9	32989.	3596.0
#3	2397.0	32916.	3587.5

Sample Name: WG1583508-5,C Acquired: 12/20/2021 13:46:57 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0460	2.054	.1212	.9700	1.971	.0502	.0841	50.64	.0450	.4366
Stddev	.0007	.025	.0014	.0065	.010	.0001	.2310	.26	.0004	.0042
%RSD	1.538	1.220	1.194	.6722	.4852	.2040	274.8	.5123	.8505	.9659
#1	.0462	2.044	.1225	.9722	1.961	.0501	.2093	50.38	.0452	.4395
#2	.0466	2.034	.1196	.9751	1.974	.0503	-.1825	50.90	.0452	.4384
#3	.0452	2.082	.1215	.9627	1.979	.0502	.2254	50.65	.0446	.4318

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1907	.2422	.9800	10.55	10.28	.7087	.9552	148.6	.4512	.5137
Stddev	.0008	.0007	.0105	.09	.02	.0059	.0088	1.1	.0046	.0039
%RSD	.4386	.2978	1.074	.8271	.2392	.8275	.9161	.7210	1.023	.7644
#1	.1915	.2417	.9691	10.46	10.30	.7019	.9609	147.3	.4541	.5165
#2	.1898	.2417	.9808	10.63	10.29	.7121	.9597	149.1	.4536	.5155
#3	.1907	.2430	.9901	10.57	10.25	.7120	.9451	149.2	.4459	.5092

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4656	.1207	2.695	.8947	1.115	.9877	.0979	.4576	.6881
Stddev	.0040	.0008	.022	.0094	.006	.0045	.0028	.0035	.0060
%RSD	.8523	.6472	.8129	1.051	.5043	.4553	2.875	.7719	.8766
#1	.4677	.1199	2.708	.9007	1.109	.9897	.0953	.4615	.6924
#2	.4680	.1213	2.707	.8995	1.119	.9826	.0975	.4547	.6908
#3	.4610	.1210	2.670	.8838	1.118	.9909	.1009	.4565	.6812

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2285.9	31398.	3503.0
Stddev	25.3	31.	18.3
%RSD	1.1048	.09773	.52374
#1	2276.7	31414.	3515.7
#2	2266.6	31417.	3481.9
#3	2314.5	31362.	3511.3

Sample Name: WG1583508-6,C,5 Acquired: 12/20/2021 13:51:12 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment: 10

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0000	.0220	.0009	.0015	.0105	.0000	-.1876	8.675	.0000	.0013
Stddev	.0009	.0185	.0006	.0003	.0002	.0000	.1129	.113	.0000	.0002
%RSD	2006.	84.08	70.06	19.27	1.725	42.00	60.18	1.306	191.0	12.30
#1	.0010	.0433	.0017	.0018	.0103	.0000	-.2843	8.545	.0000	.0012
#2	-.0003	.0128	.0007	.0013	.0107	.0000	-.0635	8.753	.0000	.0015
#3	-.0008	.0099	.0004	.0013	.0104	.0000	-.2149	8.726	-.0000	.0012

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0006	-.0159	.1407	.2604	.0518	.0024	29.37	.0015	.0103
Stddev	.0009	.0005	.0023	.0117	.0011	.0014	.0005	.47	.0001	.0008
%RSD	236.8	77.24	14.37	8.342	.4340	2.727	19.45	1.596	3.895	7.885
#1	.0012	-.0010	-.0181	.1328	.2611	.0504	.0029	28.84	.0016	.0095
#2	-.0006	-.0001	-.0135	.1541	.2591	.0533	.0021	29.74	.0015	.0111
#3	.0005	-.0008	-.0161	.1351	.2610	.0518	.0021	29.52	.0015	.0104

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.0039	.3432	.0008	.0374	.0010	-.0008	-.0019	.0489
Stddev	.0013	.0016	.0022	.0003	.0003	.0007	.0012	.0008	.0002
%RSD	35.62	40.31	.6337	35.00	.7648	64.65	150.2	40.41	.4922
#1	.0052	.0031	.3439	.0009	.0373	.0015	-.0022	-.0016	.0487
#2	.0027	.0057	.3407	.0005	.0372	.0014	-.0002	-.0028	.0489
#3	.0033	.0029	.3449	.0009	.0378	.0003	.0000	-.0014	.0492

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2432.0	33491.	3657.8
Stddev	3.5	25.	14.2
%RSD	.14444	.07442	.38876
#1	2435.0	33464.	3666.1
#2	2432.8	33496.	3641.4
#3	2428.2	33513.	3666.0

Sample Name: CCV Acquired: 12/20/2021 13:55:36 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4954	F .5591	.5016	.4914	.4991	.5154	.1450	.4889	F .4471	.4834
Stddev	.0012	.0275	.0034	.0016	.0044	.0024	.0383	.0084	.0021	.0021
%RSD	.2433	4.912	.6735	.3226	.8743	.4708	26.44	1.713	.4748	.4376

#1	.4947	.5877	.4977	.4896	.4956	.5127	.1861	.4793	.4450	.4810
#2	.4968	.5330	.5040	.4919	.5040	.5175	.1389	.4929	.4470	.4845
#3	.4948	.5565	.5031	.4927	.4979	.5160	.1101	.4946	.4492	.4848

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass
High Limit		.5524							.5524	
Low Limit		.4476							.4476	

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4928	.5114	.4953	5.270	.4961	.5049	.4918	9.534	.4879	.4847
Stddev	.0023	.0011	.0028	.005	.0027	.0034	.0028	.096	.0020	.0019
%RSD	.4637	.2103	.5696	.0940	.5511	.6650	.5749	1.003	.4103	.3905

#1	.4904	.5118	.4931	5.275	.4933	.5018	.4885	9.441	.4856	.4828
#2	.4949	.5102	.4985	5.269	.4961	.5085	.4933	9.529	.4889	.4846
#3	.4929	.5122	.4943	5.266	.4988	.5043	.4936	9.632	.4891	.4866

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4728	.5104	5.221	.4614	.4862	.5018	F .4459	.4615	.4999
Stddev	.0067	.0040	.023	.0029	.0035	.0006	.0010	.0036	.0021
%RSD	1.416	.7816	.4435	.6383	.7212	.1238	.2336	.7736	.4165

#1	.4660	.5058	5.194	.4583	.4823	.5012	.4448	.4578	.4975
#2	.4794	.5128	5.233	.4616	.4871	.5019	.4467	.4649	.5011
#3	.4731	.5126	5.235	.4642	.4891	.5024	.4464	.4620	.5011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							.5524		
Low Limit							.4476		

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2445.6	34181.	3722.1
Stddev	17.0	132.	22.8
%RSD	.69562	.38632	.61382

#1	2462.7	34196.	3747.1
#2	2445.3	34306.	3717.0
#3	2428.7	34043.	3702.3

Sample Name: CCB Acquired: 12/20/2021 14:00:00 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	-.0087	.0012	-.0004	.0001	.0003	-.0989	-.0075	.0003	.0003
Stddev	.0006	.0126	.0004	.0006	.0001	.0001	.1218	.0106	.0002	.0002
%RSD	75.20	144.5	34.57	153.0	55.63	18.52	123.1	142.5	55.77	59.43
#1	.0002	.0058	.0009	-.0007	.0001	.0003	-.1721	-.0029	.0004	.0002
#2	.0013	-.0150	.0010	-.0008	.0002	.0003	.0416	-.0196	.0002	.0001
#3	.0008	-.0170	.0017	.0003	.0001	.0004	-.1662	.0001	.0001	.0004

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0011	.0038	.0039	-.0025	.0011	.0023	.1525	.0002	.0005
Stddev	.0006	.0001	.0013	.0269	.0021	.0002	.0004	.0189	.0001	.0004
%RSD	378.6	13.89	34.57	688.9	82.40	18.60	17.63	12.40	30.52	93.20
#1	-.0003	-.0010	.0048	-.0236	-.0003	.0011	.0027	.1372	.0002	.0004
#2	-.0007	-.0012	.0044	.0302	-.0043	.0009	.0023	.1736	.0001	.0001
#3	.0005	-.0010	.0023	.0051	-.0029	.0012	.0019	.1466	.0003	.0010

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	.0042	.0051	.0008	.0006	.0011	-.0037	.0005	.0000
Stddev	.0014	.0022	.0008	.0007	.0003	.0002	.0007	.0011	.0001
%RSD	17.10	50.95	15.31	87.11	57.58	17.82	18.71	212.7	168.6
#1	.0093	.0066	.0057	.0001	.0002	.0010	-.0029	.0017	.0001
#2	.0066	.0039	.0054	.0015	.0009	.0014	-.0042	.0000	-.0000
#3	.0085	.0023	.0042	.0009	.0006	.0010	-.0039	-.0002	.0000

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2460.2	34657.	3783.9
Stddev	42.4	137.	36.4
%RSD	1.7253	.39612	.96115
#1	2500.5	34788.	3825.9
#2	2464.2	34514.	3763.3
#3	2415.9	34669.	3762.4

Sample Name: WG1583508-1,C Acquired: 12/20/2021 14:04:27 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0000	-0.0097	.0002	.0016	.0010	.0000	-.3335	.0237	-0.0001	.0002
Stddev	.0007	.0260	.0028	.0006	.0001	.0000	.1641	.0105	.0000	.0001
%RSD	2868.	267.5	1151.	40.57	5.575	11.96	49.20	44.26	41.71	47.01
#1	-0.0001	-0.0380	-0.0030	.0022	.0010	.0000	-.3493	.0266	-0.0000	.0001
#2	-0.0007	-0.0042	.0014	.0009	.0010	.0000	-.1620	.0121	-0.0000	.0002
#3	.0007	.0130	.0023	.0016	.0009	.0000	-.4890	.0325	-0.0001	.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-0.0003	-0.0130	.0372	.0022	.0132	.0006	131.3	.0001	-0.0014
Stddev	.0005	.0005	.0010	.0469	.0028	.0004	.0003	1.1	.0002	.0008
%RSD	327.6	193.1	7.577	125.8	129.9	2.870	43.39	.8297	265.6	54.08
#1	.0002	.0003	-0.0123	.0816	.0019	.0136	.0006	130.1	-0.0001	-0.0007
#2	.0006	-0.0007	-0.0141	.0420	.0052	.0128	.0009	132.2	-0.0000	-0.0022
#3	-0.0003	-0.0003	-0.0126	-0.0118	-0.0005	.0131	.0004	131.5	.0004	-0.0013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	.0015	.0115	.0005	.0002	.0001	-0.0018	.0000	.0057
Stddev	.0015	.0010	.0006	.0004	.0001	.0005	.0008	.0011	.0002
%RSD	54.35	63.60	5.454	68.71	72.04	711.9	45.09	3145.	3.896
#1	.0045	.0018	.0119	.0009	.0003	.0006	-0.0026	.0012	.0055
#2	.0019	.0023	.0118	.0005	.0002	-0.0003	-0.0016	-0.0000	.0058
#3	.0019	.0004	.0108	.0001	.0000	-0.0002	-0.0011	-0.0010	.0058

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2381.3	32608.	3695.3
Stddev	60.8	403.	30.5
%RSD	2.5514	1.2374	.82562
#1	2450.8	32230.	3728.7
#2	2355.5	32561.	3668.8
#3	2337.8	33033.	3688.5

Sample Name: WG1583508-2,C Acquired: 12/20/2021 14:08:52 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0466	2.022	.1239	.9765	1.969	.0505	.2351	9.699	.0460	.4421
Stddev	.0010	.052	.0013	.0044	.029	.0006	.1662	.157	.0003	.0017
%RSD	2.123	2.593	1.088	.4533	1.470	1.156	70.68	1.619	.7336	.3878
#1	.0458	1.962	.1226	.9720	1.986	.0506	.2827	9.734	.0458	.4402
#2	.0477	2.058	.1238	.9767	1.987	.0511	.3723	9.836	.0459	.4426
#3	.0462	2.047	.1253	.9808	1.936	.0499	.0503	9.528	.0464	.4436

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1932	.2424	.9845	10.20	9.168	.4761	.9688	141.0	.4572	.4801
Stddev	.0004	.0004	.0165	.14	.104	.0071	.0044	2.5	.0014	.0020
%RSD	.1839	.1640	1.677	1.384	1.131	1.498	.4495	1.757	.3054	.4188
#1	.1933	.2428	.9863	10.31	9.159	.4787	.9645	140.8	.4560	.4778
#2	.1928	.2424	1.000	10.25	9.276	.4815	.9686	143.5	.4569	.4812
#3	.1934	.2420	.9672	10.04	9.069	.4680	.9732	138.6	.4587	.4814

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4737	.1226	.9476	.9137	.9474	.9960	.1003	.4663	.4766
Stddev	.0011	.0012	.0029	.0056	.0164	.0017	.0046	.0021	.0018
%RSD	.2286	.9922	.3073	.6101	1.736	.1750	4.599	.4435	.3837
#1	.4728	.1239	.9446	.9074	.9482	.9941	.0950	.4642	.4754
#2	.4749	.1216	.9479	.9160	.9634	.9973	.1036	.4684	.4758
#3	.4735	.1222	.9504	.9178	.9305	.9968	.1022	.4664	.4787

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2342.1	32393.	3622.6
Stddev	1.0	67.	49.6
%RSD	.04430	.20679	1.3698
#1	2343.3	32347.	3609.7
#2	2341.7	32363.	3580.6
#3	2341.3	32470.	3677.4

Sample Name: L2166777-02,C Acquired: 12/20/2021 14:13:07 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0020	.0362	.0025	.0082	.0538	.0000	-.0575	29.88	.0013	.0020
Stddev	.0006	.0450	.0008	.0007	.0004	.0000	.0394	.36	.0001	.0000
%RSD	27.86	124.4	30.00	8.034	.7663	4.752	68.48	1.193	4.697	.6257
#1	-.0017	.0171	.0017	.0089	.0535	.0000	-.0914	29.55	.0014	.0020
#2	-.0027	.0876	.0026	.0082	.0538	.0000	-.0143	29.83	.0013	.0020
#3	-.0017	.0039	.0033	.0076	.0543	.0000	-.0669	30.26	.0012	.0020

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0915	.0369	.7907	.8747	.1912	.0020	129.1	.0047	.0726
Stddev	.0005	.0007	.0015	.0218	.0155	.0020	.0004	2.6	.0005	.0018
%RSD	81.01	.7639	4.072	2.760	1.778	1.047	20.49	1.999	10.68	2.496
#1	.0004	.0907	.0384	.7704	.8621	.1894	.0023	126.5	.0050	.0705
#2	.0003	.0919	.0368	.7878	.8698	.1908	.0022	129.1	.0050	.0731
#3	.0012	.0919	.0354	.8138	.8921	.1933	.0016	131.7	.0041	.0740

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	.0020	1.160	.0008	.0763	.0012	-.0018	-.0020	.1018
Stddev	.0007	.0013	.002	.0005	.0014	.0009	.0014	.0004	.0001
%RSD	20.15	63.51	.1358	60.30	1.771	73.71	82.40	20.98	.1167
#1	.0026	.0016	1.161	.0013	.0749	.0008	-.0001	-.0022	.1018
#2	.0037	.0010	1.158	.0009	.0765	.0022	-.0028	-.0015	.1017
#3	.0038	.0034	1.161	.0003	.0775	.0006	-.0023	-.0024	.1019

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2320.9	31691.	3592.3
Stddev	7.9	61.	66.5
%RSD	.33879	.19123	1.8516
#1	2312.3	31655.	3637.5
#2	2322.7	31761.	3623.6
#3	2327.7	31656.	3515.9

Sample Name: L2166777-05,C Acquired: 12/20/2021 14:17:30 Type: Unk
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment: recal

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0454	.0025	.0051	.0600	.0000	2.937	26.87	.0007	.0070
Stddev	.0001	.0358	.0001	.0000	.0016	.0000	.078	.59	.0001	.0005
%RSD	34.13	78.74	2.939	.7763	2.708	40.04	2.654	2.184	11.92	6.497
#1	.0003	.0067	.0024	.0051	.0582	.0000	2.876	26.19	.0006	.0068
#2	.0003	.0772	.0025	.0050	.0604	.0000	2.909	27.15	.0006	.0066
#3	.0005	.0524	.0025	.0051	.0614	.0000	3.025	27.26	.0008	.0075

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	2.758	-0.086	.3956	1.653	.4431	.0005	145.1	.0236	.4529
Stddev	.0010	.010	.0021	.0317	.039	.0104	.0001	3.2	.0007	.0170
%RSD	372.7	.3541	24.00	8.017	2.384	2.337	25.63	2.227	3.183	3.762
#1	-0.0008	2.769	-0.0063	.3598	1.608	.4312	.0005	141.4	.0228	.4420
#2	.0012	2.750	-0.0102	.4200	1.679	.4480	.0007	146.6	.0235	.4443
#3	.0004	2.755	-0.0093	.4071	1.674	.4500	.0004	147.3	.0243	.4726

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048	.0006	2.296	.0001	.0972	.0012	-0.0028	-0.0021	.2396
Stddev	.0022	.0014	.089	.0003	.0017	.0003	.0011	.0006	.0090
%RSD	46.06	241.0	3.888	240.1	1.707	24.34	38.54	26.90	3.751
#1	.0034	.0008	2.238	.0004	.0953	.0011	-0.0040	-0.0017	.2338
#2	.0073	.0018	2.250	-0.0000	.0981	.0009	-0.0027	-0.0028	.2350
#3	.0036	-0.0009	2.398	-0.0000	.0982	.0015	-0.0018	-0.0019	.2499

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2207.3	30506.	3413.4
Stddev	57.5	180.	68.1
%RSD	2.6060	.59124	1.9954
#1	2238.3	30396.	3490.1
#2	2242.6	30714.	3390.0
#3	2140.9	30408.	3360.0

Sample Name: CCV Acquired: 12/20/2021 14:22:15 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5041	.5143	.5030	.4950	.5049	.5335	.4198	.5126	.4524	.4886
Stddev	.0014	.0303	.0011	.0014	.0015	.0026	.0472	.0127	.0008	.0011
%RSD	.2826	5.888	.2207	.2749	.2877	.4922	11.23	2.470	.1837	.2272
#1	.5054	.5120	.5035	.4939	.5032	.5320	.3818	.5233	.4517	.4879
#2	.5044	.4853	.5018	.4948	.5056	.5366	.4052	.5158	.4533	.4880
#3	.5026	.5457	.5039	.4965	.5059	.5320	.4726	.4986	.4521	.4899

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5026	.5210	.5020	5.374	.5150	.5133	.4951	9.981	.4929	.4885
Stddev	.0008	.0019	.0009	.033	.0044	.0046	.0023	.106	.0012	.0013
%RSD	.1568	.3730	.1746	.6095	.8574	.8893	.4546	1.058	.2503	.2653
#1	.5035	.5233	.5028	5.341	.5099	.5081	.4945	9.862	.4926	.4872
#2	.5021	.5199	.5011	5.407	.5175	.5163	.4932	10.02	.4919	.4884
#3	.5021	.5199	.5022	5.374	.5177	.5156	.4976	10.06	.4943	.4898

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4768	.5128	5.238	.4662	.4933	.5106	.4535	.4690	.5068
Stddev	.0024	.0034	.012	.0012	.0045	.0003	.0029	.0036	.0011
%RSD	.4934	.6540	.2212	.2580	.9034	.0569	.6483	.7766	.2119
#1	.4760	.5110	5.238	.4652	.4882	.5108	.4536	.4662	.5066
#2	.4749	.5109	5.227	.4659	.4957	.5103	.4564	.4731	.5059
#3	.4794	.5167	5.250	.4675	.4960	.5108	.4505	.4676	.5080

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2324.8	32010.	3446.1
Stddev	8.3	118.	23.2
%RSD	.35574	.36900	.67224
#1	2333.9	31958.	3472.1
#2	2322.8	31927.	3427.5
#3	2317.7	32145.	3438.8

Sample Name: CCB Acquired: 12/20/2021 14:26:40 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0174	.0004	.0003	.0004	.0005	-.2058	-.0003	.0003	.0005
Stddev	.0004	.0416	.0003	.0005	.0004	.0001	.1936	.0129	.0001	.0001
%RSD	228.3	239.0	60.01	195.4	89.06	15.49	94.11	5006.	26.46	27.44
#1	.0001	-.0187	.0006	.0007	.0003	.0004	.0005	-.0067	.0003	.0006
#2	-.0002	.0080	.0006	.0004	.0001	.0005	-.3836	-.0087	.0002	.0005
#3	.0006	.0629	.0001	-.0003	.0009	.0005	-.2342	.0146	.0002	.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0000	.0012	.0330	-.0015	.0006	.0019	.2084	.0005	-.0003
Stddev	.0002	.0005	.0009	.0667	.0006	.0005	.0005	.0437	.0003	.0005
%RSD	4896.	978.7	71.34	202.0	39.46	82.13	24.68	20.96	60.28	183.3
#1	.0001	-.0005	.0022	-.0042	-.0011	.0003	.0025	.2588	.0007	-.0009
#2	-.0003	.0003	.0012	.1100	-.0012	.0004	.0018	.1842	.0002	.0002
#3	.0002	.0003	.0004	-.0068	-.0022	.0012	.0015	.1822	.0005	-.0002

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062	.0006	.0045	.0008	.0002	.0007	-.0014	-.0013	.0002
Stddev	.0016	.0012	.0002	.0003	.0005	.0001	.0002	.0001	.0001
%RSD	25.54	195.7	3.779	43.19	213.0	6.844	12.68	8.707	51.11
#1	.0065	-.0008	.0046	.0008	.0008	.0007	-.0014	-.0012	.0003
#2	.0075	.0012	.0043	.0004	.0000	.0008	-.0016	-.0014	.0002
#3	.0044	.0015	.0046	.0011	-.0001	.0007	-.0013	-.0013	.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2366.1	31867.	3428.0
Stddev	54.5	220.	15.3
%RSD	2.3039	.69025	.44609
#1	2337.3	32014.	3442.6
#2	2429.0	31614.	3412.1
#3	2332.0	31972.	3429.3

Sample Name: Std 0 Acquired: 12/20/2021 14:32:44 Type: Cal
 Method: Trace_5_E200.7_SW6010(v149) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0010	-0.0015	.0002	.0000	.0134	.0152	-0.0037	.0015	.0020	.0021
Stddev	.0003	.0002	.0003	.0003	.0039	.0012	.0005	.0018	.0002	.0002
%RSD	27.20	14.14	172.0	1667.	28.79	7.816	13.78	119.6	10.00	9.507
#1	-0.0008	-0.0018	.0001	.0004	.0175	.0150	-0.0034	.0003	.0018	.0022
#2	-0.0013	-0.0014	.0005	-0.0003	.0129	.0142	-0.0043	.0036	.0019	.0018
#3	-0.0009	-0.0014	-0.0001	-0.0001	.0098	.0165	-0.0034	.0006	.0022	.0022

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0010	.0062	.0033	.0001	-0.0003	.0001	.0009	.0400	.0061	-0.0045
Stddev	.0001	.0001	.0002	.0018	.0008	.0004	.0002	.0023	.0001	.0008
%RSD	15.05	1.898	6.406	1492.	247.8	785.8	24.73	5.745	2.394	17.33
#1	-0.0011	.0063	.0036	.0000	-0.0010	-0.0001	.0011	.0403	.0062	-0.0036
#2	-0.0008	.0062	.0032	-0.0017	-0.0006	.0005	.0007	.0421	.0061	-0.0049
#3	-0.0009	.0060	.0032	.0020	.0006	-0.0003	.0009	.0375	.0059	-0.0050

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0015	-0.0009	.0023	-0.0007	-0.0292	-0.0016	-0.0006	-0.0002	.0001
Stddev	.0001	.0002	.0003	.0004	.0028	.0003	.0004	.0002	.0002
%RSD	4.161	24.35	11.88	56.61	9.690	16.63	65.70	120.7	174.5
#1	-0.0015	-0.0010	.0020	-0.0003	-0.0266	-0.0016	-0.0010	.0001	-0.0001
#2	-0.0015	-0.0006	.0025	-0.0007	-0.0322	-0.0019	-0.0007	-0.0004	.0001
#3	-0.0016	-0.0010	.0024	-0.0010	-0.0289	-0.0013	-0.0002	-0.0002	.0002

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2308.9	32351.	3451.8
Stddev	27.1	113.	35.3
%RSD	1.1719	.34807	1.0240
#1	2277.8	32248.	3492.6
#2	2326.5	32471.	3431.8
#3	2322.5	32334.	3430.9

Sample Name: ICAL Acquired: 12/20/2021 14:37:08 Type: Cal
 Method: Trace_5_E200.7_SW6010(v149) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4244	.0570	.1444	.8265	9.931	228.6	-.0064	.1169	7.255	3.669
Stddev	.0041	.0009	.0019	.0109	.249	4.0	.0004	.0037	.082	.048
%RSD	.9724	1.666	1.319	1.320	2.503	1.744	6.427	3.204	1.125	1.312
#1	.4223	.0560	.1422	.8140	9.647	224.5	-.0061	.1126	7.161	3.613
#2	.4292	.0570	.1458	.8342	10.11	232.5	-.0063	.1196	7.306	3.701
#3	.4218	.0579	.1451	.8313	10.03	228.8	-.0069	.1185	7.300	3.692

Elem	Cr2677	Cu3247	Fe2599	Mg2790	Mn2576R	Mo2020	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4180	.6990	.1948	.5102	1.290	1.697	2.218	.6760	.3072	.1746
Stddev	.0058	.0100	.0049	.0094	.032	.026	.031	.0097	.0061	.0025
%RSD	1.392	1.424	2.518	1.837	2.477	1.558	1.384	1.437	2.000	1.418
#1	.4150	.6921	.1892	.4994	1.254	1.667	2.183	.6650	.3001	.1721
#2	.4247	.7104	.1983	.5158	1.314	1.715	2.240	.6834	.3112	.1770
#3	.4143	.6945	.1969	.5154	1.302	1.710	2.231	.6796	.3103	.1748

Elem	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2236	.3611	8.749	.7337	.1557	.1815	2.506
Stddev	.0020	.0044	.208	.0098	.0021	.0015	.035
%RSD	.9113	1.207	2.380	1.342	1.361	.8359	1.399
#1	.2213	.3561	8.522	.7270	.1533	.1807	2.466
#2	.2249	.3638	8.932	.7450	.1570	.1833	2.530
#3	.2247	.3634	8.794	.7291	.1569	.1806	2.522

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2320.3	32221.	3467.2
Stddev	23.6	485.	63.4
%RSD	1.0154	1.5050	1.8296
#1	2347.5	32556.	3540.2
#2	2306.6	31665.	3425.2
#3	2306.7	32442.	3436.2

Sample Name: 25: Fe K Na Si Acquired: 12/20/2021 14:41:29 Type: Cal
 Method: Trace_5_E200.7_SW6010(v149) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Al3961	Fe2599	K_7664	Na5895	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.374	4.771	2.290	2.884	3.750
Stddev	.017	.068	.030	.043	.039
%RSD	1.254	1.419	1.311	1.496	1.039
#1	1.354	4.702	2.257	2.840	3.793
#2	1.380	4.774	2.297	2.885	3.717
#3	1.387	4.837	2.316	2.926	3.741

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	2253.2	3410.3
Stddev	15.4	42.8
%RSD	.68256	1.2540
#1	2239.2	3454.4
#2	2269.7	3407.6
#3	2250.8	3369.0

Sample Name: 10: Ca Mg Si Acquired: 12/20/2021 14:45:52 Type: Cal
 Method: Trace_5_E200.7_SW6010(v149) Mode: IR Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ca3158	Mg2790	Si2124
Units	Cts/S	Cts/S	Cts/S
Avg	1.162	5.226	1.923
Stddev	.009	.020	.010
%RSD	.7461	.3753	.5153
#1	1.152	5.227	1.916
#2	1.167	5.206	1.918
#3	1.168	5.245	1.934

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	2287.2	3423.7
Stddev	11.8	24.8
%RSD	.51685	.72454
#1	2294.4	3452.0
#2	2293.6	3405.5
#3	2273.5	3413.8

Sample Name: ICV Acquired: 12/20/2021 14:50:16 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4984	W .5504	.5158	.5087	.4979	.5167	.6206	.5024	.4929	.5004
Stddev	.0003	.0382	.0148	.0148	.0053	.0045	.1801	.0030	.0153	.0150
%RSD	.0649	6.935	2.866	2.918	1.056	.8685	29.02	.5909	3.096	2.996
#1	.4982	.5464	.5309	.5240	.4918	.5116	.4265	.5036	.5084	.5160
#2	.4988	.5144	.5014	.4944	.5008	.5201	.7824	.5046	.4779	.4862
#3	.4983	.5904	.5151	.5076	.5010	.5184	.6529	.4990	.4924	.4989

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit		.5274								
Low Limit		.4726								

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4938	.5121	.4942	5.200	.5123	.5003	.5023	9.959	.5025	.5032
Stddev	.0017	.0012	.0060	.117	.0045	.0059	.0150	.095	.0148	.0152
%RSD	.3382	.2266	1.221	2.249	.8790	1.171	2.979	.9554	2.947	3.020
#1	.4946	.5130	.4881	5.066	.5074	.4938	.5176	9.861	.5182	.5185
#2	.4950	.5124	.4944	5.284	.5131	.5051	.4877	9.965	.4887	.4881
#3	.4919	.5108	.5001	5.249	.5163	.5021	.5017	10.05	.5007	.5029

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4941	.5178	5.295	.5034	.4846	.5032	.4951	.4799	.5162
Stddev	.0133	.0166	.157	.0143	.0035	.0005	.0128	.0016	.0151
%RSD	2.691	3.202	2.968	2.835	.7150	.0947	2.579	.3302	2.925
#1	.5073	.5344	5.458	.5169	.4807	.5037	.5081	.4792	.5319
#2	.4807	.5012	5.145	.4884	.4861	.5029	.4826	.4817	.5018
#3	.4945	.5179	5.282	.5049	.4871	.5029	.4947	.4787	.5148

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2306.7	31802.	3405.4
Stddev	65.9	24.	24.2
%RSD	2.8548	.07651	.70962
#1	2237.1	31778.	3433.2
#2	2368.1	31827.	3389.6
#3	2315.0	31803.	3393.4

Sample Name: ICB Acquired: 12/20/2021 14:54:42 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0239	.0005	.0013	.0004	.0003	.0561	.0057	.0003	.0003
Stddev	.0009	.0100	.0015	.0006	.0003	.0001	.1448	.0047	.0000	.0001
%RSD	155.4	41.66	283.6	46.96	91.38	16.72	258.3	83.44	10.20	33.56
#1	.0014	.0233	.0017	.0020	.0001	.0003	-.0225	.0044	.0003	.0002
#2	.0006	.0143	.0011	.0008	.0007	.0004	.2231	.0109	.0003	.0004
#3	-.0003	.0341	-.0012	.0012	.0003	.0003	-.0324	.0017	.0003	.0002

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0002	.0072	-.0007	.0009	.0008	.0017	-.0333	.0003	.0001
Stddev	.0005	.0003	.0058	.0616	.0030	.0006	.0002	.0336	.0004	.0006
%RSD	104.2	132.7	81.30	8413.	330.4	65.80	10.73	100.7	110.0	441.8
#1	-.0002	-.0006	.0104	.0625	-.0024	.0003	.0019	-.0235	.0004	.0006
#2	-.0010	-.0000	.0107	-.0607	.0035	.0014	.0016	-.0058	.0007	-.0005
#3	-.0001	-.0001	.0004	-.0040	.0016	.0008	.0016	-.0707	-.0000	.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	-.0002	.0025	.0008	-.0001	.0006	-.0016	.0030	.0003
Stddev	.0009	.0002	.0014	.0008	.0005	.0004	.0032	.0012	.0002
%RSD	22.51	73.66	54.35	99.75	544.6	70.26	196.6	41.60	58.26
#1	.0038	-.0003	.0033	.0013	.0003	.0001	-.0051	.0041	.0004
#2	.0050	-.0004	.0032	.0012	-.0007	.0009	.0011	.0031	.0001
#3	.0033	-.0000	.0009	-.0001	.0002	.0006	-.0009	.0017	.0004

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2340.1	32141.	3377.7
Stddev	15.1	167.	458.2
%RSD	.64666	.51890	13.564
#1	2324.4	32326.	3457.4
#2	2341.3	32093.	2884.9
#3	2354.6	32003.	3790.8

Sample Name: 0.005 Acquired: 12/20/2021 15:14:37 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0072	.0619	.0054	.0048	.0052	.0055	.1027	.0284	.0054	.0055
Stddev	.0009	.0284	.0017	.0006	.0001	.0001	.1759	.0162	.0001	.0001
%RSD	12.19	45.97	32.19	13.01	1.594	1.783	171.3	57.14	.9538	1.248
#1	.0082	.0505	.0055	.0054	.0052	.0054	.0412	.0315	.0054	.0056
#2	.0068	.0409	.0036	.0047	.0051	.0055	.3011	.0108	.0054	.0056
#3	.0066	.0942	.0071	.0042	.0051	.0056	-.0342	.0428	.0053	.0055

Check ?	Chk Fail	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass	None
High Limit	.0066									
Low Limit	.0034									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.0053	-.0130	.1764	.0215	.0060	.0049	-.0067	.0056	.0065
Stddev	.0004	.0001	.0015	.0497	.0033	.0003	.0002	.0475	.0002	.0005
%RSD	8.405	2.760	11.69	28.18	15.38	5.630	3.162	705.6	3.725	7.546
#1	.0053	.0055	-.0122	.1303	.0205	.0059	.0050	-.0084	.0054	.0065
#2	.0056	.0052	-.0120	.2291	.0252	.0063	.0049	.0416	.0058	.0060
#3	.0047	.0053	-.0147	.1697	.0189	.0056	.0047	-.0534	.0056	.0070

Check ?	None	None	None	None	None	None	None	None	None	None
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063	.0049	.0345	.0054	.0054	.0054	.0055	.0070	.0056
Stddev	.0010	.0017	.0007	.0004	.0002	.0003	.0011	.0017	.0001
%RSD	16.48	34.95	1.952	7.309	3.661	5.846	19.19	23.78	2.048
#1	.0055	.0060	.0350	.0049	.0052	.0052	.0064	.0056	.0057
#2	.0058	.0059	.0348	.0056	.0056	.0053	.0058	.0067	.0055
#3	.0074	.0029	.0337	.0056	.0054	.0058	.0043	.0089	.0055

Check ?	None	None	None	None	None	None	None	None	None
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2338.6	32335.	3471.6
Stddev	3.7	158.	38.0
%RSD	.15917	.48905	1.0935
#1	2337.5	32173.	3515.4
#2	2342.7	32344.	3448.2
#3	2335.5	32489.	3451.2

Sample Name: 0.01 Acquired: 12/20/2021 15:19:01 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0095	.0379	.0100	.0098	.0102	.0106	F -.0512	.0263	.0103	.0106
Stddev	.0005	.0619	.0007	.0005	.0004	.0001	.0384	.0047	.0001	.0001
%RSD	5.748	163.2	6.581	5.410	3.835	.8049	74.93	17.91	.6984	.9090
#1	.0098	.1084	.0107	.0096	.0100	.0105	-.0379	.0314	.0103	.0105
#2	.0088	-.0076	.0099	.0104	.0106	.0106	-.0945	.0253	.0103	.0107
#3	.0098	.0130	.0095	.0094	.0099	.0106	-.0213	.0221	.0104	.0106

Check ?	None	None	None	Chk Pass	Chk Pass	None	Chk Fail	None	None	Chk Pass
Value							.0131			
Range							.0070			

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0099	.0102	-.0107	.2339	.0144	.0119	.0100	.0637	.0108	.0107
Stddev	.0003	.0004	.0042	.0263	.0018	.0002	.0002	.0481	.0002	.0020
%RSD	3.422	3.689	39.15	11.23	12.30	1.984	1.877	75.55	1.781	18.33
#1	.0096	.0106	-.0071	.2225	.0136	.0118	.0099	.0361	.0110	.0107
#2	.0097	.0103	-.0153	.2639	.0132	.0116	.0099	.0357	.0107	.0088
#3	.0103	.0098	-.0096	.2152	.0165	.0121	.0102	.1192	.0108	.0127

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value										
Range										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0079	.0097	.0437	.0108	.0102	.0099	.0115	.0110	.0107
Stddev	.0012	.0005	.0013	.0016	.0001	.0002	.0018	.0005	.0000
%RSD	15.67	5.388	2.966	14.51	1.417	2.423	15.28	4.746	.0535
#1	.0090	.0091	.0422	.0118	.0102	.0101	.0127	.0108	.0107
#2	.0066	.0099	.0447	.0117	.0103	.0097	.0123	.0107	.0107
#3	.0082	.0102	.0442	.0090	.0100	.0098	.0095	.0116	.0107

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value									
Range									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2333.3	32168.	3411.7
Stddev	15.0	62.	24.1
%RSD	.64437	.19266	.70708
#1	2346.9	32193.	3438.6
#2	2335.9	32098.	3404.5
#3	2317.2	32215.	3392.0

Sample Name: 0.05 Acquired: 12/20/2021 15:23:25 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0473	.0419	.0458	.0461	.0473	.0482	-.0368	W .0647	.0464	.0477
Stddev	.0014	.0283	.0010	.0009	.0006	.0006	.2426	.0117	.0009	.0010
%RSD	2.891	67.54	2.165	2.022	1.375	1.198	658.7	18.12	2.045	2.195
#1	.0488	.0698	.0456	.0470	.0465	.0475	.2432	.0513	.0469	.0483
#2	.0470	.0132	.0469	.0462	.0476	.0484	-.1704	.0729	.0470	.0484
#3	.0461	.0428	.0450	.0451	.0477	.0486	-.1834	.0701	.0453	.0465

Check ?	None	Chk Pass	None	None	None	None	None	Chk Warn	None	None
Value								.0602		
Range								.0398		

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0488	.0503	F .0298	F 1.490	.0518	.0483	.0473	F 1.377	.0478	.0475
Stddev	.0009	.0012	.0035	.013	.0016	.0007	.0013	.050	.0012	.0007
%RSD	1.801	2.475	11.80	.8895	3.007	1.511	2.718	3.627	2.419	1.549
#1	.0499	.0514	.0338	1.475	.0500	.0475	.0482	1.391	.0481	.0479
#2	.0484	.0506	.0279	1.493	.0521	.0487	.0480	1.419	.0487	.0479
#3	.0483	.0490	.0276	1.501	.0531	.0488	.0458	1.322	.0465	.0467

Check ?	None	None	Chk Fail	Chk Fail	Chk Pass	None	None	Chk Fail	None	None
Value			.0652	3.262				2.610		
Range			.0348	1.738				1.390		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0451	.0478	.5034	.0482	.0467	.0493	.0469	.0477	.0480
Stddev	.0018	.0017	.0115	.0029	.0003	.0012	.0014	.0013	.0011
%RSD	3.896	3.572	2.281	5.936	.6473	2.385	3.084	2.734	2.304
#1	.0471	.0491	.5077	.0485	.0463	.0505	.0470	.0488	.0483
#2	.0441	.0459	.5122	.0509	.0467	.0491	.0454	.0463	.0489
#3	.0440	.0485	.4904	.0452	.0469	.0482	.0483	.0479	.0468

Check ?	Chk Pass	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value									
Range									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2347.0	31349.	3443.3
Stddev	45.7	686.	44.5
%RSD	1.9469	2.1870	1.2923
#1	2327.2	30616.	3494.2
#2	2314.5	31455.	3423.8
#3	2399.2	31975.	3411.9

Sample Name: IPC Acquired: 12/20/2021 15:27:49 Type: QC
Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .0017	k .0268	k -.0008	.0003	-.0010	k -.0001	-.8643	k -.0071	-.0002	-.0004
Stddev	.0001	.0121	.0007	.0001	.0001	.0000	.1352	.0014	.0000	.0000
%RSD	8.035	45.07	88.57	50.77	12.20	13.13	15.64	19.03	9.394	10.51
#1	.0018	.0314	-.0017	.0003	-.0011	-.0000	-.8674	-.0084	-.0002	-.0004
#2	s .0016	k .0131	k -.0006	.0001	-.0010	k -.0001	-.9980	k -.0057	-.0002	-.0004
#3	s .0019	k .0359	k -.0002	.0004	-.0008	k -.0001	-.7276	k -.0074	-.0002	-.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF .0014	s -.0063	-.0191	-.0086	k .0002	F .0002	-.0004	-.2871	-.0020	k .0046
Stddev	.0005	.0019	.0007	.0116	.0013	.0002	.0002	.0066	.0002	.0007
%RSD	32.03	29.91	3.608	135.2	739.8	78.25	40.59	2.303	9.762	14.30
#1	.0013	-.0063	-.0193	-.0110	.0013	.0000	-.0004	-.2941	-.0020	.0044
#2	s .0011	s -.0044	-.0197	-.0187	k .0004	.0003	-.0005	-.2809	-.0021	k .0053
#3	s .0020	s -.0081	-.0183	.0041	k -.0012	.0003	-.0002	-.2862	-.0018	k .0040

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	12.00					12.00				
Low Limit	8.000					8.000				

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Ti1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .0033	k .0034	k -.0032	.0015	.0023	s .0013	k .0028	sF .0014	-.0000
Stddev	.0006	.0005	.0023	.0002	.0003	.0004	.0005	.0004	.0000
%RSD	17.43	14.85	72.21	14.75	11.98	30.52	19.16	27.14	109.0
#1	.0031	.0035	-.0040	.0018	.0024	.0012	.0032	.0014	-.0001
#2	k .0040	k .0039	k -.0049	.0015	.0024	s .0010	k .0031	s .0018	-.0000
#3	k .0029	k .0029	k -.0006	.0013	.0020	s .0018	k .0022	s .0010	.0000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								12.00	
Low Limit								8.000	

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	8798.9	^ *****	12582.
Stddev	2369.3	----	2598.
%RSD	26.927	----	20.645
#1	9255.0	98449.	14381.
#2	10907.	^ ----	13761.
#3	6234.7	^ ----	9604.2

Sample Name: ICSA Acquired: 12/20/2021 15:32:16 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0006	269.0	.0004	-0.0001	.0036	-0.0001	-1.1655	232.0	-0.0047	-0.0002
Stddev	.0010	3.8	.0012	.0007	.0004	.0000	.1684	3.5	.0001	.0001
%RSD	169.0	1.414	320.8	524.2	9.841	3.876	101.8	1.492	2.344	53.58
#1	-0.0013	264.6	-0.0006	.0004	.0035	-0.0001	-1.1533	228.0	-0.0046	-0.0002
#2	-0.0010	271.1	-0.0000	-0.0009	.0033	-0.0001	-0.0035	233.6	-0.0048	-0.0003
#3	.0005	271.2	.0018	.0001	.0039	-0.0001	-0.3396	234.4	-0.0047	-0.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0027	.0016	94.07	-0.1056	232.8	.0021	-0.0014	-0.0458	-0.0025	-0.0155
Stddev	.0006	.0004	1.50	.0825	.7	.0001	.0003	.0595	.0003	.0012
%RSD	21.94	24.51	1.598	78.06	.3000	6.073	20.83	129.9	12.77	7.830
#1	-0.0032	.0016	92.36	-0.1829	232.1	.0022	-0.0017	-0.1071	-0.0021	-0.0143
#2	-0.0021	.0020	94.67	-0.0188	233.5	.0020	-0.0011	-0.0417	-0.0026	-0.0167
#3	-0.0027	.0012	95.19	-0.1152	232.9	.0022	-0.0013	.0116	-0.0027	-0.0153

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0044	.0007	.0041	-0.0002	.0028	.0037	.0013	F .0102	.0016
Stddev	.0016	.0017	.0022	.0011	.0004	.0004	.0039	.0019	.0001
%RSD	35.65	241.6	52.96	489.0	12.75	11.87	291.0	18.29	8.557
#1	-0.0026	-0.0012	.0033	.0003	.0025	.0032	.0042	.0102	.0015
#2	-0.0055	.0018	.0066	-0.0015	.0032	.0037	.0029	.0121	.0015
#3	-0.0051	.0015	.0024	.0006	.0026	.0041	-0.0031	.0083	.0017

Check ? Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass Chk Pass Chk Fail Chk Pass
 High Limit
 Low Limit .0100
 -.0200

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2087.1	28961.	3268.9
Stddev	68.9	114.	39.2
%RSD	3.3031	.39338	1.2006
#1	2127.1	29091.	3311.2
#2	2126.7	28879.	3261.9
#3	2007.5	28913.	3233.7

Sample Name: CCV Acquired: 12/20/2021 15:36:44 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4694	F .5670	.4909	.4708	.4733	.5006	.5240	.5279	.4681	.4826
Stddev	.0014	.0315	.0066	.0068	.0048	.0047	.1918	.0069	.0068	.0066
%RSD	.2922	5.560	1.350	1.434	1.014	.9453	36.60	1.308	1.453	1.358
#1	.4709	.5306	.4832	.4631	.4678	.4957	.3229	.5339	.4602	.4750
#2	.4683	.5854	.4948	.4735	.4758	.5051	.5443	.5293	.4722	.4864
#3	.4689	.5851	.4947	.4758	.4763	.5010	.7049	.5203	.4717	.4863

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit		.5524								
Low Limit		.4476								

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4801	.4897	.4910	5.015	.5280	.4780	.4927	9.677	.4835	.4818
Stddev	.0004	.0020	.0047	.069	.0113	.0041	.0076	.216	.0061	.0055
%RSD	.0885	.4141	.9548	1.366	2.145	.8525	1.538	2.230	1.263	1.148
#1	.4802	.4913	.4869	4.938	.5170	.4733	.4839	9.428	.4765	.4754
#2	.4805	.4905	.4961	5.071	.5272	.4800	.4972	9.799	.4878	.4852
#3	.4796	.4874	.4899	5.036	.5397	.4806	.4969	9.805	.4862	.4848

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4725	.4777	5.139	.4851	.4722	.4894	.4687	.4694	.4905
Stddev	.0061	.0083	.073	.0066	.0056	.0013	.0090	.0005	.0064
%RSD	1.292	1.741	1.418	1.353	1.193	.2686	1.925	.1057	1.304
#1	.4655	.4683	5.054	.4775	.4659	.4908	.4584	.4692	.4831
#2	.4751	.4810	5.181	.4889	.4740	.4892	.4750	.4700	.4945
#3	.4768	.4839	5.180	.4889	.4767	.4882	.4727	.4690	.4938

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2299.8	31881.	3393.8
Stddev	29.5	110.	34.6
%RSD	1.2840	.34513	1.0184
#1	2332.2	31755.	3433.5
#2	2274.4	31933.	3377.3
#3	2292.9	31955.	3370.6

Sample Name: CCB Acquired: 12/20/2021 15:41:11 Type: QC
 Method: Trace_5_E200.7_SW6010(v149) Mode: CONC Corr. Factor: 1.000000
 User: EW Custom ID1: WG1585416 Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3961	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3158	Cd2144	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0075	.0000	.0014	.0002	.0004	.1487	.0121	.0002	.0002
Stddev	.0002	.0202	.0007	.0005	.0002	.0000	.1280	.0091	.0001	.0001
%RSD	22.03	270.9	1805.	35.78	85.04	4.643	86.13	75.02	28.29	46.52
#1	.0008	.0120	-.0004	.0012	.0004	.0004	.1230	.0083	.0003	.0003
#2	.0013	.0250	-.0004	.0020	.0001	.0004	.2876	.0225	.0002	.0001
#3	.0012	-.0146	.0009	.0011	.0001	.0004	.0354	.0055	.0002	.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576R	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0003	.0070	.0158	.0191	.0008	.0006	-.0898	-.0001	-.0006
Stddev	.0000	.0010	.0008	.0454	.0027	.0006	.0003	.0511	.0001	.0015
%RSD	32.18	364.6	11.68	286.3	14.23	76.32	59.17	56.92	157.1	242.4
#1	-.0001	.0005	.0078	-.0039	.0161	.0002	.0008	-.0339	-.0001	-.0010
#2	-.0001	.0011	.0071	-.0163	.0213	.0015	.0006	-.1341	-.0002	.0010
#3	-.0001	-.0008	.0062	.0677	.0198	.0007	.0002	-.1015	.0000	-.0019

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4215	Ti3349A	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030	.0003	.0022	.0008	.0005	.0001	-.0003	.0021	.0003
Stddev	.0029	.0041	.0009	.0005	.0001	.0003	.0017	.0001	.0001
%RSD	95.12	1230.	38.86	67.71	22.04	308.3	548.2	7.046	32.90
#1	.0051	-.0035	.0031	.0005	.0006	-.0001	.0007	.0020	.0004
#2	.0042	-.0003	.0021	.0014	.0004	-.0000	.0006	.0021	.0002
#3	-.0003	.0047	.0014	.0004	.0004	.0004	-.0022	.0023	.0004

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	2331.9	32122.	3443.0
Stddev	21.9	351.	31.6
%RSD	.93963	1.0925	.91684
#1	2310.9	31730.	3475.3
#2	2354.6	32406.	3412.3
#3	2330.3	32231.	3441.3

QC True Values: Trace 4,5,6,7

	Element	True Value (mg/L)		Element	True Value (mg/L)
ICV/CCV	Al	0.50	CRI	Al	0.40
	K	5.00		Sb	0.10
	Na	10.00		As	0.02
	Si	5.25		Ba	0.04
ICSA	Al	250	Be	0.01	
	Ca	250	Bi	0.02	
	Fe	100	B	0.10	
	Mg	250	Cd	0.01	
ICSB	Al	9.00	Ca	0.40	
	Sb	1.00	Cr	0.02	
	As	1.00	Co	0.10	
	Ba	0.30	Cu	0.05	
	Be	0.10	Fe	0.20	
	Bi	1.00	Pb	0.05	
	B	0.50	Mg	0.40	
	Cd	0.30	Mn	0.03	
	Ca	45.00	Mo	0.10	
	Cr	0.30	Ni	0.08	
	Co	0.30	K	5.00	
	Cu	0.30	Se	0.02	
	Fe	37.50	Si	1.00	
	Pb	1.00	Ag	0.02	
	Mg	22.50	Na	5.00	
	Mn	0.20	Sr	0.02	
	Mo	0.30	Tl	0.02	
	Ni	0.30	Sn	0.02	
	K	20.00	Ti	0.02	
	Se	0.50	V	0.10	
	Si	1.23	Zn	0.04	
	Ag	0.30			
	Na	7.50			
	Sr	1.00			
	Tl	1.00			
	Sn	1.00			
	Ti	1.00			
	V	0.30			
	Zn	0.30			

LCS & MS Spike Concentrations

Element	Liquid concentrations (mg/L)	Soil concentrations (mg/kg)
Al	2.00	100
Sb	0.50	25.0
As	0.12	6.0
Ba	2.00	100
Be	0.05	2.5
Bi	1.00	50.0
B	1.00	50.0
Cd	0.05	2.55
Ca	10.00	500
Cr	0.20	10.0
Co	0.50	25.0
Cu	0.25	12.5
Fe	1.00	50.0
Pb	0.51	25.5
Mg	10.00	500
Mn	0.50	25.0
Mo	1.00	50.0
Ni	0.50	25.0
K	10.00	500
Se	0.12	6.0
Si	1.00	50.0
Ag	0.05	2.5
Na	10.00	500
Sr	1.00	50.0
Tl	0.12	6.0
Sn	1.00	50.0
Ti	1.00	50.0
V	0.50	25.0
Zn	0.50	25.0

LCS and MS Spike Concentrations—As of 08/09/2011

Element	Liquid Concentration(mg/L)	Soil Concentration (mg/kg)
Al	2.00	160
Sb	0.50	40
As	0.12	9.6
Ba	2.00	160
Be	0.05	4.0
Bi	1.00	80
B	1.00	80
Cd	0.051	4.08
Ca	10.0	800
Cr	0.20	16
Co	0.50	40
Cu	0.25	20
Fe	1.00	80
Pb	0.51	40.8
Mg	10.0	800
Mn	0.50	40
Mo	1.00	80
Ni	0.50	40
K	10.0	800
Se	0.12	9.6
Si	1.00	80
Ag	0.05	24
Na	10.0	800
Sr	1.00	80
Tl	0.12	9.6
Sn	1.00	80
Ti	1.00	80
V	0.50	40
Zn	0.50	40

Revised 8/9/11 Soil spike is based on $(2x \text{ water spike}) \times (50/1.25)$, where 50 is the final volume of soil digestate and 1.25 is the nominal digestion weight of 1.25g, except in the case of Ag, where additional Ag is added to the spike.

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D102-540
Certificate Issue Date: June 22, 2018
Expiration Date: January 31, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8160	6.36	3960 - 12400	4080 - 12200
Antimony	120	60.9	9.42	0.822 - 121	12.0 - 166
Arsenic	144	135	5.08	112 - 158	94.6 - 176
Barium	469	443	6.77	366 - 521	332 - 554
Beryllium	207	197	5.86	164 - 229	148 - 246
Boron	213	174	12.6	127 - 221	105 - 244
Cadmium	224	204	6.65	169 - 240	153 - 256
Calcium	5190	4830	9.12	3950 - 5700	3510 - 6150
Chromium	138	132	8.56	109 - 155	92.2 - 171
Cobalt	182	179	7.93	151 - 207	134 - 224
Copper	191	184	6.72	155 - 213	138 - 230
Iron	15000	14400	10.7	8770 - 20000	5120 - 23600
Lead	225	216	7.72	178 - 254	159 - 274
Magnesium	2570	2340	6.13	1780 - 2900	1460 - 3230
Manganese	331	323	6.71	266 - 380	242 - 404
Mercury	16.8	13.2	16.0	8.64 - 17.7	7.89 - 18.5
Molybdenum	193	175	2.39	141 - 209	125 - 226
Nickel	163	152	5.95	126 - 178	106 - 197
Potassium	2420	2050	6.31	1440 - 2660	1210 - 2890
Selenium	81.9	74.9	4.13	59.3 - 90.5	47.0 - 103
Silver	57.6	53.9	9.00	43.0 - 64.8	37.8 - 70.0
Sodium	161	149	12.1	111 - 188	57.7 - 241
Strontium	100	96.2	4.04	78.1 - 114	69.0 - 123
Thallium	253	232	3.54	188 - 276	168 - 296

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	146	134	10.8	106 - 163	79.5 - 189
Titanium	449	340	7.20	70.2 - 609	44.9 - 711
Uranium	114	113	7.10	85.5 - 140	71.9 - 153
Vanadium	180	172	8.85	137 - 207	126 - 218
Zinc	217	211	6.58	171 - 250	147 - 274

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8160	80.8	138	-	-
Antimony	120	60.9	50.8	135	-	-
Arsenic	144	135	93.8	184	-	-
Barium	469	443	94.5	158	-	-
Beryllium	207	197	95.0	148	-	-
Boron	213	174	81.8	107	-	-
Cadmium	224	204	91.3	199	-	-
Calcium	5190	4830	93.0	122	-	-
Chromium	138	132	95.5	172	-	-
Cobalt	182	179	98.4	140	-	-
Copper	191	184	96.3	183	-	-
Iron	15000	14400	95.6	133	-	-
Lead	225	216	96.2	204	-	-
Magnesium	2570	2340	91.2	122	-	-
Manganese	331	323	97.6	147	-	-
Mercury	16.8	13.2	78.3	128	-	-
Molybdenum	193	175	90.8	143	-	-
Nickel	163	152	93.1	185	-	-
Potassium	2420	2050	84.7	121	-	-
Selenium	81.9	74.9	91.5	163	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	57.6	53.9	93.6	150	-	-
Sodium	161	149	92.8	105	-	-
Strontium	100	96.2	96.2	90	-	-
Thallium	253	232	91.6	147	-	-
Tin	146	134	92.0	100	-	-
Titanium	449	340	75.6	93	-	-
Uranium	114	113	98.8	35	-	-
Vanadium	180	172	95.4	139	-	-
Zinc	217	211	97.0	180	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck




ISO/IEC GUIDE 34:2009

ISO/IEC 17025:2005



▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D105-540
Certificate Issue Date: March 19, 2019
Expiration Date: October 12, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8800	8.32	4600 - 13000	4470 - 13100
Antimony	282	147	7.70	6.17 - 289	28.2 - 366
Arsenic	155	143	6.34	119 - 168	100 - 186
Barium	439	415	5.37	343 - 488	311 - 519
Beryllium	192	179	2.78	149 - 210	134 - 224
Boron	216	160	7.08	113 - 208	96.1 - 238
Cadmium	61.5	56.2	0.528	46.6 - 65.9	42.2 - 70.3
Calcium	5190	4960	6.64	4090 - 5840	3610 - 6310
Chromium	104	101	4.75	83.2 - 118	70.5 - 131
Cobalt	196	189	0.500	158 - 219	141 - 236
Copper	65.0	63.1	2.65	53.1 - 73.1	47.3 - 78.9
Iron	15000	15700	8.94	10100 - 21300	6000 - 25400
Lead	126	125	4.77	103 - 146	89.3 - 160
Magnesium	2570	2410	6.26	1860 - 2970	1520 - 3310
Manganese	387	382	5.37	315 - 449	290 - 474
Mercury	7.76	7.61	13.7	5.53 - 9.69	4.57 - 10.7
Molybdenum	120	107	0.500	86.0 - 128	75.5 - 139
Nickel	117	108	0.514	89.5 - 127	75.7 - 141
Potassium	2420	2110	5.62	1500 - 2720	1260 - 2960
Selenium	84.6	77.9	7.10	61.8 - 94.0	49.2 - 107
Silver	34.6	34.3	8.34	27.8 - 40.9	23.6 - 45.1
Sodium	161	145	6.72	106 - 183	54.3 - 235
Strontium	104	104	3.95	85.1 - 123	74.8 - 133
Thallium	123	113	0.500	91.3 - 134	77.1 - 149

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	118	107	0.500	83.5 - 130	61.2 - 152
Titanium	512	421	5.80	114 - 728	0.00 - 854
Uranium	103	104	6.18	79.1 - 128	71.9 - 135
Vanadium	87.3	83.7	8.55	66.8 - 101	54.2 - 113
Zinc	251	240	3.98	194 - 285	168 - 312

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8800	87.1	193	-	-
Antimony	282	147	52.3	216	-	-
Arsenic	155	143	92.5	240	-	-
Barium	439	415	94.6	222	-	-
Beryllium	192	179	93.4	220	-	-
Boron	216	160	74.2	152	-	-
Cadmium	61.5	56.2	91.5	239	-	-
Calcium	5190	4960	95.6	175	-	-
Chromium	104	101	96.8	237	-	-
Cobalt	196	189	96.2	215	-	-
Copper	65.0	63.1	97.1	237	-	-
Iron	15000	15700	105	195	-	-
Lead	126	125	99.0	243	-	-
Magnesium	2570	2410	93.9	177	-	-
Manganese	387	382	98.7	215	-	-
Mercury	7.76	7.61	98.0	157	-	-
Molybdenum	120	107	89.4	216	-	-
Nickel	117	108	92.5	235	-	-
Potassium	2420	2110	87.2	181	-	-
Selenium	84.6	77.9	92.1	231	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
		mg/kg	%			%
Silver	34.6	34.3	99.3	216	-	-
Sodium	161	145	89.8	166	-	-
Strontium	104	104	99.9	148	-	-
Thallium	123	113	91.8	215	-	-
Tin	118	107	90.4	164	-	-
Titanium	512	421	82.2	157	-	-
Uranium	103	104	101	61	-	-
Vanadium	87.3	83.7	95.9	214	-	-
Zinc	251	240	95.5	234	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

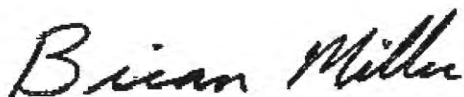
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller



Quality Officer

Matthew Seebeck



ISO/IEC 17025:2018

ISO/IEC 17025:2018



ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131912

ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131912

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D109-540
Certificate Issue Date: March 24, 2020
Expiration Date: October 03, 2023
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8130	2.54	3920 - 12300	4060 - 12200
Antimony	259	134	5.03	4.56 - 264	25.9 - 335
Arsenic	171	156	3.38	129 - 183	109 - 203
Barium	253	239	4.81	197 - 280	179 - 298
Beryllium	179	169	6.59	141 - 198	127 - 212
Boron	114	87.5	10.3	62.5 - 113	52.5 - 125
Cadmium	149	137	5.43	113 - 160	103 - 171
Calcium	5190	4760	3.48	3890 - 5640	3460 - 6070
Chromium	163	154	3.79	126 - 181	108 - 200
Cobalt	127	121	5.07	101 - 141	90.8 - 151
Copper	57.0	54.9	4.13	46.1 - 63.6	41.1 - 68.6
Iron	15000	14100	6.27	8470 - 19700	4920 - 23200
Lead	133	130	3.00	107 - 152	93.3 - 167
Magnesium	2570	2320	3.32	1760 - 2880	1440 - 3200
Manganese	277	269	2.67	221 - 317	199 - 340
Mercury	21.6	20.5	7.72	14.7 - 26.3	12.3 - 28.6
Molybdenum	108	95.4	2.61	76.4 - 114	66.9 - 124
Nickel	58.7	53.9	4.97	44.5 - 63.3	37.7 - 70.0
Potassium	2420	2020	3.06	1410 - 2630	1190 - 2850
Selenium	181	167	5.63	132 - 201	113 - 221
Silver	35.5	33.6	5.20	26.8 - 40.3	23.0 - 44.1
Sodium	161	133	2.76	95.1 - 171	46.5 - 220
Strontium	89.7	87.9	4.59	71.7 - 104	62.8 - 113
Thallium	121	112	5.19	90.3 - 133	76.1 - 147

Certified Reference Material

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	83.5	74.0	5.42	57.6 - 90.4	39.7 - 108
Titanium	474	333	7.17	48.6 - 617	46.3 - 620
Uranium	51.9	51.9	3.36	39.6 - 64.3	35.9 - 68.0
Vanadium	68.1	62.6	6.00	49.4 - 75.8	37.0 - 88.3
Zinc	165	158	2.34	128 - 188	111 - 205

▪ Certificate of Analysis ▪

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number ⁶	Recovery
		mg/kg	%			%
Aluminum	10100	8130	80.5	196	-	-
Antimony	259	134	51.8	217	-	-
Arsenic	171	156	91.3	243	-	-
Barium	253	239	94.3	230	-	-
Beryllium	179	169	94.6	223	-	-
Boron	114	87.5	76.7	150	-	-
Cadmium	149	137	91.8	249	-	-
Calcium	5190	4760	91.8	184	-	-
Chromium	163	154	94.4	245	-	-
Cobalt	127	121	95.3	221	-	-
Copper	57.0	54.9	96.2	243	-	-
Iron	15000	14100	93.9	199	-	-
Lead	133	130	97.7	251	-	-
Magnesium	2570	2320	90.1	182	-	-
Manganese	277	269	97.2	220	-	-
Mercury	21.6	20.5	94.7	172	-	-
Molybdenum	108	95.4	88.3	218	-	-
Nickel	58.7	53.9	91.8	242	-	-
Potassium	2420	2020	83.5	187	-	-
Selenium	181	167	92.2	235	-	-
Silver	35.5	33.6	94.5	222	-	-
Sodium	161	133	82.7	177	-	-
Strontium	89.7	87.9	98.0	151	-	-
Thallium	121	112	92.2	219	-	-
Tin	83.5	74.0	88.6	170	-	-
Titanium	474	333	70.3	157	-	-
Uranium	51.9	51.9	100	60	-	-
Vanadium	68.1	62.6	91.9	213	-	-
Zinc	165	158	95.8	238	-	-

▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.
2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor ($k=2$). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:

$$U_{\text{expanded}} = k * \text{SQRT}((U_{\text{char}})^2 + (U_{\text{homogen}})^2 + (U_{\text{LTS}})^2 + (U_{\text{STS}})^2 + (U_{\text{RSS}})^2)$$

Where:

 - U_{expanded} = Expanded uncertainty.
 - k = Coverage factor.
 - U_{char} = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
 - U_{homogen} = Standard uncertainty of the homogeneity assessment.
 - U_{LTS} = Standard uncertainty associated with long-term stability.
 - U_{STS} = Standard uncertainty associated with short-term (transport) stability.
 - U_{RSS} = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).
3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.
4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.
5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.
6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%) = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100**
 The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.
7. The **Reference Values** are equal to the mean recoveries for the parameters as determined in an interlaboratory round robin study. The **Reference Values** represent the expected performance for the analytes in this standard. ERA recommends using the **Reference Values** when assessing or evaluating your results.
8. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.
9. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck





Calculation of 6010B Metals

Aqueous Samples

The instrument will calculate the concentration ($\mu\text{g/L}$). This value is divided by 1000 to convert the units to mg/L . If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

$$\text{Result, mg/L} = C_s \times (1\text{mg}/1000\mu\text{g}) \times (\text{DF})$$

Where:

C_s = Concentration of sample ($\mu\text{g/L}$)

DF = Dilution Factor

Soil or Solid Samples

Soil samples are calculated as follows:

$$\text{Result, mg/Kg} = \frac{C_s \times (1\text{mg}/1000\mu\text{g}) \times (\text{DF})}{A}$$

Where:

C_s = Concentration of sample ($\mu\text{g/L}$)

DF = Dilution Factor

$$A = \frac{\text{Sample weight (grams)}}{\text{Final Volume (mL)}}$$

Dry weight correction

Dry weight correction is calculated as follows:

$$\text{Final concentration in mg/Kg, dry weight} = \frac{\text{Result, mg/Kg}}{\%_{\text{solids}}}$$

Where:

$\%_{\text{solids}}$ = Percent Solids, as a decimal value

REVIEWED
By dморisseau at 2:27 pm, Dec 20, 2021

1	12/20/2021	9:02:32AM	Std 0	EW
2	12/20/2021	9:06:57AM	ICAL	EW
3	12/20/2021	9:11:19AM	25: Fe K Na Si	EW
4	12/20/2021	9:15:44AM	10: Ca Mg Si	EW
5	12/20/2021	9:20:08AM	ICV	EW
6	12/20/2021	9:24:33AM	ICB	EW
7	12/20/2021	9:36:41AM	ICV	EW
8	12/20/2021	9:41:07AM	ICB	EW
9	12/20/2021	9:45:34AM	0.005	EW
10	12/20/2021	9:49:57AM	0.01	EW
11	12/20/2021	9:54:21AM	0.05	EW
12	12/20/2021	9:58:43AM	IPC	EW
13	12/20/2021	10:03:09AM	ICSA	EW
14	12/20/2021	10:13:05AM	0.005	EW
15	12/20/2021	10:17:30AM	0.01	EW
16	12/20/2021	10:21:54AM	0.05	EW
17	12/20/2021	10:26:14AM	IPC	EW
18	12/20/2021	10:32:40AM	10-V	EW
19	12/20/2021	10:37:08AM	IPC	EW
20	12/20/2021	10:54:34AM	CCV	EW
21	12/20/2021	10:59:00AM	CCB	EW
22	12/20/2021	11:11:50AM	WG1584355-1,C	EW
23	12/20/2021	11:16:17AM	WG1585191-1,C	EW
24	12/20/2021	11:20:43AM	WG1585191-2,C	EW
25	12/20/2021	11:24:58AM	WG1584355-2,C	EW
26	12/20/2021	11:29:15AM	L2168163-01,C	EW
27	12/20/2021	11:33:40AM	L2169404-01,C	EW
28	12/20/2021	11:38:02AM	WG1585191-3,C	EW
29	12/20/2021	11:42:16AM	WG1585191-4,C	EW
30	12/20/2021	11:46:39AM	WG1585191-5,C	EW
31	12/20/2021	11:50:55AM	WG1585191-6,C,5	EW
32	12/20/2021	11:55:20AM	CCV	EW
33	12/20/2021	11:59:46AM	CCB	EW
34	12/20/2021	12:11:13PM	CCV	EW
35	12/20/2021	12:15:40PM	CCB	EW
36	12/20/2021	12:20:07PM	WG1585179-1,C	EW
37	12/20/2021	12:24:33PM	WG1585179-2,C	EW
38	12/20/2021	12:28:49PM	L2168105-01,C	EW
39	12/20/2021	12:33:12PM	WG1585179-3,C	EW
40	12/20/2021	12:37:28PM	WG1585179-4,C	EW
41	12/20/2021	12:41:52PM	WG1585179-5,C	EW
42	12/20/2021	12:46:07PM	WG1585179-6,C,5	EW
43	12/20/2021	12:50:29PM	L2166777-07,C	EW
44	12/20/2021	12:54:50PM	WG1583508-3,C	EW
45	12/20/2021	12:59:05PM	WG1583508-4,C	EW
46	12/20/2021	1:03:22PM	CCV	EW
47	12/20/2021	1:07:48PM	CCB	EW
48	12/20/2021	1:12:15PM	WG1585365-1,C	EW
49	12/20/2021	1:16:42PM	WG1585365-2,C	EW
50	12/20/2021	1:20:59PM	L2168097-01,C	EW
51	12/20/2021	1:25:20PM	L2167957-01,C	EW
52	12/20/2021	1:29:41PM	WG1585365-3,C	EW
53	12/20/2021	1:33:55PM	WG1585365-4,C	EW
54	12/20/2021	1:38:17PM	WG1585365-5,C	EW
55	12/20/2021	1:42:32PM	WG1585365-6,C,5	EW
56	12/20/2021	1:46:57PM	WG1583508-5,C	EW
57	12/20/2021	1:51:12PM	WG1583508-6,C,5	EW
58	12/20/2021	1:55:36PM	CCV	EW
59	12/20/2021	2:00:00PM	CCB	EW
60	12/20/2021	2:04:27PM	WG1583508-1,C	EW
61	12/20/2021	2:08:52PM	WG1583508-2,C	EW
62	12/20/2021	2:13:07PM	L2166777-02,C	EW



METALS ELN REPORT

Workgroup: WG1583508

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 3015	HNO3	21370055	HCl	20450106	METALS	METSPIKE2	IPS,FPS,MIX	METSPIKE2	IPS,FPS,MIX	319,327

Additional Reagent/Std

Sample/Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Microwave Unit	Stop Date/Time	Final Vol	Tcpl Extract Date	Comments
L2166777-02 SOIL	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
L2166777-05 SOIL	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
L2166777-07 SOIL	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
WG1583508-1 BLANK	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/08/21 03:33	IFM214910211 OCK
WG1583508-2 LCS	12/15/21 10:03	Lucy Cook	5	0.5	12/15/21 10:03	2039	12/15/21 10:25	50	12/08/21 03:33	
WG1583508-3 MS	12/15/21 10:03	Lucy Cook	5	0.5	12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
WG1583508-4 MSD	12/15/21 10:03	Lucy Cook	5	0.5	12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
WG1583508-5 PS	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	
WG1583508-6 SERDIL	12/15/21 10:03	Lucy Cook	5		12/15/21 10:03	2039	12/15/21 10:25	50	12/09/21 06:22	

Workgroup: WG1583508

Reagent	Actual Volume	Units
Nitric Acid (HNO ₃)	2.5	ml
Hydrochloric Acid (HCl)	2	ml

Sample Number	Date	Time	Initials	Amount (g)	DI Vol. (mL)	pH (i)	1N HCL Vol (mL)	1N HCL Lot #	pH (f)	Fluid Number	Comments
L2166525-01	12/09/21	12:19	ANT	5.0	96.5	>5	3.5mL	HCL111221	<5	1	
-02											
L2166557-01											
-02											
L2166661-01											
L2167156-01											
L2166790-05											
L2166777-01											
-02											
-03											
-04											
-05											
-06											
-07											
-08											
-09											
L2166465-01		12:08									
-02											
-03											
L2166433-01											

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Initials: ANT

Date: 12.09.21

Balance ID: 28 WG#: 1580432

TCLP Fluid Lot #: <u>F17CLP120421A</u>	1:1 HNO ₃ Lot#: <u>HNG3120721</u>	Temp (°C) Max: <u>23.6</u> Min: <u>23.1</u>	Unit ID#: <u>266</u>	TCLP Fluid ID (circle one) # <u>1</u> #2 DI
Prep Date: <u>12/10/21</u>	pH on Date Used: <u>4.90</u>	Acceptable Temp Range: 21°-25°C		

Sample Number (Plastic Tumble Vessels only)	Amt. (g)	Fluid Vol. (mL)	Tumbler I.D.	Date On	Time On	Temp. C° On	Initials	Date Off	Time Off	Temp. C° Off	Initials	pH	1:1 HNO ₃ (preserved)	Filter Initials	Reduce Particle Size (check box)	Comments
													10 mL			
Blank - <u>L2169524-111</u>	—	<u>2000</u>	<u>16</u>	<u>12/03/21</u>	<u>03:33</u>	<u>22.4</u>	<u>ANT</u>	<u>12/03/21</u>	<u>19:53</u>	<u>22.6</u>	<u>GN</u>	<u>4.81</u>	<u>2.5mL</u>	<u>AD</u>		<u>max</u>
<u>L2166690-01</u>	<u>100</u>											<u>4.94</u>	<u>2.5mL</u>			<u>max</u>
<u>-02</u>												<u>5.03</u>				
<u>-03</u>												<u>5.04</u>				
<u>-04</u>												<u>5.13</u>				
<u>-05</u>												<u>4.95</u>				
<u>-06</u>												<u>4.93</u>				
<u>-07</u>												<u>4.92</u>				
<u>-08</u>												<u>5.24</u>				
<u>-09</u>												<u>5.31</u>				
<u>-10</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>5.32</u>				
<u>L2166809-04</u>	<u>100</u>	<u>2000</u>	<u>13</u>	<u>11/03/21</u>	<u>5:45</u>	<u>22.4</u>	<u>ANT</u>	<u>11/03/21</u>	<u>21:45</u>	<u>22.4</u>		<u>4.89</u>				
<u>-05</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>4.96</u>	↓	↓		
<u>L2166777-01</u>	<u>100</u>	<u>2000</u>	<u>14</u>	<u>12/09/21</u>	<u>6:22</u>	<u>22.2</u>	<u>ANT</u>	<u>12/09/21</u>	<u>22:22</u>	<u>23.7</u>	<u>SD</u>	<u>5.18</u>		<u>ANT</u>		<u>#285</u>
<u>-02</u>												<u>5.30</u>				<u>max 23.9</u>
<u>-03</u>												<u>6.12</u>				<u>min 22.3</u>
<u>-04</u>												<u>5.53</u>				
<u>-05</u>												<u>5.37</u>				
<u>-06</u>												<u>10.65</u>				
<u>-07</u>												<u>5.82</u>				
<u>-08</u>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	<u>7.50</u>	↓	↓		

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Batch Expires: 12/10/21 03:33

Initials: _____
 Date: _____

Alpha Analytical, Inc.
 Facility: Westborough, MA
 Department: Organic Extractions
 Title: TCLP Extraction Logbook: Metals Only (Plastic Vessels Only)

ID: 27809
 Revision: 2
 Published Date:
 Page 8 of 101

Balance ID: 28 WG#: 1580908

TCLP Fluid Lot #: <u>FITCLP120421A</u>	1:1 HNO ₃ Lot#: <u>H1103120821</u>	Temp (°C) Max: <u>24.0</u> Min: <u>22.4</u>	Unit ID#: <u>214</u>	TCLP Fluid ID (circle one) # <u>1</u> #2 DI
Prep Date: <u>12/04/21</u>	pH on Date Used: <u>4.90</u>	Acceptable Temp Range: 21°-25°C		

Sample Number (Plastic Tumble Vessels only)	Amt. (g)	Fluid Vol. (mL)	Tumbler I.D.	Date On	Time On	Temp. C° On	Initials	Date Off	Time Off	Temp. C° Off	Initials	pH	1:1 HNO ₃ (preserved)	Filter Initials	Reduce Particle Size (check box)	Comments
Blank 2149524-21	—	2000	7	12/8/21	22:20	22.4	GN	12/09/21	14:20	23.1	LF	4.83	10mL -2.5mL	GN		
2164218-03	100											4.87	2.5mL			
2167234-01												4.91				
2167506-01												5.15				
2166201-31												5.78				
-32												7.61				
-33												5.63				
-34												8.09				
-35												5.72				
-36												7.81				
-37												5.38				
-38												8.30				
-39												5.43				
-40												7.80				
2166777-09	100	2000	16	12/9/21	22:22	22.2	ANT	12/9/21	22:22	23.7	SD	6.80		ANT		#285
2167156-01												5.37				max 23.9
-03												5.03				min 22.3
-05												4.93				

Inorganic Data (ICPMS Analysis)

Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-10
 Client ID : SI-PSA-FB01_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020B
 Lab File ID : WG1584574.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 12:00
 Date Received : 12/06/21
 Date Analyzed : 12/17/21 18:35
 Dilution Factor : 1
 Analyst : CD
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 12/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U



Form 1 METALS

Client : AKRF, Inc.	Lab Number : L2166777
Project Name : EXCELSIOR BAG	Project Number : 200131
Lab ID : WG1583811-1	Date Collected : NA
Client ID : WG1583811-1BLANK	Date Received : NA
Sample Location :	Date Analyzed : 12/17/21 18:16
Sample Matrix : WATER	Dilution Factor : 1
Analytical Method : 1,6020B	Analyst : CD
Lab File ID : WG1584574.pdf	Instrument ID : ICPMSQ
Sample Amount : 50ml	%Solids : N/A
Digestion Method : EPA 3005A	Date Digested : 12/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : WG1583811-4
 Client ID : WG1583811-4 DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,6020B
 Lab File ID : WG1584574.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/14/21 13:10
 Date Received : 12/14/21
 Date Analyzed : 12/17/21 17:16
 Dilution Factor : 1
 Analyst : CD
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 12/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, Total	ND	0.00100	0.0003	U



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131
 Units : ug/l

Parameter	Initial Calibration			Continuing Calibration(s)							
	True	Found	%R	True	Found	%R	Found	%R	Found	%R	
Lead	50.0	50.0000	100	60.0000	58.1	97	58.4	97	58.4	97	

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131
 Units : ug/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Lead				60.0000	57.6	96	58.3	97	58.6	98

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131
 Units : ug/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Lead				60.0000	58.3	97	57.1	95	57.6	96

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131
 Units : ug/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Lead				60.0000	57.1	95				

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration		Continuing Calibration				Preparation	
	Blank		Blank(s)				Blank	
Lab ID :	R1514139-2		R1514139-5	R1514139-7	R1514139-10		WG1583811-1	
Date Analyzed:	12/17/21 09:31		12/17/21 10:03	12/17/21 11:10	12/17/21 12:09		12/17/21 18:16	
	ug/l	Q	ug/l	Q	ug/l	Q	mg/l	Q
Lead	0.343	U	0.343	U	0.343	U	0.00034	U



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	ug/l	Q	ug/l	Q	ug/l	Q	Q	
Lab ID :			R1514139-12		R1514139-14		R1514139-16	
Date Analyzed:			12/17/21 13:12		12/17/21 14:13		12/17/21 15:14	
Lead			0.343	U	0.343	U	0.343	U



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	ug/l	Q	ug/l	Q	ug/l	Q	Q	
Lab ID :			R1514139-18		R1514139-20		R1514139-22	
Date Analyzed:			12/17/21 16:11		12/17/21 17:11		12/17/21 18:09	
Lead			0.343	U	0.343	U	0.343	U



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank
	ug/l	Q	ug/l	Q	ug/l	Q	Q
Lab ID :			R1514139-24				
Date Analyzed:			12/17/21 19:16				
Lead			0.343	U			



Form 4a Interference Check Sample

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ

Lab Number : L2166777
 Project Number : 200131
 Concentration Units : ug/l

	True		Initial Found		Final Found					
Lab ID :			R1514139-3							
Analysis Date :			12/17/21 09:49							
Analyte	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R

Lead			0.115							
------	--	--	-------	--	--	--	--	--	--	--

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%



Form 5a Matrix Spike

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Client Sample ID : NA
 Lab Sample ID : L2168735-05
 Matrix Spike : WG1583811-3
 Matrix Spike Dup :

Lab Number : L2166777
 Project Number : 200131
 Matrix : WATER
 MS Analysis Date : 12/17/21 18:56
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample			Matrix Spike Duplicate			RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R			
Lead, Total	ND	0.53	0.4892	92					75-125	20



Form 6 Lab Duplicates

Client	: AKRF, Inc.	Lab Number	: L2166777
Project Name	: EXCELSIOR BAG	Project Number	: 200131
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 12/17/21 17:21
Dup Sample ID	: WG1583811-4	DUP Analysis Date	: 12/17/21 17:16

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Lead, Total	ND	ND	NC	20



Form 7 Laboratory Control Sample

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Client Sample ID : NA
Lab Sample ID : WG1583811-2
Dup Sample ID :

Lab Number : L2166777
Project Number : 200131
Matrix : WATER
LCS Analysis Date : 12/17/21 18:52
LCSD Analysis Date:

Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Lead, Total	0.530	0.503	95.					80-120	20



Form 12 Preparation Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Matrix : WATER

Lab Number : L2166777
Project Number : 200131
Prep Method : EPA 3005A

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2166777-10	12/16/21 14:52	-	50
WG1583811-1	12/16/21 14:52	-	50
WG1583811-2	12/16/21 14:52	-	50
WG1583811-3	12/16/21 14:52	-	50
WG1583811-4	12/16/21 14:52	-	50



Form 13

Analysis Run Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Instrument ID : ICPMSQ
Start Date : 12/17/21 08:18

Lab Number : L2166777
Project Number : 200131
Analysis Method : 1,6020B
End Date : 12/17/21 19:16

Sample Number	Dilution Factor	Analysis Time	Lead, Total																									
R1514139-8 TUNE		08:18:00																										
R1514139-1 ICV	1	09:26:37	X																									
R1514139-2 ICB	1	09:31:27	X																									
R1514139-3 ICESA	1	09:49:17	X																									
R1514139-4 CCV	1	09:58:55	X																									
R1514139-5 CCB	1	10:03:47	X																									
R1514139-6 CCV	1	11:05:55	X																									
R1514139-7 CCB	1	11:10:47	X																									
R1514139-9 CCV	1	12:04:56	X																									
R1514139-10 CCB	1	12:09:48	X																									
R1514139-11 CCV	1	13:07:46	X																									
R1514139-12 CCB	1	13:12:38	X																									
R1514139-13 CCV	1	14:08:33	X																									
R1514139-14 CCB	1	14:13:25	X																									
R1514139-15 CCV	1	15:09:13	X																									
R1514139-16 CCB	1	15:14:05	X																									
R1514139-17 CCV	1	16:07:04	X																									
R1514139-18 CCB	1	16:11:57	X																									
R1514139-19 CCV	1	17:06:44	X																									
R1514139-20 CCB	1	17:11:36	X																									
WG1583811-4 DUP	1	17:16:28	X																									
R1514139-21 CCV	1	18:04:40	X																									
R1514139-22 CCB	1	18:09:32	X																									
WG1583811-1 BLANK	1	18:16:00	X																									
L2166777-10	1	18:35:15	X																									
WG1583811-2 LCS	5	18:52:00	X																									
WG1583811-3 MS	10	18:56:47	X																									



Form 13 Analysis Run Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Instrument ID : ICPMSQ
Start Date : 12/17/21 08:18

Lab Number : L2166777
Project Number : 200131
Analysis Method : 1,6020B
End Date : 12/17/21 19:16

Sample Number	Dilution Factor	Analysis Time	Lead, Total
R1514139-23 CCV	1	19:11:15	X
R1514139-24 CCB	1	19:16:07	X



Form 14

ICP-MS Tune

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab Sample ID : R1514139-8
ICP-MS Instrument : iCAP Q

Lab Number : L2166777
Project Number : 200131
Analysis Date : 12/17/21 08:18

Mass Element	Avg Measured Mass (amu)	Avg. Peak Width at 10% Peak Height (amu)	%RSD
59 Co	58.9229	0.765	0.9
115 In	114.8878	0.753	0.2
7 Li	6.9946	0.821	0.6
238 U	238.0461	0.702	0.4



Form 15

ICP-MS Internal Standards Relative Intensity Summary

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : ICPMSQ
 Start Date : 12/17/21

Lab Number : L2166777
 Project Number : 200131
 Analysis Method : 1,6020B
 End Date : 12/17/21

Sample #	Time	Internal Standards %RI For:				
		Lithium	Scandium	Ge	In	Bismuth
R1514139-1 ICV	09:26:37	93	103	89	96	97
R1514139-2 ICB	09:31:27	91	92	91	97	98
R1514139-3 ICSA	09:49:17	88	108	83	86	85
R1514139-4 CCV	09:58:55	89	102	89	94	96
R1514139-5 CCB	10:03:47	88	87	89	97	97
R1514139-6 CCV	11:05:55	93	108	94	100	99
R1514139-7 CCB	11:10:47	92	93	97	102	102
R1514139-9 CCV	12:04:56	89	97	91	97	96
R1514139-10 CCB	12:09:48	85	85	90	97	98
R1514139-11 CCV	13:07:46	91	100	97	105	102
R1514139-12 CCB	13:12:38	87	88	95	104	102
R1514139-13 CCV	14:08:33	94	102	93	99	100
R1514139-14 CCB	14:13:25	89	86	93	101	103
R1514139-15 CCV	15:09:13	91	101	93	99	100
R1514139-16 CCB	15:14:05	89	88	96	101	102
R1514139-17 CCV	16:07:04	88	96	93	98	100
R1514139-18 CCB	16:11:57	88	87	95	100	104
R1514139-19 CCV	17:06:44	106	121	111	120	117
R1514139-20 CCB	17:11:36	99	101	108	118	117
WG1583811-4 DUP	17:16:28	101	108	111	120	119
R1514139-21 CCV	18:04:40	90	100	97	104	106
R1514139-22 CCB	18:09:32	89	88	98	106	108
WG1583811-1 BLANK	18:16:00	89	92	96	105	106
L2166777-10	18:35:15	93	96	100	107	111
WG1583811-2 LCS	18:52:00	92	99	98	105	109
WG1583811-3 MS	18:56:47	92	98	96	105	108
R1514139-23 CCV	19:11:15	89	102	96	105	106



Form 15
ICP-MS Internal Standards Relative Intensity Summary

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Instrument ID : ICPMSQ
Start Date : 12/17/21

Lab Number : L2166777
Project Number : 200131
Analysis Method : 1,6020B
End Date : 12/17/21

Sample #	Time	Internal Standards %RI For:				
		Lithium	Scandium	Ge	In	Bismuth
R1514139-24 CCB	19:16:07	88	89	96	105	108





METALS by 6020B (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Aluminum, Total	7429-90-5	0.01	0.00327	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Antimony, Total	7440-36-0	0.004	0.000429	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Arsenic, Total	7440-38-2	0.0005	0.000165	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Barium, Total	7440-39-3	0.0005	0.000173	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Beryllium, Total	7440-41-7	0.0005	0.000107	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cadmium, Total	7440-43-9	0.0002	0.0000599	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Calcium, Total	7440-70-2	0.1	0.0394	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Chromium, Total	7440-47-3	0.001	0.000178	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cobalt, Total	7440-48-4	0.0005	0.000163	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Copper, Total	7440-50-8	0.001	0.000384	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Lithium, Total	7439-93-2	0.001	0.000083	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Iron, Total	7439-89-6	0.05	0.0191	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Lead, Total	7439-92-1	0.001	0.000343	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Magnesium, Total	7439-95-4	0.07	0.0242	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Manganese, Total	7439-96-5	0.001	0.00044	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Nickel, Total	7440-02-0	0.002	0.000556	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Potassium, Total	7440-09-7	0.1	0.0309	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Selenium, Total	7782-49-2	0.005	0.00173	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Silver, Total	7440-22-4	0.0004	0.000163	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Sodium, Total	7440-23-5	0.1	0.0293	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Thallium, Total	7440-28-0	0.0005	0.000143	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Vanadium, Total	7440-62-2	0.005	0.00157	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Zinc, Total	7440-66-6	0.01	0.00341	mg/l	80-120		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
 Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.





METALS by 6020B (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Aluminum, Total	7429-90-5	10	1.48	mg/kg	48-151	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Antimony, Total	7440-36-0	0.16	0.01352	mg/kg	1-208	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Arsenic, Total	7440-38-2	0.05	0.0066	mg/kg	79-121	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Barium, Total	7440-39-3	0.3	0.02112	mg/kg	83-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Beryllium, Total	7440-41-7	0.03	0.00872	mg/kg	83-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Cadmium, Total	7440-43-9	0.02	0.00264	mg/kg	83-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Calcium, Total	7440-70-2	50	6.08	mg/kg	81-119	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Chromium, Total	7440-47-3	0.2	0.0468	mg/kg	80-120	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Cobalt, Total	7440-48-4	0.05	0.00532	mg/kg	84-115	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Copper, Total	7440-50-8	0.2	0.0194	mg/kg	81-118	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Iron, Total	7439-89-6	20	2.06	mg/kg	45-155	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Lead, Total	7439-92-1	0.06	0.0146	mg/kg	81-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Magnesium, Total	7439-95-4	10	1.232	mg/kg	76-124	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Manganese, Total	7439-96-5	0.2	0.0444	mg/kg	81-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Nickel, Total	7440-02-0	0.1	0.02672	mg/kg	83-117	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Potassium, Total	7440-09-7	10	1.588	mg/kg	71-129	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Selenium, Total	7782-49-2	0.2	0.0756	mg/kg	78-122	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Silver, Total	7440-22-4	0.05	0.00488	mg/kg	75-124	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Sodium, Total	7440-23-5	15	1.172	mg/kg	72-127	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Thallium, Total	7440-28-0	0.02	0.00516	mg/kg	80-120	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Vanadium, Total	7440-62-2	0.1	0.03792	mg/kg	78-122	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv
Zinc, Total	7440-66-6	1	0.26	mg/kg	82-118	20	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserv

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



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System

Start time: 12/17/2021 8:18:45 AM
 Instrument: iCAP Q
 Operator: ALPHALAB\Metals-Instrument
 Template: STD AGD
 Instrument Serial Number: 03031R
 Last Autotune: Autotune-SourceTune High Matrix-20211207-084316335.imatdat
 Solution: 1 ppb Tune B in 2% HNO3 and 0.5% HCl.

Sensitivity & Stability Test

Result	Runs	Sweeps
Passed	5	10

Sensitivity

Analyte	Result	Value	Condition	Limit
7Li	Passed	12,290.0 CPS	Greater than	10,000.0 CPS
59Co	Passed	18,246.0 CPS	Greater than	1,000.0 CPS
238U	Passed	134,118.0 CPS	Greater than	20,000.0 CPS
140Ce.16O/140Ce	Passed	0.0212	Less than	0.025
137Ba++/137Ba	Passed	0.011	Less than	0.034
115In	Passed	44,896.0 CPS	Greater than	5,000.0 CPS

Stability

Analyte	Value	Limit
7Li	0.6%	5
59Co	0.9%	5
238U	0.4%	5
140Ce.16O	2.6%	2
140Ce	0.8%	2
115In	0.2%	5

Mass Calibration Test

Result	Channels	Dwell	MeasureWidth	PointSpacing	Sweeps
Passed	75	0.04	1.5	0.02	10

Analyte	Result	Centroid Mass [u]	Offset	Peak width [u]	Peak width min [u]	Peak width max [u]
7Li	Passed	6.9946	0.0214	0.821	0.650	0.850
59Co	Passed	58.9229	0.0103	0.765	0.650	0.850
115In	Passed	114.8878	0.0161	0.753	0.650	0.850
238U	Passed	238.0461	0.0047	0.702	0.650	0.850

Tune Settings

Parameter	Value
Additional Gas Flow 1	44.80
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-374.02
Auxilliary Flow	0.80
CCT Bias	0.56
CCT Entry Lens	-89.99
CCT Exit Lens	-160.01
CCT Focus Lens	-5.40
CCT1 Flow	0.00
CCT1 Shut-Off Valve	0.00
CCT2 Flow	0.00
CCT2 Shut-Off Valve	0.00
Cool Flow	14.00
D1 Lens	-198.39
D2 Lens	-80.00
Deflection Entry Lens	-35.01
Dry Pump Speed	0.00
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-162.06
Focus Lens	21.00
Nebulizer Flow	0.32
Peristaltic Pump Speed	20.00
Plasma Power	1550.00
Pole Bias	1.00
Quad Entry Lens	-25.20
Sampling Depth	5.00
Spray Chamber Temperature	2.70
Torch Horizontal Position	-0.84
Torch Vertical Position	0.91
Virtual CCT Mass Maximum Dac Limit Set	4095.00
Virtual CCT Mass parameter b	0.65
Virtual CCT Mass to Dac Factor	130.00
Virtual CCT Mass to Dac Offset	-200.00

Vacuum Check

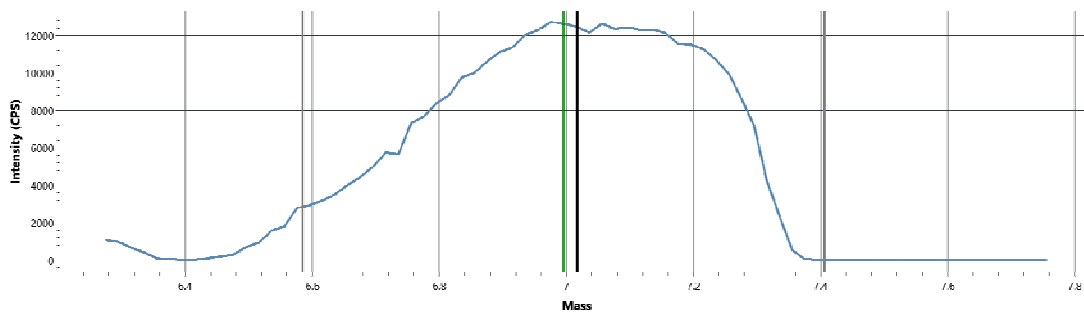
Parameter	Result	Value
Analyzer Pressure	Vacuum ok	1.400e-7
Interface Pressure		1.617e+0

Detector Voltages

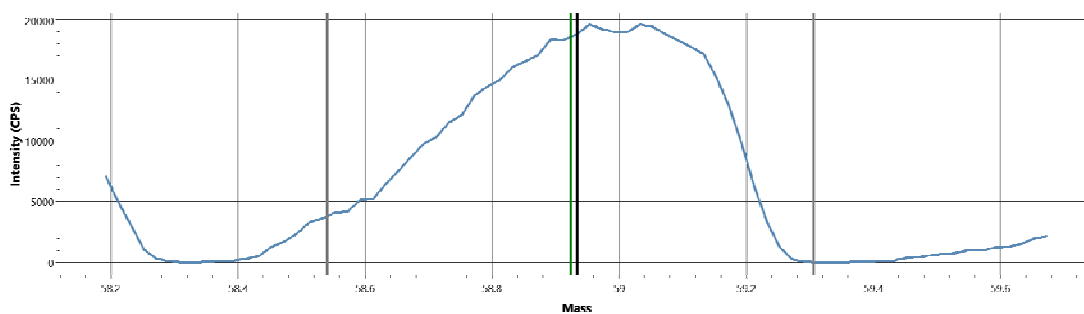
Analog	Counting
-1862.50	1537.50

Mass Calibration Peaks

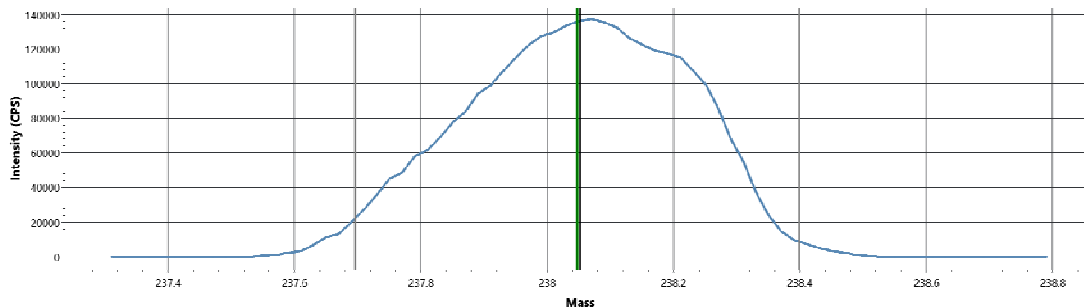
Analyte: 7Li



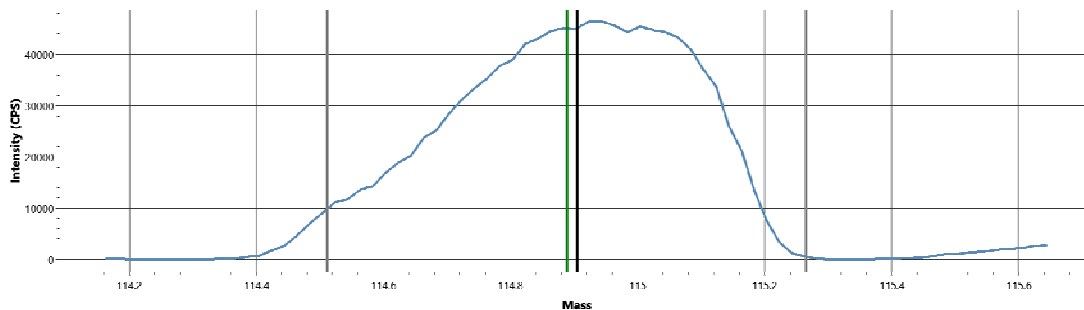
Analyte: 59Co



Analyte: 238U

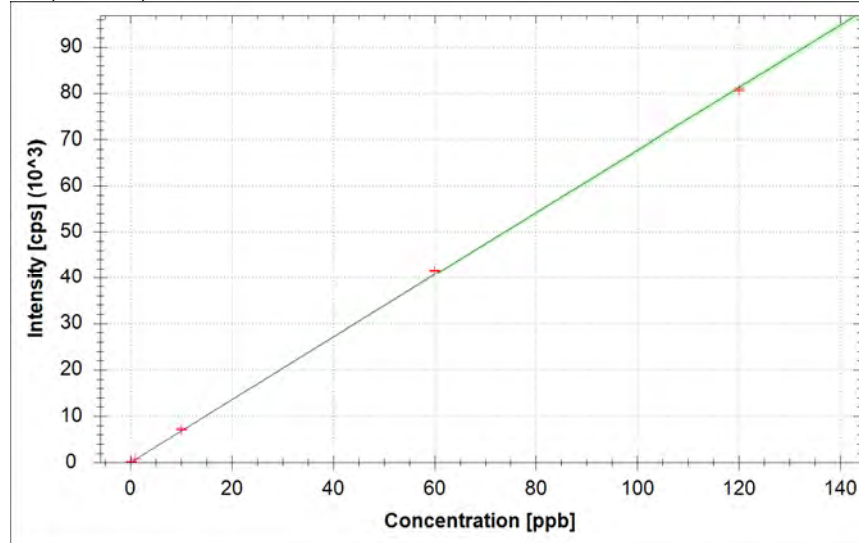


Analyte: 115In



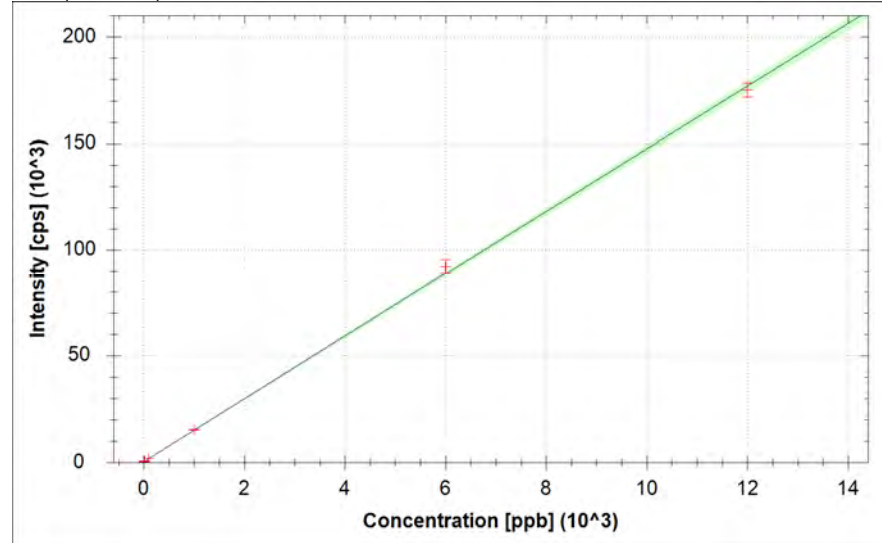
Calibration Curves:

9Be (STD AGD)



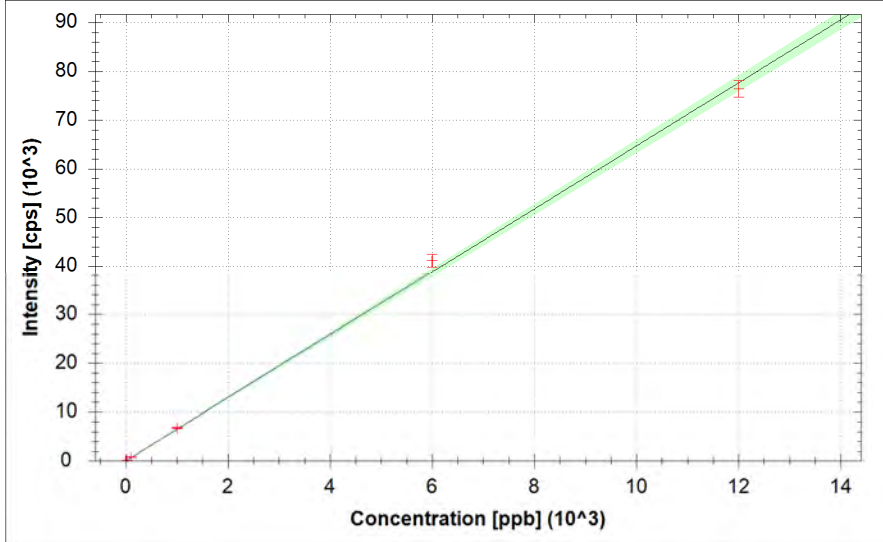
$f(x) = 676.6683 \cdot x + 9.3331$
 $R^2 = 0.9998$
BEC = 0.014 ppb
LoD = 0.0258 ppb

23Na (KED AGD)



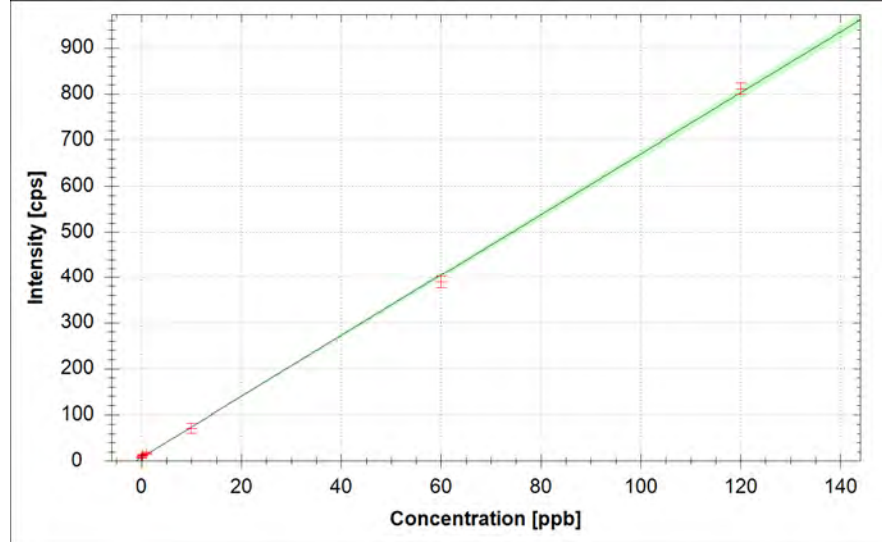
$f(x) = 14.7028 \cdot x + 398.8730$
 $R^2 = 0.9994$
BEC = 27.129 ppb
LoD = 15.4400 ppb

24Mg (KED AGD)



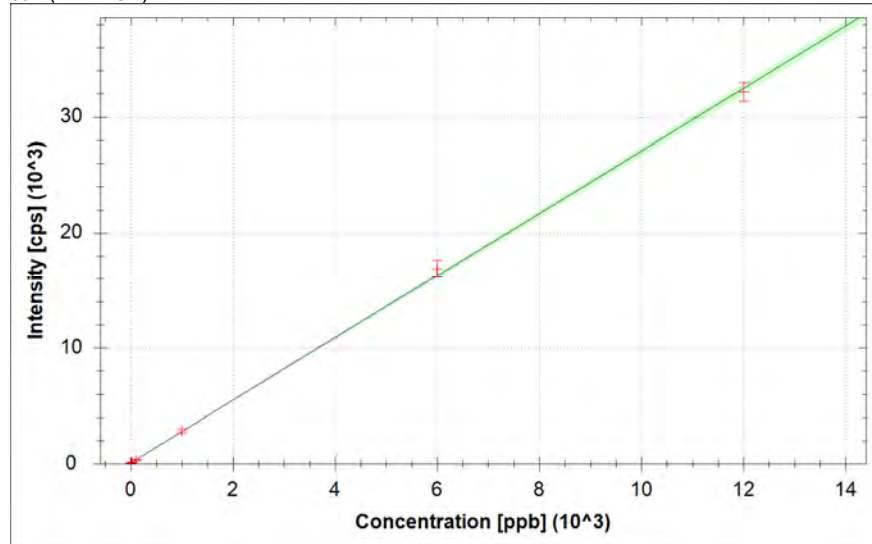
$f(x) = 6.4670 \cdot x + 4.3882$
 $R^2 = 0.9986$
BEC = 0.679 ppb
LoD = 1.7631 ppb

27Al (KED AGD)



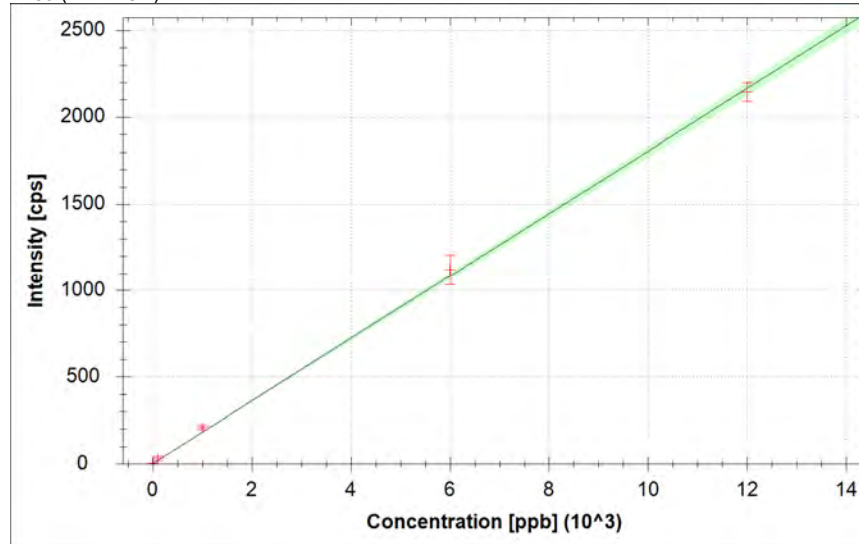
$f(x) = 6.6247 \cdot x + 7.3599$
 $R^2 = 0.9993$
BEC = 1.111 ppb
LoD = 0.8742 ppb

39K (KED AGD)



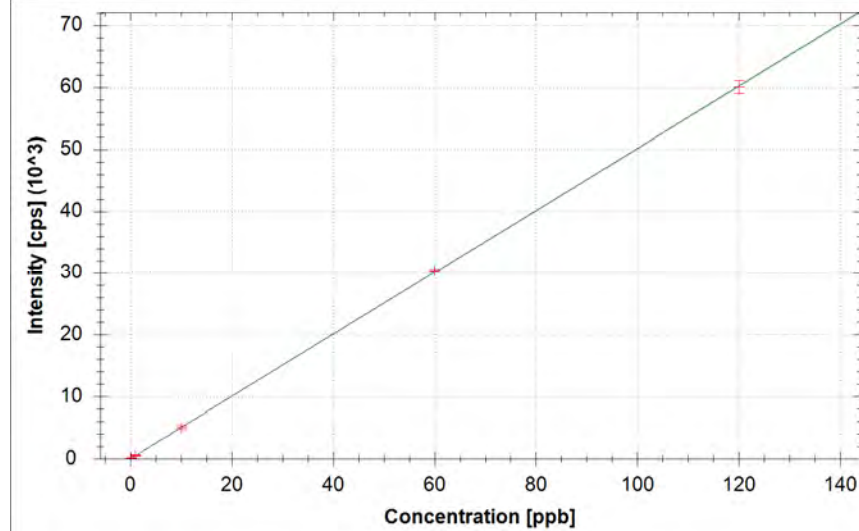
$f(x) = 2.6991 \cdot x + 80.1052$
 $R^2 = 0.9995$
 BEC = 29.679 ppb
 LoD = 26.2695 ppb

44Ca (KED AGD)



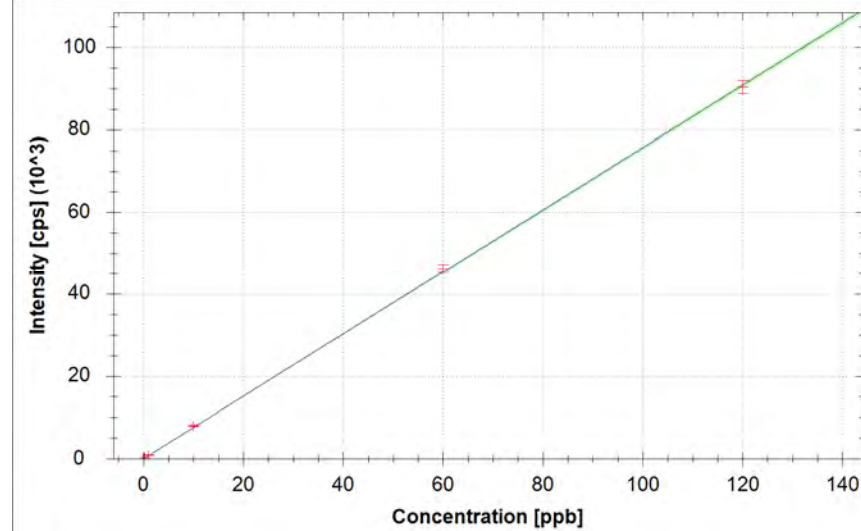
$f(x) = 0.1804 \cdot x + 0.7626$
 $R^2 = 0.9992$
 BEC = 4.227 ppb
 LoD = 25.9866 ppb

51V (KED AGD)



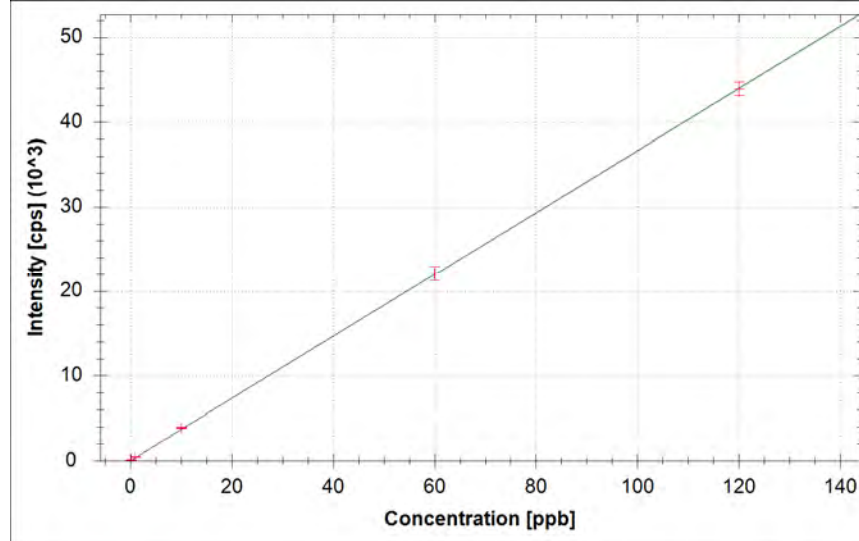
$f(x) = 501.1188 \cdot x + 39.9959$
 $R^2 = 1.0000$
BEC = 0.080 ppb
LoD = 0.1041 ppb

52Cr (KED AGD)



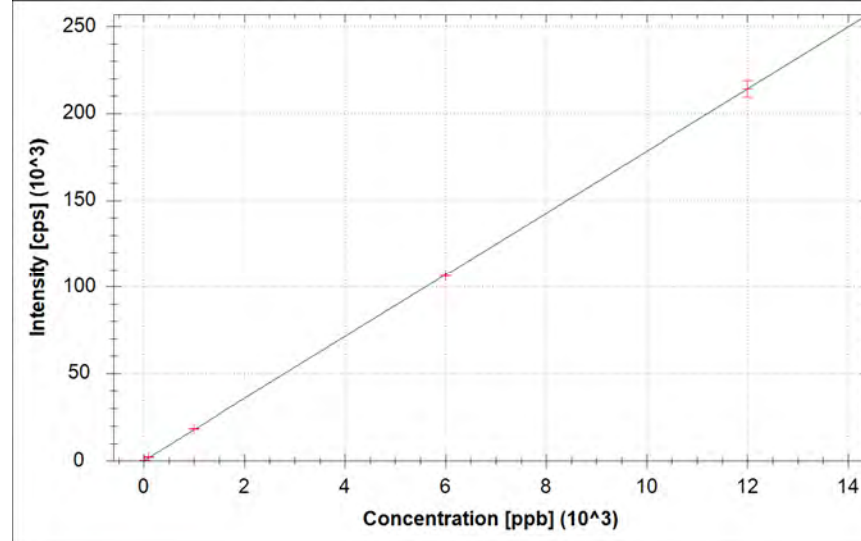
$f(x) = 756.4837 \cdot x + 15.5579$
 $R^2 = 0.9999$
BEC = 0.021 ppb
LoD = 0.0271 ppb

55Mn (KED AGD)



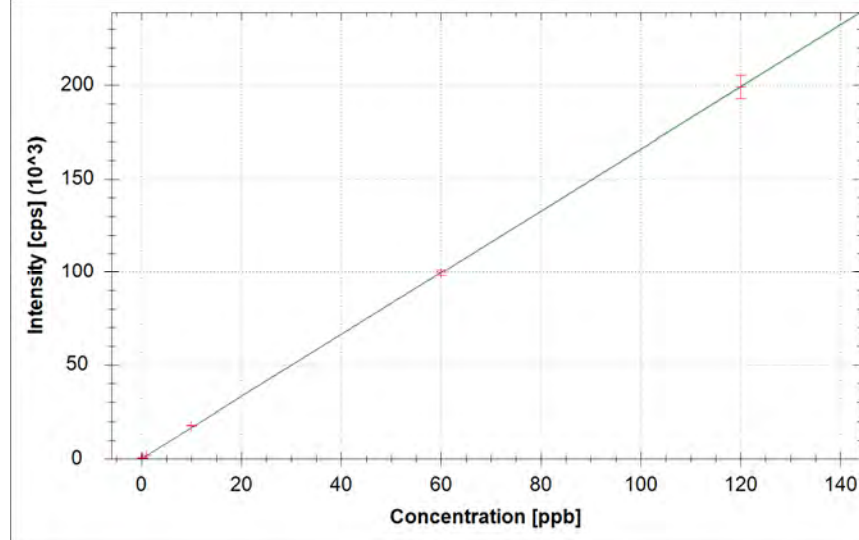
$f(x) = 365.9944 \cdot x + 31.4439$
 $R^2 = 1.0000$
BEC = 0.086 ppb
LoD = 0.1246 ppb

57Fe (KED AGD)



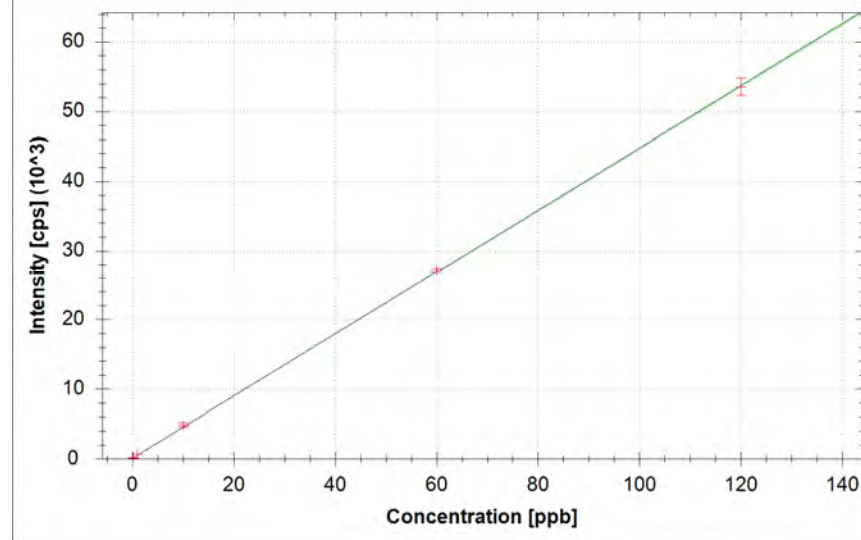
$f(x) = 17.8289 \cdot x + 30.8469$
 $R^2 = 1.0000$
BEC = 1.730 ppb
LoD = 3.0802 ppb

59Co (KED AGD)



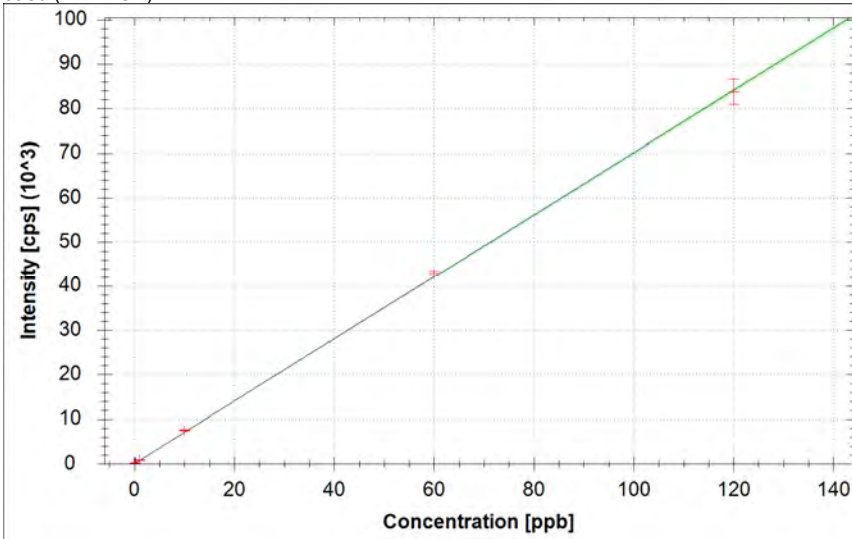
$f(x) = 1658.8892 \cdot x + 4.5092$
 $R^2 = 1.0000$
BEC = 0.003 ppb
LoD = 0.0071 ppb

60Ni (KED AGD)



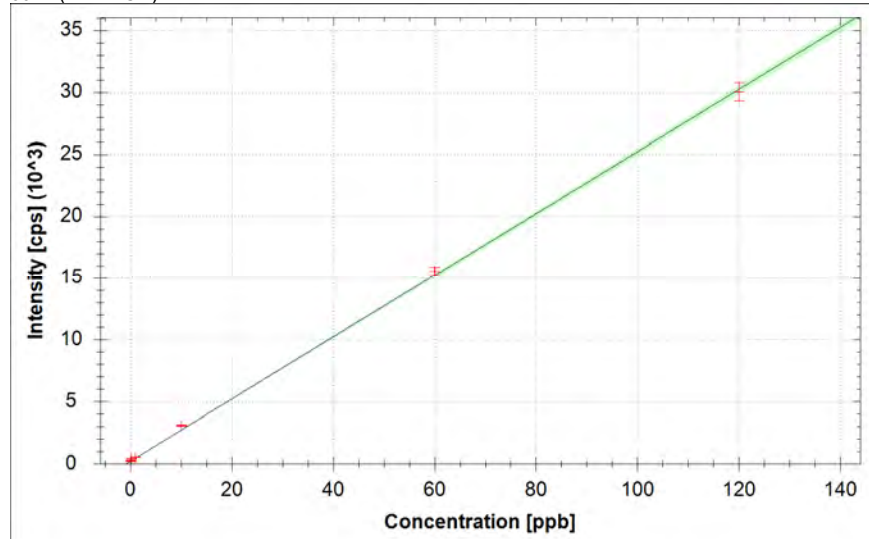
$f(x) = 446.4651 \cdot x + 85.2646$
 $R^2 = 0.9999$
BEC = 0.191 ppb
LoD = 0.2073 ppb

65Cu (KED AGD)



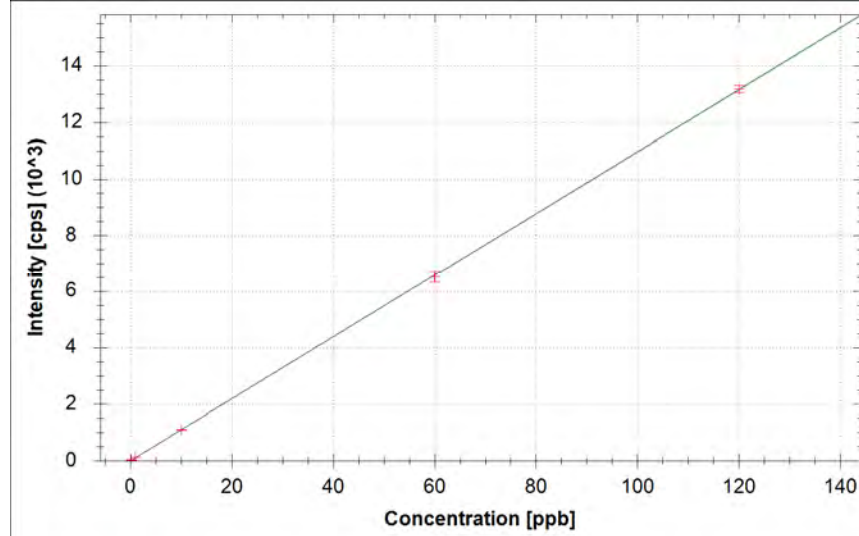
$f(x) = 700.2883 \cdot x + 67.1473$
 $R^2 = 0.9999$
BEC = 0.096 ppb
LoD = 0.0855 ppb

66Zn (KED AGD)



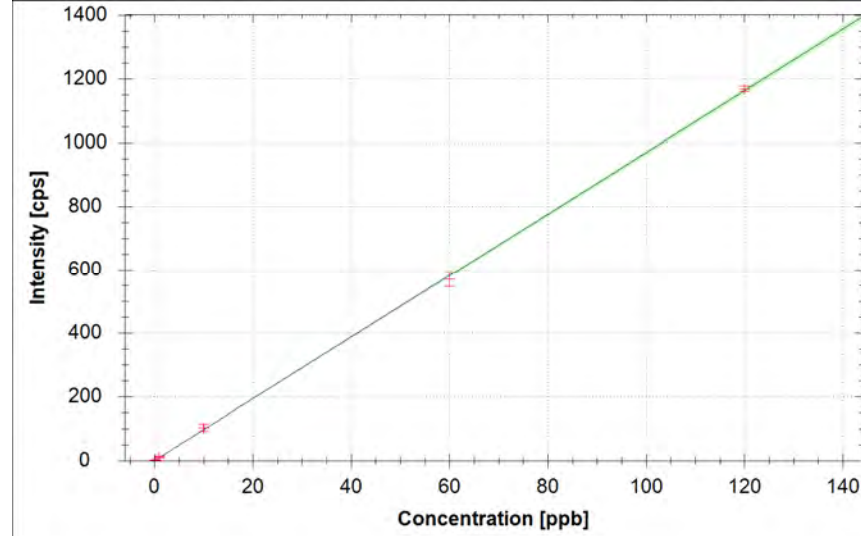
$f(x) = 250.0882 \cdot x + 213.2953$
 $R^2 = 0.9996$
BEC = 0.853 ppb
LoD = 0.4401 ppb

75As (KED AGD)



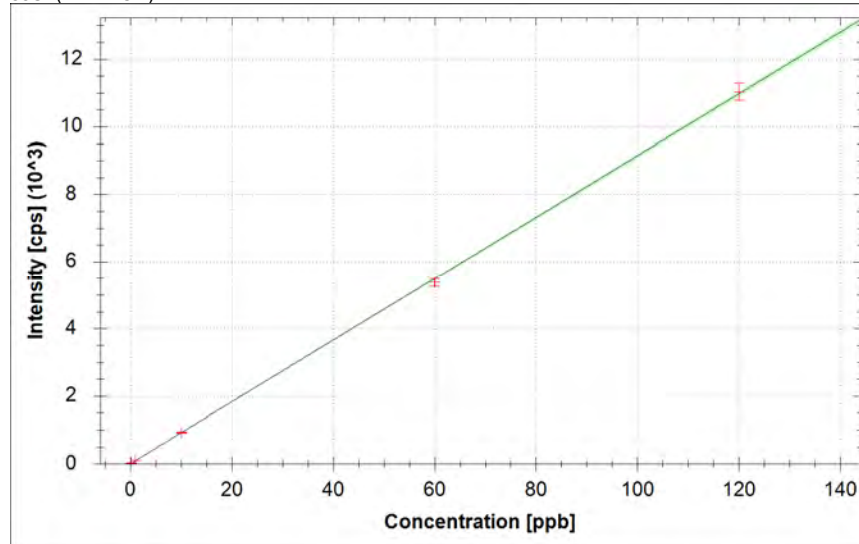
$f(x) = 109.5960 \cdot x + 0.5353$
 $R^2 = 1.0000$
BEC = 0.005 ppb
LoD = 0.0254 ppb

78Se (KED AGD)



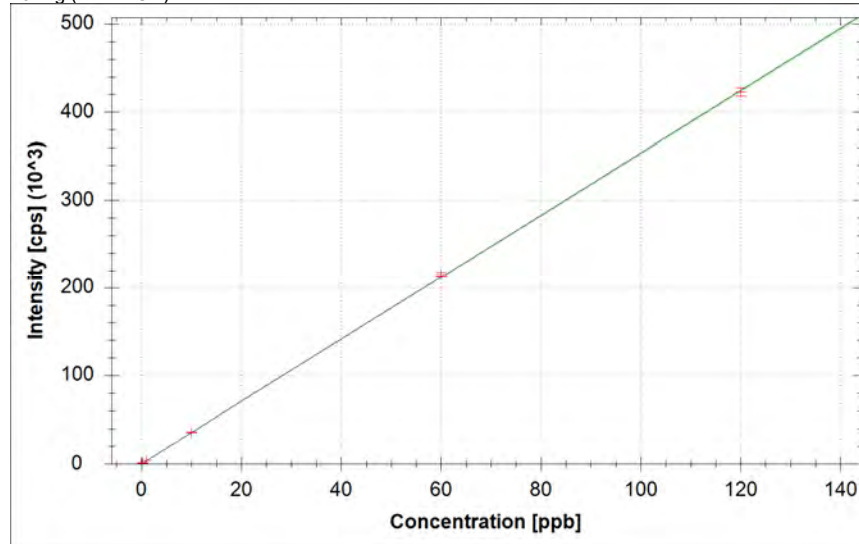
$f(x) = 9.6836 \cdot x + 0.5636$
 $R^2 = 0.9998$
BEC = 0.058 ppb
LoD = 0.1708 ppb

88Sr (KED AGD)



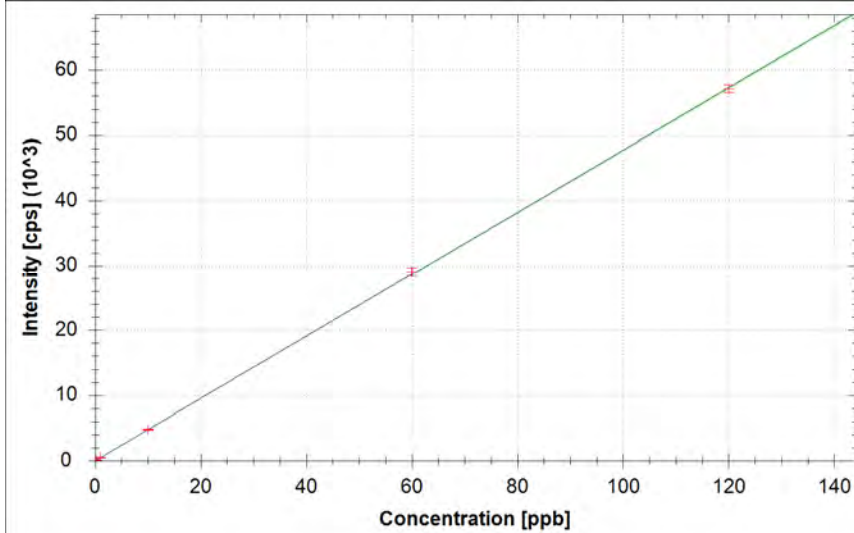
$f(x) = 91.3529x + 6.3765$
 $R^2 = 0.9998$
 BEC = 0.070 ppb
 LoD = 0.0263 ppb

107Ag (KED AGD)



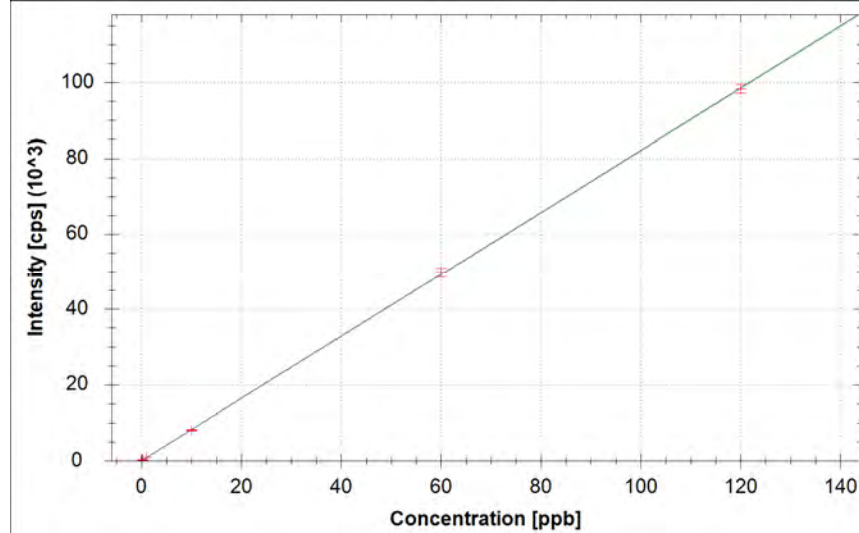
$f(x) = 3534.6190x + 23.3099$
 $R^2 = 0.9999$
 BEC = 0.007 ppb
 LoD = 0.0047 ppb

111Cd (KED AGD)



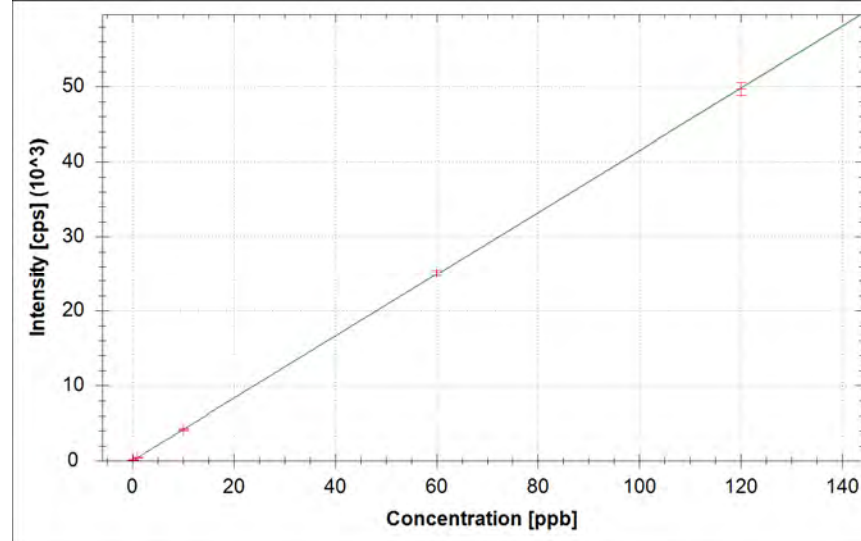
$f(x) = 477.3612 \cdot x$
 $R^2 = 0.9999$
BEC = 0.000 ppb
LoD = 0.0000 ppb

121Sb (KED AGD)



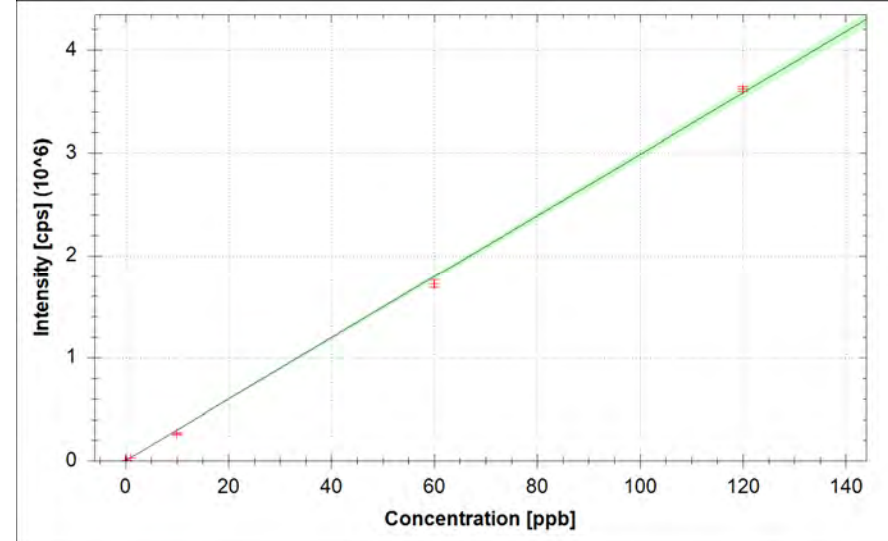
$f(x) = 820.6276 \cdot x + 17.2943$
 $R^2 = 1.0000$
BEC = 0.021 ppb
LoD = 0.0112 ppb

137Ba (KED AGD)



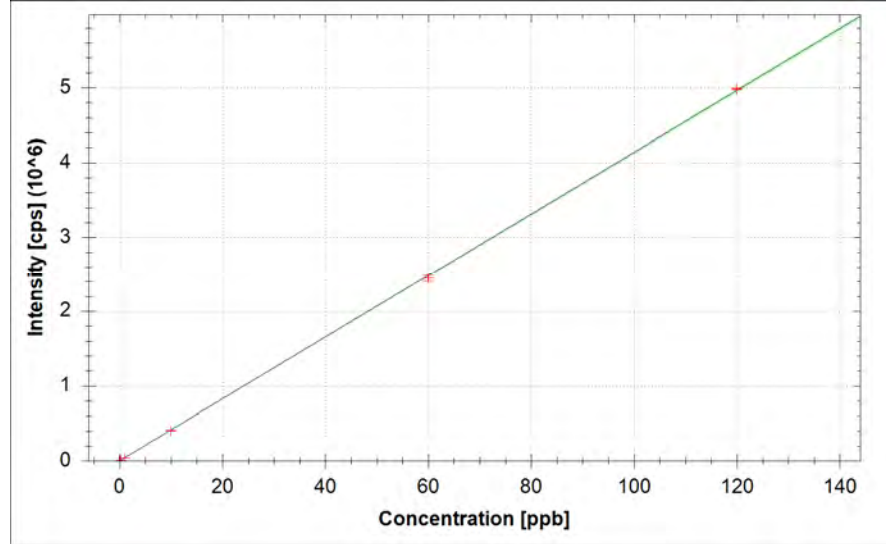
$f(x) = 414.6086 \cdot x + 34.5268$
 $R^2 = 1.0000$
BEC = 0.083 ppb
LoD = 0.1086 ppb

205Tl (KED AGD)



$f(x) = 29842.5447 \cdot x + 888.8730$
 $R^2 = 0.9993$
BEC = 0.030 ppb
LoD = 0.0011 ppb

208Pb (KED AGD)



$f(x) = 41354.9037x + 365.8421$
 $R^2 = 0.9999$
BEC = 0.009 ppb
LoD = 0.0056 ppb

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Standards:

Analysis Index: 4
Analysis Name: 0.2/20 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:47:55 AM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 50000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	99.255 %	0.8 %	
6Li (KED AGD)	105.033 %	7.3 %	
9Be (STD AGD)	0.227 ppb	8.9 %	0.200 ppb
23Na (KED AGD)	19.464 ppb	9.8 %	20.000 ppb
24Mg (KED AGD)	18.843 ppb	9.1 %	20.000 ppb
27Al (KED AGD)	0.825 ppb	35.8 %	0.200 ppb
39K (KED AGD)	5.098 ppb	227.6 %	20.000 ppb
44Ca (KED AGD)	234.648 ppb	11.4 %	20.000 ppb
45Sc (STD AGD)	105.319 %	0.9 %	
51V (KED AGD)	0.101 ppb	82.2 %	0.200 ppb
52Cr (KED AGD)	0.267 ppb	13.6 %	0.200 ppb
55Mn (KED AGD)	0.219 ppb	14.1 %	0.200 ppb
57Fe (KED AGD)	19.260 ppb	10.9 %	20.000 ppb
59Co (KED AGD)	0.222 ppb	6.1 %	0.200 ppb
60Ni (KED AGD)	0.179 ppb	17.3 %	0.200 ppb
65Cu (KED AGD)	0.198 ppb	30.2 %	0.200 ppb
66Zn (KED AGD)	0.734 ppb	14.7 %	0.200 ppb
74Ge (KED AGD)	94.783 %	1.6 %	
75As (KED AGD)	0.203 ppb	26.8 %	0.200 ppb
78Se (KED AGD)	0.154 ppb	48.0 %	0.200 ppb
88Sr (KED AGD)	0.277 ppb	5.2 %	0.200 ppb
103Rh (KED AGD)	95.837 %	0.4 %	
107Ag (KED AGD)	0.211 ppb	11.6 %	0.200 ppb
111Cd (KED AGD)	0.214 ppb	10.4 %	0.200 ppb
115In (KED AGD)	97.655 %	3.5 %	
121Sb (KED AGD)	0.215 ppb	5.7 %	0.200 ppb
137Ba (KED AGD)	0.161 ppb	9.2 %	0.200 ppb
159Tb (KED AGD)	97.495 %	1.6 %	
175Lu (KED AGD)	97.620 %	2.7 %	
205Tl (KED AGD)	0.184 ppb	5.6 %	0.200 ppb
208Pb (KED AGD)	0.203 ppb	2.3 %	0.200 ppb
209Bi (KED AGD)	97.664 %	0.3 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 5
Analysis Name: 1/100 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:52:43 AM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 10000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	99.807 %	0.5 %	
6Li (KED AGD)	105.033 %	4.1 %	
9Be (STD AGD)	1.058 ppb	3.6 %	1.000 ppb
23Na (KED AGD)	98.988 ppb	4.0 %	100.000 ppb
24Mg (KED AGD)	107.938 ppb	9.1 %	100.000 ppb
27Al (KED AGD)	1.324 ppb	33.5 %	1.000 ppb
39K (KED AGD)	92.676 ppb	30.6 %	100.000 ppb
44Ca (KED AGD)	175.058 ppb	37.6 %	100.000 ppb
45Sc (STD AGD)	105.400 %	1.3 %	
51V (KED AGD)	1.003 ppb	10.9 %	1.000 ppb
52Cr (KED AGD)	1.085 ppb	8.5 %	1.000 ppb
55Mn (KED AGD)	1.016 ppb	9.4 %	1.000 ppb
57Fe (KED AGD)	113.824 ppb	2.8 %	100.000 ppb
59Co (KED AGD)	1.031 ppb	1.3 %	1.000 ppb
60Ni (KED AGD)	1.261 ppb	4.4 %	1.000 ppb
65Cu (KED AGD)	1.097 ppb	7.3 %	1.000 ppb
66Zn (KED AGD)	1.251 ppb	6.0 %	1.000 ppb
74Ge (KED AGD)	96.148 %	3.3 %	
75As (KED AGD)	1.089 ppb	7.6 %	1.000 ppb
78Se (KED AGD)	1.167 ppb	26.3 %	1.000 ppb
88Sr (KED AGD)	0.983 ppb	1.8 %	1.000 ppb
103Rh (KED AGD)	97.328 %	1.4 %	
107Ag (KED AGD)	1.003 ppb	2.1 %	1.000 ppb
111Cd (KED AGD)	1.055 ppb	7.8 %	1.000 ppb
115In (KED AGD)	98.229 %	3.1 %	
121Sb (KED AGD)	0.995 ppb	1.8 %	1.000 ppb
137Ba (KED AGD)	0.933 ppb	7.2 %	1.000 ppb
159Tb (KED AGD)	97.854 %	1.5 %	
175Lu (KED AGD)	98.271 %	1.8 %	
205Tl (KED AGD)	0.868 ppb	5.4 %	1.000 ppb
208Pb (KED AGD)	0.974 ppb	0.2 %	1.000 ppb
209Bi (KED AGD)	98.287 %	0.8 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 6
Analysis Name: 10/1000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:57:31 AM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 1000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	99.298 %	0.5 %	
6Li (KED AGD)	102.092 %	1.8 %	
9Be (STD AGD)	10.561 ppb	2.9 %	10.000 ppb
23Na (KED AGD)	1,016.935 ppb	1.3 %	1,000.000 ppb
24Mg (KED AGD)	1,046.111 ppb	1.6 %	1,000.000 ppb
27Al (KED AGD)	9.577 ppb	17.4 %	10.000 ppb
39K (KED AGD)	1,016.074 ppb	7.7 %	1,000.000 ppb
44Ca (KED AGD)	1,151.026 ppb	5.1 %	1,000.000 ppb
45Sc (STD AGD)	104.385 %	0.3 %	
51V (KED AGD)	9.878 ppb	6.1 %	10.000 ppb
52Cr (KED AGD)	10.543 ppb	2.7 %	10.000 ppb
55Mn (KED AGD)	10.473 ppb	2.3 %	10.000 ppb
57Fe (KED AGD)	1,026.347 ppb	1.5 %	1,000.000 ppb
59Co (KED AGD)	10.661 ppb	1.3 %	10.000 ppb
60Ni (KED AGD)	10.643 ppb	6.5 %	10.000 ppb
65Cu (KED AGD)	10.698 ppb	2.0 %	10.000 ppb
66Zn (KED AGD)	11.446 ppb	1.9 %	10.000 ppb
74Ge (KED AGD)	92.072 %	2.7 %	
75As (KED AGD)	9.981 ppb	0.9 %	10.000 ppb
78Se (KED AGD)	10.611 ppb	11.6 %	10.000 ppb
88Sr (KED AGD)	10.008 ppb	1.5 %	10.000 ppb
103Rh (KED AGD)	96.581 %	1.3 %	
107Ag (KED AGD)	10.052 ppb	0.6 %	10.000 ppb
111Cd (KED AGD)	9.970 ppb	1.9 %	10.000 ppb
115In (KED AGD)	97.546 %	3.2 %	
121Sb (KED AGD)	9.860 ppb	1.9 %	10.000 ppb
137Ba (KED AGD)	9.998 ppb	3.7 %	10.000 ppb
159Tb (KED AGD)	96.122 %	0.7 %	
175Lu (KED AGD)	96.445 %	2.3 %	
205Tl (KED AGD)	8.776 ppb	3.5 %	10.000 ppb
208Pb (KED AGD)	9.711 ppb	1.2 %	10.000 ppb
209Bi (KED AGD)	97.915 %	0.3 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 7
Analysis Name: 60/6000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 9:02:20 AM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 166.666666

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	95.403 %	0.3 %	
6Li (KED AGD)	99.150 %	2.2 %	
9Be (STD AGD)	61.374 ppb	0.3 %	60.000 ppb
23Na (KED AGD)	6,240.090 ppb	3.4 %	6,000.000 ppb
24Mg (KED AGD)	6,365.639 ppb	3.3 %	6,000.000 ppb
27Al (KED AGD)	57.530 ppb	3.4 %	60.000 ppb
39K (KED AGD)	6,225.729 ppb	4.4 %	6,000.000 ppb
44Ca (KED AGD)	6,204.233 ppb	7.7 %	6,000.000 ppb
45Sc (STD AGD)	111.374 %	0.4 %	
51V (KED AGD)	60.553 ppb	0.7 %	60.000 ppb
52Cr (KED AGD)	61.017 ppb	2.2 %	60.000 ppb
55Mn (KED AGD)	60.246 ppb	3.8 %	60.000 ppb
57Fe (KED AGD)	5,994.232 ppb	0.7 %	6,000.000 ppb
59Co (KED AGD)	59.987 ppb	1.6 %	60.000 ppb
60Ni (KED AGD)	60.555 ppb	1.3 %	60.000 ppb
65Cu (KED AGD)	60.967 ppb	1.3 %	60.000 ppb
66Zn (KED AGD)	61.345 ppb	2.1 %	60.000 ppb
74Ge (KED AGD)	90.726 %	3.3 %	
75As (KED AGD)	59.502 ppb	2.9 %	60.000 ppb
78Se (KED AGD)	58.736 ppb	3.8 %	60.000 ppb
88Sr (KED AGD)	58.766 ppb	2.1 %	60.000 ppb
103Rh (KED AGD)	92.447 %	1.2 %	
107Ag (KED AGD)	60.802 ppb	1.3 %	60.000 ppb
111Cd (KED AGD)	60.768 ppb	2.2 %	60.000 ppb
115In (KED AGD)	94.505 %	2.1 %	
121Sb (KED AGD)	60.580 ppb	2.4 %	60.000 ppb
137Ba (KED AGD)	60.496 ppb	1.6 %	60.000 ppb
159Tb (KED AGD)	94.208 %	2.3 %	
175Lu (KED AGD)	95.360 %	2.8 %	
205Tl (KED AGD)	57.641 ppb	2.2 %	60.000 ppb
208Pb (KED AGD)	59.124 ppb	1.5 %	60.000 ppb
209Bi (KED AGD)	95.862 %	0.3 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 8
Analysis Name: 120/12000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 9:07:10 AM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 83.33333333

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	93.075 %	0.5 %	
6Li (KED AGD)	102.353 %	3.5 %	
9Be (STD AGD)	119.266 ppb	0.4 %	120.000 ppb
23Na (KED AGD)	11,878.553 ppb	1.9 %	12,000.000 ppb
24Mg (KED AGD)	11,813.274 ppb	2.2 %	12,000.000 ppb
27Al (KED AGD)	121.267 ppb	1.5 %	120.000 ppb
39K (KED AGD)	11,885.884 ppb	2.5 %	12,000.000 ppb
44Ca (KED AGD)	11,884.672 ppb	2.6 %	12,000.000 ppb
45Sc (STD AGD)	117.799 %	1.0 %	
51V (KED AGD)	119.734 ppb	1.8 %	120.000 ppb
52Cr (KED AGD)	119.445 ppb	1.8 %	120.000 ppb
55Mn (KED AGD)	119.838 ppb	1.8 %	120.000 ppb
57Fe (KED AGD)	12,000.574 ppb	2.2 %	12,000.000 ppb
59Co (KED AGD)	119.951 ppb	3.2 %	120.000 ppb
60Ni (KED AGD)	119.667 ppb	2.3 %	120.000 ppb
65Cu (KED AGD)	119.458 ppb	3.4 %	120.000 ppb
66Zn (KED AGD)	119.204 ppb	2.5 %	120.000 ppb
74Ge (KED AGD)	87.249 %	3.2 %	
75As (KED AGD)	120.250 ppb	0.9 %	120.000 ppb
78Se (KED AGD)	120.580 ppb	0.7 %	120.000 ppb
88Sr (KED AGD)	120.616 ppb	2.3 %	120.000 ppb
103Rh (KED AGD)	89.377 %	0.5 %	
107Ag (KED AGD)	119.594 ppb	1.1 %	120.000 ppb
111Cd (KED AGD)	119.618 ppb	1.0 %	120.000 ppb
115In (KED AGD)	92.608 %	3.4 %	
121Sb (KED AGD)	119.721 ppb	1.2 %	120.000 ppb
137Ba (KED AGD)	119.753 ppb	1.7 %	120.000 ppb
159Tb (KED AGD)	92.879 %	1.4 %	
175Lu (KED AGD)	94.402 %	1.9 %	
205Tl (KED AGD)	121.282 ppb	0.6 %	120.000 ppb
208Pb (KED AGD)	120.462 ppb	0.2 %	120.000 ppb
209Bi (KED AGD)	91.109 %	1.4 %	



Analysis index: 1 Analysis started at: 12/17/2021 8:33:30 AM
 Analysis label: Rinse User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	162.291 %	115.425 %	-0.008 ppb	7.702 ppb	0.551 ppb	0.476 ppb	4.024 ppb	8.507 ppb	132.978 %
Concentration per Run 1	160.553 %	119.412 %	-0.008 ppb	6.043 ppb	0.212 ppb	-0.062 ppb	-5.554 ppb	21.555 ppb	132.593 %
Concentration per Run 2	161.600 %	111.765 %	-0.008 ppb	10.120 ppb	1.206 ppb	0.181 ppb	9.387 ppb	8.819 ppb	132.062 %
Concentration per Run 3	164.718 %	115.098 %	-0.009 ppb	6.943 ppb	0.236 ppb	1.308 ppb	8.239 ppb	-4.853 ppb	134.281 %
Concentration RSD	1.3 %	3.3 %	9.7 %	27.8 %	102.8 %	153.6 %	206.6 %	155.2 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.063 ppb	0.011 ppb	-0.013 ppb	0.366 ppb	-0.001 ppb	0.023 ppb	0.083 ppb	0.368 ppb	104.827 %
Concentration per Run 1	-0.068 ppb	0.016 ppb	-0.003 ppb	-0.357 ppb	-0.003 ppb	0.057 ppb	0.090 ppb	0.223 ppb	105.424 %
Concentration per Run 2	-0.055 ppb	0.004 ppb	-0.034 ppb	1.115 ppb	0.001 ppb	0.066 ppb	0.023 ppb	0.655 ppb	102.943 %
Concentration per Run 3	-0.068 ppb	0.012 ppb	-0.002 ppb	0.340 ppb	-0.003 ppb	-0.053 ppb	0.135 ppb	0.227 ppb	106.115 %
Concentration RSD	11.8 %	53.4 %	141.8 %	201.1 %	153.5 %	282.4 %	68.0 %	67.5 %	1.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.000 ppb	0.044 ppb	-0.008 ppb	106.430 %	0.004 ppb	0.003 ppb	108.139 %	0.000 ppb	-0.066 ppb
Concentration per Run 1	0.002 ppb	-0.041 ppb	-0.007 ppb	107.656 %	0.005 ppb	0.003 ppb	107.636 %	-0.001 ppb	-0.083 ppb
Concentration per Run 2	-0.005 ppb	0.073 ppb	-0.001 ppb	105.993 %	0.002 ppb	0.003 ppb	108.814 %	0.007 ppb	-0.046 ppb
Concentration per Run 3	0.002 ppb	0.100 ppb	-0.015 ppb	105.641 %	0.005 ppb	0.003 ppb	107.966 %	-0.004 ppb	-0.068 ppb
Concentration RSD	4,476.8 %	171.3 %	88.6 %	1.0 %	38.3 %	0.3 %	0.6 %	1,289.4 %	28.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	106.856 %	106.571 %	0.012 ppb	0.008 ppb	101.685 %
Concentration per Run 1	108.117 %	106.145 %	0.018 ppb	0.009 ppb	100.212 %
Concentration per Run 2	106.881 %	107.353 %	0.011 ppb	0.009 ppb	102.361 %
Concentration per Run 3	105.570 %	106.215 %	0.008 ppb	0.006 ppb	102.481 %
Concentration RSD	1.2 %	0.6 %	43.9 %	18.1 %	1.3 %

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Analysis index: 2 Analysis started at: 12/17/2021 8:38:16 AM
 Analysis label: CAL LOT#M0304 User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.896 %	105.686 %	0.005 ppb	1.912 ppb	-0.354 ppb	-0.301 ppb	-4.821 ppb	2.291 ppb	97.403 %
Concentration per Run 1	99.623 %	105.294 %	0.012 ppb	1.694 ppb	-0.679 ppb	-0.222 ppb	-9.921 ppb	2.424 ppb	95.777 %
Concentration per Run 2	101.658 %	107.059 %	0.006 ppb	2.821 ppb	0.295 ppb	-0.445 ppb	-6.146 ppb	2.145 ppb	99.054 %
Concentration per Run 3	101.406 %	104.706 %	-0.002 ppb	1.220 ppb	-0.679 ppb	-0.235 ppb	1.603 ppb	2.305 ppb	97.377 %
Concentration RSD	1.1 %	1.2 %	136.4 %	43.0 %	158.7 %	41.5 %	121.9 %	6.1 %	1.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.032 ppb	0.016 ppb	0.004 ppb	-0.246 ppb	0.000 ppb	0.067 ppb	0.003 ppb	0.140 ppb	99.200 %
Concentration per Run 1	-0.039 ppb	0.024 ppb	-0.011 ppb	-0.190 ppb	0.001 ppb	0.056 ppb	0.043 ppb	0.217 ppb	94.407 %
Concentration per Run 2	-0.029 ppb	0.009 ppb	0.037 ppb	-0.289 ppb	-0.003 ppb	-0.004 ppb	-0.022 ppb	0.164 ppb	102.731 %
Concentration per Run 3	-0.028 ppb	0.014 ppb	-0.014 ppb	-0.257 ppb	0.001 ppb	0.148 ppb	-0.011 ppb	0.040 ppb	100.462 %
Concentration RSD	20.0 %	49.5 %	753.8 %	20.6 %	17,559.7 %	114.2 %	1,056.2 %	64.9 %	4.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.008 ppb	0.006 ppb	-0.007 ppb	102.476 %	0.000 ppb	0.002 ppb	104.448 %	-0.004 ppb	-0.076 ppb
Concentration per Run 1	-0.005 ppb	0.007 ppb	-0.001 ppb	101.085 %	-0.001 ppb	0.003 ppb	100.560 %	-0.008 ppb	-0.075 ppb
Concentration per Run 2	0.017 ppb	-0.066 ppb	-0.010 ppb	102.836 %	0.000 ppb	0.003 ppb	105.988 %	-0.006 ppb	-0.076 ppb
Concentration per Run 3	0.010 ppb	0.076 ppb	-0.011 ppb	103.508 %	0.002 ppb	0.000 ppb	106.797 %	0.003 ppb	-0.076 ppb
Concentration RSD	150.1 %	1,238.0 %	74.8 %	1.2 %	1,324.9 %	86.7 %	3.2 %	171.9 %	0.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	102.937 %	102.098 %	0.001 ppb	0.002 ppb	100.625 %
Concentration per Run 1	99.619 %	98.668 %	0.000 ppb	0.002 ppb	97.891 %
Concentration per Run 2	103.881 %	102.339 %	0.003 ppb	0.002 ppb	101.117 %
Concentration per Run 3	105.310 %	105.287 %	0.001 ppb	0.001 ppb	102.866 %
Concentration RSD	2.9 %	3.2 %	113.2 %	27.5 %	2.5 %

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Analysis index: 3 Analysis started at: 12/17/2021 8:43:03 AM
 Analysis label: Blank CD ICPMSQ User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.0 %	0.0 %	0.6 %	0.2 %	0.9 %	0.3 %	0.3 %	2.0 %	0.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.4 %	0.4 %	0.5 %	0.6 %	0.9 %	0.4 %	0.3 %	0.2 %	0.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration RSD	1.7 %	1.0 %	0.1 %	0.0 %	0.2 %		0.0 %	0.2 %	0.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.0 %	0.0 %	0.0 %	0.2 %	0.0 %

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Analysis index: 4 Analysis started at: 12/17/2021 8:47:55 AM
 Analysis label: 0.2/20 Cal User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	99.255 %	105.033 %	0.227 ppb	19.464 ppb	18.843 ppb	0.825 ppb	5.098 ppb	234.648 ppb	105.319 %
Concentration per Run 1	98.962 %	111.569 %	0.242 ppb	21.297 ppb	18.616 ppb	1.166 ppb	-8.082 ppb	239.422 ppb	104.285 %
Concentration per Run 2	100.112 %	106.863 %	0.204 ppb	17.495 ppb	17.257 ppb	0.650 ppb	9.597 ppb	258.743 ppb	105.747 %
Concentration per Run 3	98.693 %	96.667 %	0.234 ppb	19.602 ppb	20.655 ppb	0.659 ppb	13.778 ppb	205.778 ppb	105.926 %
Concentration RSD	0.8 %	7.3 %	8.9 %	9.8 %	9.1 %	35.8 %	227.6 %	11.4 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.101 ppb	0.267 ppb	0.219 ppb	19.260 ppb	0.222 ppb	0.179 ppb	0.198 ppb	0.734 ppb	94.783 %
Concentration per Run 1	0.027 ppb	0.227 ppb	0.209 ppb	20.350 ppb	0.215 ppb	0.177 ppb	0.251 ppb	0.610 ppb	93.772 %
Concentration per Run 2	0.191 ppb	0.276 ppb	0.194 ppb	20.579 ppb	0.238 ppb	0.211 ppb	0.133 ppb	0.788 ppb	93.998 %
Concentration per Run 3	0.085 ppb	0.299 ppb	0.253 ppb	16.850 ppb	0.214 ppb	0.149 ppb	0.210 ppb	0.803 ppb	96.579 %
Concentration RSD	82.2 %	13.6 %	14.1 %	10.9 %	6.1 %	17.3 %	30.2 %	14.7 %	1.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.203 ppb	0.154 ppb	0.277 ppb	95.837 %	0.211 ppb	0.214 ppb	97.655 %	0.215 ppb	0.161 ppb
Concentration per Run 1	0.230 ppb	0.082 ppb	0.260 ppb	95.487 %	0.239 ppb	0.231 ppb	93.827 %	0.212 ppb	0.146 ppb
Concentration per Run 2	0.141 ppb	0.230 ppb	0.284 ppb	95.863 %	0.195 ppb	0.223 ppb	98.637 %	0.205 ppb	0.161 ppb
Concentration per Run 3	0.239 ppb	0.151 ppb	0.286 ppb	96.161 %	0.198 ppb	0.189 ppb	100.499 %	0.229 ppb	0.176 ppb
Concentration RSD	26.8 %	48.0 %	5.2 %	0.4 %	11.6 %	10.4 %	3.5 %	5.7 %	9.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.495 %	97.620 %	0.184 ppb	0.203 ppb	97.664 %
Concentration per Run 1	95.695 %	94.649 %	0.172 ppb	0.206 ppb	97.960 %
Concentration per Run 2	98.452 %	98.710 %	0.187 ppb	0.197 ppb	97.710 %
Concentration per Run 3	98.337 %	99.500 %	0.192 ppb	0.204 ppb	97.322 %
Concentration RSD	1.6 %	2.7 %	5.6 %	2.3 %	0.3 %

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Analysis index: 5 Analysis started at: 12/17/2021 8:52:43 AM
 Analysis label: 1/100 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	99.807 %	105.033 %	1.058 ppb	98.988 ppb	107.938 ppb	1.324 ppb	92.676 ppb	175.058 ppb	105.400 %
Concentration per Run 1	100.227 %	102.549 %	1.055 ppb	97.792 ppb	108.712 ppb	1.823 ppb	63.878 ppb	174.199 ppb	105.558 %
Concentration per Run 2	99.322 %	102.549 %	1.097 ppb	95.776 ppb	117.349 ppb	1.178 ppb	120.548 ppb	109.607 ppb	106.682 %
Concentration per Run 3	99.871 %	110.000 %	1.021 ppb	103.396 ppb	97.753 ppb	0.972 ppb	93.602 ppb	241.369 ppb	103.959 %
Concentration RSD	0.5 %	4.1 %	3.6 %	4.0 %	9.1 %	33.5 %	30.6 %	37.6 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.003 ppb	1.085 ppb	1.016 ppb	113.824 ppb	1.031 ppb	1.261 ppb	1.097 ppb	1.251 ppb	96.148 %
Concentration per Run 1	0.974 ppb	1.157 ppb	0.965 ppb	114.355 ppb	1.015 ppb	1.230 ppb	1.101 ppb	1.338 ppb	92.523 %
Concentration per Run 2	1.124 ppb	0.981 ppb	1.126 ppb	110.381 ppb	1.037 ppb	1.229 ppb	1.015 ppb	1.210 ppb	97.906 %
Concentration per Run 3	0.911 ppb	1.117 ppb	0.956 ppb	116.735 ppb	1.039 ppb	1.325 ppb	1.175 ppb	1.206 ppb	98.017 %
Concentration RSD	10.9 %	8.5 %	9.4 %	2.8 %	1.3 %	4.4 %	7.3 %	6.0 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.089 ppb	1.167 ppb	0.983 ppb	97.328 %	1.003 ppb	1.055 ppb	98.229 %	0.995 ppb	0.933 ppb
Concentration per Run 1	1.119 ppb	1.491 ppb	0.990 ppb	96.254 %	1.011 ppb	1.094 ppb	94.769 %	1.005 ppb	0.900 ppb
Concentration per Run 2	1.153 ppb	1.126 ppb	0.963 ppb	96.881 %	1.020 ppb	0.961 ppb	99.344 %	1.005 ppb	0.889 ppb
Concentration per Run 3	0.996 ppb	0.883 ppb	0.995 ppb	98.849 %	0.980 ppb	1.112 ppb	100.573 %	0.974 ppb	1.010 ppb
Concentration RSD	7.6 %	26.3 %	1.8 %	1.4 %	2.1 %	7.8 %	3.1 %	1.8 %	7.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.854 %	98.271 %	0.868 ppb	0.974 ppb	98.287 %
Concentration per Run 1	96.604 %	96.331 %	0.815 ppb	0.976 ppb	98.313 %
Concentration per Run 2	97.523 %	98.625 %	0.882 ppb	0.972 ppb	99.033 %
Concentration per Run 3	99.435 %	99.857 %	0.906 ppb	0.974 ppb	97.515 %
Concentration RSD	1.5 %	1.8 %	5.4 %	0.2 %	0.8 %

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Analysis index: 6 Analysis started at: 12/17/2021 8:57:31 AM
 Analysis label: 10/1000 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	99.298 %	102.092 %	10.561 ppb	1,016.935 ppb	1,046.111 ppb	9.577 ppb	1,016.074 ppb	1,151.026 ppb	104.385 %
Concentration per Run 1	99.041 %	100.588 %	10.295 ppb	1,003.384 ppb	1,029.519 ppb	8.321 ppb	926.289 ppb	1,159.520 ppb	104.737 %
Concentration per Run 2	98.991 %	104.118 %	10.888 ppb	1,017.787 ppb	1,062.516 ppb	11.471 ppb	1,062.171 ppb	1,205.281 ppb	104.372 %
Concentration per Run 3	99.863 %	101.569 %	10.500 ppb	1,029.632 ppb	1,046.298 ppb	8.940 ppb	1,059.762 ppb	1,088.278 ppb	104.045 %
Concentration RSD	0.5 %	1.8 %	2.9 %	1.3 %	1.6 %	17.4 %	7.7 %	5.1 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	9.878 ppb	10.543 ppb	10.473 ppb	1,026.347 ppb	10.661 ppb	10.643 ppb	10.698 ppb	11.446 ppb	92.072 %
Concentration per Run 1	10.226 ppb	10.599 ppb	10.735 ppb	1,041.665 ppb	10.748 ppb	11.239 ppb	10.721 ppb	11.689 ppb	89.260 %
Concentration per Run 2	9.183 ppb	10.233 ppb	10.259 ppb	1,010.445 ppb	10.739 ppb	9.877 ppb	10.469 ppb	11.263 ppb	93.302 %
Concentration per Run 3	10.225 ppb	10.795 ppb	10.423 ppb	1,026.930 ppb	10.498 ppb	10.812 ppb	10.905 ppb	11.386 ppb	93.654 %
Concentration RSD	6.1 %	2.7 %	2.3 %	1.5 %	1.3 %	6.5 %	2.0 %	1.9 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	9.981 ppb	10.611 ppb	10.008 ppb	96.581 %	10.052 ppb	9.970 ppb	97.546 %	9.860 ppb	9.998 ppb
Concentration per Run 1	9.896 ppb	10.253 ppb	9.841 ppb	95.345 %	10.102 ppb	10.166 ppb	93.963 %	10.062 ppb	10.298 ppb
Concentration per Run 2	9.970 ppb	9.604 ppb	10.105 ppb	97.781 %	10.071 ppb	9.782 ppb	99.807 %	9.679 ppb	10.104 ppb
Concentration per Run 3	10.076 ppb	11.977 ppb	10.078 ppb	96.618 %	9.984 ppb	9.963 ppb	98.867 %	9.840 ppb	9.591 ppb
Concentration RSD	0.9 %	11.6 %	1.5 %	1.3 %	0.6 %	1.9 %	3.2 %	1.9 %	3.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.122 %	96.445 %	8.776 ppb	9.711 ppb	97.915 %
Concentration per Run 1	95.341 %	94.020 %	8.448 ppb	9.620 ppb	97.871 %
Concentration per Run 2	96.735 %	98.324 %	8.822 ppb	9.672 ppb	98.243 %
Concentration per Run 3	96.290 %	96.993 %	9.059 ppb	9.840 ppb	97.632 %
Concentration RSD	0.7 %	2.3 %	3.5 %	1.2 %	0.3 %

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12/17/2021 9:47:26 PM



Analysis index: 7 Analysis started at: 12/17/2021 9:02:20 AM
 Analysis label: 60/6000 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.403 %	99.150 %	61.374 ppb	6,240.090 ppb	6,365.639 ppb	57.530 ppb	6,225.725 ppb	6,204.233 ppb	111.374 %
Concentration per Run 1	95.596 %	101.373 %	61.526 ppb	6,012.864 ppb	6,123.815 ppb	56.329 ppb	5,935.116 ppb	5,762.982 ppb	111.816 %
Concentration per Run 2	95.096 %	97.059 %	61.455 ppb	6,437.203 ppb	6,482.852 ppb	56.499 ppb	6,472.880 ppb	6,716.678 ppb	111.018 %
Concentration per Run 3	95.518 %	99.020 %	61.142 ppb	6,270.204 ppb	6,490.250 ppb	59.761 ppb	6,269.180 ppb	6,133.039 ppb	111.287 %
Concentration RSD	0.3 %	2.2 %	0.3 %	3.4 %	3.3 %	3.4 %	4.4 %	7.7 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	60.553 ppb	61.017 ppb	60.246 ppb	5,994.232 ppb	59.987 ppb	60.555 ppb	60.967 ppb	61.345 ppb	90.726 %
Concentration per Run 1	60.259 ppb	61.319 ppb	62.166 ppb	5,960.910 ppb	60.662 ppb	60.518 ppb	61.669 ppb	60.823 ppb	87.407 %
Concentration per Run 2	61.073 ppb	62.175 ppb	60.868 ppb	6,039.384 ppb	60.415 ppb	59.799 ppb	60.085 ppb	62.829 ppb	91.614 %
Concentration per Run 3	60.327 ppb	59.557 ppb	57.703 ppb	5,982.402 ppb	58.885 ppb	61.349 ppb	61.146 ppb	60.384 ppb	93.157 %
Concentration RSD	0.7 %	2.2 %	3.8 %	0.7 %	1.6 %	1.3 %	1.3 %	2.1 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	59.502 ppb	58.736 ppb	58.766 ppb	92.447 %	60.802 ppb	60.768 ppb	94.505 %	60.580 ppb	60.496 ppb
Concentration per Run 1	57.578 ppb	56.147 ppb	57.395 ppb	91.313 %	61.247 ppb	60.245 ppb	92.523 %	58.921 ppb	59.363 ppb
Concentration per Run 2	59.953 ppb	59.891 ppb	59.883 ppb	92.562 %	59.870 ppb	59.792 ppb	96.547 %	61.319 ppb	60.957 ppb
Concentration per Run 3	60.975 ppb	60.170 ppb	59.019 ppb	93.465 %	61.290 ppb	62.266 ppb	94.445 %	61.502 ppb	61.167 ppb
Concentration RSD	2.9 %	3.8 %	2.1 %	1.2 %	1.3 %	2.2 %	2.1 %	2.4 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.208 %	95.360 %	57.641 ppb	59.124 ppb	95.862 %
Concentration per Run 1	92.008 %	92.361 %	56.174 ppb	58.091 ppb	95.599 %
Concentration per Run 2	96.284 %	97.451 %	58.306 ppb	59.775 ppb	95.844 %
Concentration per Run 3	94.333 %	96.269 %	58.445 ppb	59.506 ppb	96.141 %
Concentration RSD	2.3 %	2.8 %	2.2 %	1.5 %	0.3 %

Alpha ICPMSQ Full

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Analysis index: 8 Analysis started at: 12/17/2021 9:07:10 AM
 Analysis label: 120/12000 Cal User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.075 %	102.353 %	119.266 ppb	11,878.553 ppb	11,813.274 ppb	121.267 ppb	11,885.884 ppb	11,884.672 ppb	117.799 %
Concentration per Run 1	93.463 %	98.235 %	118.856 ppb	11,998.037 ppb	11,956.231 ppb	119.160 ppb	11,973.105 ppb	12,165.251 ppb	116.738 %
Concentration per Run 2	93.222 %	104.118 %	119.149 ppb	11,613.059 ppb	11,510.576 ppb	122.466 ppb	11,553.748 ppb	11,927.504 ppb	117.670 %
Concentration per Run 3	92.539 %	104.706 %	119.792 ppb	12,024.562 ppb	11,973.015 ppb	122.173 ppb	12,130.798 ppb	11,561.263 ppb	118.988 %
Concentration RSD	0.5 %	3.5 %	0.4 %	1.9 %	2.2 %	1.5 %	2.5 %	2.6 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	119.734 ppb	119.445 ppb	119.838 ppb	12,000.574 ppb	119.951 ppb	119.667 ppb	119.458 ppb	119.204 ppb	87.249 %
Concentration per Run 1	119.116 ppb	120.970 ppb	117.642 ppb	12,156.586 ppb	124.030 ppb	122.546 ppb	124.025 ppb	121.565 ppb	84.140 %
Concentration per Run 2	117.991 ppb	117.031 ppb	119.855 ppb	11,692.218 ppb	116.539 ppb	117.082 ppb	116.251 ppb	115.862 ppb	89.476 %
Concentration per Run 3	122.095 ppb	120.335 ppb	122.016 ppb	12,152.919 ppb	119.284 ppb	119.372 ppb	118.097 ppb	120.184 ppb	88.133 %
Concentration RSD	1.8 %	1.8 %	1.8 %	2.2 %	3.2 %	2.3 %	3.4 %	2.5 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	120.250 ppb	120.580 ppb	120.616 ppb	89.377 %	119.594 ppb	119.618 ppb	92.608 %	119.721 ppb	119.753 ppb
Concentration per Run 1	121.008 ppb	119.944 ppb	117.470 ppb	89.083 %	120.664 ppb	120.064 ppb	89.088 %	121.325 ppb	117.827 ppb
Concentration per Run 2	118.997 ppb	120.273 ppb	121.765 ppb	89.869 %	118.067 ppb	118.229 ppb	95.050 %	118.481 ppb	119.559 ppb
Concentration per Run 3	120.744 ppb	121.522 ppb	122.615 ppb	89.180 %	120.052 ppb	120.562 ppb	93.684 %	119.359 ppb	121.873 ppb
Concentration RSD	0.9 %	0.7 %	2.3 %	0.5 %	1.1 %	1.0 %	3.4 %	1.2 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.879 %	94.402 %	121.282 ppb	120.462 ppb	91.109 %
Concentration per Run 1	91.390 %	92.400 %	120.572 ppb	120.714 ppb	89.714 %
Concentration per Run 2	93.552 %	94.950 %	121.247 ppb	120.522 ppb	92.318 %
Concentration per Run 3	93.695 %	95.856 %	122.028 ppb	120.152 ppb	91.296 %
Concentration RSD	1.4 %	1.9 %	0.6 %	0.2 %	1.4 %

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Analysis index: 9 Analysis started at: 12/17/2021 9:12:00 AM
Analysis label: Cap on User name: ALPHALAB\Metals-Instrument

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 10
Analysis label: Wrong location

Analysis started at: 12/17/2021 9:16:52 AM
User name: ALPHALABMetals-Instrument

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 11 Analysis started at: 12/17/2021 9:21:44 AM
 Analysis label: Sr 200ppb User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.286 %	99.216 %	0.005 ppb	0.200 ppb	0.064 ppb	0.260 ppb	-11.312 ppb	1.074 ppb	99.612 %
Concentration per Run 1	92.631 %	92.549 %	0.014 ppb	-1.123 ppb	0.451 ppb	0.436 ppb	-10.521 ppb	-44.953 ppb	98.638 %
Concentration per Run 2	92.182 %	110.588 %	0.001 ppb	-3.059 ppb	-0.679 ppb	-0.050 ppb	-14.962 ppb	175.005 ppb	100.128 %
Concentration per Run 3	92.045 %	94.510 %	-0.001 ppb	4.782 ppb	0.421 ppb	0.394 ppb	-8.454 ppb	-126.832 ppb	100.072 %
Concentration RSD	0.3 %	10.0 %	174.0 %	2,045.9 %	999.2 %	103.4 %	29.4 %	14,539.0 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.018 ppb	0.027 ppb	0.098 ppb	6.798 ppb	0.006 ppb	0.006 ppb	0.040 ppb	1.723 ppb	89.876 %
Concentration per Run 1	-0.035 ppb	0.004 ppb	0.037 ppb	7.933 ppb	0.011 ppb	0.095 ppb	0.033 ppb	1.808 ppb	87.813 %
Concentration per Run 2	-0.011 ppb	0.025 ppb	0.066 ppb	6.901 ppb	0.006 ppb	-0.064 ppb	0.027 ppb	1.657 ppb	90.216 %
Concentration per Run 3	-0.008 ppb	0.051 ppb	0.190 ppb	5.560 ppb	0.002 ppb	-0.013 ppb	0.059 ppb	1.704 ppb	91.600 %
Concentration RSD	81.7 %	88.0 %	83.4 %	17.5 %	75.8 %	1,382.5 %	42.9 %	4.5 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.037 ppb	0.166 ppb	191.136 ppb	94.628 %	0.013 ppb	0.005 ppb	96.542 %	0.009 ppb	-0.058 ppb
Concentration per Run 1	0.012 ppb	0.008 ppb	185.563 ppb	91.820 %	0.009 ppb	0.000 ppb	92.430 %	0.007 ppb	-0.066 ppb
Concentration per Run 2	0.029 ppb	0.306 ppb	194.684 ppb	95.858 %	0.016 ppb	0.003 ppb	98.321 %	0.010 ppb	-0.050 ppb
Concentration per Run 3	0.070 ppb	0.185 ppb	193.159 ppb	96.205 %	0.014 ppb	0.011 ppb	98.873 %	0.010 ppb	-0.058 ppb
Concentration RSD	79.9 %	90.2 %	2.6 %	2.6 %	28.4 %	124.7 %	3.7 %	20.1 %	13.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.004 %	96.598 %	0.686 ppb	0.009 ppb	97.285 %
Concentration per Run 1	90.607 %	93.249 %	0.693 ppb	0.009 ppb	95.287 %
Concentration per Run 2	95.722 %	97.688 %	0.676 ppb	0.009 ppb	98.451 %
Concentration per Run 3	95.683 %	98.858 %	0.688 ppb	0.010 ppb	98.115 %
Concentration RSD	3.1 %	3.1 %	1.3 %	10.3 %	1.8 %

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Analysis index: 12 Analysis started at: 12/17/2021 9:26:37 AM
 Analysis label: ICV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.975 %	103.595 %	51.427 ppb	5,097.556 ppb	5,127.444 ppb	50.330 ppb	5,300.805 ppb	5,388.481 ppb	102.708 %
Concentration per Run 1	94.457 %	96.471 %	50.852 ppb	5,371.825 ppb	5,296.413 ppb	50.582 ppb	4,985.221 ppb	5,349.588 ppb	103.806 %
Concentration per Run 2	92.540 %	105.098 %	51.393 ppb	5,018.842 ppb	5,187.549 ppb	52.951 ppb	5,461.986 ppb	5,316.309 ppb	101.697 %
Concentration per Run 3	91.927 %	109.216 %	52.037 ppb	4,902.002 ppb	4,898.370 ppb	47.457 ppb	5,455.207 ppb	5,499.546 ppb	102.622 %
Recovery Percentage 1			102.855 %	101.951 %	102.549 %	100.660 %	106.016 %	107.770 %	
Concentration RSD	1.4 %	6.3 %	1.2 %	4.8 %	4.0 %	5.5 %	5.2 %	1.8 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.523 ppb	52.287 ppb	51.292 ppb	5,180.236 ppb	52.574 ppb	51.208 ppb	51.518 ppb	52.879 ppb	88.914 %
Concentration per Run 1	52.847 ppb	53.342 ppb	50.484 ppb	5,267.683 ppb	53.379 ppb	51.290 ppb	51.936 ppb	53.661 ppb	86.041 %
Concentration per Run 2	51.818 ppb	52.634 ppb	53.485 ppb	5,268.909 ppb	53.377 ppb	50.914 ppb	51.604 ppb	53.015 ppb	89.669 %
Concentration per Run 3	49.906 ppb	50.885 ppb	49.906 ppb	5,004.117 ppb	50.968 ppb	51.420 ppb	51.016 ppb	51.960 ppb	91.032 %
Recovery Percentage 1	103.047 %	104.574 %	102.583 %	103.605 %	105.149 %	102.416 %	103.037 %	105.757 %	
Concentration RSD	2.9 %	2.4 %	3.7 %	2.9 %	2.6 %	0.5 %	0.9 %	1.6 %	2.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	51.294 ppb	50.337 ppb	51.433 ppb	93.122 %	53.098 ppb	51.372 ppb	95.890 %	51.269 ppb	50.385 ppb
Concentration per Run 1	51.996 ppb	48.086 ppb	50.041 ppb	92.798 %	52.844 ppb	51.366 ppb	93.631 %	50.965 ppb	49.185 ppb
Concentration per Run 2	50.802 ppb	50.066 ppb	52.572 ppb	92.545 %	52.795 ppb	51.481 ppb	97.319 %	51.393 ppb	50.925 ppb
Concentration per Run 3	51.083 ppb	52.860 ppb	51.687 ppb	94.024 %	53.655 ppb	51.269 ppb	96.720 %	51.447 ppb	51.045 ppb
Recovery Percentage 1	102.587 %	100.674 %	102.867 %		106.197 %	102.744 %		102.537 %	100.770 %
Concentration RSD	1.2 %	4.8 %	2.5 %	0.8 %	0.9 %	0.2 %	2.1 %	0.5 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.405 %	96.329 %	49.381 ppb	50.059 ppb	97.342 %
Concentration per Run 1	92.017 %	93.948 %	47.470 ppb	49.223 ppb	97.801 %
Concentration per Run 2	93.455 %	96.734 %	50.152 ppb	50.389 ppb	96.578 %
Concentration per Run 3	94.741 %	98.306 %	50.523 ppb	50.564 ppb	97.648 %
Recovery Percentage 1			98.763 %	100.118 %	
Concentration RSD	1.5 %	2.3 %	3.4 %	1.5 %	0.7 %

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Analysis index: 13 Analysis started at: 12/17/2021 9:31:27 AM
 Analysis label: ICB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.399 %	98.693 %	0.007 ppb	-3.451 ppb	-0.679 ppb	-0.657 ppb	-6.470 ppb	2.726 ppb	91.851 %
Concentration per Run 1	90.769 %	97.059 %	0.006 ppb	-2.879 ppb	-0.679 ppb	-0.472 ppb	-19.060 ppb	3.061 ppb	90.802 %
Concentration per Run 2	91.743 %	95.294 %	0.006 ppb	-3.673 ppb	-0.679 ppb	-0.790 ppb	-3.244 ppb	-4.874 ppb	93.228 %
Concentration per Run 3	91.685 %	103.726 %	0.010 ppb	-3.801 ppb	-0.679 ppb	-0.710 ppb	2.894 ppb	9.990 ppb	91.522 %
Recovery Percentage 1			1.407 %	-3.451 %	-0.969 %	-6.575 %	-6.470 %	2.726 %	
Concentration RSD	0.6 %	4.5 %	34.7 %	14.5 %	0.0 %	25.2 %	175.1 %	272.9 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.051 ppb	0.000 ppb	-0.021 ppb	14.238 ppb	0.002 ppb	0.002 ppb	0.000 ppb	-0.235 ppb	91.119 %
Concentration per Run 1	-0.022 ppb	-0.006 ppb	-0.006 ppb	15.557 ppb	0.002 ppb	0.007 ppb	-0.043 ppb	-0.188 ppb	88.774 %
Concentration per Run 2	-0.051 ppb	-0.011 ppb	-0.086 ppb	14.049 ppb	0.002 ppb	-0.013 ppb	0.028 ppb	-0.313 ppb	91.465 %
Concentration per Run 3	-0.080 ppb	0.016 ppb	0.028 ppb	13.107 ppb	0.001 ppb	0.013 ppb	0.015 ppb	-0.203 ppb	93.119 %
Recovery Percentage 1	-1.018 %	-0.041 %	-2.134 %	28.475 %	0.323 %	0.114 %	0.010 %	-2.347 %	
Concentration RSD	57.1 %	3,511.8 %	273.8 %	8.7 %	7.1 %	591.2 %	37,149.1 %	29.2 %	2.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.039 ppb	0.160 ppb	-0.005 ppb	95.958 %	-0.001 ppb	0.002 ppb	96.903 %	0.062 ppb	-0.069 ppb
Concentration per Run 1	0.038 ppb	0.204 ppb	-0.009 ppb	94.496 %	-0.003 ppb	0.003 ppb	93.822 %	0.064 ppb	-0.066 ppb
Concentration per Run 2	0.028 ppb	0.124 ppb	-0.015 ppb	96.405 %	-0.001 ppb	0.000 ppb	98.083 %	0.064 ppb	-0.075 ppb
Concentration per Run 3	0.052 ppb	0.151 ppb	0.009 ppb	96.971 %	0.000 ppb	0.003 ppb	98.805 %	0.058 ppb	-0.067 ppb
Recovery Percentage 1	7.890 %	3.193 %	-1.067 %		-0.265 %	0.969 %		1.549 %	-13.848 %
Concentration RSD	30.5 %	25.4 %	233.0 %	1.4 %	132.6 %	86.7 %	2.8 %	5.2 %	7.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.449 %	97.576 %	0.767 ppb	0.008 ppb	97.724 %
Concentration per Run 1	92.871 %	94.944 %	0.824 ppb	0.011 ppb	95.907 %
Concentration per Run 2	94.959 %	98.426 %	0.780 ppb	0.008 ppb	98.387 %
Concentration per Run 3	95.518 %	99.359 %	0.696 ppb	0.006 ppb	98.878 %
Recovery Percentage 1			76.672 %	0.831 %	
Concentration RSD	1.5 %	2.4 %	8.4 %	32.7 %	1.6 %

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Analysis index: 14 Analysis started at: 12/17/2021 9:42:02 AM
 Analysis label: LLCCV User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.503 %	101.961 %	0.354 ppb	104.659 ppb	77.948 ppb	12.961 ppb	112.724 ppb	209.534 ppb	95.484 %
Concentration per Run 1	92.573 %	101.569 %	0.379 ppb	102.072 ppb	79.083 ppb	12.180 ppb	102.305 ppb	239.811 ppb	95.015 %
Concentration per Run 2	92.749 %	95.882 %	0.351 ppb	108.929 ppb	78.910 ppb	14.428 ppb	132.711 ppb	189.102 ppb	95.845 %
Concentration per Run 3	92.188 %	108.431 %	0.331 ppb	102.978 ppb	75.851 ppb	12.273 ppb	103.157 ppb	199.689 ppb	95.593 %
Recovery Percentage 1			70.758 %	104.659 %	111.354 %	129.607 %	112.724 %	209.534 %	
Concentration RSD	0.3 %	6.2 %	6.8 %	3.6 %	2.3 %	9.8 %	15.4 %	12.8 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	5.173 ppb	0.607 ppb	0.972 ppb	57.315 ppb	0.549 ppb	2.010 ppb	1.286 ppb	11.788 ppb	93.483 %
Concentration per Run 1	5.144 ppb	0.680 ppb	0.840 ppb	59.169 ppb	0.532 ppb	2.027 ppb	1.228 ppb	12.054 ppb	88.947 %
Concentration per Run 2	5.309 ppb	0.628 ppb	1.245 ppb	51.748 ppb	0.576 ppb	2.007 ppb	1.574 ppb	11.556 ppb	95.767 %
Concentration per Run 3	5.068 ppb	0.513 ppb	0.831 ppb	61.029 ppb	0.540 ppb	1.995 ppb	1.057 ppb	11.755 ppb	95.733 %
Recovery Percentage 1	103.468 %	60.728 %	97.214 %	114.631 %	109.851 %	100.498 %	128.637 %	117.883 %	
Concentration RSD	2.4 %	14.1 %	24.3 %	8.6 %	4.3 %	0.8 %	20.5 %	2.1 %	4.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.571 ppb	5.211 ppb	0.539 ppb	96.172 %	0.274 ppb	0.186 ppb	97.408 %	2.184 ppb	0.560 ppb
Concentration per Run 1	0.541 ppb	4.924 ppb	0.472 ppb	94.357 %	0.268 ppb	0.190 ppb	93.725 %	2.152 ppb	0.528 ppb
Concentration per Run 2	0.638 ppb	5.248 ppb	0.539 ppb	96.968 %	0.312 ppb	0.166 ppb	99.987 %	2.200 ppb	0.559 ppb
Concentration per Run 3	0.535 ppb	5.461 ppb	0.607 ppb	97.192 %	0.244 ppb	0.202 ppb	98.511 %	2.201 ppb	0.594 ppb
Recovery Percentage 1	114.265 %	104.220 %	107.874 %		68.624 %	93.168 %		54.610 %	112.082 %
Concentration RSD	10.1 %	5.2 %	12.5 %	1.6 %	12.6 %	9.8 %	3.4 %	1.3 %	5.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.808 %	97.958 %	0.676 ppb	0.548 ppb	99.052 %
Concentration per Run 1	92.941 %	95.294 %	0.657 ppb	0.538 ppb	99.117 %
Concentration per Run 2	95.312 %	99.184 %	0.676 ppb	0.559 ppb	99.272 %
Concentration per Run 3	96.172 %	99.397 %	0.694 ppb	0.548 ppb	98.767 %
Recovery Percentage 1			135.172 %	109.648 %	
Concentration RSD	1.8 %	2.4 %	2.8 %	1.9 %	0.3 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 15 Analysis started at: 12/17/2021 9:46:55 AM
Analysis label: Cap on User name: ALPHALAB\Metals-Instrument

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 16 Analysis started at: 12/17/2021 9:49:17 AM
 Analysis label: ICSA User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.594 %	97.908 %	-0.001 ppb	49,048.999 ppb	19,497.446 ppb	19,018.106 ppb	20,141.016 ppb	61,231.931 ppb	108.480 %
Concentration per Run 1	87.582 %	93.725 %	0.002 ppb	49,634.805 ppb	19,703.352 ppb	18,376.692 ppb	19,787.926 ppb	59,586.000 ppb	108.662 %
Concentration per Run 2	88.735 %	95.098 %	-0.003 ppb	50,762.426 ppb	20,363.689 ppb	19,970.919 ppb	20,381.211 ppb	63,046.635 ppb	108.892 %
Concentration per Run 3	86.465 %	104.902 %	0.000 ppb	46,749.766 ppb	18,425.296 ppb	18,706.708 ppb	20,253.912 ppb	61,063.158 ppb	107.885 %
Recovery Percentage 1				98.098 %	97.487 %	95.091 %	100.705 %	102.053 %	
Concentration RSD	1.3 %	6.2 %	431.0 %	4.2 %	5.1 %	4.4 %	1.6 %	2.8 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.019 ppb	0.322 ppb	0.616 ppb	48,561.642 ppb	0.454 ppb	0.650 ppb	0.244 ppb	1.143 ppb	82.923 %
Concentration per Run 1	-0.002 ppb	0.408 ppb	0.537 ppb	47,797.596 ppb	0.476 ppb	0.771 ppb	0.157 ppb	1.164 ppb	81.254 %
Concentration per Run 2	-0.034 ppb	0.286 ppb	0.584 ppb	49,553.382 ppb	0.393 ppb	0.606 ppb	0.406 ppb	0.980 ppb	83.930 %
Concentration per Run 3	-0.021 ppb	0.272 ppb	0.728 ppb	48,333.947 ppb	0.493 ppb	0.573 ppb	0.169 ppb	1.284 ppb	83.584 %
Recovery Percentage 1				97.123 %					
Concentration RSD	84.8 %	23.3 %	16.1 %	1.9 %	11.8 %	16.3 %	57.6 %	13.4 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.108 ppb	-0.015 ppb	0.551 ppb	82.191 %	0.015 ppb	0.060 ppb	86.243 %	0.103 ppb	0.162 ppb
Concentration per Run 1	0.061 ppb	-0.071 ppb	0.545 ppb	81.490 %	0.016 ppb	0.057 ppb	83.674 %	0.071 ppb	0.114 ppb
Concentration per Run 2	0.131 ppb	0.094 ppb	0.525 ppb	82.968 %	0.014 ppb	0.067 ppb	88.973 %	0.104 ppb	0.245 ppb
Concentration per Run 3	0.132 ppb	-0.068 ppb	0.582 ppb	82.114 %	0.014 ppb	0.056 ppb	86.081 %	0.133 ppb	0.128 ppb
Recovery Percentage 1									
Concentration RSD	37.9 %	618.5 %	5.2 %	0.9 %	9.0 %	10.4 %	3.1 %	30.3 %	44.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	81.153 %	82.680 %	0.224 ppb	0.115 ppb	85.243 %
Concentration per Run 1	79.564 %	80.401 %	0.242 ppb	0.116 ppb	86.022 %
Concentration per Run 2	82.457 %	84.462 %	0.219 ppb	0.113 ppb	85.197 %
Concentration per Run 3	81.436 %	83.178 %	0.211 ppb	0.117 ppb	84.510 %
Recovery Percentage 1					
Concentration RSD	1.8 %	2.5 %	7.2 %	1.8 %	0.9 %

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Analysis index: 17 Analysis started at: 12/17/2021 9:54:09 AM
 Analysis label: Rinse User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	86.679 %	99.281 %	-0.002 ppb	-2.188 ppb	0.032 ppb	-0.379 ppb	-0.853 ppb	-2.339 ppb	87.224 %
Concentration per Run 1	86.295 %	103.529 %	-0.009 ppb	-4.611 ppb	0.365 ppb	-0.187 ppb	6.768 ppb	-5.092 ppb	86.126 %
Concentration per Run 2	86.008 %	99.020 %	0.005 ppb	-0.862 ppb	-0.679 ppb	-0.477 ppb	-11.110 ppb	-4.843 ppb	87.383 %
Concentration per Run 3	87.733 %	95.294 %	0.000 ppb	-1.092 ppb	0.410 ppb	-0.473 ppb	1.783 ppb	2.918 ppb	88.164 %
Concentration RSD	1.1 %	4.2 %	415.2 %	96.0 %	1,921.1 %	43.9 %	1,081.3 %	194.7 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.046 ppb	0.005 ppb	0.007 ppb	44.942 ppb	0.000 ppb	0.061 ppb	-0.012 ppb	0.168 ppb	88.537 %
Concentration per Run 1	-0.036 ppb	0.004 ppb	0.055 ppb	52.603 ppb	0.002 ppb	-0.041 ppb	-0.031 ppb	0.155 ppb	85.699 %
Concentration per Run 2	-0.065 ppb	0.004 ppb	-0.066 ppb	43.611 ppb	0.002 ppb	0.110 ppb	-0.021 ppb	0.144 ppb	86.852 %
Concentration per Run 3	-0.037 ppb	0.008 ppb	0.031 ppb	38.611 ppb	-0.003 ppb	0.112 ppb	0.016 ppb	0.204 ppb	93.061 %
Concentration RSD	35.5 %	46.9 %	970.5 %	15.8 %	950.6 %	144.7 %	211.2 %	19.1 %	4.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.007 ppb	0.028 ppb	-0.006 ppb	91.896 %	0.000 ppb	0.002 ppb	93.870 %	-0.006 ppb	-0.066 ppb
Concentration per Run 1	0.013 ppb	-0.063 ppb	0.008 ppb	91.494 %	0.000 ppb	0.000 ppb	91.394 %	-0.014 ppb	-0.066 ppb
Concentration per Run 2	0.013 ppb	0.178 ppb	-0.016 ppb	90.959 %	-0.002 ppb	0.003 ppb	96.248 %	0.003 ppb	-0.058 ppb
Concentration per Run 3	-0.005 ppb	-0.030 ppb	-0.009 ppb	93.235 %	0.002 ppb	0.003 ppb	93.968 %	-0.007 ppb	-0.075 ppb
Concentration RSD	148.4 %	462.6 %	216.9 %	1.3 %	1,090.8 %	86.6 %	2.6 %	135.8 %	12.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.412 %	95.192 %	0.102 ppb	0.002 ppb	94.677 %
Concentration per Run 1	89.540 %	91.958 %	0.089 ppb	0.002 ppb	92.745 %
Concentration per Run 2	92.641 %	96.690 %	0.107 ppb	0.002 ppb	95.207 %
Concentration per Run 3	92.054 %	96.928 %	0.109 ppb	0.002 ppb	96.080 %
Concentration RSD	1.8 %	2.9 %	10.7 %	19.6 %	1.8 %

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Analysis index: 18 Analysis started at: 12/17/2021 9:58:55 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.449 %	98.627 %	60.083 ppb	6,047.793 ppb	6,053.846 ppb	61.897 ppb	5,922.357 ppb	6,088.490 ppb	102.206 %
Concentration per Run 1	89.528 %	94.902 %	59.704 ppb	6,049.587 ppb	6,091.149 ppb	63.508 ppb	5,638.322 ppb	5,981.470 ppb	101.956 %
Concentration per Run 2	89.231 %	105.098 %	60.681 ppb	5,814.508 ppb	5,822.799 ppb	61.003 ppb	5,908.033 ppb	5,953.226 ppb	102.426 %
Concentration per Run 3	89.588 %	95.882 %	59.865 ppb	6,279.284 ppb	6,247.590 ppb	61.179 ppb	6,220.715 ppb	6,330.774 ppb	102.238 %
Recovery Percentage 1			100.139 %	100.797 %	100.897 %	103.162 %	98.706 %	101.475 %	
Concentration RSD	0.2 %	5.7 %	0.9 %	3.8 %	3.5 %	2.3 %	4.9 %	3.5 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	58.434 ppb	58.538 ppb	60.602 ppb	5,865.708 ppb	58.694 ppb	58.785 ppb	58.297 ppb	59.328 ppb	89.207 %
Concentration per Run 1	58.046 ppb	57.526 ppb	59.323 ppb	5,776.651 ppb	59.488 ppb	58.578 ppb	59.259 ppb	59.632 ppb	86.137 %
Concentration per Run 2	57.994 ppb	58.812 ppb	60.556 ppb	5,829.121 ppb	58.128 ppb	59.527 ppb	59.497 ppb	60.130 ppb	87.947 %
Concentration per Run 3	59.263 ppb	59.276 ppb	61.928 ppb	5,991.351 ppb	58.466 ppb	58.248 ppb	56.135 ppb	58.222 ppb	93.536 %
Recovery Percentage 1	97.390 %	97.564 %	101.004 %	97.762 %	97.823 %	97.974 %	97.162 %	98.880 %	
Concentration RSD	1.2 %	1.5 %	2.2 %	1.9 %	1.2 %	1.1 %	3.2 %	1.7 %	4.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	59.150 ppb	57.429 ppb	60.132 ppb	91.697 %	58.897 ppb	59.481 ppb	94.132 %	59.638 ppb	59.681 ppb
Concentration per Run 1	57.851 ppb	56.820 ppb	58.123 ppb	90.828 %	58.957 ppb	60.247 ppb	92.403 %	57.851 ppb	57.343 ppb
Concentration per Run 2	62.045 ppb	57.525 ppb	61.995 ppb	92.148 %	58.646 ppb	59.216 ppb	95.314 %	60.797 ppb	61.044 ppb
Concentration per Run 3	57.553 ppb	57.942 ppb	60.278 ppb	92.115 %	59.087 ppb	58.980 ppb	94.677 %	60.266 ppb	60.656 ppb
Recovery Percentage 1	98.583 %	95.715 %	100.220 %		98.161 %	99.135 %		99.397 %	99.468 %
Concentration RSD	4.2 %	1.0 %	3.2 %	0.8 %	0.4 %	1.1 %	1.6 %	2.6 %	3.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.005 %	96.193 %	59.931 ppb	58.094 ppb	95.966 %
Concentration per Run 1	90.009 %	93.545 %	60.491 ppb	57.786 ppb	94.284 %
Concentration per Run 2	92.389 %	97.049 %	59.265 ppb	57.759 ppb	97.290 %
Concentration per Run 3	93.618 %	97.986 %	60.038 ppb	58.736 ppb	96.323 %
Recovery Percentage 1			99.886 %	96.823 %	
Concentration RSD	2.0 %	2.4 %	1.0 %	1.0 %	1.6 %

Alpha ICPMSQ Full

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Analysis index: 19 Analysis started at: 12/17/2021 10:03:47 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.277 %	103.333 %	0.002 ppb	-5.363 ppb	-0.339 ppb	-0.739 ppb	-16.082 ppb	7.915 ppb	86.826 %
Concentration per Run 1	89.014 %	100.196 %	-0.005 ppb	-8.068 ppb	-0.679 ppb	-0.794 ppb	-18.970 ppb	3.077 ppb	88.149 %
Concentration per Run 2	87.205 %	104.706 %	0.004 ppb	-2.158 ppb	-0.679 ppb	-0.712 ppb	-12.188 ppb	10.247 ppb	85.457 %
Concentration per Run 3	88.612 %	105.098 %	0.006 ppb	-5.862 ppb	0.339 ppb	-0.711 ppb	-17.089 ppb	10.422 ppb	86.871 %
Recovery Percentage 1			0.375 %	-5.363 %	-0.485 %	-7.390 %	-16.082 %	7.915 %	
Concentration RSD	1.1 %	2.6 %	318.4 %	55.7 %	173.2 %	6.4 %	21.8 %	52.9 %	1.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.047 ppb	0.011 ppb	-0.020 ppb	20.720 ppb	-0.003 ppb	-0.034 ppb	0.005 ppb	-0.103 ppb	89.044 %
Concentration per Run 1	-0.065 ppb	0.024 ppb	-0.003 ppb	20.384 ppb	-0.003 ppb	-0.037 ppb	-0.007 ppb	-0.138 ppb	83.834 %
Concentration per Run 2	-0.025 ppb	0.007 ppb	-0.048 ppb	24.070 ppb	-0.003 ppb	-0.003 ppb	0.015 ppb	-0.116 ppb	92.638 %
Concentration per Run 3	-0.052 ppb	0.003 ppb	-0.009 ppb	17.706 ppb	-0.003 ppb	-0.063 ppb	0.007 ppb	-0.056 ppb	90.658 %
Recovery Percentage 1	-0.945 %	1.110 %	-2.015 %	41.440 %	-0.544 %	-1.715 %	0.495 %	-1.034 %	
Concentration RSD	43.4 %	102.0 %	120.4 %	15.4 %	0.0 %	88.9 %	230.4 %	40.9 %	5.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.041 ppb	0.036 ppb	-0.011 ppb	94.927 %	0.003 ppb	0.003 ppb	97.365 %	0.000 ppb	-0.075 ppb
Concentration per Run 1	0.058 ppb	0.053 ppb	0.001 ppb	92.988 %	0.001 ppb	0.003 ppb	92.223 %	0.002 ppb	-0.074 ppb
Concentration per Run 2	0.036 ppb	0.044 ppb	-0.016 ppb	96.357 %	0.001 ppb	0.003 ppb	100.536 %	0.007 ppb	-0.067 ppb
Concentration per Run 3	0.029 ppb	0.010 ppb	-0.018 ppb	95.435 %	0.007 ppb	0.003 ppb	99.336 %	-0.008 ppb	-0.083 ppb
Recovery Percentage 1	8.205 %	0.715 %	-2.159 %		0.725 %	1.448 %		0.005 %	-14.970 %
Concentration RSD	37.7 %	63.1 %	97.7 %	1.8 %	124.4 %	3.8 %	4.6 %	3,558.0 %	11.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.901 %	97.187 %	0.206 ppb	0.007 ppb	97.087 %
Concentration per Run 1	90.550 %	93.266 %	0.205 ppb	0.009 ppb	94.277 %
Concentration per Run 2	94.556 %	99.507 %	0.214 ppb	0.007 ppb	97.926 %
Concentration per Run 3	93.597 %	98.788 %	0.198 ppb	0.004 ppb	99.057 %
Recovery Percentage 1			20.592 %	0.670 %	
Concentration RSD	2.3 %	3.5 %	3.8 %	43.4 %	2.6 %

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Analysis index: 20 Analysis started at: 12/17/2021 10:17:48 AM
 Analysis label: WG1582832-3D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.859 %	102.614 %	5.176 ppb	21,338.328 ppb	2,072.575 ppb	196.120 ppb	1,492.218 ppb	6,664.934 ppb	90.302 %
Concentration per Run 1	90.130 %	107.647 %	5.177 ppb	20,039.639 ppb	1,930.793 ppb	179.242 ppb	1,337.338 ppb	6,524.138 ppb	90.593 %
Concentration per Run 2	90.265 %	97.255 %	5.219 ppb	22,664.823 ppb	2,145.596 ppb	208.866 ppb	1,529.952 ppb	6,651.606 ppb	90.460 %
Concentration per Run 3	89.181 %	102.941 %	5.132 ppb	21,310.521 ppb	2,141.336 ppb	200.253 ppb	1,609.363 ppb	6,819.058 ppb	89.852 %
Concentration RSD	0.7 %	5.1 %	0.8 %	6.2 %	5.9 %	7.8 %	9.4 %	2.2 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	47.354 ppb	19.395 ppb	1,080.656 ppb	1,754.785 ppb	47.068 ppb	46.724 ppb	25.183 ppb	48.691 ppb	89.773 %
Concentration per Run 1	46.370 ppb	18.962 ppb	1,059.313 ppb	1,778.169 ppb	46.798 ppb	46.425 ppb	25.328 ppb	49.203 ppb	84.672 %
Concentration per Run 2	48.217 ppb	20.053 ppb	1,118.454 ppb	1,771.445 ppb	48.640 ppb	49.096 ppb	25.403 ppb	49.564 ppb	90.399 %
Concentration per Run 3	47.476 ppb	19.170 ppb	1,064.200 ppb	1,714.742 ppb	45.764 ppb	44.652 ppb	24.818 ppb	47.306 ppb	94.249 %
Concentration RSD	2.0 %	3.0 %	3.0 %	2.0 %	3.1 %	4.8 %	1.3 %	2.5 %	5.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	13.150 ppb	11.846 ppb	124.174 ppb	93.107 %	5.173 ppb	5.211 ppb	97.014 %	47.626 ppb	218.467 ppb
Concentration per Run 1	13.239 ppb	11.952 ppb	121.906 ppb	91.841 %	5.169 ppb	5.254 ppb	93.320 %	47.207 ppb	215.028 ppb
Concentration per Run 2	13.349 ppb	12.221 ppb	125.597 ppb	92.867 %	5.099 ppb	5.195 ppb	97.067 %	47.790 ppb	223.561 ppb
Concentration per Run 3	12.862 ppb	11.363 ppb	125.019 ppb	94.612 %	5.250 ppb	5.185 ppb	100.656 %	47.880 ppb	216.811 ppb
Concentration RSD	1.9 %	3.7 %	1.6 %	1.5 %	1.5 %	0.7 %	3.8 %	0.8 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.934 %	97.216 %	11.712 ppb	51.568 ppb	96.449 %
Concentration per Run 1	90.419 %	93.973 %	11.547 ppb	51.219 ppb	96.060 %
Concentration per Run 2	93.767 %	98.624 %	11.769 ppb	51.621 ppb	96.241 %
Concentration per Run 3	94.616 %	99.050 %	11.818 ppb	51.863 ppb	97.045 %
Concentration RSD	2.4 %	2.9 %	1.2 %	0.6 %	0.5 %

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12/17/2021 9:47:26 PM



Analysis index: 21 Analysis started at: 12/17/2021 10:22:36 AM
 Analysis label: WG1582832-5D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.358 %	99.020 %	48.893 ppb	26,808.018 ppb	6,186.056 ppb	49.778 ppb	5,378.356 ppb	11,138.677 ppb	96.717 %
Concentration per Run 1	90.548 %	99.608 %	48.682 ppb	26,059.220 ppb	6,043.187 ppb	46.349 ppb	5,406.734 ppb	11,196.498 ppb	96.373 %
Concentration per Run 2	90.576 %	99.020 %	48.615 ppb	27,143.617 ppb	6,186.584 ppb	50.494 ppb	5,352.613 ppb	11,386.547 ppb	97.231 %
Concentration per Run 3	89.951 %	98.431 %	49.382 ppb	27,221.217 ppb	6,328.397 ppb	52.491 ppb	5,375.722 ppb	10,832.987 ppb	96.546 %
Concentration RSD	0.4 %	0.6 %	0.9 %	2.4 %	2.3 %	6.3 %	0.5 %	2.5 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	46.486 ppb	47.064 ppb	1,107.446 ppb	6,314.600 ppb	47.201 ppb	46.921 ppb	46.253 ppb	47.575 ppb	91.284 %
Concentration per Run 1	44.635 ppb	46.019 ppb	1,068.684 ppb	6,106.007 ppb	47.296 ppb	46.060 ppb	45.713 ppb	47.279 ppb	89.477 %
Concentration per Run 2	47.053 ppb	47.687 ppb	1,118.524 ppb	6,388.933 ppb	47.614 ppb	47.906 ppb	46.092 ppb	48.636 ppb	91.589 %
Concentration per Run 3	47.771 ppb	47.487 ppb	1,135.130 ppb	6,448.861 ppb	46.692 ppb	46.796 ppb	46.954 ppb	46.811 ppb	92.787 %
Concentration RSD	3.5 %	1.9 %	3.1 %	2.9 %	1.0 %	2.0 %	1.4 %	2.0 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	46.999 ppb	46.244 ppb	73.787 ppb	92.222 %	1.580 ppb	47.500 ppb	97.611 %	47.280 ppb	68.744 ppb
Concentration per Run 1	47.613 ppb	43.036 ppb	71.500 ppb	91.589 %	1.591 ppb	47.652 ppb	94.404 %	46.545 ppb	67.440 ppb
Concentration per Run 2	47.616 ppb	50.296 ppb	75.520 ppb	92.509 %	1.540 ppb	47.235 ppb	99.224 %	47.898 ppb	68.781 ppb
Concentration per Run 3	45.767 ppb	45.398 ppb	74.340 ppb	92.569 %	1.610 ppb	47.612 ppb	99.206 %	47.397 ppb	70.012 ppb
Concentration RSD	2.3 %	8.0 %	2.8 %	0.6 %	2.3 %	0.5 %	2.8 %	1.4 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.419 %	97.375 %	45.489 ppb	47.248 ppb	95.586 %
Concentration per Run 1	91.510 %	95.434 %	44.422 ppb	47.211 ppb	95.061 %
Concentration per Run 2	93.175 %	98.786 %	45.409 ppb	47.079 ppb	96.821 %
Concentration per Run 3	92.572 %	97.907 %	46.634 ppb	47.455 ppb	94.876 %
Concentration RSD	0.9 %	1.8 %	2.4 %	0.4 %	1.1 %

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Analysis index: 22 Analysis started at: 12/17/2021 10:27:24 AM
 Analysis label: WG1582832-4D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.476 %	100.784 %	5.337 ppb	21,856.439 ppb	2,162.172 ppb	205.101 ppb	1,569.593 ppb	7,088.580 ppb	91.415 %
Concentration per Run 1	88.270 %	98.431 %	5.500 ppb	21,683.372 ppb	2,123.366 ppb	201.038 ppb	1,606.530 ppb	6,822.494 ppb	91.190 %
Concentration per Run 2	88.769 %	99.608 %	5.214 ppb	22,248.610 ppb	2,259.968 ppb	214.897 ppb	1,531.345 ppb	7,725.728 ppb	91.872 %
Concentration per Run 3	88.390 %	104.314 %	5.297 ppb	21,637.335 ppb	2,103.183 ppb	199.370 ppb	1,570.903 ppb	6,717.518 ppb	91.181 %
Concentration RSD	0.3 %	3.1 %	2.8 %	1.6 %	3.9 %	4.2 %	2.4 %	7.8 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	49.941 ppb	19.832 ppb	1,112.735 ppb	1,800.792 ppb	47.820 ppb	48.252 ppb	25.165 ppb	49.809 ppb	89.863 %
Concentration per Run 1	49.728 ppb	19.454 ppb	1,087.018 ppb	1,784.023 ppb	48.335 ppb	50.205 ppb	25.702 ppb	51.057 ppb	86.315 %
Concentration per Run 2	50.102 ppb	20.734 ppb	1,132.209 ppb	1,828.664 ppb	47.470 ppb	48.629 ppb	24.983 ppb	49.386 ppb	91.318 %
Concentration per Run 3	49.993 ppb	19.309 ppb	1,118.977 ppb	1,789.690 ppb	47.656 ppb	45.920 ppb	24.810 ppb	48.986 ppb	91.956 %
Concentration RSD	0.4 %	4.0 %	2.1 %	1.3 %	1.0 %	4.5 %	1.9 %	2.2 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	13.260 ppb	12.264 ppb	126.514 ppb	91.712 %	5.308 ppb	5.441 ppb	95.524 %	49.453 ppb	223.806 ppb
Concentration per Run 1	13.451 ppb	11.464 ppb	123.582 ppb	90.556 %	5.433 ppb	5.458 ppb	91.295 %	49.181 ppb	225.203 ppb
Concentration per Run 2	13.014 ppb	13.201 ppb	128.743 ppb	92.301 %	5.314 ppb	5.475 ppb	97.279 %	48.890 ppb	220.665 ppb
Concentration per Run 3	13.315 ppb	12.126 ppb	127.219 ppb	92.280 %	5.177 ppb	5.390 ppb	97.998 %	50.289 ppb	225.548 ppb
Concentration RSD	1.7 %	7.1 %	2.1 %	1.1 %	2.4 %	0.8 %	3.9 %	1.5 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.889 %	97.222 %	12.625 ppb	52.994 ppb	95.901 %
Concentration per Run 1	90.950 %	95.204 %	12.513 ppb	52.987 ppb	95.028 %
Concentration per Run 2	91.912 %	97.544 %	12.779 ppb	53.009 ppb	95.872 %
Concentration per Run 3	92.806 %	98.917 %	12.584 ppb	52.986 ppb	96.805 %
Concentration RSD	1.0 %	1.9 %	1.1 %	0.0 %	0.9 %

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Analysis index: 23 Analysis started at: 12/17/2021 10:32:12 AM
 Analysis label: I2167147-05D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.656 %	105.752 %	0.007 ppb	20,877.154 ppb	1,127.046 ppb	2.134 ppb	520.161 ppb	6,086.277 ppb	91.562 %
Concentration per Run 1	89.616 %	107.451 %	0.008 ppb	20,306.523 ppb	1,083.573 ppb	1.781 ppb	529.433 ppb	5,800.305 ppb	92.084 %
Concentration per Run 2	89.862 %	101.765 %	0.010 ppb	21,453.293 ppb	1,198.246 ppb	2.225 ppb	500.699 ppb	6,123.833 ppb	91.125 %
Concentration per Run 3	89.491 %	108.039 %	0.002 ppb	20,871.646 ppb	1,099.320 ppb	2.397 ppb	530.351 ppb	6,334.692 ppb	91.477 %
Concentration RSD	0.2 %	3.3 %	67.9 %	2.7 %	5.5 %	14.9 %	3.2 %	4.4 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.119 ppb	0.202 ppb	1,076.725 ppb	1,731.812 ppb	0.104 ppb	0.314 ppb	0.694 ppb	0.540 ppb	91.169 %
Concentration per Run 1	0.119 ppb	0.211 ppb	1,065.409 ppb	1,730.236 ppb	0.099 ppb	0.468 ppb	0.631 ppb	0.618 ppb	86.314 %
Concentration per Run 2	0.098 ppb	0.198 ppb	1,074.619 ppb	1,727.113 ppb	0.127 ppb	0.229 ppb	0.731 ppb	0.516 ppb	94.560 %
Concentration per Run 3	0.138 ppb	0.196 ppb	1,090.148 ppb	1,738.088 ppb	0.085 ppb	0.245 ppb	0.719 ppb	0.485 ppb	92.634 %
Concentration RSD	16.6 %	4.1 %	1.2 %	0.3 %	20.5 %	42.5 %	7.9 %	12.9 %	4.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.966 ppb	0.124 ppb	26.637 ppb	94.767 %	0.000 ppb	0.005 ppb	98.298 %	0.203 ppb	22.239 ppb
Concentration per Run 1	1.085 ppb	0.171 ppb	26.468 ppb	92.907 %	0.000 ppb	0.009 ppb	95.605 %	0.201 ppb	22.003 ppb
Concentration per Run 2	0.999 ppb	0.119 ppb	26.530 ppb	97.021 %	-0.002 ppb	0.006 ppb	100.526 %	0.184 ppb	22.075 ppb
Concentration per Run 3	0.815 ppb	0.083 ppb	26.913 ppb	94.372 %	0.001 ppb	0.000 ppb	98.762 %	0.222 ppb	22.640 ppb
Concentration RSD	14.2 %	35.6 %	0.9 %	2.2 %	6,568.2 %	92.8 %	2.5 %	9.5 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.360 %	98.484 %	0.347 ppb	0.201 ppb	97.004 %
Concentration per Run 1	91.487 %	94.122 %	0.363 ppb	0.202 ppb	96.043 %
Concentration per Run 2	94.816 %	100.900 %	0.348 ppb	0.204 ppb	98.219 %
Concentration per Run 3	93.778 %	100.429 %	0.331 ppb	0.197 ppb	96.750 %
Concentration RSD	1.8 %	3.8 %	4.6 %	1.8 %	1.1 %

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Analysis index: 24 Analysis started at: 12/17/2021 10:36:59 AM
 Analysis label: I2166830-01D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.683 %	104.183 %	0.006 ppb	260,877.946 ppb	26,331.235 ppb	7.188 ppb	9,565.473 ppb	10,007.924 ppb	97.696 %
Concentration per Run 1	89.111 %	102.941 %	0.006 ppb	257,011.304 ppb	25,698.265 ppb	5.396 ppb	9,537.971 ppb	10,221.020 ppb	97.007 %
Concentration per Run 2	88.353 %	107.255 %	0.013 ppb	260,681.573 ppb	26,619.385 ppb	8.686 ppb	9,432.396 ppb	9,416.775 ppb	97.597 %
Concentration per Run 3	88.585 %	102.353 %	-0.001 ppb	264,940.960 ppb	26,676.055 ppb	7.483 ppb	9,726.051 ppb	10,385.978 ppb	98.484 %
Concentration RSD	0.4 %	2.6 %	109.9 %	1.5 %	2.1 %	23.2 %	1.6 %	5.2 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.427 ppb	0.203 ppb	856.790 ppb	13,710.303 ppb	7.236 ppb	0.169 ppb	0.234 ppb	7.165 ppb	87.927 %
Concentration per Run 1	0.358 ppb	0.280 ppb	844.205 ppb	13,633.900 ppb	7.352 ppb	0.196 ppb	0.176 ppb	7.192 ppb	85.122 %
Concentration per Run 2	0.492 ppb	0.183 ppb	855.884 ppb	13,536.575 ppb	7.080 ppb	0.114 ppb	0.237 ppb	7.114 ppb	89.236 %
Concentration per Run 3	0.431 ppb	0.144 ppb	870.280 ppb	13,960.432 ppb	7.278 ppb	0.198 ppb	0.291 ppb	7.191 ppb	89.423 %
Concentration RSD	15.7 %	34.5 %	1.5 %	1.6 %	1.9 %	28.2 %	24.4 %	0.6 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.670 ppb	0.104 ppb	151.620 ppb	87.045 %	0.000 ppb	0.001 ppb	93.523 %	0.120 ppb	23.002 ppb
Concentration per Run 1	0.674 ppb	0.255 ppb	148.674 ppb	85.619 %	0.002 ppb	0.000 ppb	90.424 %	0.139 ppb	22.889 ppb
Concentration per Run 2	0.771 ppb	0.046 ppb	153.154 ppb	87.570 %	-0.002 ppb	0.000 ppb	95.544 %	0.093 ppb	22.830 ppb
Concentration per Run 3	0.565 ppb	0.012 ppb	153.032 ppb	87.947 %	0.002 ppb	0.003 ppb	94.602 %	0.127 ppb	23.287 ppb
Concentration RSD	15.4 %	126.2 %	1.7 %	1.4 %	531.1 %	173.2 %	2.9 %	19.8 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.304 %	97.133 %	0.173 ppb	0.036 ppb	85.295 %
Concentration per Run 1	90.925 %	95.091 %	0.159 ppb	0.038 ppb	85.533 %
Concentration per Run 2	94.137 %	98.753 %	0.175 ppb	0.037 ppb	85.421 %
Concentration per Run 3	91.850 %	97.556 %	0.184 ppb	0.033 ppb	84.931 %
Concentration RSD	1.8 %	1.9 %	7.2 %	7.7 %	0.4 %

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Analysis index: 25 Analysis started at: 12/17/2021 10:41:48 AM
 Analysis label: L2166830-03D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.585 %	108.497 %	0.003 ppb	86,503.436 ppb	11,866.175 ppb	87.641 ppb	2,770.905 ppb	10,564.276 ppb	94.376 %
Concentration per Run 1	91.581 %	106.667 %	0.006 ppb	84,476.934 ppb	11,573.312 ppb	83.485 ppb	2,711.206 ppb	10,853.408 ppb	94.664 %
Concentration per Run 2	91.427 %	110.392 %	0.010 ppb	85,290.668 ppb	11,872.217 ppb	89.975 ppb	2,775.082 ppb	10,957.372 ppb	93.716 %
Concentration per Run 3	91.748 %	108.431 %	-0.005 ppb	89,742.706 ppb	12,152.998 ppb	89.463 ppb	2,826.427 ppb	9,882.048 ppb	94.747 %
Concentration RSD	0.2 %	1.7 %	229.2 %	3.3 %	2.4 %	4.1 %	2.1 %	5.6 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.323 ppb	0.357 ppb	8.105 ppb	246.758 ppb	0.083 ppb	0.183 ppb	0.505 ppb	1.787 ppb	94.420 %
Concentration per Run 1	0.390 ppb	0.314 ppb	7.955 ppb	255.945 ppb	0.095 ppb	0.221 ppb	0.375 ppb	1.720 ppb	91.004 %
Concentration per Run 2	0.369 ppb	0.343 ppb	8.091 ppb	229.910 ppb	0.078 ppb	0.111 ppb	0.565 ppb	1.870 ppb	96.022 %
Concentration per Run 3	0.212 ppb	0.415 ppb	8.269 ppb	254.420 ppb	0.074 ppb	0.217 ppb	0.575 ppb	1.773 ppb	96.233 %
Concentration RSD	30.1 %	14.5 %	1.9 %	5.9 %	13.3 %	34.2 %	22.4 %	4.3 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.178 ppb	0.042 ppb	83.742 ppb	94.188 %	-0.001 ppb	0.004 ppb	97.706 %	0.038 ppb	14.686 ppb
Concentration per Run 1	0.212 ppb	-0.030 ppb	82.619 ppb	91.929 %	-0.001 ppb	0.000 ppb	94.716 %	0.034 ppb	14.971 ppb
Concentration per Run 2	0.154 ppb	0.073 ppb	84.432 ppb	93.672 %	0.000 ppb	0.000 ppb	98.391 %	0.053 ppb	14.730 ppb
Concentration per Run 3	0.169 ppb	0.083 ppb	84.175 ppb	96.964 %	-0.002 ppb	0.011 ppb	100.011 %	0.026 ppb	14.358 ppb
Concentration RSD	17.1 %	148.4 %	1.2 %	2.7 %	164.4 %	173.2 %	2.8 %	37.1 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.573 %	100.665 %	0.112 ppb	0.230 ppb	92.248 %
Concentration per Run 1	93.315 %	97.070 %	0.103 ppb	0.232 ppb	90.769 %
Concentration per Run 2	95.961 %	102.274 %	0.117 ppb	0.233 ppb	92.217 %
Concentration per Run 3	97.445 %	102.652 %	0.115 ppb	0.225 ppb	93.758 %
Concentration RSD	2.2 %	3.1 %	6.7 %	1.8 %	1.6 %

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Analysis index: 26 Analysis started at: 12/17/2021 10:46:37 AM
 Analysis label: I2166830-07D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.416 %	97.908 %	0.002 ppb	133,095.017 ppb	9,688.392 ppb	12.846 ppb	6,298.452 ppb	5,981.291 ppb	95.389 %
Concentration per Run 1	88.664 %	93.333 %	-0.003 ppb	134,811.181 ppb	9,678.522 ppb	14.058 ppb	6,120.825 ppb	6,002.809 ppb	93.424 %
Concentration per Run 2	89.229 %	100.588 %	0.008 ppb	132,722.879 ppb	9,909.750 ppb	12.844 ppb	6,124.003 ppb	5,933.059 ppb	94.767 %
Concentration per Run 3	90.353 %	99.804 %	-0.001 ppb	131,750.992 ppb	9,476.906 ppb	11.637 ppb	6,650.529 ppb	6,008.005 ppb	97.977 %
Concentration RSD	1.0 %	4.1 %	374.3 %	1.2 %	2.2 %	9.4 %	4.8 %	0.7 %	2.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.570 ppb	0.244 ppb	82.991 ppb	10,983.602 ppb	0.197 ppb	-0.002 ppb	0.066 ppb	3.888 ppb	91.201 %
Concentration per Run 1	0.574 ppb	0.245 ppb	84.818 ppb	10,976.859 ppb	0.192 ppb	0.011 ppb	0.066 ppb	3.812 ppb	87.563 %
Concentration per Run 2	0.493 ppb	0.211 ppb	81.719 ppb	11,034.892 ppb	0.206 ppb	0.015 ppb	0.087 ppb	3.897 ppb	92.441 %
Concentration per Run 3	0.643 ppb	0.274 ppb	82.436 ppb	10,939.055 ppb	0.192 ppb	-0.034 ppb	0.045 ppb	3.957 ppb	93.599 %
Concentration RSD	13.2 %	13.0 %	2.0 %	0.4 %	4.2 %	1,095.5 %	31.8 %	1.9 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.623 ppb	0.148 ppb	83.960 ppb	90.443 %	-0.004 ppb	0.003 ppb	95.061 %	0.038 ppb	152.389 ppb
Concentration per Run 1	0.499 ppb	0.131 ppb	82.413 ppb	88.157 %	-0.002 ppb	0.003 ppb	92.647 %	0.060 ppb	147.451 ppb
Concentration per Run 2	0.637 ppb	0.154 ppb	85.864 ppb	90.563 %	-0.005 ppb	0.003 ppb	95.551 %	0.028 ppb	154.732 ppb
Concentration per Run 3	0.735 ppb	0.158 ppb	83.603 ppb	92.611 %	-0.005 ppb	0.003 ppb	96.987 %	0.026 ppb	154.982 ppb
Concentration RSD	19.0 %	10.0 %	2.1 %	2.5 %	32.8 %	2.4 %	2.3 %	49.6 %	2.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.617 %	97.709 %	0.087 ppb	0.026 ppb	89.674 %
Concentration per Run 1	90.231 %	94.351 %	0.077 ppb	0.026 ppb	88.503 %
Concentration per Run 2	92.914 %	98.286 %	0.093 ppb	0.025 ppb	90.299 %
Concentration per Run 3	94.707 %	100.490 %	0.091 ppb	0.027 ppb	90.219 %
Concentration RSD	2.4 %	3.2 %	9.8 %	4.6 %	1.1 %



Analysis index: 27 Analysis started at: 12/17/2021 10:51:27 AM
 Analysis label: L2166830-09D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.493 %	114.053 %	0.001 ppb	74,206.102 ppb	12,835.043 ppb	1.037 ppb	5,133.366 ppb	5,909.813 ppb	94.633 %
Concentration per Run 1	91.843 %	110.000 %	-0.001 ppb	71,861.814 ppb	12,228.419 ppb	0.046 ppb	5,019.919 ppb	5,788.383 ppb	94.708 %
Concentration per Run 2	92.021 %	108.235 %	0.003 ppb	77,837.558 ppb	13,619.217 ppb	1.774 ppb	5,432.279 ppb	6,150.656 ppb	95.082 %
Concentration per Run 3	90.616 %	123.922 %	-0.001 ppb	72,918.933 ppb	12,657.493 ppb	1.291 ppb	4,947.899 ppb	5,790.399 ppb	94.111 %
Concentration RSD	0.8 %	7.5 %	462.8 %	4.3 %	5.5 %	86.0 %	5.1 %	3.5 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.075 ppb	0.055 ppb	11.875 ppb	283.272 ppb	0.007 ppb	-0.003 ppb	0.022 ppb	0.282 ppb	97.009 %
Concentration per Run 1	0.069 ppb	0.047 ppb	12.034 ppb	285.698 ppb	0.014 ppb	-0.019 ppb	0.025 ppb	0.355 ppb	91.889 %
Concentration per Run 2	0.066 ppb	0.054 ppb	11.775 ppb	289.596 ppb	-0.003 ppb	0.005 ppb	-0.018 ppb	0.247 ppb	96.579 %
Concentration per Run 3	0.090 ppb	0.064 ppb	11.816 ppb	274.524 ppb	0.009 ppb	0.004 ppb	0.058 ppb	0.243 ppb	102.558 %
Concentration RSD	17.3 %	15.4 %	1.2 %	2.8 %	129.1 %	433.9 %	176.7 %	22.6 %	5.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.230 ppb	0.018 ppb	82.923 ppb	95.253 %	-0.003 ppb	0.004 ppb	100.463 %	0.018 ppb	2.742 ppb
Concentration per Run 1	0.185 ppb	0.085 ppb	81.754 ppb	92.227 %	-0.003 ppb	0.003 ppb	97.155 %	0.016 ppb	2.738 ppb
Concentration per Run 2	0.287 ppb	-0.033 ppb	84.247 ppb	94.969 %	-0.003 ppb	0.000 ppb	101.465 %	0.008 ppb	2.683 ppb
Concentration per Run 3	0.218 ppb	0.003 ppb	82.769 ppb	98.562 %	-0.004 ppb	0.008 ppb	102.770 %	0.031 ppb	2.803 ppb
Concentration RSD	22.5 %	332.7 %	1.5 %	3.3 %	21.6 %	112.4 %	2.9 %	64.9 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.664 %	102.084 %	0.062 ppb	0.005 ppb	93.514 %
Concentration per Run 1	93.184 %	98.543 %	0.052 ppb	0.004 ppb	91.000 %
Concentration per Run 2	97.908 %	103.010 %	0.065 ppb	0.004 ppb	93.458 %
Concentration per Run 3	98.901 %	104.699 %	0.068 ppb	0.005 ppb	96.083 %
Concentration RSD	3.2 %	3.1 %	14.4 %	11.9 %	2.7 %

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Analysis index: 28 Analysis started at: 12/17/2021 10:56:17 AM
 Analysis label: I2166830-11D10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.035 %	107.059 %	-0.001 ppb	100,391.653 ppb	9,011.402 ppb	0.682 ppb	3,037.459 ppb	10,300.035 ppb	97.084 %
Concentration per Run 1	93.490 %	106.275 %	-0.005 ppb	96,887.410 ppb	8,713.868 ppb	0.180 ppb	2,882.887 ppb	9,911.769 ppb	97.041 %
Concentration per Run 2	92.975 %	108.235 %	-0.003 ppb	103,034.144 ppb	9,299.997 ppb	0.728 ppb	3,074.591 ppb	10,769.250 ppb	96.385 %
Concentration per Run 3	92.641 %	106.667 %	0.005 ppb	101,253.406 ppb	9,020.343 ppb	1.139 ppb	3,154.897 ppb	10,219.085 ppb	97.825 %
Concentration RSD	0.5 %	1.0 %	505.1 %	3.2 %	3.3 %	70.6 %	4.6 %	4.2 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.156 ppb	0.095 ppb	223.103 ppb	2,308.669 ppb	0.031 ppb	0.012 ppb	-0.005 ppb	0.057 ppb	93.092 %
Concentration per Run 1	0.156 ppb	0.072 ppb	215.520 ppb	2,216.057 ppb	0.027 ppb	0.048 ppb	0.028 ppb	0.066 ppb	90.404 %
Concentration per Run 2	0.162 ppb	0.135 ppb	229.066 ppb	2,365.509 ppb	0.022 ppb	-0.038 ppb	-0.037 ppb	-0.010 ppb	94.484 %
Concentration per Run 3	0.150 ppb	0.078 ppb	224.725 ppb	2,344.443 ppb	0.043 ppb	0.025 ppb	-0.007 ppb	0.115 ppb	94.387 %
Concentration RSD	3.9 %	36.9 %	3.1 %	3.5 %	35.3 %	376.1 %	617.1 %	110.0 %	2.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.156 ppb	0.083 ppb	75.709 ppb	94.444 %	-0.003 ppb	0.001 ppb	99.038 %	0.028 ppb	65.874 ppb
Concentration per Run 1	0.163 ppb	0.122 ppb	73.699 ppb	93.576 %	-0.005 ppb	0.003 ppb	96.721 %	0.024 ppb	64.361 ppb
Concentration per Run 2	0.148 ppb	0.044 ppb	76.737 ppb	95.486 %	-0.002 ppb	0.000 ppb	100.200 %	0.029 ppb	66.607 ppb
Concentration per Run 3	0.156 ppb	0.083 ppb	76.691 ppb	94.271 %	-0.002 ppb	0.000 ppb	100.193 %	0.029 ppb	66.655 ppb
Concentration RSD	4.9 %	46.7 %	2.3 %	1.0 %	62.2 %	173.2 %	2.0 %	10.5 %	2.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.297 %	103.028 %	0.051 ppb	0.002 ppb	93.613 %
Concentration per Run 1	96.024 %	99.970 %	0.051 ppb	0.002 ppb	92.966 %
Concentration per Run 2	97.796 %	104.424 %	0.048 ppb	0.003 ppb	94.229 %
Concentration per Run 3	98.071 %	104.691 %	0.054 ppb	0.002 ppb	93.645 %
Concentration RSD	1.1 %	2.6 %	6.4 %	34.6 %	0.7 %

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Analysis index: 29 Analysis started at: 12/17/2021 11:01:07 AM
 Analysis label: WG1582832-6D50 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.040 %	108.105 %	-0.003 ppb	4,281.083 ppb	244.386 ppb	0.535 ppb	102.704 ppb	1,154.621 ppb	93.621 %
Concentration per Run 1	93.188 %	108.235 %	0.003 ppb	4,144.678 ppb	244.962 ppb	0.245 ppb	99.431 ppb	1,086.557 ppb	94.239 %
Concentration per Run 2	93.579 %	105.294 %	-0.007 ppb	4,535.827 ppb	249.582 ppb	1.145 ppb	107.184 ppb	1,171.019 ppb	92.826 %
Concentration per Run 3	92.353 %	110.784 %	-0.005 ppb	4,162.744 ppb	238.613 ppb	0.216 ppb	101.496 ppb	1,206.288 ppb	93.798 %
Concentration RSD	0.7 %	2.5 %	173.9 %	5.2 %	2.3 %	98.7 %	3.9 %	5.3 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.026 ppb	0.030 ppb	216.574 ppb	349.421 ppb	0.019 ppb	0.052 ppb	0.142 ppb	0.006 ppb	95.541 %
Concentration per Run 1	-0.013 ppb	0.037 ppb	210.940 ppb	331.828 ppb	0.018 ppb	-0.037 ppb	0.122 ppb	0.004 ppb	94.138 %
Concentration per Run 2	-0.040 ppb	0.024 ppb	222.291 ppb	367.527 ppb	0.034 ppb	0.082 ppb	0.157 ppb	0.021 ppb	96.579 %
Concentration per Run 3	-0.027 ppb	0.028 ppb	216.492 ppb	348.909 ppb	0.005 ppb	0.111 ppb	0.147 ppb	-0.007 ppb	95.906 %
Concentration RSD	51.4 %	23.9 %	2.6 %	5.1 %	75.1 %	150.9 %	12.7 %	225.7 %	1.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.191 ppb	0.019 ppb	5.199 ppb	97.744 %	-0.005 ppb	0.004 ppb	99.625 %	0.006 ppb	4.524 ppb
Concentration per Run 1	0.181 ppb	0.079 ppb	5.118 ppb	96.490 %	-0.006 ppb	0.006 ppb	97.432 %	0.001 ppb	4.682 ppb
Concentration per Run 2	0.200 ppb	-0.027 ppb	5.302 ppb	97.411 %	-0.005 ppb	0.000 ppb	100.439 %	0.010 ppb	4.458 ppb
Concentration per Run 3	0.193 ppb	0.005 ppb	5.177 ppb	99.331 %	-0.005 ppb	0.006 ppb	101.002 %	0.006 ppb	4.433 ppb
Concentration RSD	5.0 %	289.0 %	1.8 %	1.5 %	10.7 %	86.6 %	1.9 %	81.9 %	3.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.767 %	101.533 %	0.042 ppb	0.040 ppb	100.667 %
Concentration per Run 1	94.584 %	99.937 %	0.037 ppb	0.037 ppb	99.816 %
Concentration per Run 2	95.736 %	101.788 %	0.044 ppb	0.044 ppb	100.645 %
Concentration per Run 3	96.980 %	102.876 %	0.044 ppb	0.038 ppb	101.538 %
Concentration RSD	1.3 %	1.5 %	9.5 %	9.2 %	0.9 %

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Analysis index: 30 Analysis started at: 12/17/2021 11:05:55 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.828 %	103.203 %	60.047 ppb	6,294.506 ppb	6,291.563 ppb	61.099 ppb	6,334.360 ppb	6,283.241 ppb	108.395 %
Concentration per Run 1	92.272 %	91.569 %	60.382 ppb	6,738.668 ppb	6,628.899 ppb	67.832 ppb	6,563.297 ppb	6,249.299 ppb	107.397 %
Concentration per Run 2	93.365 %	119.608 %	59.671 ppb	5,613.914 ppb	5,641.870 ppb	54.282 ppb	5,899.613 ppb	6,171.229 ppb	109.890 %
Concentration per Run 3	92.846 %	98.431 %	60.087 ppb	6,530.936 ppb	6,603.919 ppb	61.185 ppb	6,540.171 ppb	6,429.195 ppb	107.899 %
Recovery Percentage 1			100.078 %	104.908 %	104.859 %	101.832 %	105.573 %	104.721 %	
Concentration RSD	0.6 %	14.2 %	0.6 %	9.5 %	8.9 %	11.1 %	5.9 %	2.1 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	60.141 ppb	60.451 ppb	61.440 ppb	6,004.284 ppb	59.386 ppb	60.054 ppb	58.296 ppb	59.502 ppb	94.239 %
Concentration per Run 1	60.598 ppb	61.771 ppb	61.436 ppb	6,140.872 ppb	61.445 ppb	63.458 ppb	59.754 ppb	59.358 ppb	92.839 %
Concentration per Run 2	57.905 ppb	56.986 ppb	59.516 ppb	5,785.890 ppb	57.482 ppb	57.730 ppb	56.593 ppb	58.696 ppb	95.272 %
Concentration per Run 3	61.921 ppb	62.595 ppb	63.370 ppb	6,086.090 ppb	59.231 ppb	58.975 ppb	58.539 ppb	60.453 ppb	94.605 %
Recovery Percentage 1	100.235 %	100.751 %	102.401 %	100.071 %	98.977 %	100.091 %	97.159 %	99.171 %	
Concentration RSD	3.4 %	5.0 %	3.1 %	3.2 %	3.3 %	5.0 %	2.7 %	1.5 %	1.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	59.827 ppb	58.777 ppb	61.835 ppb	96.327 %	59.346 ppb	59.641 ppb	100.494 %	59.224 ppb	60.629 ppb
Concentration per Run 1	58.181 ppb	55.385 ppb	60.211 ppb	94.854 %	59.984 ppb	59.806 ppb	97.915 %	58.876 ppb	60.427 ppb
Concentration per Run 2	61.514 ppb	61.985 ppb	62.689 ppb	97.006 %	59.542 ppb	59.809 ppb	101.320 %	59.161 ppb	61.052 ppb
Concentration per Run 3	59.785 ppb	58.960 ppb	62.605 ppb	97.122 %	58.512 ppb	59.309 ppb	102.247 %	59.636 ppb	60.407 ppb
Recovery Percentage 1	99.711 %	97.961 %	103.058 %		98.910 %	99.402 %		98.707 %	101.048 %
Concentration RSD	2.8 %	5.6 %	2.3 %	1.3 %	1.3 %	0.5 %	2.3 %	0.6 %	0.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.291 %	101.540 %	60.302 ppb	58.446 ppb	99.306 %
Concentration per Run 1	94.608 %	98.641 %	60.191 ppb	58.457 ppb	98.056 %
Concentration per Run 2	97.271 %	102.644 %	59.889 ppb	57.968 ppb	99.866 %
Concentration per Run 3	96.994 %	103.337 %	60.826 ppb	58.913 ppb	99.995 %
Recovery Percentage 1			100.504 %	97.410 %	
Concentration RSD	1.5 %	2.5 %	0.8 %	0.8 %	1.1 %

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Analysis index: 31 Analysis started at: 12/17/2021 11:10:47 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.316 %	104.706 %	0.006 ppb	-4.599 ppb	-0.329 ppb	-0.784 ppb	-15.069 ppb	-0.101 ppb	92.819 %
Concentration per Run 1	92.348 %	100.588 %	0.008 ppb	-2.649 ppb	0.369 ppb	-0.803 ppb	-19.453 ppb	-5.016 ppb	93.512 %
Concentration per Run 2	93.214 %	105.882 %	-0.001 ppb	-4.528 ppb	-0.679 ppb	-1.014 ppb	-10.468 ppb	2.183 ppb	92.676 %
Concentration per Run 3	91.386 %	107.647 %	0.012 ppb	-6.619 ppb	-0.679 ppb	-0.534 ppb	-15.285 ppb	2.530 ppb	92.268 %
Recovery Percentage 1			1.232 %	-4.599 %	-0.471 %	-7.838 %	-15.069 %	-0.101 %	
Concentration RSD	1.0 %	3.5 %	108.6 %	43.2 %	183.6 %	30.7 %	29.8 %	4,216.8 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.021 ppb	0.003 ppb	-0.025 ppb	14.704 ppb	0.000 ppb	0.007 ppb	-0.031 ppb	-0.156 ppb	96.680 %
Concentration per Run 1	0.018 ppb	0.003 ppb	-0.028 ppb	16.085 ppb	-0.003 ppb	0.047 ppb	-0.025 ppb	-0.162 ppb	92.403 %
Concentration per Run 2	-0.041 ppb	-0.003 ppb	0.004 ppb	19.329 ppb	-0.003 ppb	-0.058 ppb	-0.039 ppb	-0.200 ppb	99.655 %
Concentration per Run 3	-0.040 ppb	0.010 ppb	-0.050 ppb	8.698 ppb	0.005 ppb	0.033 ppb	-0.029 ppb	-0.105 ppb	97.982 %
Recovery Percentage 1	-0.420 %	0.311 %	-2.468 %	29.408 %	-0.008 %	0.372 %	-3.080 %	-1.556 %	
Concentration RSD	161.0 %	212.4 %	109.4 %	37.1 %	11,010.0 %	766.1 %	24.1 %	30.5 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.040 ppb	0.042 ppb	-0.010 ppb	99.480 %	0.001 ppb	0.001 ppb	101.861 %	0.001 ppb	-0.067 ppb
Concentration per Run 1	0.044 ppb	0.187 ppb	-0.002 ppb	96.853 %	0.008 ppb	0.003 ppb	97.231 %	0.002 ppb	-0.075 ppb
Concentration per Run 2	0.026 ppb	-0.030 ppb	0.000 ppb	101.370 %	-0.002 ppb	0.000 ppb	103.845 %	-0.001 ppb	-0.067 ppb
Concentration per Run 3	0.049 ppb	-0.032 ppb	-0.029 ppb	100.217 %	-0.002 ppb	0.000 ppb	104.507 %	0.002 ppb	-0.060 ppb
Recovery Percentage 1	7.961 %	0.837 %	-2.034 %		0.338 %	0.479 %		0.035 %	-13.455 %
Concentration RSD	31.5 %	300.9 %	156.8 %	2.4 %	425.4 %	173.2 %	3.9 %	123.1 %	11.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.290 %	102.870 %	0.199 ppb	0.008 ppb	101.596 %
Concentration per Run 1	94.490 %	99.054 %	0.212 ppb	0.009 ppb	99.541 %
Concentration per Run 2	98.693 %	104.833 %	0.199 ppb	0.008 ppb	102.958 %
Concentration per Run 3	98.688 %	104.724 %	0.185 ppb	0.008 ppb	102.288 %
Recovery Percentage 1			19.887 %	0.829 %	
Concentration RSD	2.5 %	3.2 %	6.8 %	3.9 %	1.8 %

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Analysis index: 32 Analysis started at: 12/17/2021 11:16:55 AM
 Analysis label: WG1583661-1 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.003 %	112.157 %	-0.001 ppb	73.345 ppb	2.189 ppb	3.710 ppb	-3.298 ppb	23.054 ppb	117.269 %
Concentration per Run 1	93.173 %	110.000 %	-0.010 ppb	77.476 ppb	4.164 ppb	3.833 ppb	-5.809 ppb	30.687 ppb	117.051 %
Concentration per Run 2	94.385 %	110.392 %	-0.008 ppb	78.863 ppb	1.240 ppb	4.250 ppb	-8.518 ppb	37.108 ppb	118.540 %
Concentration per Run 3	94.451 %	116.079 %	0.013 ppb	63.697 ppb	1.162 ppb	3.047 ppb	4.433 ppb	1.368 ppb	116.215 %
Concentration RSD	0.8 %	3.0 %	841.4 %	11.4 %	78.2 %	16.5 %	207.1 %	82.6 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.028 ppb	0.029 ppb	0.003 ppb	11.907 ppb	0.012 ppb	0.064 ppb	0.105 ppb	0.499 ppb	98.880 %
Concentration per Run 1	-0.001 ppb	0.027 ppb	0.041 ppb	9.122 ppb	0.026 ppb	0.095 ppb	0.069 ppb	0.494 ppb	96.560 %
Concentration per Run 2	-0.028 ppb	0.039 ppb	0.003 ppb	14.378 ppb	0.005 ppb	0.044 ppb	0.102 ppb	0.492 ppb	99.386 %
Concentration per Run 3	-0.055 ppb	0.021 ppb	-0.034 ppb	12.220 ppb	0.005 ppb	0.053 ppb	0.145 ppb	0.510 ppb	100.693 %
Concentration RSD	96.4 %	31.6 %	1,093.5 %	22.2 %	99.2 %	42.0 %	36.3 %	1.9 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.026 ppb	0.065 ppb	0.038 ppb	101.431 %	-0.003 ppb	0.004 ppb	104.223 %	0.472 ppb	0.080 ppb
Concentration per Run 1	0.034 ppb	0.151 ppb	0.032 ppb	99.194 %	-0.002 ppb	0.006 ppb	101.540 %	0.450 ppb	0.119 ppb
Concentration per Run 2	0.018 ppb	0.043 ppb	0.036 ppb	102.179 %	-0.005 ppb	0.000 ppb	105.949 %	0.463 ppb	0.034 ppb
Concentration per Run 3	0.025 ppb	0.002 ppb	0.045 ppb	102.920 %	-0.001 ppb	0.005 ppb	105.179 %	0.504 ppb	0.088 ppb
Concentration RSD	31.7 %	117.9 %	18.1 %	1.9 %	74.0 %	86.6 %	2.3 %	6.0 %	53.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.369 %	104.191 %	0.096 ppb	0.019 ppb	104.969 %
Concentration per Run 1	97.529 %	101.290 %	0.098 ppb	0.019 ppb	105.201 %
Concentration per Run 2	99.748 %	104.858 %	0.100 ppb	0.021 ppb	104.820 %
Concentration per Run 3	100.829 %	106.425 %	0.089 ppb	0.016 ppb	104.886 %
Concentration RSD	1.7 %	2.5 %	6.0 %	13.4 %	0.2 %

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Analysis index: 33 Analysis started at: 12/17/2021 11:21:45 AM
 Analysis label: WG1583661-2D5 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.305 %	105.033 %	10.103 ppb	2,149.757 ppb	2,202.098 ppb	429.990 ppb	2,194.768 ppb	1,860.226 ppb	101.957 %
Concentration per Run 1	94.639 %	100.588 %	9.893 ppb	2,171.661 ppb	2,182.825 ppb	426.517 ppb	2,200.515 ppb	1,722.020 ppb	101.574 %
Concentration per Run 2	94.608 %	107.255 %	9.980 ppb	2,114.537 ppb	2,164.393 ppb	422.890 ppb	2,300.233 ppb	1,769.253 ppb	102.274 %
Concentration per Run 3	93.668 %	107.255 %	10.436 ppb	2,163.072 ppb	2,259.075 ppb	440.562 ppb	2,083.557 ppb	2,089.405 ppb	102.021 %
Concentration RSD	0.6 %	3.7 %	2.9 %	1.4 %	2.3 %	2.2 %	4.9 %	10.7 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	101.769 ppb	40.359 ppb	101.612 ppb	206.906 ppb	99.046 ppb	100.910 ppb	49.784 ppb	100.320 ppb	95.052 %
Concentration per Run 1	102.535 ppb	40.015 ppb	99.978 ppb	211.744 ppb	100.459 ppb	103.505 ppb	51.434 ppb	101.389 ppb	92.137 %
Concentration per Run 2	101.196 ppb	40.757 ppb	104.108 ppb	201.535 ppb	97.872 ppb	98.671 ppb	49.322 ppb	100.054 ppb	96.226 %
Concentration per Run 3	101.577 ppb	40.306 ppb	100.750 ppb	207.439 ppb	98.808 ppb	100.554 ppb	48.598 ppb	99.518 ppb	96.793 %
Concentration RSD	0.7 %	0.9 %	2.2 %	2.5 %	1.3 %	2.4 %	3.0 %	1.0 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	24.548 ppb	23.128 ppb	201.575 ppb	98.731 %	10.606 ppb	10.550 ppb	102.029 %	80.542 ppb	416.146 ppb
Concentration per Run 1	24.246 ppb	21.464 ppb	197.204 ppb	97.366 %	10.548 ppb	10.447 ppb	98.522 %	76.345 ppb	408.387 ppb
Concentration per Run 2	24.871 ppb	23.508 ppb	202.322 ppb	99.139 %	10.627 ppb	10.571 ppb	102.901 %	82.239 ppb	418.968 ppb
Concentration per Run 3	24.529 ppb	24.413 ppb	205.200 ppb	99.690 %	10.643 ppb	10.632 ppb	104.665 %	83.042 ppb	421.083 ppb
Concentration RSD	1.3 %	6.5 %	2.0 %	1.2 %	0.5 %	0.9 %	3.1 %	4.5 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.038 %	102.821 %	24.773 ppb	105.073 ppb	101.469 %
Concentration per Run 1	95.894 %	99.836 %	24.489 ppb	104.099 ppb	101.417 %
Concentration per Run 2	98.637 %	104.227 %	24.920 ppb	105.093 ppb	102.023 %
Concentration per Run 3	99.581 %	104.401 %	24.909 ppb	106.028 ppb	100.966 %
Concentration RSD	2.0 %	2.5 %	1.0 %	0.9 %	0.5 %

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Analysis index: 34 Analysis started at: 12/17/2021 11:26:36 AM
 Analysis label: WG1583661-3D10 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.417 %	107.843 %	5.023 ppb	19,786.190 ppb	3,673.579 ppb	205.851 ppb	1,687.376 ppb	20,277.608 ppb	103.916 %
Concentration per Run 1	92.840 %	105.882 %	5.174 ppb	19,400.896 ppb	3,630.175 ppb	197.383 ppb	1,638.932 ppb	19,656.884 ppb	103.149 %
Concentration per Run 2	92.163 %	113.137 %	4.900 ppb	19,404.091 ppb	3,598.645 ppb	203.608 ppb	1,602.257 ppb	19,992.277 ppb	104.104 %
Concentration per Run 3	92.247 %	104.510 %	4.996 ppb	20,553.584 ppb	3,791.916 ppb	216.563 ppb	1,820.940 ppb	21,183.663 ppb	104.494 %
Concentration RSD	0.4 %	4.3 %	2.8 %	3.4 %	2.8 %	4.8 %	6.9 %	4.0 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	49.768 ppb	19.422 ppb	1,681.261 ppb	10,721.163 ppb	49.624 ppb	48.190 ppb	24.340 ppb	48.859 ppb	92.761 %
Concentration per Run 1	48.060 ppb	19.238 ppb	1,640.122 ppb	10,589.086 ppb	49.425 ppb	47.820 ppb	24.913 ppb	47.127 ppb	90.881 %
Concentration per Run 2	49.115 ppb	18.801 ppb	1,667.885 ppb	10,620.181 ppb	49.193 ppb	46.791 ppb	23.932 ppb	48.517 ppb	95.239 %
Concentration per Run 3	52.129 ppb	20.227 ppb	1,735.775 ppb	10,954.221 ppb	50.255 ppb	49.958 ppb	24.177 ppb	50.934 ppb	92.163 %
Concentration RSD	4.2 %	3.8 %	2.9 %	1.9 %	1.1 %	3.4 %	2.1 %	3.9 %	2.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	11.893 ppb	11.926 ppb	184.036 ppb	95.353 %	5.201 ppb	5.116 ppb	98.338 %	51.043 ppb	235.647 ppb
Concentration per Run 1	11.486 ppb	11.510 ppb	176.816 ppb	93.931 %	5.246 ppb	5.208 ppb	94.406 %	50.834 ppb	232.912 ppb
Concentration per Run 2	11.850 ppb	12.686 ppb	185.839 ppb	95.560 %	5.235 ppb	5.045 ppb	99.650 %	51.777 ppb	238.624 ppb
Concentration per Run 3	12.343 ppb	11.582 ppb	189.453 ppb	96.567 %	5.123 ppb	5.096 ppb	100.958 %	50.518 ppb	235.405 ppb
Concentration RSD	3.6 %	5.5 %	3.5 %	1.4 %	1.3 %	1.6 %	3.5 %	1.3 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.840 %	102.408 %	12.387 ppb	52.024 ppb	97.383 %
Concentration per Run 1	94.284 %	99.478 %	12.081 ppb	50.909 ppb	97.256 %
Concentration per Run 2	97.995 %	105.049 %	12.419 ppb	52.530 ppb	97.638 %
Concentration per Run 3	98.240 %	102.698 %	12.659 ppb	52.635 ppb	97.255 %
Concentration RSD	2.3 %	2.7 %	2.3 %	1.9 %	0.2 %

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Analysis index: 35 Analysis started at: 12/17/2021 11:31:22 AM
 Analysis label: WG1583661-5D10 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.206 %	103.726 %	46.461 ppb	23,575.844 ppb	7,485.045 ppb	50.205 ppb	5,575.717 ppb	23,342.177 ppb	104.597 %
Concentration per Run 1	91.513 %	111.961 %	45.879 ppb	21,479.944 ppb	6,935.212 ppb	44.580 ppb	4,941.364 ppb	22,065.425 ppb	104.721 %
Concentration per Run 2	91.208 %	98.824 %	46.589 ppb	24,752.189 ppb	7,841.886 ppb	51.112 ppb	5,973.424 ppb	24,251.870 ppb	104.723 %
Concentration per Run 3	90.898 %	100.392 %	46.914 ppb	24,495.398 ppb	7,678.039 ppb	54.924 ppb	5,812.362 ppb	23,709.237 ppb	104.346 %
Concentration RSD	0.3 %	6.9 %	1.1 %	7.7 %	6.5 %	10.4 %	10.0 %	4.9 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	46.233 ppb	47.591 ppb	1,638.700 ppb	15,124.345 ppb	49.343 ppb	46.794 ppb	45.654 ppb	48.236 ppb	91.428 %
Concentration per Run 1	44.821 ppb	45.468 ppb	1,554.036 ppb	14,724.558 ppb	49.139 ppb	48.199 ppb	44.306 ppb	48.140 ppb	88.183 %
Concentration per Run 2	45.755 ppb	48.657 ppb	1,699.236 ppb	15,444.093 ppb	48.768 ppb	45.268 ppb	47.135 ppb	48.284 ppb	92.686 %
Concentration per Run 3	48.123 ppb	48.647 ppb	1,662.829 ppb	15,204.385 ppb	50.122 ppb	46.917 ppb	45.521 ppb	48.283 ppb	93.414 %
Concentration RSD	3.7 %	3.9 %	4.6 %	2.4 %	1.4 %	3.1 %	3.1 %	0.2 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	45.343 ppb	45.808 ppb	129.251 ppb	94.169 %	3.073 ppb	46.268 ppb	98.581 %	47.186 ppb	76.878 ppb
Concentration per Run 1	45.560 ppb	44.588 ppb	125.732 ppb	93.301 %	3.137 ppb	46.510 ppb	93.958 %	47.875 ppb	76.572 ppb
Concentration per Run 2	45.068 ppb	45.604 ppb	131.404 ppb	95.022 %	2.999 ppb	46.499 ppb	100.019 %	47.480 ppb	77.704 ppb
Concentration per Run 3	45.402 ppb	47.231 ppb	130.618 ppb	94.183 %	3.083 ppb	45.796 ppb	101.766 %	46.202 ppb	76.357 ppb
Concentration RSD	0.6 %	2.9 %	2.4 %	0.9 %	2.3 %	0.9 %	4.2 %	1.9 %	0.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.852 %	100.752 %	45.903 ppb	46.837 ppb	95.980 %
Concentration per Run 1	93.229 %	97.740 %	44.719 ppb	46.720 ppb	95.046 %
Concentration per Run 2	97.288 %	103.708 %	46.065 ppb	46.856 ppb	97.367 %
Concentration per Run 3	94.038 %	100.809 %	46.925 ppb	46.935 ppb	95.526 %
Concentration RSD	2.3 %	3.0 %	2.4 %	0.2 %	1.3 %

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Analysis index: 36 Analysis started at: 12/17/2021 11:36:10 AM
 Analysis label: WG1583661-4 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.603 %	96.340 %	0.017 ppb	195,390.771 ppb	25,827.776 ppb	10.178 ppb	6,276.839 ppb	191,190.007 ppb	116.545 %
Concentration per Run 1	86.006 %	97.451 %	0.017 ppb	191,680.211 ppb	24,969.282 ppb	10.712 ppb	6,145.899 ppb	185,494.415 ppb	115.450 %
Concentration per Run 2	85.747 %	96.471 %	0.013 ppb	192,737.773 ppb	25,711.216 ppb	10.475 ppb	6,353.629 ppb	190,426.290 ppb	117.555 %
Concentration per Run 3	85.057 %	95.098 %	0.020 ppb	201,754.328 ppb	26,802.829 ppb	9.346 ppb	6,330.988 ppb	197,649.315 ppb	116.630 %
Concentration RSD	0.6 %	1.2 %	21.0 %	2.8 %	3.6 %	7.2 %	1.8 %	3.2 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.085 ppb	0.259 ppb	15,972.070 ppb	105,930.947 ppb	18.646 ppb	14.008 ppb	0.146 ppb	15.259 ppb	80.618 %
Concentration per Run 1	0.076 ppb	0.217 ppb	15,375.192 ppb	103,460.272 ppb	18.353 ppb	14.146 ppb	0.148 ppb	15.061 ppb	79.548 %
Concentration per Run 2	0.195 ppb	0.289 ppb	15,870.647 ppb	105,151.124 ppb	18.433 ppb	13.437 ppb	0.130 ppb	15.583 ppb	82.219 %
Concentration per Run 3	-0.017 ppb	0.270 ppb	16,670.370 ppb	109,181.444 ppb	19.153 ppb	14.443 ppb	0.159 ppb	15.133 ppb	80.086 %
Concentration RSD	126.1 %	14.4 %	4.1 %	2.8 %	2.4 %	3.7 %	10.0 %	1.9 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.198 ppb	0.136 ppb	879.679 ppb	83.552 %	0.005 ppb	0.019 ppb	92.434 %	0.815 ppb	309.610 ppb
Concentration per Run 1	2.105 ppb	0.111 ppb	858.780 ppb	82.902 %	0.002 ppb	0.016 ppb	91.153 %	0.756 ppb	306.676 ppb
Concentration per Run 2	2.315 ppb	0.143 ppb	879.521 ppb	83.839 %	0.010 ppb	0.016 ppb	92.082 %	0.850 ppb	312.092 ppb
Concentration per Run 3	2.175 ppb	0.153 ppb	900.737 ppb	83.914 %	0.003 ppb	0.025 ppb	94.068 %	0.840 ppb	310.061 ppb
Concentration RSD	4.9 %	16.0 %	2.4 %	0.7 %	81.7 %	27.6 %	1.6 %	6.3 %	0.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.404 %	96.541 %	0.863 ppb	0.031 ppb	81.251 %
Concentration per Run 1	91.111 %	95.085 %	0.977 ppb	0.034 ppb	83.103 %
Concentration per Run 2	91.095 %	96.626 %	0.857 ppb	0.032 ppb	80.322 %
Concentration per Run 3	92.005 %	97.911 %	0.755 ppb	0.027 ppb	80.330 %
Concentration RSD	0.6 %	1.5 %	12.8 %	11.0 %	2.0 %

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Analysis index: 37 Analysis started at: 12/17/2021 11:40:57 AM
 Analysis label: I2168430-01 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.225 %	96.993 %	0.013 ppb	188,866.883 ppb	25,221.592 ppb	9.697 ppb	6,203.428 ppb	180,129.071 ppb	107.395 %
Concentration per Run 1	85.154 %	92.549 %	0.018 ppb	195,002.950 ppb	25,672.938 ppb	11.426 ppb	6,137.107 ppb	178,852.558 ppb	107.128 %
Concentration per Run 2	84.012 %	100.392 %	0.009 ppb	184,844.796 ppb	24,980.891 ppb	8.977 ppb	6,270.911 ppb	176,675.046 ppb	107.425 %
Concentration per Run 3	83.509 %	98.039 %	0.012 ppb	186,752.902 ppb	25,010.947 ppb	8.687 ppb	6,202.267 ppb	184,859.609 ppb	107.632 %
Concentration RSD	1.0 %	4.1 %	35.2 %	2.9 %	1.6 %	15.5 %	1.1 %	2.4 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.083 ppb	0.229 ppb	15,540.328 ppb	102,624.764 ppb	18.282 ppb	13.296 ppb	0.115 ppb	14.363 ppb	82.264 %
Concentration per Run 1	0.123 ppb	0.176 ppb	15,417.301 ppb	103,658.536 ppb	19.086 ppb	13.803 ppb	0.145 ppb	14.391 ppb	81.374 %
Concentration per Run 2	0.101 ppb	0.215 ppb	15,756.312 ppb	102,521.100 ppb	18.409 ppb	13.018 ppb	0.073 ppb	14.203 ppb	82.181 %
Concentration per Run 3	0.026 ppb	0.295 ppb	15,447.371 ppb	101,694.655 ppb	17.352 ppb	13.067 ppb	0.128 ppb	14.495 ppb	83.238 %
Concentration RSD	61.4 %	26.4 %	1.2 %	1.0 %	4.8 %	3.3 %	32.8 %	1.0 %	1.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.956 ppb	0.166 ppb	852.372 ppb	81.962 %	0.004 ppb	0.026 ppb	91.244 %	0.578 ppb	306.832 ppb
Concentration per Run 1	2.070 ppb	0.180 ppb	837.321 ppb	81.361 %	-0.002 ppb	0.023 ppb	87.738 %	0.620 ppb	308.084 ppb
Concentration per Run 2	2.031 ppb	0.139 ppb	864.585 ppb	82.044 %	0.003 ppb	0.028 ppb	93.926 %	0.521 ppb	303.641 ppb
Concentration per Run 3	1.768 ppb	0.180 ppb	855.209 ppb	82.482 %	0.012 ppb	0.028 ppb	92.068 %	0.594 ppb	308.771 ppb
Concentration RSD	8.4 %	14.5 %	1.6 %	0.7 %	161.5 %	11.6 %	3.5 %	8.9 %	0.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	90.879 %	97.069 %	0.318 ppb	0.028 ppb	80.138 %
Concentration per Run 1	90.634 %	94.195 %	0.306 ppb	0.028 ppb	80.484 %
Concentration per Run 2	90.623 %	99.155 %	0.332 ppb	0.026 ppb	80.250 %
Concentration per Run 3	91.381 %	97.858 %	0.315 ppb	0.030 ppb	79.679 %
Concentration RSD	0.5 %	2.7 %	4.1 %	7.1 %	0.5 %

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Analysis index: 38 Analysis started at: 12/17/2021 11:45:43 AM
 Analysis label: L2168430-02 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.176 %	106.536 %	0.007 ppb	22,039.574 ppb	9,290.283 ppb	2.856 ppb	1,265.593 ppb	64,596.264 ppb	98.784 %
Concentration per Run 1	88.628 %	106.275 %	0.006 ppb	21,603.822 ppb	9,123.990 ppb	2.983 ppb	1,184.805 ppb	62,661.687 ppb	99.434 %
Concentration per Run 2	88.181 %	107.647 %	0.004 ppb	21,698.495 ppb	9,229.907 ppb	2.153 ppb	1,282.095 ppb	64,977.879 ppb	98.588 %
Concentration per Run 3	87.718 %	105.686 %	0.011 ppb	22,816.404 ppb	9,516.952 ppb	3.432 ppb	1,329.878 ppb	66,149.226 ppb	98.329 %
Concentration RSD	0.5 %	0.9 %	50.3 %	3.1 %	2.2 %	22.7 %	5.8 %	2.7 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.950 ppb	0.105 ppb	29.174 ppb	170.298 ppb	6.015 ppb	1.882 ppb	1.062 ppb	1.497 ppb	95.842 %
Concentration per Run 1	0.962 ppb	0.106 ppb	29.146 ppb	191.453 ppb	6.211 ppb	1.754 ppb	1.057 ppb	1.655 ppb	88.467 %
Concentration per Run 2	0.889 ppb	0.118 ppb	28.914 ppb	152.644 ppb	5.837 ppb	2.115 ppb	1.098 ppb	1.343 ppb	98.482 %
Concentration per Run 3	1.000 ppb	0.091 ppb	29.463 ppb	166.796 ppb	5.998 ppb	1.778 ppb	1.032 ppb	1.492 ppb	100.578 %
Concentration RSD	5.9 %	12.8 %	0.9 %	11.5 %	3.1 %	10.7 %	3.1 %	10.4 %	6.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.537 ppb	0.629 ppb	257.277 ppb	97.144 %	0.002 ppb	0.036 ppb	101.440 %	0.380 ppb	27.114 ppb
Concentration per Run 1	0.681 ppb	0.532 ppb	253.963 ppb	95.181 %	0.000 ppb	0.032 ppb	96.419 %	0.341 ppb	26.640 ppb
Concentration per Run 2	0.513 ppb	0.838 ppb	257.938 ppb	97.440 %	0.006 ppb	0.041 ppb	103.684 %	0.387 ppb	27.463 ppb
Concentration per Run 3	0.419 ppb	0.515 ppb	259.930 ppb	98.813 %	-0.001 ppb	0.035 ppb	104.217 %	0.412 ppb	27.239 ppb
Concentration RSD	24.7 %	28.9 %	1.2 %	1.9 %	210.5 %	12.9 %	4.3 %	9.4 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.303 %	105.136 %	0.164 ppb	0.047 ppb	96.529 %
Concentration per Run 1	96.270 %	101.585 %	0.151 ppb	0.048 ppb	94.352 %
Concentration per Run 2	99.723 %	105.328 %	0.169 ppb	0.048 ppb	97.226 %
Concentration per Run 3	101.915 %	108.496 %	0.171 ppb	0.046 ppb	98.010 %
Concentration RSD	2.9 %	3.3 %	6.7 %	2.5 %	2.0 %

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Analysis index: 39 Analysis started at: 12/17/2021 11:50:32 AM
 Analysis label: L2168430-03 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	79.565 %	96.863 %	0.080 ppb	1,137,611.161 ppb	32,523.467 ppb	12.480 ppb	12,077.985 ppb	124,214.207 ppb	108.544 %
Concentration per Run 1	79.732 %	99.020 %	0.097 ppb	1,073,055.341 ppb	30,637.802 ppb	12.740 ppb	11,062.837 ppb	118,089.154 ppb	107.675 %
Concentration per Run 2	79.307 %	93.529 %	0.066 ppb	1,199,554.493 ppb	34,308.374 ppb	13.176 ppb	12,346.311 ppb	126,964.866 ppb	108.791 %
Concentration per Run 3	79.656 %	98.039 %	0.078 ppb	1,140,223.650 ppb	32,624.225 ppb	11.523 ppb	12,824.807 ppb	127,588.600 ppb	109.166 %
Concentration RSD	0.3 %	3.0 %	19.5 %	5.6 %	5.6 %	6.9 %	7.5 %	4.3 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.061 ppb	1.133 ppb	4,574.317 ppb	191,339.444 ppb	2.565 ppb	3.489 ppb	0.172 ppb	2.488 ppb	75.140 %
Concentration per Run 1	0.165 ppb	1.088 ppb	4,403.739 ppb	187,603.674 ppb	2.584 ppb	3.258 ppb	0.155 ppb	2.392 ppb	72.456 %
Concentration per Run 2	0.018 ppb	1.206 ppb	4,614.318 ppb	192,892.511 ppb	2.489 ppb	3.606 ppb	0.172 ppb	2.618 ppb	75.781 %
Concentration per Run 3	-0.001 ppb	1.103 ppb	4,704.894 ppb	193,522.147 ppb	2.622 ppb	3.603 ppb	0.190 ppb	2.454 ppb	77.184 %
Concentration RSD	149.8 %	5.7 %	3.4 %	1.7 %	2.7 %	5.7 %	10.2 %	4.7 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.074 ppb	0.176 ppb	873.917 ppb	74.813 %	0.001 ppb	0.009 ppb	85.321 %	0.628 ppb	33.297 ppb
Concentration per Run 1	1.894 ppb	0.221 ppb	851.839 ppb	72.747 %	0.001 ppb	0.007 ppb	83.115 %	0.539 ppb	32.389 ppb
Concentration per Run 2	2.193 ppb	0.107 ppb	884.583 ppb	74.866 %	0.001 ppb	0.010 ppb	84.740 %	0.726 ppb	34.604 ppb
Concentration per Run 3	2.133 ppb	0.199 ppb	885.330 ppb	76.826 %	0.002 ppb	0.010 ppb	88.108 %	0.618 ppb	32.900 ppb
Concentration RSD	7.6 %	34.3 %	2.2 %	2.7 %	49.3 %	19.8 %	3.0 %	15.0 %	3.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.691 %	92.370 %	0.149 ppb	0.057 ppb	68.226 %
Concentration per Run 1	85.920 %	89.520 %	0.135 ppb	0.060 ppb	66.880 %
Concentration per Run 2	88.161 %	93.630 %	0.152 ppb	0.059 ppb	68.862 %
Concentration per Run 3	88.992 %	93.959 %	0.161 ppb	0.053 ppb	68.935 %
Concentration RSD	1.8 %	2.7 %	8.6 %	6.4 %	1.7 %

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Analysis index: 40 Analysis started at: 12/17/2021 11:55:20 AM
 Analysis label: L2168430-04 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.929 %	110.981 %	0.003 ppb	75,909.798 ppb	51,832.590 ppb	5.317 ppb	4,538.161 ppb	182,697.941 ppb	104.366 %
Concentration per Run 1	94.557 %	113.530 %	0.001 ppb	72,562.988 ppb	49,640.737 ppb	4.705 ppb	4,440.511 ppb	176,393.350 ppb	103.509 %
Concentration per Run 2	94.618 %	115.883 %	0.001 ppb	74,372.813 ppb	50,374.504 ppb	5.226 ppb	4,460.052 ppb	181,098.586 ppb	104.687 %
Concentration per Run 3	95.613 %	103.529 %	0.007 ppb	80,793.593 ppb	55,482.529 ppb	6.018 ppb	4,713.921 ppb	190,601.887 ppb	104.904 %
Concentration RSD	0.6 %	5.9 %	129.3 %	5.7 %	6.1 %	12.4 %	3.4 %	4.0 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.515 ppb	0.085 ppb	1,190.224 ppb	4,801.514 ppb	1.606 ppb	4.230 ppb	1.055 ppb	6.330 ppb	95.366 %
Concentration per Run 1	0.491 ppb	0.099 ppb	1,162.147 ppb	4,751.217 ppb	1.687 ppb	3.900 ppb	1.263 ppb	6.186 ppb	93.292 %
Concentration per Run 2	0.544 ppb	0.057 ppb	1,198.117 ppb	4,788.123 ppb	1.562 ppb	4.380 ppb	1.010 ppb	6.488 ppb	95.426 %
Concentration per Run 3	0.509 ppb	0.099 ppb	1,210.409 ppb	4,865.201 ppb	1.569 ppb	4.411 ppb	0.893 ppb	6.316 ppb	97.382 %
Concentration RSD	5.2 %	28.3 %	2.1 %	1.2 %	4.4 %	6.8 %	17.9 %	2.4 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.630 ppb	0.070 ppb	851.819 ppb	96.726 %	-0.001 ppb	0.004 ppb	102.823 %	0.300 ppb	3,303.372 ppb
Concentration per Run 1	0.606 ppb	0.037 ppb	823.735 ppb	94.914 %	-0.004 ppb	0.000 ppb	98.778 %	0.293 ppb	3,254.727 ppb
Concentration per Run 2	0.624 ppb	0.032 ppb	871.798 ppb	97.265 %	-0.002 ppb	0.003 ppb	104.481 %	0.291 ppb	3,340.536 ppb
Concentration per Run 3	0.659 ppb	0.141 ppb	859.924 ppb	97.998 %	0.004 ppb	0.008 ppb	105.209 %	0.317 ppb	3,314.853 ppb
Concentration RSD	4.2 %	88.0 %	2.9 %	1.7 %	649.7 %	114.3 %	3.4 %	4.9 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.380 %	101.825 %	0.099 ppb	0.047 ppb	91.469 %
Concentration per Run 1	95.606 %	99.117 %	0.094 ppb	0.047 ppb	90.544 %
Concentration per Run 2	98.528 %	103.356 %	0.104 ppb	0.046 ppb	91.290 %
Concentration per Run 3	98.007 %	103.002 %	0.101 ppb	0.049 ppb	92.573 %
Concentration RSD	1.6 %	2.3 %	5.2 %	4.1 %	1.1 %

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Analysis index: 41 Analysis started at: 12/17/2021 12:00:08 PM
 Analysis label: WG1583661-6D5 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.221 %	102.941 %	0.012 ppb	37,963.917 ppb	5,348.029 ppb	2.709 ppb	1,209.734 ppb	36,866.025 ppb	98.919 %
Concentration per Run 1	90.036 %	100.000 %	0.010 ppb	38,242.385 ppb	5,370.121 ppb	2.319 ppb	1,192.458 ppb	35,405.173 ppb	99.156 %
Concentration per Run 2	90.517 %	103.333 %	0.004 ppb	38,504.756 ppb	5,437.802 ppb	2.941 ppb	1,245.661 ppb	38,357.286 ppb	98.633 %
Concentration per Run 3	90.110 %	105.490 %	0.021 ppb	37,144.610 ppb	5,236.163 ppb	2.867 ppb	1,191.082 ppb	36,835.615 ppb	98.967 %
Concentration RSD	0.3 %	2.7 %	76.5 %	1.9 %	1.9 %	12.5 %	2.6 %	4.0 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.033 ppb	0.038 ppb	3,196.108 ppb	20,834.650 ppb	3.739 ppb	2.882 ppb	0.059 ppb	3.462 ppb	90.556 %
Concentration per Run 1	-0.023 ppb	0.027 ppb	3,173.737 ppb	20,838.713 ppb	3.857 ppb	2.769 ppb	0.061 ppb	3.405 ppb	89.697 %
Concentration per Run 2	-0.052 ppb	0.059 ppb	3,251.461 ppb	21,153.435 ppb	3.619 ppb	2.939 ppb	0.049 ppb	3.458 ppb	90.369 %
Concentration per Run 3	-0.025 ppb	0.030 ppb	3,163.125 ppb	20,511.802 ppb	3.742 ppb	2.939 ppb	0.067 ppb	3.522 ppb	91.600 %
Concentration RSD	49.3 %	45.7 %	1.5 %	1.5 %	3.2 %	3.4 %	15.8 %	1.7 %	1.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.473 ppb	0.024 ppb	164.136 ppb	92.457 %	0.001 ppb	0.008 ppb	96.871 %	0.130 ppb	62.265 ppb
Concentration per Run 1	0.427 ppb	0.126 ppb	159.392 ppb	92.782 %	-0.001 ppb	0.006 ppb	93.907 %	0.136 ppb	61.607 ppb
Concentration per Run 2	0.474 ppb	-0.063 ppb	166.813 ppb	92.974 %	-0.002 ppb	0.012 ppb	98.801 %	0.109 ppb	62.873 ppb
Concentration per Run 3	0.518 ppb	0.008 ppb	166.203 ppb	91.615 %	0.004 ppb	0.006 ppb	97.905 %	0.146 ppb	62.315 ppb
Concentration RSD	9.6 %	403.9 %	2.5 %	0.8 %	419.1 %	41.8 %	2.7 %	14.4 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.744 %	100.151 %	0.064 ppb	0.003 ppb	94.071 %
Concentration per Run 1	94.281 %	98.926 %	0.057 ppb	0.002 ppb	94.662 %
Concentration per Run 2	95.144 %	101.642 %	0.064 ppb	0.005 ppb	94.541 %
Concentration per Run 3	94.806 %	99.884 %	0.071 ppb	0.002 ppb	93.011 %
Concentration RSD	0.5 %	1.4 %	11.2 %	52.5 %	1.0 %

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Analysis index: 42 Analysis started at: 12/17/2021 12:04:56 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.106 %	102.549 %	60.054 ppb	5,939.325 ppb	5,962.046 ppb	58.703 ppb	6,077.152 ppb	6,365.049 ppb	97.122 %
Concentration per Run 1	89.170 %	97.647 %	60.158 ppb	5,990.077 ppb	6,049.014 ppb	59.655 ppb	6,013.093 ppb	6,003.615 ppb	97.942 %
Concentration per Run 2	88.614 %	102.353 %	59.727 ppb	6,108.418 ppb	6,045.904 ppb	56.355 ppb	6,399.490 ppb	6,743.658 ppb	96.053 %
Concentration per Run 3	89.534 %	107.647 %	60.278 ppb	5,719.479 ppb	5,791.219 ppb	60.099 ppb	5,818.873 ppb	6,347.876 ppb	97.372 %
Recovery Percentage 1			100.090 %	98.989 %	99.367 %	97.838 %	101.286 %	106.084 %	
Concentration RSD	0.5 %	4.9 %	0.5 %	3.4 %	2.5 %	3.5 %	4.9 %	5.8 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	58.503 ppb	58.353 ppb	58.401 ppb	5,832.617 ppb	57.804 ppb	57.825 ppb	56.551 ppb	57.572 ppb	91.148 %
Concentration per Run 1	60.075 ppb	59.672 ppb	58.117 ppb	5,947.244 ppb	60.047 ppb	57.898 ppb	58.553 ppb	58.382 ppb	87.661 %
Concentration per Run 2	58.984 ppb	58.526 ppb	59.724 ppb	5,834.269 ppb	57.828 ppb	59.430 ppb	56.260 ppb	58.435 ppb	91.311 %
Concentration per Run 3	56.450 ppb	56.860 ppb	57.361 ppb	5,716.338 ppb	55.538 ppb	56.145 ppb	54.840 ppb	55.901 ppb	94.471 %
Recovery Percentage 1	97.505 %	97.254 %	97.335 %	97.210 %	96.341 %	96.374 %	94.252 %	95.954 %	
Concentration RSD	3.2 %	2.4 %	2.1 %	2.0 %	3.9 %	2.8 %	3.3 %	2.5 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	58.310 ppb	55.396 ppb	59.780 ppb	93.625 %	58.481 ppb	58.921 ppb	96.972 %	58.226 ppb	59.089 ppb
Concentration per Run 1	59.112 ppb	53.738 ppb	58.485 ppb	93.683 %	59.143 ppb	59.078 ppb	93.541 %	58.512 ppb	58.155 ppb
Concentration per Run 2	58.846 ppb	56.277 ppb	60.837 ppb	93.708 %	58.063 ppb	59.125 ppb	98.352 %	57.900 ppb	59.939 ppb
Concentration per Run 3	56.974 ppb	56.172 ppb	60.017 ppb	93.483 %	58.235 ppb	58.562 ppb	99.021 %	58.264 ppb	59.174 ppb
Recovery Percentage 1	97.184 %	92.326 %	99.633 %		97.468 %	98.202 %		97.043 %	98.482 %
Concentration RSD	2.0 %	2.6 %	2.0 %	0.1 %	1.0 %	0.5 %	3.1 %	0.5 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.162 %	98.268 %	60.377 ppb	58.394 ppb	95.769 %
Concentration per Run 1	92.579 %	95.688 %	60.546 ppb	58.212 ppb	95.310 %
Concentration per Run 2	93.854 %	99.248 %	60.943 ppb	58.915 ppb	94.903 %
Concentration per Run 3	93.055 %	99.868 %	59.642 ppb	58.054 ppb	97.095 %
Recovery Percentage 1			100.629 %	97.323 %	
Concentration RSD	0.7 %	2.3 %	1.1 %	0.8 %	1.2 %

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Analysis index: 43 Analysis started at: 12/17/2021 12:09:48 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.447 %	103.726 %	0.006 ppb	3.725 ppb	0.332 ppb	-0.743 ppb	-10.185 ppb	5.200 ppb	84.636 %
Concentration per Run 1	84.830 %	101.765 %	0.000 ppb	7.237 ppb	-0.679 ppb	-0.903 ppb	-8.603 ppb	-4.860 ppb	84.075 %
Concentration per Run 2	85.241 %	103.137 %	0.005 ppb	-0.084 ppb	0.348 ppb	-0.608 ppb	-9.557 ppb	17.854 ppb	85.247 %
Concentration per Run 3	86.268 %	106.275 %	0.014 ppb	4.020 ppb	1.326 ppb	-0.718 ppb	-12.396 ppb	2.606 ppb	84.587 %
Recovery Percentage 1			1.234 %	3.725 %	0.474 %	-7.427 %	-10.185 %	5.200 %	
Concentration RSD	0.9 %	2.2 %	111.4 %	98.5 %	302.2 %	20.1 %	19.4 %	222.6 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.048 ppb	0.005 ppb	0.011 ppb	18.362 ppb	0.002 ppb	-0.074 ppb	-0.021 ppb	-0.209 ppb	90.549 %
Concentration per Run 1	-0.080 ppb	0.018 ppb	0.036 ppb	19.605 ppb	0.002 ppb	-0.073 ppb	-0.052 ppb	-0.303 ppb	85.257 %
Concentration per Run 2	-0.025 ppb	0.007 ppb	-0.010 ppb	19.412 ppb	-0.003 ppb	-0.128 ppb	-0.005 ppb	-0.179 ppb	92.965 %
Concentration per Run 3	-0.039 ppb	-0.012 ppb	0.008 ppb	16.069 ppb	0.006 ppb	-0.020 ppb	-0.006 ppb	-0.145 ppb	93.426 %
Recovery Percentage 1	-0.956 %	0.457 %	1.126 %	36.724 %	0.314 %	-3.687 %	-2.106 %	-2.090 %	
Concentration RSD	59.9 %	329.9 %	203.8 %	10.8 %	265.9 %	73.3 %	128.6 %	39.6 %	5.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.057 ppb	0.065 ppb	-0.013 ppb	94.861 %	0.002 ppb	0.002 ppb	97.031 %	0.049 ppb	-0.066 ppb
Concentration per Run 1	0.075 ppb	0.099 ppb	-0.014 ppb	93.541 %	0.005 ppb	0.000 ppb	93.698 %	0.047 ppb	-0.075 ppb
Concentration per Run 2	0.061 ppb	0.050 ppb	-0.011 ppb	94.246 %	0.004 ppb	0.003 ppb	99.044 %	0.047 ppb	-0.058 ppb
Concentration per Run 3	0.036 ppb	0.045 ppb	-0.015 ppb	96.797 %	-0.003 ppb	0.003 ppb	98.351 %	0.054 ppb	-0.067 ppb
Recovery Percentage 1	11.426 %	1.295 %	-2.617 %		0.584 %	0.954 %		1.227 %	-13.287 %
Concentration RSD	34.8 %	45.6 %	16.9 %	1.8 %	189.4 %	86.6 %	3.0 %	8.2 %	12.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.643 %	97.643 %	0.223 ppb	0.008 ppb	98.524 %
Concentration per Run 1	90.644 %	94.176 %	0.239 ppb	0.009 ppb	97.104 %
Concentration per Run 2	93.356 %	98.918 %	0.227 ppb	0.010 ppb	99.260 %
Concentration per Run 3	93.930 %	99.835 %	0.204 ppb	0.005 ppb	99.208 %
Recovery Percentage 1			22.313 %	0.785 %	
Concentration RSD	1.9 %	3.1 %	7.9 %	35.3 %	1.2 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.489 %	105.817 %	-0.001 ppb	-1.591 ppb	0.352 ppb	1.515 ppb	-7.061 ppb	2.661 ppb	91.436 %
Concentration per Run 1	86.197 %	104.902 %	0.002 ppb	-0.373 ppb	2.412 ppb	0.917 ppb	-9.100 ppb	-4.773 ppb	93.067 %
Concentration per Run 2	85.479 %	108.431 %	-0.002 ppb	-2.970 ppb	-0.679 ppb	1.322 ppb	-5.105 ppb	2.487 ppb	91.533 %
Concentration per Run 3	84.790 %	104.118 %	-0.002 ppb	-1.430 ppb	-0.679 ppb	2.305 ppb	-6.977 ppb	10.269 ppb	89.707 %
Concentration RSD	0.8 %	2.2 %	311.2 %	82.1 %	507.4 %	47.1 %	28.3 %	282.7 %	1.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.052 ppb	0.029 ppb	0.088 ppb	9.976 ppb	0.000 ppb	0.013 ppb	0.035 ppb	-0.281 ppb	90.022 %
Concentration per Run 1	-0.051 ppb	0.056 ppb	0.133 ppb	12.213 ppb	0.002 ppb	0.090 ppb	0.022 ppb	-0.318 ppb	86.602 %
Concentration per Run 2	-0.066 ppb	0.011 ppb	0.065 ppb	8.765 ppb	0.001 ppb	-0.113 ppb	0.066 ppb	-0.320 ppb	92.114 %
Concentration per Run 3	-0.038 ppb	0.021 ppb	0.068 ppb	8.949 ppb	-0.003 ppb	0.063 ppb	0.017 ppb	-0.204 ppb	91.350 %
Concentration RSD	27.1 %	80.0 %	43.4 %	19.4 %	1,566.4 %	818.3 %	77.7 %	23.7 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.026 ppb	0.073 ppb	-0.010 ppb	95.146 %	0.000 ppb	0.003 ppb	97.932 %	0.036 ppb	-0.055 ppb
Concentration per Run 1	0.030 ppb	0.168 ppb	-0.021 ppb	93.710 %	-0.002 ppb	0.003 ppb	95.369 %	0.029 ppb	-0.075 ppb
Concentration per Run 2	0.003 ppb	0.007 ppb	-0.004 ppb	95.620 %	-0.001 ppb	0.003 ppb	99.586 %	0.033 ppb	-0.042 ppb
Concentration per Run 3	0.045 ppb	0.043 ppb	-0.004 ppb	96.106 %	0.002 ppb	0.003 ppb	98.842 %	0.047 ppb	-0.050 ppb
Concentration RSD	80.6 %	116.5 %	97.0 %	1.3 %	2,997.3 %	2.0 %	2.3 %	25.9 %	31.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.468 %	97.485 %	0.079 ppb	0.013 ppb	98.923 %
Concentration per Run 1	89.982 %	93.710 %	0.083 ppb	0.014 ppb	97.203 %
Concentration per Run 2	93.315 %	98.893 %	0.079 ppb	0.013 ppb	99.461 %
Concentration per Run 3	94.105 %	99.853 %	0.074 ppb	0.013 ppb	100.104 %
Concentration RSD	2.4 %	3.4 %	5.7 %	2.1 %	1.5 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.879 %	105.948 %	10.160 ppb	1,941.483 ppb	1,959.437 ppb	379.026 ppb	1,952.116 ppb	1,728.949 ppb	90.490 %
Concentration per Run 1	86.011 %	101.569 %	10.098 ppb	1,931.198 ppb	1,925.078 ppb	383.866 ppb	1,926.719 ppb	1,988.268 ppb	90.350 %
Concentration per Run 2	85.178 %	110.196 %	10.273 ppb	1,896.521 ppb	1,938.182 ppb	374.022 ppb	1,884.516 ppb	1,587.707 ppb	89.784 %
Concentration per Run 3	86.448 %	106.079 %	10.110 ppb	1,996.731 ppb	2,015.051 ppb	379.189 ppb	2,045.114 ppb	1,610.873 ppb	91.336 %
Concentration RSD	0.8 %	4.1 %	1.0 %	2.6 %	2.5 %	1.3 %	4.3 %	13.0 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	93.257 ppb	37.377 ppb	94.144 ppb	200.673 ppb	90.559 ppb	92.084 ppb	47.378 ppb	94.051 ppb	91.078 %
Concentration per Run 1	94.313 ppb	37.426 ppb	95.430 ppb	200.999 ppb	93.052 ppb	96.414 ppb	49.327 ppb	94.688 ppb	86.908 %
Concentration per Run 2	92.294 ppb	37.584 ppb	93.640 ppb	196.258 ppb	88.330 ppb	87.775 ppb	45.981 ppb	93.241 ppb	93.220 %
Concentration per Run 3	93.165 ppb	37.121 ppb	93.362 ppb	204.762 ppb	90.295 ppb	92.062 ppb	46.827 ppb	94.224 ppb	93.106 %
Concentration RSD	1.1 %	0.6 %	1.2 %	2.1 %	2.6 %	4.7 %	3.7 %	0.8 %	4.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	23.442 ppb	22.538 ppb	191.257 ppb	94.615 %	10.273 ppb	10.363 ppb	96.958 %	90.459 ppb	393.530 ppb
Concentration per Run 1	23.703 ppb	21.907 ppb	187.711 ppb	92.963 %	10.401 ppb	10.329 ppb	92.272 %	91.423 ppb	396.894 ppb
Concentration per Run 2	23.861 ppb	22.963 ppb	193.635 ppb	94.446 %	10.180 ppb	10.321 ppb	99.881 %	89.440 ppb	391.825 ppb
Concentration per Run 3	22.762 ppb	22.745 ppb	192.424 ppb	96.436 %	10.239 ppb	10.441 ppb	98.721 %	90.513 ppb	391.871 ppb
Concentration RSD	2.5 %	2.5 %	1.6 %	1.8 %	1.1 %	0.6 %	4.2 %	1.1 %	0.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.077 %	98.893 %	24.358 ppb	102.417 ppb	97.919 %
Concentration per Run 1	91.411 %	96.420 %	24.438 ppb	102.279 ppb	96.115 %
Concentration per Run 2	94.397 %	101.003 %	24.326 ppb	102.526 ppb	98.959 %
Concentration per Run 3	93.423 %	99.255 %	24.309 ppb	102.446 ppb	98.684 %
Concentration RSD	1.6 %	2.3 %	0.3 %	0.1 %	1.6 %

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Analysis index: 46 Analysis started at: 12/17/2021 12:29:22 PM
 Analysis label: WG1582905-3D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	83.478 %	99.150 %	4.833 ppb	68,567.379 ppb	10,058.784 ppb	208.783 ppb	1,853.192 ppb	14,303.501 ppb	95.661 %
Concentration per Run 1	83.233 %	101.177 %	4.689 ppb	67,038.514 ppb	9,617.781 ppb	203.411 ppb	1,817.975 ppb	13,228.471 ppb	94.070 %
Concentration per Run 2	83.905 %	99.216 %	4.792 ppb	67,911.378 ppb	9,953.292 ppb	213.884 ppb	1,799.223 ppb	14,428.232 ppb	96.608 %
Concentration per Run 3	83.296 %	97.059 %	5.019 ppb	70,752.247 ppb	10,605.279 ppb	209.053 ppb	1,942.377 ppb	15,253.801 ppb	96.306 %
Concentration RSD	0.4 %	2.1 %	3.5 %	2.8 %	5.0 %	2.5 %	4.2 %	7.1 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	47.520 ppb	18.620 ppb	524.165 ppb	22,066.427 ppb	45.028 ppb	43.459 ppb	22.200 ppb	43.632 ppb	85.866 %
Concentration per Run 1	45.604 ppb	18.640 ppb	510.863 ppb	21,824.120 ppb	45.169 ppb	44.085 ppb	22.989 ppb	44.005 ppb	83.623 %
Concentration per Run 2	47.641 ppb	18.435 ppb	523.137 ppb	21,576.373 ppb	44.487 ppb	42.514 ppb	21.382 ppb	42.363 ppb	88.218 %
Concentration per Run 3	49.313 ppb	18.784 ppb	538.495 ppb	22,798.789 ppb	45.428 ppb	43.779 ppb	22.228 ppb	44.529 ppb	85.757 %
Concentration RSD	3.9 %	0.9 %	2.6 %	2.9 %	1.1 %	1.9 %	3.6 %	2.6 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	17.434 ppb	10.996 ppb	185.580 ppb	88.089 %	4.884 ppb	4.924 ppb	92.142 %	48.014 ppb	258.018 ppb
Concentration per Run 1	16.969 ppb	10.719 ppb	180.665 ppb	87.985 %	4.911 ppb	4.927 ppb	87.981 %	48.730 ppb	257.072 ppb
Concentration per Run 2	17.078 ppb	10.773 ppb	187.004 ppb	88.480 %	4.948 ppb	4.770 ppb	94.207 %	47.943 ppb	260.334 ppb
Concentration per Run 3	18.255 ppb	11.494 ppb	189.070 ppb	87.801 %	4.792 ppb	5.075 ppb	94.237 %	47.368 ppb	256.647 ppb
Concentration RSD	4.1 %	3.9 %	2.4 %	0.4 %	1.7 %	3.1 %	3.9 %	1.4 %	0.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	90.396 %	95.438 %	10.858 ppb	50.250 ppb	91.311 %
Concentration per Run 1	88.200 %	92.013 %	10.532 ppb	49.594 ppb	91.076 %
Concentration per Run 2	91.989 %	97.586 %	10.952 ppb	50.663 ppb	91.623 %
Concentration per Run 3	90.997 %	96.715 %	11.090 ppb	50.494 ppb	91.233 %
Concentration RSD	2.2 %	3.1 %	2.7 %	1.1 %	0.3 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	82.171 %	100.719 %	4.964 ppb	67,779.401 ppb	9,897.723 ppb	208.573 ppb	1,870.199 ppb	14,463.878 ppb	92.826 %
Concentration per Run 1	82.055 %	104.510 %	4.979 ppb	63,286.030 ppb	9,175.724 ppb	190.597 ppb	1,723.168 ppb	13,405.931 ppb	92.374 %
Concentration per Run 2	82.440 %	105.686 %	4.884 ppb	66,182.746 ppb	9,569.845 ppb	207.092 ppb	1,883.023 ppb	13,854.075 ppb	93.019 %
Concentration per Run 3	82.017 %	91.961 %	5.030 ppb	73,869.427 ppb	10,947.600 ppb	228.029 ppb	2,004.407 ppb	16,131.628 ppb	93.085 %
Concentration RSD	0.3 %	7.6 %	1.5 %	8.1 %	9.4 %	9.0 %	7.5 %	10.1 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	47.280 ppb	18.578 ppb	517.696 ppb	21,942.653 ppb	44.254 ppb	43.346 ppb	22.602 ppb	43.417 ppb	85.278 %
Concentration per Run 1	45.770 ppb	18.235 ppb	487.947 ppb	21,040.002 ppb	42.715 ppb	41.390 ppb	22.045 ppb	41.448 ppb	86.348 %
Concentration per Run 2	47.449 ppb	18.186 ppb	528.622 ppb	22,149.049 ppb	44.667 ppb	44.388 ppb	22.615 ppb	43.699 ppb	84.326 %
Concentration per Run 3	48.621 ppb	19.312 ppb	536.519 ppb	22,638.907 ppb	45.380 ppb	44.259 ppb	23.147 ppb	45.104 ppb	85.161 %
Concentration RSD	3.0 %	3.4 %	5.0 %	3.7 %	3.1 %	3.9 %	2.4 %	4.2 %	1.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	16.913 ppb	10.233 ppb	186.371 ppb	86.574 %	4.950 ppb	4.936 ppb	91.618 %	46.248 ppb	254.018 ppb
Concentration per Run 1	15.922 ppb	10.274 ppb	177.729 ppb	85.634 %	4.952 ppb	5.073 ppb	88.335 %	46.196 ppb	251.277 ppb
Concentration per Run 2	17.271 ppb	9.486 ppb	192.467 ppb	87.134 %	4.887 ppb	4.843 ppb	94.937 %	45.667 ppb	251.127 ppb
Concentration per Run 3	17.546 ppb	10.940 ppb	188.916 ppb	86.953 %	5.010 ppb	4.893 ppb	91.582 %	46.881 ppb	259.650 ppb
Concentration RSD	5.1 %	7.1 %	4.1 %	0.9 %	1.2 %	2.5 %	3.6 %	1.3 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	89.449 %	95.253 %	11.105 ppb	51.005 ppb	89.303 %
Concentration per Run 1	87.442 %	91.955 %	10.827 ppb	50.464 ppb	88.850 %
Concentration per Run 2	91.123 %	97.754 %	11.112 ppb	51.029 ppb	89.895 %
Concentration per Run 3	89.783 %	96.050 %	11.377 ppb	51.521 ppb	89.163 %
Concentration RSD	2.1 %	3.1 %	2.5 %	1.0 %	0.6 %

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Analysis index: 48 Analysis started at: 12/17/2021 12:38:56 PM
 Analysis label: WG1582905-5D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	79.740 %	95.098 %	45.902 ppb	75,394.574 ppb	14,182.281 ppb	64.093 ppb	5,759.213 ppb	19,241.157 ppb	91.010 %
Concentration per Run 1	80.269 %	92.549 %	45.307 ppb	75,582.750 ppb	14,282.494 ppb	62.780 ppb	5,650.319 ppb	19,196.777 ppb	91.492 %
Concentration per Run 2	79.063 %	96.078 %	45.914 ppb	75,897.808 ppb	14,281.827 ppb	65.446 ppb	6,058.142 ppb	18,898.061 ppb	90.222 %
Concentration per Run 3	79.889 %	96.667 %	46.486 ppb	74,703.165 ppb	13,982.521 ppb	64.051 ppb	5,569.178 ppb	19,628.632 ppb	91.316 %
Concentration RSD	0.8 %	2.3 %	1.3 %	0.8 %	1.2 %	2.1 %	4.5 %	1.9 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	47.133 ppb	47.048 ppb	563.959 ppb	28,039.008 ppb	46.164 ppb	44.472 ppb	44.490 ppb	45.066 ppb	80.476 %
Concentration per Run 1	46.682 ppb	46.052 ppb	545.758 ppb	27,479.211 ppb	45.155 ppb	44.167 ppb	44.736 ppb	45.251 ppb	80.522 %
Concentration per Run 2	48.136 ppb	47.000 ppb	565.868 ppb	28,085.099 ppb	46.953 ppb	45.385 ppb	45.147 ppb	46.345 ppb	79.706 %
Concentration per Run 3	46.579 ppb	48.092 ppb	580.250 ppb	28,552.716 ppb	46.383 ppb	43.863 ppb	43.587 ppb	43.602 ppb	81.200 %
Concentration RSD	1.8 %	2.2 %	3.1 %	1.9 %	2.0 %	1.8 %	1.8 %	3.1 %	0.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	50.981 ppb	44.861 ppb	144.496 ppb	83.632 %	4.304 ppb	45.695 ppb	87.912 %	46.709 ppb	109.944 ppb
Concentration per Run 1	49.442 ppb	43.310 ppb	139.470 ppb	82.563 %	4.323 ppb	46.315 ppb	83.773 %	47.807 ppb	111.172 ppb
Concentration per Run 2	52.097 ppb	45.329 ppb	147.737 ppb	84.112 %	4.363 ppb	45.339 ppb	89.013 %	46.952 ppb	110.540 ppb
Concentration per Run 3	51.404 ppb	45.944 ppb	146.280 ppb	84.221 %	4.227 ppb	45.430 ppb	90.951 %	45.367 ppb	108.119 ppb
Concentration RSD	2.7 %	3.1 %	3.1 %	1.1 %	1.6 %	1.2 %	4.2 %	2.7 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	86.891 %	92.108 %	46.248 ppb	47.166 ppb	86.514 %
Concentration per Run 1	86.258 %	89.964 %	45.147 ppb	46.918 ppb	86.143 %
Concentration per Run 2	86.725 %	92.596 %	46.606 ppb	47.158 ppb	86.589 %
Concentration per Run 3	87.691 %	93.765 %	46.993 ppb	47.422 ppb	86.810 %
Concentration RSD	0.8 %	2.1 %	2.1 %	0.5 %	0.4 %



Analysis index: 49 Analysis started at: 12/17/2021 12:43:44 PM
 Analysis label: WG1582905-6D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	77.341 %	86.993 %	0.009 ppb	156,096.072 ppb	20,273.077 ppb	39.977 ppb	1,976.748 ppb	29,775.096 ppb	89.552 %
Concentration per Run 1	77.129 %	79.804 %	0.004 ppb	163,447.048 ppb	20,695.005 ppb	37.660 ppb	1,995.498 ppb	29,797.481 ppb	88.822 %
Concentration per Run 2	77.388 %	88.039 %	0.014 ppb	156,480.943 ppb	20,223.628 ppb	39.856 ppb	2,030.657 ppb	29,615.725 ppb	88.921 %
Concentration per Run 3	77.507 %	93.137 %	0.009 ppb	148,360.225 ppb	19,900.597 ppb	42.416 ppb	1,904.090 ppb	29,912.082 ppb	90.914 %
Concentration RSD	0.2 %	7.7 %	56.5 %	4.8 %	2.0 %	6.0 %	3.3 %	0.5 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.178 ppb	0.220 ppb	1,036.451 ppb	47,910.135 ppb	0.242 ppb	0.182 ppb	0.296 ppb	0.619 ppb	79.862 %
Concentration per Run 1	0.107 ppb	0.204 ppb	1,042.874 ppb	48,197.628 ppb	0.239 ppb	0.134 ppb	0.258 ppb	0.665 ppb	77.741 %
Concentration per Run 2	0.256 ppb	0.224 ppb	1,045.974 ppb	47,886.775 ppb	0.217 ppb	0.264 ppb	0.371 ppb	0.672 ppb	80.567 %
Concentration per Run 3	0.170 ppb	0.233 ppb	1,020.506 ppb	47,646.001 ppb	0.270 ppb	0.148 ppb	0.260 ppb	0.521 ppb	81.278 %
Concentration RSD	42.3 %	6.7 %	1.3 %	0.6 %	11.0 %	39.2 %	21.8 %	13.8 %	2.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	11.826 ppb	0.139 ppb	199.530 ppb	80.850 %	0.074 ppb	0.052 ppb	87.574 %	0.345 ppb	126.061 ppb
Concentration per Run 1	11.506 ppb	0.071 ppb	194.125 ppb	79.937 %	0.062 ppb	0.041 ppb	84.165 %	0.312 ppb	124.215 ppb
Concentration per Run 2	11.430 ppb	0.107 ppb	201.572 ppb	81.502 %	0.078 ppb	0.045 ppb	90.235 %	0.346 ppb	125.157 ppb
Concentration per Run 3	12.542 ppb	0.238 ppb	202.893 ppb	81.112 %	0.081 ppb	0.072 ppb	88.321 %	0.378 ppb	128.812 ppb
Concentration RSD	5.3 %	63.2 %	2.4 %	1.0 %	14.3 %	32.2 %	3.5 %	9.6 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	84.250 %	90.521 %	0.731 ppb	0.124 ppb	82.566 %
Concentration per Run 1	82.611 %	88.024 %	0.811 ppb	0.104 ppb	82.142 %
Concentration per Run 2	84.663 %	91.529 %	0.725 ppb	0.127 ppb	82.921 %
Concentration per Run 3	85.476 %	92.009 %	0.656 ppb	0.142 ppb	82.635 %
Concentration RSD	1.8 %	2.4 %	10.7 %	15.5 %	0.5 %

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Analysis index: 50 Analysis started at: 12/17/2021 12:48:32 PM
 Analysis label: I2167788-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	73.821 %	86.274 %	0.037 ppb	767,714.317 ppb	97,557.659 ppb	197.301 ppb	9,699.264 ppb	146,086.100 ppb	98.330 %
Concentration per Run 1	73.361 %	81.568 %	0.031 ppb	775,089.817 ppb	97,464.837 ppb	192.342 ppb	9,378.020 ppb	145,605.759 ppb	97.276 %
Concentration per Run 2	74.111 %	87.059 %	0.033 ppb	774,686.578 ppb	97,983.555 ppb	200.516 ppb	9,920.055 ppb	149,729.129 ppb	99.187 %
Concentration per Run 3	73.992 %	90.196 %	0.046 ppb	753,366.557 ppb	97,224.585 ppb	199.045 ppb	9,799.718 ppb	142,923.413 ppb	98.525 %
Concentration RSD	0.5 %	5.1 %	22.5 %	1.6 %	0.4 %	2.2 %	2.9 %	2.3 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.296 ppb	1.036 ppb	5,122.038 ppb	241,739.503 ppb	0.927 ppb	0.452 ppb	1.346 ppb	2.546 ppb	73.980 %
Concentration per Run 1	1.125 ppb	1.085 ppb	5,218.334 ppb	246,017.211 ppb	0.997 ppb	0.335 ppb	1.454 ppb	2.363 ppb	71.802 %
Concentration per Run 2	1.425 ppb	1.080 ppb	5,080.315 ppb	238,814.992 ppb	0.799 ppb	0.604 ppb	1.355 ppb	2.610 ppb	74.416 %
Concentration per Run 3	1.339 ppb	0.944 ppb	5,067.466 ppb	240,386.307 ppb	0.985 ppb	0.416 ppb	1.228 ppb	2.666 ppb	75.723 %
Concentration RSD	11.9 %	7.7 %	1.6 %	1.6 %	12.0 %	30.5 %	8.4 %	6.3 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	53.243 ppb	0.197 ppb	1,058.456 ppb	74.175 %	0.013 ppb	0.190 ppb	83.872 %	0.225 ppb	636.066 ppb
Concentration per Run 1	53.044 ppb	0.223 ppb	1,033.762 ppb	73.212 %	0.012 ppb	0.200 ppb	80.752 %	0.243 ppb	621.147 ppb
Concentration per Run 2	53.790 ppb	0.119 ppb	1,078.935 ppb	73.627 %	0.015 ppb	0.192 ppb	85.248 %	0.192 ppb	642.027 ppb
Concentration per Run 3	52.894 ppb	0.249 ppb	1,062.671 ppb	75.685 %	0.010 ppb	0.176 ppb	85.615 %	0.241 ppb	645.024 ppb
Concentration RSD	0.9 %	35.0 %	2.2 %	1.8 %	21.0 %	6.3 %	3.2 %	12.9 %	2.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	81.307 %	86.413 %	0.301 ppb	0.451 ppb	69.655 %
Concentration per Run 1	80.198 %	84.051 %	0.283 ppb	0.452 ppb	69.451 %
Concentration per Run 2	82.036 %	88.420 %	0.321 ppb	0.447 ppb	69.402 %
Concentration per Run 3	81.686 %	86.767 %	0.299 ppb	0.454 ppb	70.111 %
Concentration RSD	1.2 %	2.6 %	6.4 %	0.8 %	0.6 %

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Analysis index: 51 Analysis started at: 12/17/2021 12:53:19 PM
 Analysis label: L2168430-05 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	81.310 %	101.177 %	0.006 ppb	89,984.743 ppb	41,521.509 ppb	2,914 ppb	2,609.058 ppb	141,882.147 ppb	91.616 %
Concentration per Run 1	81.133 %	99.020 %	0.008 ppb	87,540.442 ppb	40,227.544 ppb	3,585 ppb	2,502.900 ppb	137,610.310 ppb	91.204 %
Concentration per Run 2	81.874 %	107.647 %	0.001 ppb	86,397.023 ppb	40,037.817 ppb	2,351 ppb	2,617.854 ppb	143,093.465 ppb	92.697 %
Concentration per Run 3	80.924 %	96.863 %	0.010 ppb	96,016.765 ppb	44,299.165 ppb	2,807 ppb	2,706.422 ppb	144,942.666 ppb	90.947 %
Concentration RSD	0.6 %	5.6 %	82.1 %	5.8 %	5.8 %	21.4 %	3.9 %	2.7 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.727 ppb	0.091 ppb	3,605.258 ppb	518.449 ppb	96.893 ppb	60.767 ppb	31.443 ppb	5.842 ppb	87.735 %
Concentration per Run 1	0.683 ppb	0.074 ppb	3,543.248 ppb	529.290 ppb	97.387 ppb	61.585 ppb	32.233 ppb	5.898 ppb	83.733 %
Concentration per Run 2	0.649 ppb	0.072 ppb	3,573.043 ppb	513.487 ppb	95.081 ppb	59.338 ppb	31.080 ppb	5.703 ppb	88.505 %
Concentration per Run 3	0.850 ppb	0.127 ppb	3,699.484 ppb	512.569 ppb	98.211 ppb	61.378 ppb	31.017 ppb	5.924 ppb	90.966 %
Concentration RSD	14.8 %	33.9 %	2.3 %	1.8 %	1.7 %	2.0 %	2.2 %	2.1 %	4.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.452 ppb	0.484 ppb	435.990 ppb	88.476 %	0.000 ppb	0.122 ppb	94.737 %	0.381 ppb	101.742 ppb
Concentration per Run 1	1.374 ppb	0.480 ppb	425.648 ppb	85.811 %	-0.001 ppb	0.145 ppb	90.239 %	0.351 ppb	99.863 ppb
Concentration per Run 2	1.524 ppb	0.574 ppb	442.640 ppb	88.997 %	0.002 ppb	0.092 ppb	96.425 %	0.371 ppb	103.118 ppb
Concentration per Run 3	1.458 ppb	0.397 ppb	439.681 ppb	90.622 %	-0.002 ppb	0.129 ppb	97.548 %	0.421 ppb	102.246 ppb
Concentration RSD	5.2 %	18.3 %	2.1 %	2.8 %	493.8 %	22.1 %	4.2 %	9.5 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.230 %	97.653 %	0.209 ppb	0.545 ppb	86.407 %
Concentration per Run 1	88.217 %	94.048 %	0.194 ppb	0.546 ppb	84.739 %
Concentration per Run 2	91.952 %	98.920 %	0.214 ppb	0.555 ppb	86.650 %
Concentration per Run 3	93.520 %	99.991 %	0.220 ppb	0.535 ppb	87.831 %
Concentration RSD	3.0 %	3.2 %	6.5 %	1.9 %	1.8 %

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Analysis index: 52 Analysis started at: 12/17/2021 12:58:08 PM
 Analysis label: I2168430-06 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	86.747 %	103.399 %	0.008 ppb	101,652.285 ppb	40,755.189 ppb	6.798 ppb	2,462.238 ppb	110,225.330 ppb	97.022 %
Concentration per Run 1	87.337 %	105.882 %	0.011 ppb	97,963.256 ppb	39,235.304 ppb	6.065 ppb	2,295.282 ppb	105,083.363 ppb	96.428 %
Concentration per Run 2	85.929 %	103.726 %	0.020 ppb	101,466.048 ppb	40,587.683 ppb	6.619 ppb	2,517.668 ppb	112,785.297 ppb	97.425 %
Concentration per Run 3	86.977 %	100.588 %	-0.007 ppb	105,527.552 ppb	42,442.581 ppb	7.710 ppb	2,573.764 ppb	112,807.331 ppb	97.213 %
Concentration RSD	0.8 %	2.6 %	173.2 %	3.7 %	4.0 %	12.3 %	6.0 %	4.0 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.611 ppb	0.255 ppb	4,525.888 ppb	316.371 ppb	102.292 ppb	50.715 ppb	1.640 ppb	1.423 ppb	90.149 %
Concentration per Run 1	1.491 ppb	0.248 ppb	4,518.695 ppb	348.975 ppb	105.420 ppb	53.177 ppb	1.784 ppb	1.442 ppb	85.425 %
Concentration per Run 2	1.648 ppb	0.259 ppb	4,538.364 ppb	302.534 ppb	100.473 ppb	49.296 ppb	1.698 ppb	1.382 ppb	92.441 %
Concentration per Run 3	1.693 ppb	0.257 ppb	4,520.605 ppb	297.603 ppb	100.983 ppb	49.672 ppb	1.439 ppb	1.445 ppb	92.580 %
Concentration RSD	6.6 %	2.5 %	0.2 %	9.0 %	2.7 %	4.2 %	10.9 %	2.5 %	4.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.067 ppb	0.227 ppb	483.651 ppb	91.233 %	0.007 ppb	0.012 ppb	97.091 %	0.253 ppb	212.607 ppb
Concentration per Run 1	0.901 ppb	0.272 ppb	479.680 ppb	90.270 %	0.013 ppb	0.009 ppb	93.871 %	0.259 ppb	208.873 ppb
Concentration per Run 2	1.040 ppb	0.090 ppb	485.633 ppb	92.034 %	0.004 ppb	0.006 ppb	98.715 %	0.236 ppb	213.127 ppb
Concentration per Run 3	1.260 ppb	0.320 ppb	485.639 ppb	91.393 %	0.003 ppb	0.020 ppb	98.686 %	0.263 ppb	215.822 ppb
Concentration RSD	17.0 %	53.5 %	0.7 %	1.0 %	75.5 %	65.1 %	2.9 %	5.8 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.526 %	97.622 %	0.133 ppb	0.144 ppb	87.631 %
Concentration per Run 1	89.478 %	94.329 %	0.128 ppb	0.141 ppb	86.981 %
Concentration per Run 2	92.778 %	99.955 %	0.145 ppb	0.145 ppb	87.888 %
Concentration per Run 3	92.321 %	98.581 %	0.127 ppb	0.146 ppb	88.024 %
Concentration RSD	2.0 %	3.0 %	7.7 %	2.0 %	0.6 %

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Analysis index: 53 Analysis started at: 12/17/2021 1:02:57 PM
 Analysis label: L2168430-08 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.147 %	104.379 %	0.008 ppb	564,074.031 ppb	89,009.344 ppb	6.239 ppb	6,340.546 ppb	119,660.913 ppb	100.785 %
Concentration per Run 1	84.491 %	104.902 %	0.011 ppb	543,273.498 ppb	87,105.554 ppb	5.418 ppb	5,871.680 ppb	113,152.462 ppb	100.602 %
Concentration per Run 2	83.927 %	96.274 %	-0.002 ppb	604,754.640 ppb	95,029.173 ppb	7.204 ppb	6,905.963 ppb	126,783.502 ppb	101.611 %
Concentration per Run 3	84.022 %	111.961 %	0.014 ppb	544,193.955 ppb	84,893.305 ppb	6.093 ppb	6,243.995 ppb	119,046.774 ppb	100.144 %
Concentration RSD	0.4 %	7.5 %	112.8 %	6.2 %	6.0 %	14.5 %	8.3 %	5.7 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.239 ppb	0.475 ppb	13,185.743 ppb	36,156.555 ppb	51.616 ppb	6.826 ppb	0.334 ppb	3.214 ppb	82.034 %
Concentration per Run 1	0.312 ppb	0.471 ppb	12,837.596 ppb	35,561.259 ppb	51.782 ppb	6.586 ppb	0.363 ppb	3.252 ppb	79.625 %
Concentration per Run 2	0.256 ppb	0.548 ppb	13,904.181 ppb	38,049.627 ppb	52.626 ppb	7.502 ppb	0.368 ppb	3.235 ppb	82.354 %
Concentration per Run 3	0.148 ppb	0.405 ppb	12,815.452 ppb	34,858.779 ppb	50.440 ppb	6.390 ppb	0.273 ppb	3.155 ppb	84.122 %
Concentration RSD	35.1 %	15.0 %	4.7 %	4.6 %	2.1 %	8.7 %	16.0 %	1.6 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	4.524 ppb	0.065 ppb	1,275.160 ppb	81.432 %	0.002 ppb	0.007 ppb	89.668 %	0.478 ppb	450.076 ppb
Concentration per Run 1	4.301 ppb	0.069 ppb	1,237.935 ppb	80.245 %	0.003 ppb	0.000 ppb	84.780 %	0.459 ppb	460.320 ppb
Concentration per Run 2	4.863 ppb	0.026 ppb	1,294.041 ppb	81.436 %	0.001 ppb	0.013 ppb	93.177 %	0.448 ppb	438.073 ppb
Concentration per Run 3	4.409 ppb	0.101 ppb	1,293.505 ppb	82.615 %	0.002 ppb	0.009 ppb	91.046 %	0.526 ppb	451.834 ppb
Concentration RSD	6.6 %	58.1 %	2.5 %	1.5 %	38.6 %	89.0 %	4.9 %	8.9 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.799 %	91.888 %	0.120 ppb	0.131 ppb	75.720 %
Concentration per Run 1	86.534 %	90.245 %	0.112 ppb	0.134 ppb	75.394 %
Concentration per Run 2	87.494 %	92.069 %	0.115 ppb	0.125 ppb	76.007 %
Concentration per Run 3	89.370 %	93.350 %	0.133 ppb	0.133 ppb	75.760 %
Concentration RSD	1.6 %	1.7 %	9.3 %	3.7 %	0.4 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 54 Analysis started at: 12/17/2021 1:07:46 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.682 %	112.353 %	60.187 ppb	5,779.715 ppb	5,801.548 ppb	57.340 ppb	6,057.894 ppb	6,174.584 ppb	99.843 %
Concentration per Run 1	90.614 %	111.177 %	60.031 ppb	5,700.243 ppb	5,659.002 ppb	55.602 ppb	5,682.239 ppb	5,917.465 ppb	100.198 %
Concentration per Run 2	90.575 %	113.726 %	60.157 ppb	5,800.487 ppb	5,741.912 ppb	61.012 ppb	6,040.795 ppb	6,134.686 ppb	99.457 %
Concentration per Run 3	90.857 %	112.157 %	60.373 ppb	5,838.413 ppb	6,003.729 ppb	55.405 ppb	6,450.647 ppb	6,471.601 ppb	99.874 %
Recovery Percentage 1			100.311 %	96.329 %	96.692 %	95.566 %	100.965 %	102.910 %	
Concentration RSD	0.2 %	1.1 %	0.3 %	1.2 %	3.1 %	5.5 %	6.3 %	4.5 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	55.934 ppb	55.915 ppb	57.195 ppb	5,648.850 ppb	56.400 ppb	55.735 ppb	55.840 ppb	56.962 ppb	97.186 %
Concentration per Run 1	57.276 ppb	56.801 ppb	56.292 ppb	5,731.944 ppb	58.448 ppb	56.231 ppb	57.419 ppb	57.183 ppb	94.202 %
Concentration per Run 2	54.708 ppb	55.077 ppb	57.494 ppb	5,558.754 ppb	55.456 ppb	55.244 ppb	54.489 ppb	56.093 ppb	99.538 %
Concentration per Run 3	55.820 ppb	55.868 ppb	57.798 ppb	5,655.852 ppb	55.296 ppb	55.729 ppb	55.612 ppb	57.610 ppb	97.817 %
Recovery Percentage 1	93.224 %	93.192 %	95.325 %	94.147 %	94.000 %	92.891 %	93.066 %	94.936 %	
Concentration RSD	2.3 %	1.5 %	1.4 %	1.5 %	3.1 %	0.9 %	2.6 %	1.4 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	56.555 ppb	56.488 ppb	60.374 ppb	100.604 %	58.089 ppb	58.480 ppb	105.116 %	57.031 ppb	56.679 ppb
Concentration per Run 1	56.535 ppb	56.172 ppb	59.520 ppb	100.021 %	58.614 ppb	58.852 ppb	102.470 %	56.627 ppb	55.408 ppb
Concentration per Run 2	55.819 ppb	53.397 ppb	60.585 ppb	101.493 %	58.362 ppb	59.139 ppb	104.118 %	58.886 ppb	57.224 ppb
Concentration per Run 3	57.311 ppb	59.897 ppb	61.019 ppb	100.298 %	57.292 ppb	57.451 ppb	108.760 %	55.581 ppb	57.406 ppb
Recovery Percentage 1	94.259 %	94.147 %	100.624 %		96.816 %	97.467 %		95.052 %	94.465 %
Concentration RSD	1.3 %	5.8 %	1.3 %	0.8 %	1.2 %	1.5 %	3.1 %	3.0 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.481 %	101.297 %	59.432 ppb	57.624 ppb	101.705 %
Concentration per Run 1	95.939 %	100.252 %	59.330 ppb	57.673 ppb	100.761 %
Concentration per Run 2	96.914 %	102.081 %	59.444 ppb	57.746 ppb	102.509 %
Concentration per Run 3	96.590 %	101.558 %	59.522 ppb	57.453 ppb	101.846 %
Recovery Percentage 1			99.054 %	96.040 %	
Concentration RSD	0.5 %	0.9 %	0.2 %	0.3 %	0.9 %

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Analysis index: 55 Analysis started at: 12/17/2021 1:12:38 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.418 %	104.837 %	0.001 ppb	14.046 ppb	-0.679 ppb	-0.349 ppb	-19.070 ppb	0.020 ppb	87.771 %
Concentration per Run 1	86.981 %	98.039 %	0.009 ppb	19.225 ppb	-0.679 ppb	-0.166 ppb	-24.456 ppb	-4.941 ppb	88.196 %
Concentration per Run 2	87.758 %	109.804 %	-0.005 ppb	16.477 ppb	-0.679 ppb	-0.258 ppb	-20.193 ppb	-4.877 ppb	88.296 %
Concentration per Run 3	87.516 %	106.667 %	0.000 ppb	6.436 ppb	-0.679 ppb	-0.623 ppb	-12.561 ppb	9.879 ppb	86.820 %
Recovery Percentage 1			0.250 %	14.046 %	-0.969 %	-3.490 %	-19.070 %	0.020 %	
Concentration RSD	0.5 %	5.8 %	556.9 %	47.9 %	0.0 %	69.2 %	31.6 %	41,972.6 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.053 ppb	0.014 ppb	0.069 ppb	23.621 ppb	0.001 ppb	-0.017 ppb	-0.023 ppb	-0.129 ppb	94.695 %
Concentration per Run 1	-0.080 ppb	0.027 ppb	0.051 ppb	32.964 ppb	0.002 ppb	-0.029 ppb	-0.023 ppb	-0.156 ppb	90.908 %
Concentration per Run 2	-0.041 ppb	-0.003 ppb	0.076 ppb	18.246 ppb	0.001 ppb	0.017 ppb	0.000 ppb	-0.098 ppb	98.175 %
Concentration per Run 3	-0.039 ppb	0.020 ppb	0.081 ppb	19.655 ppb	0.001 ppb	-0.038 ppb	-0.047 ppb	-0.134 ppb	95.003 %
Recovery Percentage 1	-1.067 %	1.434 %	6.933 %	47.243 %	0.287 %	-0.835 %	-2.344 %	-1.290 %	
Concentration RSD	43.0 %	109.3 %	22.8 %	34.4 %	12.6 %	175.9 %	98.5 %	22.7 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.054 ppb	0.090 ppb	-0.012 ppb	100.138 %	0.002 ppb	0.003 ppb	103.738 %	0.043 ppb	-0.070 ppb
Concentration per Run 1	0.062 ppb	0.012 ppb	-0.010 ppb	98.649 %	0.004 ppb	0.006 ppb	100.576 %	0.051 ppb	-0.067 ppb
Concentration per Run 2	0.042 ppb	0.110 ppb	-0.013 ppb	100.925 %	0.004 ppb	0.003 ppb	106.139 %	0.032 ppb	-0.075 ppb
Concentration per Run 3	0.059 ppb	0.146 ppb	-0.013 ppb	100.841 %	-0.002 ppb	0.000 ppb	104.497 %	0.045 ppb	-0.067 ppb
Recovery Percentage 1	10.826 %	1.791 %	-2.357 %		0.526 %	1.378 %		1.063 %	-13.939 %
Concentration RSD	20.3 %	77.6 %	15.8 %	1.3 %	168.5 %	101.5 %	2.8 %	23.0 %	6.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.244 %	98.783 %	0.265 ppb	0.011 ppb	101.874 %
Concentration per Run 1	92.336 %	95.820 %	0.282 ppb	0.015 ppb	101.007 %
Concentration per Run 2	94.815 %	99.889 %	0.270 ppb	0.012 ppb	102.207 %
Concentration per Run 3	95.581 %	100.642 %	0.241 ppb	0.007 ppb	102.409 %
Recovery Percentage 1			26.459 %	1.139 %	
Concentration RSD	1.8 %	2.6 %	7.9 %	32.0 %	0.7 %

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Analysis index: 56 Analysis started at: 12/17/2021 1:20:30 PM
 Analysis label: I2167575-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.423 %	102.288 %	0.000 ppb	357.698 ppb	11.299 ppb	2.268 ppb	-14.682 ppb	62.093 ppb	98.727 %
Concentration per Run 1	90.228 %	96.078 %	0.008 ppb	359.546 ppb	12.310 ppb	2.169 ppb	-14.003 ppb	40.276 ppb	100.110 %
Concentration per Run 2	89.342 %	102.745 %	-0.005 ppb	352.647 ppb	10.568 ppb	2.594 ppb	-12.255 ppb	67.412 ppb	98.464 %
Concentration per Run 3	88.701 %	108.039 %	-0.003 ppb	360.902 ppb	11.017 ppb	2.040 ppb	-17.790 ppb	78.590 ppb	97.606 %
Concentration RSD	0.9 %	5.9 %	39,013.0 %	1.2 %	8.0 %	12.8 %	19.3 %	31.7 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.004 ppb	0.044 ppb	0.188 ppb	11.927 ppb	0.004 ppb	0.018 ppb	0.088 ppb	-0.085 ppb	95.958 %
Concentration per Run 1	-0.023 ppb	0.064 ppb	0.167 ppb	11.040 ppb	0.006 ppb	-0.095 ppb	0.129 ppb	-0.127 ppb	92.907 %
Concentration per Run 2	-0.025 ppb	0.042 ppb	0.288 ppb	12.487 ppb	0.001 ppb	0.148 ppb	0.052 ppb	-0.006 ppb	95.503 %
Concentration per Run 3	0.037 ppb	0.027 ppb	0.111 ppb	12.254 ppb	0.005 ppb	0.001 ppb	0.084 ppb	-0.121 ppb	99.463 %
Concentration RSD	924.8 %	41.9 %	48.0 %	6.5 %	57.6 %	689.0 %	43.5 %	80.2 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.016 ppb	-0.005 ppb	0.179 ppb	102.735 %	-0.004 ppb	0.002 ppb	108.301 %	0.043 ppb	0.100 ppb
Concentration per Run 1	0.011 ppb	-0.033 ppb	0.139 ppb	100.393 %	-0.003 ppb	0.003 ppb	104.324 %	0.037 ppb	0.072 ppb
Concentration per Run 2	0.019 ppb	0.049 ppb	0.203 ppb	103.848 %	-0.006 ppb	0.000 ppb	110.925 %	0.046 ppb	0.055 ppb
Concentration per Run 3	0.018 ppb	-0.032 ppb	0.196 ppb	103.964 %	-0.002 ppb	0.003 ppb	109.653 %	0.047 ppb	0.174 ppb
Concentration RSD	25.3 %	864.5 %	19.6 %	2.0 %	52.6 %	86.7 %	3.2 %	11.9 %	64.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.806 %	101.900 %	0.096 ppb	0.014 ppb	105.583 %
Concentration per Run 1	93.011 %	97.543 %	0.098 ppb	0.013 ppb	104.141 %
Concentration per Run 2	97.643 %	104.809 %	0.095 ppb	0.015 ppb	106.398 %
Concentration per Run 3	96.764 %	103.348 %	0.096 ppb	0.015 ppb	106.211 %
Concentration RSD	2.6 %	3.8 %	1.6 %	10.3 %	1.2 %

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Analysis index: 57 Analysis started at: 12/17/2021 1:25:17 PM
 Analysis label: L2166721-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.494 %	98.824 %	0.082 ppb	63,533.867 ppb	11,924.768 ppb	1,080.807 ppb	4,456.625 ppb	72,334.036 ppb	95.710 %
Concentration per Run 1	83.889 %	93.333 %	0.070 ppb	65,184.909 ppb	12,136.605 ppb	1,064.018 ppb	4,638.376 ppb	72,459.907 ppb	94.722 %
Concentration per Run 2	84.962 %	101.765 %	0.076 ppb	62,447.867 ppb	11,771.383 ppb	1,080.278 ppb	4,536.576 ppb	73,783.762 ppb	96.595 %
Concentration per Run 3	84.631 %	101.373 %	0.101 ppb	62,968.826 ppb	11,866.316 ppb	1,098.125 ppb	4,194.922 ppb	70,758.439 ppb	95.814 %
Concentration RSD	0.7 %	4.8 %	20.4 %	2.3 %	1.6 %	1.6 %	5.2 %	2.1 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	5.485 ppb	3.128 ppb	5,729.898 ppb	18,367.700 ppb	1.495 ppb	1.810 ppb	6.066 ppb	3.904 ppb	87.279 %
Concentration per Run 1	5.521 ppb	3.170 ppb	5,744.546 ppb	18,612.961 ppb	1.577 ppb	2.038 ppb	6.441 ppb	4.132 ppb	82.956 %
Concentration per Run 2	5.439 ppb	3.099 ppb	5,705.229 ppb	18,278.355 ppb	1.566 ppb	1.882 ppb	5.730 ppb	3.674 ppb	87.885 %
Concentration per Run 3	5.495 ppb	3.113 ppb	5,739.919 ppb	18,211.784 ppb	1.342 ppb	1.509 ppb	6.027 ppb	3.905 ppb	90.995 %
Concentration RSD	0.8 %	1.2 %	0.4 %	1.2 %	8.9 %	15.0 %	5.9 %	5.9 %	4.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3.324 ppb	0.236 ppb	249.674 ppb	90.388 %	0.010 ppb	0.029 ppb	97.286 %	0.170 ppb	376.766 ppb
Concentration per Run 1	3.607 ppb	0.040 ppb	246.370 ppb	88.569 %	0.014 ppb	0.033 ppb	93.731 %	0.156 ppb	371.034 ppb
Concentration per Run 2	3.261 ppb	0.327 ppb	253.768 ppb	91.197 %	0.003 ppb	0.041 ppb	99.135 %	0.203 ppb	378.294 ppb
Concentration per Run 3	3.103 ppb	0.342 ppb	248.884 ppb	91.396 %	0.012 ppb	0.012 ppb	98.991 %	0.152 ppb	380.970 ppb
Concentration RSD	7.8 %	72.0 %	1.5 %	1.7 %	57.6 %	52.9 %	3.2 %	16.7 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	88.607 %	92.808 %	0.088 ppb	2.313 ppb	92.616 %
Concentration per Run 1	86.247 %	89.670 %	0.087 ppb	2.263 ppb	92.377 %
Concentration per Run 2	89.872 %	93.889 %	0.091 ppb	2.311 ppb	92.720 %
Concentration per Run 3	89.700 %	94.864 %	0.086 ppb	2.364 ppb	92.752 %
Concentration RSD	2.3 %	3.0 %	3.4 %	2.2 %	0.2 %

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Analysis index: 58 Analysis started at: 12/17/2021 1:30:05 PM
 Analysis label: I2166721-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.493 %	105.817 %	0.439 ppb	27,148.736 ppb	11,481.349 ppb	3,425.065 ppb	4,615.311 ppb	92,286.632 ppb	91.244 %
Concentration per Run 1	84.644 %	103.333 %	0.454 ppb	26,659.730 ppb	11,207.122 ppb	3,274.694 ppb	4,458.150 ppb	89,852.378 ppb	91.011 %
Concentration per Run 2	84.142 %	102.353 %	0.410 ppb	28,210.186 ppb	12,096.450 ppb	3,585.298 ppb	4,677.192 ppb	94,836.277 ppb	90.953 %
Concentration per Run 3	84.693 %	111.765 %	0.453 ppb	26,576.290 ppb	11,140.473 ppb	3,415.202 ppb	4,710.590 ppb	92,171.241 ppb	91.770 %
Concentration RSD	0.4 %	4.9 %	5.7 %	3.4 %	4.6 %	4.5 %	3.0 %	2.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	7.560 ppb	3.749 ppb	896.012 ppb	3,483.712 ppb	1.540 ppb	3.057 ppb	8.688 ppb	12.021 ppb	92.709 %
Concentration per Run 1	7.564 ppb	3.715 ppb	885.376 ppb	3,430.064 ppb	1.622 ppb	2.950 ppb	8.943 ppb	11.488 ppb	88.169 %
Concentration per Run 2	7.397 ppb	3.827 ppb	917.576 ppb	3,616.293 ppb	1.539 ppb	3.116 ppb	8.832 ppb	12.867 ppb	93.427 %
Concentration per Run 3	7.719 ppb	3.706 ppb	885.085 ppb	3,404.779 ppb	1.458 ppb	3.105 ppb	8.291 ppb	11.707 ppb	96.532 %
Concentration RSD	2.1 %	1.8 %	2.1 %	3.3 %	5.3 %	3.1 %	4.0 %	6.2 %	4.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.343 ppb	1.059 ppb	231.447 ppb	95.814 %	0.020 ppb	0.074 ppb	100.376 %	0.181 ppb	114.195 ppb
Concentration per Run 1	2.414 ppb	1.162 ppb	224.496 ppb	93.220 %	0.022 ppb	0.080 ppb	94.117 %	0.198 ppb	113.424 ppb
Concentration per Run 2	2.369 ppb	1.138 ppb	236.263 ppb	95.881 %	0.020 ppb	0.067 ppb	102.429 %	0.176 ppb	112.773 ppb
Concentration per Run 3	2.246 ppb	0.878 ppb	233.583 ppb	98.340 %	0.017 ppb	0.074 ppb	104.581 %	0.168 ppb	116.387 ppb
Concentration RSD	3.7 %	14.9 %	2.7 %	2.7 %	12.5 %	9.2 %	5.5 %	8.7 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.347 %	96.065 %	0.082 ppb	8.035 ppb	95.424 %
Concentration per Run 1	88.483 %	91.332 %	0.078 ppb	8.004 ppb	93.220 %
Concentration per Run 2	93.848 %	98.575 %	0.082 ppb	8.092 ppb	95.600 %
Concentration per Run 3	94.709 %	98.289 %	0.087 ppb	8.007 ppb	97.452 %
Concentration RSD	3.7 %	4.3 %	5.1 %	0.6 %	2.2 %

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Analysis index: 59 Analysis started at: 12/17/2021 1:34:54 PM
 Analysis label: I2166721-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.610 %	103.529 %	1.072 ppb	102,053.873 ppb	17,221.908 ppb	11,977.562 ppb	5,579.325 ppb	71,912.867 ppb	103.574 %
Concentration per Run 1	87.457 %	103.137 %	1.071 ppb	97,491.099 ppb	16,382.345 ppb	11,451.400 ppb	5,288.814 ppb	67,282.415 ppb	102.707 %
Concentration per Run 2	87.952 %	108.628 %	1.087 ppb	98,979.095 ppb	16,982.328 ppb	11,800.395 ppb	5,416.020 ppb	72,194.179 ppb	103.549 %
Concentration per Run 3	87.421 %	98.824 %	1.059 ppb	109,691.426 ppb	18,301.050 ppb	12,680.891 ppb	6,033.140 ppb	76,262.009 ppb	104.467 %
Concentration RSD	0.3 %	4.7 %	1.3 %	6.5 %	5.7 %	5.3 %	7.1 %	6.3 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	34.515 ppb	23.547 ppb	4,090.402 ppb	26,277.583 ppb	10.461 ppb	19.193 ppb	51.712 ppb	122.860 ppb	89.223 %
Concentration per Run 1	33.106 ppb	22.602 ppb	3,921.402 ppb	26,041.840 ppb	10.293 ppb	19.373 ppb	52.070 ppb	122.572 ppb	86.514 %
Concentration per Run 2	33.550 ppb	23.278 ppb	4,078.300 ppb	25,597.595 ppb	10.184 ppb	18.761 ppb	49.733 ppb	120.099 ppb	91.928 %
Concentration per Run 3	36.889 ppb	24.760 ppb	4,271.504 ppb	27,193.314 ppb	10.907 ppb	19.446 ppb	53.331 ppb	125.909 ppb	89.227 %
Concentration RSD	6.0 %	4.7 %	4.3 %	3.1 %	3.7 %	2.0 %	3.5 %	2.4 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	8.612 ppb	3.389 ppb	238.810 ppb	93.053 %	0.138 ppb	0.279 ppb	99.266 %	0.457 ppb	713.458 ppb
Concentration per Run 1	8.442 ppb	3.389 ppb	232.448 ppb	91.641 %	0.145 ppb	0.275 ppb	95.689 %	0.472 ppb	708.340 ppb
Concentration per Run 2	8.262 ppb	3.043 ppb	240.417 ppb	93.407 %	0.135 ppb	0.307 ppb	102.008 %	0.486 ppb	708.380 ppb
Concentration per Run 3	9.130 ppb	3.734 ppb	243.566 ppb	94.109 %	0.134 ppb	0.253 ppb	100.101 %	0.412 ppb	723.654 ppb
Concentration RSD	5.3 %	10.2 %	2.4 %	1.4 %	4.2 %	9.7 %	3.3 %	8.7 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	88.718 %	91.072 %	0.253 ppb	23.384 ppb	91.865 %
Concentration per Run 1	87.039 %	89.055 %	0.246 ppb	23.147 ppb	90.883 %
Concentration per Run 2	88.819 %	91.331 %	0.258 ppb	23.501 ppb	92.057 %
Concentration per Run 3	90.297 %	92.828 %	0.257 ppb	23.505 ppb	92.656 %
Concentration RSD	1.8 %	2.1 %	2.7 %	0.9 %	1.0 %

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Analysis index: 60 Analysis started at: 12/17/2021 1:39:42 PM
 Analysis label: L2166721-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.283 %	110.458 %	0.040 ppb	150,305.199 ppb	6,874.112 ppb	423.903 ppb	1,499.353 ppb	46,173.399 ppb	97.217 %
Concentration per Run 1	89.025 %	102.157 %	0.041 ppb	154,402.441 ppb	7,022.352 ppb	422.583 ppb	1,490.599 ppb	46,085.560 ppb	97.089 %
Concentration per Run 2	89.041 %	115.098 %	0.032 ppb	149,360.486 ppb	6,962.162 ppb	422.881 ppb	1,536.697 ppb	45,702.161 ppb	97.615 %
Concentration per Run 3	89.782 %	114.118 %	0.047 ppb	147,152.671 ppb	6,637.823 ppb	426.245 ppb	1,470.763 ppb	46,732.477 ppb	96.946 %
Concentration RSD	0.5 %	6.5 %	18.7 %	2.5 %	3.0 %	0.5 %	2.3 %	1.1 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.980 ppb	0.827 ppb	1,482.280 ppb	2,390.793 ppb	1.424 ppb	1.466 ppb	5.788 ppb	3.552 ppb	94.893 %
Concentration per Run 1	1.016 ppb	0.898 ppb	1,494.169 ppb	2,451.356 ppb	1.413 ppb	1.347 ppb	6.027 ppb	3.588 ppb	90.880 %
Concentration per Run 2	1.000 ppb	0.844 ppb	1,486.685 ppb	2,356.052 ppb	1.497 ppb	1.712 ppb	5.487 ppb	3.736 ppb	95.666 %
Concentration per Run 3	0.922 ppb	0.739 ppb	1,465.987 ppb	2,364.971 ppb	1.361 ppb	1.340 ppb	5.850 ppb	3.332 ppb	98.132 %
Concentration RSD	5.1 %	9.8 %	1.0 %	2.2 %	4.8 %	14.5 %	4.8 %	5.8 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.871 ppb	0.329 ppb	188.435 ppb	96.016 %	0.008 ppb	0.131 ppb	102.823 %	0.089 ppb	340.385 ppb
Concentration per Run 1	0.831 ppb	0.386 ppb	184.842 ppb	93.209 %	0.006 ppb	0.135 ppb	99.181 %	0.096 ppb	334.566 ppb
Concentration per Run 2	0.964 ppb	0.283 ppb	189.846 ppb	97.069 %	0.007 ppb	0.131 ppb	101.963 %	0.080 ppb	347.542 ppb
Concentration per Run 3	0.817 ppb	0.317 ppb	190.618 ppb	97.772 %	0.012 ppb	0.126 ppb	107.325 %	0.092 ppb	339.047 ppb
Concentration RSD	9.4 %	15.8 %	1.7 %	2.6 %	38.4 %	3.5 %	4.0 %	9.4 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.442 %	101.386 %	0.055 ppb	0.577 ppb	94.355 %
Concentration per Run 1	93.945 %	97.680 %	0.052 ppb	0.587 ppb	92.908 %
Concentration per Run 2	97.272 %	102.400 %	0.052 ppb	0.568 ppb	94.666 %
Concentration per Run 3	98.108 %	104.077 %	0.061 ppb	0.575 ppb	95.490 %
Concentration RSD	2.3 %	3.3 %	9.8 %	1.7 %	1.4 %

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Analysis index: 61 Analysis started at: 12/17/2021 1:44:32 PM
 Analysis label: L2167575-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.350 %	120.589 %	0.002 ppb	101,618.869 ppb	22,078.935 ppb	106.922 ppb	5,769.462 ppb	104,552.242 ppb	104.424 %
Concentration per Run 1	96.031 %	116.863 %	-0.002 ppb	102,957.921 ppb	22,223.490 ppb	106.922 ppb	5,609.794 ppb	101,109.575 ppb	103.447 %
Concentration per Run 2	96.716 %	122.942 %	0.002 ppb	101,090.966 ppb	21,899.784 ppb	106.116 ppb	5,900.893 ppb	106,359.491 ppb	104.798 %
Concentration per Run 3	96.304 %	121.961 %	0.004 ppb	100,807.719 ppb	22,113.531 ppb	107.729 ppb	5,797.699 ppb	106,187.659 ppb	105.028 %
Concentration RSD	0.4 %	2.7 %	172.5 %	1.1 %	0.7 %	0.8 %	2.6 %	2.9 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.239 ppb	0.221 ppb	357.482 ppb	343.243 ppb	0.724 ppb	0.671 ppb	0.992 ppb	2.164 ppb	102.434 %
Concentration per Run 1	0.249 ppb	0.240 ppb	360.101 ppb	350.550 ppb	0.769 ppb	0.622 ppb	1.057 ppb	2.390 ppb	99.209 %
Concentration per Run 2	0.211 ppb	0.209 ppb	354.963 ppb	338.941 ppb	0.733 ppb	0.686 ppb	0.885 ppb	2.143 ppb	103.207 %
Concentration per Run 3	0.257 ppb	0.215 ppb	357.382 ppb	340.237 ppb	0.670 ppb	0.704 ppb	1.033 ppb	1.960 ppb	104.885 %
Concentration RSD	10.3 %	7.5 %	0.7 %	1.9 %	6.9 %	6.4 %	9.4 %	10.0 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.346 ppb	2.099 ppb	443.340 ppb	103.516 %	-0.002 ppb	0.049 ppb	111.287 %	0.094 ppb	46.851 ppb
Concentration per Run 1	0.309 ppb	1.975 ppb	432.828 ppb	101.862 %	0.000 ppb	0.055 ppb	109.136 %	0.065 ppb	46.017 ppb
Concentration per Run 2	0.378 ppb	1.793 ppb	446.132 ppb	105.614 %	-0.005 ppb	0.036 ppb	111.181 %	0.113 ppb	47.318 ppb
Concentration per Run 3	0.351 ppb	2.529 ppb	451.061 ppb	103.071 %	-0.001 ppb	0.056 ppb	113.545 %	0.105 ppb	47.219 ppb
Concentration RSD	10.0 %	18.2 %	2.1 %	1.9 %	112.8 %	23.2 %	2.0 %	27.5 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.369 %	106.191 %	0.038 ppb	0.404 ppb	98.348 %
Concentration per Run 1	99.116 %	103.635 %	0.032 ppb	0.408 ppb	97.348 %
Concentration per Run 2	102.025 %	107.595 %	0.043 ppb	0.396 ppb	98.979 %
Concentration per Run 3	102.966 %	107.342 %	0.039 ppb	0.408 ppb	98.717 %
Concentration RSD	2.0 %	2.1 %	15.0 %	1.7 %	0.9 %

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Analysis index: 62 Analysis started at: 12/17/2021 1:49:21 PM
 Analysis label: L2167575-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.393 %	117.386 %	-0.002 ppb	33,721.479 ppb	28,501.102 ppb	29.751 ppb	7,577.895 ppb	115,196.998 ppb	103.652 %
Concentration per Run 1	96.314 %	113.137 %	-0.004 ppb	33,622.361 ppb	28,683.597 ppb	31.944 ppb	7,539.026 ppb	116,735.520 ppb	103.815 %
Concentration per Run 2	96.062 %	118.824 %	0.003 ppb	34,490.077 ppb	29,114.313 ppb	27.314 ppb	7,594.876 ppb	112,790.443 ppb	103.507 %
Concentration per Run 3	96.803 %	120.196 %	-0.004 ppb	33,051.999 ppb	27,705.396 ppb	29.995 ppb	7,599.783 ppb	116,065.032 ppb	103.632 %
Concentration RSD	0.4 %	3.2 %	223.7 %	2.1 %	2.5 %	7.8 %	0.4 %	1.8 %	0.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.130 ppb	0.122 ppb	1,274.344 ppb	6,002.399 ppb	0.906 ppb	1.006 ppb	0.548 ppb	0.619 ppb	94.637 %
Concentration per Run 1	0.192 ppb	0.102 ppb	1,297.182 ppb	6,123.113 ppb	1.004 ppb	0.977 ppb	0.580 ppb	0.552 ppb	89.851 %
Concentration per Run 2	0.098 ppb	0.131 ppb	1,265.431 ppb	5,903.629 ppb	0.957 ppb	1.114 ppb	0.607 ppb	0.694 ppb	97.464 %
Concentration per Run 3	0.098 ppb	0.132 ppb	1,260.419 ppb	5,980.454 ppb	0.755 ppb	0.928 ppb	0.458 ppb	0.612 ppb	96.598 %
Concentration RSD	42.0 %	14.2 %	1.6 %	1.9 %	14.6 %	9.6 %	14.5 %	11.5 %	4.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	6.045 ppb	0.414 ppb	363.027 ppb	97.296 %	0.000 ppb	0.016 ppb	102.170 %	0.115 ppb	89.244 ppb
Concentration per Run 1	6.356 ppb	0.353 ppb	358.011 ppb	98.157 %	-0.003 ppb	0.006 ppb	100.408 %	0.111 ppb	86.756 ppb
Concentration per Run 2	5.653 ppb	0.357 ppb	363.388 ppb	96.846 %	0.001 ppb	0.028 ppb	103.317 %	0.114 ppb	90.418 ppb
Concentration per Run 3	6.127 ppb	0.530 ppb	367.681 ppb	96.885 %	0.002 ppb	0.014 ppb	102.784 %	0.119 ppb	90.557 ppb
Concentration RSD	5.9 %	24.4 %	1.3 %	0.8 %	3,205.0 %	70.9 %	1.5 %	3.6 %	2.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.690 %	101.596 %	0.038 ppb	0.184 ppb	96.640 %
Concentration per Run 1	95.177 %	98.009 %	0.034 ppb	0.182 ppb	97.447 %
Concentration per Run 2	97.200 %	103.003 %	0.038 ppb	0.182 ppb	96.766 %
Concentration per Run 3	97.692 %	103.778 %	0.041 ppb	0.189 ppb	95.706 %
Concentration RSD	1.4 %	3.1 %	8.4 %	2.3 %	0.9 %

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Analysis index: 63 Analysis started at: 12/17/2021 1:54:11 PM
 Analysis label: L2167575-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.414 %	115.752 %	0.010 ppb	20,483.418 ppb	28,761.728 ppb	133.822 ppb	6,680.415 ppb	90,256.367 ppb	100.265 %
Concentration per Run 1	94.373 %	115.883 %	0.013 ppb	19,925.251 ppb	27,823.087 ppb	131.383 ppb	6,632.730 ppb	90,088.592 ppb	98.910 %
Concentration per Run 2	95.198 %	116.863 %	0.007 ppb	20,608.940 ppb	29,286.615 ppb	137.224 ppb	6,741.630 ppb	90,110.786 ppb	101.395 %
Concentration per Run 3	93.672 %	114.510 %	0.011 ppb	20,916.061 ppb	29,175.483 ppb	132.860 ppb	6,666.887 ppb	90,569.722 ppb	100.489 %
Concentration RSD	0.8 %	1.0 %	31.6 %	2.5 %	2.8 %	2.3 %	0.8 %	0.3 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.549 ppb	0.500 ppb	322.271 ppb	274.260 ppb	0.373 ppb	0.653 ppb	1.178 ppb	2.374 ppb	97.172 %
Concentration per Run 1	0.493 ppb	0.493 ppb	318.653 ppb	293.460 ppb	0.350 ppb	0.705 ppb	1.330 ppb	2.375 ppb	91.615 %
Concentration per Run 2	0.453 ppb	0.535 ppb	325.458 ppb	261.669 ppb	0.419 ppb	0.595 ppb	1.042 ppb	2.368 ppb	98.867 %
Concentration per Run 3	0.701 ppb	0.473 ppb	322.701 ppb	267.651 ppb	0.349 ppb	0.658 ppb	1.163 ppb	2.379 ppb	101.035 %
Concentration RSD	24.3 %	6.3 %	1.1 %	6.2 %	10.9 %	8.5 %	12.3 %	0.2 %	5.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.305 ppb	0.146 ppb	212.932 ppb	100.408 %	0.004 ppb	0.034 ppb	105.694 %	0.088 ppb	29.059 ppb
Concentration per Run 1	0.285 ppb	0.228 ppb	208.779 ppb	99.456 %	0.007 ppb	0.048 ppb	99.997 %	0.096 ppb	28.639 ppb
Concentration per Run 2	0.333 ppb	0.142 ppb	215.571 ppb	101.019 %	0.003 ppb	0.034 ppb	109.096 %	0.095 ppb	28.532 ppb
Concentration per Run 3	0.296 ppb	0.068 ppb	214.448 ppb	100.751 %	0.003 ppb	0.021 ppb	107.991 %	0.074 ppb	30.007 ppb
Concentration RSD	8.3 %	54.9 %	1.7 %	0.8 %	51.6 %	38.5 %	4.7 %	13.7 %	2.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.549 %	105.090 %	0.040 ppb	0.372 ppb	99.560 %
Concentration per Run 1	98.104 %	101.811 %	0.037 ppb	0.361 ppb	98.801 %
Concentration per Run 2	101.953 %	106.702 %	0.040 ppb	0.381 ppb	100.729 %
Concentration per Run 3	101.591 %	106.758 %	0.042 ppb	0.374 ppb	99.151 %
Concentration RSD	2.1 %	2.7 %	6.7 %	2.8 %	1.0 %



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 Analysis label: L2167575-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.802 %	114.249 %	0.005 ppb	69,676.344 ppb	27,814.438 ppb	19.659 ppb	5,373.044 ppb	98,723.887 ppb	100.735 %
Concentration per Run 1	95.579 %	114.902 %	0.005 ppb	67,370.254 ppb	26,864.359 ppb	18.008 ppb	5,211.357 ppb	95,186.081 ppb	99.755 %
Concentration per Run 2	95.802 %	112.157 %	0.005 ppb	71,366.745 ppb	28,592.120 ppb	21.112 ppb	5,457.152 ppb	100,106.680 ppb	101.767 %
Concentration per Run 3	96.024 %	115.687 %	0.005 ppb	70,292.034 ppb	27,986.835 ppb	19.857 ppb	5,450.623 ppb	100,878.901 ppb	100.684 %
Concentration RSD	0.2 %	1.6 %	1.0 %	3.0 %	3.2 %	7.9 %	2.6 %	3.1 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.242 ppb	0.086 ppb	796.676 ppb	53.964 ppb	0.890 ppb	1.273 ppb	2.327 ppb	1.236 ppb	95.772 %
Concentration per Run 1	0.236 ppb	0.098 ppb	771.977 ppb	47.657 ppb	0.960 ppb	1.222 ppb	2.345 ppb	1.033 ppb	93.945 %
Concentration per Run 2	0.270 ppb	0.074 ppb	806.005 ppb	61.629 ppb	0.856 ppb	1.363 ppb	2.393 ppb	1.362 ppb	97.963 %
Concentration per Run 3	0.219 ppb	0.087 ppb	812.046 ppb	52.605 ppb	0.854 ppb	1.234 ppb	2.243 ppb	1.311 ppb	95.406 %
Concentration RSD	10.6 %	13.7 %	2.7 %	13.1 %	6.8 %	6.1 %	3.3 %	14.4 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.251 ppb	0.372 ppb	258.972 ppb	97.729 %	-0.001 ppb	0.027 ppb	103.460 %	0.116 ppb	31.038 ppb
Concentration per Run 1	0.221 ppb	0.334 ppb	251.855 ppb	96.919 %	0.002 ppb	0.028 ppb	101.318 %	0.114 ppb	29.805 ppb
Concentration per Run 2	0.305 ppb	0.426 ppb	258.450 ppb	99.220 %	-0.004 ppb	0.027 ppb	105.424 %	0.117 ppb	30.351 ppb
Concentration per Run 3	0.226 ppb	0.356 ppb	266.611 ppb	97.048 %	0.000 ppb	0.025 ppb	103.640 %	0.116 ppb	32.959 ppb
Concentration RSD	18.8 %	12.9 %	2.9 %	1.3 %	519.7 %	6.2 %	2.0 %	1.3 %	5.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.970 %	102.991 %	0.037 ppb	0.187 ppb	95.319 %
Concentration per Run 1	96.598 %	99.965 %	0.034 ppb	0.186 ppb	94.567 %
Concentration per Run 2	97.819 %	104.561 %	0.034 ppb	0.195 ppb	95.640 %
Concentration per Run 3	99.493 %	104.447 %	0.043 ppb	0.180 ppb	95.751 %
Concentration RSD	1.5 %	2.5 %	13.3 %	3.9 %	0.7 %

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Analysis index: 65 Analysis started at: 12/17/2021 2:03:46 PM
 Analysis label: L2167658-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.881 %	111.503 %	0.021 ppb	114,965.516 ppb	21,247.138 ppb	274.251 ppb	3,934.215 ppb	119,497.879 ppb	95.468 %
Concentration per Run 1	91.853 %	112.157 %	0.018 ppb	112,310.578 ppb	20,498.116 ppb	256.384 ppb	3,862.994 ppb	117,570.262 ppb	96.188 %
Concentration per Run 2	91.205 %	112.157 %	0.023 ppb	116,105.590 ppb	21,416.495 ppb	280.427 ppb	4,028.715 ppb	120,115.081 ppb	94.779 %
Concentration per Run 3	92.586 %	110.196 %	0.022 ppb	116,480.380 ppb	21,826.802 ppb	285.941 ppb	3,910.934 ppb	120,808.295 ppb	95.437 %
Concentration RSD	0.8 %	1.0 %	11.8 %	2.0 %	3.2 %	5.7 %	2.2 %	1.4 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.759 ppb	1.357 ppb	39.981 ppb	351.252 ppb	0.358 ppb	0.789 ppb	1.327 ppb	3.647 ppb	89.937 %
Concentration per Run 1	0.763 ppb	1.358 ppb	39.404 ppb	336.415 ppb	0.309 ppb	0.742 ppb	1.526 ppb	3.653 ppb	85.752 %
Concentration per Run 2	0.709 ppb	1.272 ppb	39.683 ppb	395.411 ppb	0.326 ppb	0.753 ppb	1.261 ppb	3.561 ppb	90.447 %
Concentration per Run 3	0.805 ppb	1.440 ppb	40.856 ppb	321.929 ppb	0.439 ppb	0.871 ppb	1.196 ppb	3.728 ppb	93.614 %
Concentration RSD	6.3 %	6.2 %	1.9 %	11.1 %	19.8 %	9.0 %	13.2 %	2.3 %	4.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.266 ppb	1.477 ppb	248.365 ppb	92.845 %	0.045 ppb	0.012 ppb	100.417 %	0.041 ppb	114.790 ppb
Concentration per Run 1	0.305 ppb	1.718 ppb	243.410 ppb	91.284 %	0.048 ppb	0.021 ppb	97.105 %	0.053 ppb	114.030 ppb
Concentration per Run 2	0.222 ppb	1.528 ppb	252.151 ppb	93.604 %	0.052 ppb	0.011 ppb	103.330 %	0.038 ppb	113.207 ppb
Concentration per Run 3	0.271 ppb	1.185 ppb	249.533 ppb	93.648 %	0.036 ppb	0.003 ppb	100.817 %	0.032 ppb	117.134 ppb
Concentration RSD	15.7 %	18.3 %	1.8 %	1.5 %	18.8 %	76.9 %	3.1 %	26.1 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.740 %	99.715 %	0.029 ppb	0.837 ppb	92.368 %
Concentration per Run 1	92.530 %	96.429 %	0.024 ppb	0.847 ppb	91.213 %
Concentration per Run 2	94.703 %	101.028 %	0.026 ppb	0.821 ppb	93.602 %
Concentration per Run 3	96.987 %	101.689 %	0.037 ppb	0.844 ppb	92.290 %
Concentration RSD	2.4 %	2.9 %	23.1 %	1.7 %	1.3 %

Alpha ICPMSQ Full

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Analysis index: 66 Analysis started at: 12/17/2021 2:08:33 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.686 %	107.190 %	58.963 ppb	5,997.084 ppb	5,944.823 ppb	57.097 ppb	6,339.426 ppb	6,344.717 ppb	102.365 %
Concentration per Run 1	94.211 %	113.137 %	58.675 ppb	5,605.238 ppb	5,441.853 ppb	51.244 ppb	5,844.683 ppb	6,098.412 ppb	102.765 %
Concentration per Run 2	93.521 %	104.118 %	59.041 ppb	6,220.711 ppb	6,226.678 ppb	59.922 ppb	6,529.343 ppb	6,606.215 ppb	102.270 %
Concentration per Run 3	93.324 %	104.314 %	59.174 ppb	6,165.302 ppb	6,165.937 ppb	60.124 ppb	6,644.251 ppb	6,329.524 ppb	102.061 %
Recovery Percentage 1			98.272 %	99.951 %	99.080 %	95.161 %	105.657 %	105.745 %	
Concentration RSD	0.5 %	4.8 %	0.4 %	5.7 %	7.3 %	8.9 %	6.8 %	4.0 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	56.219 ppb	57.156 ppb	57.490 ppb	5,733.738 ppb	56.718 ppb	56.883 ppb	56.514 ppb	58.254 ppb	93.286 %
Concentration per Run 1	53.973 ppb	54.430 ppb	51.759 ppb	5,372.408 ppb	55.256 ppb	56.066 ppb	56.030 ppb	57.674 ppb	92.849 %
Concentration per Run 2	55.555 ppb	58.249 ppb	59.444 ppb	5,863.850 ppb	57.301 ppb	57.583 ppb	55.781 ppb	58.013 ppb	94.264 %
Concentration per Run 3	59.129 ppb	58.789 ppb	61.267 ppb	5,964.956 ppb	57.596 ppb	57.001 ppb	57.732 ppb	59.075 ppb	92.745 %
Recovery Percentage 1	93.698 %	95.260 %	95.817 %	95.562 %	94.530 %	94.806 %	94.190 %	97.089 %	
Concentration RSD	4.7 %	4.2 %	8.8 %	5.5 %	2.2 %	1.3 %	1.9 %	1.3 %	0.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	57.729 ppb	57.767 ppb	60.825 ppb	95.429 %	58.955 ppb	60.116 ppb	99.401 %	57.303 ppb	58.223 ppb
Concentration per Run 1	56.298 ppb	54.752 ppb	58.194 ppb	95.352 %	59.503 ppb	59.896 ppb	96.130 %	57.525 ppb	56.976 ppb
Concentration per Run 2	58.849 ppb	58.972 ppb	61.351 ppb	95.634 %	59.210 ppb	60.760 ppb	99.244 %	58.200 ppb	59.579 ppb
Concentration per Run 3	58.040 ppb	59.577 ppb	62.931 ppb	95.302 %	58.151 ppb	59.690 ppb	102.827 %	56.185 ppb	58.114 ppb
Recovery Percentage 1	96.215 %	96.278 %	101.376 %		98.258 %	100.193 %		95.506 %	97.039 %
Concentration RSD	2.3 %	4.6 %	4.0 %	0.2 %	1.2 %	0.9 %	3.4 %	1.8 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.945 %	99.903 %	59.924 ppb	58.298 ppb	100.214 %
Concentration per Run 1	92.166 %	97.498 %	59.654 ppb	58.058 ppb	100.148 %
Concentration per Run 2	95.093 %	101.398 %	59.679 ppb	58.572 ppb	100.516 %
Concentration per Run 3	94.576 %	100.812 %	60.440 ppb	58.263 ppb	99.978 %
Recovery Percentage 1			99.874 %	97.163 %	
Concentration RSD	1.7 %	2.1 %	0.7 %	0.4 %	0.3 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 67 Analysis started at: 12/17/2021 2:13:25 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.067 %	112.222 %	0.002 ppb	-6.401 ppb	-0.362 ppb	-0.575 ppb	-8.861 ppb	-4.821 ppb	86.192 %
Concentration per Run 1	88.588 %	114.314 %	0.006 ppb	-8.782 ppb	0.272 ppb	-0.736 ppb	-5.814 ppb	-4.954 ppb	85.650 %
Concentration per Run 2	89.324 %	113.334 %	0.004 ppb	-5.399 ppb	-0.679 ppb	-0.361 ppb	-13.048 ppb	-4.714 ppb	86.517 %
Concentration per Run 3	89.291 %	109.020 %	-0.003 ppb	-5.021 ppb	-0.679 ppb	-0.627 ppb	-7.721 ppb	-4.795 ppb	86.409 %
Recovery Percentage 1			0.496 %	-6.401 %	-0.517 %	-5.750 %	-8.861 %	-4.821 %	
Concentration RSD	0.5 %	2.5 %	188.2 %	32.4 %	151.8 %	33.6 %	42.3 %	2.5 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.040 ppb	-0.001 ppb	0.019 ppb	10.504 ppb	0.003 ppb	0.015 ppb	-0.016 ppb	-0.243 ppb	93.010 %
Concentration per Run 1	-0.040 ppb	0.006 ppb	0.062 ppb	10.147 ppb	0.001 ppb	-0.006 ppb	-0.056 ppb	-0.284 ppb	92.023 %
Concentration per Run 2	-0.040 ppb	-0.016 ppb	0.024 ppb	10.374 ppb	0.005 ppb	-0.008 ppb	-0.017 ppb	-0.216 ppb	94.022 %
Concentration per Run 3	-0.039 ppb	0.006 ppb	-0.030 ppb	10.992 ppb	0.001 ppb	0.057 ppb	0.024 ppb	-0.229 ppb	92.984 %
Recovery Percentage 1	-0.794 %	-0.124 %	1.886 %	21.009 %	0.555 %	0.725 %	-1.620 %	-2.431 %	
Concentration RSD	1.1 %	1,038.9 %	245.8 %	4.2 %	83.6 %	254.9 %	247.1 %	14.8 %	1.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.028 ppb	0.049 ppb	-0.016 ppb	97.085 %	-0.001 ppb	0.001 ppb	101.364 %	0.009 ppb	-0.067 ppb
Concentration per Run 1	-0.005 ppb	0.047 ppb	-0.003 ppb	95.712 %	-0.003 ppb	0.003 ppb	97.362 %	0.006 ppb	-0.058 ppb
Concentration per Run 2	0.052 ppb	0.122 ppb	-0.026 ppb	97.358 %	-0.002 ppb	0.000 ppb	103.237 %	0.004 ppb	-0.067 ppb
Concentration per Run 3	0.036 ppb	-0.021 ppb	-0.019 ppb	98.186 %	0.003 ppb	0.000 ppb	103.494 %	0.015 ppb	-0.075 ppb
Recovery Percentage 1	5.513 %	0.979 %	-3.187 %		-0.140 %	0.481 %		0.213 %	-13.358 %
Concentration RSD	105.9 %	146.3 %	73.5 %	1.3 %	530.2 %	173.2 %	3.4 %	70.7 %	12.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.966 %	100.701 %	0.238 ppb	0.011 ppb	102.693 %
Concentration per Run 1	94.432 %	98.636 %	0.263 ppb	0.013 ppb	100.672 %
Concentration per Run 2	95.085 %	102.172 %	0.241 ppb	0.010 ppb	103.910 %
Concentration per Run 3	95.382 %	101.294 %	0.210 ppb	0.010 ppb	103.498 %
Recovery Percentage 1			23.765 %	1.128 %	
Concentration RSD	0.5 %	1.8 %	11.2 %	14.0 %	1.7 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 68 Analysis started at: 12/17/2021 2:18:17 PM
 Analysis label: WG1584061-1 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.022 %	111.569 %	-0.003 ppb	-4.607 ppb	0.311 ppb	1.689 ppb	-11.604 ppb	7.308 ppb	89.173 %
Concentration per Run 1	91.085 %	109.020 %	-0.003 ppb	-5.536 ppb	1.324 ppb	0.863 ppb	-1.939 ppb	2.681 ppb	89.964 %
Concentration per Run 2	89.604 %	111.961 %	0.002 ppb	-4.408 ppb	0.288 ppb	2.028 ppb	-10.357 ppb	9.789 ppb	88.275 %
Concentration per Run 3	89.376 %	113.726 %	-0.007 ppb	-3.877 ppb	-0.679 ppb	2.175 ppb	-22.515 ppb	9.454 ppb	89.279 %
Concentration RSD	1.0 %	2.1 %	154.8 %	18.4 %	322.0 %	42.6 %	89.1 %	54.9 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.002 ppb	0.032 ppb	0.016 ppb	6.915 ppb	0.000 ppb	-0.050 ppb	0.013 ppb	0.205 ppb	90.234 %
Concentration per Run 1	0.005 ppb	0.017 ppb	0.052 ppb	9.255 ppb	-0.003 ppb	-0.109 ppb	-0.011 ppb	0.137 ppb	86.199 %
Concentration per Run 2	-0.012 ppb	0.024 ppb	-0.011 ppb	3.282 ppb	0.001 ppb	-0.051 ppb	0.025 ppb	0.102 ppb	91.980 %
Concentration per Run 3	0.014 ppb	0.055 ppb	0.007 ppb	8.208 ppb	0.001 ppb	0.009 ppb	0.024 ppb	0.376 ppb	92.523 %
Concentration RSD	630.4 %	62.6 %	206.7 %	46.1 %	4,821.7 %	117.8 %	158.1 %	72.7 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.026 ppb	0.012 ppb	-0.002 ppb	96.468 %	-0.003 ppb	0.001 ppb	99.599 %	0.008 ppb	-0.042 ppb
Concentration per Run 1	0.013 ppb	-0.021 ppb	-0.001 ppb	95.523 %	-0.004 ppb	0.000 ppb	93.372 %	0.007 ppb	-0.040 ppb
Concentration per Run 2	0.045 ppb	-0.023 ppb	-0.011 ppb	96.434 %	-0.003 ppb	0.003 ppb	102.578 %	0.006 ppb	-0.043 ppb
Concentration per Run 3	0.020 ppb	0.081 ppb	0.006 ppb	97.448 %	-0.004 ppb	0.000 ppb	102.846 %	0.012 ppb	-0.043 ppb
Concentration RSD	65.3 %	494.6 %	420.8 %	1.0 %	15.8 %	173.2 %	5.4 %	40.8 %	3.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.980 %	99.979 %	0.074 ppb	0.019 ppb	103.220 %
Concentration per Run 1	92.620 %	97.303 %	0.070 ppb	0.019 ppb	102.434 %
Concentration per Run 2	95.528 %	101.353 %	0.073 ppb	0.018 ppb	104.875 %
Concentration per Run 3	96.792 %	101.282 %	0.079 ppb	0.019 ppb	102.352 %
Concentration RSD	2.3 %	2.3 %	5.8 %	3.0 %	1.4 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 69 Analysis started at: 12/17/2021 2:23:05 PM
 Analysis label: I2167788-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.098 %	110.981 %	0.001 ppb	344.393 ppb	29.167 ppb	4.518 ppb	-4.510 ppb	65.527 ppb	94.185 %
Concentration per Run 1	91.483 %	112.549 %	0.010 ppb	313.423 ppb	26.519 ppb	3.583 ppb	-0.268 ppb	51.812 ppb	94.520 %
Concentration per Run 2	91.385 %	112.157 %	-0.005 ppb	357.730 ppb	36.035 ppb	4.501 ppb	-10.336 ppb	87.190 ppb	94.566 %
Concentration per Run 3	90.427 %	108.235 %	-0.001 ppb	362.027 ppb	24.947 ppb	5.470 ppb	-2.926 ppb	57.578 ppb	93.468 %
Concentration RSD	0.6 %	2.1 %	594.6 %	7.8 %	20.6 %	20.9 %	115.7 %	29.0 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.015 ppb	0.305 ppb	1.178 ppb	66.540 ppb	0.000 ppb	0.153 ppb	0.085 ppb	0.170 ppb	91.438 %
Concentration per Run 1	0.017 ppb	0.218 ppb	0.987 ppb	59.695 ppb	0.002 ppb	0.129 ppb	0.029 ppb	0.124 ppb	88.294 %
Concentration per Run 2	0.001 ppb	0.482 ppb	1.374 ppb	73.679 ppb	-0.003 ppb	0.152 ppb	0.066 ppb	0.129 ppb	91.542 %
Concentration per Run 3	0.028 ppb	0.215 ppb	1.174 ppb	66.246 ppb	0.001 ppb	0.177 ppb	0.161 ppb	0.257 ppb	94.479 %
Concentration RSD	87.4 %	50.2 %	16.4 %	10.5 %	2,825.6 %	15.8 %	80.0 %	44.4 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.061 ppb	-0.013 ppb	0.293 ppb	96.868 %	-0.004 ppb	0.005 ppb	99.090 %	0.011 ppb	0.368 ppb
Concentration per Run 1	0.055 ppb	-0.058 ppb	0.266 ppb	96.163 %	-0.005 ppb	0.009 ppb	97.165 %	0.006 ppb	0.454 ppb
Concentration per Run 2	0.061 ppb	-0.023 ppb	0.298 ppb	96.635 %	-0.005 ppb	0.006 ppb	98.699 %	0.012 ppb	0.399 ppb
Concentration per Run 3	0.067 ppb	0.042 ppb	0.316 ppb	97.807 %	-0.003 ppb	0.000 ppb	101.406 %	0.016 ppb	0.252 ppb
Concentration RSD	10.0 %	384.1 %	8.6 %	0.9 %	26.7 %	91.9 %	2.2 %	45.9 %	28.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.741 %	99.130 %	0.058 ppb	0.011 ppb	102.781 %
Concentration per Run 1	94.435 %	98.146 %	0.050 ppb	0.011 ppb	103.404 %
Concentration per Run 2	94.626 %	99.460 %	0.064 ppb	0.012 ppb	102.402 %
Concentration per Run 3	95.161 %	99.783 %	0.060 ppb	0.011 ppb	102.537 %
Concentration RSD	0.4 %	0.9 %	12.9 %	7.1 %	0.5 %

Alpha ICPMSQ Full

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Analysis index: 70 Analysis started at: 12/17/2021 2:29:57 PM
 Analysis label: WG1584061-2D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.501 %	107.713 %	10.049 ppb	2,046.941 ppb	2,075.538 ppb	397.419 ppb	2,056.710 ppb	1,811.777 ppb	94.364 %
Concentration per Run 1	90.258 %	104.902 %	9.930 ppb	2,041.005 ppb	2,070.073 ppb	390.098 ppb	1,998.673 ppb	1,828.709 ppb	94.732 %
Concentration per Run 2	90.686 %	112.745 %	10.093 ppb	2,022.861 ppb	2,056.545 ppb	392.035 ppb	2,040.711 ppb	1,686.135 ppb	94.396 %
Concentration per Run 3	90.561 %	105.490 %	10.123 ppb	2,076.958 ppb	2,099.995 ppb	410.125 ppb	2,130.746 ppb	1,920.487 ppb	93.964 %
Concentration RSD	0.2 %	4.1 %	1.0 %	1.3 %	1.1 %	2.8 %	3.3 %	6.5 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	93.876 ppb	38.070 ppb	96.344 ppb	194.229 ppb	92.090 ppb	93.188 ppb	47.342 ppb	95.020 ppb	93.598 %
Concentration per Run 1	94.577 ppb	38.681 ppb	96.662 ppb	204.962 ppb	93.626 ppb	96.085 ppb	48.376 ppb	96.263 ppb	89.272 %
Concentration per Run 2	92.843 ppb	37.035 ppb	96.979 ppb	185.881 ppb	91.063 ppb	91.153 ppb	47.309 ppb	94.236 ppb	95.571 %
Concentration per Run 3	94.208 ppb	38.495 ppb	95.391 ppb	191.843 ppb	91.582 ppb	92.327 ppb	46.341 ppb	94.563 ppb	95.951 %
Concentration RSD	1.0 %	2.4 %	0.9 %	5.0 %	1.5 %	2.8 %	2.2 %	1.1 %	4.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	23.229 ppb	22.130 ppb	198.736 ppb	94.981 %	10.535 ppb	10.645 ppb	98.079 %	88.066 ppb	396.531 ppb
Concentration per Run 1	23.656 ppb	22.881 ppb	194.657 ppb	93.278 %	10.664 ppb	10.830 ppb	93.011 %	87.457 ppb	396.756 ppb
Concentration per Run 2	22.592 ppb	22.812 ppb	200.218 ppb	96.563 %	10.416 ppb	10.730 ppb	98.760 %	89.584 ppb	400.861 ppb
Concentration per Run 3	23.437 ppb	20.699 ppb	201.334 ppb	95.103 %	10.525 ppb	10.375 ppb	102.466 %	87.156 ppb	391.975 ppb
Concentration RSD	2.4 %	5.6 %	1.8 %	1.7 %	1.2 %	2.2 %	4.9 %	1.5 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.852 %	99.245 %	24.570 ppb	104.492 ppb	101.301 %
Concentration per Run 1	92.284 %	95.883 %	24.348 ppb	103.818 ppb	100.213 %
Concentration per Run 2	96.771 %	102.383 %	24.737 ppb	104.672 ppb	102.008 %
Concentration per Run 3	95.501 %	99.470 %	24.625 ppb	104.985 ppb	101.683 %
Concentration RSD	2.4 %	3.3 %	0.8 %	0.6 %	0.9 %

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 Analysis label: I2167788-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	77.192 %	93.464 %	0.011 ppb	918,658.704 ppb	57,804.679 ppb	60.353 ppb	6,627.779 ppb	142,405.386 ppb	110.076 %
Concentration per Run 1	76.995 %	95.686 %	0.009 ppb	860,631.011 ppb	55,078.006 ppb	55.032 ppb	6,117.407 ppb	132,696.235 ppb	108.100 %
Concentration per Run 2	77.082 %	87.451 %	0.008 ppb	980,964.629 ppb	61,575.844 ppb	63.131 ppb	7,113.740 ppb	151,172.326 ppb	110.587 %
Concentration per Run 3	77.500 %	97.255 %	0.016 ppb	914,380.472 ppb	56,760.186 ppb	62.896 ppb	6,652.190 ppb	143,347.597 ppb	111.542 %
Concentration RSD	0.3 %	5.6 %	38.2 %	6.6 %	5.8 %	7.6 %	7.5 %	6.5 %	1.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.443 ppb	0.456 ppb	1,100.481 ppb	140,280.153 ppb	2.913 ppb	2.465 ppb	0.526 ppb	2.387 ppb	75.134 %
Concentration per Run 1	0.332 ppb	0.478 ppb	1,065.903 ppb	136,099.212 ppb	2.827 ppb	2.381 ppb	0.579 ppb	2.376 ppb	73.148 %
Concentration per Run 2	0.507 ppb	0.464 ppb	1,147.512 ppb	145,692.773 ppb	2.981 ppb	2.596 ppb	0.475 ppb	2.565 ppb	75.146 %
Concentration per Run 3	0.491 ppb	0.427 ppb	1,088.027 ppb	139,048.475 ppb	2.930 ppb	2.419 ppb	0.525 ppb	2.219 ppb	77.107 %
Concentration RSD	21.8 %	5.7 %	3.8 %	3.5 %	2.7 %	4.7 %	10.0 %	7.2 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	52.712 ppb	0.177 ppb	979.773 ppb	74.417 %	-0.003 ppb	0.006 ppb	84.536 %	2.053 ppb	413.351 ppb
Concentration per Run 1	51.507 ppb	0.163 ppb	940.848 ppb	73.314 %	-0.003 ppb	0.007 ppb	80.473 %	2.249 ppb	408.371 ppb
Concentration per Run 2	52.481 ppb	0.260 ppb	998.906 ppb	74.647 %	-0.002 ppb	0.003 ppb	85.199 %	2.050 ppb	418.811 ppb
Concentration per Run 3	54.148 ppb	0.107 ppb	999.566 ppb	75.290 %	-0.003 ppb	0.007 ppb	87.935 %	1.858 ppb	412.871 ppb
Concentration RSD	2.5 %	43.7 %	3.4 %	1.4 %	26.9 %	35.3 %	4.5 %	9.5 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	83.217 %	86.463 %	0.079 ppb	0.124 ppb	71.163 %
Concentration per Run 1	80.814 %	83.563 %	0.088 ppb	0.127 ppb	71.130 %
Concentration per Run 2	83.374 %	86.539 %	0.075 ppb	0.120 ppb	70.603 %
Concentration per Run 3	85.463 %	89.286 %	0.073 ppb	0.124 ppb	71.757 %
Concentration RSD	2.8 %	3.3 %	10.2 %	2.8 %	0.8 %

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Analysis index: 72 Analysis started at: 12/17/2021 2:40:19 PM
 Analysis label: I2168430-01 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.188 %	98.627 %	0.015 ppb	198,702.323 ppb	26,556.246 ppb	30.655 ppb	6,359.930 ppb	190,222.363 ppb	103.374 %
Concentration per Run 1	84.506 %	100.000 %	0.011 ppb	192,491.889 ppb	25,181.759 ppb	28.722 ppb	5,836.511 ppb	179,131.731 ppb	102.529 %
Concentration per Run 2	83.729 %	92.745 %	0.026 ppb	206,410.613 ppb	27,529.304 ppb	32.332 ppb	6,897.327 ppb	200,162.074 ppb	103.095 %
Concentration per Run 3	84.329 %	103.137 %	0.009 ppb	197,204.467 ppb	26,957.675 ppb	30.912 ppb	6,345.952 ppb	191,373.283 ppb	104.497 %
Concentration RSD	0.5 %	5.4 %	57.7 %	3.6 %	4.6 %	5.9 %	8.3 %	5.6 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.517 ppb	0.361 ppb	15,970.842 ppb	116,961.584 ppb	18.301 ppb	13.492 ppb	0.899 ppb	15.535 ppb	82.444 %
Concentration per Run 1	0.453 ppb	0.364 ppb	15,431.617 ppb	114,549.799 ppb	18.312 ppb	13.449 ppb	1.045 ppb	15.648 ppb	80.932 %
Concentration per Run 2	0.677 ppb	0.430 ppb	16,679.459 ppb	120,214.656 ppb	18.367 ppb	14.367 ppb	0.798 ppb	15.734 ppb	82.796 %
Concentration per Run 3	0.422 ppb	0.288 ppb	15,801.449 ppb	116,120.297 ppb	18.224 ppb	12.660 ppb	0.854 ppb	15.224 ppb	83.603 %
Concentration RSD	26.9 %	19.7 %	4.0 %	2.5 %	0.4 %	6.3 %	14.4 %	1.8 %	1.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.522 ppb	0.173 ppb	864.705 ppb	83.210 %	-0.002 ppb	0.051 ppb	90.114 %	0.817 ppb	305.328 ppb
Concentration per Run 1	2.277 ppb	0.061 ppb	841.664 ppb	82.386 %	0.000 ppb	0.076 ppb	86.382 %	0.828 ppb	299.923 ppb
Concentration per Run 2	2.676 ppb	0.189 ppb	876.882 ppb	83.319 %	0.000 ppb	0.032 ppb	91.284 %	0.838 ppb	308.551 ppb
Concentration per Run 3	2.614 ppb	0.269 ppb	875.569 ppb	83.924 %	-0.006 ppb	0.047 ppb	92.677 %	0.784 ppb	307.511 ppb
Concentration RSD	8.5 %	60.5 %	2.3 %	0.9 %	180.6 %	43.6 %	3.7 %	3.5 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	90.751 %	94.727 %	0.048 ppb	0.258 ppb	81.443 %
Concentration per Run 1	88.755 %	92.124 %	0.040 ppb	0.256 ppb	81.014 %
Concentration per Run 2	91.409 %	95.368 %	0.049 ppb	0.268 ppb	81.492 %
Concentration per Run 3	92.089 %	96.689 %	0.055 ppb	0.250 ppb	81.824 %
Concentration RSD	1.9 %	2.5 %	16.7 %	3.5 %	0.5 %

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Analysis index: 73 Analysis started at: 12/17/2021 2:45:08 PM
 Analysis label: I2168430-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.444 %	105.948 %	0.006 ppb	22,804.012 ppb	9,764.202 ppb	12.321 ppb	1,249.651 ppb	65,984.660 ppb	95.010 %
Concentration per Run 1	87.688 %	107.451 %	0.009 ppb	22,001.681 ppb	9,422.280 ppb	11.846 ppb	1,248.728 ppb	62,787.702 ppb	94.822 %
Concentration per Run 2	87.474 %	107.451 %	0.006 ppb	22,736.560 ppb	9,775.090 ppb	11.335 ppb	1,217.625 ppb	66,224.407 ppb	94.628 %
Concentration per Run 3	87.170 %	102.941 %	0.002 ppb	23,673.794 ppb	10,095.237 ppb	13.782 ppb	1,282.602 ppb	68,941.873 ppb	95.579 %
Concentration RSD	0.3 %	2.5 %	60.3 %	3.7 %	3.4 %	10.5 %	2.6 %	4.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.233 ppb	0.257 ppb	30.054 ppb	292.283 ppb	5.953 ppb	1.831 ppb	0.804 ppb	0.965 ppb	95.671 %
Concentration per Run 1	1.183 ppb	0.235 ppb	29.312 ppb	299.083 ppb	5.773 ppb	1.700 ppb	0.840 ppb	0.946 ppb	91.495 %
Concentration per Run 2	1.076 ppb	0.259 ppb	29.125 ppb	296.290 ppb	5.971 ppb	1.649 ppb	0.819 ppb	0.919 ppb	99.886 %
Concentration per Run 3	1.439 ppb	0.276 ppb	31.725 ppb	281.474 ppb	6.116 ppb	2.146 ppb	0.752 ppb	1.031 ppb	95.633 %
Concentration RSD	15.1 %	8.1 %	4.8 %	3.2 %	2.9 %	14.9 %	5.7 %	6.1 %	4.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.639 ppb	0.911 ppb	261.356 ppb	96.031 %	-0.003 ppb	0.037 ppb	101.514 %	0.350 ppb	26.102 ppb
Concentration per Run 1	0.792 ppb	0.742 ppb	255.015 ppb	94.142 %	-0.002 ppb	0.041 ppb	96.665 %	0.366 ppb	25.596 ppb
Concentration per Run 2	0.597 ppb	1.178 ppb	260.144 ppb	97.113 %	-0.005 ppb	0.025 ppb	103.717 %	0.349 ppb	26.634 ppb
Concentration per Run 3	0.528 ppb	0.813 ppb	268.909 ppb	96.839 %	-0.002 ppb	0.047 ppb	104.160 %	0.335 ppb	26.077 ppb
Concentration RSD	21.5 %	25.7 %	2.7 %	1.7 %	62.8 %	30.3 %	4.1 %	4.4 %	2.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.995 %	102.714 %	0.032 ppb	0.113 ppb	97.459 %
Concentration per Run 1	95.957 %	99.687 %	0.029 ppb	0.113 ppb	96.159 %
Concentration per Run 2	98.894 %	104.617 %	0.034 ppb	0.113 ppb	98.391 %
Concentration per Run 3	99.133 %	103.837 %	0.033 ppb	0.113 ppb	97.827 %
Concentration RSD	1.8 %	2.6 %	7.7 %	0.2 %	1.2 %

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Analysis index: 74 Analysis started at: 12/17/2021 2:49:56 PM
 Analysis label: L2168430-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.460 %	110.719 %	0.001 ppb	75,223.637 ppb	50,783.598 ppb	17.628 ppb	4,346.053 ppb	179,386.824 ppb	98.417 %
Concentration per Run 1	90.459 %	110.588 %	0.001 ppb	74,117.801 ppb	49,343.579 ppb	16.114 ppb	4,076.188 ppb	173,591.387 ppb	98.661 %
Concentration per Run 2	90.840 %	106.863 %	-0.001 ppb	77,499.233 ppb	53,194.103 ppb	18.798 ppb	4,637.281 ppb	186,105.247 ppb	97.284 %
Concentration per Run 3	90.081 %	114.706 %	0.001 ppb	74,053.876 ppb	49,813.111 ppb	17.974 ppb	4,324.691 ppb	178,463.837 ppb	99.306 %
Concentration RSD	0.4 %	3.5 %	202.7 %	2.6 %	4.1 %	7.8 %	6.5 %	3.5 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.982 ppb	0.180 ppb	1,207.875 ppb	9,832.948 ppb	1.555 ppb	3.635 ppb	0.815 ppb	1.940 ppb	90.107 %
Concentration per Run 1	1.136 ppb	0.188 ppb	1,189.496 ppb	9,817.709 ppb	1.523 ppb	3.327 ppb	0.736 ppb	1.763 ppb	87.333 %
Concentration per Run 2	0.968 ppb	0.133 ppb	1,214.035 ppb	9,795.773 ppb	1.598 ppb	3.950 ppb	0.977 ppb	2.237 ppb	93.099 %
Concentration per Run 3	0.841 ppb	0.218 ppb	1,220.093 ppb	9,885.362 ppb	1.544 ppb	3.629 ppb	0.732 ppb	1.818 ppb	89.889 %
Concentration RSD	15.1 %	24.0 %	1.3 %	0.5 %	2.5 %	8.6 %	17.2 %	13.4 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.053 ppb	0.104 ppb	857.702 ppb	91.023 %	-0.003 ppb	0.010 ppb	96.993 %	0.305 ppb	3,409.051 ppb
Concentration per Run 1	1.056 ppb	-0.038 ppb	829.700 ppb	91.062 %	-0.002 ppb	0.009 ppb	93.899 %	0.302 ppb	3,351.615 ppb
Concentration per Run 2	1.025 ppb	0.144 ppb	868.330 ppb	90.989 %	-0.003 ppb	0.003 ppb	99.209 %	0.321 ppb	3,438.028 ppb
Concentration per Run 3	1.077 ppb	0.205 ppb	875.076 ppb	91.019 %	-0.005 ppb	0.018 ppb	97.872 %	0.291 ppb	3,437.510 ppb
Concentration RSD	2.5 %	122.0 %	2.9 %	0.0 %	36.7 %	74.9 %	2.8 %	4.9 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.463 %	94.735 %	0.021 ppb	0.226 ppb	88.542 %
Concentration per Run 1	91.385 %	92.173 %	0.017 ppb	0.219 ppb	89.012 %
Concentration per Run 2	92.966 %	96.101 %	0.018 ppb	0.227 ppb	89.279 %
Concentration per Run 3	93.039 %	95.930 %	0.028 ppb	0.231 ppb	87.334 %
Concentration RSD	1.0 %	2.3 %	28.5 %	2.7 %	1.2 %

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Analysis index: 75 Analysis started at: 12/17/2021 2:54:45 PM
 Analysis label: L2168430-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.870 %	109.935 %	0.015 ppb	91,035.522 ppb	42,117.490 ppb	142.079 ppb	2,539.067 ppb	136,631.499 ppb	96.902 %
Concentration per Run 1	88.723 %	106.471 %	0.004 ppb	89,789.266 ppb	41,788.006 ppb	139.508 ppb	2,392.675 ppb	136,240.465 ppb	96.611 %
Concentration per Run 2	89.304 %	115.490 %	0.015 ppb	87,927.750 ppb	40,252.087 ppb	142.196 ppb	2,464.584 ppb	128,512.442 ppb	96.925 %
Concentration per Run 3	88.582 %	107.843 %	0.026 ppb	95,389.549 ppb	44,312.378 ppb	144.534 ppb	2,759.942 ppb	145,141.589 ppb	97.170 %
Concentration RSD	0.4 %	4.4 %	74.5 %	4.3 %	4.9 %	1.8 %	7.7 %	6.1 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.589 ppb	0.667 ppb	3,708.458 ppb	3,350.839 ppb	101.134 ppb	62.344 ppb	47.046 ppb	7.010 ppb	89.881 %
Concentration per Run 1	1.456 ppb	0.614 ppb	3,736.796 ppb	3,366.359 ppb	103.766 ppb	62.962 ppb	48.222 ppb	7.254 ppb	85.680 %
Concentration per Run 2	1.535 ppb	0.723 ppb	3,624.566 ppb	3,218.733 ppb	98.044 ppb	59.655 ppb	44.655 ppb	6.856 ppb	92.845 %
Concentration per Run 3	1.776 ppb	0.664 ppb	3,764.012 ppb	3,467.424 ppb	101.593 ppb	64.415 ppb	48.261 ppb	6.920 ppb	91.119 %
Concentration RSD	10.5 %	8.2 %	2.0 %	3.7 %	2.9 %	3.9 %	4.4 %	3.1 %	4.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.190 ppb	0.450 ppb	435.751 ppb	90.608 %	0.011 ppb	0.177 ppb	95.176 %	0.326 ppb	115.263 ppb
Concentration per Run 1	2.317 ppb	0.335 ppb	427.904 ppb	88.990 %	0.008 ppb	0.176 ppb	90.876 %	0.303 ppb	114.299 ppb
Concentration per Run 2	2.356 ppb	0.280 ppb	435.499 ppb	90.770 %	0.009 ppb	0.159 ppb	96.498 %	0.373 ppb	114.979 ppb
Concentration per Run 3	1.897 ppb	0.735 ppb	443.850 ppb	92.063 %	0.015 ppb	0.195 ppb	98.152 %	0.302 ppb	116.511 ppb
Concentration RSD	11.6 %	55.2 %	1.8 %	1.7 %	37.9 %	10.0 %	4.0 %	12.4 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.936 %	99.441 %	0.033 ppb	0.987 ppb	89.713 %
Concentration per Run 1	93.505 %	95.788 %	0.027 ppb	0.981 ppb	89.001 %
Concentration per Run 2	96.806 %	101.537 %	0.035 ppb	0.978 ppb	89.961 %
Concentration per Run 3	97.497 %	100.998 %	0.038 ppb	1.003 ppb	90.177 %
Concentration RSD	2.2 %	3.2 %	17.9 %	1.4 %	0.7 %

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Analysis index: 76 Analysis started at: 12/17/2021 2:59:34 PM
 Analysis label: I2168430-06 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.839 %	111.569 %	0.015 ppb	97,982.043 ppb	39,458.320 ppb	26.666 ppb	2,111.859 ppb	108,797.559 ppb	94.973 %
Concentration per Run 1	88.043 %	107.059 %	0.015 ppb	98,942.619 ppb	39,622.255 ppb	25.494 ppb	2,207.207 ppb	109,251.253 ppb	95.530 %
Concentration per Run 2	88.176 %	112.745 %	0.008 ppb	97,982.767 ppb	39,156.575 ppb	29.419 ppb	2,033.856 ppb	108,103.607 ppb	95.057 %
Concentration per Run 3	87.299 %	114.902 %	0.022 ppb	97,020.744 ppb	39,596.130 ppb	25.085 ppb	2,094.515 ppb	109,037.818 ppb	94.334 %
Concentration RSD	0.5 %	3.6 %	45.0 %	1.0 %	0.7 %	9.0 %	4.2 %	0.6 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.607 ppb	0.558 ppb	4,617.240 ppb	1,212.520 ppb	110.930 ppb	53.006 ppb	15.834 ppb	2.097 ppb	90.383 %
Concentration per Run 1	1.618 ppb	0.473 ppb	4,649.865 ppb	1,228.482 ppb	113.495 ppb	55.731 ppb	16.103 ppb	2.154 ppb	87.410 %
Concentration per Run 2	1.593 ppb	0.607 ppb	4,633.485 ppb	1,214.627 ppb	110.959 ppb	50.829 ppb	16.357 ppb	2.135 ppb	91.350 %
Concentration per Run 3	1.610 ppb	0.594 ppb	4,568.370 ppb	1,194.451 ppb	108.335 ppb	52.459 ppb	15.043 ppb	2.003 ppb	92.388 %
Concentration RSD	0.8 %	13.3 %	0.9 %	1.4 %	2.3 %	4.7 %	4.4 %	3.9 %	2.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.706 ppb	0.235 ppb	481.762 ppb	89.586 %	0.103 ppb	0.116 ppb	95.788 %	0.260 ppb	242.184 ppb
Concentration per Run 1	1.691 ppb	0.348 ppb	469.814 ppb	88.608 %	0.096 ppb	0.124 ppb	93.823 %	0.218 ppb	239.127 ppb
Concentration per Run 2	1.710 ppb	0.252 ppb	489.288 ppb	90.406 %	0.104 ppb	0.103 ppb	97.412 %	0.280 ppb	239.495 ppb
Concentration per Run 3	1.717 ppb	0.106 ppb	486.183 ppb	89.744 %	0.109 ppb	0.122 ppb	96.128 %	0.280 ppb	247.929 ppb
Concentration RSD	0.8 %	51.8 %	2.2 %	1.0 %	6.7 %	10.1 %	1.9 %	13.8 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.068 %	97.442 %	0.018 ppb	0.532 ppb	89.078 %
Concentration per Run 1	92.626 %	94.741 %	0.013 ppb	0.521 ppb	89.394 %
Concentration per Run 2	98.658 %	98.952 %	0.018 ppb	0.540 ppb	89.130 %
Concentration per Run 3	94.920 %	98.631 %	0.021 ppb	0.534 ppb	88.710 %
Concentration RSD	1.3 %	2.4 %	22.5 %	1.8 %	0.4 %

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Analysis index: 77 Analysis started at: 12/17/2021 3:04:23 PM
 Analysis label: I2168430-08 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	83.639 %	104.118 %	0.084 ppb	586,196.638 ppb	91,835.131 ppb	35.907 ppb	6,201.299 ppb	122,956.444 ppb	98.457 %
Concentration per Run 1	83.853 %	94.706 %	0.084 ppb	614,880.102 ppb	96,455.785 ppb	35.724 ppb	6,276.326 ppb	124,233.891 ppb	97.664 %
Concentration per Run 2	84.043 %	114.314 %	0.093 ppb	559,228.201 ppb	87,375.415 ppb	34.226 ppb	6,024.367 ppb	117,116.717 ppb	98.643 %
Concentration per Run 3	83.022 %	103.333 %	0.075 ppb	584,481.610 ppb	91,674.193 ppb	37.771 ppb	6,303.203 ppb	127,518.723 ppb	99.063 %
Concentration RSD	0.6 %	9.4 %	10.5 %	4.8 %	4.9 %	5.0 %	2.5 %	4.3 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.662 ppb	1.059 ppb	13,888.278 ppb	42,756.250 ppb	55.770 ppb	7.896 ppb	2.444 ppb	3.773 ppb	81.238 %
Concentration per Run 1	1.705 ppb	1.066 ppb	13,717.206 ppb	42,768.417 ppb	56.648 ppb	8.409 ppb	2.589 ppb	3.754 ppb	79.971 %
Concentration per Run 2	1.408 ppb	0.975 ppb	13,879.665 ppb	42,584.061 ppb	54.980 ppb	8.175 ppb	2.274 ppb	3.768 ppb	80.735 %
Concentration per Run 3	1.874 ppb	1.135 ppb	14,067.965 ppb	42,916.271 ppb	55.681 ppb	7.105 ppb	2.470 ppb	3.798 ppb	83.008 %
Concentration RSD	14.2 %	7.6 %	1.3 %	0.4 %	1.5 %	8.8 %	6.5 %	0.6 %	1.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	5.103 ppb	0.255 ppb	1,299.809 ppb	79.936 %	0.016 ppb	0.032 ppb	86.548 %	0.282 ppb	711.017 ppb
Concentration per Run 1	4.845 ppb	0.319 ppb	1,258.410 ppb	79.435 %	0.018 ppb	0.034 ppb	83.526 %	0.290 ppb	709.961 ppb
Concentration per Run 2	5.214 ppb	0.177 ppb	1,326.461 ppb	80.033 %	0.016 ppb	0.043 ppb	87.550 %	0.262 ppb	710.812 ppb
Concentration per Run 3	5.250 ppb	0.267 ppb	1,314.557 ppb	80.339 %	0.013 ppb	0.020 ppb	88.567 %	0.294 ppb	712.278 ppb
Concentration RSD	4.4 %	28.2 %	2.8 %	0.6 %	17.0 %	36.5 %	3.1 %	6.2 %	0.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	88.858 %	90.033 %	0.030 ppb	2.547 ppb	74.838 %
Concentration per Run 1	87.757 %	88.139 %	0.031 ppb	2.531 ppb	74.953 %
Concentration per Run 2	89.517 %	91.192 %	0.031 ppb	2.505 ppb	74.607 %
Concentration per Run 3	89.302 %	90.767 %	0.029 ppb	2.605 ppb	74.952 %
Concentration RSD	1.1 %	1.8 %	5.0 %	2.0 %	0.3 %

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Analysis index: 78 Analysis started at: 12/17/2021 3:09:13 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.286 %	113.987 %	59.363 ppb	5,808.456 ppb	5,752.542 ppb	57.640 ppb	6,046.790 ppb	6,030.725 ppb	101.211 %
Concentration per Run 1	91.466 %	109.412 %	58.941 ppb	5,932.284 ppb	5,791.433 ppb	54.850 ppb	5,918.846 ppb	5,475.331 ppb	102.085 %
Concentration per Run 2	90.986 %	116.471 %	59.274 ppb	5,729.948 ppb	5,772.225 ppb	57.699 ppb	6,071.555 ppb	6,498.009 ppb	100.588 %
Concentration per Run 3	91.407 %	116.079 %	59.876 ppb	5,763.137 ppb	5,693.967 ppb	60.372 ppb	6,149.968 ppb	6,118.835 ppb	100.959 %
Recovery Percentage 1			98.939 %	96.808 %	95.876 %	96.067 %	100.780 %	100.512 %	
Concentration RSD	0.3 %	3.5 %	0.8 %	1.9 %	0.9 %	4.8 %	1.9 %	8.6 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	57.553 ppb	57.632 ppb	58.554 ppb	5,825.959 ppb	57.280 ppb	57.876 ppb	58.409 ppb	59.069 ppb	92.786 %
Concentration per Run 1	57.044 ppb	56.705 ppb	57.454 ppb	5,821.705 ppb	56.602 ppb	58.793 ppb	58.324 ppb	57.921 ppb	92.862 %
Concentration per Run 2	58.396 ppb	58.974 ppb	62.320 ppb	5,893.719 ppb	57.859 ppb	58.032 ppb	59.328 ppb	59.246 ppb	92.841 %
Concentration per Run 3	57.219 ppb	57.217 ppb	55.889 ppb	5,762.453 ppb	57.379 ppb	56.802 ppb	57.575 ppb	60.038 ppb	92.656 %
Recovery Percentage 1	95.921 %	96.053 %	97.591 %	97.099 %	95.466 %	96.460 %	97.349 %	98.448 %	
Concentration RSD	1.3 %	2.1 %	5.7 %	1.1 %	1.1 %	1.7 %	1.5 %	1.8 %	0.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	59.766 ppb	57.838 ppb	59.050 ppb	97.248 %	58.997 ppb	58.992 ppb	99.063 %	58.736 ppb	57.566 ppb
Concentration per Run 1	57.741 ppb	54.967 ppb	56.844 ppb	97.565 %	59.099 ppb	58.786 ppb	97.381 %	59.037 ppb	58.125 ppb
Concentration per Run 2	61.430 ppb	58.789 ppb	60.270 ppb	97.403 %	59.200 ppb	59.610 ppb	99.344 %	58.989 ppb	57.970 ppb
Concentration per Run 3	60.128 ppb	59.757 ppb	60.037 ppb	96.775 %	58.693 ppb	58.580 ppb	100.463 %	58.181 ppb	56.602 ppb
Recovery Percentage 1	99.610 %	96.396 %	98.417 %		98.328 %	98.320 %		97.893 %	95.943 %
Concentration RSD	3.1 %	4.4 %	3.2 %	0.4 %	0.5 %	0.9 %	1.6 %	0.8 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.537 %	98.938 %	59.652 ppb	58.584 ppb	99.643 %
Concentration per Run 1	97.305 %	97.731 %	59.514 ppb	58.383 ppb	99.018 %
Concentration per Run 2	98.244 %	98.848 %	59.176 ppb	58.879 ppb	100.250 %
Concentration per Run 3	97.062 %	100.235 %	60.265 ppb	58.489 ppb	99.661 %
Recovery Percentage 1			99.420 %	97.640 %	
Concentration RSD	0.6 %	1.3 %	0.9 %	0.4 %	0.6 %

Alpha ICPMSQ Full

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Analysis index: 79 Analysis started at: 12/17/2021 3:14:05 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.665 %	114.772 %	0.005 ppb	5.351 ppb	-0.026 ppb	-0.555 ppb	-6.918 ppb	-4.757 ppb	87.926 %
Concentration per Run 1	88.488 %	104.902 %	0.009 ppb	11.023 ppb	0.337 ppb	-0.413 ppb	-4.668 ppb	-4.720 ppb	87.164 %
Concentration per Run 2	87.882 %	125.491 %	0.013 ppb	3.722 ppb	-0.679 ppb	-0.510 ppb	-12.102 ppb	-4.664 ppb	88.630 %
Concentration per Run 3	89.624 %	113.922 %	-0.007 ppb	1.307 ppb	0.263 ppb	-0.741 ppb	-3.984 ppb	-4.886 ppb	87.983 %
Recovery Percentage 1		0.961 %		5.351 %	-0.037 %	-5.547 %	-6.918 %	-4.757 %	
Concentration RSD	1.0 %	9.0 %	221.4 %	94.5 %	2,157.5 %	30.3 %	65.1 %	2.4 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.027 ppb	-0.001 ppb	0.084 ppb	23.383 ppb	-0.001 ppb	-0.013 ppb	-0.019 ppb	-0.118 ppb	95.951 %
Concentration per Run 1	-0.011 ppb	-0.002 ppb	0.161 ppb	26.882 ppb	-0.003 ppb	-0.065 ppb	-0.035 ppb	-0.148 ppb	92.235 %
Concentration per Run 2	-0.043 ppb	0.012 ppb	0.034 ppb	20.998 ppb	0.001 ppb	0.010 ppb	-0.021 ppb	-0.135 ppb	98.559 %
Concentration per Run 3	-0.028 ppb	-0.012 ppb	0.057 ppb	22.269 ppb	-0.003 ppb	0.017 ppb	0.000 ppb	-0.072 ppb	97.060 %
Recovery Percentage 1	-0.544 %	-0.065 %	8.429 %	46.766 %	-0.287 %	-0.637 %	-1.879 %	-1.183 %	
Concentration RSD	58.5 %	1,882.7 %	80.3 %	13.2 %	154.6 %	356.3 %	94.0 %	34.0 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.042 ppb	0.076 ppb	-0.022 ppb	98.149 %	0.001 ppb	0.002 ppb	100.803 %	0.041 ppb	-0.067 ppb
Concentration per Run 1	0.036 ppb	0.011 ppb	-0.027 ppb	96.741 %	0.002 ppb	0.003 ppb	96.734 %	0.043 ppb	-0.075 ppb
Concentration per Run 2	0.072 ppb	0.178 ppb	-0.028 ppb	98.552 %	-0.002 ppb	0.003 ppb	101.141 %	0.032 ppb	-0.075 ppb
Concentration per Run 3	0.019 ppb	0.039 ppb	-0.010 ppb	99.155 %	0.003 ppb	0.000 ppb	104.535 %	0.048 ppb	-0.052 ppb
Recovery Percentage 1	8.475 %	1.523 %	-4.341 %		0.256 %	0.945 %		1.023 %	-13.460 %
Concentration RSD	64.5 %	117.0 %	45.8 %	1.3 %	244.7 %	86.6 %	3.9 %	19.4 %	20.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.939 %	99.914 %	0.267 ppb	0.010 ppb	101.977 %
Concentration per Run 1	97.254 %	98.513 %	0.285 ppb	0.012 ppb	100.494 %
Concentration per Run 2	97.099 %	99.275 %	0.272 ppb	0.011 ppb	103.171 %
Concentration per Run 3	99.465 %	101.953 %	0.244 ppb	0.008 ppb	102.264 %
Recovery Percentage 1			26.673 %		1.022 %
Concentration RSD	1.4 %	1.8 %	7.9 %	17.8 %	1.3 %

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Analysis index: 80 Analysis started at: 12/17/2021 3:18:58 PM
 Analysis label: WG1584061-3D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.658 %	111.830 %	5.187 ppb	24,779.234 ppb	7,915.796 ppb	210.696 ppb	5,125.557 ppb	17,725.710 ppb	92.677 %
Concentration per Run 1	90.311 %	104.314 %	5.173 ppb	25,582.132 ppb	8,268.007 ppb	213.232 ppb	5,064.640 ppb	17,893.483 ppb	92.399 %
Concentration per Run 2	89.282 %	113.922 %	5.222 ppb	24,901.620 ppb	7,981.090 ppb	204.128 ppb	5,386.895 ppb	18,053.085 ppb	93.090 %
Concentration per Run 3	89.382 %	117.255 %	5.167 ppb	23,853.950 ppb	7,498.291 ppb	214.729 ppb	4,925.137 ppb	17,230.561 ppb	92.544 %
Concentration RSD	0.6 %	6.0 %	0.6 %	3.5 %	4.9 %	2.7 %	4.6 %	2.5 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.573 ppb	20.416 ppb	127.514 ppb	2,214.147 ppb	50.143 ppb	50.350 ppb	25.651 ppb	50.418 ppb	90.619 %
Concentration per Run 1	50.631 ppb	20.737 ppb	125.775 ppb	2,260.574 ppb	51.601 ppb	52.203 ppb	25.642 ppb	50.773 ppb	87.786 %
Concentration per Run 2	52.730 ppb	20.185 ppb	129.471 ppb	2,149.605 ppb	49.651 ppb	49.995 ppb	25.262 ppb	50.300 ppb	92.600 %
Concentration per Run 3	51.358 ppb	20.325 ppb	127.295 ppb	2,232.261 ppb	49.179 ppb	48.852 ppb	26.048 ppb	50.181 ppb	91.471 %
Concentration RSD	2.1 %	1.4 %	1.5 %	2.6 %	2.6 %	3.4 %	1.5 %	0.6 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	13.690 ppb	12.385 ppb	223.122 ppb	91.863 %	5.614 ppb	5.550 ppb	95.161 %	50.963 ppb	266.585 ppb
Concentration per Run 1	13.652 ppb	13.456 ppb	216.484 ppb	91.677 %	5.673 ppb	5.480 ppb	92.859 %	50.727 ppb	261.994 ppb
Concentration per Run 2	13.226 ppb	11.240 ppb	225.766 ppb	92.233 %	5.613 ppb	5.547 ppb	95.741 %	51.280 ppb	272.170 ppb
Concentration per Run 3	14.193 ppb	12.460 ppb	227.116 ppb	91.679 %	5.556 ppb	5.622 ppb	96.884 %	50.883 ppb	265.592 ppb
Concentration RSD	3.5 %	9.0 %	2.6 %	0.3 %	1.0 %	1.3 %	2.2 %	0.6 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.196 %	95.565 %	12.800 ppb	56.087 ppb	95.593 %
Concentration per Run 1	93.604 %	92.962 %	12.480 ppb	55.339 ppb	96.319 %
Concentration per Run 2	95.274 %	95.813 %	12.812 ppb	56.100 ppb	95.762 %
Concentration per Run 3	96.711 %	97.919 %	13.108 ppb	56.823 ppb	94.699 %
Concentration RSD	1.6 %	2.6 %	2.5 %	1.3 %	0.9 %

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Analysis index: 81 Analysis started at: 12/17/2021 3:23:46 PM
 Analysis label: WG1584061-5D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.505 %	110.458 %	45.339 ppb	27,065.614 ppb	10,759.237 ppb	45.882 ppb	8,627.836 ppb	20,204.775 ppb	94.749 %
Concentration per Run 1	88.870 %	109.216 %	44.374 ppb	26,980.161 ppb	10,640.640 ppb	42.766 ppb	8,130.644 ppb	20,323.685 ppb	94.650 %
Concentration per Run 2	88.294 %	110.981 %	45.722 ppb	27,178.987 ppb	10,758.602 ppb	47.834 ppb	8,970.278 ppb	19,931.995 ppb	93.986 %
Concentration per Run 3	88.351 %	111.177 %	45.921 ppb	27,037.693 ppb	10,878.469 ppb	47.046 ppb	8,782.586 ppb	20,358.646 ppb	95.610 %
Concentration RSD	0.4 %	1.0 %	1.9 %	0.4 %	1.1 %	5.9 %	5.1 %	1.2 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	46.005 ppb	45.612 ppb	115.789 ppb	6,457.842 ppb	45.210 ppb	44.256 ppb	43.630 ppb	44.846 ppb	90.496 %
Concentration per Run 1	45.771 ppb	45.723 ppb	117.249 ppb	6,497.152 ppb	46.271 ppb	43.994 ppb	44.381 ppb	44.346 ppb	86.794 %
Concentration per Run 2	44.463 ppb	44.617 ppb	113.672 ppb	6,337.862 ppb	44.451 ppb	43.330 ppb	43.000 ppb	46.043 ppb	93.157 %
Concentration per Run 3	47.783 ppb	46.495 ppb	116.445 ppb	6,538.512 ppb	44.906 ppb	45.446 ppb	43.510 ppb	44.147 ppb	91.537 %
Concentration RSD	3.6 %	2.1 %	1.6 %	1.6 %	2.1 %	2.4 %	1.6 %	2.3 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	45.358 ppb	45.090 ppb	157.982 ppb	90.592 %	3.081 ppb	46.633 ppb	93.052 %	46.323 ppb	102.462 ppb
Concentration per Run 1	45.909 ppb	45.058 ppb	155.330 ppb	89.181 %	3.140 ppb	45.557 ppb	92.133 %	45.292 ppb	101.771 ppb
Concentration per Run 2	45.294 ppb	45.649 ppb	157.776 ppb	91.346 %	3.055 ppb	46.746 ppb	93.928 %	46.604 ppb	104.027 ppb
Concentration per Run 3	44.872 ppb	44.561 ppb	160.841 ppb	91.249 %	3.049 ppb	47.594 ppb	93.096 %	47.073 ppb	101.587 ppb
Concentration RSD	1.1 %	1.2 %	1.7 %	1.3 %	1.7 %	2.2 %	1.0 %	2.0 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.314 %	96.337 %	44.972 ppb	46.747 ppb	94.371 %
Concentration per Run 1	95.445 %	94.052 %	43.471 ppb	46.447 ppb	93.950 %
Concentration per Run 2	95.454 %	97.495 %	44.831 ppb	46.571 ppb	95.137 %
Concentration per Run 3	95.042 %	97.466 %	46.614 ppb	47.221 ppb	94.027 %
Concentration RSD	0.2 %	2.1 %	3.5 %	0.9 %	0.7 %

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Analysis index: 82 Analysis started at: 12/17/2021 3:28:34 PM
 Analysis label: WG1584061-4 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	103.663 %	135.360 %	0.002 ppb	196,382.521 ppb	52,437.036 ppb	5.613 ppb	34,291.808 ppb	137,718.735 ppb	93.978 %
Concentration per Run 1	103.853 %	124.118 %	0.005 ppb	201,412.840 ppb	53,613.889 ppb	4.918 ppb	33,493.850 ppb	136,817.123 ppb	92.662 %
Concentration per Run 2	103.708 %	141.569 %	-0.004 ppb	192,052.163 ppb	51,087.926 ppb	5.545 ppb	35,324.679 ppb	139,148.814 ppb	93.590 %
Concentration per Run 3	103.428 %	140.393 %	0.003 ppb	195,682.561 ppb	52,609.292 ppb	6.375 ppb	34,056.896 ppb	137,190.269 ppb	95.681 %
Concentration RSD	0.2 %	7.2 %	332.3 %	2.4 %	2.4 %	13.0 %	2.7 %	0.9 %	1.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.808 ppb	0.478 ppb	644.631 ppb	17,888.178 ppb	0.763 ppb	0.393 ppb	0.394 ppb	4.068 ppb	88.140 %
Concentration per Run 1	0.723 ppb	0.487 ppb	645.713 ppb	18,010.921 ppb	0.826 ppb	0.535 ppb	0.372 ppb	4.351 ppb	84.353 %
Concentration per Run 2	0.902 ppb	0.468 ppb	648.830 ppb	17,957.527 ppb	0.777 ppb	0.271 ppb	0.438 ppb	3.720 ppb	89.466 %
Concentration per Run 3	0.799 ppb	0.479 ppb	639.350 ppb	17,696.085 ppb	0.686 ppb	0.372 ppb	0.374 ppb	4.133 ppb	90.600 %
Concentration RSD	11.1 %	2.0 %	0.7 %	0.9 %	9.3 %	34.0 %	9.5 %	7.9 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	5.973 ppb	0.366 ppb	1,166.258 ppb	84.293 %	-0.002 ppb	0.004 ppb	91.264 %	0.325 ppb	565.483 ppb
Concentration per Run 1	5.889 ppb	0.424 ppb	1,129.703 ppb	81.390 %	-0.003 ppb	0.003 ppb	87.637 %	0.311 ppb	561.393 ppb
Concentration per Run 2	6.099 ppb	0.327 ppb	1,184.271 ppb	85.121 %	-0.001 ppb	0.006 ppb	92.151 %	0.315 ppb	566.710 ppb
Concentration per Run 3	5.930 ppb	0.348 ppb	1,184.798 ppb	86.369 %	-0.001 ppb	0.003 ppb	94.006 %	0.348 ppb	568.345 ppb
Concentration RSD	1.9 %	13.9 %	2.7 %	3.1 %	59.5 %	42.4 %	3.6 %	6.3 %	0.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.189 %	93.156 %	0.753 ppb	0.209 ppb	80.929 %
Concentration per Run 1	90.070 %	89.419 %	0.826 ppb	0.208 ppb	79.052 %
Concentration per Run 2	94.398 %	95.313 %	0.752 ppb	0.213 ppb	81.299 %
Concentration per Run 3	95.098 %	94.736 %	0.682 ppb	0.205 ppb	82.436 %
Concentration RSD	2.9 %	3.5 %	9.6 %	2.0 %	2.1 %

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Analysis index: 83 Analysis started at: 12/17/2021 3:33:22 PM
 Analysis label: L2168543-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	110.728 %	142.027 %	0.005 ppb	201,010.249 ppb	53,978.046 ppb	5.150 ppb	34,869.524 ppb	144,089.282 ppb	100.023 %
Concentration per Run 1	110.989 %	140.001 %	-0.005 ppb	195,595.467 ppb	52,434.138 ppb	5.281 ppb	32,773.340 ppb	140,997.003 ppb	99.894 %
Concentration per Run 2	109.696 %	146.668 %	0.013 ppb	198,457.974 ppb	53,834.169 ppb	4.950 ppb	34,819.365 ppb	143,070.723 ppb	100.546 %
Concentration per Run 3	111.498 %	139.413 %	0.008 ppb	208,977.306 ppb	55,665.830 ppb	5.218 ppb	37,015.868 ppb	148,200.119 ppb	99.630 %
Concentration RSD	0.8 %	2.8 %	173.5 %	3.5 %	3.0 %	3.4 %	6.1 %	2.6 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.778 ppb	0.461 ppb	662.905 ppb	18,647.975 ppb	0.760 ppb	0.427 ppb	0.308 ppb	4.041 ppb	88.306 %
Concentration per Run 1	0.797 ppb	0.462 ppb	648.407 ppb	18,697.219 ppb	0.796 ppb	0.542 ppb	0.309 ppb	4.271 ppb	84.276 %
Concentration per Run 2	0.816 ppb	0.484 ppb	657.708 ppb	18,295.432 ppb	0.802 ppb	0.392 ppb	0.185 ppb	3.833 ppb	91.081 %
Concentration per Run 3	0.720 ppb	0.438 ppb	682.602 ppb	18,951.275 ppb	0.681 ppb	0.347 ppb	0.429 ppb	4.019 ppb	89.562 %
Concentration RSD	6.5 %	5.0 %	2.7 %	1.8 %	9.0 %	23.9 %	39.7 %	5.4 %	4.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	6.040 ppb	0.168 ppb	1,209.154 ppb	86.621 %	-0.004 ppb	0.006 ppb	92.219 %	0.265 ppb	577.846 ppb
Concentration per Run 1	5.776 ppb	0.013 ppb	1,185.509 ppb	85.150 %	-0.003 ppb	0.006 ppb	88.407 %	0.251 ppb	581.283 ppb
Concentration per Run 2	5.880 ppb	0.243 ppb	1,208.530 ppb	87.740 %	-0.003 ppb	0.009 ppb	94.320 %	0.268 ppb	571.445 ppb
Concentration per Run 3	6.462 ppb	0.248 ppb	1,233.424 ppb	86.974 %	-0.004 ppb	0.003 ppb	93.931 %	0.277 ppb	580.811 ppb
Concentration RSD	6.1 %	79.7 %	2.0 %	1.5 %	17.1 %	49.0 %	3.6 %	4.9 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.963 %	94.855 %	0.271 ppb	0.190 ppb	82.598 %
Concentration per Run 1	92.201 %	90.742 %	0.258 ppb	0.180 ppb	81.733 %
Concentration per Run 2	96.267 %	96.768 %	0.275 ppb	0.198 ppb	83.415 %
Concentration per Run 3	96.420 %	97.057 %	0.281 ppb	0.191 ppb	82.647 %
Concentration RSD	2.5 %	3.8 %	4.5 %	4.6 %	1.0 %

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Analysis index: 84 Analysis started at: 12/17/2021 3:38:10 PM
 Analysis label: I2167658-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	86.319 %	103.137 %	0.015 ppb	208,801.761 ppb	16,987.373 ppb	24.752 ppb	16,789.759 ppb	74,190.263 ppb	103.045 %
Concentration per Run 1	86.687 %	103.726 %	0.002 ppb	203,417.614 ppb	16,701.658 ppb	25.947 ppb	16,162.443 ppb	75,375.047 ppb	102.664 %
Concentration per Run 2	86.450 %	101.176 %	0.020 ppb	213,092.480 ppb	16,987.042 ppb	23.005 ppb	16,740.141 ppb	73,041.509 ppb	102.970 %
Concentration per Run 3	85.819 %	104.510 %	0.022 ppb	209,895.190 ppb	17,273.419 ppb	25.304 ppb	17,466.692 ppb	74,154.231 ppb	103.502 %
Concentration RSD	0.5 %	1.7 %	75.9 %	2.4 %	1.7 %	6.2 %	3.9 %	1.6 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.485 ppb	0.220 ppb	27,414.033 ppb	69,453.833 ppb	39.570 ppb	8.170 ppb	1.329 ppb	6.654 ppb	84.987 %
Concentration per Run 1	0.490 ppb	0.174 ppb	26,734.812 ppb	69,053.480 ppb	40.112 ppb	7.794 ppb	1.185 ppb	6.955 ppb	80.970 %
Concentration per Run 2	0.451 ppb	0.246 ppb	27,696.728 ppb	69,288.817 ppb	38.684 ppb	8.062 ppb	1.320 ppb	6.496 ppb	88.390 %
Concentration per Run 3	0.513 ppb	0.239 ppb	27,810.559 ppb	70,019.203 ppb	39.915 ppb	8.653 ppb	1.482 ppb	6.511 ppb	85.602 %
Concentration RSD	6.5 %	18.1 %	2.2 %	0.7 %	2.0 %	5.4 %	11.2 %	3.9 %	4.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	6.393 ppb	0.263 ppb	387.234 ppb	85.483 %	0.000 ppb	0.035 ppb	89.793 %	0.084 ppb	578.266 ppb
Concentration per Run 1	6.173 ppb	0.143 ppb	379.740 ppb	85.124 %	0.001 ppb	0.033 ppb	85.874 %	0.078 ppb	575.047 ppb
Concentration per Run 2	6.420 ppb	0.480 ppb	387.913 ppb	85.527 %	0.001 ppb	0.038 ppb	90.435 %	0.102 ppb	587.989 ppb
Concentration per Run 3	6.586 ppb	0.166 ppb	394.047 ppb	85.796 %	-0.001 ppb	0.034 ppb	93.071 %	0.071 ppb	571.761 ppb
Concentration RSD	3.2 %	71.7 %	1.9 %	0.4 %	462.2 %	7.7 %	4.1 %	19.3 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.066 %	93.866 %	0.154 ppb	0.754 ppb	84.698 %
Concentration per Run 1	92.997 %	91.556 %	0.134 ppb	0.744 ppb	84.468 %
Concentration per Run 2	94.865 %	95.342 %	0.160 ppb	0.763 ppb	84.678 %
Concentration per Run 3	94.335 %	94.699 %	0.168 ppb	0.756 ppb	84.947 %
Concentration RSD	1.0 %	2.2 %	11.3 %	1.3 %	0.3 %

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Analysis index: 85 Analysis started at: 12/17/2021 3:42:59 PM
 Analysis label: L2167658-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.871 %	104.902 %	0.009 ppb	75,159.086 ppb	16,020.935 ppb	4.464 ppb	6,830.933 ppb	69,763.913 ppb	90.371 %
Concentration per Run 1	84.207 %	105.294 %	0.005 ppb	72,893.161 ppb	15,612.883 ppb	4.988 ppb	6,634.475 ppb	68,361.404 ppb	89.668 %
Concentration per Run 2	85.200 %	102.941 %	0.023 ppb	76,821.219 ppb	16,341.221 ppb	4.917 ppb	7,087.800 ppb	70,232.043 ppb	91.705 %
Concentration per Run 3	85.207 %	106.471 %	0.000 ppb	75,762.877 ppb	16,108.700 ppb	3.488 ppb	6,770.523 ppb	70,698.291 ppb	89.739 %
Concentration RSD	0.7 %	1.7 %	130.5 %	2.7 %	2.3 %	19.0 %	3.4 %	1.8 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.215 ppb	0.117 ppb	5,265.349 ppb	10,782.653 ppb	4.079 ppb	2.460 ppb	0.898 ppb	1.189 ppb	87.030 %
Concentration per Run 1	0.094 ppb	0.109 ppb	5,109.795 ppb	10,621.161 ppb	4.184 ppb	2.524 ppb	0.904 ppb	1.187 ppb	84.891 %
Concentration per Run 2	0.262 ppb	0.112 ppb	5,389.921 ppb	10,796.185 ppb	4.012 ppb	2.159 ppb	0.904 ppb	1.180 ppb	88.544 %
Concentration per Run 3	0.288 ppb	0.130 ppb	5,296.332 ppb	10,930.613 ppb	4.043 ppb	2.697 ppb	0.886 ppb	1.200 ppb	87.655 %
Concentration RSD	49.0 %	9.5 %	2.7 %	1.4 %	2.2 %	11.2 %	1.1 %	0.9 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	21.191 ppb	0.145 ppb	233.763 ppb	86.549 %	0.006 ppb	0.020 ppb	90.953 %	0.068 ppb	459.480 ppb
Concentration per Run 1	21.196 ppb	0.094 ppb	224.903 ppb	85.090 %	0.008 ppb	0.013 ppb	88.393 %	0.065 ppb	453.688 ppb
Concentration per Run 2	21.152 ppb	0.047 ppb	237.297 ppb	86.989 %	0.006 ppb	0.025 ppb	92.506 %	0.070 ppb	456.071 ppb
Concentration per Run 3	21.224 ppb	0.295 ppb	239.090 ppb	87.568 %	0.003 ppb	0.022 ppb	91.959 %	0.070 ppb	468.680 ppb
Concentration RSD	0.2 %	90.7 %	3.3 %	1.5 %	43.0 %	31.3 %	2.5 %	4.6 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.385 %	92.639 %	0.112 ppb	0.170 ppb	88.577 %
Concentration per Run 1	91.801 %	89.471 %	0.098 ppb	0.173 ppb	88.029 %
Concentration per Run 2	93.534 %	94.670 %	0.122 ppb	0.167 ppb	89.124 %
Concentration per Run 3	94.819 %	93.776 %	0.116 ppb	0.171 ppb	88.577 %
Concentration RSD	1.6 %	3.0 %	11.1 %	2.0 %	0.6 %



Analysis index: 86 Analysis started at: 12/17/2021 3:47:47 PM
 Analysis label: L2167658-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.501 %	110.458 %	0.011 ppb	73,324.773 ppb	12,828.904 ppb	38.443 ppb	22,006.356 ppb	43,250.117 ppb	88.851 %
Concentration per Run 1	85.148 %	108.824 %	0.014 ppb	71,018.889 ppb	12,316.182 ppb	34.844 ppb	20,792.161 ppb	41,552.881 ppb	87.851 %
Concentration per Run 2	85.982 %	110.981 %	0.007 ppb	73,714.426 ppb	13,023.649 ppb	41.086 ppb	22,970.636 ppb	43,881.687 ppb	90.053 %
Concentration per Run 3	85.375 %	111.569 %	0.012 ppb	75,241.005 ppb	13,146.879 ppb	39.400 ppb	22,256.270 ppb	44,315.782 ppb	88.649 %
Concentration RSD	0.5 %	1.3 %	33.9 %	2.9 %	3.5 %	8.4 %	5.0 %	3.4 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.287 ppb	0.234 ppb	2,405.226 ppb	399.037 ppb	1.234 ppb	2.679 ppb	0.588 ppb	1.425 ppb	87.301 %
Concentration per Run 1	0.236 ppb	0.227 ppb	2,353.989 ppb	402.414 ppb	1.218 ppb	2.478 ppb	0.609 ppb	1.380 ppb	84.526 %
Concentration per Run 2	0.274 ppb	0.262 ppb	2,463.100 ppb	391.217 ppb	1.381 ppb	2.877 ppb	0.516 ppb	1.401 ppb	85.218 %
Concentration per Run 3	0.351 ppb	0.212 ppb	2,398.587 ppb	403.480 ppb	1.102 ppb	2.682 ppb	0.638 ppb	1.496 ppb	92.158 %
Concentration RSD	20.5 %	10.9 %	2.3 %	1.7 %	11.4 %	7.5 %	10.8 %	4.3 %	4.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.699 ppb	0.143 ppb	203.313 ppb	88.778 %	0.013 ppb	0.152 ppb	92.103 %	0.057 ppb	131.199 ppb
Concentration per Run 1	0.687 ppb	0.137 ppb	197.003 ppb	86.706 %	0.015 ppb	0.185 ppb	87.962 %	0.062 ppb	128.716 ppb
Concentration per Run 2	0.761 ppb	0.130 ppb	209.929 ppb	89.053 %	0.009 ppb	0.145 ppb	91.412 %	0.060 ppb	134.537 ppb
Concentration per Run 3	0.647 ppb	0.162 ppb	203.008 ppb	90.577 %	0.016 ppb	0.127 ppb	96.936 %	0.048 ppb	130.344 ppb
Concentration RSD	8.3 %	11.6 %	3.2 %	2.2 %	27.3 %	19.6 %	4.9 %	13.5 %	2.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.178 %	93.146 %	0.108 ppb	0.125 ppb	89.990 %
Concentration per Run 1	92.083 %	89.868 %	0.107 ppb	0.119 ppb	88.783 %
Concentration per Run 2	94.625 %	94.525 %	0.102 ppb	0.130 ppb	90.359 %
Concentration per Run 3	95.825 %	95.044 %	0.115 ppb	0.126 ppb	90.829 %
Concentration RSD	2.0 %	3.1 %	6.1 %	4.7 %	1.2 %

Alpha ICPMSQ Full

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Analysis index: 87 Analysis started at: 12/17/2021 3:52:37 PM
 Analysis label: L2168106-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.223 %	122.092 %	9.581 ppb	133,871.548 ppb	24,134.711 ppb	10,049.055 ppb	5,267.818 ppb	83,419.721 ppb	105.118 %
Concentration per Run 1	94.825 %	122.549 %	9.445 ppb	129,107.653 ppb	23,030.396 ppb	9,488.071 ppb	5,097.804 ppb	79,465.679 ppb	104.618 %
Concentration per Run 2	95.453 %	120.000 %	9.598 ppb	139,006.928 ppb	25,215.051 ppb	10,539.079 ppb	5,582.978 ppb	84,849.678 ppb	105.012 %
Concentration per Run 3	95.390 %	123.726 %	9.701 ppb	133,500.061 ppb	24,158.686 ppb	10,120.015 ppb	5,122.672 ppb	85,943.806 ppb	105.723 %
Concentration RSD	0.4 %	1.6 %	1.3 %	3.7 %	4.5 %	5.3 %	5.2 %	4.2 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.027 ppb	0.876 ppb	3,517.279 ppb	34,272.888 ppb	86.581 ppb	251.084 ppb	9.056 ppb	291.855 ppb	107.845 %
Concentration per Run 1	-0.009 ppb	0.896 ppb	3,387.319 ppb	32,885.393 ppb	84.427 ppb	245.634 ppb	8.941 ppb	283.603 ppb	107.609 %
Concentration per Run 2	0.052 ppb	0.825 ppb	3,646.952 ppb	35,587.656 ppb	88.867 ppb	259.505 ppb	8.987 ppb	299.379 ppb	106.756 %
Concentration per Run 3	0.037 ppb	0.908 ppb	3,517.566 ppb	34,345.615 ppb	86.450 ppb	248.114 ppb	9.238 ppb	292.584 ppb	109.170 %
Concentration RSD	119.3 %	5.2 %	3.7 %	3.9 %	2.6 %	2.9 %	1.8 %	2.7 %	1.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	36.176 ppb	87.227 ppb	859.918 ppb	86.271 %	0.005 ppb	0.851 ppb	90.376 %	0.139 ppb	17.945 ppb
Concentration per Run 1	35.154 ppb	85.227 ppb	828.026 ppb	85.662 %	0.008 ppb	0.883 ppb	89.030 %	0.119 ppb	17.455 ppb
Concentration per Run 2	36.527 ppb	90.699 ppb	888.357 ppb	85.499 %	0.001 ppb	0.885 ppb	90.750 %	0.156 ppb	18.332 ppb
Concentration per Run 3	36.846 ppb	85.756 ppb	863.371 ppb	87.653 %	0.005 ppb	0.784 ppb	91.348 %	0.143 ppb	18.049 ppb
Concentration RSD	2.5 %	3.5 %	3.5 %	1.4 %	73.2 %	6.8 %	1.3 %	13.4 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	125.663 %	99.294 %	0.684 ppb	4.015 ppb	86.547 %
Concentration per Run 1	124.490 %	97.823 %	0.661 ppb	3.969 ppb	86.590 %
Concentration per Run 2	125.525 %	98.818 %	0.688 ppb	4.021 ppb	86.468 %
Concentration per Run 3	126.974 %	101.242 %	0.704 ppb	4.054 ppb	86.583 %
Concentration RSD	1.0 %	1.8 %	3.2 %	1.1 %	0.1 %

Alpha ICPMSQ Full

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Analysis index: 88 Analysis started at: 12/17/2021 3:57:26 PM
 Analysis label: I2168106-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.500 %	113.726 %	0.017 ppb	8,629.492 ppb	7,799.964 ppb	63.916 ppb	1,765.292 ppb	14,185.628 ppb	100.300 %
Concentration per Run 1	89.588 %	109.216 %	0.010 ppb	8,637.206 ppb	7,660.025 ppb	64.936 ppb	1,816.576 ppb	14,044.316 ppb	98.930 %
Concentration per Run 2	89.833 %	118.824 %	0.014 ppb	8,396.170 ppb	7,700.540 ppb	62.808 ppb	1,633.182 ppb	13,779.851 ppb	101.281 %
Concentration per Run 3	89.079 %	113.137 %	0.026 ppb	8,855.098 ppb	8,039.327 ppb	64.002 ppb	1,846.117 ppb	14,732.717 ppb	100.690 %
Concentration RSD	0.4 %	4.2 %	47.5 %	2.7 %	2.7 %	1.7 %	6.5 %	3.5 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.302 ppb	0.277 ppb	1,410.676 ppb	57,321.031 ppb	3.421 ppb	1.617 ppb	0.489 ppb	5.604 ppb	91.728 %
Concentration per Run 1	0.349 ppb	0.255 ppb	1,388.033 ppb	56,873.768 ppb	3.460 ppb	1.484 ppb	0.513 ppb	5.866 ppb	89.582 %
Concentration per Run 2	0.243 ppb	0.331 ppb	1,419.804 ppb	57,113.369 ppb	3.373 ppb	1.662 ppb	0.399 ppb	5.498 ppb	95.003 %
Concentration per Run 3	0.313 ppb	0.245 ppb	1,424.191 ppb	57,975.957 ppb	3.429 ppb	1.706 ppb	0.555 ppb	5.448 ppb	90.601 %
Concentration RSD	17.9 %	17.0 %	1.4 %	1.0 %	1.3 %	7.3 %	16.6 %	4.1 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.632 ppb	0.072 ppb	161.854 ppb	95.018 %	-0.001 ppb	0.026 ppb	97.684 %	0.092 ppb	138.432 ppb
Concentration per Run 1	0.656 ppb	0.011 ppb	156.519 ppb	94.462 %	-0.002 ppb	0.021 ppb	93.198 %	0.128 ppb	139.800 ppb
Concentration per Run 2	0.659 ppb	0.114 ppb	163.038 ppb	95.855 %	0.000 ppb	0.017 ppb	99.366 %	0.084 ppb	137.664 ppb
Concentration per Run 3	0.582 ppb	0.091 ppb	166.004 ppb	94.737 %	-0.003 ppb	0.040 ppb	100.487 %	0.063 ppb	137.831 ppb
Concentration RSD	6.9 %	75.0 %	3.0 %	0.8 %	108.1 %	46.8 %	4.0 %	36.2 %	0.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.323 %	97.467 %	0.064 ppb	0.532 ppb	99.596 %
Concentration per Run 1	96.982 %	95.114 %	0.056 ppb	0.540 ppb	99.603 %
Concentration per Run 2	99.259 %	98.808 %	0.067 ppb	0.528 ppb	99.278 %
Concentration per Run 3	98.729 %	98.478 %	0.070 ppb	0.528 ppb	99.906 %
Concentration RSD	1.2 %	2.1 %	11.0 %	1.2 %	0.3 %

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Analysis index: 89 Analysis started at: 12/17/2021 4:02:16 PM
 Analysis label: I2168430-08D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.308 %	104.379 %	0.016 ppb	116,157.073 ppb	18,776.067 ppb	6.617 ppb	1,291.337 ppb	24,195.503 ppb	88.328 %
Concentration per Run 1	84.574 %	92.745 %	0.019 ppb	125,307.557 ppb	20,132.858 ppb	6.943 ppb	1,205.947 ppb	25,276.356 ppb	87.557 %
Concentration per Run 2	84.572 %	107.843 %	0.021 ppb	116,534.097 ppb	18,667.274 ppb	7.018 ppb	1,376.052 ppb	24,018.591 ppb	89.393 %
Concentration per Run 3	83.780 %	112.549 %	0.010 ppb	106,629.566 ppb	17,528.069 ppb	5.891 ppb	1,292.013 ppb	23,291.562 ppb	88.035 %
Concentration RSD	0.5 %	9.9 %	36.6 %	8.0 %	7.0 %	9.5 %	6.6 %	4.2 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.245 ppb	0.198 ppb	2,872.950 ppb	8,804.784 ppb	11.673 ppb	1.652 ppb	0.558 ppb	0.945 ppb	84.962 %
Concentration per Run 1	0.288 ppb	0.218 ppb	2,899.651 ppb	8,931.959 ppb	12.290 ppb	1.851 ppb	0.566 ppb	0.826 ppb	83.719 %
Concentration per Run 2	0.182 ppb	0.245 ppb	2,929.950 ppb	8,964.385 ppb	11.716 ppb	1.431 ppb	0.641 ppb	0.965 ppb	83.334 %
Concentration per Run 3	0.266 ppb	0.131 ppb	2,789.248 ppb	8,518.009 ppb	11.012 ppb	1.673 ppb	0.468 ppb	1.045 ppb	87.832 %
Concentration RSD	22.9 %	30.0 %	2.6 %	2.8 %	5.5 %	12.8 %	15.5 %	11.7 %	2.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.103 ppb	-0.012 ppb	238.791 ppb	86.695 %	0.000 ppb	0.004 ppb	89.573 %	0.042 ppb	131.048 ppb
Concentration per Run 1	1.094 ppb	-0.063 ppb	230.983 ppb	84.838 %	-0.002 ppb	0.010 ppb	86.947 %	0.042 ppb	127.653 ppb
Concentration per Run 2	1.243 ppb	0.016 ppb	243.104 ppb	87.601 %	0.000 ppb	0.000 ppb	91.012 %	0.046 ppb	133.441 ppb
Concentration per Run 3	0.973 ppb	0.011 ppb	242.285 ppb	87.645 %	0.002 ppb	0.003 ppb	90.759 %	0.038 ppb	132.049 ppb
Concentration RSD	12.2 %	367.8 %	2.8 %	1.9 %	1,252.7 %	116.0 %	2.5 %	10.2 %	2.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.073 %	92.998 %	0.048 ppb	0.493 ppb	88.054 %
Concentration per Run 1	90.906 %	89.855 %	0.042 ppb	0.477 ppb	87.403 %
Concentration per Run 2	95.078 %	95.673 %	0.046 ppb	0.503 ppb	88.655 %
Concentration per Run 3	93.234 %	93.466 %	0.056 ppb	0.498 ppb	88.105 %
Concentration RSD	2.2 %	3.2 %	15.5 %	2.8 %	0.7 %

Alpha ICPMSQ Full

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Analysis index: 90 Analysis started at: 12/17/2021 4:07:04 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.753 %	108.431 %	59.346 ppb	5,863.609 ppb	5,776.637 ppb	56.614 ppb	6,018.582 ppb	6,079.994 ppb	95.514 %
Concentration per Run 1	88.125 %	106.275 %	58.731 ppb	5,866.833 ppb	5,584.235 ppb	54.982 ppb	5,797.303 ppb	5,854.294 ppb	95.115 %
Concentration per Run 2	87.752 %	112.941 %	60.118 ppb	5,712.902 ppb	5,624.030 ppb	53.004 ppb	5,897.667 ppb	5,987.261 ppb	95.572 %
Concentration per Run 3	87.383 %	106.079 %	59.191 ppb	6,011.093 ppb	6,121.646 ppb	61.856 ppb	6,360.777 ppb	6,398.427 ppb	95.854 %
Recovery Percentage 1			98.911 %	97.727 %	96.277 %	94.357 %	100.310 %	101.333 %	
Concentration RSD	0.4 %	3.6 %	1.2 %	2.5 %	5.2 %	8.2 %	5.0 %	4.7 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	58.897 ppb	58.295 ppb	59.231 ppb	5,830.089 ppb	57.875 ppb	58.013 ppb	57.190 ppb	57.573 ppb	93.109 %
Concentration per Run 1	59.281 ppb	57.734 ppb	58.269 ppb	5,784.750 ppb	57.242 ppb	58.428 ppb	57.003 ppb	57.424 ppb	91.539 %
Concentration per Run 2	58.355 ppb	58.527 ppb	60.017 ppb	5,754.455 ppb	57.671 ppb	57.706 ppb	57.358 ppb	57.673 ppb	93.475 %
Concentration per Run 3	59.054 ppb	58.623 ppb	59.406 ppb	5,951.061 ppb	58.711 ppb	57.906 ppb	57.209 ppb	57.621 ppb	94.312 %
Recovery Percentage 1	98.161 %	97.158 %	98.718 %	97.168 %	96.458 %	96.689 %	95.317 %	95.955 %	
Concentration RSD	0.8 %	0.8 %	1.5 %	1.8 %	1.3 %	0.6 %	0.3 %	0.2 %	1.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	58.429 ppb	55.411 ppb	57.532 ppb	96.645 %	58.843 ppb	59.827 ppb	98.476 %	56.528 ppb	54.314 ppb
Concentration per Run 1	56.624 ppb	53.311 ppb	55.621 ppb	95.103 %	59.279 ppb	60.616 ppb	95.518 %	55.295 ppb	52.259 ppb
Concentration per Run 2	59.946 ppb	58.981 ppb	58.261 ppb	97.069 %	58.891 ppb	59.569 ppb	99.642 %	57.200 ppb	56.344 ppb
Concentration per Run 3	58.717 ppb	53.939 ppb	58.713 ppb	97.763 %	58.360 ppb	59.296 ppb	100.267 %	57.089 ppb	54.338 ppb
Recovery Percentage 1	97.382 %	92.351 %	95.886 %		98.072 %	99.712 %		94.213 %	90.523 %
Concentration RSD	2.9 %	5.6 %	2.9 %	1.4 %	0.8 %	1.2 %	2.6 %	1.9 %	3.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.797 %	96.329 %	59.340 ppb	58.332 ppb	100.089 %
Concentration per Run 1	95.527 %	94.461 %	59.119 ppb	58.174 ppb	98.901 %
Concentration per Run 2	96.025 %	95.774 %	59.016 ppb	58.247 ppb	101.181 %
Concentration per Run 3	98.839 %	98.752 %	59.883 ppb	58.574 ppb	100.185 %
Recovery Percentage 1			98.899 %	97.220 %	
Concentration RSD	1.8 %	2.3 %	0.8 %	0.4 %	1.1 %

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12/17/2021 9:47:26 PM



Analysis index: 91 Analysis started at: 12/17/2021 4:11:57 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.686 %	105.098 %	0.006 ppb	22.407 ppb	5.692 ppb	-0.256 ppb	-12.460 ppb	26.604 ppb	87.081 %
Concentration per Run 1	86.662 %	105.882 %	0.009 ppb	19.220 ppb	4.358 ppb	-0.023 ppb	-14.765 ppb	31.986 ppb	86.386 %
Concentration per Run 2	88.075 %	105.686 %	0.000 ppb	26.088 ppb	6.319 ppb	-0.425 ppb	-5.223 ppb	38.704 ppb	86.818 %
Concentration per Run 3	88.321 %	103.726 %	0.009 ppb	21.914 ppb	6.398 ppb	-0.319 ppb	-17.393 ppb	9.121 ppb	88.038 %
Recovery Percentage 1			1.141 %	22.407 %	8.131 %	-2.558 %	-12.460 %	26.604 %	
Concentration RSD	1.0 %	1.1 %	92.1 %	15.4 %	20.3 %	81.5 %	51.4 %	58.3 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.053 ppb	-0.001 ppb	0.465 ppb	27.629 ppb	0.004 ppb	-0.021 ppb	-0.014 ppb	-0.093 ppb	95.201 %
Concentration per Run 1	-0.080 ppb	-0.021 ppb	0.331 ppb	28.318 ppb	0.006 ppb	0.060 ppb	-0.015 ppb	-0.099 ppb	92.465 %
Concentration per Run 2	-0.013 ppb	0.015 ppb	0.578 ppb	29.799 ppb	0.001 ppb	-0.023 ppb	-0.008 ppb	-0.057 ppb	96.021 %
Concentration per Run 3	-0.066 ppb	0.002 ppb	0.485 ppb	24.771 ppb	0.005 ppb	-0.100 ppb	-0.018 ppb	-0.123 ppb	97.117 %
Recovery Percentage 1	-1.060 %	-0.132 %	46.453 %	55.259 %	0.834 %	-1.058 %	-1.369 %	-0.931 %	
Concentration RSD	66.9 %	1,364.6 %	26.9 %	9.4 %	58.1 %	377.9 %	38.8 %	35.8 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.077 ppb	0.126 ppb	0.047 ppb	100.915 %	0.002 ppb	0.007 ppb	100.066 %	0.026 ppb	-0.016 ppb
Concentration per Run 1	0.069 ppb	0.228 ppb	0.048 ppb	99.016 %	-0.001 ppb	0.006 ppb	94.520 %	0.020 ppb	-0.033 ppb
Concentration per Run 2	0.050 ppb	0.009 ppb	0.041 ppb	101.228 %	0.004 ppb	0.011 ppb	101.815 %	0.019 ppb	-0.020 ppb
Concentration per Run 3	0.112 ppb	0.142 ppb	0.052 ppb	102.501 %	0.003 ppb	0.003 ppb	103.864 %	0.039 ppb	0.003 ppb
Recovery Percentage 1	15.448 %	2.524 %	9.380 %		0.450 %	3.252 %		0.647 %	-3.278 %
Concentration RSD	41.1 %	87.5 %	11.2 %	1.7 %	128.2 %	64.4 %	4.9 %	42.9 %	111.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.157 %	98.428 %	0.312 ppb	0.015 ppb	104.014 %
Concentration per Run 1	95.930 %	95.048 %	0.341 ppb	0.018 ppb	100.883 %
Concentration per Run 2	101.389 %	100.589 %	0.307 ppb	0.013 ppb	105.507 %
Concentration per Run 3	100.152 %	99.647 %	0.289 ppb	0.014 ppb	105.651 %
Recovery Percentage 1			31.244 %	1.516 %	
Concentration RSD	2.9 %	3.0 %	8.4 %	18.0 %	2.6 %

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12/17/2021 9:47:26 PM



Analysis index: 92 Analysis started at: 12/17/2021 4:18:39 PM
 Analysis label: L2168106-06 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.896 %	114.510 %	0.000 ppb	30.713 ppb	6.211 ppb	3.932 ppb	-11.901 ppb	41.110 ppb	100.975 %
Concentration per Run 1	89.155 %	109.804 %	0.002 ppb	28.829 ppb	6.122 ppb	3.277 ppb	-5.706 ppb	28.793 ppb	101.539 %
Concentration per Run 2	88.285 %	119.216 %	0.010 ppb	32.384 ppb	1.120 ppb	5.075 ppb	-16.308 ppb	73.956 ppb	100.896 %
Concentration per Run 3	89.248 %	114.510 %	-0.012 ppb	30.925 ppb	11.391 ppb	3.445 ppb	-13.689 ppb	20.580 ppb	100.490 %
Concentration RSD	0.6 %	4.1 %	8,343.3 %	5.8 %	82.7 %	25.3 %	46.4 %	69.9 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.025 ppb	0.019 ppb	0.493 ppb	22.694 ppb	0.006 ppb	0.065 ppb	0.083 ppb	0.555 ppb	99.719 %
Concentration per Run 1	-0.040 ppb	0.032 ppb	0.462 ppb	25.749 ppb	-0.003 ppb	0.021 ppb	0.099 ppb	0.596 ppb	95.849 %
Concentration per Run 2	0.019 ppb	0.020 ppb	0.443 ppb	17.624 ppb	0.016 ppb	0.021 ppb	0.014 ppb	0.506 ppb	101.943 %
Concentration per Run 3	-0.055 ppb	0.004 ppb	0.573 ppb	24.710 ppb	0.005 ppb	0.153 ppb	0.135 ppb	0.561 ppb	101.366 %
Concentration RSD	154.1 %	73.1 %	14.3 %	19.5 %	154.5 %	117.2 %	75.4 %	8.2 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.013 ppb	-0.031 ppb	0.191 ppb	101.795 %	0.001 ppb	0.008 ppb	103.728 %	0.023 ppb	0.171 ppb
Concentration per Run 1	0.011 ppb	-0.058 ppb	0.213 ppb	100.324 %	0.006 ppb	0.011 ppb	98.566 %	0.014 ppb	0.146 ppb
Concentration per Run 2	0.003 ppb	-0.039 ppb	0.182 ppb	102.038 %	0.000 ppb	0.011 ppb	106.250 %	0.030 ppb	0.235 ppb
Concentration per Run 3	0.025 ppb	0.005 ppb	0.177 ppb	103.021 %	-0.001 ppb	0.003 ppb	106.366 %	0.027 ppb	0.133 ppb
Concentration RSD	88.4 %	106.9 %	10.2 %	1.3 %	257.9 %	58.7 %	4.3 %	36.8 %	32.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.042 %	99.576 %	0.114 ppb	0.034 ppb	106.794 %
Concentration per Run 1	97.909 %	96.765 %	0.123 ppb	0.036 ppb	105.513 %
Concentration per Run 2	100.737 %	100.317 %	0.106 ppb	0.032 ppb	107.500 %
Concentration per Run 3	101.480 %	101.646 %	0.112 ppb	0.033 ppb	107.367 %
Concentration RSD	1.9 %	2.5 %	7.7 %	5.5 %	1.0 %

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Analysis index: 93 Analysis started at: 12/17/2021 4:23:27 PM
 Analysis label: I2168543-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.778 %	113.530 %	0.001 ppb	8.076 ppb	4.397 ppb	1.438 ppb	-8.903 ppb	10.767 ppb	97.947 %
Concentration per Run 1	91.845 %	107.451 %	0.005 ppb	13.170 ppb	7.197 ppb	1.688 ppb	-10.389 ppb	1.856 ppb	99.372 %
Concentration per Run 2	91.355 %	123.530 %	-0.001 ppb	7.789 ppb	2.828 ppb	1.478 ppb	-7.748 ppb	21.420 ppb	97.025 %
Concentration per Run 3	92.135 %	109.608 %	-0.001 ppb	3.269 ppb	3.166 ppb	1.149 ppb	-8.572 ppb	9.023 ppb	97.444 %
Concentration RSD	0.4 %	7.7 %	318.0 %	61.4 %	55.3 %	18.9 %	15.2 %	91.9 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.032 ppb	0.039 ppb	0.123 ppb	11.867 ppb	0.006 ppb	-0.041 ppb	0.035 ppb	0.168 ppb	99.649 %
Concentration per Run 1	0.079 ppb	0.045 ppb	0.333 ppb	14.022 ppb	0.009 ppb	-0.041 ppb	0.001 ppb	0.156 ppb	97.117 %
Concentration per Run 2	0.006 ppb	0.053 ppb	0.033 ppb	8.785 ppb	0.005 ppb	0.035 ppb	0.078 ppb	0.201 ppb	101.059 %
Concentration per Run 3	0.010 ppb	0.018 ppb	0.002 ppb	12.794 ppb	0.005 ppb	-0.118 ppb	0.026 ppb	0.147 ppb	100.770 %
Concentration RSD	129.9 %	47.8 %	148.9 %	23.1 %	39.6 %	186.0 %	113.4 %	17.2 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.016 ppb	-0.019 ppb	0.020 ppb	103.767 %	-0.002 ppb	0.004 ppb	104.757 %	0.005 ppb	-0.026 ppb
Concentration per Run 1	0.026 ppb	-0.027 ppb	0.032 ppb	103.102 %	-0.001 ppb	0.005 ppb	102.177 %	0.009 ppb	-0.028 ppb
Concentration per Run 2	0.018 ppb	0.001 ppb	0.021 ppb	104.112 %	-0.004 ppb	0.000 ppb	107.071 %	0.005 ppb	-0.022 ppb
Concentration per Run 3	0.003 ppb	-0.032 ppb	0.006 ppb	104.086 %	-0.001 ppb	0.008 ppb	105.024 %	0.002 ppb	-0.029 ppb
Concentration RSD	77.1 %	93.7 %	67.4 %	0.6 %	77.8 %	91.2 %	2.3 %	65.1 %	15.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.266 %	100.582 %	0.061 ppb	0.011 ppb	106.996 %
Concentration per Run 1	99.843 %	98.484 %	0.053 ppb	0.013 ppb	106.762 %
Concentration per Run 2	101.315 %	101.285 %	0.067 ppb	0.011 ppb	107.282 %
Concentration per Run 3	102.640 %	101.978 %	0.063 ppb	0.009 ppb	106.945 %
Concentration RSD	1.4 %	1.8 %	12.1 %	19.7 %	0.2 %



Analysis index: 94 Analysis started at: 12/17/2021 4:28:15 PM
 Analysis label: I2168106-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.938 %	112.157 %	0.186 ppb	631,749.858 ppb	17,329.328 ppb	173.051 ppb	62,020.327 ppb	40,360.979 ppb	113.954 %
Concentration per Run 1	84.400 %	108.235 %	0.173 ppb	627,587.876 ppb	17,228.159 ppb	164.059 ppb	60,233.399 ppb	40,232.723 ppb	111.355 %
Concentration per Run 2	85.409 %	112.353 %	0.216 ppb	646,919.707 ppb	17,672.995 ppb	180.778 ppb	63,638.278 ppb	40,445.402 ppb	114.365 %
Concentration per Run 3	85.005 %	115.883 %	0.169 ppb	620,741.992 ppb	17,086.830 ppb	174.317 ppb	62,189.305 ppb	40,404.812 ppb	116.143 %
Concentration RSD	0.6 %	3.4 %	13.9 %	2.1 %	1.8 %	4.9 %	2.8 %	0.3 %	2.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.657 ppb	0.650 ppb	4,212.838 ppb	94,031.005 ppb	5.685 ppb	10.016 ppb	0.773 ppb	4.308 ppb	83.123 %
Concentration per Run 1	1.839 ppb	0.633 ppb	4,195.298 ppb	93,573.575 ppb	5.650 ppb	9.967 ppb	0.745 ppb	4.490 ppb	78.755 %
Concentration per Run 2	1.646 ppb	0.638 ppb	4,269.170 ppb	94,070.029 ppb	5.826 ppb	10.206 ppb	0.928 ppb	4.242 ppb	84.647 %
Concentration per Run 3	1.485 ppb	0.680 ppb	4,174.045 ppb	94,449.410 ppb	5.578 ppb	9.876 ppb	0.645 ppb	4.193 ppb	85.968 %
Concentration RSD	10.7 %	3.9 %	1.2 %	0.5 %	2.2 %	1.7 %	18.6 %	3.7 %	4.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.413 ppb	0.336 ppb	659.474 ppb	83.279 %	-0.001 ppb	0.007 ppb	90.778 %	0.080 ppb	202.711 ppb
Concentration per Run 1	1.423 ppb	0.359 ppb	649.258 ppb	80.910 %	-0.002 ppb	0.003 ppb	86.366 %	0.070 ppb	201.677 ppb
Concentration per Run 2	1.379 ppb	0.243 ppb	665.005 ppb	83.602 %	-0.003 ppb	0.009 ppb	92.033 %	0.083 ppb	204.028 ppb
Concentration per Run 3	1.437 ppb	0.406 ppb	664.160 ppb	85.324 %	0.001 ppb	0.009 ppb	93.934 %	0.086 ppb	202.428 ppb
Concentration RSD	2.1 %	25.0 %	1.3 %	2.7 %	145.0 %	47.4 %	4.3 %	10.3 %	0.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.441 %	94.494 %	0.061 ppb	0.185 ppb	80.056 %
Concentration per Run 1	91.866 %	90.774 %	0.060 ppb	0.184 ppb	79.331 %
Concentration per Run 2	94.615 %	94.944 %	0.060 ppb	0.187 ppb	80.527 %
Concentration per Run 3	96.842 %	97.764 %	0.062 ppb	0.183 ppb	80.311 %
Concentration RSD	2.6 %	3.7 %	1.7 %	1.2 %	0.8 %

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Analysis index: 95 Analysis started at: 12/17/2021 4:33:04 PM
 Analysis label: L2168106-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.841 %	118.628 %	0.067 ppb	120,057.614 ppb	41,516.532 ppb	300.087 ppb	2,818.193 ppb	19,056.766 ppb	111.755 %
Concentration per Run 1	101.493 %	115.490 %	0.067 ppb	119,311.976 ppb	40,871.682 ppb	297.047 ppb	2,722.015 ppb	19,311.653 ppb	111.895 %
Concentration per Run 2	101.320 %	125.687 %	0.058 ppb	115,618.619 ppb	40,095.371 ppb	305.353 ppb	2,726.988 ppb	17,794.676 ppb	112.495 %
Concentration per Run 3	99.709 %	114.706 %	0.076 ppb	125,242.246 ppb	43,582.542 ppb	297.861 ppb	3,005.576 ppb	20,063.970 ppb	110.876 %
Concentration RSD	1.0 %	5.2 %	14.0 %	4.0 %	4.4 %	1.5 %	5.8 %	6.1 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.292 ppb	0.700 ppb	12,547.222 ppb	200,400.079 ppb	183.303 ppb	68.858 ppb	1.636 ppb	87.742 ppb	89.489 %
Concentration per Run 1	1.342 ppb	0.714 ppb	12,384.011 ppb	199,158.505 ppb	184.831 ppb	72.010 ppb	1.705 ppb	88.681 ppb	86.579 %
Concentration per Run 2	1.221 ppb	0.724 ppb	12,547.589 ppb	199,689.225 ppb	181.786 ppb	65.866 ppb	1.587 ppb	86.199 ppb	90.350 %
Concentration per Run 3	1.312 ppb	0.660 ppb	12,710.065 ppb	202,352.508 ppb	183.292 ppb	68.698 ppb	1.615 ppb	88.346 ppb	91.538 %
Concentration RSD	4.9 %	4.9 %	1.3 %	0.9 %	0.8 %	4.5 %	3.8 %	1.5 %	2.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.642 ppb	0.135 ppb	263.405 ppb	91.713 %	0.005 ppb	0.010 ppb	97.925 %	0.068 ppb	139.380 ppb
Concentration per Run 1	0.600 ppb	0.130 ppb	258.059 ppb	90.403 %	0.003 ppb	0.000 ppb	95.205 %	0.066 ppb	137.350 ppb
Concentration per Run 2	0.559 ppb	0.120 ppb	266.463 ppb	92.161 %	0.011 ppb	0.017 ppb	98.827 %	0.060 ppb	141.499 ppb
Concentration per Run 3	0.767 ppb	0.156 ppb	265.695 ppb	92.574 %	0.002 ppb	0.011 ppb	99.743 %	0.078 ppb	139.292 ppb
Concentration RSD	17.2 %	13.6 %	1.8 %	1.3 %	94.3 %	91.8 %	2.5 %	14.1 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.535 %	98.009 %	0.060 ppb	1.241 ppb	92.089 %
Concentration per Run 1	95.578 %	94.996 %	0.053 ppb	1.242 ppb	92.428 %
Concentration per Run 2	98.309 %	99.352 %	0.063 ppb	1.238 ppb	91.696 %
Concentration per Run 3	98.717 %	99.680 %	0.065 ppb	1.242 ppb	92.142 %
Concentration RSD	1.7 %	2.7 %	10.4 %	0.2 %	0.4 %

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Analysis index: 96 Analysis started at: 12/17/2021 4:37:52 PM
 Analysis label: I2168106-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.653 %	129.478 %	9.736 ppb	133,233.084 ppb	24,019.371 ppb	9,963.401 ppb	5,507.269 ppb	85,080.913 ppb	104.385 %
Concentration per Run 1	98.417 %	124.902 %	9.388 ppb	132,846.028 ppb	23,596.929 ppb	9,693.720 ppb	5,324.723 ppb	83,832.778 ppb	103.186 %
Concentration per Run 2	98.791 %	123.530 %	9.559 ppb	139,978.572 ppb	25,284.668 ppb	10,564.598 ppb	5,896.691 ppb	88,142.521 ppb	105.618 %
Concentration per Run 3	98.752 %	140.001 %	10.260 ppb	126,874.652 ppb	23,176.516 ppb	9,631.886 ppb	5,300.393 ppb	83,267.441 ppb	104.351 %
Concentration RSD	0.2 %	7.1 %	4.7 %	4.9 %	4.6 %	5.2 %	6.1 %	3.1 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.012 ppb	0.918 ppb	3,424.847 ppb	32,679.625 ppb	85.599 ppb	249.983 ppb	8.909 ppb	288.571 ppb	114.669 %
Concentration per Run 1	0.012 ppb	0.903 ppb	3,382.107 ppb	32,634.574 ppb	86.223 ppb	250.766 ppb	8.810 ppb	289.043 ppb	111.702 %
Concentration per Run 2	-0.011 ppb	0.950 ppb	3,553.169 ppb	33,613.936 ppb	87.978 ppb	256.616 ppb	9.364 ppb	297.033 ppb	113.415 %
Concentration per Run 3	0.036 ppb	0.901 ppb	3,339.264 ppb	31,790.366 ppb	82.597 ppb	242.565 ppb	8.551 ppb	279.638 ppb	118.892 %
Concentration RSD	195.9 %	3.0 %	3.3 %	2.8 %	3.2 %	2.8 %	4.7 %	3.0 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	34.594 ppb	83.168 ppb	871.825 ppb	92.226 %	-0.002 ppb	0.858 ppb	98.052 %	0.113 ppb	16.663 ppb
Concentration per Run 1	34.552 ppb	83.399 ppb	841.201 ppb	91.522 %	0.000 ppb	0.879 ppb	94.343 %	0.105 ppb	16.679 ppb
Concentration per Run 2	34.943 ppb	86.017 ppb	898.248 ppb	92.753 %	-0.003 ppb	0.890 ppb	100.491 %	0.118 ppb	16.080 ppb
Concentration per Run 3	34.289 ppb	80.087 ppb	876.025 ppb	92.402 %	-0.004 ppb	0.803 ppb	99.322 %	0.114 ppb	17.228 ppb
Concentration RSD	1.0 %	3.6 %	3.3 %	0.7 %	71.6 %	5.5 %	3.3 %	5.8 %	3.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	129.990 %	103.394 %	0.649 ppb	4.001 ppb	90.695 %
Concentration per Run 1	127.418 %	100.986 %	0.633 ppb	3.939 ppb	90.784 %
Concentration per Run 2	132.175 %	104.781 %	0.641 ppb	3.995 ppb	91.699 %
Concentration per Run 3	130.376 %	104.417 %	0.673 ppb	4.070 ppb	89.603 %
Concentration RSD	1.8 %	2.0 %	3.2 %	1.7 %	1.2 %

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Analysis index: 97 Analysis started at: 12/17/2021 4:42:41 PM
 Analysis label: L2168543-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.481 %	128.236 %	0.000 ppb	118,094.897 ppb	18,879.001 ppb	4.196 ppb	16,091.426 ppb	65,274.791 ppb	99.906 %
Concentration per Run 1	96.362 %	119.020 %	-0.004 ppb	120,355.256 ppb	19,180.475 ppb	3.631 ppb	15,800.468 ppb	64,790.300 ppb	99.630 %
Concentration per Run 2	97.093 %	134.903 %	-0.004 ppb	116,099.426 ppb	18,252.667 ppb	5.228 ppb	15,990.949 ppb	64,866.314 ppb	100.647 %
Concentration per Run 3	95.989 %	130.785 %	0.007 ppb	117,830.010 ppb	19,203.860 ppb	3.728 ppb	16,482.860 ppb	66,167.759 ppb	99.441 %
Concentration RSD	0.6 %	6.4 %	3,023.1 %	1.8 %	2.9 %	21.3 %	2.2 %	1.2 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.017 ppb	0.094 ppb	3,902.869 ppb	163.422 ppb	5.058 ppb	1.425 ppb	4.453 ppb	15.689 ppb	102.192 %
Concentration per Run 1	0.034 ppb	0.068 ppb	3,887.103 ppb	169.750 ppb	4.918 ppb	1.431 ppb	4.198 ppb	15.794 ppb	97.863 %
Concentration per Run 2	0.001 ppb	0.118 ppb	3,876.232 ppb	172.143 ppb	5.252 ppb	1.282 ppb	4.426 ppb	15.133 ppb	104.154 %
Concentration per Run 3	0.014 ppb	0.096 ppb	3,945.273 ppb	148.372 ppb	5.003 ppb	1.561 ppb	4.734 ppb	16.138 ppb	104.558 %
Concentration RSD	99.7 %	27.0 %	1.0 %	8.0 %	3.4 %	9.8 %	6.0 %	3.3 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.838 ppb	0.011 ppb	351.349 ppb	103.324 %	0.001 ppb	0.042 ppb	107.670 %	0.185 ppb	174.423 ppb
Concentration per Run 1	0.826 ppb	0.003 ppb	345.114 ppb	100.611 %	0.003 ppb	0.058 ppb	101.952 %	0.181 ppb	171.313 ppb
Concentration per Run 2	0.820 ppb	-0.002 ppb	352.424 ppb	104.445 %	0.000 ppb	0.028 ppb	112.169 %	0.161 ppb	174.457 ppb
Concentration per Run 3	0.868 ppb	0.031 ppb	356.510 ppb	104.915 %	0.001 ppb	0.042 ppb	108.887 %	0.214 ppb	177.499 ppb
Concentration RSD	3.1 %	165.7 %	1.6 %	2.3 %	173.1 %	35.1 %	4.8 %	14.4 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	106.403 %	105.998 %	0.041 ppb	0.274 ppb	98.792 %
Concentration per Run 1	102.371 %	100.778 %	0.038 ppb	0.281 ppb	97.658 %
Concentration per Run 2	108.991 %	108.038 %	0.043 ppb	0.274 ppb	98.419 %
Concentration per Run 3	107.847 %	109.176 %	0.043 ppb	0.266 ppb	100.299 %
Concentration RSD	3.3 %	4.3 %	7.1 %	2.7 %	1.4 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 98 Analysis started at: 12/17/2021 4:47:29 PM
 Analysis label: I2168543-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	122.856 %	165.753 %	0.002 ppb	164,126.637 ppb	15,665.397 ppb	3.633 ppb	26,207.058 ppb	60,371.654 ppb	114.299 %
Concentration per Run 1	123.367 %	164.707 %	0.001 ppb	159,668.897 ppb	15,065.811 ppb	3.837 ppb	25,493.654 ppb	58,880.791 ppb	114.277 %
Concentration per Run 2	123.081 %	174.708 %	0.007 ppb	159,680.771 ppb	15,376.479 ppb	3.298 ppb	25,944.575 ppb	59,439.243 ppb	114.964 %
Concentration per Run 3	122.119 %	157.844 %	-0.002 ppb	173,030.244 ppb	16,553.901 ppb	3.763 ppb	27,182.946 ppb	62,794.927 ppb	113.656 %
Concentration RSD	0.5 %	5.1 %	273.5 %	4.7 %	5.0 %	8.0 %	3.3 %	3.5 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.589 ppb	0.360 ppb	351.290 ppb	15,673.312 ppb	0.549 ppb	0.216 ppb	0.221 ppb	0.376 ppb	101.501 %
Concentration per Run 1	0.502 ppb	0.416 ppb	345.889 ppb	15,527.360 ppb	0.635 ppb	0.207 ppb	0.240 ppb	0.361 ppb	98.963 %
Concentration per Run 2	0.606 ppb	0.323 ppb	343.580 ppb	15,300.471 ppb	0.511 ppb	0.274 ppb	0.231 ppb	0.441 ppb	104.193 %
Concentration per Run 3	0.660 ppb	0.340 ppb	364.402 ppb	16,192.105 ppb	0.502 ppb	0.166 ppb	0.193 ppb	0.327 ppb	101.347 %
Concentration RSD	13.6 %	13.7 %	3.2 %	3.0 %	13.5 %	25.4 %	11.4 %	15.5 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	5.120 ppb	0.207 ppb	561.084 ppb	103.450 %	-0.003 ppb	0.003 ppb	108.149 %	0.101 ppb	246.247 ppb
Concentration per Run 1	4.816 ppb	0.107 ppb	549.158 ppb	101.797 %	-0.005 ppb	0.003 ppb	105.916 %	0.108 ppb	242.931 ppb
Concentration per Run 2	5.197 ppb	0.305 ppb	559.180 ppb	104.830 %	-0.002 ppb	0.003 ppb	109.018 %	0.097 ppb	246.617 ppb
Concentration per Run 3	5.348 ppb	0.211 ppb	574.915 ppb	103.724 %	-0.003 ppb	0.003 ppb	109.513 %	0.099 ppb	249.193 ppb
Concentration RSD	5.4 %	47.8 %	2.3 %	1.5 %	40.1 %	1.7 %	1.8 %	5.6 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	107.653 %	107.281 %	0.026 ppb	0.170 ppb	97.400 %
Concentration per Run 1	107.138 %	106.013 %	0.022 ppb	0.168 ppb	97.935 %
Concentration per Run 2	108.422 %	108.050 %	0.028 ppb	0.167 ppb	97.643 %
Concentration per Run 3	107.398 %	107.779 %	0.029 ppb	0.176 ppb	96.621 %
Concentration RSD	0.6 %	1.0 %	15.4 %	2.7 %	0.7 %

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Analysis index: 99 Analysis started at: 12/17/2021 4:52:17 PM
 Analysis label: L2168543-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	102.848 %	132.484 %	-0.006 ppb	122,377.600 ppb	19,462.092 ppb	31.951 ppb	16,414.662 ppb	66,968.772 ppb	107.424 %
Concentration per Run 1	102.763 %	128.236 %	-0.002 ppb	119,580.332 ppb	19,000.963 ppb	32.198 ppb	16,079.895 ppb	65,469.771 ppb	107.935 %
Concentration per Run 2	102.683 %	147.256 %	-0.008 ppb	113,927.797 ppb	18,231.130 ppb	29.344 ppb	15,331.451 ppb	63,912.784 ppb	107.843 %
Concentration per Run 3	103.097 %	121.961 %	-0.006 ppb	133,624.670 ppb	21,154.183 ppb	34.312 ppb	17,832.640 ppb	71,523.760 ppb	106.495 %
Concentration RSD	0.2 %	9.9 %	52.9 %	8.3 %	7.8 %	7.8 %	7.8 %	6.0 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.081 ppb	0.121 ppb	3,977.836 ppb	268.862 ppb	5.100 ppb	1.554 ppb	4.204 ppb	14.727 ppb	106.090 %
Concentration per Run 1	0.042 ppb	0.129 ppb	3,939.021 ppb	265.186 ppb	5.132 ppb	1.411 ppb	4.395 ppb	14.851 ppb	99.424 %
Concentration per Run 2	0.106 ppb	0.106 ppb	3,804.135 ppb	258.946 ppb	5.012 ppb	1.660 ppb	4.124 ppb	14.838 ppb	109.115 %
Concentration per Run 3	0.095 ppb	0.127 ppb	4,190.351 ppb	282.454 ppb	5.157 ppb	1.592 ppb	4.094 ppb	14.491 ppb	109.730 %
Concentration RSD	42.1 %	10.4 %	4.9 %	4.5 %	1.5 %	8.3 %	3.9 %	1.4 %	5.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.960 ppb	0.052 ppb	360.781 ppb	108.661 %	-0.003 ppb	0.032 ppb	113.059 %	0.161 ppb	176.193 ppb
Concentration per Run 1	0.835 ppb	-0.028 ppb	358.164 ppb	105.761 %	-0.006 ppb	0.026 ppb	108.000 %	0.138 ppb	173.259 ppb
Concentration per Run 2	1.005 ppb	0.155 ppb	360.787 ppb	109.402 %	-0.003 ppb	0.034 ppb	117.049 %	0.176 ppb	176.552 ppb
Concentration per Run 3	1.041 ppb	0.030 ppb	363.392 ppb	110.821 %	-0.002 ppb	0.035 ppb	114.128 %	0.167 ppb	178.767 ppb
Concentration RSD	11.5 %	178.7 %	0.7 %	2.4 %	60.1 %	15.2 %	4.1 %	12.3 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	110.530 %	110.300 %	0.032 ppb	0.222 ppb	103.006 %
Concentration per Run 1	108.268 %	107.670 %	0.021 ppb	0.225 ppb	102.186 %
Concentration per Run 2	111.373 %	111.106 %	0.037 ppb	0.218 ppb	103.284 %
Concentration per Run 3	111.948 %	112.124 %	0.036 ppb	0.224 ppb	103.547 %
Concentration RSD	1.8 %	2.1 %	27.7 %	1.8 %	0.7 %

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12/17/2021 9:47:26 PM



Analysis index: 100 Analysis started at: 12/17/2021 4:57:06 PM
 Analysis label: I2168643-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	111.994 %	145.949 %	-0.001 ppb	3,530.631 ppb	11,807.099 ppb	8.024 ppb	923.121 ppb	58,005.819 ppb	124.684 %
Concentration per Run 1	112.291 %	145.099 %	0.002 ppb	3,390.487 ppb	11,381.951 ppb	7.898 ppb	882.328 ppb	56,735.575 ppb	124.098 %
Concentration per Run 2	111.459 %	155.099 %	-0.003 ppb	3,450.745 ppb	11,533.422 ppb	6.424 ppb	911.723 ppb	56,662.305 ppb	124.429 %
Concentration per Run 3	112.231 %	137.648 %	-0.002 ppb	3,750.659 ppb	12,505.923 ppb	9.749 ppb	975.311 ppb	60,619.577 ppb	125.524 %
Concentration RSD	0.4 %	6.0 %	261.2 %	5.5 %	5.2 %	20.8 %	5.1 %	3.9 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.203 ppb	21.640 ppb	4.069 ppb	241.719 ppb	3.223 ppb	30.243 ppb	1.423 ppb	2.409 ppb	125.248 %
Concentration per Run 1	0.200 ppb	23.172 ppb	4.070 ppb	227.598 ppb	3.254 ppb	30.638 ppb	1.485 ppb	2.339 ppb	120.153 %
Concentration per Run 2	0.143 ppb	20.305 ppb	3.879 ppb	234.228 ppb	3.176 ppb	29.173 ppb	1.382 ppb	2.402 ppb	128.572 %
Concentration per Run 3	0.266 ppb	21.443 ppb	4.258 ppb	263.330 ppb	3.238 ppb	30.919 ppb	1.402 ppb	2.485 ppb	127.019 %
Concentration RSD	30.6 %	6.7 %	4.7 %	7.9 %	1.3 %	3.1 %	3.9 %	3.0 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.156 ppb	0.762 ppb	127.389 ppb	129.859 %	0.267 ppb	0.011 ppb	131.755 %	0.019 ppb	35.173 ppb
Concentration per Run 1	0.140 ppb	0.677 ppb	124.233 ppb	127.686 %	0.248 ppb	0.020 ppb	126.788 %	0.021 ppb	35.500 ppb
Concentration per Run 2	0.161 ppb	0.842 ppb	128.662 ppb	130.833 %	0.274 ppb	0.004 ppb	134.585 %	0.018 ppb	34.578 ppb
Concentration per Run 3	0.169 ppb	0.768 ppb	129.273 ppb	131.058 %	0.278 ppb	0.011 ppb	133.892 %	0.017 ppb	35.442 ppb
Concentration RSD	9.3 %	10.8 %	2.2 %	1.5 %	6.1 %	68.2 %	3.3 %	13.0 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	125.493 %	124.246 %	0.023 ppb	0.028 ppb	122.591 %
Concentration per Run 1	121.840 %	118.270 %	0.020 ppb	0.027 ppb	121.201 %
Concentration per Run 2	127.718 %	127.436 %	0.027 ppb	0.028 ppb	123.809 %
Concentration per Run 3	126.923 %	127.033 %	0.023 ppb	0.028 ppb	122.763 %
Concentration RSD	2.5 %	4.2 %	13.8 %	1.4 %	1.1 %

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Analysis index: 101 Analysis started at: 12/17/2021 5:01:55 PM
 Analysis label: WG1584061-6D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	112.824 %	139.739 %	-0.006 ppb	47,347.988 ppb	13,293.066 ppb	1.450 ppb	8,333.722 ppb	33,578.253 ppb	117.726 %
Concentration per Run 1	113.297 %	127.059 %	-0.005 ppb	49,217.916 ppb	13,833.795 ppb	1.757 ppb	8,239.434 ppb	34,226.834 ppb	117.683 %
Concentration per Run 2	113.117 %	139.216 %	-0.005 ppb	48,515.516 ppb	13,522.275 ppb	1.567 ppb	8,480.406 ppb	33,616.891 ppb	117.136 %
Concentration per Run 3	112.057 %	152.942 %	-0.009 ppb	44,310.532 ppb	12,523.128 ppb	1.027 ppb	8,281.325 ppb	32,891.033 ppb	118.360 %
Concentration RSD	0.6 %	9.3 %	31.6 %	5.6 %	5.2 %	26.1 %	1.5 %	2.0 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.188 ppb	0.102 ppb	141.547 ppb	3,933.539 ppb	0.161 ppb	0.040 ppb	0.050 ppb	2.790 ppb	114.179 %
Concentration per Run 1	0.225 ppb	0.107 ppb	141.298 ppb	3,898.299 ppb	0.180 ppb	0.118 ppb	0.028 ppb	2.682 ppb	113.307 %
Concentration per Run 2	0.180 ppb	0.113 ppb	143.907 ppb	4,098.235 ppb	0.168 ppb	0.047 ppb	0.050 ppb	2.958 ppb	114.307 %
Concentration per Run 3	0.160 ppb	0.087 ppb	139.435 ppb	3,804.083 ppb	0.134 ppb	-0.045 ppb	0.071 ppb	2.728 ppb	114.922 %
Concentration RSD	17.7 %	13.3 %	1.6 %	3.8 %	14.9 %	205.2 %	43.0 %	5.3 %	0.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.219 ppb	0.012 ppb	230.143 ppb	116.602 %	-0.002 ppb	0.002 ppb	121.105 %	0.052 ppb	105.240 ppb
Concentration per Run 1	1.202 ppb	0.018 ppb	221.219 ppb	116.124 %	0.000 ppb	0.000 ppb	119.117 %	0.045 ppb	103.286 ppb
Concentration per Run 2	1.192 ppb	-0.005 ppb	234.359 ppb	116.240 %	-0.004 ppb	0.005 ppb	123.389 %	0.072 ppb	105.782 ppb
Concentration per Run 3	1.265 ppb	0.024 ppb	234.850 ppb	117.442 %	-0.001 ppb	0.000 ppb	120.810 %	0.040 ppb	106.653 ppb
Concentration RSD	3.2 %	127.7 %	3.4 %	0.6 %	118.8 %	173.2 %	1.8 %	33.1 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	115.447 %	115.256 %	0.016 ppb	0.032 ppb	112.704 %
Concentration per Run 1	113.854 %	112.510 %	0.012 ppb	0.034 ppb	112.504 %
Concentration per Run 2	116.136 %	117.114 %	0.018 ppb	0.030 ppb	112.873 %
Concentration per Run 3	116.351 %	116.145 %	0.018 ppb	0.031 ppb	112.734 %
Concentration RSD	1.2 %	2.1 %	22.5 %	6.2 %	0.2 %

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Analysis index: 102 Analysis started at: 12/17/2021 5:06:44 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	105.555 %	132.157 %	58.797 ppb	5,859.494 ppb	5,734.393 ppb	54.552 ppb	6,031.442 ppb	6,215.323 ppb	120.760 %
Concentration per Run 1	105.998 %	138.040 %	57.828 ppb	5,609.013 ppb	5,298.697 ppb	49.766 ppb	5,826.913 ppb	6,218.027 ppb	120.396 %
Concentration per Run 2	105.605 %	128.628 %	59.396 ppb	5,975.786 ppb	6,076.260 ppb	59.569 ppb	6,046.375 ppb	6,435.631 ppb	121.398 %
Concentration per Run 3	105.061 %	129.804 %	59.166 ppb	5,993.682 ppb	5,828.223 ppb	54.322 ppb	6,221.037 ppb	5,992.312 ppb	120.485 %
Recovery Percentage 1			97.994 %	97.658 %	95.573 %	90.920 %	100.524 %	103.589 %	
Concentration RSD	0.4 %	3.9 %	1.4 %	3.7 %	6.9 %	9.0 %	3.3 %	3.6 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	56.633 ppb	56.754 ppb	56.765 ppb	5,612.494 ppb	56.134 ppb	56.641 ppb	56.313 ppb	56.841 ppb	111.314 %
Concentration per Run 1	54.594 ppb	56.579 ppb	55.249 ppb	5,577.765 ppb	56.714 ppb	55.967 ppb	57.604 ppb	57.444 ppb	107.376 %
Concentration per Run 2	58.657 ppb	57.379 ppb	57.912 ppb	5,621.474 ppb	55.749 ppb	57.080 ppb	55.689 ppb	55.872 ppb	113.815 %
Concentration per Run 3	56.647 ppb	56.305 ppb	57.134 ppb	5,638.241 ppb	55.938 ppb	56.875 ppb	55.645 ppb	57.207 ppb	112.752 %
Recovery Percentage 1	94.388 %	94.591 %	94.609 %	93.542 %	93.556 %	94.401 %	93.854 %	94.735 %	
Concentration RSD	3.6 %	1.0 %	2.4 %	0.6 %	0.9 %	1.0 %	2.0 %	1.5 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	57.973 ppb	53.843 ppb	58.521 ppb	116.783 %	58.603 ppb	58.902 ppb	120.301 %	54.357 ppb	55.286 ppb
Concentration per Run 1	57.742 ppb	52.725 ppb	56.494 ppb	117.082 %	59.542 ppb	59.743 ppb	116.790 %	54.481 ppb	54.152 ppb
Concentration per Run 2	58.228 ppb	54.555 ppb	59.134 ppb	115.718 %	58.452 ppb	58.638 ppb	121.628 %	54.353 ppb	55.628 ppb
Concentration per Run 3	57.950 ppb	54.248 ppb	59.934 ppb	117.550 %	57.815 ppb	58.325 ppb	122.484 %	54.238 ppb	56.079 ppb
Recovery Percentage 1	96.622 %	89.738 %	97.535 %		97.672 %	98.170 %		90.595 %	92.144 %
Concentration RSD	0.4 %	1.8 %	3.1 %	0.8 %	1.5 %	1.3 %	2.6 %	0.2 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	111.988 %	112.432 %	57.920 ppb	57.108 ppb	117.344 %
Concentration per Run 1	110.907 %	109.651 %	57.612 ppb	56.718 ppb	117.490 %
Concentration per Run 2	113.119 %	114.570 %	57.735 ppb	57.176 ppb	117.624 %
Concentration per Run 3	111.939 %	113.076 %	58.411 ppb	57.429 ppb	116.918 %
Recovery Percentage 1			96.533 %	95.180 %	
Concentration RSD	1.0 %	2.2 %	0.7 %	0.6 %	0.3 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 103 Analysis started at: 12/17/2021 5:11:36 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	99.047 %	130.327 %	0.008 ppb	-4.024 ppb	-0.403 ppb	-0.533 ppb	-9.680 ppb	-0.656 ppb	100.706 %
Concentration per Run 1	99.223 %	125.295 %	0.000 ppb	-3.656 ppb	-0.679 ppb	-0.092 ppb	-12.430 ppb	1.570 ppb	101.402 %
Concentration per Run 2	99.011 %	130.001 %	0.014 ppb	-6.381 ppb	0.148 ppb	-0.867 ppb	-0.935 ppb	1.311 ppb	100.506 %
Concentration per Run 3	98.906 %	135.687 %	0.010 ppb	-2.037 ppb	-0.679 ppb	-0.639 ppb	-15.674 ppb	-4.850 ppb	100.209 %
Recovery Percentage 1		1.614 %		-4.024 %	-0.576 %	-5.326 %	-9.680 %	-0.656 %	
Concentration RSD	0.2 %	4.0 %	89.1 %	54.6 %	118.4 %	74.8 %	80.0 %	553.8 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.049 ppb	0.005 ppb	0.020 ppb	18.516 ppb	-0.001 ppb	0.013 ppb	-0.014 ppb	-0.116 ppb	107.891 %
Concentration per Run 1	-0.056 ppb	-0.001 ppb	-0.003 ppb	20.285 ppb	0.001 ppb	0.045 ppb	-0.051 ppb	-0.107 ppb	103.174 %
Concentration per Run 2	-0.068 ppb	0.002 ppb	-0.023 ppb	18.102 ppb	-0.003 ppb	0.018 ppb	0.014 ppb	-0.094 ppb	110.019 %
Concentration per Run 3	-0.024 ppb	0.013 ppb	0.085 ppb	17.161 ppb	-0.003 ppb	-0.023 ppb	-0.004 ppb	-0.148 ppb	110.480 %
Recovery Percentage 1	-0.987 %	0.480 %	1.969 %	37.032 %	-0.296 %	0.664 %	-1.365 %	-1.162 %	
Concentration RSD	46.4 %	148.3 %	290.1 %	8.7 %	145.2 %	257.4 %	246.0 %	24.3 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.045 ppb	0.029 ppb	-0.009 ppb	116.983 %	0.003 ppb	0.002 ppb	118.234 %	0.006 ppb	-0.072 ppb
Concentration per Run 1	0.061 ppb	0.065 ppb	-0.004 ppb	115.270 %	0.007 ppb	0.002 ppb	114.285 %	-0.002 ppb	-0.069 ppb
Concentration per Run 2	0.030 ppb	0.000 ppb	-0.010 ppb	118.141 %	-0.001 ppb	0.005 ppb	120.635 %	0.006 ppb	-0.062 ppb
Concentration per Run 3	0.043 ppb	0.023 ppb	-0.013 ppb	117.538 %	0.001 ppb	0.000 ppb	119.783 %	0.013 ppb	-0.083 ppb
Recovery Percentage 1	8.930 %	0.589 %	-1.813 %		0.640 %	1.183 %		0.141 %	-14.302 %
Concentration RSD	35.5 %	112.2 %	51.1 %	1.3 %	168.8 %	98.5 %	2.9 %	139.0 %	14.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	109.810 %	111.399 %	0.316 ppb	0.011 ppb	117.157 %
Concentration per Run 1	107.328 %	106.501 %	0.352 ppb	0.013 ppb	115.323 %
Concentration per Run 2	111.515 %	114.031 %	0.316 ppb	0.011 ppb	118.010 %
Concentration per Run 3	110.586 %	113.665 %	0.280 ppb	0.008 ppb	118.137 %
Recovery Percentage 1			31.594 %		1.083 %
Concentration RSD	2.0 %	3.8 %	11.4 %	23.6 %	1.4 %

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Analysis index: 104 Analysis started at: 12/17/2021 5:16:28 PM
 Analysis label: WG1583811-4 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.842 %	131.504 %	0.000 ppb	7.506 ppb	3.406 ppb	2.011 ppb	-12.108 ppb	2.202 ppb	108.219 %
Concentration per Run 1	101.504 %	128.432 %	-0.004 ppb	7.966 ppb	1.842 ppb	1.948 ppb	-21.298 ppb	0.485 ppb	108.266 %
Concentration per Run 2	100.622 %	136.079 %	0.012 ppb	6.141 ppb	3.270 ppb	1.296 ppb	-12.023 ppb	-0.084 ppb	107.725 %
Concentration per Run 3	100.400 %	130.001 %	-0.008 ppb	8.410 ppb	5.106 ppb	2.789 ppb	-3.003 ppb	6.205 ppb	108.666 %
Concentration RSD	0.6 %	3.1 %	5,616.5 %	16.0 %	48.0 %	37.2 %	75.6 %	158.0 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.016 ppb	0.359 ppb	0.134 ppb	12.603 ppb	0.002 ppb	0.120 ppb	0.036 ppb	-0.039 ppb	110.660 %
Concentration per Run 1	-0.045 ppb	0.344 ppb	0.205 ppb	15.609 ppb	0.001 ppb	0.198 ppb	0.034 ppb	-0.219 ppb	106.712 %
Concentration per Run 2	-0.025 ppb	0.377 ppb	0.140 ppb	12.561 ppb	-0.003 ppb	-0.041 ppb	0.025 ppb	0.081 ppb	115.114 %
Concentration per Run 3	0.023 ppb	0.357 ppb	0.056 ppb	9.639 ppb	0.008 ppb	0.201 ppb	0.048 ppb	0.019 ppb	110.153 %
Concentration RSD	219.0 %	4.7 %	56.0 %	23.7 %	268.6 %	116.3 %	31.4 %	401.6 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.018 ppb	0.026 ppb	0.092 ppb	117.850 %	-0.002 ppb	0.003 ppb	119.887 %	0.000 ppb	0.070 ppb
Concentration per Run 1	0.009 ppb	-0.038 ppb	0.075 ppb	116.771 %	0.001 ppb	0.007 ppb	114.339 %	0.005 ppb	0.068 ppb
Concentration per Run 2	0.015 ppb	0.057 ppb	0.093 ppb	118.083 %	-0.004 ppb	0.002 ppb	122.613 %	0.002 ppb	0.074 ppb
Concentration per Run 3	0.030 ppb	0.060 ppb	0.106 ppb	118.696 %	-0.001 ppb	0.000 ppb	122.709 %	-0.005 ppb	0.067 ppb
Concentration RSD	58.2 %	211.3 %	17.0 %	0.8 %	163.4 %	116.4 %	4.0 %	1,082.1 %	5.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	111.372 %	113.902 %	0.110 ppb	0.015 ppb	119.493 %
Concentration per Run 1	108.732 %	110.344 %	0.109 ppb	0.016 ppb	118.972 %
Concentration per Run 2	112.148 %	115.483 %	0.111 ppb	0.017 ppb	120.075 %
Concentration per Run 3	113.237 %	115.879 %	0.109 ppb	0.013 ppb	119.431 %
Concentration RSD	2.1 %	2.7 %	1.1 %	14.3 %	0.5 %

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Analysis index: 105 Analysis started at: 12/17/2021 5:21:17 PM
 Analysis label: I2168735-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	102.614 %	125.883 %	-0.003 ppb	34.108 ppb	7.193 ppb	3.112 ppb	-4.717 ppb	66.131 ppb	110.545 %
Concentration per Run 1	102.302 %	126.079 %	0.002 ppb	35.848 ppb	4.435 ppb	2.827 ppb	-2.166 ppb	57.207 ppb	110.360 %
Concentration per Run 2	102.811 %	127.844 %	-0.004 ppb	31.639 ppb	8.502 ppb	4.052 ppb	-15.261 ppb	61.468 ppb	110.961 %
Concentration per Run 3	102.729 %	123.726 %	-0.006 ppb	34.838 ppb	8.643 ppb	2.456 ppb	3.276 ppb	79.719 ppb	110.315 %
Concentration RSD	0.3 %	1.6 %	134.9 %	6.4 %	33.2 %	26.8 %	202.0 %	18.1 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.019 ppb	0.347 ppb	0.530 ppb	12.027 ppb	0.010 ppb	0.166 ppb	0.041 ppb	0.798 ppb	111.390 %
Concentration per Run 1	-0.009 ppb	0.381 ppb	0.580 ppb	12.343 ppb	0.008 ppb	0.200 ppb	0.052 ppb	0.810 ppb	106.769 %
Concentration per Run 2	-0.023 ppb	0.349 ppb	0.510 ppb	10.238 ppb	0.004 ppb	0.121 ppb	-0.004 ppb	0.881 ppb	111.518 %
Concentration per Run 3	-0.024 ppb	0.311 ppb	0.500 ppb	13.501 ppb	0.018 ppb	0.178 ppb	0.075 ppb	0.704 ppb	115.883 %
Concentration RSD	43.2 %	10.2 %	8.2 %	13.8 %	69.2 %	24.5 %	98.6 %	11.2 %	4.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.034 ppb	0.030 ppb	0.168 ppb	118.947 %	-0.002 ppb	0.001 ppb	119.045 %	-0.001 ppb	0.159 ppb
Concentration per Run 1	0.031 ppb	0.001 ppb	0.163 ppb	118.092 %	0.000 ppb	0.000 ppb	114.662 %	-0.007 ppb	0.175 ppb
Concentration per Run 2	0.050 ppb	0.060 ppb	0.173 ppb	119.857 %	-0.005 ppb	0.002 ppb	119.863 %	0.001 ppb	0.166 ppb
Concentration per Run 3	0.021 ppb	0.029 ppb	0.168 ppb	118.893 %	-0.002 ppb	0.000 ppb	122.610 %	0.002 ppb	0.135 ppb
Concentration RSD	42.5 %	97.5 %	2.9 %	0.7 %	105.2 %	173.2 %	3.4 %	325.5 %	13.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	111.459 %	113.449 %	0.062 ppb	0.014 ppb	119.221 %
Concentration per Run 1	109.197 %	109.416 %	0.053 ppb	0.017 ppb	119.367 %
Concentration per Run 2	112.311 %	114.936 %	0.065 ppb	0.012 ppb	119.351 %
Concentration per Run 3	112.868 %	115.995 %	0.068 ppb	0.013 ppb	118.945 %
Concentration RSD	1.8 %	3.1 %	12.5 %	17.2 %	0.2 %

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Analysis index: 106 Analysis started at: 12/17/2021 5:26:06 PM
 Analysis label: L2168643-03 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	104.751 %	135.491 %	0.000 ppb	6,030.067 ppb	22,355.860 ppb	20.634 ppb	3,037.701 ppb	108,036.109 ppb	117.491 %
Concentration per Run 1	104.404 %	135.883 %	-0.001 ppb	5,907.432 ppb	21,851.787 ppb	19.996 ppb	3,068.090 ppb	108,255.850 ppb	116.970 %
Concentration per Run 2	105.297 %	135.295 %	0.003 ppb	6,069.981 ppb	22,518.454 ppb	21.880 ppb	2,934.691 ppb	106,510.864 ppb	117.881 %
Concentration per Run 3	104.552 %	135.295 %	-0.001 ppb	6,112.789 ppb	22,697.339 ppb	20.026 ppb	3,110.321 ppb	109,341.612 ppb	117.623 %
Concentration RSD	0.5 %	0.3 %	426.3 %	1.8 %	2.0 %	5.2 %	3.0 %	1.3 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.406 ppb	2.184 ppb	7.489 ppb	117.271 ppb	2.503 ppb	3.061 ppb	1.395 ppb	2.552 ppb	111.722 %
Concentration per Run 1	0.400 ppb	2.300 ppb	7.694 ppb	115.832 ppb	2.651 ppb	3.178 ppb	1.490 ppb	2.889 ppb	106.539 %
Concentration per Run 2	0.320 ppb	2.231 ppb	7.400 ppb	112.582 ppb	2.469 ppb	2.819 ppb	1.318 ppb	2.402 ppb	116.725 %
Concentration per Run 3	0.498 ppb	2.023 ppb	7.374 ppb	123.397 ppb	2.390 ppb	3.187 ppb	1.378 ppb	2.365 ppb	111.903 %
Concentration RSD	21.9 %	6.6 %	2.4 %	4.7 %	5.3 %	6.9 %	6.3 %	11.5 %	4.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.239 ppb	0.668 ppb	249.024 ppb	117.763 %	0.095 ppb	0.032 ppb	121.323 %	0.012 ppb	96.894 ppb
Concentration per Run 1	0.244 ppb	0.883 ppb	246.025 ppb	116.969 %	0.110 ppb	0.038 ppb	116.889 %	0.010 ppb	96.961 ppb
Concentration per Run 2	0.262 ppb	0.731 ppb	248.941 ppb	118.058 %	0.075 ppb	0.034 ppb	125.249 %	0.009 ppb	96.852 ppb
Concentration per Run 3	0.212 ppb	0.390 ppb	252.105 ppb	118.261 %	0.101 ppb	0.023 ppb	121.831 %	0.016 ppb	96.870 ppb
Concentration RSD	10.6 %	37.7 %	1.2 %	0.6 %	19.0 %	24.5 %	3.5 %	35.3 %	0.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	116.550 %	118.237 %	0.059 ppb	0.058 ppb	113.418 %
Concentration per Run 1	114.933 %	115.911 %	0.051 ppb	0.056 ppb	114.120 %
Concentration per Run 2	116.870 %	119.211 %	0.061 ppb	0.056 ppb	113.970 %
Concentration per Run 3	117.847 %	119.588 %	0.064 ppb	0.062 ppb	112.165 %
Concentration RSD	1.3 %	1.7 %	11.4 %	5.9 %	1.0 %

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Analysis index: 107 Analysis started at: 12/17/2021 5:30:56 PM
 Analysis label: I2168643-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.292 %	126.667 %	0.023 ppb	6,697.317 ppb	4,761.315 ppb	702.176 ppb	871.265 ppb	14,146.127 ppb	106.602 %
Concentration per Run 1	99.407 %	130.981 %	0.026 ppb	6,498.937 ppb	4,593.256 ppb	661.563 ppb	799.659 ppb	13,579.246 ppb	107.811 %
Concentration per Run 2	98.426 %	124.314 %	0.018 ppb	6,786.140 ppb	4,786.567 ppb	724.688 ppb	943.552 ppb	14,091.927 ppb	105.987 %
Concentration per Run 3	97.044 %	124.706 %	0.025 ppb	6,806.873 ppb	4,904.122 ppb	720.277 ppb	870.584 ppb	14,767.206 ppb	106.010 %
Concentration RSD	1.2 %	3.0 %	18.0 %	2.6 %	3.3 %	5.0 %	8.3 %	4.2 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.771 ppb	5.189 ppb	60.429 ppb	3,833.903 ppb	0.963 ppb	4.357 ppb	1.812 ppb	5.850 ppb	103.231 %
Concentration per Run 1	1.607 ppb	5.093 ppb	57.765 ppb	3,710.875 ppb	0.871 ppb	4.725 ppb	1.917 ppb	6.004 ppb	101.059 %
Concentration per Run 2	1.750 ppb	5.171 ppb	63.272 ppb	3,883.857 ppb	1.027 ppb	4.346 ppb	1.530 ppb	5.792 ppb	104.558 %
Concentration per Run 3	1.957 ppb	5.304 ppb	60.251 ppb	3,906.978 ppb	0.993 ppb	4.000 ppb	1.990 ppb	5.755 ppb	104.077 %
Concentration RSD	9.9 %	2.1 %	4.6 %	2.8 %	8.5 %	8.3 %	13.6 %	2.3 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.932 ppb	0.299 ppb	71.247 ppb	108.612 %	0.003 ppb	0.029 ppb	112.948 %	0.027 ppb	26.181 ppb
Concentration per Run 1	1.001 ppb	0.338 ppb	69.519 ppb	108.582 %	0.010 ppb	0.030 ppb	110.991 %	0.034 ppb	25.989 ppb
Concentration per Run 2	0.838 ppb	0.296 ppb	71.664 ppb	108.445 %	0.001 ppb	0.025 ppb	115.205 %	0.023 ppb	26.835 ppb
Concentration per Run 3	0.958 ppb	0.262 ppb	72.558 ppb	108.809 %	-0.001 ppb	0.033 ppb	112.648 %	0.026 ppb	25.717 ppb
Concentration RSD	9.1 %	12.7 %	2.2 %	0.2 %	163.0 %	13.9 %	1.9 %	19.9 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	104.048 %	106.997 %	0.046 ppb	0.520 ppb	111.590 %
Concentration per Run 1	102.988 %	105.260 %	0.040 ppb	0.518 ppb	111.620 %
Concentration per Run 2	105.078 %	108.830 %	0.050 ppb	0.517 ppb	111.937 %
Concentration per Run 3	104.079 %	106.902 %	0.047 ppb	0.524 ppb	111.213 %
Concentration RSD	1.0 %	1.7 %	10.7 %	0.7 %	0.3 %

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Analysis index: 108 Analysis started at: 12/17/2021 5:35:45 PM
 Analysis label: I2168643-04 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.419 %	130.131 %	0.021 ppb	11,071.127 ppb	5,241.917 ppb	114.143 ppb	993.604 ppb	12,805.901 ppb	101.723 %
Concentration per Run 1	96.693 %	135.295 %	0.035 ppb	10,447.866 ppb	4,932.033 ppb	115.264 ppb	956.383 ppb	12,482.712 ppb	101.662 %
Concentration per Run 2	96.334 %	126.471 %	0.017 ppb	11,431.984 ppb	5,321.080 ppb	116.800 ppb	1,010.414 ppb	12,927.208 ppb	101.779 %
Concentration per Run 3	96.231 %	128.628 %	0.011 ppb	11,333.530 ppb	5,472.638 ppb	110.365 ppb	1,014.016 ppb	13,007.784 ppb	101.729 %
Concentration RSD	0.3 %	3.5 %	60.7 %	4.9 %	5.3 %	2.9 %	3.2 %	2.2 %	0.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.546 ppb	4.332 ppb	4.678 ppb	156.448 ppb	0.257 ppb	3.450 ppb	1.065 ppb	5.780 ppb	103.225 %
Concentration per Run 1	0.416 ppb	4.119 ppb	4.631 ppb	145.229 ppb	0.230 ppb	3.623 ppb	0.976 ppb	5.736 ppb	97.060 %
Concentration per Run 2	0.573 ppb	4.535 ppb	4.732 ppb	171.099 ppb	0.258 ppb	3.365 ppb	1.223 ppb	5.977 ppb	104.693 %
Concentration per Run 3	0.649 ppb	4.343 ppb	4.672 ppb	153.016 ppb	0.283 ppb	3.363 ppb	0.997 ppb	5.626 ppb	107.923 %
Concentration RSD	21.8 %	4.8 %	1.1 %	8.5 %	10.4 %	4.3 %	12.8 %	3.1 %	5.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.118 ppb	0.144 ppb	58.437 ppb	109.034 %	0.005 ppb	0.032 ppb	112.447 %	0.003 ppb	25.275 ppb
Concentration per Run 1	0.128 ppb	0.110 ppb	57.818 ppb	107.530 %	0.007 ppb	0.031 ppb	108.142 %	0.002 ppb	25.328 ppb
Concentration per Run 2	0.082 ppb	0.138 ppb	59.214 ppb	109.713 %	0.009 ppb	0.027 ppb	115.060 %	0.002 ppb	24.712 ppb
Concentration per Run 3	0.143 ppb	0.183 ppb	58.278 ppb	109.861 %	0.000 ppb	0.037 ppb	114.138 %	0.006 ppb	25.786 ppb
Concentration RSD	26.9 %	25.5 %	1.2 %	1.2 %	84.4 %	15.9 %	3.3 %	82.6 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	106.002 %	108.545 %	0.030 ppb	0.151 ppb	110.882 %
Concentration per Run 1	103.489 %	105.260 %	0.028 ppb	0.146 ppb	109.704 %
Concentration per Run 2	107.337 %	109.858 %	0.031 ppb	0.156 ppb	111.765 %
Concentration per Run 3	107.180 %	110.517 %	0.032 ppb	0.150 ppb	111.178 %
Concentration RSD	2.1 %	2.6 %	7.0 %	3.4 %	1.0 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 109 Analysis started at: 12/17/2021 5:40:35 PM
 Analysis label: L2168643-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.527 %	130.981 %	0.001 ppb	10,636.424 ppb	6,096.348 ppb	4.141 ppb	2,338.435 ppb	22,537.210 ppb	106.568 %
Concentration per Run 1	100.541 %	126.667 %	0.002 ppb	10,624.587 ppb	6,088.787 ppb	4.389 ppb	2,382.729 ppb	22,162.824 ppb	105.788 %
Concentration per Run 2	100.603 %	130.785 %	-0.004 ppb	10,731.067 ppb	6,249.080 ppb	3.771 ppb	2,388.717 ppb	23,228.238 ppb	107.450 %
Concentration per Run 3	100.437 %	135.491 %	0.004 ppb	10,553.616 ppb	5,951.178 ppb	4.263 ppb	2,243.858 ppb	22,220.567 ppb	106.465 %
Concentration RSD	0.1 %	3.4 %	786.3 %	0.8 %	2.4 %	7.9 %	3.5 %	2.7 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.414 ppb	1.523 ppb	6.885 ppb	50.596 ppb	0.918 ppb	1.545 ppb	0.423 ppb	0.631 ppb	106.173 %
Concentration per Run 1	0.367 ppb	2.503 ppb	6.607 ppb	49.230 ppb	0.954 ppb	1.543 ppb	0.539 ppb	0.723 ppb	101.597 %
Concentration per Run 2	0.358 ppb	1.084 ppb	7.378 ppb	51.288 ppb	0.859 ppb	1.640 ppb	0.394 ppb	0.561 ppb	107.807 %
Concentration per Run 3	0.518 ppb	0.983 ppb	6.670 ppb	51.269 ppb	0.941 ppb	1.452 ppb	0.335 ppb	0.610 ppb	109.115 %
Concentration RSD	21.6 %	55.8 %	6.2 %	2.3 %	5.6 %	6.1 %	24.9 %	13.2 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.234 ppb	0.324 ppb	91.692 ppb	111.878 %	0.057 ppb	0.007 ppb	116.819 %	0.014 ppb	19.970 ppb
Concentration per Run 1	0.279 ppb	0.404 ppb	90.091 ppb	111.028 %	0.060 ppb	0.010 ppb	112.566 %	0.018 ppb	19.901 ppb
Concentration per Run 2	0.185 ppb	0.287 ppb	92.080 ppb	111.666 %	0.056 ppb	0.002 ppb	118.381 %	0.009 ppb	20.134 ppb
Concentration per Run 3	0.239 ppb	0.281 ppb	92.905 ppb	112.940 %	0.056 ppb	0.007 ppb	119.509 %	0.013 ppb	19.874 ppb
Concentration RSD	20.0 %	21.3 %	1.6 %	0.9 %	4.3 %	58.8 %	3.2 %	32.0 %	0.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	109.188 %	112.649 %	0.024 ppb	0.016 ppb	113.727 %
Concentration per Run 1	108.383 %	110.820 %	0.020 ppb	0.019 ppb	113.476 %
Concentration per Run 2	110.759 %	113.615 %	0.028 ppb	0.016 ppb	113.395 %
Concentration per Run 3	108.424 %	113.512 %	0.025 ppb	0.015 ppb	114.310 %
Concentration RSD	1.2 %	1.4 %	17.7 %	14.2 %	0.4 %

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Analysis index: 110 Analysis started at: 12/17/2021 5:45:24 PM
 Analysis label: L2168643-06 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	97.650 %	126.079 %	0.022 ppb	14,808.511 ppb	9,331.021 ppb	127.903 ppb	1,439.260 ppb	21,111.739 ppb	101.257 %
Concentration per Run 1	97.539 %	125.098 %	0.020 ppb	14,817.306 ppb	9,197.016 ppb	125.122 ppb	1,331.324 ppb	19,714.264 ppb	100.688 %
Concentration per Run 2	97.670 %	127.844 %	0.030 ppb	14,793.829 ppb	9,251.360 ppb	130.447 ppb	1,438.438 ppb	21,865.993 ppb	101.471 %
Concentration per Run 3	97.740 %	125.295 %	0.014 ppb	14,814.398 ppb	9,544.688 ppb	128.140 ppb	1,548.016 ppb	21,754.959 ppb	101.612 %
Concentration RSD	0.1 %	1.2 %	37.4 %	0.1 %	2.0 %	2.1 %	7.5 %	5.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.557 ppb	5.171 ppb	3.410 ppb	182.844 ppb	0.336 ppb	2.360 ppb	1.176 ppb	4.892 ppb	100.591 %
Concentration per Run 1	1.529 ppb	5.054 ppb	3.423 ppb	179.344 ppb	0.371 ppb	2.567 ppb	1.295 ppb	5.035 ppb	98.463 %
Concentration per Run 2	1.419 ppb	5.178 ppb	3.294 ppb	184.113 ppb	0.314 ppb	2.211 ppb	0.976 ppb	4.966 ppb	102.270 %
Concentration per Run 3	1.723 ppb	5.281 ppb	3.513 ppb	185.075 ppb	0.322 ppb	2.302 ppb	1.256 ppb	4.674 ppb	101.039 %
Concentration RSD	9.9 %	2.2 %	3.2 %	1.7 %	9.2 %	7.8 %	14.8 %	3.9 %	1.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.209 ppb	0.184 ppb	102.217 ppb	105.518 %	0.058 ppb	0.025 ppb	107.972 %	-0.005 ppb	16.149 ppb
Concentration per Run 1	0.165 ppb	0.250 ppb	99.447 ppb	104.485 %	0.066 ppb	0.040 ppb	104.853 %	-0.010 ppb	15.765 ppb
Concentration per Run 2	0.196 ppb	0.168 ppb	103.271 ppb	105.814 %	0.047 ppb	0.018 ppb	108.425 %	0.003 ppb	16.639 ppb
Concentration per Run 3	0.266 ppb	0.134 ppb	103.932 ppb	106.255 %	0.061 ppb	0.018 ppb	110.636 %	-0.008 ppb	16.044 ppb
Concentration RSD	24.8 %	32.2 %	2.4 %	0.9 %	16.9 %	50.0 %	2.7 %	141.9 %	2.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	102.767 %	107.152 %	0.025 ppb	0.208 ppb	107.192 %
Concentration per Run 1	100.955 %	103.535 %	0.022 ppb	0.193 ppb	107.894 %
Concentration per Run 2	103.755 %	109.804 %	0.027 ppb	0.205 ppb	107.512 %
Concentration per Run 3	103.591 %	108.118 %	0.026 ppb	0.226 ppb	106.172 %
Concentration RSD	1.5 %	3.0 %	11.0 %	7.9 %	0.8 %

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Analysis index: 111 Analysis started at: 12/17/2021 5:50:12 PM
 Analysis label: I2167658-02D10 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.793 %	125.687 %	-0.003 ppb	18,798.769 ppb	1,612.892 ppb	2.194 ppb	1,652.127 ppb	7,162.311 ppb	103.168 %
Concentration per Run 1	96.225 %	119.804 %	-0.004 ppb	19,363.668 ppb	1,587.585 ppb	1.960 ppb	1,615.830 ppb	7,010.966 ppb	103.190 %
Concentration per Run 2	95.919 %	132.942 %	-0.006 ppb	17,997.841 ppb	1,602.119 ppb	2.430 ppb	1,687.825 ppb	7,055.276 ppb	103.156 %
Concentration per Run 3	95.235 %	124.314 %	0.001 ppb	19,034.798 ppb	1,648.973 ppb	2.193 ppb	1,652.727 ppb	7,420.690 ppb	103.159 %
Concentration RSD	0.5 %	5.3 %	110.3 %	3.8 %	2.0 %	10.7 %	2.2 %	3.1 %	0.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.021 ppb	0.034 ppb	2,600.562 ppb	6,511.472 ppb	3.853 ppb	0.827 ppb	0.098 ppb	0.665 ppb	95.791 %
Concentration per Run 1	-0.014 ppb	0.036 ppb	2,619.001 ppb	6,570.898 ppb	4.050 ppb	0.661 ppb	0.062 ppb	0.589 ppb	92.580 %
Concentration per Run 2	-0.031 ppb	0.028 ppb	2,549.526 ppb	6,480.151 ppb	3.662 ppb	0.815 ppb	0.089 ppb	0.737 ppb	98.194 %
Concentration per Run 3	-0.017 ppb	0.038 ppb	2,633.160 ppb	6,483.368 ppb	3.848 ppb	1.006 ppb	0.141 ppb	0.669 ppb	96.598 %
Concentration RSD	43.5 %	15.9 %	1.7 %	0.8 %	5.0 %	20.9 %	41.1 %	11.2 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.605 ppb	-0.033 ppb	37.761 ppb	99.473 %	-0.003 ppb	0.005 ppb	103.504 %	0.009 ppb	55.326 ppb
Concentration per Run 1	0.724 ppb	-0.028 ppb	36.803 ppb	98.955 %	-0.002 ppb	0.008 ppb	101.533 %	0.011 ppb	55.158 ppb
Concentration per Run 2	0.459 ppb	-0.003 ppb	38.162 ppb	100.854 %	-0.002 ppb	0.005 ppb	105.743 %	0.008 ppb	53.878 ppb
Concentration per Run 3	0.632 ppb	-0.069 ppb	38.317 ppb	98.610 %	-0.006 ppb	0.003 ppb	103.236 %	0.009 ppb	56.942 ppb
Concentration RSD	22.2 %	99.3 %	2.2 %	1.2 %	67.7 %	50.9 %	2.0 %	14.9 %	2.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.263 %	103.779 %	0.013 ppb	0.068 ppb	105.806 %
Concentration per Run 1	98.737 %	101.883 %	0.005 ppb	0.064 ppb	107.208 %
Concentration per Run 2	99.753 %	104.748 %	0.015 ppb	0.073 ppb	104.963 %
Concentration per Run 3	99.300 %	104.705 %	0.018 ppb	0.068 ppb	105.248 %
Concentration RSD	0.5 %	1.6 %	54.4 %	7.2 %	1.2 %

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Analysis index: 112 Analysis started at: 12/17/2021 5:55:01 PM
 Analysis label: I2168106-03D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.173 %	123.661 %	0.048 ppb	122,802.621 ppb	3,440.722 ppb	35.155 ppb	12,495.969 ppb	8,214.922 ppb	102.525 %
Concentration per Run 1	91.491 %	118.824 %	0.048 ppb	124,860.421 ppb	3,432.877 ppb	36.336 ppb	11,870.332 ppb	8,159.714 ppb	101.614 %
Concentration per Run 2	90.636 %	122.353 %	0.046 ppb	125,293.173 ppb	3,528.576 ppb	34.714 ppb	12,891.616 ppb	8,507.937 ppb	103.137 %
Concentration per Run 3	91.390 %	129.804 %	0.048 ppb	118,254.269 ppb	3,360.715 ppb	34.413 ppb	12,725.959 ppb	7,977.117 ppb	102.824 %
Concentration RSD	0.5 %	4.5 %	2.1 %	3.2 %	2.4 %	2.9 %	4.4 %	3.3 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.275 ppb	0.111 ppb	839.850 ppb	18,500.327 ppb	1.094 ppb	2.104 ppb	0.144 ppb	1.024 ppb	91.579 %
Concentration per Run 1	0.309 ppb	0.113 ppb	846.253 ppb	18,544.452 ppb	1.165 ppb	2.271 ppb	0.191 ppb	0.955 ppb	89.097 %
Concentration per Run 2	0.233 ppb	0.122 ppb	843.761 ppb	18,756.338 ppb	1.062 ppb	2.123 ppb	0.152 ppb	0.974 ppb	91.811 %
Concentration per Run 3	0.284 ppb	0.096 ppb	829.536 ppb	18,200.191 ppb	1.056 ppb	1.918 ppb	0.088 ppb	1.142 ppb	93.830 %
Concentration RSD	14.2 %	11.9 %	1.1 %	1.5 %	5.6 %	8.4 %	36.3 %	10.1 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.290 ppb	0.046 ppb	127.489 ppb	94.101 %	-0.003 ppb	0.005 ppb	97.835 %	0.012 ppb	42.902 ppb
Concentration per Run 1	0.225 ppb	-0.029 ppb	125.140 ppb	93.208 %	-0.001 ppb	0.006 ppb	94.755 %	0.005 ppb	42.933 ppb
Concentration per Run 2	0.301 ppb	0.120 ppb	128.619 ppb	93.715 %	-0.002 ppb	0.009 ppb	100.206 %	0.015 ppb	43.379 ppb
Concentration per Run 3	0.343 ppb	0.047 ppb	128.707 ppb	95.380 %	-0.006 ppb	0.000 ppb	98.545 %	0.017 ppb	42.395 ppb
Concentration RSD	20.7 %	162.2 %	1.6 %	1.2 %	101.5 %	90.8 %	2.9 %	54.1 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.503 %	101.743 %	0.014 ppb	0.037 ppb	96.112 %
Concentration per Run 1	95.527 %	98.836 %	0.010 ppb	0.036 ppb	96.202 %
Concentration per Run 2	97.530 %	102.770 %	0.015 ppb	0.036 ppb	96.491 %
Concentration per Run 3	99.453 %	103.621 %	0.016 ppb	0.037 ppb	95.644 %
Concentration RSD	2.0 %	2.5 %	23.5 %	1.8 %	0.4 %

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Analysis index: 113 Analysis started at: 12/17/2021 5:59:50 PM
 Analysis label: L2168106-04D5 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.928 %	126.340 %	0.009 ppb	23,327.223 ppb	8,324.884 ppb	61.376 ppb	571.232 ppb	3,970.337 ppb	109.156 %
Concentration per Run 1	96.659 %	127.451 %	0.014 ppb	23,244.631 ppb	8,151.367 ppb	64.150 ppb	527.213 ppb	3,890.281 ppb	108.742 %
Concentration per Run 2	95.640 %	127.844 %	-0.002 ppb	23,214.639 ppb	8,427.063 ppb	57.227 ppb	577.806 ppb	4,245.989 ppb	108.574 %
Concentration per Run 3	95.485 %	123.726 %	0.015 ppb	23,522.400 ppb	8,396.222 ppb	62.752 ppb	608.676 ppb	3,774.740 ppb	110.153 %
Concentration RSD	0.7 %	1.8 %	101.2 %	0.7 %	1.8 %	6.0 %	7.2 %	6.2 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.165 ppb	0.137 ppb	2,494.575 ppb	37,851.099 ppb	36.885 ppb	13.974 ppb	0.326 ppb	19.104 ppb	96.675 %
Concentration per Run 1	0.223 ppb	0.147 ppb	2,474.880 ppb	37,721.190 ppb	37.170 ppb	13.758 ppb	0.281 ppb	18.685 ppb	94.234 %
Concentration per Run 2	0.178 ppb	0.123 ppb	2,472.233 ppb	37,559.811 ppb	36.589 ppb	14.246 ppb	0.426 ppb	19.592 ppb	98.175 %
Concentration per Run 3	0.095 ppb	0.141 ppb	2,536.612 ppb	38,272.296 ppb	36.896 ppb	13.919 ppb	0.271 ppb	19.033 ppb	97.617 %
Concentration RSD	39.2 %	9.5 %	1.5 %	1.0 %	0.8 %	1.8 %	26.6 %	2.4 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.155 ppb	-0.005 ppb	52.431 ppb	100.232 %	-0.002 ppb	0.002 ppb	104.317 %	0.010 ppb	29.663 ppb
Concentration per Run 1	0.140 ppb	0.082 ppb	51.103 ppb	99.974 %	-0.003 ppb	0.003 ppb	103.628 %	0.009 ppb	28.357 ppb
Concentration per Run 2	0.142 ppb	-0.032 ppb	52.994 ppb	100.674 %	-0.001 ppb	0.000 ppb	105.168 %	-0.002 ppb	29.669 ppb
Concentration per Run 3	0.182 ppb	-0.065 ppb	53.197 ppb	100.048 %	-0.002 ppb	0.003 ppb	104.157 %	0.023 ppb	30.963 ppb
Concentration RSD	15.2 %	1,641.0 %	2.2 %	0.4 %	46.3 %	86.6 %	0.8 %	130.2 %	4.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.849 %	106.011 %	0.009 ppb	0.239 ppb	105.479 %
Concentration per Run 1	101.593 %	104.539 %	0.006 ppb	0.229 ppb	106.301 %
Concentration per Run 2	101.925 %	106.330 %	0.009 ppb	0.241 ppb	106.090 %
Concentration per Run 3	102.030 %	107.162 %	0.014 ppb	0.246 ppb	104.046 %
Concentration RSD	0.2 %	1.3 %	42.7 %	3.8 %	1.2 %

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Analysis index: 114 Analysis started at: 12/17/2021 6:04:40 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.263 %	119.870 %	58.864 ppb	5,701.593 ppb	5,596.005 ppb	55.867 ppb	6,034.114 ppb	5,878.690 ppb	100.486 %
Concentration per Run 1	89.877 %	119.412 %	58.496 ppb	5,577.601 ppb	5,442.978 ppb	54.993 ppb	5,935.290 ppb	5,793.277 ppb	100.542 %
Concentration per Run 2	91.023 %	119.020 %	59.035 ppb	5,849.989 ppb	5,655.233 ppb	56.389 ppb	5,919.303 ppb	5,929.970 ppb	102.091 %
Concentration per Run 3	89.890 %	121.177 %	59.060 ppb	5,677.189 ppb	5,689.803 ppb	56.218 ppb	6,247.749 ppb	5,912.822 ppb	98.825 %
Recovery Percentage 1			98.106 %	95.027 %	93.267 %	93.111 %	100.569 %	97.978 %	
Concentration RSD	0.7 %	1.0 %	0.5 %	2.4 %	2.4 %	1.4 %	3.1 %	1.3 %	1.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	55.565 ppb	55.305 ppb	55.703 ppb	5,665.630 ppb	56.011 ppb	56.224 ppb	56.218 ppb	56.147 ppb	96.753 %
Concentration per Run 1	55.240 ppb	55.820 ppb	56.672 ppb	5,640.548 ppb	57.333 ppb	58.016 ppb	57.609 ppb	56.638 ppb	92.274 %
Concentration per Run 2	56.581 ppb	55.175 ppb	55.288 ppb	5,754.209 ppb	55.567 ppb	55.034 ppb	55.394 ppb	55.675 ppb	98.589 %
Concentration per Run 3	54.873 ppb	54.921 ppb	55.150 ppb	5,602.134 ppb	55.133 ppb	55.623 ppb	55.652 ppb	56.128 ppb	99.397 %
Recovery Percentage 1	92.608 %	92.176 %	92.839 %	94.427 %	93.352 %	93.707 %	93.697 %	93.578 %	
Concentration RSD	1.6 %	0.8 %	1.5 %	1.4 %	2.1 %	2.8 %	2.2 %	0.9 %	4.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	56.302 ppb	54.731 ppb	59.661 ppb	101.040 %	58.966 ppb	59.406 ppb	103.601 %	55.900 ppb	55.381 ppb
Concentration per Run 1	57.709 ppb	55.332 ppb	58.360 ppb	99.481 %	59.552 ppb	59.011 ppb	102.142 %	54.452 ppb	54.064 ppb
Concentration per Run 2	56.265 ppb	54.615 ppb	60.945 ppb	100.859 %	58.386 ppb	59.033 ppb	105.482 %	55.466 ppb	55.633 ppb
Concentration per Run 3	54.931 ppb	54.246 ppb	59.678 ppb	102.781 %	58.960 ppb	60.173 ppb	103.178 %	57.781 ppb	56.447 ppb
Recovery Percentage 1	93.836 %	91.218 %	99.435 %		98.277 %	99.009 %		93.166 %	92.302 %
Concentration RSD	2.5 %	1.0 %	2.2 %	1.6 %	1.0 %	1.1 %	1.7 %	3.1 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.609 %	105.594 %	58.109 ppb	57.573 ppb	106.181 %
Concentration per Run 1	98.692 %	103.252 %	57.685 ppb	57.323 ppb	105.973 %
Concentration per Run 2	101.290 %	107.183 %	58.254 ppb	58.007 ppb	106.062 %
Concentration per Run 3	101.845 %	106.347 %	58.389 ppb	57.389 ppb	106.506 %
Recovery Percentage 1			96.848 %	95.955 %	
Concentration RSD	1.7 %	2.0 %	0.6 %	0.7 %	0.3 %

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Analysis index: 115 Analysis started at: 12/17/2021 6:09:32 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.450 %	116.013 %	0.008 ppb	-3.072 ppb	0.573 ppb	-0.355 ppb	-2.179 ppb	13.348 ppb	88.307 %
Concentration per Run 1	88.526 %	114.706 %	0.006 ppb	-2.179 ppb	2.146 ppb	-0.555 ppb	-10.882 ppb	2.022 ppb	87.086 %
Concentration per Run 2	90.123 %	115.490 %	0.008 ppb	-4.140 ppb	0.250 ppb	-0.381 ppb	2.565 ppb	15.960 ppb	88.201 %
Concentration per Run 3	89.701 %	117.843 %	0.008 ppb	-2.895 ppb	-0.679 ppb	-0.130 ppb	1.780 ppb	22.062 ppb	89.633 %
Recovery Percentage 1			1.503 %	-3.072 %	0.818 %	-3.551 %	-2.179 %	13.348 %	
Concentration RSD	0.9 %	1.4 %	14.4 %	32.3 %	251.4 %	60.2 %	346.3 %	77.0 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.041 ppb	-0.004 ppb	0.074 ppb	25.689 ppb	0.006 ppb	-0.010 ppb	0.024 ppb	-0.121 ppb	98.329 %
Concentration per Run 1	-0.027 ppb	-0.003 ppb	0.150 ppb	26.342 ppb	-0.003 ppb	0.005 ppb	0.011 ppb	-0.091 ppb	94.964 %
Concentration per Run 2	-0.054 ppb	-0.004 ppb	0.055 ppb	24.836 ppb	0.025 ppb	0.014 ppb	0.046 ppb	-0.110 ppb	98.502 %
Concentration per Run 3	-0.043 ppb	-0.004 ppb	0.017 ppb	25.889 ppb	-0.003 ppb	-0.049 ppb	0.014 ppb	-0.162 ppb	101.520 %
Recovery Percentage 1	-0.829 %	-0.362 %	7.403 %	51.378 %	1.290 %	-0.493 %	2.386 %	-1.212 %	
Concentration RSD	32.5 %	12.3 %	92.2 %	3.0 %	246.2 %	343.1 %	80.0 %	30.4 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.047 ppb	0.132 ppb	0.005 ppb	103.141 %	0.004 ppb	0.004 ppb	105.694 %	0.010 ppb	-0.067 ppb
Concentration per Run 1	0.059 ppb	0.115 ppb	0.009 ppb	101.034 %	0.007 ppb	0.005 ppb	103.823 %	0.017 ppb	-0.051 ppb
Concentration per Run 2	0.049 ppb	0.143 ppb	-0.005 ppb	104.377 %	0.006 ppb	0.003 ppb	107.517 %	0.014 ppb	-0.068 ppb
Concentration per Run 3	0.033 ppb	0.136 ppb	0.011 ppb	104.011 %	0.000 ppb	0.005 ppb	105.742 %	-0.001 ppb	-0.083 ppb
Recovery Percentage 1	9.374 %	2.631 %	1.028 %		1.077 %	2.227 %		0.249 %	-13.493 %
Concentration RSD	28.6 %	11.3 %	171.7 %	1.8 %	93.6 %	35.6 %	1.7 %	96.2 %	23.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.499 %	103.843 %	0.328 ppb	0.013 ppb	108.150 %
Concentration per Run 1	97.837 %	101.549 %	0.357 ppb	0.018 ppb	107.195 %
Concentration per Run 2	99.409 %	104.602 %	0.335 ppb	0.011 ppb	108.963 %
Concentration per Run 3	101.252 %	105.378 %	0.292 ppb	0.012 ppb	108.292 %
Recovery Percentage 1			32.818 %	1.334 %	
Concentration RSD	1.7 %	1.9 %	10.0 %	28.0 %	0.8 %

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Analysis index: 116 Analysis started at: 12/17/2021 6:16:00 PM
 Analysis label: WG1583811-1 6020TL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.188 %	120.196 %	0.001 ppb	-3.958 ppb	3.870 ppb	1.120 ppb	-8.752 ppb	11.103 ppb	92.506 %
Concentration per Run 1	89.148 %	107.059 %	0.002 ppb	-3.502 ppb	4.305 ppb	0.455 ppb	-17.379 ppb	9.917 ppb	92.859 %
Concentration per Run 2	88.895 %	128.432 %	0.006 ppb	-6.747 ppb	3.629 ppb	1.529 ppb	-1.092 ppb	15.090 ppb	91.910 %
Concentration per Run 3	89.520 %	125.098 %	-0.005 ppb	-1.627 ppb	3.675 ppb	1.377 ppb	-7.785 ppb	8.304 ppb	92.748 %
Concentration RSD	0.4 %	9.6 %	616.5 %	65.4 %	9.8 %	51.9 %	93.5 %	31.9 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.055 ppb	0.660 ppb	0.089 ppb	15.616 ppb	0.006 ppb	0.110 ppb	-0.005 ppb	-0.171 ppb	96.124 %
Concentration per Run 1	-0.066 ppb	0.696 ppb	0.008 ppb	16.430 ppb	-0.003 ppb	0.135 ppb	0.054 ppb	-0.112 ppb	93.349 %
Concentration per Run 2	-0.030 ppb	0.653 ppb	0.071 ppb	14.883 ppb	0.013 ppb	0.102 ppb	-0.048 ppb	-0.208 ppb	95.233 %
Concentration per Run 3	-0.068 ppb	0.632 ppb	0.187 ppb	15.536 ppb	0.009 ppb	0.093 ppb	-0.022 ppb	-0.194 ppb	99.790 %
Concentration RSD	39.2 %	4.9 %	102.6 %	5.0 %	128.3 %	20.1 %	997.5 %	30.3 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.027 ppb	0.039 ppb	0.003 ppb	101.863 %	-0.002 ppb	0.001 ppb	104.905 %	-0.004 ppb	-0.049 ppb
Concentration per Run 1	0.036 ppb	0.152 ppb	-0.006 ppb	99.532 %	-0.002 ppb	0.003 ppb	101.798 %	0.000 ppb	-0.059 ppb
Concentration per Run 2	0.027 ppb	0.038 ppb	0.011 ppb	102.651 %	-0.002 ppb	0.000 ppb	106.204 %	-0.007 ppb	-0.060 ppb
Concentration per Run 3	0.018 ppb	-0.073 ppb	0.004 ppb	103.406 %	-0.001 ppb	0.000 ppb	106.713 %	-0.004 ppb	-0.029 ppb
Concentration RSD	33.1 %	287.1 %	301.1 %	2.0 %	27.2 %	173.2 %	2.6 %	92.0 %	35.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.487 %	103.509 %	0.079 ppb	0.005 ppb	106.528 %
Concentration per Run 1	95.480 %	100.049 %	0.083 ppb	0.004 ppb	104.328 %
Concentration per Run 2	99.844 %	105.696 %	0.080 ppb	0.006 ppb	107.718 %
Concentration per Run 3	100.138 %	104.782 %	0.075 ppb	0.005 ppb	107.539 %
Concentration RSD	2.6 %	2.9 %	4.9 %	14.2 %	1.8 %

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Analysis index: 117 Analysis started at: 12/17/2021 6:20:48 PM
 Analysis label: WG1583819-1 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.139 %	121.634 %	-0.004 ppb	-3.066 ppb	5.615 ppb	1.175 ppb	-13.218 ppb	10.968 ppb	93.172 %
Concentration per Run 1	91.464 %	115.490 %	-0.001 ppb	-3.082 ppb	6.832 ppb	1.015 ppb	-10.871 ppb	16.351 ppb	93.437 %
Concentration per Run 2	91.129 %	122.549 %	0.001 ppb	-6.599 ppb	5.528 ppb	1.160 ppb	-20.780 ppb	1.748 ppb	92.604 %
Concentration per Run 3	90.823 %	126.863 %	-0.012 ppb	0.483 ppb	4.484 ppb	1.349 ppb	-8.001 ppb	14.804 ppb	93.475 %
Concentration RSD	0.4 %	4.7 %	185.7 %	115.5 %	21.0 %	14.2 %	50.7 %	73.1 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.000 ppb	0.493 ppb	0.054 ppb	8.484 ppb	0.001 ppb	0.042 ppb	0.031 ppb	4.849 ppb	97.681 %
Concentration per Run 1	0.012 ppb	0.446 ppb	0.078 ppb	8.429 ppb	0.001 ppb	0.052 ppb	0.091 ppb	5.007 ppb	94.003 %
Concentration per Run 2	0.007 ppb	0.546 ppb	0.000 ppb	7.908 ppb	0.005 ppb	0.039 ppb	-0.012 ppb	4.699 ppb	98.809 %
Concentration per Run 3	-0.019 ppb	0.485 ppb	0.083 ppb	9.114 ppb	-0.003 ppb	0.035 ppb	0.014 ppb	4.842 ppb	100.232 %
Concentration RSD	8,852.1 %	10.2 %	86.0 %	7.1 %	318.5 %	20.6 %	171.8 %	3.2 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.014 ppb	0.060 ppb	0.003 ppb	103.875 %	-0.005 ppb	0.002 ppb	106.391 %	-0.003 ppb	-0.029 ppb
Concentration per Run 1	0.043 ppb	0.007 ppb	0.006 ppb	103.873 %	-0.005 ppb	0.000 ppb	104.763 %	-0.005 ppb	-0.052 ppb
Concentration per Run 2	0.003 ppb	0.035 ppb	0.002 ppb	103.744 %	-0.004 ppb	0.003 ppb	107.694 %	-0.004 ppb	-0.045 ppb
Concentration per Run 3	-0.005 ppb	0.136 ppb	0.002 ppb	104.009 %	-0.006 ppb	0.003 ppb	106.717 %	0.000 ppb	0.009 ppb
Concentration RSD	188.4 %	113.9 %	64.9 %	0.1 %	18.7 %	86.6 %	1.4 %	98.8 %	115.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.548 %	105.336 %	0.047 ppb	0.007 ppb	108.948 %
Concentration per Run 1	98.982 %	103.650 %	0.040 ppb	0.008 ppb	107.620 %
Concentration per Run 2	101.244 %	105.413 %	0.050 ppb	0.006 ppb	109.777 %
Concentration per Run 3	101.419 %	106.945 %	0.052 ppb	0.006 ppb	109.447 %
Concentration RSD	1.4 %	1.6 %	14.0 %	16.7 %	1.1 %

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Analysis index: 118 Analysis started at: 12/17/2021 6:25:37 PM
 Analysis label: I2168712-05 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.230 %	112.811 %	0.001 ppb	1.790 ppb	5.932 ppb	3.244 ppb	-9.568 ppb	9.309 ppb	95.423 %
Concentration per Run 1	91.342 %	107.451 %	0.003 ppb	4.203 ppb	6.219 ppb	3.624 ppb	-10.355 ppb	7.829 ppb	94.648 %
Concentration per Run 2	91.574 %	115.098 %	0.006 ppb	-1.395 ppb	6.742 ppb	2.168 ppb	-6.774 ppb	6.572 ppb	95.935 %
Concentration per Run 3	90.773 %	115.883 %	-0.005 ppb	2.560 ppb	4.834 ppb	3.939 ppb	-11.573 ppb	13.526 ppb	95.685 %
Concentration RSD	0.5 %	4.1 %	448.6 %	160.8 %	16.6 %	29.1 %	26.1 %	39.8 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.037 ppb	0.346 ppb	0.049 ppb	7.183 ppb	0.027 ppb	0.042 ppb	0.120 ppb	0.317 ppb	99.623 %
Concentration per Run 1	-0.040 ppb	0.344 ppb	0.024 ppb	4.663 ppb	0.005 ppb	0.066 ppb	0.127 ppb	0.349 ppb	96.752 %
Concentration per Run 2	-0.042 ppb	0.387 ppb	0.019 ppb	7.269 ppb	0.028 ppb	-0.046 ppb	0.091 ppb	0.214 ppb	100.136 %
Concentration per Run 3	-0.030 ppb	0.306 ppb	0.103 ppb	9.616 ppb	0.047 ppb	0.108 ppb	0.143 ppb	0.387 ppb	101.981 %
Concentration RSD	17.3 %	11.6 %	97.6 %	34.5 %	77.4 %	187.9 %	22.2 %	28.6 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.005 ppb	-0.017 ppb	0.174 ppb	103.718 %	-0.003 ppb	0.002 ppb	106.727 %	-0.001 ppb	0.148 ppb
Concentration per Run 1	0.003 ppb	0.037 ppb	0.148 ppb	101.965 %	0.000 ppb	0.005 ppb	104.333 %	0.004 ppb	0.130 ppb
Concentration per Run 2	-0.005 ppb	-0.062 ppb	0.200 ppb	104.726 %	-0.007 ppb	0.000 ppb	106.644 %	-0.003 ppb	0.171 ppb
Concentration per Run 3	0.017 ppb	-0.025 ppb	0.175 ppb	104.462 %	-0.001 ppb	0.000 ppb	109.205 %	-0.005 ppb	0.144 ppb
Concentration RSD	218.9 %	301.4 %	14.9 %	1.5 %	128.5 %	173.2 %	2.3 %	415.9 %	13.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.430 %	105.242 %	0.032 ppb	0.026 ppb	109.027 %
Concentration per Run 1	99.174 %	102.521 %	0.027 ppb	0.026 ppb	108.618 %
Concentration per Run 2	102.407 %	106.269 %	0.033 ppb	0.027 ppb	109.008 %
Concentration per Run 3	102.710 %	106.936 %	0.037 ppb	0.025 ppb	109.454 %
Concentration RSD	1.9 %	2.3 %	14.5 %	2.9 %	0.4 %

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Analysis index: 119 Analysis started at: 12/17/2021 6:30:26 PM
 Analysis label: L2168712-10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.762 %	117.713 %	-0.001 ppb	-1.527 ppb	4.533 ppb	2.801 ppb	-6.523 ppb	69.520 ppb	95.888 %
Concentration per Run 1	91.624 %	108.628 %	-0.001 ppb	0.419 ppb	5.204 ppb	3.027 ppb	-12.769 ppb	78.563 ppb	95.476 %
Concentration per Run 2	92.113 %	118.432 %	0.003 ppb	-0.716 ppb	4.760 ppb	3.344 ppb	-13.933 ppb	52.923 ppb	96.397 %
Concentration per Run 3	91.548 %	126.079 %	-0.005 ppb	-4.285 ppb	3.634 ppb	2.033 ppb	7.132 ppb	77.075 ppb	95.790 %
Concentration RSD	0.3 %	7.4 %	440.5 %	160.8 %	17.9 %	24.4 %	181.5 %	20.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.001 ppb	0.362 ppb	0.405 ppb	9.972 ppb	0.005 ppb	0.080 ppb	0.078 ppb	0.295 ppb	99.155 %
Concentration per Run 1	-0.067 ppb	0.461 ppb	0.300 ppb	12.656 ppb	0.005 ppb	0.128 ppb	0.051 ppb	0.323 ppb	95.483 %
Concentration per Run 2	0.057 ppb	0.315 ppb	0.380 ppb	7.164 ppb	0.013 ppb	-0.005 ppb	0.107 ppb	0.283 ppb	100.655 %
Concentration per Run 3	0.005 ppb	0.310 ppb	0.537 ppb	10.094 ppb	-0.003 ppb	0.118 ppb	0.077 ppb	0.277 ppb	101.328 %
Concentration RSD	4,609.3 %	23.7 %	29.7 %	27.6 %	150.0 %	92.1 %	36.0 %	8.4 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.028 ppb	-0.029 ppb	0.322 ppb	105.306 %	-0.003 ppb	0.001 ppb	106.246 %	-0.004 ppb	0.111 ppb
Concentration per Run 1	0.011 ppb	-0.029 ppb	0.341 ppb	104.453 %	-0.004 ppb	0.003 ppb	102.876 %	-0.005 ppb	0.100 ppb
Concentration per Run 2	0.033 ppb	0.004 ppb	0.301 ppb	105.784 %	-0.005 ppb	0.000 ppb	107.027 %	-0.006 ppb	0.103 ppb
Concentration per Run 3	0.040 ppb	-0.062 ppb	0.325 ppb	105.682 %	-0.001 ppb	0.000 ppb	108.835 %	-0.002 ppb	0.130 ppb
Concentration RSD	54.1 %	112.3 %	6.3 %	0.7 %	54.8 %	173.2 %	2.9 %	55.7 %	15.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.762 %	105.607 %	0.028 ppb	0.020 ppb	109.889 %
Concentration per Run 1	99.428 %	102.643 %	0.025 ppb	0.023 ppb	109.894 %
Concentration per Run 2	100.660 %	105.276 %	0.030 ppb	0.020 ppb	110.001 %
Concentration per Run 3	102.199 %	108.902 %	0.028 ppb	0.017 ppb	109.772 %
Concentration RSD	1.4 %	3.0 %	8.6 %	14.3 %	0.1 %

Analysis index: 120 Analysis started at: 12/17/2021 6:35:15 PM
 Analysis label: L2166777-10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.918 %	122.680 %	0.006 ppb	-0.937 ppb	5.176 ppb	2.206 ppb	-11.276 ppb	34.550 ppb	96.209 %
Concentration per Run 1	92.975 %	112.157 %	-0.001 ppb	-1.548 ppb	4.082 ppb	2.443 ppb	-13.215 ppb	77.974 ppb	95.924 %
Concentration per Run 2	92.834 %	128.824 %	0.014 ppb	-0.850 ppb	6.135 ppb	1.662 ppb	-8.118 ppb	19.686 ppb	96.641 %
Concentration per Run 3	92.944 %	127.059 %	0.005 ppb	-0.413 ppb	5.311 ppb	2.514 ppb	-12.495 ppb	5.989 ppb	96.062 %
Concentration RSD	0.1 %	7.5 %	125.0 %	61.1 %	20.0 %	21.4 %	24.5 %	110.6 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.014 ppb	0.338 ppb	0.402 ppb	5.382 ppb	0.001 ppb	0.314 ppb	0.201 ppb	0.043 ppb	99.687 %
Concentration per Run 1	-0.015 ppb	0.255 ppb	0.488 ppb	6.405 ppb	-0.003 ppb	0.285 ppb	0.191 ppb	0.099 ppb	97.444 %
Concentration per Run 2	-0.019 ppb	0.392 ppb	0.405 ppb	4.573 ppb	0.005 ppb	0.319 ppb	0.217 ppb	-0.044 ppb	99.425 %
Concentration per Run 3	-0.008 ppb	0.367 ppb	0.315 ppb	5.168 ppb	0.001 ppb	0.338 ppb	0.193 ppb	0.075 ppb	102.193 %
Concentration RSD	41.5 %	21.5 %	21.5 %	17.4 %	359.5 %	8.6 %	7.3 %	178.0 %	2.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.011 ppb	-0.055 ppb	0.182 ppb	106.071 %	-0.004 ppb	0.000 ppb	107.238 %	-0.013 ppb	0.068 ppb
Concentration per Run 1	0.026 ppb	-0.067 ppb	0.203 ppb	105.373 %	-0.003 ppb	0.000 ppb	102.429 %	-0.015 ppb	0.075 ppb
Concentration per Run 2	0.010 ppb	-0.064 ppb	0.152 ppb	105.715 %	-0.004 ppb	0.000 ppb	108.163 %	-0.010 ppb	0.062 ppb
Concentration per Run 3	-0.005 ppb	-0.033 ppb	0.191 ppb	107.126 %	-0.005 ppb	0.000 ppb	111.121 %	-0.015 ppb	0.067 ppb
Concentration RSD	147.1 %	34.6 %	14.4 %	0.9 %	23.9 %	N/A	4.1 %	19.2 %	9.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.628 %	106.137 %	0.017 ppb	0.007 ppb	110.898 %
Concentration per Run 1	100.359 %	104.230 %	0.011 ppb	0.008 ppb	110.500 %
Concentration per Run 2	101.665 %	105.829 %	0.016 ppb	0.008 ppb	111.047 %
Concentration per Run 3	102.861 %	108.354 %	0.025 ppb	0.006 ppb	111.148 %
Concentration RSD	1.2 %	2.0 %	39.9 %	20.2 %	0.3 %



Analysis index: 121 Analysis started at: 12/17/2021 6:42:22 PM
 Analysis label: WG1583819-2D5 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.333 %	119.543 %	9.934 ppb	1,993.083 ppb	2,002.296 ppb	388.133 ppb	2,016.210 ppb	1,740.048 ppb	98.804 %
Concentration per Run 1	91.823 %	116.471 %	9.784 ppb	1,995.974 ppb	2,083.613 ppb	375.788 ppb	1,980.523 ppb	1,630.618 ppb	98.219 %
Concentration per Run 2	91.348 %	120.000 %	9.886 ppb	2,027.782 ppb	1,944.123 ppb	392.283 ppb	2,015.451 ppb	2,081.429 ppb	99.020 %
Concentration per Run 3	90.828 %	122.157 %	10.133 ppb	1,955.492 ppb	1,979.152 ppb	396.329 ppb	2,052.658 ppb	1,508.096 ppb	99.173 %
Concentration RSD	0.5 %	2.4 %	1.8 %	1.8 %	3.6 %	2.8 %	1.8 %	17.4 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	93.512 ppb	37.150 ppb	94.762 ppb	195.346 ppb	91.905 ppb	92.397 ppb	46.697 ppb	91.937 ppb	96.609 %
Concentration per Run 1	94.567 ppb	37.511 ppb	93.681 ppb	194.216 ppb	92.599 ppb	94.610 ppb	47.287 ppb	92.403 ppb	93.755 %
Concentration per Run 2	93.170 ppb	36.520 ppb	94.571 ppb	192.352 ppb	91.625 ppb	91.368 ppb	46.045 ppb	89.779 ppb	99.248 %
Concentration per Run 3	92.801 ppb	37.419 ppb	96.033 ppb	199.469 ppb	91.493 ppb	91.212 ppb	46.758 ppb	93.630 ppb	96.825 %
Concentration RSD	1.0 %	1.5 %	1.3 %	1.9 %	0.7 %	2.1 %	1.3 %	2.1 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	23.574 ppb	21.084 ppb	191.625 ppb	103.269 %	10.127 ppb	10.340 ppb	106.268 %	84.377 ppb	371.140 ppb
Concentration per Run 1	23.105 ppb	21.004 ppb	187.279 ppb	102.111 %	10.023 ppb	10.617 ppb	102.805 %	81.257 ppb	362.787 ppb
Concentration per Run 2	23.998 ppb	20.945 ppb	191.769 ppb	104.098 %	10.357 ppb	10.377 ppb	106.936 %	85.258 ppb	383.172 ppb
Concentration per Run 3	23.617 ppb	21.305 ppb	195.828 ppb	103.599 %	10.000 ppb	10.027 ppb	109.063 %	86.615 ppb	367.461 ppb
Concentration RSD	1.9 %	0.9 %	2.2 %	1.0 %	2.0 %	2.9 %	3.0 %	3.3 %	2.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.072 %	104.707 %	23.546 ppb	100.656 ppb	108.806 %
Concentration per Run 1	97.686 %	101.937 %	23.580 ppb	100.073 ppb	108.624 %
Concentration per Run 2	101.291 %	105.972 %	23.446 ppb	100.487 ppb	109.509 %
Concentration per Run 3	101.240 %	106.213 %	23.613 ppb	101.408 ppb	108.285 %
Concentration RSD	2.1 %	2.3 %	0.4 %	0.7 %	0.6 %

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Analysis index: 122 Analysis started at: 12/17/2021 6:52:00 PM
 Analysis label: WG1583811-2D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.677 %	120.392 %	9.969 ppb	1,983.594 ppb	1,963.799 ppb	382.177 ppb	2,055.605 ppb	1,844.831 ppb	99.170 %
Concentration per Run 1	91.752 %	114.902 %	9.941 ppb	1,999.345 ppb	1,996.033 ppb	369.825 ppb	2,104.965 ppb	2,013.515 ppb	98.635 %
Concentration per Run 2	91.774 %	126.863 %	9.854 ppb	1,930.509 ppb	1,862.705 ppb	377.588 ppb	1,905.628 ppb	1,719.931 ppb	99.388 %
Concentration per Run 3	91.506 %	119.412 %	10.113 ppb	2,020.927 ppb	2,032.660 ppb	399.117 ppb	2,156.222 ppb	1,801.048 ppb	99.488 %
Concentration RSD	0.2 %	5.0 %	1.3 %	2.4 %	4.6 %	4.0 %	6.4 %	8.2 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	93.191 ppb	37.774 ppb	94.235 ppb	194.946 ppb	91.131 ppb	91.715 ppb	45.207 ppb	92.097 ppb	97.950 %
Concentration per Run 1	93.552 ppb	38.344 ppb	93.688 ppb	195.626 ppb	93.637 ppb	93.637 ppb	45.844 ppb	93.106 ppb	96.111 %
Concentration per Run 2	93.135 ppb	37.063 ppb	95.294 ppb	200.868 ppb	89.281 ppb	90.149 ppb	45.036 ppb	91.435 ppb	98.245 %
Concentration per Run 3	92.886 ppb	37.916 ppb	93.724 ppb	188.343 ppb	90.476 ppb	91.359 ppb	44.740 ppb	91.749 ppb	99.495 %
Concentration RSD	0.4 %	1.7 %	1.0 %	3.2 %	2.5 %	1.9 %	1.3 %	1.0 %	1.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	22.632 ppb	21.333 ppb	191.416 ppb	102.815 %	10.124 ppb	10.132 ppb	104.735 %	82.228 ppb	380.061 ppb
Concentration per Run 1	22.427 ppb	21.220 ppb	185.860 ppb	102.902 %	10.198 ppb	10.050 ppb	101.747 %	81.236 ppb	377.443 ppb
Concentration per Run 2	22.858 ppb	22.544 ppb	194.509 ppb	102.383 %	10.107 ppb	10.212 ppb	104.546 %	82.462 ppb	380.479 ppb
Concentration per Run 3	22.613 ppb	20.234 ppb	193.880 ppb	103.159 %	10.067 ppb	10.134 ppb	107.911 %	82.986 ppb	382.260 ppb
Concentration RSD	1.0 %	5.4 %	2.5 %	0.4 %	0.7 %	0.8 %	2.9 %	1.1 %	0.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.346 %	105.374 %	23.593 ppb	100.671 ppb	108.896 %
Concentration per Run 1	99.379 %	101.816 %	23.715 ppb	100.112 ppb	108.630 %
Concentration per Run 2	101.291 %	107.316 %	23.441 ppb	100.325 ppb	108.969 %
Concentration per Run 3	100.369 %	106.990 %	23.623 ppb	101.576 ppb	109.088 %
Concentration RSD	1.0 %	2.9 %	0.6 %	0.8 %	0.2 %

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Analysis index: 123 Analysis started at: 12/17/2021 6:56:47 PM
 Analysis label: WG1583811-3D10 6020TL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.697 %	121.373 %	4.884 ppb	957.895 ppb	968.973 ppb	187.176 ppb	968.627 ppb	749.166 ppb	97.585 %
Concentration per Run 1	91.882 %	117.647 %	4.828 ppb	956.959 ppb	972.994 ppb	179.923 ppb	878.327 ppb	730.661 ppb	96.899 %
Concentration per Run 2	90.814 %	124.118 %	4.926 ppb	956.251 ppb	1,007.548 ppb	193.268 ppb	1,073.400 ppb	694.633 ppb	98.454 %
Concentration per Run 3	92.394 %	122.353 %	4.897 ppb	960.473 ppb	926.375 ppb	188.338 ppb	954.154 ppb	822.203 ppb	97.401 %
Concentration RSD	0.9 %	2.8 %	1.0 %	0.2 %	4.2 %	3.6 %	10.2 %	8.8 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	45.970 ppb	18.474 ppb	46.110 ppb	96.684 ppb	44.107 ppb	44.603 ppb	23.179 ppb	45.834 ppb	96.310 %
Concentration per Run 1	46.021 ppb	18.461 ppb	44.655 ppb	96.103 ppb	43.791 ppb	44.394 ppb	23.296 ppb	45.188 ppb	93.288 %
Concentration per Run 2	46.093 ppb	18.374 ppb	47.140 ppb	92.508 ppb	44.262 ppb	45.800 ppb	23.199 ppb	46.166 ppb	97.244 %
Concentration per Run 3	45.796 ppb	18.587 ppb	46.537 ppb	101.440 ppb	44.267 ppb	43.615 ppb	23.042 ppb	46.149 ppb	98.397 %
Concentration RSD	0.3 %	0.6 %	2.8 %	4.6 %	0.6 %	2.5 %	0.6 %	1.2 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	11.168 ppb	10.877 ppb	93.915 ppb	103.672 %	4.912 ppb	5.009 ppb	104.853 %	38.831 ppb	183.546 ppb
Concentration per Run 1	10.744 ppb	10.104 ppb	91.206 ppb	104.136 %	4.955 ppb	5.083 ppb	100.926 %	37.544 ppb	181.648 ppb
Concentration per Run 2	11.429 ppb	11.528 ppb	95.860 ppb	102.548 %	4.923 ppb	5.059 ppb	107.085 %	38.359 ppb	185.814 ppb
Concentration per Run 3	11.332 ppb	10.999 ppb	94.678 ppb	104.331 %	4.858 ppb	4.884 ppb	106.548 %	40.589 ppb	183.175 ppb
Concentration RSD	3.3 %	6.6 %	2.6 %	0.9 %	1.0 %	2.2 %	3.3 %	4.1 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.288 %	105.491 %	11.496 ppb	48.919 ppb	108.375 %
Concentration per Run 1	99.867 %	103.511 %	11.482 ppb	48.399 ppb	108.499 %
Concentration per Run 2	101.719 %	106.576 %	11.464 ppb	49.017 ppb	108.135 %
Concentration per Run 3	102.279 %	106.386 %	11.541 ppb	49.340 ppb	108.492 %
Concentration RSD	1.2 %	1.6 %	0.3 %	1.0 %	0.2 %

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Analysis index: 124 Analysis started at: 12/17/2021 7:01:36 PM
 Analysis label: WG1583811-5d10 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.483 %	116.994 %	40.653 ppb	4,071.571 ppb	4,075.903 ppb	39.287 ppb	4,186.825 ppb	3,927.371 ppb	98.758 %
Concentration per Run 1	89.947 %	114.510 %	40.352 ppb	4,018.120 ppb	4,068.967 ppb	37.853 ppb	4,169.664 ppb	3,708.971 ppb	98.844 %
Concentration per Run 2	89.213 %	114.706 %	40.167 ppb	4,177.926 ppb	4,161.548 ppb	39.991 ppb	4,314.244 ppb	3,946.636 ppb	99.066 %
Concentration per Run 3	89.290 %	121.765 %	41.441 ppb	4,018.666 ppb	3,997.195 ppb	40.019 ppb	4,076.568 ppb	4,126.507 ppb	98.365 %
Concentration RSD	0.5 %	3.5 %	1.7 %	2.3 %	2.0 %	3.2 %	2.9 %	5.3 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	40.150 ppb	39.950 ppb	40.264 ppb	3,937.047 ppb	40.228 ppb	39.711 ppb	38.936 ppb	39.943 ppb	97.203 %
Concentration per Run 1	40.868 ppb	40.457 ppb	40.893 ppb	3,967.307 ppb	40.819 ppb	40.414 ppb	39.767 ppb	40.331 ppb	93.297 %
Concentration per Run 2	40.083 ppb	40.677 ppb	41.427 ppb	3,971.655 ppb	40.736 ppb	39.670 ppb	39.075 ppb	40.720 ppb	97.669 %
Concentration per Run 3	39.498 ppb	38.717 ppb	38.471 ppb	3,872.179 ppb	39.130 ppb	39.047 ppb	37.965 ppb	38.778 ppb	100.643 %
Concentration RSD	1.7 %	2.7 %	3.9 %	1.4 %	2.4 %	1.7 %	2.3 %	2.6 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	38.998 ppb	38.352 ppb	40.250 ppb	101.213 %	3.396 ppb	40.916 ppb	102.903 %	43.471 ppb	40.427 ppb
Concentration per Run 1	39.567 ppb	37.662 ppb	39.768 ppb	99.611 %	3.406 ppb	41.036 ppb	98.608 %	44.361 ppb	41.989 ppb
Concentration per Run 2	39.937 ppb	39.894 ppb	40.417 ppb	102.859 %	3.458 ppb	41.449 ppb	103.281 %	43.450 ppb	40.360 ppb
Concentration per Run 3	37.490 ppb	37.500 ppb	40.566 ppb	101.169 %	3.324 ppb	40.262 ppb	106.819 %	42.601 ppb	38.931 ppb
Concentration RSD	3.4 %	3.5 %	1.1 %	1.6 %	2.0 %	1.5 %	4.0 %	2.0 %	3.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.908 %	104.010 %	37.591 ppb	39.953 ppb	107.967 %
Concentration per Run 1	97.858 %	100.678 %	35.700 ppb	39.203 ppb	109.634 %
Concentration per Run 2	101.572 %	105.581 %	37.972 ppb	40.222 ppb	107.139 %
Concentration per Run 3	100.294 %	105.771 %	39.101 ppb	40.435 ppb	107.127 %
Concentration RSD	1.9 %	2.8 %	4.6 %	1.6 %	1.3 %

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Analysis index: 125 Analysis started at: 12/17/2021 7:06:25 PM
 Analysis label: WG1583811-6D5 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.001 %	111.046 %	0.001 ppb	-3.694 ppb	1.554 ppb	0.938 ppb	-6.891 ppb	23.229 ppb	97.596 %
Concentration per Run 1	90.456 %	107.843 %	0.004 ppb	-2.245 ppb	-0.679 ppb	1.809 ppb	-5.182 ppb	16.945 ppb	97.475 %
Concentration per Run 2	89.816 %	108.039 %	-0.005 ppb	-2.351 ppb	4.183 ppb	0.127 ppb	-17.844 ppb	16.189 ppb	97.984 %
Concentration per Run 3	89.732 %	117.255 %	0.004 ppb	-6.487 ppb	1.159 ppb	0.877 ppb	2.352 ppb	36.552 ppb	97.329 %
Concentration RSD	0.4 %	4.8 %	711.1 %	65.5 %	157.9 %	89.9 %	148.1 %	49.7 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.040 ppb	0.072 ppb	-0.026 ppb	11.766 ppb	0.001 ppb	0.009 ppb	0.020 ppb	0.009 ppb	97.310 %
Concentration per Run 1	-0.026 ppb	0.069 ppb	-0.011 ppb	12.147 ppb	0.001 ppb	0.072 ppb	0.054 ppb	0.067 ppb	93.388 %
Concentration per Run 2	-0.054 ppb	0.061 ppb	0.003 ppb	13.250 ppb	0.005 ppb	-0.001 ppb	0.026 ppb	0.005 ppb	100.444 %
Concentration per Run 3	-0.042 ppb	0.085 ppb	-0.068 ppb	9.900 ppb	-0.003 ppb	-0.045 ppb	-0.020 ppb	-0.045 ppb	98.098 %
Concentration RSD	35.1 %	17.2 %	147.8 %	14.5 %	304.7 %	654.4 %	187.8 %	648.0 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.039 ppb	0.061 ppb	0.014 ppb	101.704 %	-0.003 ppb	0.004 ppb	104.643 %	0.991 ppb	-0.005 ppb
Concentration per Run 1	0.036 ppb	0.175 ppb	0.023 ppb	99.244 %	-0.005 ppb	0.003 ppb	101.100 %	0.995 ppb	-0.010 ppb
Concentration per Run 2	0.041 ppb	0.004 ppb	0.012 ppb	102.165 %	-0.005 ppb	0.008 ppb	106.606 %	1.002 ppb	-0.006 ppb
Concentration per Run 3	0.042 ppb	0.005 ppb	0.005 ppb	103.703 %	0.002 ppb	0.000 ppb	106.225 %	0.976 ppb	0.002 ppb
Concentration RSD	7.9 %	160.5 %	64.2 %	2.2 %	136.4 %	112.9 %	2.9 %	1.3 %	127.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.158 %	103.166 %	0.620 ppb	0.014 ppb	107.765 %
Concentration per Run 1	97.054 %	99.110 %	0.676 ppb	0.016 ppb	107.342 %
Concentration per Run 2	102.009 %	105.372 %	0.621 ppb	0.014 ppb	108.050 %
Concentration per Run 3	101.410 %	105.017 %	0.562 ppb	0.013 ppb	107.903 %
Concentration RSD	2.7 %	3.4 %	9.2 %	10.4 %	0.3 %

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Analysis index: 126 Analysis started at: 12/17/2021 7:11:15 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.825 %	122.027 %	59.073 ppb	5,561.436 ppb	5,485.644 ppb	54.189 ppb	5,901.812 ppb	5,809.413 ppb	102.489 %
Concentration per Run 1	89.238 %	121.765 %	58.107 ppb	5,484.807 ppb	5,439.379 ppb	52.576 ppb	5,842.935 ppb	5,793.266 ppb	102.398 %
Concentration per Run 2	88.698 %	121.569 %	59.058 ppb	5,722.966 ppb	5,572.751 ppb	53.247 ppb	5,900.822 ppb	5,885.149 ppb	101.916 %
Concentration per Run 3	88.540 %	122.745 %	60.054 ppb	5,476.536 ppb	5,444.803 ppb	56.743 ppb	5,961.679 ppb	5,749.826 ppb	103.153 %
Recovery Percentage 1			98.455 %	92.691 %	91.427 %	90.315 %	98.364 %	96.824 %	
Concentration RSD	0.4 %	0.5 %	1.6 %	2.5 %	1.4 %	4.1 %	1.0 %	1.2 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	55.900 ppb	55.801 ppb	56.844 ppb	5,555.600 ppb	55.725 ppb	55.461 ppb	56.111 ppb	56.740 ppb	96.069 %
Concentration per Run 1	56.990 ppb	55.601 ppb	57.194 ppb	5,596.919 ppb	56.991 ppb	56.106 ppb	58.191 ppb	57.641 ppb	92.264 %
Concentration per Run 2	55.986 ppb	56.263 ppb	56.229 ppb	5,549.632 ppb	55.297 ppb	55.078 ppb	54.350 ppb	56.470 ppb	97.790 %
Concentration per Run 3	54.724 ppb	55.540 ppb	57.111 ppb	5,520.248 ppb	54.886 ppb	55.200 ppb	55.793 ppb	56.110 ppb	98.153 %
Recovery Percentage 1	93.166 %	93.002 %	94.741 %	92.593 %	92.874 %	92.435 %	93.519 %	94.567 %	
Concentration RSD	2.0 %	0.7 %	0.9 %	0.7 %	2.0 %	1.0 %	3.5 %	1.4 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	57.244 ppb	55.930 ppb	60.131 ppb	100.983 %	58.276 ppb	58.740 ppb	104.988 %	55.879 ppb	55.796 ppb
Concentration per Run 1	58.256 ppb	53.862 ppb	59.585 ppb	99.549 %	58.508 ppb	58.597 ppb	101.613 %	55.511 ppb	56.775 ppb
Concentration per Run 2	56.563 ppb	57.572 ppb	59.925 ppb	101.163 %	58.057 ppb	58.743 ppb	107.550 %	55.615 ppb	54.739 ppb
Concentration per Run 3	56.913 ppb	56.357 ppb	60.882 ppb	102.236 %	58.264 ppb	58.881 ppb	105.801 %	56.510 ppb	55.874 ppb
Recovery Percentage 1	95.406 %	93.217 %	100.218 %		97.127 %	97.900 %		93.131 %	92.993 %
Concentration RSD	1.6 %	3.4 %	1.1 %	1.3 %	0.4 %	0.2 %	2.9 %	1.0 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.739 %	105.015 %	58.152 ppb	57.093 ppb	106.592 %
Concentration per Run 1	100.272 %	103.185 %	57.137 ppb	56.678 ppb	106.718 %
Concentration per Run 2	100.770 %	106.050 %	58.314 ppb	56.975 ppb	107.058 %
Concentration per Run 3	101.174 %	105.811 %	59.004 ppb	57.626 ppb	106.000 %
Recovery Percentage 1			96.920 %	95.155 %	
Concentration RSD	0.4 %	1.5 %	1.6 %	0.8 %	0.5 %

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Analysis index: 127 Analysis started at: 12/17/2021 7:16:07 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.959 %	113.464 %	0.000 ppb	-8.072 ppb	0.258 ppb	-0.553 ppb	-9.379 ppb	2.340 ppb	88.866 %
Concentration per Run 1	87.756 %	109.804 %	-0.003 ppb	-8.600 ppb	-0.679 ppb	-0.631 ppb	-15.132 ppb	2.584 ppb	88.953 %
Concentration per Run 2	88.449 %	113.922 %	0.006 ppb	-7.210 ppb	1.213 ppb	-0.460 ppb	-6.130 ppb	9.420 ppb	88.861 %
Concentration per Run 3	87.673 %	116.667 %	-0.005 ppb	-8.404 ppb	0.241 ppb	-0.569 ppb	-6.874 ppb	-4.983 ppb	88.785 %
Recovery Percentage 1			-0.076 %	-8.072 %	0.369 %	-5.531 %	-9.379 %	2.340 %	
Concentration RSD	0.5 %	3.0 %	1,540.3 %	9.3 %	365.9 %	15.6 %	53.3 %	307.9 %	0.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.032 ppb	0.005 ppb	0.022 ppb	13.425 ppb	0.001 ppb	-0.050 ppb	0.027 ppb	-0.078 ppb	96.071 %
Concentration per Run 1	-0.026 ppb	0.002 ppb	0.026 ppb	14.369 ppb	-0.003 ppb	0.025 ppb	0.043 ppb	-0.082 ppb	93.465 %
Concentration per Run 2	-0.014 ppb	0.010 ppb	-0.013 ppb	12.859 ppb	0.005 ppb	-0.101 ppb	0.050 ppb	-0.087 ppb	95.306 %
Concentration per Run 3	-0.055 ppb	0.005 ppb	0.054 ppb	13.047 ppb	0.001 ppb	-0.075 ppb	-0.012 ppb	-0.065 ppb	99.444 %
Recovery Percentage 1	-0.633 %	0.541 %	2.200 %	26.850 %	0.255 %	-2.511 %	2.733 %	-0.779 %	
Concentration RSD	65.3 %	76.2 %	153.5 %	6.1 %	317.3 %	132.0 %	124.1 %	15.1 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.098 ppb	0.091 ppb	-0.013 ppb	103.208 %	0.003 ppb	0.002 ppb	104.777 %	0.269 ppb	-0.076 ppb
Concentration per Run 1	0.117 ppb	0.115 ppb	-0.023 ppb	102.055 %	0.003 ppb	0.006 ppb	98.931 %	0.222 ppb	-0.083 ppb
Concentration per Run 2	0.099 ppb	0.120 ppb	-0.014 ppb	103.424 %	0.003 ppb	0.000 ppb	106.673 %	0.298 ppb	-0.076 ppb
Concentration per Run 3	0.079 ppb	0.039 ppb	-0.002 ppb	104.145 %	0.001 ppb	0.000 ppb	108.728 %	0.286 ppb	-0.068 ppb
Recovery Percentage 1	19.625 %	1.825 %	-2.647 %		0.626 %	0.931 %		6.723 %	-15.122 %
Concentration RSD	19.2 %	50.0 %	79.8 %	1.0 %	38.7 %	173.2 %	4.9 %	15.2 %	10.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.346 %	104.035 %	0.455 ppb	0.013 ppb	108.020 %
Concentration per Run 1	97.951 %	100.553 %	0.488 ppb	0.016 ppb	106.066 %
Concentration per Run 2	100.896 %	105.528 %	0.459 ppb	0.012 ppb	108.207 %
Concentration per Run 3	102.192 %	106.023 %	0.419 ppb	0.010 ppb	109.786 %
Recovery Percentage 1			45.542 %	1.277 %	
Concentration RSD	2.2 %	2.9 %	7.6 %	21.1 %	1.7 %

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Analysis index: 128 Analysis started at: 12/17/2021 7:21:29 PM
 Analysis label: WG1583819-3D10 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.374 %	110.000 %	4.905 ppb	119,070.316 ppb	2,024.558 ppb	1,850.942 ppb	1,530.732 ppb	2,874.916 ppb	94.697 %
Concentration per Run 1	86.145 %	113.530 %	5.096 ppb	115,084.737 ppb	1,923.646 ppb	1,696.534 ppb	1,360.373 ppb	2,845.583 ppb	95.268 %
Concentration per Run 2	85.369 %	110.784 %	4.805 ppb	117,544.996 ppb	1,999.732 ppb	1,880.942 ppb	1,700.676 ppb	3,063.718 ppb	95.191 %
Concentration per Run 3	84.610 %	105.686 %	4.814 ppb	124,581.214 ppb	2,150.296 ppb	1,975.351 ppb	1,531.146 ppb	2,715.448 ppb	93.633 %
Concentration RSD	0.9 %	3.6 %	3.4 %	4.1 %	5.7 %	7.7 %	11.1 %	6.1 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	103.632 ppb	33.406 ppb	126.543 ppb	3,485.274 ppb	43.384 ppb	46.395 ppb	25.013 ppb	45.736 ppb	89.823 %
Concentration per Run 1	100.819 ppb	33.165 ppb	122.201 ppb	3,455.250 ppb	43.982 ppb	45.891 ppb	24.721 ppb	46.219 ppb	85.758 %
Concentration per Run 2	104.186 ppb	33.247 ppb	127.618 ppb	3,448.160 ppb	42.293 ppb	47.163 ppb	24.703 ppb	44.974 ppb	91.966 %
Concentration per Run 3	105.890 ppb	33.805 ppb	129.809 ppb	3,552.413 ppb	43.877 ppb	46.133 ppb	25.615 ppb	46.016 ppb	91.746 %
Concentration RSD	2.5 %	1.0 %	3.1 %	1.7 %	2.2 %	1.5 %	2.1 %	1.5 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	13.610 ppb	8.412 ppb	110.535 ppb	92.080 %	1.874 ppb	4.733 ppb	96.864 %	11.068 ppb	196.479 ppb
Concentration per Run 1	13.845 ppb	8.938 ppb	108.818 ppb	90.559 %	1.875 ppb	4.497 ppb	94.209 %	10.446 ppb	194.246 ppb
Concentration per Run 2	13.313 ppb	8.182 ppb	111.183 ppb	92.515 %	1.871 ppb	4.822 ppb	99.293 %	10.882 ppb	196.380 ppb
Concentration per Run 3	13.672 ppb	8.116 ppb	111.604 ppb	93.167 %	1.878 ppb	4.879 ppb	97.091 %	11.876 ppb	198.811 ppb
Concentration RSD	2.0 %	5.4 %	1.4 %	1.5 %	0.2 %	4.4 %	2.6 %	6.6 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.203 %	100.805 %	11.636 ppb	52.670 ppb	95.507 %
Concentration per Run 1	95.008 %	97.954 %	11.427 ppb	51.711 ppb	95.836 %
Concentration per Run 2	97.041 %	103.065 %	11.757 ppb	52.941 ppb	95.675 %
Concentration per Run 3	96.559 %	101.397 %	11.723 ppb	53.358 ppb	95.010 %
Concentration RSD	1.1 %	2.6 %	1.6 %	1.6 %	0.5 %

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Analysis index: 129 Analysis started at: 12/17/2021 7:26:17 PM
 Analysis label: WG1583819-5D10 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.760 %	110.588 %	45.532 ppb	128,339.088 ppb	5,622.365 ppb	1,512.065 ppb	5,583.008 ppb	7,179.317 ppb	97.222 %
Concentration per Run 1	87.684 %	109.020 %	44.782 ppb	125,624.350 ppb	5,587.132 ppb	1,456.383 ppb	5,562.171 ppb	7,170.411 ppb	95.990 %
Concentration per Run 2	88.256 %	119.412 %	46.321 ppb	123,679.259 ppb	5,430.908 ppb	1,440.939 ppb	5,307.177 ppb	7,022.475 ppb	98.039 %
Concentration per Run 3	87.339 %	103.333 %	45.491 ppb	135,713.656 ppb	5,849.055 ppb	1,638.873 ppb	5,879.675 ppb	7,345.066 ppb	97.638 %
Concentration RSD	0.5 %	7.4 %	1.7 %	5.0 %	3.8 %	7.3 %	5.1 %	2.2 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	105.261 ppb	60.450 ppb	129.629 ppb	7,993.256 ppb	47.272 ppb	48.982 ppb	48.456 ppb	48.887 ppb	90.365 %
Concentration per Run 1	104.846 ppb	61.946 ppb	128.198 ppb	8,046.298 ppb	47.266 ppb	49.020 ppb	50.156 ppb	50.145 ppb	86.644 %
Concentration per Run 2	100.725 ppb	58.216 ppb	126.006 ppb	7,811.217 ppb	45.828 ppb	48.182 ppb	48.158 ppb	47.230 ppb	92.638 %
Concentration per Run 3	110.213 ppb	61.187 ppb	134.684 ppb	8,122.254 ppb	48.722 ppb	49.743 ppb	47.053 ppb	49.287 ppb	91.812 %
Concentration RSD	4.5 %	3.3 %	3.5 %	2.0 %	3.1 %	1.6 %	3.2 %	3.1 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	48.269 ppb	43.576 ppb	64.886 ppb	93.397 %	2.431 ppb	44.462 ppb	98.119 %	44.959 ppb	64.249 ppb
Concentration per Run 1	48.449 ppb	45.525 ppb	63.600 ppb	92.899 %	2.392 ppb	44.670 ppb	94.700 %	44.353 ppb	63.329 ppb
Concentration per Run 2	48.708 ppb	43.185 ppb	65.165 ppb	93.730 %	2.354 ppb	44.659 ppb	99.836 %	45.525 ppb	64.147 ppb
Concentration per Run 3	47.651 ppb	42.019 ppb	65.893 ppb	93.562 %	2.548 ppb	44.059 ppb	99.823 %	44.998 ppb	65.270 ppb
Concentration RSD	1.1 %	4.1 %	1.8 %	0.5 %	4.2 %	0.8 %	3.0 %	1.3 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.192 %	102.332 %	49.665 ppb	50.863 ppb	95.722 %
Concentration per Run 1	95.874 %	100.578 %	49.591 ppb	50.603 ppb	95.335 %
Concentration per Run 2	98.141 %	102.199 %	49.851 ppb	50.951 ppb	96.242 %
Concentration per Run 3	97.563 %	104.220 %	49.554 ppb	51.035 ppb	95.590 %
Concentration RSD	1.2 %	1.8 %	0.3 %	0.5 %	0.5 %

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Analysis index: 130 Analysis started at: 12/17/2021 7:31:06 PM
 Analysis label: WG1583819-4D10 6020SL User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.902 %	112.288 %	0.418 ppb	120,199.552 ppb	1,036.469 ppb	1,524.337 ppb	599.643 ppb	2,073.688 ppb	95.805 %
Concentration per Run 1	89.255 %	112.353 %	0.379 ppb	116,710.376 ppb	996.653 ppb	1,450.770 ppb	603.150 ppb	1,988.994 ppb	96.607 %
Concentration per Run 2	87.479 %	112.745 %	0.456 ppb	120,260.317 ppb	1,050.058 ppb	1,554.642 ppb	585.816 ppb	2,249.660 ppb	95.075 %
Concentration per Run 3	86.973 %	111.765 %	0.418 ppb	123,627.965 ppb	1,062.697 ppb	1,567.599 ppb	609.965 ppb	1,982.411 ppb	95.732 %
Concentration RSD	1.4 %	0.4 %	9.2 %	2.9 %	3.4 %	4.2 %	2.1 %	7.4 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	59.844 ppb	15.301 ppb	84.516 ppb	3,549.256 ppb	1.121 ppb	4.442 ppb	4.972 ppb	4.638 ppb	88.792 %
Concentration per Run 1	59.566 ppb	15.089 ppb	84.861 ppb	3,515.038 ppb	1.161 ppb	4.647 ppb	4.915 ppb	4.827 ppb	85.132 %
Concentration per Run 2	57.625 ppb	15.097 ppb	83.232 ppb	3,483.909 ppb	1.115 ppb	4.427 ppb	5.143 ppb	4.512 ppb	91.298 %
Concentration per Run 3	62.339 ppb	15.716 ppb	85.455 ppb	3,648.822 ppb	1.087 ppb	4.252 ppb	4.858 ppb	4.576 ppb	89.947 %
Concentration RSD	4.0 %	2.4 %	1.4 %	2.5 %	3.3 %	4.5 %	3.0 %	3.6 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3.897 ppb	0.962 ppb	16.392 ppb	94.307 %	0.006 ppb	0.030 ppb	97.907 %	0.384 ppb	19.245 ppb
Concentration per Run 1	3.753 ppb	1.245 ppb	16.177 ppb	92.679 %	0.007 ppb	0.039 ppb	94.976 %	0.397 ppb	18.675 ppb
Concentration per Run 2	4.036 ppb	0.959 ppb	16.534 ppb	95.457 %	0.003 ppb	0.026 ppb	98.970 %	0.396 ppb	19.648 ppb
Concentration per Run 3	3.902 ppb	0.681 ppb	16.464 ppb	94.786 %	0.008 ppb	0.026 ppb	99.774 %	0.359 ppb	19.411 ppb
Concentration RSD	3.6 %	29.4 %	1.2 %	1.5 %	42.4 %	24.8 %	2.6 %	5.7 %	2.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.675 %	102.880 %	0.116 ppb	3.624 ppb	96.172 %
Concentration per Run 1	95.978 %	100.337 %	0.125 ppb	3.635 ppb	95.536 %
Concentration per Run 2	98.717 %	104.282 %	0.118 ppb	3.638 ppb	96.408 %
Concentration per Run 3	98.330 %	104.021 %	0.105 ppb	3.599 ppb	96.573 %
Concentration RSD	1.5 %	2.1 %	8.6 %	0.6 %	0.6 %

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Analysis index: 131 Analysis started at: 12/17/2021 7:35:55 PM
 Analysis label: I2166848-12D10 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.901 %	117.321 %	0.372 ppb	119,129.803 ppb	1,050.541 ppb	1,424.715 ppb	590.032 ppb	2,170.315 ppb	95.093 %
Concentration per Run 1	89.727 %	112.745 %	0.379 ppb	119,620.506 ppb	1,101.787 ppb	1,389.891 ppb	569.403 ppb	2,190.516 ppb	95.905 %
Concentration per Run 2	88.582 %	117.843 %	0.373 ppb	120,354.194 ppb	1,028.807 ppb	1,456.209 ppb	597.344 ppb	2,178.616 ppb	94.797 %
Concentration per Run 3	88.396 %	121.373 %	0.363 ppb	117,414.710 ppb	1,021.029 ppb	1,428.044 ppb	603.350 ppb	2,141.814 ppb	94.577 %
Concentration RSD	0.8 %	3.7 %	2.2 %	1.3 %	4.2 %	2.3 %	3.1 %	1.2 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	56.821 ppb	14.629 ppb	82.381 ppb	3,336.701 ppb	1.048 ppb	4.670 ppb	4.680 ppb	5.396 ppb	92.791 %
Concentration per Run 1	57.514 ppb	14.608 ppb	83.164 ppb	3,398.266 ppb	1.110 ppb	4.757 ppb	4.915 ppb	5.527 ppb	88.577 %
Concentration per Run 2	58.272 ppb	14.523 ppb	82.976 ppb	3,278.784 ppb	1.069 ppb	4.678 ppb	4.365 ppb	5.569 ppb	94.191 %
Concentration per Run 3	54.677 ppb	14.755 ppb	81.001 ppb	3,333.053 ppb	0.965 ppb	4.574 ppb	4.760 ppb	5.093 ppb	95.604 %
Concentration RSD	3.3 %	0.8 %	1.5 %	1.8 %	7.1 %	2.0 %	6.1 %	4.9 %	4.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3.631 ppb	0.909 ppb	16.306 ppb	95.176 %	0.003 ppb	0.029 ppb	99.806 %	0.226 ppb	19.487 ppb
Concentration per Run 1	3.764 ppb	0.944 ppb	15.898 ppb	94.511 %	0.004 ppb	0.032 ppb	98.318 %	0.226 ppb	18.954 ppb
Concentration per Run 2	3.635 ppb	0.939 ppb	16.490 ppb	94.972 %	0.006 ppb	0.028 ppb	100.628 %	0.225 ppb	19.443 ppb
Concentration per Run 3	3.494 ppb	0.842 ppb	16.532 ppb	96.044 %	-0.002 ppb	0.028 ppb	100.471 %	0.227 ppb	20.065 ppb
Concentration RSD	3.7 %	6.3 %	2.2 %	0.8 %	143.8 %	6.7 %	1.3 %	0.4 %	2.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.112 %	102.899 %	0.070 ppb	3.636 ppb	96.557 %
Concentration per Run 1	96.677 %	100.242 %	0.076 ppb	3.593 ppb	95.785 %
Concentration per Run 2	98.388 %	103.572 %	0.062 ppb	3.679 ppb	97.109 %
Concentration per Run 3	99.272 %	104.882 %	0.072 ppb	3.636 ppb	96.776 %
Concentration RSD	1.3 %	2.3 %	10.6 %	1.2 %	0.7 %



Analysis index: 132 Analysis started at: 12/17/2021 7:40:44 PM
 Analysis label: WG1583819-6D50 6020SL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.974 %	115.098 %	0.130 ppb	23,361.415 ppb	231.442 ppb	298.750 ppb	109.991 ppb	402.345 ppb	97.587 %
Concentration per Run 1	92.443 %	110.000 %	0.141 ppb	23,328.473 ppb	229.074 ppb	292.549 ppb	112.528 ppb	410.321 ppb	97.382 %
Concentration per Run 2	91.945 %	112.353 %	0.129 ppb	24,134.191 ppb	237.473 ppb	307.876 ppb	124.733 ppb	466.144 ppb	97.304 %
Concentration per Run 3	91.535 %	122.942 %	0.121 ppb	22,621.581 ppb	227.779 ppb	295.825 ppb	92.713 ppb	330.569 ppb	98.075 %
Concentration RSD	0.5 %	6.0 %	7.7 %	3.2 %	2.3 %	2.7 %	14.7 %	16.9 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	11.830 ppb	3.048 ppb	16.857 ppb	693.781 ppb	0.268 ppb	1.007 ppb	1.181 ppb	1.630 ppb	97.070 %
Concentration per Run 1	11.834 ppb	2.942 ppb	17.114 ppb	710.173 ppb	0.264 ppb	0.910 ppb	1.028 ppb	1.472 ppb	94.499 %
Concentration per Run 2	11.896 ppb	3.213 ppb	16.639 ppb	688.627 ppb	0.286 ppb	1.033 ppb	1.196 ppb	1.626 ppb	98.386 %
Concentration per Run 3	11.761 ppb	2.989 ppb	16.817 ppb	682.543 ppb	0.253 ppb	1.080 ppb	1.319 ppb	1.791 ppb	98.324 %
Concentration RSD	0.6 %	4.7 %	1.4 %	2.1 %	6.4 %	8.7 %	12.4 %	9.8 %	2.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.781 ppb	0.179 ppb	3.333 ppb	101.421 %	-0.001 ppb	0.053 ppb	104.746 %	0.191 ppb	3.983 ppb
Concentration per Run 1	0.661 ppb	0.147 ppb	3.249 ppb	100.535 %	-0.002 ppb	0.069 ppb	101.999 %	0.192 ppb	4.026 ppb
Concentration per Run 2	0.813 ppb	0.136 ppb	3.351 ppb	101.859 %	-0.001 ppb	0.051 ppb	105.219 %	0.206 ppb	4.059 ppb
Concentration per Run 3	0.868 ppb	0.253 ppb	3.400 ppb	101.871 %	-0.001 ppb	0.040 ppb	107.022 %	0.176 ppb	3.863 ppb
Concentration RSD	13.7 %	36.2 %	2.3 %	0.8 %	33.8 %	27.5 %	2.4 %	7.7 %	2.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.031 %	104.479 %	0.094 ppb	0.781 ppb	105.691 %
Concentration per Run 1	98.763 %	101.120 %	0.091 ppb	0.777 ppb	105.383 %
Concentration per Run 2	100.543 %	106.530 %	0.093 ppb	0.759 ppb	106.299 %
Concentration per Run 3	100.785 %	105.788 %	0.098 ppb	0.806 ppb	105.392 %
Concentration RSD	1.1 %	2.8 %	3.8 %	3.1 %	0.5 %

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Analysis index: 133 Analysis started at: 12/17/2021 7:45:34 PM
 Analysis label: I2168712-01 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.865 %	125.164 %	0.047 ppb	116,677.894 ppb	44,436.566 ppb	23.723 ppb	5,856.296 ppb	111,868.612 ppb	104.521 %
Concentration per Run 1	93.517 %	117.059 %	0.061 ppb	117,771.163 ppb	44,690.867 ppb	21.861 ppb	5,815.338 ppb	110,369.933 ppb	103.898 %
Concentration per Run 2	94.271 %	132.354 %	0.044 ppb	111,887.327 ppb	42,666.035 ppb	23.284 ppb	5,928.696 ppb	112,674.348 ppb	105.274 %
Concentration per Run 3	93.806 %	126.079 %	0.036 ppb	120,375.192 ppb	45,952.795 ppb	26.024 ppb	5,824.853 ppb	112,561.554 ppb	104.392 %
Concentration RSD	0.4 %	6.1 %	27.3 %	3.7 %	3.7 %	8.9 %	1.1 %	1.2 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	10.893 ppb	0.632 ppb	1,435.775 ppb	916.548 ppb	1.393 ppb	4.554 ppb	1.518 ppb	0.665 ppb	102.797 %
Concentration per Run 1	11.097 ppb	0.689 ppb	1,413.508 ppb	890.145 ppb	1.264 ppb	4.939 ppb	1.406 ppb	0.749 ppb	98.305 %
Concentration per Run 2	10.620 ppb	0.609 ppb	1,458.242 ppb	947.429 ppb	1.420 ppb	4.159 ppb	1.487 ppb	0.507 ppb	103.169 %
Concentration per Run 3	10.962 ppb	0.599 ppb	1,435.576 ppb	912.071 ppb	1.494 ppb	4.564 ppb	1.661 ppb	0.739 ppb	106.918 %
Concentration RSD	2.3 %	7.8 %	1.6 %	3.2 %	8.4 %	8.6 %	8.6 %	20.6 %	4.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.586 ppb	0.097 ppb	189.795 ppb	104.615 %	0.003 ppb	0.093 ppb	111.375 %	0.221 ppb	92.992 ppb
Concentration per Run 1	2.738 ppb	0.066 ppb	185.788 ppb	101.926 %	0.004 ppb	0.109 ppb	106.336 %	0.192 ppb	91.730 ppb
Concentration per Run 2	2.574 ppb	0.131 ppb	193.318 ppb	104.508 %	0.002 ppb	0.090 ppb	114.747 %	0.217 ppb	92.564 ppb
Concentration per Run 3	2.448 ppb	0.093 ppb	190.278 ppb	107.410 %	0.001 ppb	0.080 ppb	113.042 %	0.253 ppb	94.683 ppb
Concentration RSD	5.6 %	33.8 %	2.0 %	2.6 %	63.7 %	15.7 %	4.0 %	13.9 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	107.324 %	111.910 %	0.074 ppb	0.224 ppb	99.425 %
Concentration per Run 1	104.193 %	107.106 %	0.074 ppb	0.227 ppb	98.021 %
Concentration per Run 2	107.852 %	113.320 %	0.073 ppb	0.221 ppb	100.202 %
Concentration per Run 3	109.927 %	115.305 %	0.075 ppb	0.223 ppb	100.052 %
Concentration RSD	2.7 %	3.8 %	1.1 %	1.4 %	1.2 %

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Analysis index: 134 Analysis started at: 12/17/2021 7:50:23 PM
 Analysis label: I2168712-02 6020TL User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	101.015 %	133.922 %	0.048 ppb	116,060.010 ppb	43,844.779 ppb	28.503 ppb	5,741.852 ppb	109,722.029 ppb	113.040 %
Concentration per Run 1	101.182 %	130.589 %	0.042 ppb	117,085.617 ppb	43,890.780 ppb	27.547 ppb	5,797.744 ppb	109,399.407 ppb	112.902 %
Concentration per Run 2	101.366 %	136.275 %	0.048 ppb	116,987.804 ppb	43,544.747 ppb	29.429 ppb	5,775.061 ppb	110,736.859 ppb	113.347 %
Concentration per Run 3	100.498 %	134.903 %	0.054 ppb	114,106.609 ppb	44,098.810 ppb	28.534 ppb	5,652.751 ppb	109,029.819 ppb	112.871 %
Concentration RSD	0.5 %	2.2 %	12.5 %	1.5 %	0.6 %	3.3 %	1.4 %	0.8 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	10.786 ppb	0.658 ppb	1,541.263 ppb	983.573 ppb	1.555 ppb	5.025 ppb	1.470 ppb	0.832 ppb	105.364 %
Concentration per Run 1	10.986 ppb	0.724 ppb	1,547.382 ppb	984.860 ppb	1.539 ppb	5.241 ppb	1.708 ppb	0.880 ppb	101.155 %
Concentration per Run 2	10.731 ppb	0.521 ppb	1,509.341 ppb	951.356 ppb	1.504 ppb	4.729 ppb	1.193 ppb	0.877 ppb	106.861 %
Concentration per Run 3	10.643 ppb	0.730 ppb	1,567.064 ppb	1,014.503 ppb	1.623 ppb	5.107 ppb	1.507 ppb	0.738 ppb	108.077 %
Concentration RSD	1.7 %	18.1 %	1.9 %	3.2 %	3.9 %	5.3 %	17.6 %	9.7 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.668 ppb	0.133 ppb	194.164 ppb	105.559 %	0.001 ppb	0.091 ppb	111.368 %	0.200 ppb	94.889 ppb
Concentration per Run 1	2.698 ppb	0.202 ppb	189.425 ppb	104.618 %	0.001 ppb	0.097 ppb	107.449 %	0.188 ppb	94.823 ppb
Concentration per Run 2	2.522 ppb	0.162 ppb	196.783 ppb	105.604 %	0.002 ppb	0.099 ppb	112.885 %	0.202 ppb	96.057 ppb
Concentration per Run 3	2.783 ppb	0.036 ppb	196.285 ppb	106.455 %	0.000 ppb	0.078 ppb	113.771 %	0.210 ppb	93.787 ppb
Concentration RSD	5.0 %	65.3 %	2.1 %	0.9 %	97.6 %	12.7 %	3.1 %	5.6 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	107.287 %	111.876 %	0.061 ppb	0.288 ppb	100.914 %
Concentration per Run 1	105.741 %	109.437 %	0.059 ppb	0.287 ppb	100.464 %
Concentration per Run 2	107.836 %	112.559 %	0.059 ppb	0.291 ppb	101.624 %
Concentration per Run 3	108.283 %	113.630 %	0.064 ppb	0.287 ppb	100.654 %
Concentration RSD	1.3 %	1.9 %	4.8 %	0.8 %	0.6 %

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Analysis index: 135 Analysis started at: 12/17/2021 7:55:11 PM
 Analysis label: L2167138-02 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.954 %	123.595 %	0.008 ppb	74,106.532 ppb	60,168.912 ppb	6.009 ppb	33,242.536 ppb	231,342.097 ppb	124.958 %
Concentration per Run 1	95.543 %	124.706 %	0.012 ppb	70,985.041 ppb	57,817.477 ppb	5.177 ppb	31,643.932 ppb	223,716.949 ppb	124.201 %
Concentration per Run 2	94.828 %	118.628 %	-0.002 ppb	78,590.248 ppb	63,282.186 ppb	6.721 ppb	34,707.416 ppb	239,231.862 ppb	124.929 %
Concentration per Run 3	94.491 %	127.451 %	0.013 ppb	72,744.307 ppb	59,407.073 ppb	6.130 ppb	33,376.259 ppb	231,077.479 ppb	125.743 %
Concentration RSD	0.6 %	3.7 %	104.6 %	5.4 %	4.7 %	13.0 %	4.6 %	3.4 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	4.960 ppb	4.871 ppb	5,010.209 ppb	63,191.077 ppb	3.183 ppb	0.706 ppb	0.370 ppb	0.912 ppb	95.924 %
Concentration per Run 1	4.789 ppb	4.919 ppb	4,952.746 ppb	62,944.567 ppb	3.168 ppb	0.643 ppb	0.360 ppb	0.840 ppb	93.999 %
Concentration per Run 2	5.640 ppb	5.222 ppb	5,158.167 ppb	64,725.311 ppb	3.173 ppb	0.843 ppb	0.412 ppb	0.976 ppb	96.483 %
Concentration per Run 3	4.450 ppb	4.471 ppb	4,919.715 ppb	61,903.353 ppb	3.207 ppb	0.631 ppb	0.336 ppb	0.918 ppb	97.290 %
Concentration RSD	12.4 %	7.8 %	2.6 %	2.3 %	0.7 %	16.9 %	10.4 %	7.5 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	6.226 ppb	0.830 ppb	1,060.745 ppb	98.319 %	-0.003 ppb	0.004 ppb	105.936 %	0.141 ppb	1,022.962 ppb
Concentration per Run 1	6.021 ppb	0.918 ppb	1,035.346 ppb	98.027 %	-0.003 ppb	0.005 ppb	104.432 %	0.140 ppb	1,010.014 ppb
Concentration per Run 2	6.303 ppb	0.756 ppb	1,078.312 ppb	98.553 %	-0.002 ppb	0.003 ppb	107.913 %	0.127 ppb	1,021.095 ppb
Concentration per Run 3	6.355 ppb	0.816 ppb	1,068.576 ppb	98.377 %	-0.005 ppb	0.003 ppb	105.463 %	0.156 ppb	1,037.776 ppb
Concentration RSD	2.9 %	9.9 %	2.1 %	0.3 %	44.6 %	44.3 %	1.7 %	10.3 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	104.031 %	108.337 %	0.051 ppb	0.022 ppb	95.495 %
Concentration per Run 1	101.922 %	104.913 %	0.045 ppb	0.023 ppb	95.981 %
Concentration per Run 2	104.755 %	110.569 %	0.049 ppb	0.020 ppb	95.798 %
Concentration per Run 3	105.416 %	109.530 %	0.059 ppb	0.022 ppb	94.706 %
Concentration RSD	1.8 %	2.8 %	14.4 %	6.7 %	0.7 %

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Analysis index: 136 Analysis started at: 12/17/2021 8:00:01 PM
 Analysis label: L2167143-02 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	97.045 %	128.301 %	-0.003 ppb	37,451.367 ppb	13,311.342 ppb	7.765 ppb	7,140.202 ppb	279,250.913 ppb	128.087 %
Concentration per Run 1	97.832 %	123.138 %	0.004 ppb	37,970.917 ppb	13,422.360 ppb	6.261 ppb	7,061.491 ppb	281,327.331 ppb	128.201 %
Concentration per Run 2	97.030 %	129.412 %	-0.008 ppb	37,201.108 ppb	13,262.631 ppb	9.217 ppb	7,045.251 ppb	275,740.101 ppb	127.435 %
Concentration per Run 3	96.274 %	132.354 %	-0.004 ppb	37,182.077 ppb	13,249.037 ppb	7.818 ppb	7,313.864 ppb	280,685.306 ppb	128.624 %
Concentration RSD	0.8 %	3.7 %	231.2 %	1.2 %	0.7 %	19.0 %	2.1 %	1.1 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	7.654 ppb	1.227 ppb	157.061 ppb	12,874.985 ppb	0.088 ppb	2.923 ppb	0.037 ppb	-0.153 ppb	105.646 %
Concentration per Run 1	7.749 ppb	1.196 ppb	158.657 ppb	13,313.464 ppb	0.077 ppb	2.785 ppb	0.089 ppb	-0.117 ppb	100.136 %
Concentration per Run 2	7.694 ppb	1.303 ppb	158.879 ppb	12,873.303 ppb	0.076 ppb	2.946 ppb	0.024 ppb	-0.153 ppb	107.918 %
Concentration per Run 3	7.517 ppb	1.182 ppb	153.646 ppb	12,438.188 ppb	0.110 ppb	3.039 ppb	-0.002 ppb	-0.189 ppb	108.884 %
Concentration RSD	1.6 %	5.4 %	1.9 %	3.4 %	22.0 %	4.4 %	126.7 %	23.7 %	4.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.434 ppb	0.242 ppb	764.152 ppb	105.975 %	-0.003 ppb	0.003 ppb	112.095 %	0.123 ppb	33.777 ppb
Concentration per Run 1	2.467 ppb	0.359 ppb	756.071 ppb	104.793 %	-0.005 ppb	0.000 ppb	107.974 %	0.118 ppb	32.732 ppb
Concentration per Run 2	2.533 ppb	0.280 ppb	768.549 ppb	106.824 %	-0.002 ppb	0.000 ppb	114.268 %	0.143 ppb	34.805 ppb
Concentration per Run 3	2.302 ppb	0.089 ppb	767.835 ppb	106.306 %	-0.002 ppb	0.008 ppb	114.044 %	0.109 ppb	33.793 ppb
Concentration RSD	4.9 %	57.3 %	0.9 %	1.0 %	47.0 %	173.2 %	3.2 %	14.3 %	3.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	109.335 %	113.793 %	0.047 ppb	0.014 ppb	101.216 %
Concentration per Run 1	106.915 %	109.529 %	0.044 ppb	0.014 ppb	101.363 %
Concentration per Run 2	111.340 %	116.958 %	0.045 ppb	0.014 ppb	101.984 %
Concentration per Run 3	109.748 %	114.891 %	0.054 ppb	0.015 ppb	100.300 %
Concentration RSD	2.0 %	3.4 %	11.8 %	2.7 %	0.8 %

Analysis index: 137 Analysis started at: 12/17/2021 8:04:51 PM
 Analysis label: L2167143-04 6020SL User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	99.490 %	128.105 %	0.007 ppb	25,148.431 ppb	7,678.531 ppb	6.739 ppb	3,569.054 ppb	55,908.948 ppb	108.233 %
Concentration per Run 1	99.209 %	121.373 %	0.008 ppb	25,975.754 ppb	7,649.127 ppb	6.249 ppb	3,482.336 ppb	56,732.227 ppb	107.644 %
Concentration per Run 2	99.483 %	130.981 %	0.006 ppb	24,819.733 ppb	7,809.719 ppb	6.460 ppb	3,663.653 ppb	55,529.392 ppb	109.040 %
Concentration per Run 3	99.779 %	131.961 %	0.006 ppb	24,649.805 ppb	7,576.746 ppb	7.508 ppb	3,561.174 ppb	55,465.227 ppb	108.015 %
Concentration RSD	0.3 %	4.6 %	18.2 %	2.9 %	1.6 %	10.0 %	2.5 %	1.3 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.254 ppb	0.492 ppb	73.798 ppb	227.430 ppb	0.106 ppb	0.448 ppb	0.067 ppb	0.132 ppb	108.447 %
Concentration per Run 1	0.185 ppb	0.528 ppb	75.529 ppb	245.622 ppb	0.101 ppb	0.527 ppb	0.082 ppb	0.072 ppb	104.693 %
Concentration per Run 2	0.337 ppb	0.466 ppb	73.685 ppb	229.408 ppb	0.129 ppb	0.404 ppb	0.063 ppb	0.080 ppb	111.456 %
Concentration per Run 3	0.239 ppb	0.482 ppb	72.181 ppb	207.260 ppb	0.089 ppb	0.412 ppb	0.057 ppb	0.243 ppb	109.192 %
Concentration RSD	30.3 %	6.5 %	2.3 %	8.5 %	19.5 %	15.4 %	19.8 %	73.5 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.636 ppb	0.029 ppb	308.007 ppb	110.060 %	-0.004 ppb	0.004 ppb	113.889 %	1.230 ppb	50.375 ppb
Concentration per Run 1	2.794 ppb	0.003 ppb	302.200 ppb	110.108 %	-0.002 ppb	0.003 ppb	111.226 %	1.283 ppb	49.745 ppb
Concentration per Run 2	2.473 ppb	0.021 ppb	309.381 ppb	109.982 %	-0.005 ppb	0.005 ppb	114.937 %	1.230 ppb	51.145 ppb
Concentration per Run 3	2.641 ppb	0.062 ppb	312.439 ppb	110.091 %	-0.005 ppb	0.005 ppb	115.505 %	1.178 ppb	50.235 ppb
Concentration RSD	6.1 %	104.4 %	1.7 %	0.1 %	36.8 %	33.7 %	2.0 %	4.3 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	108.786 %	112.974 %	0.026 ppb	0.387 ppb	108.630 %
Concentration per Run 1	106.759 %	109.154 %	0.020 ppb	0.377 ppb	108.590 %
Concentration per Run 2	109.479 %	114.580 %	0.028 ppb	0.389 ppb	108.434 %
Concentration per Run 3	110.120 %	115.188 %	0.028 ppb	0.396 ppb	108.867 %
Concentration RSD	1.6 %	2.9 %	18.5 %	2.4 %	0.2 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 138 Analysis started at: 12/17/2021 8:09:40 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	97.857 %	124.576 %	58.660 ppb	5,814.938 ppb	5,784.648 ppb	56.944 ppb	5,886.259 ppb	5,882.573 ppb	110.543 %
Concentration per Run 1	98.533 %	126.863 %	58.341 ppb	5,616.554 ppb	5,502.378 ppb	55.393 ppb	5,627.514 ppb	5,798.865 ppb	111.362 %
Concentration per Run 2	97.865 %	125.491 %	58.106 ppb	5,844.915 ppb	5,887.396 ppb	56.166 ppb	5,936.231 ppb	5,613.521 ppb	110.590 %
Concentration per Run 3	97.173 %	121.373 %	59.531 ppb	5,983.345 ppb	5,964.171 ppb	59.273 ppb	6,095.032 ppb	6,235.333 ppb	109.676 %
Recovery Percentage 1			97.766 %	96.916 %	96.411 %	94.906 %	98.104 %	98.043 %	
Concentration RSD	0.7 %	2.3 %	1.3 %	3.2 %	4.3 %	3.6 %	4.0 %	5.4 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	57.217 ppb	56.467 ppb	57.910 ppb	5,686.460 ppb	56.568 ppb	56.338 ppb	56.200 ppb	56.187 ppb	103.185 %
Concentration per Run 1	56.914 ppb	57.074 ppb	56.632 ppb	5,661.559 ppb	57.539 ppb	56.967 ppb	56.681 ppb	55.111 ppb	100.154 %
Concentration per Run 2	57.084 ppb	56.682 ppb	59.319 ppb	5,638.772 ppb	56.775 ppb	55.362 ppb	56.603 ppb	56.537 ppb	105.442 %
Concentration per Run 3	57.652 ppb	55.647 ppb	57.780 ppb	5,759.049 ppb	55.389 ppb	56.686 ppb	55.316 ppb	56.914 ppb	103.958 %
Recovery Percentage 1	95.361 %	94.112 %	96.517 %	94.774 %	94.279 %	93.897 %	93.667 %	93.645 %	
Concentration RSD	0.7 %	1.3 %	2.3 %	1.1 %	1.9 %	1.5 %	1.4 %	1.7 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	56.608 ppb	55.202 ppb	59.628 ppb	106.839 %	58.628 ppb	58.911 ppb	108.166 %	56.982 ppb	58.077 ppb
Concentration per Run 1	58.844 ppb	55.512 ppb	58.417 ppb	108.220 %	59.270 ppb	58.926 ppb	106.317 %	56.091 ppb	56.972 ppb
Concentration per Run 2	54.894 ppb	55.615 ppb	59.827 ppb	106.619 %	58.100 ppb	59.093 ppb	108.966 %	57.891 ppb	58.776 ppb
Concentration per Run 3	56.085 ppb	54.481 ppb	60.642 ppb	105.679 %	58.514 ppb	58.715 ppb	109.216 %	56.965 ppb	58.484 ppb
Recovery Percentage 1	94.346 %	92.004 %	99.381 %		97.713 %	98.185 %		94.970 %	96.796 %
Concentration RSD	3.6 %	1.1 %	1.9 %	1.2 %	1.0 %	0.3 %	1.5 %	1.6 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	103.042 %	106.654 %	58.192 ppb	57.724 ppb	108.346 %
Concentration per Run 1	102.465 %	104.715 %	57.566 ppb	57.365 ppb	108.376 %
Concentration per Run 2	103.627 %	108.243 %	58.134 ppb	57.818 ppb	109.201 %
Concentration per Run 3	103.032 %	107.005 %	58.876 ppb	57.990 ppb	107.461 %
Recovery Percentage 1			96.987 %	96.207 %	
Concentration RSD	0.6 %	1.7 %	1.1 %	0.6 %	0.8 %

Alpha ICPMSQ Full

12/17/2021 9:47:26 PM



Analysis index: 139 Analysis started at: 12/17/2021 8:14:33 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.313 %	121.700 %	-0.003 ppb	-6.383 ppb	0.470 ppb	-0.291 ppb	-8.964 ppb	24.112 ppb	91.338 %
Concentration per Run 1	91.873 %	118.432 %	-0.001 ppb	-4.657 ppb	-0.679 ppb	-0.300 ppb	-9.073 ppb	29.894 ppb	92.043 %
Concentration per Run 2	91.689 %	128.824 %	-0.005 ppb	-8.579 ppb	1.860 ppb	-0.444 ppb	-8.387 ppb	40.497 ppb	91.837 %
Concentration per Run 3	90.378 %	117.843 %	-0.003 ppb	-5.913 ppb	0.230 ppb	-0.129 ppb	-9.433 ppb	1.945 ppb	90.135 %
Recovery Percentage 1			-0.601 %	-6.383 %	0.672 %	-2.910 %	-8.964 %	24.112 %	
Concentration RSD	0.9 %	5.1 %	71.2 %	31.4 %	273.4 %	54.2 %	5.9 %	82.6 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.035 ppb	0.005 ppb	0.016 ppb	18.929 ppb	0.001 ppb	0.014 ppb	0.006 ppb	-0.186 ppb	100.123 %
Concentration per Run 1	-0.067 ppb	0.013 ppb	0.003 ppb	19.139 ppb	-0.003 ppb	0.030 ppb	0.019 ppb	-0.187 ppb	96.694 %
Concentration per Run 2	-0.008 ppb	0.015 ppb	0.063 ppb	20.223 ppb	0.005 ppb	0.044 ppb	-0.051 ppb	-0.252 ppb	102.404 %
Concentration per Run 3	-0.030 ppb	-0.012 ppb	-0.017 ppb	17.425 ppb	0.001 ppb	-0.034 ppb	0.051 ppb	-0.119 ppb	101.270 %
Recovery Percentage 1	-0.701 %	0.543 %	1.633 %	37.858 %	0.207 %	0.679 %	0.641 %	-1.859 %	
Concentration RSD	84.9 %	283.3 %	256.9 %	7.5 %	359.2 %	308.2 %	814.9 %	35.5 %	3.0 %

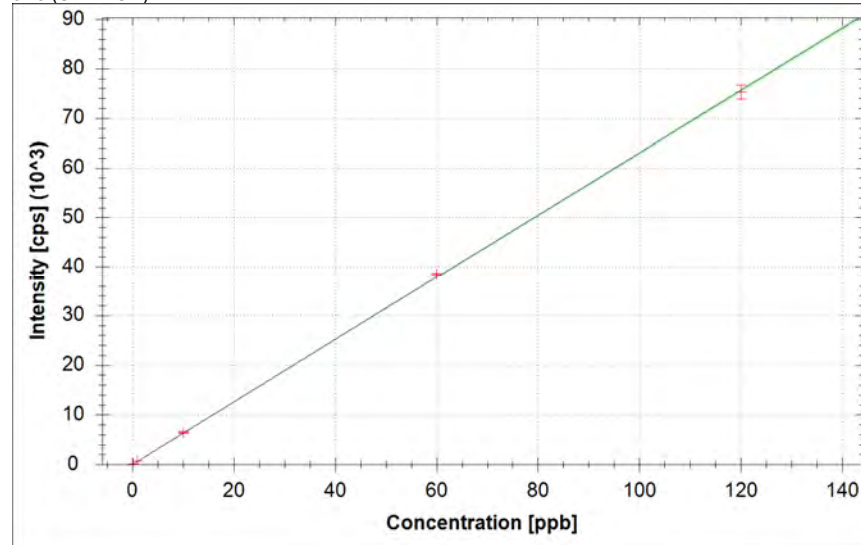
Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.038 ppb	0.182 ppb	-0.012 ppb	105.677 %	0.003 ppb	0.000 ppb	104.634 %	0.038 ppb	-0.065 ppb
Concentration per Run 1	0.034 ppb	0.074 ppb	-0.012 ppb	105.582 %	0.002 ppb	0.000 ppb	103.177 %	0.039 ppb	-0.044 ppb
Concentration per Run 2	0.047 ppb	0.168 ppb	-0.011 ppb	105.840 %	0.009 ppb	0.000 ppb	105.322 %	0.028 ppb	-0.083 ppb
Concentration per Run 3	0.033 ppb	0.305 ppb	-0.013 ppb	105.610 %	-0.002 ppb	0.000 ppb	105.402 %	0.045 ppb	-0.068 ppb
Recovery Percentage 1	7.596 %	3.647 %	-2.413 %		0.663 %	0.000 %		0.941 %	-12.981 %
Concentration RSD	20.8 %	63.8 %	10.1 %	0.1 %	205.3 %	N/A	1.2 %	22.9 %	30.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.978 %	106.139 %	0.361 ppb	0.012 ppb	108.513 %
Concentration per Run 1	99.563 %	103.264 %	0.397 ppb	0.017 ppb	107.292 %
Concentration per Run 2	103.706 %	107.886 %	0.366 ppb	0.011 ppb	108.533 %
Concentration per Run 3	102.667 %	107.269 %	0.319 ppb	0.009 ppb	109.714 %
Recovery Percentage 1			36.099 %	1.222 %	
Concentration RSD	2.1 %	2.4 %	10.9 %	31.8 %	1.1 %



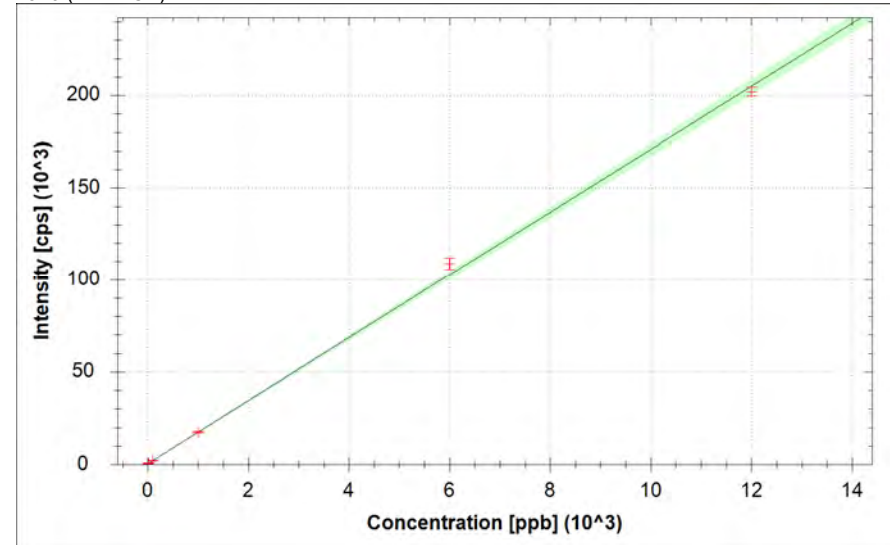
Calibration Curves:

⁹Be (STD AGD)



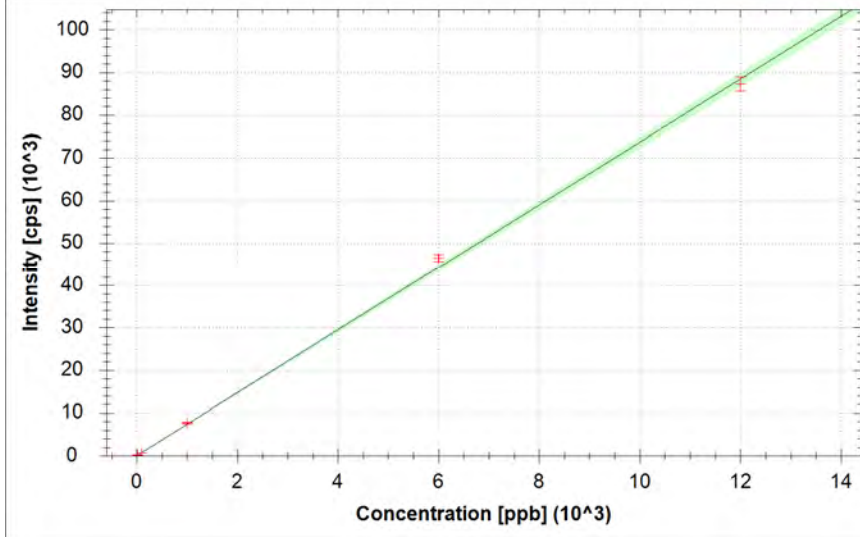
$f(x) = 630.0005 \cdot x + 4.8841$
 $R^2 = 0.9999$
 BEC = 0.008 ppb
 LoD = 0.0072 ppb

²³Na (KED AGD)



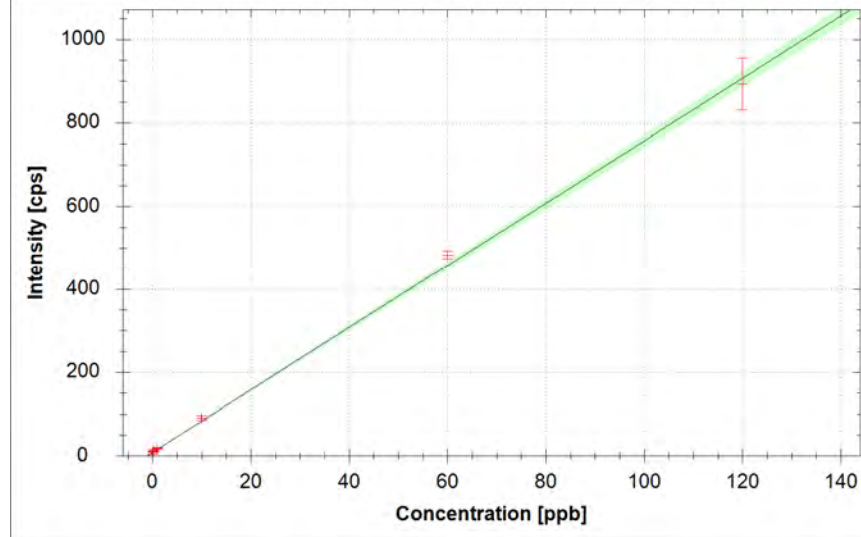
$f(x) = 17.0438 \cdot x + 356.5639$
 $R^2 = 0.9987$
 BEC = 20.920 ppb
 LoD = 0.6302 ppb

24Mg (KED AGD)



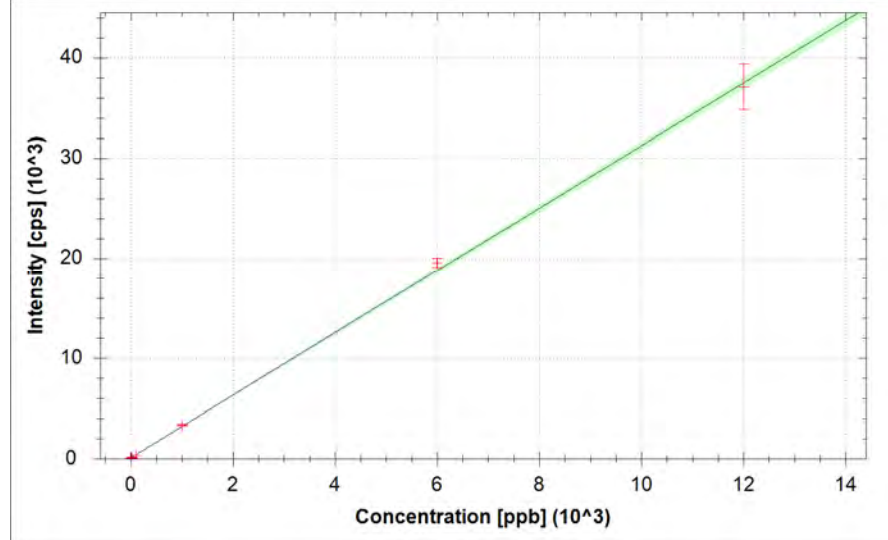
$f(x) = 7.3662 \cdot x + 15.7553$
 $R^2 = 0.9990$
BEC = 2.139 ppb
LoD = 4.4376 ppb

27Al (KED AGD)



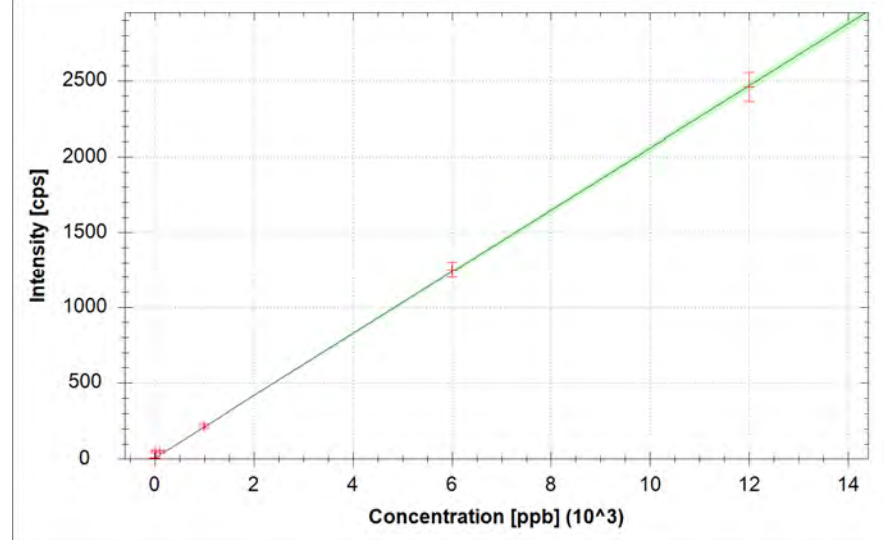
$f(x) = 7.4843 \cdot x + 8.0083$
 $R^2 = 0.9987$
BEC = 1.070 ppb
LoD = 1.4358 ppb

39K (KED AGD)



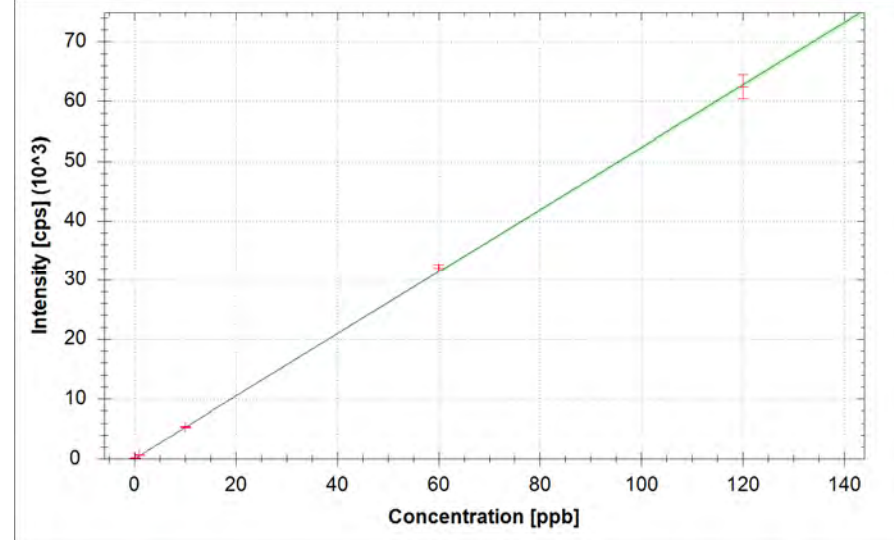
$f(x) = 3.1164 \cdot x + 88.6484$
 $R^2 = 0.9993$
 BEC = 28.446 ppb
 LoD = 16.8198 ppb

44Ca (KED AGD)



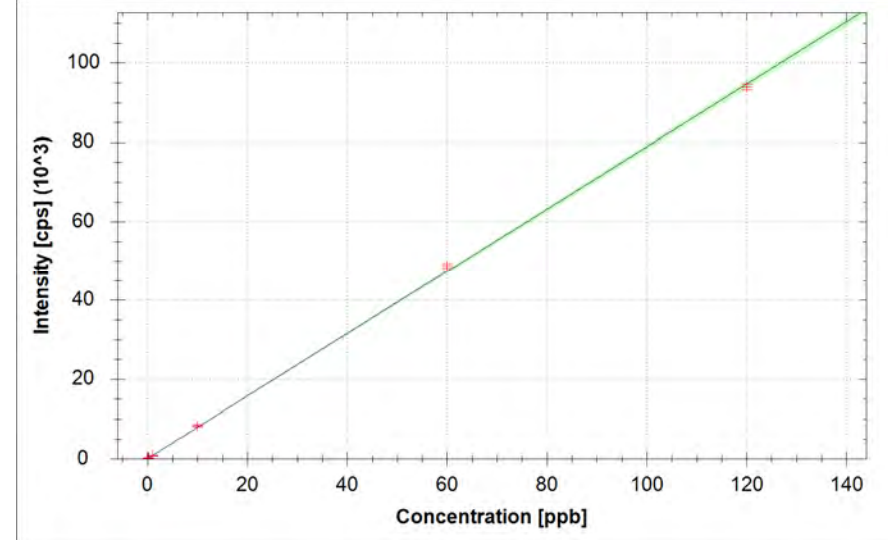
$f(x) = 0.2052 \cdot x + 4.7368$
 $R^2 = 0.9995$
 BEC = 23.081 ppb
 LoD = 49.8728 ppb

51V (KED AGD)



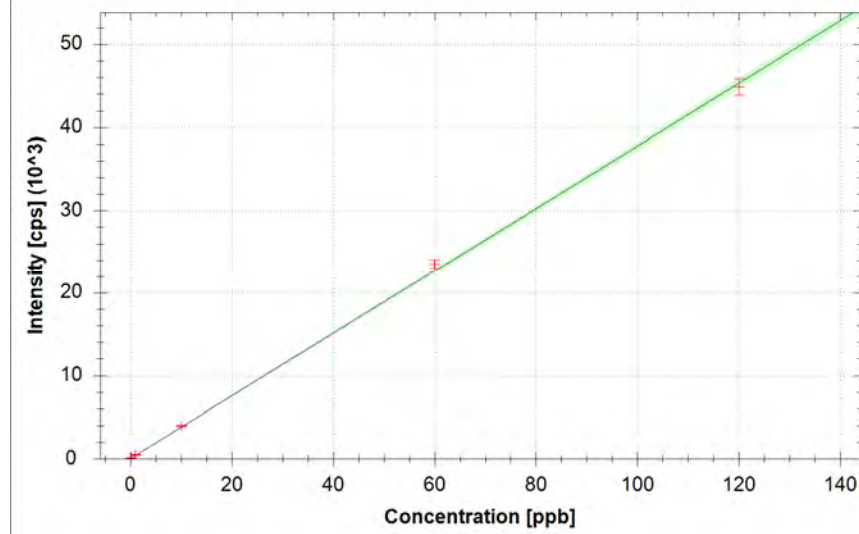
$f(x) = 522.3459 \cdot x + 33.2196$
 $R^2 = 0.9998$
BEC = 0.064 ppb
LoD = 0.0319 ppb

52Cr (KED AGD)



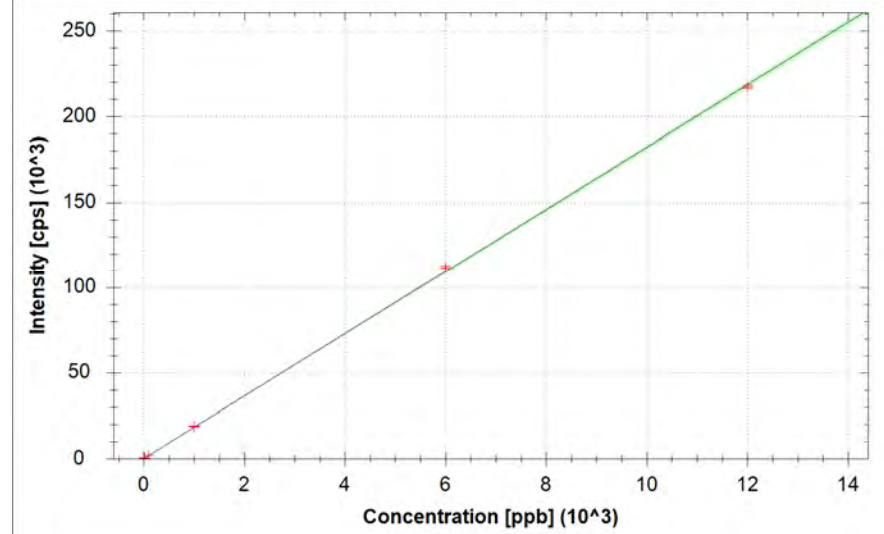
$f(x) = 788.1310 \cdot x + 38.7633$
 $R^2 = 0.9997$
BEC = 0.049 ppb
LoD = 0.0277 ppb

55Mn (KED AGD)



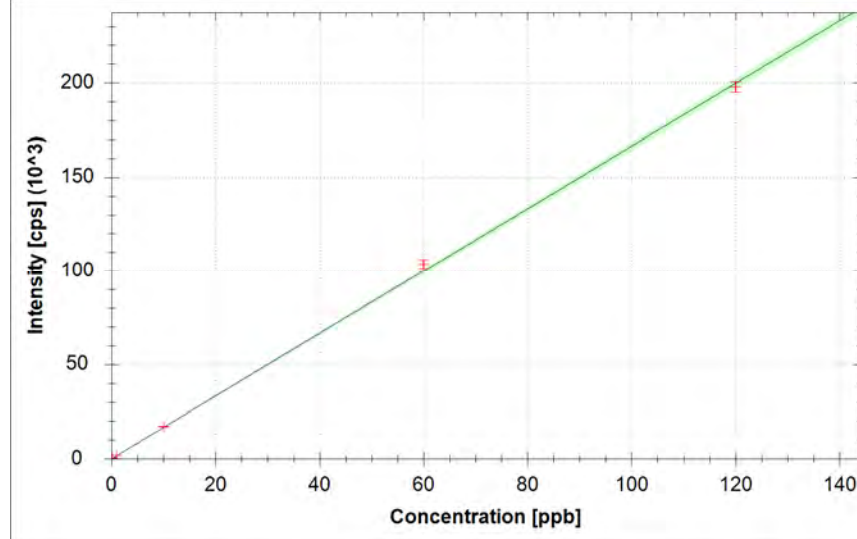
$f(x) = 377.1629x + 33.6462$
 $R^2 = 0.9995$
BEC = 0.089 ppb
LoD = 0.0997 ppb

57Fe (KED AGD)



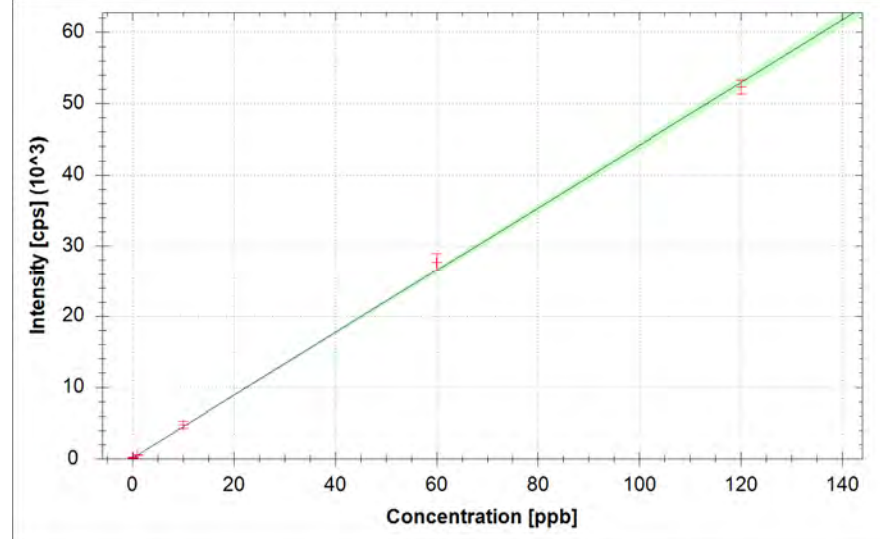
$f(x) = 18.1978x + 160.2125$
 $R^2 = 0.9998$
BEC = 8.804 ppb
LoD = 3.6293 ppb

59Co (KED AGD)



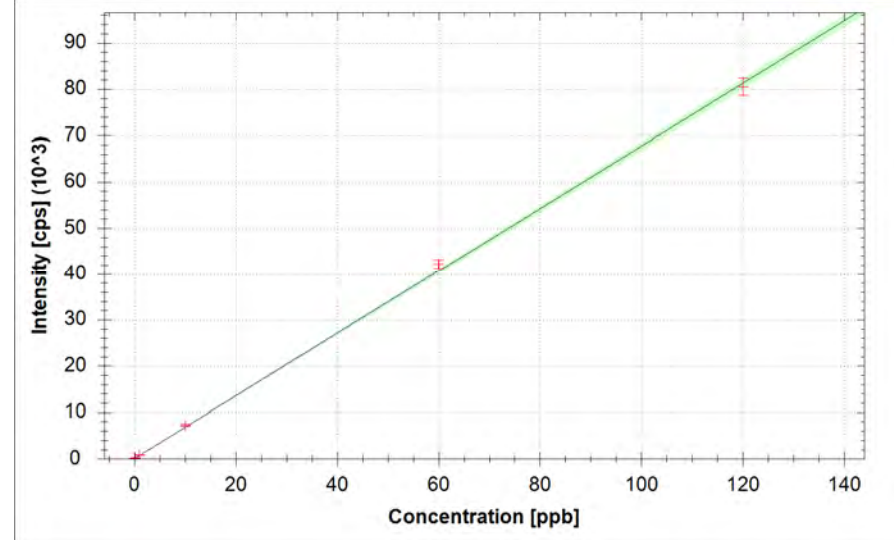
$f(x) = 1664.2425 \cdot x$
 $R^2 = 0.9995$
 BEC = 0.000 ppb
 LoD = 0.0000 ppb

60Ni (KED AGD)



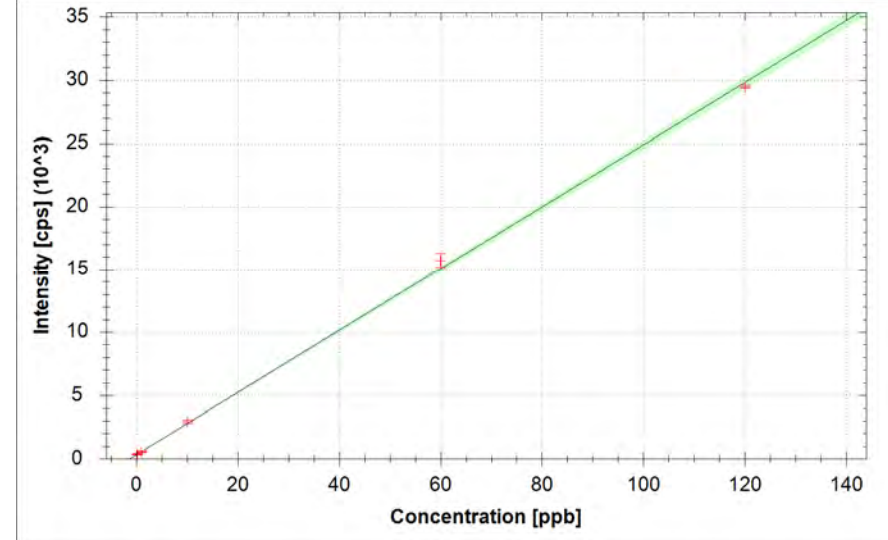
$f(x) = 440.0764 \cdot x + 100.6386$
 $R^2 = 0.9992$
 BEC = 0.229 ppb
 LoD = 0.1787 ppb

65Cu (KED AGD)



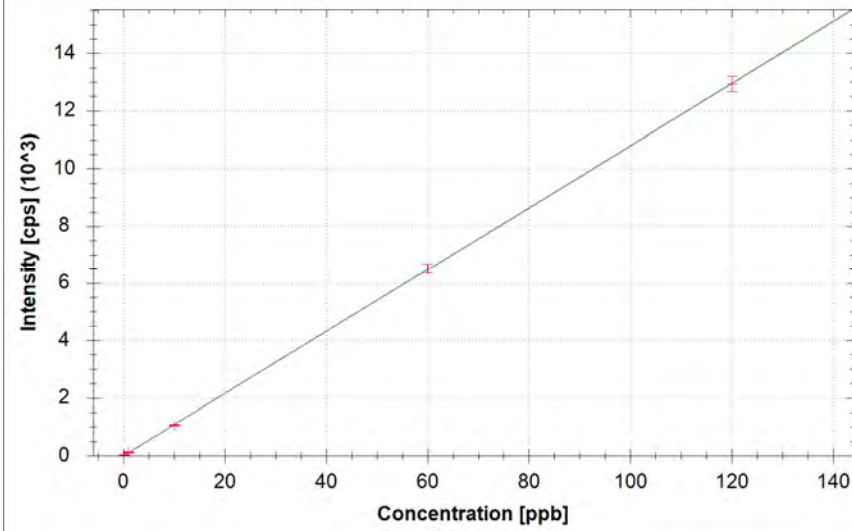
$f(x) = 676.5006 \cdot x + 60.5862$
 $R^2 = 0.9994$
 BEC = 0.090 ppb
 LoD = 0.1097 ppb

66Zn (KED AGD)



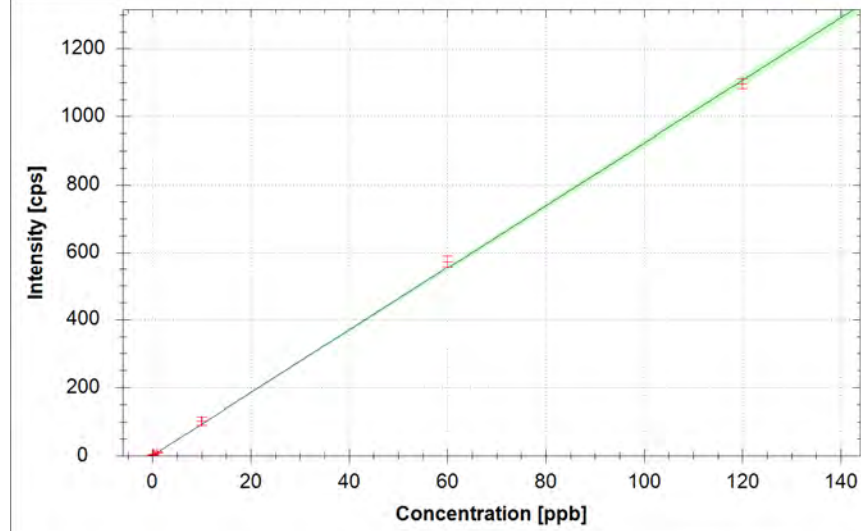
$f(x) = 245.5320 \cdot x + 327.8886$
 $R^2 = 0.9992$
 BEC = 1.335 ppb
 LoD = 0.2811 ppb

75As (KED AGD)



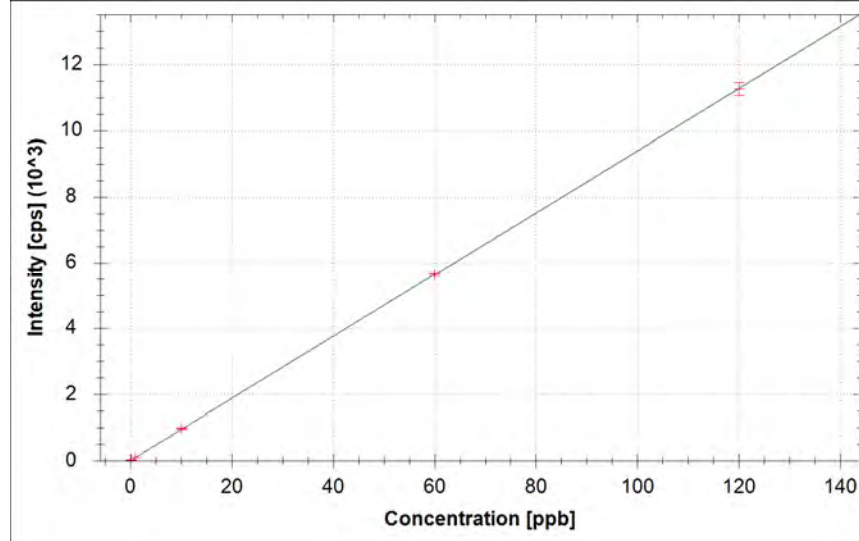
$f(x) = 107.8939 \cdot x + 2.5418$
 $R^2 = 1.0000$
BEC = 0.024 ppb
LoD = 0.0488 ppb

78Se (KED AGD)



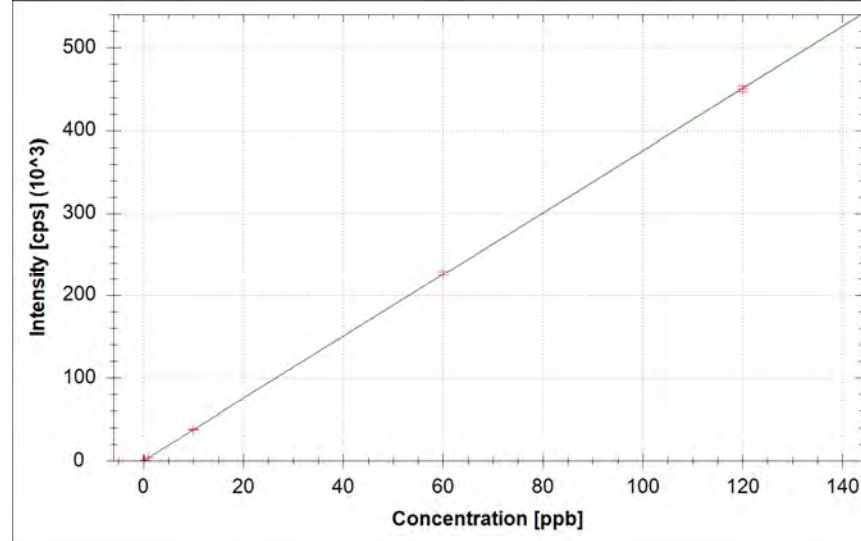
$f(x) = 9.2120 \cdot x + 0.9064$
 $R^2 = 0.9994$
BEC = 0.098 ppb
LoD = 0.3654 ppb

88Sr (KED AGD)



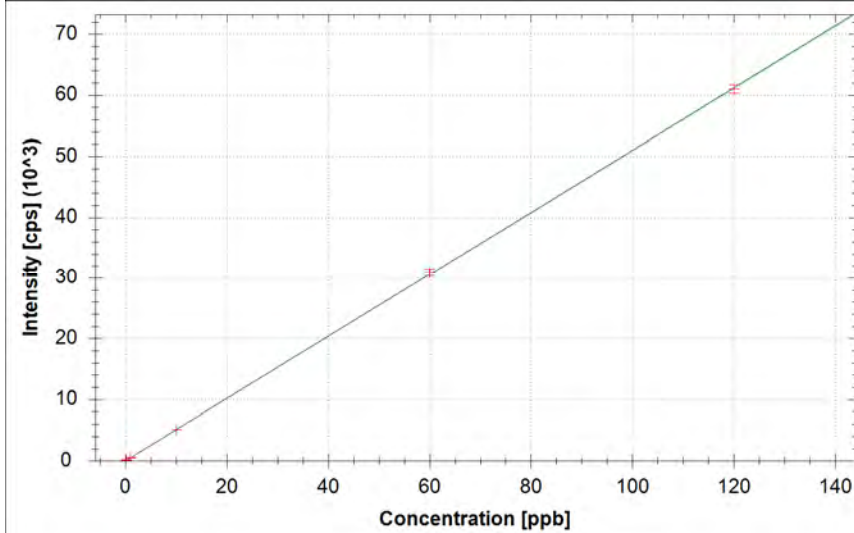
$f(x) = 93.8197x + 7.0211$
 $R^2 = 1.0000$
BEC = 0.075 ppb
LoD = 0.0375 ppb

107Ag (KED AGD)



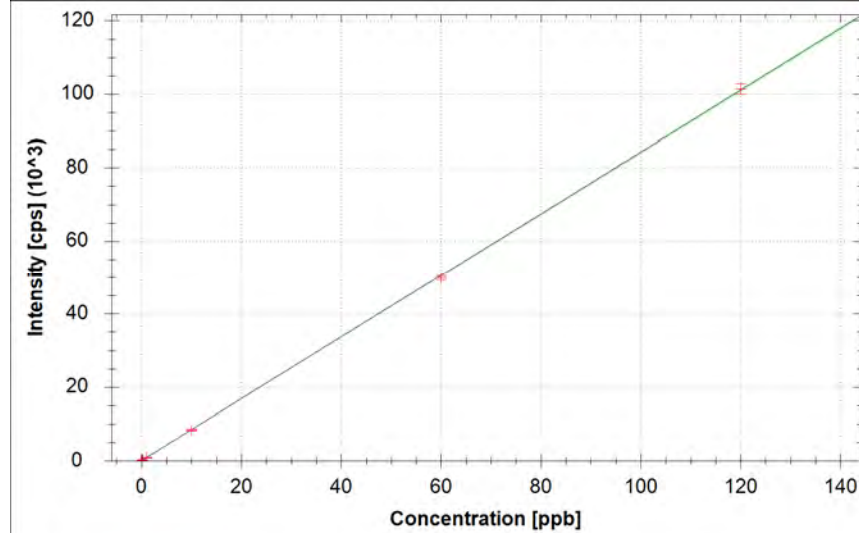
$f(x) = 3756.9893x + 16.7434$
 $R^2 = 1.0000$
BEC = 0.004 ppb
LoD = 0.0056 ppb

111Cd (KED AGD)



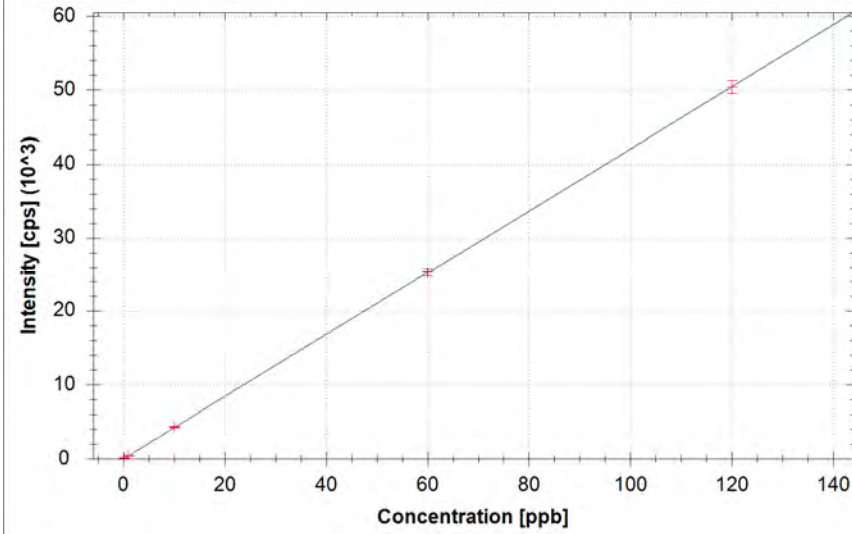
$f(x) = 509.7284 \cdot x + 0.8754$
 $R^2 = 1.0000$
 BEC = 0.002 ppb
 LoD = 0.0045 ppb

121Sb (KED AGD)



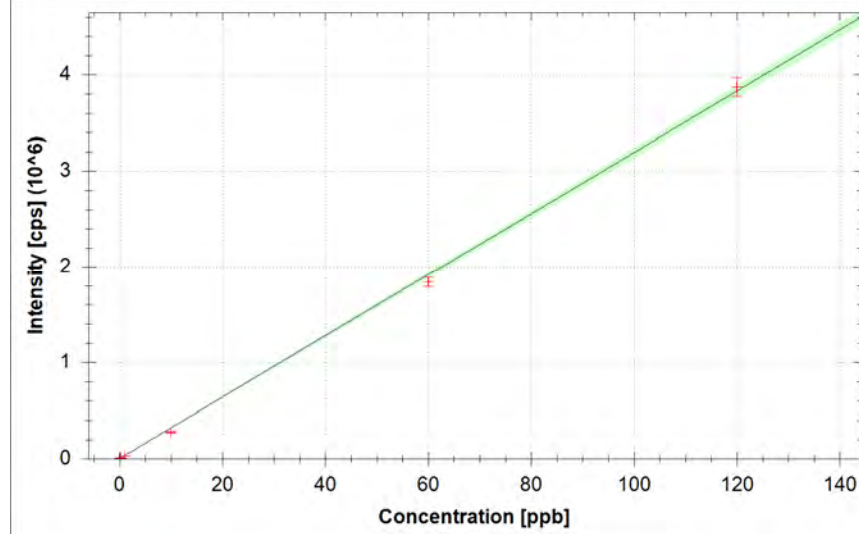
$f(x) = 841.5579 \cdot x + 50.6245$
 $R^2 = 0.9999$
 BEC = 0.060 ppb
 LoD = 0.0093 ppb

137Ba (KED AGD)



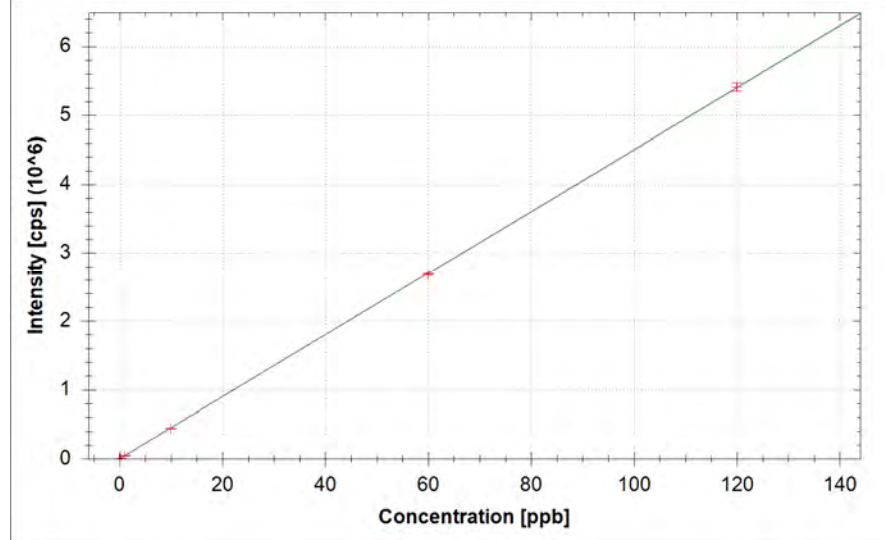
$f(x) = 420.2559 \cdot x + 11.0493$
 $R^2 = 1.0000$
BEC = 0.026 ppb
LoD = 0.0258 ppb

205TI (KED AGD)



$f(x) = 31890.8691 \cdot x + 2503.4232$
 $R^2 = 0.9992$
BEC = 0.078 ppb
LoD = 0.0076 ppb

208Pb (KED AGD)



$f(x) = 45013.8895 \cdot x + 413.2258$
 $R^2 = 1.0000$
BEC = 0.009 ppb
LoD = 0.0020 ppb

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Standards:

Analysis Index: 4
Analysis Name: 0.2/20 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:34:00 PM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 50000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	100.034 %	0.4 %	
6Li (KED AGD)	101.436 %	3.4 %	
9Be (STD AGD)	0.201 ppb	6.4 %	0.200 ppb
23Na (KED AGD)	21.627 ppb	12.4 %	20.000 ppb
24Mg (KED AGD)	20.037 ppb	51.0 %	20.000 ppb
27Al (KED AGD)	0.564 ppb	65.8 %	0.200 ppb
39K (KED AGD)	3.172 ppb	356.2 %	20.000 ppb
44Ca (KED AGD)	215.613 ppb	21.8 %	20.000 ppb
45Sc (STD AGD)	98.520 %	0.3 %	
51V (KED AGD)	0.199 ppb	20.6 %	0.200 ppb
52Cr (KED AGD)	0.181 ppb	9.2 %	0.200 ppb
55Mn (KED AGD)	0.236 ppb	24.7 %	0.200 ppb
57Fe (KED AGD)	23.378 ppb	16.2 %	20.000 ppb
59Co (KED AGD)	0.234 ppb	15.0 %	0.200 ppb
60Ni (KED AGD)	0.208 ppb	6.9 %	0.200 ppb
65Cu (KED AGD)	0.188 ppb	23.9 %	0.200 ppb
66Zn (KED AGD)	0.208 ppb	63.6 %	0.200 ppb
74Ge (KED AGD)	101.905 %	0.9 %	
75As (KED AGD)	0.199 ppb	18.7 %	0.200 ppb
78Se (KED AGD)	0.323 ppb	22.7 %	0.200 ppb
88Sr (KED AGD)	0.274 ppb	10.3 %	0.200 ppb
103Rh (KED AGD)	99.766 %	0.0 %	
107Ag (KED AGD)	0.210 ppb	5.1 %	0.200 ppb
111Cd (KED AGD)	0.226 ppb	7.4 %	0.200 ppb
115In (KED AGD)	98.877 %	2.4 %	
121Sb (KED AGD)	0.180 ppb	9.8 %	0.200 ppb
137Ba (KED AGD)	0.201 ppb	2.0 %	0.200 ppb
159Tb (KED AGD)	98.957 %	0.3 %	
175Lu (KED AGD)	99.315 %	2.0 %	
205Tl (KED AGD)	0.157 ppb	6.1 %	0.200 ppb
208Pb (KED AGD)	0.201 ppb	2.1 %	0.200 ppb
209Bi (KED AGD)	100.021 %	0.8 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 5
Analysis Name: 1/100 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:38:47 PM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 10000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	98.973 %	0.2 %	
6Li (KED AGD)	97.744 %	3.2 %	
9Be (STD AGD)	1.004 ppb	0.3 %	1.000 ppb
23Na (KED AGD)	95.798 ppb	3.4 %	100.000 ppb
24Mg (KED AGD)	88.056 ppb	4.3 %	100.000 ppb
27Al (KED AGD)	1.310 ppb	19.5 %	1.000 ppb
39K (KED AGD)	79.672 ppb	10.0 %	100.000 ppb
44Ca (KED AGD)	214.641 ppb	20.7 %	100.000 ppb
45Sc (STD AGD)	97.411 %	0.4 %	
51V (KED AGD)	1.119 ppb	6.2 %	1.000 ppb
52Cr (KED AGD)	1.003 ppb	10.5 %	1.000 ppb
55Mn (KED AGD)	1.196 ppb	17.4 %	1.000 ppb
57Fe (KED AGD)	104.068 ppb	3.2 %	100.000 ppb
59Co (KED AGD)	1.089 ppb	5.9 %	1.000 ppb
60Ni (KED AGD)	0.978 ppb	11.7 %	1.000 ppb
65Cu (KED AGD)	1.119 ppb	6.9 %	1.000 ppb
66Zn (KED AGD)	0.939 ppb	27.4 %	1.000 ppb
74Ge (KED AGD)	100.130 %	2.5 %	
75As (KED AGD)	1.060 ppb	12.7 %	1.000 ppb
78Se (KED AGD)	1.040 ppb	32.4 %	1.000 ppb
88Sr (KED AGD)	1.034 ppb	3.3 %	1.000 ppb
103Rh (KED AGD)	98.967 %	0.4 %	
107Ag (KED AGD)	1.046 ppb	4.4 %	1.000 ppb
111Cd (KED AGD)	1.041 ppb	8.1 %	1.000 ppb
115In (KED AGD)	98.035 %	2.4 %	
121Sb (KED AGD)	0.984 ppb	6.4 %	1.000 ppb
137Ba (KED AGD)	1.050 ppb	9.5 %	1.000 ppb
159Tb (KED AGD)	98.830 %	1.7 %	
175Lu (KED AGD)	99.518 %	2.7 %	
205Tl (KED AGD)	0.822 ppb	5.2 %	1.000 ppb
208Pb (KED AGD)	0.975 ppb	1.4 %	1.000 ppb
209Bi (KED AGD)	98.527 %	1.3 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 6
Analysis Name: 10/1000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:43:36 PM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 1000

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	95.020 %	2.1 %	
6Li (KED AGD)	94.205 %	6.6 %	
9Be (STD AGD)	10.209 ppb	2.9 %	10.000 ppb
23Na (KED AGD)	1,005.689 ppb	2.8 %	1,000.000 ppb
24Mg (KED AGD)	1,034.980 ppb	2.0 %	1,000.000 ppb
27Al (KED AGD)	11.015 ppb	7.1 %	10.000 ppb
39K (KED AGD)	1,050.547 ppb	3.1 %	1,000.000 ppb
44Ca (KED AGD)	1,038.231 ppb	7.8 %	1,000.000 ppb
45Sc (STD AGD)	94.449 %	2.0 %	
51V (KED AGD)	10.149 ppb	2.2 %	10.000 ppb
52Cr (KED AGD)	10.485 ppb	2.8 %	10.000 ppb
55Mn (KED AGD)	10.342 ppb	3.1 %	10.000 ppb
57Fe (KED AGD)	1,025.354 ppb	2.3 %	1,000.000 ppb
59Co (KED AGD)	10.262 ppb	1.3 %	10.000 ppb
60Ni (KED AGD)	10.604 ppb	10.1 %	10.000 ppb
65Cu (KED AGD)	10.644 ppb	4.0 %	10.000 ppb
66Zn (KED AGD)	10.607 ppb	5.6 %	10.000 ppb
74Ge (KED AGD)	98.078 %	2.9 %	
75As (KED AGD)	9.776 ppb	1.8 %	10.000 ppb
78Se (KED AGD)	10.975 ppb	11.3 %	10.000 ppb
88Sr (KED AGD)	10.307 ppb	2.7 %	10.000 ppb
103Rh (KED AGD)	96.725 %	0.5 %	
107Ag (KED AGD)	10.086 ppb	0.3 %	10.000 ppb
111Cd (KED AGD)	10.028 ppb	0.7 %	10.000 ppb
115In (KED AGD)	96.359 %	1.5 %	
121Sb (KED AGD)	9.892 ppb	2.5 %	10.000 ppb
137Ba (KED AGD)	10.245 ppb	1.7 %	10.000 ppb
159Tb (KED AGD)	98.058 %	2.6 %	
175Lu (KED AGD)	97.635 %	3.5 %	
205Tl (KED AGD)	8.562 ppb	3.2 %	10.000 ppb
208Pb (KED AGD)	9.793 ppb	0.9 %	10.000 ppb
209Bi (KED AGD)	96.901 %	0.8 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 7
Analysis Name: 60/6000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:48:24 PM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 166.666666

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	95.632 %	1.0 %	
6Li (KED AGD)	86.923 %	6.6 %	
9Be (STD AGD)	60.921 ppb	0.6 %	60.000 ppb
23Na (KED AGD)	6,357.305 ppb	2.9 %	6,000.000 ppb
24Mg (KED AGD)	6,301.571 ppb	1.8 %	6,000.000 ppb
27Al (KED AGD)	63.389 ppb	1.9 %	60.000 ppb
39K (KED AGD)	6,245.775 ppb	2.4 %	6,000.000 ppb
44Ca (KED AGD)	6,072.175 ppb	4.0 %	6,000.000 ppb
45Sc (STD AGD)	104.824 %	1.1 %	
51V (KED AGD)	61.241 ppb	1.8 %	60.000 ppb
52Cr (KED AGD)	61.719 ppb	1.2 %	60.000 ppb
55Mn (KED AGD)	62.238 ppb	2.0 %	60.000 ppb
57Fe (KED AGD)	6,141.591 ppb	0.8 %	6,000.000 ppb
59Co (KED AGD)	62.264 ppb	2.3 %	60.000 ppb
60Ni (KED AGD)	62.674 ppb	4.5 %	60.000 ppb
65Cu (KED AGD)	62.193 ppb	2.4 %	60.000 ppb
66Zn (KED AGD)	62.685 ppb	3.7 %	60.000 ppb
74Ge (KED AGD)	94.862 %	3.2 %	
75As (KED AGD)	60.338 ppb	2.5 %	60.000 ppb
78Se (KED AGD)	62.121 ppb	2.9 %	60.000 ppb
88Sr (KED AGD)	60.173 ppb	1.0 %	60.000 ppb
103Rh (KED AGD)	93.729 %	1.4 %	
107Ag (KED AGD)	60.365 ppb	1.1 %	60.000 ppb
111Cd (KED AGD)	60.611 ppb	1.9 %	60.000 ppb
115In (KED AGD)	94.804 %	2.4 %	
121Sb (KED AGD)	59.223 ppb	1.1 %	60.000 ppb
137Ba (KED AGD)	60.100 ppb	1.9 %	60.000 ppb
159Tb (KED AGD)	96.119 %	1.2 %	
175Lu (KED AGD)	96.633 %	2.3 %	
205Tl (KED AGD)	57.590 ppb	2.6 %	60.000 ppb
208Pb (KED AGD)	59.612 ppb	0.5 %	60.000 ppb
209Bi (KED AGD)	93.913 %	0.3 %	

Alpha ICPMSQ Full

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Standards:

Analysis Index: 8
Analysis Name: 120/12000 Cal
Analysis Type: STD
Analysis Started at: 12/17/2021 8:53:14 PM
Standard (Stock): Calibration Standard 6020/2008
Standard DF: 83.33333333

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (STD AGD)	91.853 %	0.9 %	
6Li (KED AGD)	89.846 %	1.5 %	
9Be (STD AGD)	119.522 ppb	1.9 %	120.000 ppb
23Na (KED AGD)	11,820.906 ppb	1.2 %	12,000.000 ppb
24Mg (KED AGD)	11,846.399 ppb	1.9 %	12,000.000 ppb
27Al (KED AGD)	118.218 ppb	7.0 %	120.000 ppb
39K (KED AGD)	11,873.098 ppb	6.1 %	12,000.000 ppb
44Ca (KED AGD)	11,959.445 ppb	4.0 %	12,000.000 ppb
45Sc (STD AGD)	107.131 %	0.3 %	
51V (KED AGD)	119.366 ppb	3.3 %	120.000 ppb
52Cr (KED AGD)	119.100 ppb	0.8 %	120.000 ppb
55Mn (KED AGD)	118.851 ppb	2.2 %	120.000 ppb
57Fe (KED AGD)	11,927.052 ppb	0.4 %	12,000.000 ppb
59Co (KED AGD)	118.845 ppb	1.4 %	120.000 ppb
60Ni (KED AGD)	118.613 ppb	1.9 %	120.000 ppb
65Cu (KED AGD)	118.849 ppb	2.3 %	120.000 ppb
66Zn (KED AGD)	118.607 ppb	0.4 %	120.000 ppb
74Ge (KED AGD)	91.248 %	3.0 %	
75As (KED AGD)	119.849 ppb	2.1 %	120.000 ppb
78Se (KED AGD)	118.858 ppb	1.3 %	120.000 ppb
88Sr (KED AGD)	119.888 ppb	1.7 %	120.000 ppb
103Rh (KED AGD)	88.314 %	0.6 %	
107Ag (KED AGD)	119.810 ppb	0.7 %	120.000 ppb
111Cd (KED AGD)	119.692 ppb	1.1 %	120.000 ppb
115In (KED AGD)	89.228 %	1.8 %	
121Sb (KED AGD)	120.398 ppb	1.4 %	120.000 ppb
137Ba (KED AGD)	119.929 ppb	1.8 %	120.000 ppb
159Tb (KED AGD)	93.132 %	1.5 %	
175Lu (KED AGD)	94.158 %	2.5 %	
205Tl (KED AGD)	121.326 ppb	2.6 %	120.000 ppb
208Pb (KED AGD)	120.212 ppb	1.1 %	120.000 ppb
209Bi (KED AGD)	88.965 %	0.1 %	

Alpha ICPMSQ Full

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Analysis index: 1 Analysis started at: 12/17/2021 8:19:34 PM
 Analysis label: Rinse User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.221 %	94.769 %	0.005 ppb	4.360 ppb	-0.896 ppb	-0.095 ppb	-0.643 ppb	-12.800 ppb	88.885 %
Concentration per Run 1	95.431 %	90.308 %	0.008 ppb	3.968 ppb	-1.161 ppb	-0.591 ppb	-1.250 ppb	-17.047 ppb	87.908 %
Concentration per Run 2	95.785 %	98.000 %	0.008 ppb	1.443 ppb	0.612 ppb	0.282 ppb	-6.894 ppb	-17.114 ppb	88.301 %
Concentration per Run 3	97.445 %	96.000 %	-0.001 ppb	7.668 ppb	-2.139 ppb	0.024 ppb	6.215 ppb	-4.241 ppb	90.446 %
Concentration RSD	1.1 %	4.2 %	108.2 %	71.8 %	155.7 %	472.3 %	1,022.8 %	57.9 %	1.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.016 ppb	-0.010 ppb	0.007 ppb	7.101 ppb	0.004 ppb	-0.004 ppb	0.085 ppb	-0.098 ppb	100.331 %
Concentration per Run 1	0.016 ppb	0.004 ppb	0.058 ppb	5.604 ppb	0.008 ppb	0.052 ppb	0.102 ppb	-0.041 ppb	98.726 %
Concentration per Run 2	-0.025 ppb	-0.020 ppb	-0.018 ppb	8.423 ppb	0.000 ppb	0.014 ppb	0.078 ppb	-0.204 ppb	100.600 %
Concentration per Run 3	-0.038 ppb	-0.015 ppb	-0.019 ppb	7.275 ppb	-0.015 ppb	-0.078 ppb	0.076 ppb	-0.050 ppb	101.668 %
Concentration RSD	181.4 %	119.1 %	640.9 %	20.0 %	101.2 %	1,681.2 %	17.1 %	93.0 %	1.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.012 ppb	-0.058 ppb	-0.005 ppb	99.297 %	0.001 ppb	0.001 ppb	96.886 %	-0.010 ppb	0.001 ppb
Concentration per Run 1	0.000 ppb	-0.077 ppb	0.002 ppb	97.596 %	-0.003 ppb	0.001 ppb	94.233 %	-0.007 ppb	-0.001 ppb
Concentration per Run 2	-0.008 ppb	-0.065 ppb	-0.020 ppb	100.963 %	0.004 ppb	0.004 ppb	97.912 %	-0.004 ppb	-0.002 ppb
Concentration per Run 3	0.045 ppb	-0.034 ppb	0.004 ppb	99.332 %	0.001 ppb	-0.002 ppb	98.513 %	-0.018 ppb	0.006 ppb
Concentration RSD	234.4 %	38.6 %	292.6 %	1.7 %	505.2 %	275.6 %	2.4 %	81.4 %	624.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.779 %	99.043 %	0.073 ppb	0.007 ppb	96.929 %
Concentration per Run 1	97.469 %	97.337 %	0.070 ppb	0.007 ppb	95.378 %
Concentration per Run 2	99.868 %	99.673 %	0.077 ppb	0.007 ppb	96.962 %
Concentration per Run 3	98.999 %	100.117 %	0.073 ppb	0.006 ppb	98.447 %
Concentration RSD	1.2 %	1.5 %	4.7 %	9.3 %	1.6 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 2 Analysis started at: 12/17/2021 8:24:20 PM
 Analysis label: CAL LOT#M0304 User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	97.963 %	97.385 %	0.004 ppb	2.498 ppb	-1.524 ppb	-0.398 ppb	-7.553 ppb	-12.852 ppb	90.235 %
Concentration per Run 1	96.831 %	97.692 %	0.010 ppb	1.420 ppb	-2.139 ppb	-0.795 ppb	-15.218 ppb	-17.152 ppb	89.339 %
Concentration per Run 2	99.064 %	101.231 %	0.001 ppb	1.985 ppb	-1.244 ppb	-0.541 ppb	3.335 ppb	-10.821 ppb	91.572 %
Concentration per Run 3	97.994 %	93.231 %	0.001 ppb	4.088 ppb	-1.188 ppb	0.142 ppb	-10.776 ppb	-10.584 ppb	89.793 %
Concentration RSD	1.1 %	4.1 %	133.3 %	56.3 %	35.0 %	121.8 %	128.3 %	29.0 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.021 ppb	-0.026 ppb	0.059 ppb	5.055 ppb	0.001 ppb	-0.009 ppb	0.026 ppb	-0.109 ppb	99.238 %
Concentration per Run 1	-0.050 ppb	-0.027 ppb	0.002 ppb	6.355 ppb	0.000 ppb	-0.056 ppb	0.013 ppb	-0.142 ppb	96.326 %
Concentration per Run 2	0.038 ppb	-0.024 ppb	0.121 ppb	4.640 ppb	0.000 ppb	-0.003 ppb	0.018 ppb	-0.063 ppb	100.693 %
Concentration per Run 3	-0.051 ppb	-0.028 ppb	0.054 ppb	4.171 ppb	0.004 ppb	0.031 ppb	0.049 ppb	-0.122 ppb	100.693 %
Concentration RSD	240.8 %	7.6 %	100.8 %	22.7 %	173.2 %	464.0 %	73.9 %	37.5 %	2.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	-0.013 ppb	-0.049 ppb	-0.002 ppb	98.853 %	0.002 ppb	0.001 ppb	98.314 %	-0.008 ppb	0.006 ppb
Concentration per Run 1	-0.016 ppb	-0.101 ppb	0.002 ppb	97.130 %	0.005 ppb	-0.002 ppb	95.259 %	-0.022 ppb	0.015 ppb
Concentration per Run 2	-0.024 ppb	-0.008 ppb	-0.014 ppb	100.203 %	0.000 ppb	0.001 ppb	99.084 %	0.004 ppb	-0.010 ppb
Concentration per Run 3	-0.001 ppb	-0.037 ppb	0.006 ppb	99.227 %	0.001 ppb	0.004 ppb	100.599 %	-0.006 ppb	0.014 ppb
Concentration RSD	88.5 %	97.3 %	508.0 %	1.6 %	135.0 %	290.0 %	2.8 %	158.2 %	232.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.044 %	98.684 %	0.017 ppb	0.006 ppb	98.317 %
Concentration per Run 1	96.561 %	96.980 %	0.014 ppb	0.005 ppb	96.787 %
Concentration per Run 2	98.977 %	100.144 %	0.021 ppb	0.006 ppb	99.028 %
Concentration per Run 3	98.595 %	98.927 %	0.015 ppb	0.006 ppb	99.136 %
Concentration RSD	1.3 %	1.6 %	23.5 %	11.4 %	1.3 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 3 Analysis started at: 12/17/2021 8:29:07 PM
 Analysis label: Blank WP ICPMSQ User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.0 %	0.1 %	0.3 %	0.0 %	0.7 %	0.4 %	0.2 %	0.7 %	0.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.2 %	0.2 %	0.4 %	0.1 %		0.3 %	0.4 %	0.1 %	0.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration RSD	0.7 %	1.2 %	0.2 %	0.0 %	0.4 %	0.9 %	0.0 %	0.1 %	0.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.0 %	0.0 %	0.0 %	0.1 %	0.0 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 4 Analysis started at: 12/17/2021 8:34:00 PM
 Analysis label: 0.2/20 Cal User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	100.034 %	101.436 %	0.201 ppb	21.627 ppb	20.037 ppb	0.564 ppb	3.172 ppb	215.613 ppb	98.520 %
Concentration per Run 1	100.383 %	100.923 %	0.208 ppb	19.135 ppb	9.489 ppb	0.162 ppb	15.857 ppb	236.122 ppb	98.344 %
Concentration per Run 2	99.599 %	98.308 %	0.186 ppb	24.452 ppb	20.714 ppb	0.637 ppb	-0.522 ppb	161.843 ppb	98.832 %
Concentration per Run 3	100.120 %	105.077 %	0.208 ppb	21.294 ppb	29.910 ppb	0.893 ppb	-5.818 ppb	248.872 ppb	98.384 %
Concentration RSD	0.4 %	3.4 %	6.4 %	12.4 %	51.0 %	65.8 %	356.2 %	21.8 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.199 ppb	0.181 ppb	0.236 ppb	23.378 ppb	0.234 ppb	0.208 ppb	0.188 ppb	0.208 ppb	101.905 %
Concentration per Run 1	0.213 ppb	0.171 ppb	0.224 ppb	20.745 ppb	0.248 ppb	0.203 ppb	0.240 ppb	0.302 ppb	101.912 %
Concentration per Run 2	0.153 ppb	0.200 ppb	0.299 ppb	27.724 ppb	0.259 ppb	0.224 ppb	0.165 ppb	0.057 ppb	100.956 %
Concentration per Run 3	0.232 ppb	0.171 ppb	0.184 ppb	21.665 ppb	0.194 ppb	0.197 ppb	0.159 ppb	0.266 ppb	102.849 %
Concentration RSD	20.6 %	9.2 %	24.7 %	16.2 %	15.0 %	6.9 %	23.9 %	63.6 %	0.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.199 ppb	0.323 ppb	0.274 ppb	99.766 %	0.210 ppb	0.226 ppb	98.877 %	0.180 ppb	0.201 ppb
Concentration per Run 1	0.227 ppb	0.251 ppb	0.252 ppb	99.792 %	0.204 ppb	0.246 ppb	96.099 %	0.196 ppb	0.201 ppb
Concentration per Run 2	0.214 ppb	0.398 ppb	0.306 ppb	99.738 %	0.203 ppb	0.217 ppb	100.498 %	0.161 ppb	0.205 ppb
Concentration per Run 3	0.157 ppb	0.321 ppb	0.264 ppb	99.769 %	0.222 ppb	0.216 ppb	100.034 %	0.184 ppb	0.197 ppb
Concentration RSD	18.7 %	22.7 %	10.3 %	0.0 %	5.1 %	7.4 %	2.4 %	9.8 %	2.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.957 %	99.315 %	0.157 ppb	0.201 ppb	100.021 %
Concentration per Run 1	99.222 %	97.050 %	0.148 ppb	0.200 ppb	100.872 %
Concentration per Run 2	98.614 %	100.037 %	0.157 ppb	0.205 ppb	99.187 %
Concentration per Run 3	99.036 %	100.859 %	0.167 ppb	0.197 ppb	100.002 %
Concentration RSD	0.3 %	2.0 %	6.1 %	2.1 %	0.8 %

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12/18/2021 10:42:07 AM



Analysis index: 5 Analysis started at: 12/17/2021 8:38:47 PM
 Analysis label: 1/100 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.973 %	97.744 %	1.004 ppb	95.798 ppb	88.056 ppb	1.310 ppb	79.672 ppb	214.641 ppb	97.411 %
Concentration per Run 1	99.053 %	101.231 %	1.002 ppb	93.651 ppb	86.393 ppb	1.335 ppb	79.256 ppb	182.563 ppb	97.856 %
Concentration per Run 2	98.764 %	96.923 %	1.007 ppb	94.147 ppb	85.371 ppb	1.553 ppb	87.817 ppb	265.375 ppb	97.073 %
Concentration per Run 3	99.101 %	95.077 %	1.002 ppb	99.596 ppb	92.406 ppb	1.043 ppb	71.941 ppb	195.985 ppb	97.305 %
Concentration RSD	0.2 %	3.2 %	0.3 %	3.4 %	4.3 %	19.5 %	10.0 %	20.7 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	1.119 ppb	1.003 ppb	1.196 ppb	104.068 ppb	1.089 ppb	0.978 ppb	1.119 ppb	0.939 ppb	100.130 %
Concentration per Run 1	1.088 ppb	0.882 ppb	0.989 ppb	101.179 ppb	1.163 ppb	1.007 ppb	1.170 ppb	0.692 ppb	97.282 %
Concentration per Run 2	1.070 ppb	1.055 ppb	1.194 ppb	103.265 ppb	1.061 ppb	0.852 ppb	1.156 ppb	0.920 ppb	101.949 %
Concentration per Run 3	1.199 ppb	1.072 ppb	1.404 ppb	107.761 ppb	1.044 ppb	1.075 ppb	1.030 ppb	1.206 ppb	101.158 %
Concentration RSD	6.2 %	10.5 %	17.4 %	3.2 %	5.9 %	11.7 %	6.9 %	27.4 %	2.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1.060 ppb	1.040 ppb	1.034 ppb	98.967 %	1.046 ppb	1.041 ppb	98.035 %	0.984 ppb	1.050 ppb
Concentration per Run 1	1.080 ppb	0.863 ppb	1.009 ppb	98.483 %	1.067 ppb	1.113 ppb	95.454 %	1.054 ppb	0.938 ppb
Concentration per Run 2	0.917 ppb	1.429 ppb	1.020 ppb	99.181 %	0.992 ppb	0.948 ppb	99.940 %	0.967 ppb	1.129 ppb
Concentration per Run 3	1.184 ppb	0.830 ppb	1.072 ppb	99.238 %	1.078 ppb	1.062 ppb	98.712 %	0.931 ppb	1.082 ppb
Concentration RSD	12.7 %	32.4 %	3.3 %	0.4 %	4.4 %	8.1 %	2.4 %	6.4 %	9.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.830 %	99.518 %	0.822 ppb	0.975 ppb	98.527 %
Concentration per Run 1	97.008 %	96.512 %	0.784 ppb	0.959 ppb	98.120 %
Concentration per Run 2	99.199 %	101.565 %	0.813 ppb	0.985 ppb	99.946 %
Concentration per Run 3	100.283 %	100.476 %	0.868 ppb	0.982 ppb	97.514 %
Concentration RSD	1.7 %	2.7 %	5.2 %	1.4 %	1.3 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 6 Analysis started at: 12/17/2021 8:43:36 PM
 Analysis label: 10/1000 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.020 %	94.205 %	10.209 ppb	1,005.689 ppb	1,034.980 ppb	11.015 ppb	1,050.547 ppb	1,038.231 ppb	94.449 %
Concentration per Run 1	92.796 %	87.231 %	9.876 ppb	1,035.150 ppb	1,056.596 ppb	10.461 ppb	1,013.452 ppb	1,076.705 ppb	92.292 %
Concentration per Run 2	95.544 %	99.077 %	10.327 ppb	979.465 ppb	1,033.646 ppb	11.907 ppb	1,067.175 ppb	945.259 ppb	95.727 %
Concentration per Run 3	96.720 %	96.308 %	10.424 ppb	1,002.451 ppb	1,014.697 ppb	10.677 ppb	1,071.013 ppb	1,092.729 ppb	95.330 %
Concentration RSD	2.1 %	6.6 %	2.9 %	2.8 %	2.0 %	7.1 %	3.1 %	7.8 %	2.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	10.149 ppb	10.485 ppb	10.342 ppb	1,025.354 ppb	10.262 ppb	10.604 ppb	10.644 ppb	10.607 ppb	98.078 %
Concentration per Run 1	10.403 ppb	10.821 ppb	10.448 ppb	1,051.910 ppb	10.391 ppb	11.831 ppb	10.879 ppb	11.164 ppb	94.935 %
Concentration per Run 2	9.978 ppb	10.263 ppb	10.592 ppb	1,004.931 ppb	10.259 ppb	10.155 ppb	10.156 ppb	9.990 ppb	100.544 %
Concentration per Run 3	10.065 ppb	10.372 ppb	9.988 ppb	1,019.222 ppb	10.134 ppb	9.826 ppb	10.897 ppb	10.667 ppb	98.754 %
Concentration RSD	2.2 %	2.8 %	3.1 %	2.3 %	1.3 %	10.1 %	4.0 %	5.6 %	2.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	9.776 ppb	10.975 ppb	10.307 ppb	96.725 %	10.086 ppb	10.028 ppb	96.359 %	9.892 ppb	10.245 ppb
Concentration per Run 1	9.963 ppb	11.654 ppb	10.012 ppb	96.158 %	10.078 ppb	10.092 ppb	94.765 %	9.615 ppb	10.443 ppb
Concentration per Run 2	9.606 ppb	9.544 ppb	10.351 ppb	97.156 %	10.056 ppb	9.962 ppb	97.476 %	9.990 ppb	10.160 ppb
Concentration per Run 3	9.760 ppb	11.727 ppb	10.558 ppb	96.861 %	10.122 ppb	10.032 ppb	96.838 %	10.070 ppb	10.132 ppb
Concentration RSD	1.8 %	11.3 %	2.7 %	0.5 %	0.3 %	0.7 %	1.5 %	2.5 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.058 %	97.635 %	8.562 ppb	9.793 ppb	96.901 %
Concentration per Run 1	95.131 %	93.845 %	8.277 ppb	9.722 ppb	96.092 %
Concentration per Run 2	99.083 %	98.499 %	8.585 ppb	9.771 ppb	97.706 %
Concentration per Run 3	99.960 %	100.561 %	8.825 ppb	9.886 ppb	96.906 %
Concentration RSD	2.6 %	3.5 %	3.2 %	0.9 %	0.8 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 7 Analysis started at: 12/17/2021 8:48:24 PM
 Analysis label: 60/6000 Cal User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.632 %	86.923 %	60.921 ppb	6,357.305 ppb	6,301.571 ppb	63.389 ppb	6,245.775 ppb	6,072.175 ppb	104.824 %
Concentration per Run 1	94.765 %	80.307 %	60.584 ppb	6,546.892 ppb	6,420.324 ppb	64.769 ppb	6,102.643 ppb	6,133.927 ppb	104.467 %
Concentration per Run 2	96.622 %	90.769 %	60.859 ppb	6,184.993 ppb	6,188.048 ppb	62.917 ppb	6,403.465 ppb	5,803.350 ppb	106.105 %
Concentration per Run 3	95.510 %	89.692 %	61.320 ppb	6,340.031 ppb	6,296.340 ppb	62.482 ppb	6,231.217 ppb	6,279.249 ppb	103.902 %
Concentration RSD	1.0 %	6.6 %	0.6 %	2.9 %	1.8 %	1.9 %	2.4 %	4.0 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	61.241 ppb	61.719 ppb	62.238 ppb	6,141.591 ppb	62.264 ppb	62.674 ppb	62.193 ppb	62.685 ppb	94.862 %
Concentration per Run 1	62.424 ppb	62.580 ppb	62.352 ppb	6,193.178 ppb	63.621 ppb	65.936 ppb	63.498 ppb	64.553 ppb	91.887 %
Concentration per Run 2	60.167 ppb	61.379 ppb	63.446 ppb	6,103.119 ppb	60.746 ppb	60.988 ppb	60.597 ppb	60.126 ppb	97.972 %
Concentration per Run 3	61.133 ppb	61.197 ppb	60.917 ppb	6,128.477 ppb	62.425 ppb	61.099 ppb	62.485 ppb	63.378 ppb	94.726 %
Concentration RSD	1.8 %	1.2 %	2.0 %	0.8 %	2.3 %	4.5 %	2.4 %	3.7 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	60.338 ppb	62.121 ppb	60.173 ppb	93.729 %	60.365 ppb	60.611 ppb	94.804 %	59.223 ppb	60.100 ppb
Concentration per Run 1	60.772 ppb	61.571 ppb	59.500 ppb	92.238 %	60.786 ppb	61.897 ppb	92.298 %	58.563 ppb	58.782 ppb
Concentration per Run 2	58.679 ppb	60.631 ppb	60.417 ppb	94.381 %	59.635 ppb	59.599 ppb	96.616 %	59.227 ppb	60.568 ppb
Concentration per Run 3	61.564 ppb	64.162 ppb	60.601 ppb	94.567 %	60.674 ppb	60.335 ppb	95.499 %	59.878 ppb	60.950 ppb
Concentration RSD	2.5 %	2.9 %	1.0 %	1.4 %	1.1 %	1.9 %	2.4 %	1.1 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.119 %	96.633 %	57.590 ppb	59.612 ppb	93.913 %
Concentration per Run 1	94.785 %	94.099 %	55.908 ppb	59.303 ppb	93.549 %
Concentration per Run 2	96.782 %	98.040 %	58.197 ppb	59.825 ppb	94.147 %
Concentration per Run 3	96.790 %	97.760 %	58.666 ppb	59.708 ppb	94.041 %
Concentration RSD	1.2 %	2.3 %	2.6 %	0.5 %	0.3 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 8 Analysis started at: 12/17/2021 8:53:14 PM
 Analysis label: 120/12000 Cal User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.853 %	89.846 %	119.522 ppb	11,820.906 ppb	11,846.399 ppb	118.218 ppb	11,873.098 ppb	11,959.445 ppb	107.131 %
Concentration per Run 1	92.793 %	88.615 %	117.843 ppb	11,662.286 ppb	11,597.644 ppb	110.887 ppb	11,146.887 ppb	11,413.778 ppb	107.387 %
Concentration per Run 2	91.662 %	89.692 %	118.617 ppb	11,857.132 ppb	11,928.160 ppb	116.544 ppb	11,866.686 ppb	12,229.982 ppb	107.250 %
Concentration per Run 3	91.105 %	91.231 %	122.106 ppb	11,943.298 ppb	12,013.393 ppb	127.222 ppb	12,605.720 ppb	12,234.575 ppb	106.756 %
Concentration RSD	0.9 %	1.5 %	1.9 %	1.2 %	1.9 %	7.0 %	6.1 %	4.0 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	119.366 ppb	119.100 ppb	118.851 ppb	11,927.052 ppb	118.845 ppb	118.613 ppb	118.849 ppb	118.607 ppb	91.248 %
Concentration per Run 1	119.484 ppb	119.966 ppb	121.574 ppb	11,980.150 ppb	120.650 ppb	120.340 ppb	121.494 ppb	119.193 ppb	88.162 %
Concentration per Run 2	123.206 ppb	119.219 ppb	116.344 ppb	11,920.770 ppb	118.435 ppb	119.451 ppb	115.997 ppb	118.347 ppb	92.085 %
Concentration per Run 3	115.408 ppb	118.116 ppb	118.634 ppb	11,880.236 ppb	117.451 ppb	116.047 ppb	119.055 ppb	118.282 ppb	93.498 %
Concentration RSD	3.3 %	0.8 %	2.2 %	0.4 %	1.4 %	1.9 %	2.3 %	0.4 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	119.849 ppb	118.858 ppb	119.888 ppb	88.314 %	119.810 ppb	119.692 ppb	89.228 %	120.398 ppb	119.929 ppb
Concentration per Run 1	122.322 ppb	118.087 ppb	117.521 ppb	87.851 %	120.799 ppb	118.153 ppb	87.949 %	118.987 ppb	117.750 ppb
Concentration per Run 2	119.875 ppb	117.796 ppb	121.093 ppb	88.911 %	119.563 ppb	120.594 ppb	88.723 %	122.293 ppb	120.035 ppb
Concentration per Run 3	117.350 ppb	120.689 ppb	121.049 ppb	88.179 %	119.068 ppb	120.329 ppb	91.010 %	119.914 ppb	122.002 ppb
Concentration RSD	2.1 %	1.3 %	1.7 %	0.6 %	0.7 %	1.1 %	1.8 %	1.4 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.132 %	94.158 %	121.326 ppb	120.212 ppb	88.965 %
Concentration per Run 1	91.632 %	91.432 %	117.814 ppb	118.646 ppb	89.032 %
Concentration per Run 2	94.349 %	95.475 %	122.380 ppb	120.868 ppb	89.008 %
Concentration per Run 3	93.415 %	95.567 %	123.784 ppb	121.121 ppb	88.856 %
Concentration RSD	1.5 %	2.5 %	2.6 %	1.1 %	0.1 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 9 Analysis started at: 12/17/2021 8:58:04 PM
 Analysis label: Sr 200ppb User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.098 %	88.718 %	0.016 ppb	0.214 ppb	1.548 ppb	0.274 ppb	-2.637 ppb	0.284 ppb	88.301 %
Concentration per Run 1	89.969 %	86.923 %	0.023 ppb	0.117 ppb	1.984 ppb	0.550 ppb	-11.534 ppb	-96.235 ppb	87.866 %
Concentration per Run 2	90.741 %	87.077 %	0.006 ppb	1.768 ppb	0.909 ppb	-0.472 ppb	9.280 ppb	-22.486 ppb	89.417 %
Concentration per Run 3	89.583 %	92.154 %	0.018 ppb	-1.245 ppb	1.750 ppb	0.745 ppb	-5.658 ppb	119.573 ppb	87.620 %
Concentration RSD	0.7 %	3.4 %	54.3 %	706.9 %	36.5 %	238.3 %	406.9 %	38,631.4 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.008 ppb	-0.011 ppb	0.186 ppb	24.256 ppb	0.009 ppb	-0.038 ppb	1.951 ppb	1.820 ppb	93.525 %
Concentration per Run 1	0.022 ppb	-0.030 ppb	0.227 ppb	24.379 ppb	0.000 ppb	-0.043 ppb	1.984 ppb	1.819 ppb	90.264 %
Concentration per Run 2	-0.050 ppb	0.001 ppb	0.121 ppb	22.806 ppb	0.013 ppb	-0.033 ppb	1.763 ppb	1.910 ppb	94.602 %
Concentration per Run 3	0.004 ppb	-0.004 ppb	0.209 ppb	25.583 ppb	0.013 ppb	-0.037 ppb	2.104 ppb	1.731 ppb	95.708 %
Concentration RSD	478.2 %	150.8 %	30.6 %	5.7 %	86.6 %	12.4 %	8.9 %	4.9 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.064 ppb	0.240 ppb	188.969 ppb	91.313 %	0.009 ppb	0.003 ppb	89.904 %	0.013 ppb	0.241 ppb
Concentration per Run 1	0.028 ppb	0.260 ppb	185.877 ppb	90.126 %	0.009 ppb	0.001 ppb	87.374 %	0.010 ppb	0.178 ppb
Concentration per Run 2	0.099 ppb	0.235 ppb	190.490 ppb	92.031 %	0.005 ppb	0.007 ppb	91.383 %	0.023 ppb	0.272 ppb
Concentration per Run 3	0.065 ppb	0.225 ppb	190.538 ppb	91.781 %	0.012 ppb	0.001 ppb	90.955 %	0.006 ppb	0.274 ppb
Concentration RSD	55.6 %	7.4 %	1.4 %	1.1 %	38.7 %	105.9 %	2.4 %	68.2 %	22.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.326 %	93.684 %	1.385 ppb	0.030 ppb	93.124 %
Concentration per Run 1	91.275 %	90.756 %	1.474 ppb	0.035 ppb	92.939 %
Concentration per Run 2	94.912 %	95.190 %	1.421 ppb	0.032 ppb	92.985 %
Concentration per Run 3	93.790 %	95.104 %	1.262 ppb	0.025 ppb	93.448 %
Concentration RSD	2.0 %	2.7 %	8.0 %	16.9 %	0.3 %

Alpha ICPMSQ Full

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Analysis index: 10 Analysis started at: 12/17/2021 9:02:56 PM
 Analysis label: ICV User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.202 %	89.641 %	51.765 ppb	5,158.327 ppb	5,213.156 ppb	50.434 ppb	4,899.077 ppb	5,060.595 ppb	89.924 %
Concentration per Run 1	90.560 %	94.923 %	51.393 ppb	4,678.154 ppb	4,737.024 ppb	45.152 ppb	4,636.251 ppb	4,760.144 ppb	89.954 %
Concentration per Run 2	90.357 %	84.307 %	52.045 ppb	5,560.213 ppb	5,565.595 ppb	54.848 ppb	5,191.273 ppb	5,002.907 ppb	90.149 %
Concentration per Run 3	89.689 %	89.692 %	51.857 ppb	5,236.613 ppb	5,336.849 ppb	51.304 ppb	4,869.707 ppb	5,418.736 ppb	89.670 %
Recovery Percentage 1			103.530 %	103.167 %	104.263 %	100.869 %	97.982 %	101.212 %	
Concentration RSD	0.5 %	5.9 %	0.6 %	8.7 %	8.2 %	9.7 %	5.7 %	6.6 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.224 ppb	52.053 ppb	51.687 ppb	5,132.556 ppb	52.624 ppb	52.843 ppb	52.562 ppb	53.401 ppb	92.059 %
Concentration per Run 1	49.298 ppb	49.308 ppb	48.636 ppb	4,933.667 ppb	51.668 ppb	53.153 ppb	51.731 ppb	52.243 ppb	91.453 %
Concentration per Run 2	52.499 ppb	55.220 ppb	55.681 ppb	5,321.506 ppb	53.899 ppb	53.452 ppb	52.811 ppb	54.209 ppb	91.923 %
Concentration per Run 3	51.876 ppb	51.632 ppb	50.745 ppb	5,142.495 ppb	52.305 ppb	51.923 ppb	53.144 ppb	53.752 ppb	92.800 %
Recovery Percentage 1	102.449 %	104.107 %	103.375 %	102.651 %	105.248 %	105.686 %	105.124 %	106.802 %	
Concentration RSD	3.3 %	5.7 %	7.0 %	3.8 %	2.2 %	1.5 %	1.4 %	1.9 %	0.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	50.413 ppb	53.532 ppb	50.934 ppb	89.889 %	53.757 ppb	52.220 ppb	89.675 %	52.038 ppb	51.353 ppb
Concentration per Run 1	49.992 ppb	49.984 ppb	49.361 ppb	88.305 %	53.544 ppb	52.207 ppb	88.762 %	51.136 ppb	49.619 ppb
Concentration per Run 2	51.418 ppb	57.092 ppb	51.886 ppb	90.135 %	53.421 ppb	52.119 ppb	90.893 %	51.371 ppb	52.104 ppb
Concentration per Run 3	49.828 ppb	53.521 ppb	51.556 ppb	91.226 %	54.307 ppb	52.336 ppb	89.369 %	53.608 ppb	52.335 ppb
Recovery Percentage 1	100.826 %	107.065 %	101.869 %		107.514 %	104.441 %		104.076 %	102.705 %
Concentration RSD	1.7 %	6.6 %	2.7 %	1.6 %	0.9 %	0.2 %	1.2 %	2.6 %	2.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.453 %	94.156 %	50.304 ppb	50.565 ppb	91.701 %
Concentration per Run 1	91.497 %	91.857 %	48.286 ppb	49.868 ppb	91.648 %
Concentration per Run 2	94.093 %	94.668 %	50.626 ppb	50.537 ppb	92.031 %
Concentration per Run 3	94.771 %	95.943 %	52.000 ppb	51.291 ppb	91.425 %
Recovery Percentage 1			100.608 %	101.130 %	
Concentration RSD	1.8 %	2.2 %	3.7 %	1.4 %	0.3 %

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Analysis index: 11 Analysis started at: 12/17/2021 9:07:47 PM
 Analysis label: ICB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.758 %	91.025 %	0.014 ppb	0.303 ppb	-1.479 ppb	-0.554 ppb	-3.889 ppb	-9.890 ppb	84.713 %
Concentration per Run 1	88.975 %	91.231 %	0.011 ppb	4.917 ppb	-0.160 ppb	-0.583 ppb	1.902 ppb	-23.836 ppb	83.725 %
Concentration per Run 2	89.916 %	92.923 %	0.014 ppb	-3.650 ppb	-2.139 ppb	-0.693 ppb	-6.031 ppb	-3.372 ppb	84.543 %
Concentration per Run 3	90.383 %	88.923 %	0.018 ppb	-0.359 ppb	-2.139 ppb	-0.384 ppb	-7.538 ppb	-2.461 ppb	85.870 %
Recovery Percentage 1			2.866 %	0.303 %	-2.113 %	-5.535 %	-3.889 %	-9.890 %	
Concentration RSD	0.8 %	2.2 %	24.0 %	1,428.3 %	77.3 %	28.3 %	130.4 %	122.2 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.037 ppb	-0.022 ppb	0.073 ppb	6.771 ppb	0.004 ppb	-0.075 ppb	0.008 ppb	-0.609 ppb	95.208 %
Concentration per Run 1	-0.050 ppb	-0.031 ppb	0.065 ppb	6.750 ppb	0.004 ppb	-0.130 ppb	0.007 ppb	-0.586 ppb	92.072 %
Concentration per Run 2	-0.024 ppb	-0.027 ppb	0.094 ppb	5.576 ppb	0.004 ppb	-0.010 ppb	-0.019 ppb	-0.583 ppb	98.107 %
Concentration per Run 3	-0.036 ppb	-0.008 ppb	0.062 ppb	7.988 ppb	0.004 ppb	-0.084 ppb	0.035 ppb	-0.659 ppb	95.445 %
Recovery Percentage 1	-0.732 %	-2.214 %	7.342 %	13.542 %	0.850 %	-3.728 %	0.787 %	-6.092 %	
Concentration RSD	35.3 %	54.3 %	24.0 %	17.8 %	2.7 %	80.9 %	344.6 %	7.0 %	3.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.054 ppb	0.096 ppb	-0.015 ppb	92.266 %	0.005 ppb	0.000 ppb	91.517 %	0.033 ppb	-0.006 ppb
Concentration per Run 1	0.044 ppb	0.089 ppb	-0.001 ppb	91.908 %	0.003 ppb	-0.002 ppb	88.954 %	0.034 ppb	0.009 ppb
Concentration per Run 2	0.095 ppb	0.113 ppb	-0.012 ppb	92.906 %	0.001 ppb	0.001 ppb	91.948 %	0.029 ppb	-0.001 ppb
Concentration per Run 3	0.025 ppb	0.085 ppb	-0.032 ppb	91.985 %	0.012 ppb	0.001 ppb	93.649 %	0.038 ppb	-0.026 ppb
Recovery Percentage 1	10.891 %	1.913 %	-3.032 %		1.374 %	0.082 %		0.837 %	-1.241 %
Concentration RSD	66.3 %	16.0 %	105.8 %	0.6 %	101.8 %	992.7 %	2.6 %	13.3 %	291.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.548 %	94.000 %	0.974 ppb	0.012 ppb	92.747 %
Concentration per Run 1	92.631 %	91.776 %	1.002 ppb	0.015 ppb	91.743 %
Concentration per Run 2	96.000 %	95.712 %	1.006 ppb	0.013 ppb	92.651 %
Concentration per Run 3	95.013 %	94.512 %	0.916 ppb	0.009 ppb	93.848 %
Recovery Percentage 1			97.439 %	1.228 %	
Concentration RSD	1.8 %	2.1 %	5.2 %	21.8 %	1.1 %



Analysis index: 12 Analysis started at: 12/17/2021 9:12:40 PM
 Analysis label: A1 0.2 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.837 %	89.231 %	0.219 ppb	21.170 ppb	14.895 ppb	1.096 ppb	10.735 ppb	-0.067 ppb	85.363 %
Concentration per Run 1	90.291 %	87.846 %	0.223 ppb	18.245 ppb	15.200 ppb	0.734 ppb	9.807 ppb	-16.402 ppb	84.813 %
Concentration per Run 2	91.369 %	88.154 %	0.237 ppb	21.756 ppb	12.013 ppb	1.312 ppb	11.658 ppb	26.068 ppb	85.565 %
Concentration per Run 3	90.850 %	91.692 %	0.198 ppb	23.508 ppb	17.472 ppb	1.244 ppb	10.738 ppb	-9.866 ppb	85.709 %
Concentration RSD	0.6 %	2.4 %	8.9 %	12.7 %	18.4 %	28.8 %	8.6 %	34,200.0 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.173 ppb	0.232 ppb	0.217 ppb	21.751 ppb	0.190 ppb	0.095 ppb	0.242 ppb	-0.475 ppb	92.858 %
Concentration per Run 1	0.121 ppb	0.251 ppb	0.087 ppb	20.790 ppb	0.186 ppb	0.089 ppb	0.269 ppb	-0.486 ppb	91.210 %
Concentration per Run 2	0.215 ppb	0.140 ppb	0.257 ppb	25.817 ppb	0.217 ppb	0.149 ppb	0.261 ppb	-0.387 ppb	93.365 %
Concentration per Run 3	0.183 ppb	0.305 ppb	0.308 ppb	18.647 ppb	0.167 ppb	0.047 ppb	0.194 ppb	-0.553 ppb	93.998 %
Concentration RSD	27.8 %	36.2 %	53.3 %	16.9 %	13.3 %	54.0 %	17.0 %	17.6 %	1.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.182 ppb	0.297 ppb	-0.007 ppb	93.743 %	0.206 ppb	0.177 ppb	91.682 %	0.183 ppb	0.173 ppb
Concentration per Run 1	0.171 ppb	0.256 ppb	-0.021 ppb	92.204 %	0.208 ppb	0.196 ppb	86.887 %	0.146 ppb	0.141 ppb
Concentration per Run 2	0.216 ppb	0.122 ppb	0.001 ppb	94.298 %	0.219 ppb	0.147 ppb	92.600 %	0.188 ppb	0.182 ppb
Concentration per Run 3	0.157 ppb	0.512 ppb	-0.001 ppb	94.726 %	0.190 ppb	0.188 ppb	95.559 %	0.216 ppb	0.196 ppb
Concentration RSD	17.0 %	66.8 %	172.2 %	1.4 %	7.2 %	14.8 %	4.8 %	19.4 %	16.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.998 %	95.373 %	0.578 ppb	0.197 ppb	93.803 %
Concentration per Run 1	93.365 %	91.747 %	0.562 ppb	0.200 ppb	91.254 %
Concentration per Run 2	97.440 %	97.090 %	0.582 ppb	0.194 ppb	94.659 %
Concentration per Run 3	97.189 %	97.282 %	0.591 ppb	0.198 ppb	95.497 %
Concentration RSD	2.4 %	3.3 %	2.5 %	1.4 %	2.4 %

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12/18/2021 10:42:07 AM



Analysis index: 13 Analysis started at: 12/17/2021 9:17:29 PM
 Analysis label: A1 1 User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.823 %	93.231 %	0.995 ppb	95.376 ppb	96.396 ppb	2.203 ppb	76.507 ppb	60.245 ppb	88.472 %
Concentration per Run 1	92.875 %	96.154 %	1.033 ppb	87.330 ppb	107.014 ppb	1.643 ppb	52.887 ppb	58.822 ppb	88.820 %
Concentration per Run 2	93.050 %	92.308 %	1.008 ppb	96.347 ppb	93.294 ppb	2.430 ppb	88.396 ppb	64.559 ppb	88.862 %
Concentration per Run 3	92.545 %	91.231 %	0.945 ppb	102.451 ppb	88.880 ppb	2.537 ppb	88.237 ppb	57.353 ppb	87.733 %
Concentration RSD	0.3 %	2.8 %	4.5 %	8.0 %	9.8 %	22.2 %	26.7 %	6.3 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.931 ppb	1.006 ppb	0.937 ppb	98.124 ppb	0.930 ppb	0.908 ppb	0.989 ppb	0.504 ppb	97.039 %
Concentration per Run 1	0.885 ppb	1.011 ppb	1.077 ppb	88.749 ppb	0.905 ppb	0.741 ppb	0.943 ppb	0.448 ppb	93.136 %
Concentration per Run 2	0.891 ppb	1.061 ppb	0.807 ppb	109.297 ppb	0.905 ppb	1.176 ppb	1.154 ppb	0.534 ppb	98.285 %
Concentration per Run 3	1.017 ppb	0.945 ppb	0.928 ppb	96.327 ppb	0.979 ppb	0.808 ppb	0.870 ppb	0.530 ppb	99.695 %
Concentration RSD	8.0 %	5.8 %	14.4 %	10.6 %	4.6 %	25.8 %	14.9 %	9.7 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.947 ppb	0.943 ppb	-0.007 ppb	95.388 %	1.010 ppb	0.991 ppb	94.411 %	0.952 ppb	0.964 ppb
Concentration per Run 1	1.038 ppb	1.096 ppb	-0.012 ppb	93.684 %	1.000 ppb	1.001 ppb	91.641 %	0.918 ppb	0.826 ppb
Concentration per Run 2	0.928 ppb	0.744 ppb	-0.011 ppb	96.232 %	0.998 ppb	0.979 ppb	94.342 %	0.958 ppb	1.023 ppb
Concentration per Run 3	0.876 ppb	0.989 ppb	0.003 ppb	96.249 %	1.031 ppb	0.992 ppb	97.250 %	0.981 ppb	1.043 ppb
Concentration RSD	8.7 %	19.1 %	133.1 %	1.5 %	1.8 %	1.1 %	3.0 %	3.3 %	12.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.871 %	96.648 %	1.104 ppb	0.957 ppb	94.533 %
Concentration per Run 1	94.381 %	93.353 %	1.032 ppb	0.953 ppb	93.378 %
Concentration per Run 2	97.618 %	98.965 %	1.102 ppb	0.952 ppb	94.441 %
Concentration per Run 3	98.613 %	97.625 %	1.179 ppb	0.967 ppb	95.780 %
Concentration RSD	2.3 %	3.0 %	6.6 %	0.9 %	1.3 %

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Analysis index: 14 Analysis started at: 12/17/2021 9:22:18 PM
 Analysis label: A13 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.906 %	86.820 %	3.031 ppb	303.927 ppb	295.952 ppb	5.326 ppb	269.429 ppb	303.324 ppb	89.391 %
Concentration per Run 1	92.277 %	86.615 %	3.016 ppb	303.443 ppb	257.237 ppb	5.367 ppb	241.126 ppb	242.766 ppb	88.414 %
Concentration per Run 2	92.184 %	90.000 %	3.008 ppb	295.822 ppb	293.054 ppb	5.471 ppb	234.451 ppb	244.013 ppb	88.893 %
Concentration per Run 3	94.258 %	83.846 %	3.068 ppb	312.516 ppb	337.565 ppb	5.141 ppb	332.709 ppb	423.194 ppb	90.867 %
Concentration RSD	1.3 %	3.5 %	1.1 %	2.7 %	13.6 %	3.2 %	20.4 %	34.2 %	1.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	3.102 ppb	3.033 ppb	3.035 ppb	299.398 ppb	3.143 ppb	3.023 ppb	3.255 ppb	2.529 ppb	95.741 %
Concentration per Run 1	3.043 ppb	3.023 ppb	2.897 ppb	291.241 ppb	3.165 ppb	3.326 ppb	3.185 ppb	2.223 ppb	92.925 %
Concentration per Run 2	3.132 ppb	3.048 ppb	2.879 ppb	306.729 ppb	3.123 ppb	2.892 ppb	3.284 ppb	2.623 ppb	94.026 %
Concentration per Run 3	3.130 ppb	3.029 ppb	3.329 ppb	300.224 ppb	3.142 ppb	2.852 ppb	3.296 ppb	2.740 ppb	100.272 %
Concentration RSD	1.6 %	0.4 %	8.4 %	2.6 %	0.7 %	8.7 %	1.9 %	10.7 %	4.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.863 ppb	3.091 ppb	-0.009 ppb	95.049 %	3.066 ppb	3.059 ppb	95.270 %	2.893 ppb	2.882 ppb
Concentration per Run 1	2.859 ppb	3.084 ppb	0.004 ppb	94.145 %	3.129 ppb	3.179 ppb	92.096 %	2.852 ppb	3.044 ppb
Concentration per Run 2	2.875 ppb	2.889 ppb	-0.024 ppb	95.098 %	3.041 ppb	3.018 ppb	96.156 %	2.901 ppb	2.815 ppb
Concentration per Run 3	2.854 ppb	3.299 ppb	-0.008 ppb	95.904 %	3.027 ppb	2.981 ppb	97.560 %	2.924 ppb	2.787 ppb
Concentration RSD	0.4 %	6.6 %	151.1 %	0.9 %	1.8 %	3.4 %	3.0 %	1.3 %	4.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.454 %	96.623 %	2.728 ppb	2.882 ppb	95.642 %
Concentration per Run 1	94.945 %	92.787 %	2.623 ppb	2.866 ppb	94.564 %
Concentration per Run 2	98.141 %	98.249 %	2.729 ppb	2.870 ppb	96.578 %
Concentration per Run 3	99.276 %	98.832 %	2.833 ppb	2.908 ppb	95.784 %
Concentration RSD	2.3 %	3.5 %	3.9 %	0.8 %	1.1 %

Alpha ICPMSQ Full

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Analysis index: 15 Analysis started at: 12/17/2021 9:27:07 PM
 Analysis label: A1 10 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.751 %	88.923 %	9.643 ppb	1,018.429 ppb	1,029.301 ppb	12.799 ppb	1,055.024 ppb	1,002.313 ppb	106.647 %
Concentration per Run 1	93.574 %	91.231 %	9.430 ppb	968.175 ppb	978.410 ppb	12.026 ppb	910.097 ppb	955.404 ppb	106.745 %
Concentration per Run 2	94.373 %	88.923 %	9.672 ppb	1,037.802 ppb	1,024.988 ppb	13.989 ppb	1,151.032 ppb	1,032.643 ppb	107.360 %
Concentration per Run 3	93.304 %	86.615 %	9.826 ppb	1,049.311 ppb	1,084.506 ppb	12.383 ppb	1,103.942 ppb	1,018.892 ppb	105.837 %
Concentration RSD	0.6 %	2.6 %	2.1 %	4.3 %	5.2 %	8.2 %	12.1 %	4.1 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	9.908 ppb	10.277 ppb	10.487 ppb	1,001.694 ppb	10.247 ppb	10.572 ppb	10.581 ppb	9.242 ppb	96.350 %
Concentration per Run 1	9.990 ppb	10.241 ppb	10.251 ppb	979.504 ppb	10.020 ppb	10.240 ppb	10.338 ppb	9.008 ppb	95.362 %
Concentration per Run 2	9.623 ppb	10.415 ppb	10.745 ppb	1,008.208 ppb	10.280 ppb	10.610 ppb	10.938 ppb	9.358 ppb	95.948 %
Concentration per Run 3	10.111 ppb	10.175 ppb	10.466 ppb	1,017.371 ppb	10.441 ppb	10.867 ppb	10.467 ppb	9.360 ppb	97.742 %
Concentration RSD	2.6 %	1.2 %	2.4 %	2.0 %	2.1 %	3.0 %	3.0 %	2.2 %	1.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	9.457 ppb	9.099 ppb	0.007 ppb	95.350 %	10.383 ppb	9.637 ppb	94.956 %	9.641 ppb	9.693 ppb
Concentration per Run 1	9.361 ppb	8.875 ppb	0.009 ppb	93.795 %	10.478 ppb	9.795 ppb	91.949 %	9.704 ppb	9.455 ppb
Concentration per Run 2	9.845 ppb	9.513 ppb	0.009 ppb	96.180 %	10.321 ppb	9.696 ppb	95.407 %	9.620 ppb	9.838 ppb
Concentration per Run 3	9.164 ppb	8.910 ppb	0.003 ppb	96.075 %	10.350 ppb	9.422 ppb	97.510 %	9.599 ppb	9.785 ppb
Concentration RSD	3.7 %	3.9 %	52.2 %	1.4 %	0.8 %	2.0 %	3.0 %	0.6 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.435 %	97.190 %	9.316 ppb	9.839 ppb	96.025 %
Concentration per Run 1	96.633 %	93.296 %	8.943 ppb	9.744 ppb	95.536 %
Concentration per Run 2	99.216 %	98.960 %	9.337 ppb	9.831 ppb	96.722 %
Concentration per Run 3	99.455 %	99.315 %	9.668 ppb	9.942 ppb	95.817 %
Concentration RSD	1.6 %	3.5 %	3.9 %	1.0 %	0.6 %

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Analysis index: 16 Analysis started at: 12/17/2021 9:31:56 PM
 Analysis label: A1 50 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.261 %	92.051 %	0.535 ppb	56.701 ppb	51.051 ppb	1.273 ppb	50.523 ppb	76.130 ppb	87.307 %
Concentration per Run 1	93.980 %	90.769 %	0.531 ppb	57.246 ppb	48.295 ppb	1.165 ppb	36.558 ppb	67.542 ppb	88.092 %
Concentration per Run 2	92.366 %	93.385 %	0.526 ppb	50.538 ppb	52.910 ppb	1.164 ppb	35.509 ppb	55.848 ppb	86.914 %
Concentration per Run 3	93.436 %	92.000 %	0.548 ppb	62.319 ppb	51.949 ppb	1.489 ppb	79.500 ppb	105.001 ppb	86.915 %
Concentration RSD	0.9 %	1.4 %	2.1 %	10.4 %	4.8 %	14.7 %	49.7 %	33.7 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.481 ppb	0.547 ppb	0.583 ppb	51.953 ppb	0.506 ppb	0.436 ppb	0.555 ppb	-0.213 ppb	97.632 %
Concentration per Run 1	0.336 ppb	0.535 ppb	0.501 ppb	49.957 ppb	0.470 ppb	0.423 ppb	0.418 ppb	-0.218 ppb	93.609 %
Concentration per Run 2	0.547 ppb	0.458 ppb	0.734 ppb	51.900 ppb	0.541 ppb	0.458 ppb	0.700 ppb	-0.298 ppb	100.843 %
Concentration per Run 3	0.560 ppb	0.649 ppb	0.514 ppb	54.002 ppb	0.508 ppb	0.426 ppb	0.547 ppb	-0.124 ppb	98.444 %
Concentration RSD	26.1 %	17.5 %	22.4 %	3.9 %	7.1 %	4.4 %	25.5 %	41.0 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.557 ppb	0.610 ppb	0.017 ppb	96.510 %	0.505 ppb	0.496 ppb	95.563 %	0.488 ppb	0.537 ppb
Concentration per Run 1	0.545 ppb	0.628 ppb	0.005 ppb	94.921 %	0.478 ppb	0.470 ppb	93.195 %	0.500 ppb	0.484 ppb
Concentration per Run 2	0.567 ppb	0.653 ppb	0.021 ppb	96.700 %	0.514 ppb	0.537 ppb	96.465 %	0.462 ppb	0.519 ppb
Concentration per Run 3	0.557 ppb	0.550 ppb	0.025 ppb	97.908 %	0.524 ppb	0.479 ppb	97.029 %	0.501 ppb	0.607 ppb
Concentration RSD	1.9 %	8.8 %	61.9 %	1.6 %	4.8 %	7.4 %	2.2 %	4.5 %	11.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.633 %	96.895 %	0.737 ppb	0.493 ppb	95.614 %
Concentration per Run 1	96.414 %	94.603 %	0.742 ppb	0.493 ppb	93.072 %
Concentration per Run 2	98.276 %	98.589 %	0.730 ppb	0.492 ppb	96.697 %
Concentration per Run 3	98.211 %	97.493 %	0.739 ppb	0.494 ppb	97.072 %
Concentration RSD	1.1 %	2.1 %	0.9 %	0.2 %	2.3 %

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Analysis index: 17 Analysis started at: 12/17/2021 9:36:45 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.500 %	87.538 %	61.197 ppb	6,228.964 ppb	6,338.149 ppb	62.549 ppb	6,220.387 ppb	5,769.519 ppb	100.606 %
Concentration per Run 1	91.650 %	90.461 %	60.288 ppb	5,894.990 ppb	5,862.423 ppb	59.186 ppb	5,854.314 ppb	5,606.064 ppb	100.079 %
Concentration per Run 2	92.546 %	86.308 %	61.271 ppb	6,297.212 ppb	6,504.528 ppb	65.919 ppb	6,405.742 ppb	5,759.741 ppb	100.431 %
Concentration per Run 3	93.305 %	85.846 %	62.031 ppb	6,494.691 ppb	6,647.496 ppb	62.543 ppb	6,401.106 ppb	5,942.751 ppb	101.309 %
Recovery Percentage 1			101.995 %	103.816 %	105.636 %	104.249 %	103.673 %	96.159 %	
Concentration RSD	0.9 %	2.9 %	1.4 %	4.9 %	6.6 %	5.4 %	5.1 %	2.9 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	61.767 ppb	62.094 ppb	63.071 ppb	6,173.011 ppb	62.188 ppb	63.555 ppb	62.365 ppb	61.629 ppb	93.697 %
Concentration per Run 1	61.100 ppb	61.864 ppb	63.225 ppb	6,185.089 ppb	62.692 ppb	64.464 ppb	63.267 ppb	61.808 ppb	90.015 %
Concentration per Run 2	60.879 ppb	60.780 ppb	61.966 ppb	6,070.049 ppb	61.234 ppb	63.475 ppb	61.476 ppb	61.313 ppb	96.186 %
Concentration per Run 3	63.322 ppb	63.637 ppb	64.022 ppb	6,263.895 ppb	62.637 ppb	62.727 ppb	62.351 ppb	61.765 ppb	94.889 %
Recovery Percentage 1	102.945 %	103.489 %	105.119 %	102.884 %	103.646 %	105.926 %	103.941 %	102.714 %	
Concentration RSD	2.2 %	2.3 %	1.6 %	1.6 %	1.3 %	1.4 %	1.4 %	0.4 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.130 ppb	61.707 ppb	61.648 ppb	91.118 %	61.147 ppb	62.273 ppb	91.763 %	60.767 ppb	58.902 ppb
Concentration per Run 1	63.303 ppb	61.251 ppb	60.168 ppb	91.560 %	61.479 ppb	61.865 ppb	89.531 %	59.841 ppb	58.008 ppb
Concentration per Run 2	59.747 ppb	59.561 ppb	62.323 ppb	91.832 %	60.883 ppb	61.379 ppb	93.246 %	60.759 ppb	59.137 ppb
Concentration per Run 3	60.341 ppb	64.307 ppb	62.454 ppb	89.962 %	61.078 ppb	63.575 ppb	92.511 %	61.702 ppb	59.561 ppb
Recovery Percentage 1	101.884 %	102.845 %	102.747 %		101.912 %	103.788 %		101.279 %	98.170 %
Concentration RSD	3.1 %	3.9 %	2.1 %	1.1 %	0.5 %	1.9 %	2.1 %	1.5 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.505 %	94.876 %	61.235 ppb	59.950 ppb	93.167 %
Concentration per Run 1	92.817 %	92.251 %	60.185 ppb	59.379 ppb	93.748 %
Concentration per Run 2	95.104 %	96.601 %	61.109 ppb	60.248 ppb	93.313 %
Concentration per Run 3	95.593 %	95.776 %	62.410 ppb	60.222 ppb	92.440 %
Recovery Percentage 1			102.058 %	99.916 %	
Concentration RSD	1.6 %	2.4 %	1.8 %	0.8 %	0.7 %

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Analysis index: 18 Analysis started at: 12/17/2021 9:41:37 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.325 %	87.179 %	0.021 ppb	-2.683 ppb	-0.493 ppb	-0.430 ppb	-12.841 ppb	-14.294 ppb	84.576 %
Concentration per Run 1	89.652 %	80.923 %	0.030 ppb	0.692 ppb	-2.139 ppb	-0.220 ppb	-18.432 ppb	-16.325 ppb	84.448 %
Concentration per Run 2	90.732 %	91.384 %	0.009 ppb	-3.963 ppb	-0.178 ppb	-0.877 ppb	-5.468 ppb	-16.678 ppb	84.565 %
Concentration per Run 3	90.590 %	89.231 %	0.025 ppb	-4.776 ppb	0.838 ppb	-0.194 ppb	-14.623 ppb	-9.880 ppb	84.714 %
Recovery Percentage 1			4.265 %	-2.683 %	-0.704 %	-4.304 %	-12.841 %	-14.294 %	
Concentration RSD	0.6 %	6.3 %	52.8 %	110.0 %	306.9 %	90.0 %	51.9 %	26.8 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.041 ppb	-0.023 ppb	0.077 ppb	8.072 ppb	0.011 ppb	-0.044 ppb	0.017 ppb	-0.630 ppb	93.959 %
Concentration per Run 1	-0.064 ppb	-0.006 ppb	0.072 ppb	10.780 ppb	0.000 ppb	-0.074 ppb	0.043 ppb	-0.684 ppb	90.254 %
Concentration per Run 2	-0.036 ppb	-0.022 ppb	0.061 ppb	7.559 ppb	0.017 ppb	-0.052 ppb	0.004 ppb	-0.692 ppb	94.921 %
Concentration per Run 3	-0.023 ppb	-0.040 ppb	0.098 ppb	5.876 ppb	0.017 ppb	-0.006 ppb	0.003 ppb	-0.514 ppb	96.701 %
Recovery Percentage 1	-0.819 %	-2.263 %	7.703 %	16.143 %	2.259 %	-2.199 %	1.691 %	-6.297 %	
Concentration RSD	50.6 %	76.6 %	24.2 %	30.9 %	86.6 %	79.4 %	135.1 %	16.0 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.036 ppb	0.056 ppb	-0.010 ppb	93.800 %	0.005 ppb	0.008 ppb	93.396 %	-0.007 ppb	0.007 ppb
Concentration per Run 1	0.019 ppb	0.052 ppb	-0.002 ppb	92.857 %	0.006 ppb	0.004 ppb	88.159 %	-0.003 ppb	-0.009 ppb
Concentration per Run 2	0.050 ppb	0.009 ppb	-0.021 ppb	93.945 %	0.009 ppb	0.015 ppb	96.376 %	-0.006 ppb	0.023 ppb
Concentration per Run 3	0.040 ppb	0.109 ppb	-0.007 ppb	94.599 %	0.001 ppb	0.007 ppb	95.654 %	-0.012 ppb	0.007 ppb
Recovery Percentage 1	7.285 %	1.129 %	-1.935 %		1.336 %	4.223 %		-0.176 %	1.408 %
Concentration RSD	42.9 %	88.3 %	101.3 %	0.9 %	71.6 %	65.8 %	4.9 %	66.1 %	226.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.131 %	94.949 %	0.515 ppb	0.017 ppb	93.784 %
Concentration per Run 1	92.896 %	92.737 %	0.532 ppb	0.020 ppb	92.955 %
Concentration per Run 2	96.246 %	96.589 %	0.525 ppb	0.016 ppb	93.453 %
Concentration per Run 3	96.251 %	95.522 %	0.489 ppb	0.016 ppb	94.944 %
Recovery Percentage 1			51.514 %	1.741 %	
Concentration RSD	2.0 %	2.1 %	4.5 %	14.4 %	1.1 %

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Analysis index: 19 Analysis started at: 12/17/2021 9:46:29 PM
 Analysis label: A13 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.894 %	93.077 %	3.082 ppb	295.766 ppb	303.810 ppb	3.536 ppb	296.923 ppb	246.653 ppb	87.934 %
Concentration per Run 1	90.800 %	85.538 %	2.984 ppb	313.478 ppb	332.922 ppb	4.445 ppb	306.326 ppb	254.950 ppb	86.645 %
Concentration per Run 2	92.550 %	96.308 %	2.948 ppb	282.230 ppb	289.257 ppb	2.801 ppb	296.284 ppb	237.428 ppb	89.184 %
Concentration per Run 3	92.332 %	97.385 %	3.314 ppb	291.591 ppb	289.251 ppb	3.362 ppb	288.161 ppb	247.580 ppb	87.972 %
Concentration RSD	1.0 %	7.0 %	6.5 %	5.4 %	8.3 %	23.6 %	3.1 %	3.6 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	3.050 ppb	2.872 ppb	2.905 ppb	289.818 ppb	3.063 ppb	2.817 ppb	2.950 ppb	2.287 ppb	94.281 %
Concentration per Run 1	3.201 ppb	2.819 ppb	2.459 ppb	283.893 ppb	3.195 ppb	2.822 ppb	2.945 ppb	2.547 ppb	90.999 %
Concentration per Run 2	2.830 ppb	2.923 ppb	3.060 ppb	297.125 ppb	2.977 ppb	2.686 ppb	2.960 ppb	2.148 ppb	97.414 %
Concentration per Run 3	3.120 ppb	2.873 ppb	3.195 ppb	288.436 ppb	3.017 ppb	2.944 ppb	2.945 ppb	2.166 ppb	94.429 %
Concentration RSD	6.4 %	1.8 %	13.5 %	2.3 %	3.8 %	4.6 %	0.3 %	9.9 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	2.842 ppb	2.912 ppb	0.002 ppb	94.557 %	3.053 ppb	2.972 ppb	92.196 %	2.957 ppb	2.864 ppb
Concentration per Run 1	2.775 ppb	2.952 ppb	-0.013 ppb	92.946 %	3.143 ppb	3.124 ppb	88.865 %	2.981 ppb	2.838 ppb
Concentration per Run 2	2.865 ppb	2.835 ppb	0.015 ppb	94.906 %	2.935 ppb	2.916 ppb	93.235 %	2.959 ppb	2.835 ppb
Concentration per Run 3	2.887 ppb	2.949 ppb	0.004 ppb	95.819 %	3.081 ppb	2.878 ppb	94.489 %	2.931 ppb	2.920 ppb
Concentration RSD	2.1 %	2.3 %	644.7 %	1.6 %	3.5 %	4.5 %	3.2 %	0.8 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.389 %	95.783 %	2.726 ppb	2.846 ppb	95.645 %
Concentration per Run 1	94.469 %	93.152 %	2.644 ppb	2.840 ppb	93.930 %
Concentration per Run 2	96.970 %	96.875 %	2.743 ppb	2.822 ppb	96.881 %
Concentration per Run 3	97.727 %	97.323 %	2.790 ppb	2.876 ppb	96.123 %
Concentration RSD	1.8 %	2.4 %	2.7 %	1.0 %	1.6 %

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12/18/2021 10:42:07 AM



Analysis index: 20 Analysis started at: 12/17/2021 9:51:18 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.539 %	86.410 %	61.592 ppb	6,253.613 ppb	6,313.905 ppb	61.583 ppb	6,291.804 ppb	6,167.318 ppb	100.538 %
Concentration per Run 1	91.496 %	85.538 %	61.234 ppb	6,229.365 ppb	6,194.352 ppb	57.799 ppb	5,869.952 ppb	6,218.859 ppb	100.380 %
Concentration per Run 2	91.633 %	86.769 %	61.676 ppb	6,217.826 ppb	6,321.118 ppb	63.601 ppb	6,621.084 ppb	5,859.850 ppb	100.894 %
Concentration per Run 3	91.488 %	86.923 %	61.866 ppb	6,313.648 ppb	6,426.245 ppb	63.348 ppb	6,384.376 ppb	6,423.246 ppb	100.340 %
Recovery Percentage 1			102.653 %	104.227 %	105.232 %	102.638 %	104.863 %	102.789 %	
Concentration RSD	0.1 %	0.9 %	0.5 %	0.8 %	1.8 %	5.3 %	6.1 %	4.6 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	61.735 ppb	62.226 ppb	61.934 ppb	6,077.217 ppb	61.884 ppb	64.275 ppb	62.746 ppb	62.681 ppb	91.205 %
Concentration per Run 1	60.316 ppb	61.326 ppb	61.194 ppb	5,954.106 ppb	62.076 ppb	63.421 ppb	61.481 ppb	60.590 ppb	90.779 %
Concentration per Run 2	63.118 ppb	64.030 ppb	62.896 ppb	6,284.918 ppb	62.547 ppb	67.020 ppb	65.058 ppb	65.285 ppb	89.019 %
Concentration per Run 3	61.770 ppb	61.322 ppb	61.711 ppb	5,992.626 ppb	61.030 ppb	62.384 ppb	61.698 ppb	62.169 ppb	93.818 %
Recovery Percentage 1	102.891 %	103.710 %	103.223 %	101.287 %	103.141 %	107.125 %	104.576 %	104.468 %	
Concentration RSD	2.3 %	2.5 %	1.4 %	3.0 %	1.3 %	3.8 %	3.2 %	3.8 %	2.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	60.830 ppb	63.265 ppb	62.688 ppb	91.346 %	60.539 ppb	61.502 ppb	92.810 %	60.093 ppb	58.428 ppb
Concentration per Run 1	60.535 ppb	62.711 ppb	61.230 ppb	91.140 %	61.278 ppb	62.024 ppb	91.430 %	59.250 ppb	58.075 ppb
Concentration per Run 2	61.475 ppb	63.835 ppb	64.375 ppb	91.793 %	59.792 ppb	60.256 ppb	95.429 %	59.128 ppb	58.004 ppb
Concentration per Run 3	60.479 ppb	63.250 ppb	62.459 ppb	91.106 %	60.546 ppb	62.226 ppb	91.571 %	61.899 ppb	59.204 ppb
Recovery Percentage 1	101.383 %	105.442 %	104.480 %		100.898 %	102.503 %		100.154 %	97.380 %
Concentration RSD	0.9 %	0.9 %	2.5 %	0.4 %	1.2 %	1.8 %	2.4 %	2.6 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.147 %	94.484 %	61.311 ppb	59.945 ppb	93.009 %
Concentration per Run 1	94.812 %	93.270 %	60.642 ppb	59.231 ppb	93.333 %
Concentration per Run 2	95.912 %	94.605 %	61.536 ppb	60.207 ppb	92.883 %
Concentration per Run 3	94.716 %	95.577 %	61.757 ppb	60.397 ppb	92.809 %
Recovery Percentage 1			102.186 %	99.908 %	
Concentration RSD	0.7 %	1.2 %	1.0 %	1.0 %	0.3 %

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Analysis index: 21 Analysis started at: 12/17/2021 9:56:10 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.851 %	86.615 %	0.024 ppb	-0.134 ppb	-1.130 ppb	-0.363 ppb	-6.272 ppb	-18.955 ppb	84.691 %
Concentration per Run 1	89.602 %	86.461 %	0.025 ppb	0.813 ppb	-2.139 ppb	0.257 ppb	-8.936 ppb	-16.396 ppb	84.199 %
Concentration per Run 2	90.663 %	84.769 %	0.032 ppb	1.046 ppb	-1.108 ppb	-0.666 ppb	2.357 ppb	-16.489 ppb	85.558 %
Concentration per Run 3	89.288 %	88.615 %	0.014 ppb	-2.260 ppb	-0.142 ppb	-0.678 ppb	-12.235 ppb	-23.981 ppb	84.317 %
Recovery Percentage 1			4.750 %	-0.134 %	-1.614 %	-3.626 %	-6.272 %	-18.955 %	
Concentration RSD	0.8 %	2.2 %	39.3 %	1,380.6 %	88.4 %	148.0 %	122.0 %	23.0 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.013 ppb	-0.009 ppb	0.038 ppb	8.865 ppb	0.003 ppb	0.002 ppb	-0.004 ppb	-0.603 ppb	93.852 %
Concentration per Run 1	-0.035 ppb	0.018 ppb	0.011 ppb	9.844 ppb	0.005 ppb	0.062 ppb	0.044 ppb	-0.564 ppb	89.055 %
Concentration per Run 2	0.006 ppb	-0.026 ppb	0.025 ppb	9.259 ppb	0.004 ppb	-0.035 ppb	-0.027 ppb	-0.591 ppb	96.139 %
Concentration per Run 3	-0.009 ppb	-0.018 ppb	0.080 ppb	7.491 ppb	0.000 ppb	-0.021 ppb	-0.028 ppb	-0.653 ppb	96.364 %
Recovery Percentage 1	-0.255 %	-0.867 %	3.847 %	17.730 %	0.587 %	0.108 %	-0.362 %	-6.026 %	
Concentration RSD	159.6 %	270.4 %	94.5 %	13.8 %	86.7 %	2,423.1 %	1,132.3 %	7.5 %	4.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.048 ppb	0.112 ppb	-0.007 ppb	93.439 %	0.004 ppb	0.006 ppb	92.884 %	-0.010 ppb	0.013 ppb
Concentration per Run 1	0.072 ppb	0.056 ppb	-0.007 ppb	92.402 %	0.009 ppb	0.004 ppb	90.071 %	-0.013 ppb	0.025 ppb
Concentration per Run 2	0.001 ppb	0.268 ppb	-0.024 ppb	93.073 %	0.002 ppb	0.012 ppb	93.789 %	-0.023 ppb	0.024 ppb
Concentration per Run 3	0.073 ppb	0.012 ppb	0.011 ppb	94.841 %	0.002 ppb	0.001 ppb	94.793 %	0.005 ppb	-0.010 ppb
Recovery Percentage 1	9.664 %	2.242 %	-1.325 %		1.116 %	2.891 %		-0.259 %	2.641 %
Concentration RSD	85.6 %	122.1 %	265.6 %	1.3 %	89.9 %	100.5 %	2.7 %	136.9 %	150.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.287 %	94.597 %	0.520 ppb	0.017 ppb	94.403 %
Concentration per Run 1	93.952 %	92.982 %	0.548 ppb	0.022 ppb	92.747 %
Concentration per Run 2	96.119 %	94.901 %	0.525 ppb	0.016 ppb	94.832 %
Concentration per Run 3	95.791 %	95.910 %	0.486 ppb	0.012 ppb	95.629 %
Recovery Percentage 1			51.969 %	1.652 %	
Concentration RSD	1.2 %	1.6 %	6.1 %	29.7 %	1.6 %

Alpha ICPMSQ Full

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Analysis index: 22 Analysis started at: 12/17/2021 10:01:02 PM
 Analysis label: WG1583711-1D10 A2-6020T User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	91.951 %	91.179 %	0.012 ppb	-1.142 ppb	2.091 ppb	1.977 ppb	-15.477 ppb	-14.628 ppb	96.763 %
Concentration per Run 1	91.798 %	89.077 %	0.008 ppb	-0.414 ppb	0.875 ppb	1.989 ppb	-16.683 ppb	-16.748 ppb	96.171 %
Concentration per Run 2	91.913 %	94.000 %	0.013 ppb	-1.220 ppb	2.648 ppb	1.942 ppb	-17.186 ppb	-17.010 ppb	96.734 %
Concentration per Run 3	92.142 %	90.461 %	0.015 ppb	-1.791 ppb	2.751 ppb	1.999 ppb	-12.561 ppb	-10.126 ppb	97.385 %
Concentration RSD	0.2 %	2.8 %	28.6 %	60.6 %	50.4 %	1.5 %	16.4 %	26.7 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.004 ppb	-0.004 ppb	-0.002 ppb	5.016 ppb	0.008 ppb	-0.062 ppb	0.015 ppb	-0.288 ppb	95.751 %
Concentration per Run 1	-0.008 ppb	-0.003 ppb	0.026 ppb	5.142 ppb	0.004 ppb	0.051 ppb	0.081 ppb	-0.390 ppb	92.897 %
Concentration per Run 2	0.003 ppb	-0.005 ppb	-0.034 ppb	7.302 ppb	0.017 ppb	-0.118 ppb	0.003 ppb	-0.315 ppb	96.045 %
Concentration per Run 3	0.016 ppb	-0.005 ppb	0.003 ppb	2.603 ppb	0.004 ppb	-0.119 ppb	-0.039 ppb	-0.159 ppb	98.313 %
Concentration RSD	306.4 %	25.5 %	1,952.0 %	46.9 %	85.8 %	157.8 %	403.8 %	40.9 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.006 ppb	0.002 ppb	-0.001 ppb	94.198 %	0.001 ppb	0.000 ppb	95.964 %	-0.019 ppb	0.013 ppb
Concentration per Run 1	0.010 ppb	-0.039 ppb	0.002 ppb	93.125 %	0.003 ppb	-0.002 ppb	93.262 %	-0.025 ppb	0.041 ppb
Concentration per Run 2	0.001 ppb	0.008 ppb	0.000 ppb	94.657 %	-0.001 ppb	0.001 ppb	97.222 %	-0.016 ppb	-0.018 ppb
Concentration per Run 3	0.008 ppb	0.038 ppb	-0.003 ppb	94.811 %	-0.001 ppb	0.001 ppb	97.406 %	-0.018 ppb	0.015 ppb
Concentration RSD	79.7 %	1,731.1 %	424.7 %	1.0 %	404.3 %	1,729.8 %	2.4 %	22.8 %	235.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.929 %	95.444 %	0.205 ppb	0.009 ppb	96.491 %
Concentration per Run 1	94.325 %	93.007 %	0.182 ppb	0.008 ppb	96.610 %
Concentration per Run 2	97.318 %	97.214 %	0.208 ppb	0.009 ppb	96.346 %
Concentration per Run 3	96.145 %	96.111 %	0.224 ppb	0.009 ppb	96.516 %
Concentration RSD	1.6 %	2.3 %	10.6 %	6.6 %	0.1 %

Alpha ICPMSQ Full

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Analysis index: 23 Analysis started at: 12/17/2021 10:05:52 PM
 Analysis label: WG1583711-2D10 A2-6020T User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.710 %	89.487 %	82.078 ppb	1,041.969 ppb	1,264.677 ppb	3,902.682 ppb	1,055.477 ppb	2,727.543 ppb	98.753 %
Concentration per Run 1	91.541 %	82.615 %	80.676 ppb	1,063.911 ppb	1,338.361 ppb	3,961.752 ppb	1,076.568 ppb	2,627.038 ppb	98.707 %
Concentration per Run 2	90.925 %	91.538 %	82.167 ppb	1,062.055 ppb	1,184.383 ppb	3,874.946 ppb	1,050.221 ppb	2,867.809 ppb	98.994 %
Concentration per Run 3	89.665 %	94.308 %	83.390 ppb	999.940 ppb	1,271.288 ppb	3,871.348 ppb	1,039.642 ppb	2,687.781 ppb	98.557 %
Concentration RSD	1.1 %	6.8 %	1.7 %	3.5 %	6.1 %	1.3 %	1.8 %	4.6 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	96.514 ppb	62.702 ppb	233.752 ppb	8,481.106 ppb	32.804 ppb	71.978 ppb	32.112 ppb	150.646 ppb	94.609 %
Concentration per Run 1	99.216 ppb	62.871 ppb	235.473 ppb	8,733.080 ppb	33.503 ppb	74.200 ppb	32.684 ppb	151.925 ppb	90.720 %
Concentration per Run 2	96.739 ppb	64.106 ppb	234.220 ppb	8,286.636 ppb	32.956 ppb	71.858 ppb	31.474 ppb	150.301 ppb	96.240 %
Concentration per Run 3	93.586 ppb	61.128 ppb	231.564 ppb	8,423.602 ppb	31.953 ppb	69.876 ppb	32.178 ppb	149.714 ppb	96.868 %
Concentration RSD	2.9 %	2.4 %	0.9 %	2.7 %	2.4 %	3.0 %	1.9 %	0.8 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	43.467 ppb	61.640 ppb	39.364 ppb	93.721 %	23.033 ppb	49.180 ppb	95.584 %	108.033 ppb	116.421 ppb
Concentration per Run 1	43.637 ppb	59.471 ppb	38.843 ppb	92.071 %	23.150 ppb	49.638 ppb	92.252 %	107.863 ppb	114.402 ppb
Concentration per Run 2	42.738 ppb	62.689 ppb	39.633 ppb	93.957 %	23.034 ppb	49.373 ppb	96.454 %	108.776 ppb	117.081 ppb
Concentration per Run 3	44.025 ppb	62.761 ppb	39.615 ppb	95.136 %	22.916 ppb	48.529 ppb	98.044 %	107.459 ppb	117.780 ppb
Concentration RSD	1.5 %	3.0 %	1.1 %	1.6 %	0.5 %	1.2 %	3.1 %	0.6 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.862 %	95.081 %	71.821 ppb	62.508 ppb	95.194 %
Concentration per Run 1	93.947 %	92.299 %	69.526 ppb	61.888 ppb	94.023 %
Concentration per Run 2	96.767 %	96.390 %	71.905 ppb	62.812 ppb	95.875 %
Concentration per Run 3	96.870 %	96.554 %	74.032 ppb	62.825 ppb	95.685 %
Concentration RSD	1.7 %	2.5 %	3.1 %	0.9 %	1.1 %

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Analysis index: 24
 Analysis label: WG1583711-3D10 A2-6020T
 Analysis started at: 12/17/2021 10:10:41 PM
 User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.859 %	92.667 %	8.324 ppb	13,059.831 ppb	8,274.783 ppb	17,197.125 ppb	4,750.579 ppb	4,225.613 ppb	115.257 %
Concentration per Run 1	95.757 %	90.154 %	8.191 ppb	13,003.139 ppb	8,158.737 ppb	16,630.788 ppb	4,848.017 ppb	4,833.698 ppb	114.672 %
Concentration per Run 2	95.179 %	95.538 %	8.173 ppb	12,887.133 ppb	8,336.167 ppb	17,160.402 ppb	4,615.038 ppb	4,045.799 ppb	115.915 %
Concentration per Run 3	93.641 %	92.308 %	8.609 ppb	13,289.223 ppb	8,329.446 ppb	17,800.184 ppb	4,788.682 ppb	3,797.343 ppb	115.183 %
Concentration RSD	1.2 %	2.9 %	3.0 %	1.6 %	1.2 %	3.4 %	2.5 %	12.8 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	129.905 ppb	661.477 ppb	397.868 ppb	40,317.323 ppb	94.086 ppb	108.753 ppb	4,335.154 ppb	1,330.137 ppb	96.223 %
Concentration per Run 1	128.778 ppb	662.339 ppb	397.516 ppb	40,276.794 ppb	94.972 ppb	109.433 ppb	4,386.739 ppb	1,317.051 ppb	94.505 %
Concentration per Run 2	129.331 ppb	651.425 ppb	397.122 ppb	39,892.555 ppb	92.949 ppb	108.662 ppb	4,264.023 ppb	1,322.408 ppb	97.952 %
Concentration per Run 3	131.608 ppb	670.666 ppb	398.966 ppb	40,782.622 ppb	94.337 ppb	108.162 ppb	4,354.699 ppb	1,350.951 ppb	96.211 %
Concentration RSD	1.2 %	1.5 %	0.2 %	1.1 %	1.1 %	0.6 %	1.5 %	1.4 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3,721.606 ppb	34.584 ppb	568.478 ppb	94.641 %	67.086 ppb	29.846 ppb	94.650 %	134.751 ppb	442.653 ppb
Concentration per Run 1	3,716.807 ppb	35.088 ppb	555.296 ppb	93.342 %	67.399 ppb	29.625 ppb	92.399 %	134.331 ppb	431.747 ppb
Concentration per Run 2	3,672.931 ppb	33.190 ppb	570.782 ppb	95.596 %	66.946 ppb	30.015 ppb	95.970 %	132.562 ppb	449.225 ppb
Concentration per Run 3	3,775.079 ppb	35.472 ppb	579.355 ppb	94.986 %	66.914 ppb	29.897 ppb	95.581 %	137.360 ppb	446.986 ppb
Concentration RSD	1.4 %	3.5 %	2.1 %	1.2 %	0.4 %	0.7 %	2.1 %	1.8 %	2.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.761 %	96.021 %	17.911 ppb	1,195.083 ppb	107.549 %
Concentration per Run 1	96.300 %	93.299 %	17.583 ppb	1,189.246 ppb	106.350 %
Concentration per Run 2	100.103 %	98.708 %	17.993 ppb	1,195.063 ppb	108.121 %
Concentration per Run 3	99.881 %	96.057 %	18.158 ppb	1,200.940 ppb	108.177 %
Concentration RSD	2.2 %	2.8 %	1.7 %	0.5 %	1.0 %

Alpha ICPMSQ Full

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Analysis index: 25 Analysis started at: 12/17/2021 10:15:30 PM
 Analysis label: WG1583711-5D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.449 %	87.333 %	44.122 ppb	16,127.693 ppb	10,601.858 ppb	14,147.792 ppb	7,264.122 ppb	7,349.439 ppb	108.821 %
Concentration per Run 1	94.289 %	84.461 %	43.803 ppb	16,243.315 ppb	10,496.760 ppb	14,066.343 ppb	7,474.704 ppb	7,310.620 ppb	109.069 %
Concentration per Run 2	93.618 %	87.384 %	44.263 ppb	16,070.338 ppb	10,745.738 ppb	14,268.276 ppb	7,049.222 ppb	7,354.230 ppb	109.086 %
Concentration per Run 3	92.439 %	90.154 %	44.301 ppb	16,069.425 ppb	10,563.077 ppb	14,108.758 ppb	7,268.441 ppb	7,383.466 ppb	108.308 %
Concentration RSD	1.0 %	3.3 %	0.6 %	0.6 %	1.2 %	0.8 %	2.9 %	0.5 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	91.124 ppb	596.773 ppb	330.873 ppb	39,724.299 ppb	62.059 ppb	75.814 ppb	3,709.188 ppb	1,152.910 ppb	97.526 %
Concentration per Run 1	92.597 ppb	600.277 ppb	322.552 ppb	39,525.091 ppb	63.788 ppb	77.056 ppb	3,785.927 ppb	1,170.187 ppb	94.113 %
Concentration per Run 2	89.929 ppb	596.133 ppb	334.600 ppb	39,749.446 ppb	62.237 ppb	76.208 ppb	3,658.548 ppb	1,147.145 ppb	99.872 %
Concentration per Run 3	90.847 ppb	593.911 ppb	335.467 ppb	39,898.360 ppb	60.152 ppb	74.176 ppb	3,683.088 ppb	1,141.398 ppb	98.593 %
Concentration RSD	1.5 %	0.5 %	2.2 %	0.5 %	2.9 %	2.0 %	1.8 %	1.3 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3,229.317 ppb	58.610 ppb	327.387 ppb	92.710 %	9.479 ppb	63.401 ppb	95.093 %	101.197 ppb	354.125 ppb
Concentration per Run 1	3,226.040 ppb	56.969 ppb	322.155 ppb	91.693 %	9.515 ppb	63.088 ppb	92.882 %	99.760 ppb	348.998 ppb
Concentration per Run 2	3,192.525 ppb	60.030 ppb	324.638 ppb	94.175 %	9.445 ppb	63.293 ppb	96.064 %	101.150 ppb	360.127 ppb
Concentration per Run 3	3,269.388 ppb	58.831 ppb	335.367 ppb	92.262 %	9.478 ppb	63.822 ppb	96.333 %	102.680 ppb	353.251 ppb
Concentration RSD	1.2 %	2.6 %	2.1 %	1.4 %	0.4 %	0.6 %	2.0 %	1.4 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.595 %	94.839 %	43.082 ppb	1,014.920 ppb	105.298 %
Concentration per Run 1	95.091 %	92.380 %	42.200 ppb	1,010.206 ppb	104.864 %
Concentration per Run 2	98.173 %	96.487 %	42.639 ppb	1,011.389 ppb	105.774 %
Concentration per Run 3	96.520 %	95.649 %	44.409 ppb	1,023.167 ppb	105.256 %
Concentration RSD	1.6 %	2.3 %	2.7 %	0.7 %	0.4 %

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Analysis index: 26 Analysis started at: 12/17/2021 10:20:20 PM
 Analysis label: WG1583711-4D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.364 %	94.102 %	0.860 ppb	11,420.966 ppb	6,154.659 ppb	14,661.749 ppb	2,794.917 ppb	2,796.171 ppb	110.604 %
Concentration per Run 1	96.051 %	86.769 %	0.906 ppb	11,848.110 ppb	6,391.430 ppb	14,484.856 ppb	2,797.399 ppb	3,112.106 ppb	108.952 %
Concentration per Run 2	95.839 %	100.000 %	0.819 ppb	10,924.190 ppb	5,914.846 ppb	14,556.716 ppb	2,750.456 ppb	2,575.762 ppb	111.348 %
Concentration per Run 3	97.200 %	95.538 %	0.856 ppb	11,490.598 ppb	6,157.701 ppb	14,943.676 ppb	2,836.896 ppb	2,700.645 ppb	111.511 %
Concentration RSD	0.8 %	7.2 %	5.1 %	4.1 %	3.9 %	1.7 %	1.5 %	10.0 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	48.415 ppb	583.499 ppb	298.760 ppb	36,984.645 ppb	20.132 ppb	47.925 ppb	3,893.934 ppb	1,179.052 ppb	101.859 %
Concentration per Run 1	47.962 ppb	582.280 ppb	292.019 ppb	36,739.894 ppb	20.084 ppb	48.253 ppb	3,945.083 ppb	1,162.056 ppb	100.848 %
Concentration per Run 2	48.414 ppb	580.011 ppb	296.182 ppb	36,575.243 ppb	19.881 ppb	47.630 ppb	3,859.399 ppb	1,193.971 ppb	102.294 %
Concentration per Run 3	48.870 ppb	588.207 ppb	308.079 ppb	37,638.799 ppb	20.432 ppb	47.893 ppb	3,877.320 ppb	1,181.129 ppb	102.435 %
Concentration RSD	0.9 %	0.7 %	2.8 %	1.5 %	1.4 %	0.7 %	1.2 %	1.4 %	0.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3,347.346 ppb	16.417 ppb	345.060 ppb	97.986 %	8.064 ppb	20.388 ppb	99.151 %	49.245 ppb	298.557 ppb
Concentration per Run 1	3,276.772 ppb	16.129 ppb	332.489 ppb	96.249 %	8.061 ppb	20.313 ppb	98.241 %	48.223 ppb	286.818 ppb
Concentration per Run 2	3,345.221 ppb	17.404 ppb	351.491 ppb	97.814 %	8.114 ppb	20.731 ppb	97.613 %	49.934 ppb	310.168 ppb
Concentration per Run 3	3,420.045 ppb	15.717 ppb	351.201 ppb	99.896 %	8.017 ppb	20.118 ppb	101.600 %	49.577 ppb	298.685 ppb
Concentration RSD	2.1 %	5.4 %	3.2 %	1.9 %	0.6 %	1.5 %	2.2 %	1.8 %	3.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.601 %	99.162 %	2.145 ppb	969.299 ppb	110.319 %
Concentration per Run 1	98.398 %	95.849 %	2.185 ppb	967.018 ppb	108.597 %
Concentration per Run 2	101.051 %	100.077 %	2.164 ppb	973.903 ppb	109.681 %
Concentration per Run 3	102.353 %	101.561 %	2.087 ppb	966.975 ppb	112.677 %
Concentration RSD	2.0 %	3.0 %	2.4 %	0.4 %	1.9 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.044 %	96.256 %	0.816 ppb	11,318.629 ppb	6,077.032 ppb	14,280.698 ppb	2,850.864 ppb	2,876.433 ppb	112.458 %
Concentration per Run 1	98.029 %	93.538 %	0.817 ppb	11,297.604 ppb	6,147.245 ppb	13,914.020 ppb	2,724.921 ppb	3,253.201 ppb	111.368 %
Concentration per Run 2	98.302 %	100.769 %	0.752 ppb	10,964.929 ppb	5,936.612 ppb	14,200.810 ppb	3,031.131 ppb	2,631.753 ppb	113.907 %
Concentration per Run 3	97.800 %	94.461 %	0.880 ppb	11,693.353 ppb	6,147.239 ppb	14,727.264 ppb	2,796.541 ppb	2,744.345 ppb	112.098 %
Concentration RSD	0.3 %	4.1 %	7.9 %	3.2 %	2.0 %	2.9 %	5.6 %	11.5 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	45.497 ppb	569.157 ppb	292.015 ppb	36,205.811 ppb	16.508 ppb	32.666 ppb	3,862.195 ppb	1,162.704 ppb	101.741 %
Concentration per Run 1	45.790 ppb	574.201 ppb	290.923 ppb	36,814.760 ppb	17.012 ppb	33.339 ppb	3,996.925 ppb	1,179.478 ppb	98.744 %
Concentration per Run 2	44.938 ppb	559.981 ppb	291.109 ppb	35,770.154 ppb	16.089 ppb	33.154 ppb	3,840.736 ppb	1,146.687 ppb	103.272 %
Concentration per Run 3	45.762 ppb	573.291 ppb	294.015 ppb	36,032.519 ppb	16.425 ppb	31.505 ppb	3,748.922 ppb	1,161.947 ppb	103.208 %
Concentration RSD	1.1 %	1.4 %	0.6 %	1.5 %	2.8 %	3.1 %	3.2 %	1.4 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	3,299.641 ppb	15.994 ppb	287.499 ppb	98.780 %	7.795 ppb	19.469 ppb	99.925 %	56.670 ppb	306.425 ppb
Concentration per Run 1	3,312.832 ppb	16.046 ppb	282.299 ppb	98.333 %	7.894 ppb	19.847 ppb	97.371 %	55.984 ppb	298.476 ppb
Concentration per Run 2	3,316.124 ppb	16.349 ppb	290.861 ppb	99.721 %	7.790 ppb	19.061 ppb	102.180 %	56.485 ppb	307.267 ppb
Concentration per Run 3	3,269.968 ppb	15.588 ppb	289.337 ppb	98.286 %	7.703 ppb	19.497 ppb	100.225 %	57.541 ppb	313.531 ppb
Concentration RSD	0.8 %	2.4 %	1.6 %	0.8 %	1.2 %	2.0 %	2.4 %	1.4 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	101.311 %	99.717 %	1.704 ppb	996.818 ppb	109.366 %
Concentration per Run 1	99.227 %	97.662 %	1.650 ppb	987.974 ppb	109.212 %
Concentration per Run 2	102.289 %	100.192 %	1.727 ppb	998.929 ppb	109.516 %
Concentration per Run 3	102.417 %	101.296 %	1.735 ppb	1,003.551 ppb	109.370 %
Concentration RSD	1.8 %	1.9 %	2.8 %	0.8 %	0.1 %

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Analysis index: 28 Analysis started at: 12/17/2021 10:29:59 PM
 Analysis label: WG1583711-6D50 A2-6020T User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.790 %	93.333 %	0.164 ppb	2,330.236 ppb	1,215.223 ppb	2,928.723 ppb	536.409 ppb	656.194 ppb	101.801 %
Concentration per Run 1	96.025 %	92.769 %	0.155 ppb	2,303.900 ppb	1,192.543 ppb	2,820.143 ppb	513.299 ppb	564.033 ppb	101.330 %
Concentration per Run 2	95.346 %	96.308 %	0.147 ppb	2,257.044 ppb	1,213.141 ppb	2,997.228 ppb	558.653 ppb	576.480 ppb	102.401 %
Concentration per Run 3	95.999 %	90.923 %	0.192 ppb	2,429.762 ppb	1,239.984 ppb	2,968.799 ppb	537.275 ppb	828.070 ppb	101.672 %
Concentration RSD	0.4 %	2.9 %	14.7 %	3.8 %	2.0 %	3.2 %	4.2 %	22.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	8.985 ppb	114.895 ppb	59.358 ppb	7,299.580 ppb	3.420 ppb	7.030 ppb	810.615 ppb	239.738 ppb	103.556 %
Concentration per Run 1	8.759 ppb	113.677 ppb	59.425 ppb	7,150.153 ppb	3.432 ppb	7.497 ppb	816.357 ppb	238.346 ppb	100.165 %
Concentration per Run 2	9.011 ppb	114.025 ppb	58.445 ppb	7,233.443 ppb	3.402 ppb	6.988 ppb	803.496 ppb	239.682 ppb	105.104 %
Concentration per Run 3	9.183 ppb	116.983 ppb	60.204 ppb	7,515.144 ppb	3.426 ppb	6.606 ppb	811.991 ppb	241.187 ppb	105.399 %
Concentration RSD	2.4 %	1.6 %	1.5 %	2.6 %	0.5 %	6.4 %	0.8 %	0.6 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	668.178 ppb	3.294 ppb	56.315 ppb	102.445 %	1.560 ppb	3.937 ppb	102.341 %	11.481 ppb	61.310 ppb
Concentration per Run 1	665.806 ppb	2.950 ppb	55.157 ppb	100.197 %	1.546 ppb	3.946 ppb	100.288 %	11.193 ppb	59.806 ppb
Concentration per Run 2	670.887 ppb	3.613 ppb	57.073 ppb	102.234 %	1.573 ppb	3.858 ppb	103.120 %	11.629 ppb	61.661 ppb
Concentration per Run 3	667.842 ppb	3.320 ppb	56.715 ppb	104.904 %	1.563 ppb	4.006 ppb	103.615 %	11.619 ppb	62.462 ppb
Concentration RSD	0.4 %	10.1 %	1.8 %	2.3 %	0.9 %	1.9 %	1.8 %	2.2 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	103.702 %	102.354 %	0.537 ppb	213.690 ppb	103.242 %
Concentration per Run 1	101.788 %	98.980 %	0.517 ppb	212.892 ppb	101.940 %
Concentration per Run 2	103.418 %	102.379 %	0.542 ppb	214.286 ppb	103.988 %
Concentration per Run 3	105.900 %	105.703 %	0.551 ppb	213.891 ppb	103.797 %
Concentration RSD	2.0 %	3.3 %	3.3 %	0.3 %	1.1 %

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Analysis index: 29 Analysis started at: 12/17/2021 10:34:48 PM
 Analysis label: I2156432-02D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.190 %	97.641 %	1.003 ppb	11,318.844 ppb	6,423.051 ppb	16,298.379 ppb	2,796.154 ppb	4,584.288 ppb	111.388 %
Concentration per Run 1	97.494 %	94.923 %	0.966 ppb	11,437.955 ppb	6,615.893 ppb	15,870.565 ppb	2,770.910 ppb	4,554.691 ppb	110.327 %
Concentration per Run 2	98.922 %	103.385 %	1.068 ppb	11,000.560 ppb	6,097.164 ppb	16,189.901 ppb	2,822.634 ppb	4,499.155 ppb	112.633 %
Concentration per Run 3	98.155 %	94.615 %	0.974 ppb	11,518.015 ppb	6,556.095 ppb	16,834.673 ppb	2,794.917 ppb	4,699.018 ppb	111.205 %
Concentration RSD	0.7 %	5.1 %	5.6 %	2.5 %	4.4 %	3.0 %	0.9 %	2.3 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.102 ppb	768.455 ppb	335.100 ppb	37,383.293 ppb	16.241 ppb	51.281 ppb	2,890.202 ppb	1,320.975 ppb	100.919 %
Concentration per Run 1	53.082 ppb	777.376 ppb	336.072 ppb	37,284.372 ppb	16.392 ppb	52.423 ppb	2,928.503 ppb	1,324.148 ppb	98.435 %
Concentration per Run 2	50.981 ppb	756.283 ppb	326.814 ppb	37,201.337 ppb	16.334 ppb	50.272 ppb	2,863.782 ppb	1,313.068 ppb	101.784 %
Concentration per Run 3	52.243 ppb	771.706 ppb	342.413 ppb	37,664.170 ppb	15.999 ppb	51.148 ppb	2,878.320 ppb	1,325.708 ppb	102.538 %
Concentration RSD	2.0 %	1.4 %	2.3 %	0.7 %	1.3 %	2.1 %	1.2 %	0.5 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,941.401 ppb	17.636 ppb	279.055 ppb	97.900 %	9.914 ppb	24.494 ppb	98.880 %	24.911 ppb	257.539 ppb
Concentration per Run 1	1,942.123 ppb	17.454 ppb	271.054 ppb	97.703 %	10.104 ppb	24.019 ppb	97.115 %	24.573 ppb	250.241 ppb
Concentration per Run 2	1,967.089 ppb	17.950 ppb	284.513 ppb	97.676 %	9.949 ppb	24.797 ppb	98.585 %	25.148 ppb	260.187 ppb
Concentration per Run 3	1,914.991 ppb	17.505 ppb	281.598 ppb	98.321 %	9.687 ppb	24.666 ppb	100.941 %	25.014 ppb	262.190 ppb
Concentration RSD	1.3 %	1.5 %	2.5 %	0.4 %	2.1 %	1.7 %	2.0 %	1.2 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.085 %	97.772 %	1.352 ppb	1,115.047 ppb	109.855 %
Concentration per Run 1	97.369 %	94.930 %	1.280 ppb	1,109.922 ppb	110.272 %
Concentration per Run 2	101.543 %	99.777 %	1.393 ppb	1,119.933 ppb	108.675 %
Concentration per Run 3	101.344 %	98.609 %	1.383 ppb	1,115.285 ppb	110.617 %
Concentration RSD	2.4 %	2.6 %	4.6 %	0.4 %	0.9 %

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 Analysis label: L2156432-03D10 A2-6020T

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 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.027 %	96.872 %	0.974 ppb	11,863.338 ppb	7,074.443 ppb	16,093.614 ppb	2,851.827 ppb	4,283.170 ppb	109.571 %
Concentration per Run 1	98.385 %	93.692 %	0.954 ppb	12,181.493 ppb	7,217.681 ppb	15,788.948 ppb	2,737.630 ppb	4,229.023 ppb	109.071 %
Concentration per Run 2	98.195 %	101.077 %	0.956 ppb	11,476.487 ppb	6,940.765 ppb	15,883.122 ppb	2,864.699 ppb	4,434.032 ppb	109.656 %
Concentration per Run 3	97.500 %	95.846 %	1.013 ppb	11,932.036 ppb	7,064.882 ppb	16,608.771 ppb	2,953.151 ppb	4,186.455 ppb	109.985 %
Concentration RSD	0.5 %	3.9 %	3.5 %	3.0 %	2.0 %	2.8 %	3.8 %	3.1 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	55.228 ppb	593.893 ppb	343.072 ppb	38,766.359 ppb	14.625 ppb	50.716 ppb	2,286.861 ppb	984.315 ppb	101.912 %
Concentration per Run 1	56.657 ppb	607.957 ppb	347.845 ppb	39,104.168 ppb	15.100 ppb	51.200 ppb	2,340.198 ppb	997.776 ppb	98.150 %
Concentration per Run 2	52.861 ppb	575.220 ppb	331.289 ppb	37,922.360 ppb	14.193 ppb	48.960 ppb	2,197.693 ppb	958.239 ppb	105.580 %
Concentration per Run 3	56.165 ppb	598.503 ppb	350.081 ppb	39,272.549 ppb	14.581 ppb	51.987 ppb	2,322.692 ppb	996.931 ppb	102.006 %
Concentration RSD	3.7 %	2.8 %	3.0 %	1.9 %	3.1 %	3.1 %	3.4 %	2.3 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,002.819 ppb	24.771 ppb	220.442 ppb	97.583 %	9.450 ppb	16.807 ppb	98.503 %	14.693 ppb	230.936 ppb
Concentration per Run 1	1,013.679 ppb	24.953 ppb	217.662 ppb	96.758 %	9.397 ppb	16.748 ppb	96.201 %	11.386 ppb	227.014 ppb
Concentration per Run 2	977.071 ppb	24.731 ppb	219.004 ppb	97.742 %	9.411 ppb	16.966 ppb	98.319 %	16.582 ppb	233.662 ppb
Concentration per Run 3	1,017.706 ppb	24.629 ppb	224.660 ppb	98.250 %	9.542 ppb	16.706 ppb	100.988 %	16.112 ppb	232.131 ppb
Concentration RSD	2.2 %	0.7 %	1.7 %	0.8 %	0.9 %	0.8 %	2.4 %	19.6 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.851 %	97.665 %	0.917 ppb	962.602 ppb	107.319 %
Concentration per Run 1	97.694 %	94.596 %	0.889 ppb	959.774 ppb	106.999 %
Concentration per Run 2	101.771 %	100.212 %	0.921 ppb	964.374 ppb	108.393 %
Concentration per Run 3	100.088 %	98.188 %	0.941 ppb	963.657 ppb	106.566 %
Concentration RSD	2.1 %	2.9 %	2.9 %	0.3 %	0.9 %

Alpha ICPMSQ Full

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Analysis index: 31 Analysis started at: 12/17/2021 10:44:27 PM
 Analysis label: I2156432-04D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.656 %	96.820 %	0.871 ppb	11,205.477 ppb	6,932.040 ppb	15,169.728 ppb	2,772.798 ppb	4,065.068 ppb	110.878 %
Concentration per Run 1	98.231 %	97.231 %	0.861 ppb	11,072.604 ppb	6,826.589 ppb	14,570.158 ppb	2,640.459 ppb	4,085.604 ppb	109.817 %
Concentration per Run 2	98.975 %	98.154 %	0.861 ppb	11,198.897 ppb	7,016.268 ppb	15,160.316 ppb	2,752.847 ppb	4,051.367 ppb	111.113 %
Concentration per Run 3	98.761 %	95.077 %	0.890 ppb	11,344.931 ppb	6,953.264 ppb	15,778.710 ppb	2,925.088 ppb	4,058.232 ppb	111.704 %
Concentration RSD	0.4 %	1.6 %	1.9 %	1.2 %	1.4 %	4.0 %	5.2 %	0.4 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.919 ppb	595.386 ppb	298.995 ppb	37,376.870 ppb	13.373 ppb	49.671 ppb	2,582.376 ppb	1,006.489 ppb	100.045 %
Concentration per Run 1	52.589 ppb	593.315 ppb	298.216 ppb	37,395.751 ppb	13.562 ppb	49.713 ppb	2,613.747 ppb	1,019.303 ppb	96.133 %
Concentration per Run 2	51.638 ppb	582.612 ppb	288.977 ppb	36,497.071 ppb	12.854 ppb	47.946 ppb	2,527.685 ppb	985.269 ppb	103.281 %
Concentration per Run 3	54.531 ppb	610.231 ppb	309.793 ppb	38,237.789 ppb	13.704 ppb	51.354 ppb	2,605.695 ppb	1,014.897 ppb	100.723 %
Concentration RSD	2.8 %	2.3 %	3.5 %	2.3 %	3.4 %	3.4 %	1.8 %	1.8 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	941.856 ppb	25.888 ppb	209.481 ppb	99.396 %	9.862 ppb	16.436 ppb	99.742 %	16.016 ppb	312.321 ppb
Concentration per Run 1	941.987 ppb	25.827 ppb	204.856 ppb	98.910 %	9.799 ppb	16.310 ppb	98.427 %	15.486 ppb	305.646 ppb
Concentration per Run 2	924.317 ppb	25.408 ppb	207.669 ppb	100.320 %	9.885 ppb	16.621 ppb	99.727 %	16.200 ppb	317.304 ppb
Concentration per Run 3	959.266 ppb	26.429 ppb	215.918 ppb	98.957 %	9.904 ppb	16.376 ppb	101.072 %	16.362 ppb	314.012 ppb
Concentration RSD	1.9 %	2.0 %	2.7 %	0.8 %	0.6 %	1.0 %	1.3 %	2.9 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.850 %	98.692 %	0.802 ppb	1,042.877 ppb	106.802 %
Concentration per Run 1	98.189 %	95.316 %	0.764 ppb	1,037.111 ppb	106.032 %
Concentration per Run 2	101.222 %	101.749 %	0.828 ppb	1,049.083 ppb	107.286 %
Concentration per Run 3	100.139 %	99.013 %	0.813 ppb	1,042.436 ppb	107.088 %
Concentration RSD	1.5 %	3.3 %	4.1 %	0.6 %	0.6 %

Alpha ICPMSQ Full

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Analysis index: 32 Analysis started at: 12/17/2021 10:49:16 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.278 %	85.128 %	61.701 ppb	6,069.977 ppb	6,053.452 ppb	62.974 ppb	6,172.399 ppb	6,284.437 ppb	93.525 %
Concentration per Run 1	88.383 %	82.461 %	60.511 ppb	6,141.227 ppb	6,152.075 ppb	60.806 ppb	5,992.456 ppb	6,412.348 ppb	93.789 %
Concentration per Run 2	88.740 %	87.077 %	61.711 ppb	6,101.791 ppb	6,045.559 ppb	63.498 ppb	6,340.783 ppb	6,234.276 ppb	92.996 %
Concentration per Run 3	87.710 %	85.846 %	62.880 ppb	5,966.913 ppb	5,962.722 ppb	64.617 ppb	6,183.956 ppb	6,206.686 ppb	93.790 %
Recovery Percentage 1			102.835 %	101.166 %	100.891 %	104.956 %	102.873 %	104.741 %	
Concentration RSD	0.6 %	2.8 %	1.9 %	1.5 %	1.6 %	3.1 %	2.8 %	1.8 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	61.909 ppb	60.838 ppb	61.411 ppb	6,091.235 ppb	61.192 ppb	62.205 ppb	63.387 ppb	60.930 ppb	90.555 %
Concentration per Run 1	62.103 ppb	61.121 ppb	59.366 ppb	6,049.131 ppb	61.726 ppb	62.778 ppb	64.662 ppb	61.738 ppb	89.544 %
Concentration per Run 2	61.412 ppb	60.144 ppb	61.490 ppb	6,030.904 ppb	60.850 ppb	61.358 ppb	62.214 ppb	60.774 ppb	91.463 %
Concentration per Run 3	62.211 ppb	61.248 ppb	63.377 ppb	6,193.670 ppb	61.001 ppb	62.480 ppb	63.283 ppb	60.277 ppb	90.657 %
Recovery Percentage 1	103.181 %	101.396 %	102.351 %	101.521 %	101.987 %	103.675 %	105.644 %	101.549 %	
Concentration RSD	0.7 %	1.0 %	3.3 %	1.5 %	0.8 %	1.2 %	1.9 %	1.2 %	1.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.551 ppb	60.833 ppb	61.873 ppb	89.145 %	61.313 ppb	62.129 ppb	90.504 %	61.163 ppb	58.914 ppb
Concentration per Run 1	62.382 ppb	60.394 ppb	60.144 ppb	89.114 %	62.105 ppb	63.495 ppb	87.398 %	61.914 ppb	59.162 ppb
Concentration per Run 2	61.051 ppb	59.538 ppb	62.752 ppb	89.399 %	60.777 ppb	61.376 ppb	92.143 %	60.321 ppb	58.499 ppb
Concentration per Run 3	61.220 ppb	62.569 ppb	62.724 ppb	88.921 %	61.056 ppb	61.516 ppb	91.969 %	61.253 ppb	59.081 ppb
Recovery Percentage 1	102.585 %	101.389 %	103.122 %		102.188 %	103.549 %		101.938 %	98.190 %
Concentration RSD	1.2 %	2.6 %	2.4 %	0.3 %	1.1 %	1.9 %	3.0 %	1.3 %	0.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.965 %	93.462 %	62.914 ppb	61.186 ppb	90.078 %
Concentration per Run 1	92.415 %	91.569 %	62.349 ppb	60.677 ppb	90.284 %
Concentration per Run 2	92.557 %	93.481 %	63.148 ppb	61.496 ppb	90.371 %
Concentration per Run 3	93.923 %	95.337 %	63.246 ppb	61.384 ppb	89.577 %
Recovery Percentage 1			104.857 %	101.976 %	
Concentration RSD	0.9 %	2.0 %	0.8 %	0.7 %	0.5 %

Alpha ICPMSQ Full

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Analysis index: 33 Analysis started at: 12/17/2021 10:54:08 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	84.337 %	82.359 %	0.017 ppb	0.452 ppb	0.454 ppb	-0.144 ppb	-6.941 ppb	-21.584 ppb	79.815 %
Concentration per Run 1	84.020 %	75.846 %	0.010 ppb	1.804 ppb	3.562 ppb	0.378 ppb	2.739 ppb	-23.791 ppb	79.399 %
Concentration per Run 2	83.893 %	76.154 %	0.020 ppb	2.660 ppb	-1.015 ppb	-0.303 ppb	-13.198 ppb	-23.925 ppb	79.453 %
Concentration per Run 3	85.099 %	95.077 %	0.020 ppb	-3.107 ppb	-1.185 ppb	-0.506 ppb	-10.366 ppb	-17.036 ppb	80.594 %
Recovery Percentage 1			3.319 %	0.452 %	0.649 %	-1.436 %	-6.941 %	-21.584 %	
Concentration RSD	0.8 %	13.4 %	34.7 %	688.2 %	592.9 %	322.5 %	122.5 %	18.3 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.029 ppb	-0.003 ppb	0.048 ppb	23.583 ppb	0.012 ppb	-0.049 ppb	0.121 ppb	-0.527 ppb	92.028 %
Concentration per Run 1	-0.003 ppb	-0.009 ppb	-0.069 ppb	23.629 ppb	0.005 ppb	-0.053 ppb	0.125 ppb	-0.542 ppb	89.186 %
Concentration per Run 2	-0.034 ppb	-0.001 ppb	0.172 ppb	27.603 ppb	0.022 ppb	-0.042 ppb	0.183 ppb	-0.510 ppb	92.690 %
Concentration per Run 3	-0.050 ppb	0.000 ppb	0.042 ppb	19.519 ppb	0.008 ppb	-0.052 ppb	0.057 ppb	-0.529 ppb	94.208 %
Recovery Percentage 1	-0.585 %	-0.334 %	4.833 %	47.167 %	2.375 %	-2.460 %	12.134 %	-5.270 %	
Concentration RSD	81.4 %	155.4 %	248.8 %	17.1 %	79.1 %	12.7 %	52.0 %	3.1 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.396 ppb	0.090 ppb	0.000 ppb	91.216 %	0.041 ppb	0.004 ppb	90.126 %	0.016 ppb	0.009 ppb
Concentration per Run 1	0.349 ppb	0.135 ppb	-0.010 ppb	89.531 %	0.059 ppb	0.007 ppb	85.698 %	0.002 ppb	0.019 ppb
Concentration per Run 2	0.435 ppb	0.090 ppb	0.002 ppb	91.810 %	0.042 ppb	0.004 ppb	90.209 %	0.020 ppb	0.000 ppb
Concentration per Run 3	0.403 ppb	0.044 ppb	0.007 ppb	92.307 %	0.022 ppb	0.001 ppb	94.472 %	0.027 ppb	0.007 ppb
Recovery Percentage 1	79.116 %	1.793 %	-0.001 %		10.277 %	2.071 %		0.412 %	1.702 %
Concentration RSD	11.0 %	50.8 %	123,276.9 %	1.6 %	44.6 %	75.3 %	4.9 %	78.0 %	112.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.938 %	93.256 %	0.443 ppb	0.071 ppb	93.193 %
Concentration per Run 1	91.011 %	90.864 %	0.466 ppb	0.080 ppb	91.569 %
Concentration per Run 2	93.474 %	93.742 %	0.452 ppb	0.066 ppb	94.109 %
Concentration per Run 3	94.329 %	95.161 %	0.410 ppb	0.068 ppb	93.901 %
Recovery Percentage 1			44.286 %	7.137 %	
Concentration RSD	1.9 %	2.3 %	6.6 %	10.4 %	1.5 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 34 Analysis started at: 12/17/2021 10:59:01 PM
 Analysis label: I2156432-05D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.500 %	99.744 %	1.055 ppb	11,613.361 ppb	7,325.332 ppb	16,394.485 ppb	2,982.652 ppb	4,801.796 ppb	111.989 %
Concentration per Run 1	96.071 %	96.154 %	1.106 ppb	11,589.998 ppb	7,504.491 ppb	16,393.933 ppb	2,991.982 ppb	4,868.395 ppb	111.553 %
Concentration per Run 2	96.082 %	103.539 %	1.041 ppb	11,614.108 ppb	7,208.951 ppb	16,221.540 ppb	2,973.200 ppb	4,738.666 ppb	111.948 %
Concentration per Run 3	97.346 %	99.538 %	1.017 ppb	11,635.978 ppb	7,262.553 ppb	16,567.982 ppb	2,982.774 ppb	4,798.328 ppb	112.465 %
Concentration RSD	0.8 %	3.7 %	4.4 %	0.2 %	2.1 %	1.1 %	0.3 %	1.4 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.870 ppb	441.626 ppb	329.041 ppb	38,470.082 ppb	15.020 ppb	53.784 ppb	1,918.709 ppb	975.537 ppb	102.287 %
Concentration per Run 1	54.170 ppb	443.557 ppb	328.596 ppb	38,544.718 ppb	15.106 ppb	54.779 ppb	1,979.599 ppb	1,000.929 ppb	97.745 %
Concentration per Run 2	52.137 ppb	436.078 ppb	324.785 ppb	38,134.744 ppb	14.730 ppb	53.544 ppb	1,894.082 ppb	968.322 ppb	103.801 %
Concentration per Run 3	52.302 ppb	445.243 ppb	333.741 ppb	38,730.783 ppb	15.225 ppb	53.029 ppb	1,882.448 ppb	957.359 ppb	105.314 %
Concentration RSD	2.1 %	1.1 %	1.4 %	0.8 %	1.7 %	1.7 %	2.8 %	2.3 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	779.626 ppb	25.962 ppb	180.992 ppb	98.344 %	8.548 ppb	13.961 ppb	99.727 %	15.057 ppb	297.299 ppb
Concentration per Run 1	791.235 ppb	25.505 ppb	177.855 ppb	97.559 %	8.668 ppb	13.741 ppb	98.240 %	14.721 ppb	287.137 ppb
Concentration per Run 2	783.021 ppb	25.867 ppb	183.423 ppb	98.440 %	8.589 ppb	14.022 ppb	99.530 %	15.670 ppb	304.145 ppb
Concentration per Run 3	764.622 ppb	26.514 ppb	181.696 ppb	99.034 %	8.387 ppb	14.121 ppb	101.410 %	14.779 ppb	300.614 ppb
Concentration RSD	1.7 %	2.0 %	1.6 %	0.8 %	1.7 %	1.4 %	1.6 %	3.5 %	3.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.910 %	96.869 %	0.851 ppb	826.772 ppb	108.115 %
Concentration per Run 1	96.914 %	94.377 %	0.809 ppb	815.084 ppb	108.174 %
Concentration per Run 2	98.839 %	97.635 %	0.861 ppb	832.510 ppb	107.598 %
Concentration per Run 3	100.978 %	98.595 %	0.883 ppb	832.723 ppb	108.572 %
Concentration RSD	2.1 %	2.3 %	4.4 %	1.2 %	0.5 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 35 Analysis started at: 12/17/2021 11:03:50 PM
 Analysis label: I2156432-06D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	97.895 %	96.256 %	0.980 ppb	12,866.703 ppb	7,390.795 ppb	16,754.995 ppb	2,878.384 ppb	4,519.592 ppb	110.973 %
Concentration per Run 1	98.755 %	100.000 %	0.999 ppb	12,269.794 ppb	7,080.050 ppb	15,651.003 ppb	2,721.299 ppb	4,526.490 ppb	110.697 %
Concentration per Run 2	98.459 %	91.384 %	1.079 ppb	13,441.815 ppb	7,658.969 ppb	17,508.705 ppb	2,901.626 ppb	4,643.189 ppb	111.749 %
Concentration per Run 3	96.472 %	97.385 %	0.862 ppb	12,888.500 ppb	7,433.367 ppb	17,105.278 ppb	3,012.226 ppb	4,389.096 ppb	110.474 %
Concentration RSD	1.3 %	4.6 %	11.2 %	4.6 %	3.9 %	5.8 %	5.1 %	2.8 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.327 ppb	512.273 ppb	320.808 ppb	38,179.669 ppb	14.551 ppb	58.151 ppb	2,711.190 ppb	1,201.644 ppb	100.362 %
Concentration per Run 1	52.253 ppb	506.016 ppb	314.397 ppb	37,569.719 ppb	14.609 ppb	58.379 ppb	2,764.655 ppb	1,208.448 ppb	96.320 %
Concentration per Run 2	52.221 ppb	513.993 ppb	323.178 ppb	38,263.165 ppb	14.488 ppb	58.129 ppb	2,661.293 ppb	1,189.074 ppb	103.996 %
Concentration per Run 3	52.507 ppb	516.810 ppb	324.850 ppb	38,706.123 ppb	14.556 ppb	57.946 ppb	2,707.622 ppb	1,207.409 ppb	100.769 %
Concentration RSD	0.3 %	1.1 %	1.8 %	1.5 %	0.4 %	0.4 %	1.9 %	0.9 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,086.957 ppb	27.605 ppb	211.782 ppb	98.187 %	8.653 ppb	19.142 ppb	100.426 %	16.316 ppb	326.775 ppb
Concentration per Run 1	1,092.080 ppb	27.615 ppb	208.666 ppb	97.660 %	8.750 ppb	19.177 ppb	96.360 %	16.282 ppb	327.832 ppb
Concentration per Run 2	1,063.805 ppb	27.224 ppb	211.145 ppb	97.693 %	8.705 ppb	19.024 ppb	100.771 %	16.969 ppb	329.241 ppb
Concentration per Run 3	1,104.987 ppb	27.975 ppb	215.534 ppb	99.208 %	8.505 ppb	19.225 ppb	104.147 %	15.697 ppb	323.251 ppb
Concentration RSD	1.9 %	1.4 %	1.6 %	0.9 %	1.5 %	0.5 %	3.9 %	3.9 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.462 %	98.494 %	1.013 ppb	1,002.635 ppb	105.242 %
Concentration per Run 1	97.495 %	95.743 %	0.998 ppb	990.685 ppb	104.680 %
Concentration per Run 2	100.164 %	99.270 %	1.014 ppb	1,008.892 ppb	105.132 %
Concentration per Run 3	100.728 %	100.469 %	1.027 ppb	1,008.327 ppb	105.915 %
Concentration RSD	1.7 %	2.5 %	1.4 %	1.0 %	0.6 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 36 Analysis started at: 12/17/2021 11:08:40 PM
 Analysis label: I2156432-07D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.019 %	104.359 %	0.954 ppb	12,974.901 ppb	6,880.048 ppb	16,393.138 ppb	2,965.035 ppb	4,679.263 ppb	109.909 %
Concentration per Run 1	98.012 %	97.538 %	0.968 ppb	13,347.108 ppb	7,050.651 ppb	16,264.420 ppb	3,054.950 ppb	4,997.861 ppb	109.802 %
Concentration per Run 2	98.122 %	105.692 %	1.009 ppb	12,972.890 ppb	7,003.694 ppb	16,696.249 ppb	2,936.312 ppb	4,549.417 ppb	110.019 %
Concentration per Run 3	97.924 %	109.846 %	0.885 ppb	12,604.705 ppb	6,585.799 ppb	16,218.745 ppb	2,903.843 ppb	4,490.513 ppb	109.906 %
Concentration RSD	0.1 %	6.0 %	6.6 %	2.9 %	3.7 %	1.6 %	2.7 %	5.9 %	0.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.379 ppb	650.067 ppb	308.923 ppb	36,180.717 ppb	13.132 ppb	55.105 ppb	2,722.297 ppb	1,163.046 ppb	103.417 %
Concentration per Run 1	51.916 ppb	658.778 ppb	304.692 ppb	36,418.351 ppb	13.326 ppb	56.727 ppb	2,761.118 ppb	1,178.892 ppb	101.212 %
Concentration per Run 2	51.213 ppb	647.216 ppb	309.513 ppb	35,955.163 ppb	12.838 ppb	54.740 ppb	2,706.445 ppb	1,161.965 ppb	104.920 %
Concentration per Run 3	51.007 ppb	644.207 ppb	312.563 ppb	36,168.635 ppb	13.233 ppb	53.847 ppb	2,699.330 ppb	1,148.282 ppb	104.119 %
Concentration RSD	0.9 %	1.2 %	1.3 %	0.6 %	2.0 %	2.7 %	1.2 %	1.3 %	1.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,299.964 ppb	26.159 ppb	232.489 ppb	97.430 %	9.180 ppb	21.120 ppb	99.838 %	17.492 ppb	274.434 ppb
Concentration per Run 1	1,282.477 ppb	25.754 ppb	226.192 ppb	96.915 %	9.258 ppb	21.455 ppb	95.992 %	17.835 ppb	272.052 ppb
Concentration per Run 2	1,299.050 ppb	26.491 ppb	234.481 ppb	98.028 %	9.097 ppb	20.788 ppb	101.920 %	17.559 ppb	280.163 ppb
Concentration per Run 3	1,318.365 ppb	26.233 ppb	236.794 ppb	97.347 %	9.185 ppb	21.117 ppb	101.603 %	17.081 ppb	271.087 ppb
Concentration RSD	1.4 %	1.4 %	2.4 %	0.6 %	0.9 %	1.6 %	3.3 %	2.2 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.873 %	97.972 %	0.977 ppb	1,053.162 ppb	105.014 %
Concentration per Run 1	98.844 %	95.865 %	0.954 ppb	1,047.817 ppb	104.392 %
Concentration per Run 2	100.168 %	99.826 %	0.976 ppb	1,051.006 ppb	106.409 %
Concentration per Run 3	100.608 %	98.226 %	1.002 ppb	1,060.661 ppb	104.240 %
Concentration RSD	0.9 %	2.0 %	2.4 %	0.6 %	1.2 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	98.351 %	93.846 %	1.023 ppb	11,327.638 ppb	7,440.232 ppb	16,686.668 ppb	3,009.696 ppb	4,338.135 ppb	109.168 %
Concentration per Run 1	98.322 %	93.384 %	0.966 ppb	11,064.753 ppb	7,122.282 ppb	15,906.338 ppb	2,859.460 ppb	4,003.777 ppb	108.287 %
Concentration per Run 2	98.495 %	96.000 %	1.096 ppb	11,144.073 ppb	7,369.308 ppb	16,969.508 ppb	2,973.812 ppb	4,507.693 ppb	109.722 %
Concentration per Run 3	98.237 %	92.154 %	1.007 ppb	11,774.089 ppb	7,829.107 ppb	17,184.159 ppb	3,195.817 ppb	4,502.936 ppb	109.497 %
Concentration RSD	0.1 %	2.1 %	6.5 %	3.4 %	4.8 %	4.1 %	5.7 %	6.7 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.329 ppb	624.966 ppb	327.173 ppb	37,318.512 ppb	13.558 ppb	56.219 ppb	2,387.452 ppb	1,215.025 ppb	100.630 %
Concentration per Run 1	52.636 ppb	623.910 ppb	324.494 ppb	37,289.042 ppb	13.157 ppb	56.989 ppb	2,419.098 ppb	1,216.999 ppb	97.933 %
Concentration per Run 2	51.366 ppb	625.878 ppb	325.830 ppb	37,422.096 ppb	13.572 ppb	55.873 ppb	2,385.881 ppb	1,220.472 ppb	101.321 %
Concentration per Run 3	52.985 ppb	625.110 ppb	331.196 ppb	37,244.398 ppb	13.945 ppb	55.794 ppb	2,357.379 ppb	1,207.604 ppb	102.634 %
Concentration RSD	1.6 %	0.2 %	1.1 %	0.2 %	2.9 %	1.2 %	1.3 %	0.5 %	2.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	955.737 ppb	19.964 ppb	175.459 ppb	97.519 %	9.395 ppb	18.766 ppb	97.170 %	15.965 ppb	272.606 ppb
Concentration per Run 1	945.233 ppb	19.769 ppb	171.835 ppb	96.767 %	9.520 ppb	19.509 ppb	93.246 %	15.814 ppb	272.352 ppb
Concentration per Run 2	972.213 ppb	20.079 ppb	177.588 ppb	98.814 %	9.335 ppb	18.788 ppb	100.354 %	16.026 ppb	271.253 ppb
Concentration per Run 3	949.765 ppb	20.046 ppb	176.954 ppb	96.978 %	9.330 ppb	18.002 ppb	97.911 %	16.056 ppb	274.212 ppb
Concentration RSD	1.5 %	0.9 %	1.8 %	1.2 %	1.2 %	4.0 %	3.7 %	0.8 %	0.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.027 %	97.144 %	0.783 ppb	911.314 ppb	106.327 %
Concentration per Run 1	97.741 %	95.313 %	0.739 ppb	900.347 ppb	106.961 %
Concentration per Run 2	100.600 %	99.056 %	0.799 ppb	914.815 ppb	106.997 %
Concentration per Run 3	98.739 %	97.064 %	0.810 ppb	918.779 ppb	105.021 %
Concentration RSD	1.5 %	1.9 %	4.9 %	1.1 %	1.1 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.813 %	98.923 %	0.957 ppb	10,529.447 ppb	6,756.114 ppb	15,656.565 ppb	2,799.669 ppb	4,406.301 ppb	107.882 %
Concentration per Run 1	96.892 %	91.538 %	0.989 ppb	10,926.844 ppb	6,936.589 ppb	15,957.292 ppb	2,817.202 ppb	4,235.816 ppb	107.529 %
Concentration per Run 2	96.916 %	102.615 %	0.925 ppb	10,239.110 ppb	6,647.842 ppb	15,513.158 ppb	2,784.342 ppb	4,406.283 ppb	108.511 %
Concentration per Run 3	96.632 %	102.615 %	0.956 ppb	10,422.386 ppb	6,683.909 ppb	15,499.246 ppb	2,797.465 ppb	4,576.806 ppb	107.605 %
Concentration RSD	0.2 %	6.5 %	3.3 %	3.4 %	2.3 %	1.7 %	0.6 %	3.9 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	49.513 ppb	552.995 ppb	303.042 ppb	37,088.307 ppb	13.281 ppb	51.657 ppb	2,154.687 ppb	1,237.989 ppb	100.934 %
Concentration per Run 1	51.506 ppb	576.586 ppb	311.074 ppb	38,133.269 ppb	13.693 ppb	52.664 ppb	2,207.067 ppb	1,261.928 ppb	97.235 %
Concentration per Run 2	48.989 ppb	545.183 ppb	303.277 ppb	37,508.195 ppb	13.462 ppb	53.420 ppb	2,180.393 ppb	1,261.935 ppb	100.459 %
Concentration per Run 3	48.045 ppb	537.214 ppb	294.773 ppb	35,623.458 ppb	12.689 ppb	48.886 ppb	2,076.601 ppb	1,190.105 ppb	105.109 %
Concentration RSD	3.6 %	3.8 %	2.7 %	3.5 %	4.0 %	4.7 %	3.2 %	3.3 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	920.536 ppb	22.929 ppb	200.415 ppb	97.406 %	9.907 ppb	18.406 ppb	97.517 %	22.867 ppb	182.101 ppb
Concentration per Run 1	933.620 ppb	21.537 ppb	197.522 ppb	96.557 %	9.938 ppb	18.349 ppb	94.369 %	22.855 ppb	182.660 ppb
Concentration per Run 2	928.209 ppb	25.735 ppb	202.866 ppb	97.977 %	9.786 ppb	18.202 ppb	99.964 %	22.879 ppb	182.614 ppb
Concentration per Run 3	899.778 ppb	21.517 ppb	200.858 ppb	97.684 %	9.998 ppb	18.668 ppb	98.217 %	22.868 ppb	181.028 ppb
Concentration RSD	2.0 %	10.6 %	1.3 %	0.8 %	1.1 %	1.3 %	2.9 %	0.1 %	0.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.334 %	97.990 %	0.852 ppb	941.849 ppb	106.680 %
Concentration per Run 1	96.455 %	94.510 %	0.822 ppb	926.244 ppb	106.683 %
Concentration per Run 2	100.770 %	99.526 %	0.848 ppb	944.037 ppb	107.282 %
Concentration per Run 3	100.776 %	99.934 %	0.887 ppb	955.266 ppb	106.075 %
Concentration RSD	2.5 %	3.1 %	3.8 %	1.6 %	0.6 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	96.570 %	92.205 %	0.843 ppb	12,516.247 ppb	6,427.872 ppb	14,978.997 ppb	2,682.339 ppb	4,406.394 ppb	106.735 %
Concentration per Run 1	96.950 %	84.461 %	0.840 ppb	13,320.637 ppb	6,723.132 ppb	15,355.311 ppb	2,698.764 ppb	4,695.437 ppb	106.267 %
Concentration per Run 2	97.607 %	94.308 %	0.820 ppb	12,341.353 ppb	6,425.967 ppb	14,924.552 ppb	2,647.446 ppb	4,138.266 ppb	107.752 %
Concentration per Run 3	95.153 %	97.846 %	0.870 ppb	11,886.753 ppb	6,134.516 ppb	14,657.127 ppb	2,700.808 ppb	4,385.479 ppb	106.185 %
Concentration RSD	1.3 %	7.5 %	2.9 %	5.9 %	4.6 %	2.4 %	1.1 %	6.3 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	44.209 ppb	788.208 ppb	290.330 ppb	34,506.246 ppb	13.826 ppb	48.076 ppb	2,959.977 ppb	1,205.208 ppb	98.995 %
Concentration per Run 1	45.871 ppb	804.957 ppb	291.287 ppb	34,992.082 ppb	14.758 ppb	49.937 ppb	3,049.052 ppb	1,235.893 ppb	95.552 %
Concentration per Run 2	43.815 ppb	791.059 ppb	292.629 ppb	34,763.058 ppb	13.645 ppb	47.667 ppb	2,973.262 ppb	1,210.823 ppb	99.044 %
Concentration per Run 3	42.940 ppb	768.607 ppb	287.074 ppb	33,763.597 ppb	13.074 ppb	46.623 ppb	2,857.616 ppb	1,168.907 ppb	102.389 %
Concentration RSD	3.4 %	2.3 %	1.0 %	1.9 %	6.2 %	3.5 %	3.3 %	2.8 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,055.320 ppb	23.462 ppb	270.296 ppb	96.891 %	10.340 ppb	17.677 ppb	96.940 %	28.621 ppb	287.924 ppb
Concentration per Run 1	1,068.542 ppb	22.377 ppb	265.894 ppb	96.872 %	10.383 ppb	17.922 ppb	94.273 %	28.532 ppb	285.787 ppb
Concentration per Run 2	1,069.096 ppb	24.599 ppb	273.733 ppb	96.831 %	10.238 ppb	17.569 ppb	98.123 %	28.624 ppb	291.090 ppb
Concentration per Run 3	1,028.322 ppb	23.409 ppb	271.261 ppb	96.969 %	10.398 ppb	17.538 ppb	98.424 %	28.708 ppb	286.894 ppb
Concentration RSD	2.2 %	4.7 %	1.5 %	0.1 %	0.9 %	1.2 %	2.4 %	0.3 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.668 %	98.540 %	0.887 ppb	1,001.966 ppb	104.354 %
Concentration per Run 1	97.709 %	96.444 %	0.866 ppb	987.428 ppb	104.774 %
Concentration per Run 2	100.861 %	99.942 %	0.889 ppb	1,005.794 ppb	104.745 %
Concentration per Run 3	100.433 %	99.234 %	0.906 ppb	1,012.675 ppb	103.544 %
Concentration RSD	1.7 %	1.9 %	2.3 %	1.3 %	0.7 %

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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.379 %	96.000 %	0.698 ppb	11,050.333 ppb	5,442.144 ppb	12,888.207 ppb	2,689.187 ppb	3,517.172 ppb	107.272 %
Concentration per Run 1	95.567 %	92.461 %	0.633 ppb	11,247.383 ppb	5,571.497 ppb	12,737.844 ppb	2,625.024 ppb	3,460.288 ppb	107.181 %
Concentration per Run 2	95.316 %	101.692 %	0.671 ppb	10,709.004 ppb	5,282.292 ppb	12,766.654 ppb	2,594.426 ppb	3,505.972 ppb	107.941 %
Concentration per Run 3	95.255 %	93.846 %	0.789 ppb	11,194.612 ppb	5,472.643 ppb	13,160.124 ppb	2,848.110 ppb	3,585.256 ppb	106.695 %
Concentration RSD	0.2 %	5.2 %	11.7 %	2.7 %	2.7 %	1.8 %	5.1 %	1.8 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	42.639 ppb	562.222 ppb	237.101 ppb	32,651.397 ppb	10.862 ppb	33.482 ppb	5,328.028 ppb	1,482.577 ppb	100.654 %
Concentration per Run 1	42.917 ppb	560.324 ppb	229.411 ppb	32,644.577 ppb	11.003 ppb	34.333 ppb	5,452.802 ppb	1,509.736 ppb	98.030 %
Concentration per Run 2	42.731 ppb	570.292 ppb	247.882 ppb	33,666.636 ppb	11.090 ppb	33.150 ppb	5,380.758 ppb	1,504.002 ppb	99.270 %
Concentration per Run 3	42.268 ppb	556.049 ppb	234.011 ppb	31,642.977 ppb	10.492 ppb	32.963 ppb	5,150.523 ppb	1,433.992 ppb	104.664 %
Concentration RSD	0.8 %	1.3 %	4.1 %	3.1 %	3.0 %	2.2 %	3.0 %	2.8 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,809.011 ppb	14.467 ppb	245.144 ppb	98.867 %	11.137 ppb	18.041 ppb	99.495 %	39.735 ppb	293.483 ppb
Concentration per Run 1	1,822.065 ppb	15.107 ppb	239.115 ppb	98.776 %	11.159 ppb	18.033 ppb	97.367 %	39.484 ppb	285.713 ppb
Concentration per Run 2	1,840.176 ppb	13.997 ppb	250.077 ppb	99.326 %	11.103 ppb	18.024 ppb	100.386 %	39.247 ppb	294.830 ppb
Concentration per Run 3	1,764.791 ppb	14.299 ppb	246.240 ppb	98.498 %	11.149 ppb	18.067 ppb	100.731 %	40.473 ppb	299.906 ppb
Concentration RSD	2.2 %	4.0 %	2.3 %	0.4 %	0.3 %	0.1 %	1.9 %	1.6 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	100.827 %	100.482 %	1.193 ppb	1,002.677 ppb	110.073 %
Concentration per Run 1	98.599 %	97.739 %	1.158 ppb	998.469 ppb	109.439 %
Concentration per Run 2	102.377 %	102.697 %	1.216 ppb	1,003.889 ppb	110.399 %
Concentration per Run 3	101.506 %	101.010 %	1.205 ppb	1,005.674 ppb	110.381 %
Concentration RSD	2.0 %	2.5 %	2.6 %	0.4 %	0.5 %



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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	95.267 %	98.820 %	0.643 ppb	11,259.277 ppb	5,069.264 ppb	11,105.029 ppb	2,380.628 ppb	2,975.765 ppb	107.495 %
Concentration per Run 1	95.248 %	99.846 %	0.650 ppb	11,075.624 ppb	4,843.311 ppb	10,438.051 ppb	2,377.928 ppb	3,130.129 ppb	106.852 %
Concentration per Run 2	95.250 %	103.231 %	0.636 ppb	10,894.293 ppb	4,893.527 ppb	11,009.546 ppb	2,300.887 ppb	2,605.287 ppb	108.683 %
Concentration per Run 3	95.303 %	93.385 %	0.641 ppb	11,807.916 ppb	5,470.952 ppb	11,867.489 ppb	2,463.071 ppb	3,191.879 ppb	106.949 %
Concentration RSD	0.0 %	5.1 %	1.1 %	4.3 %	6.9 %	6.5 %	3.4 %	10.8 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	39.353 ppb	479.994 ppb	219.268 ppb	31,737.621 ppb	10.711 ppb	31.971 ppb	3,067.227 ppb	1,165.334 ppb	98.626 %
Concentration per Run 1	39.829 ppb	477.201 ppb	212.994 ppb	31,413.230 ppb	10.762 ppb	33.108 ppb	3,131.625 ppb	1,177.399 ppb	94.751 %
Concentration per Run 2	38.319 ppb	471.959 ppb	216.640 ppb	31,023.642 ppb	10.303 ppb	30.361 ppb	2,962.392 ppb	1,135.264 ppb	101.775 %
Concentration per Run 3	39.910 ppb	490.821 ppb	228.169 ppb	32,775.990 ppb	11.069 ppb	32.443 ppb	3,107.663 ppb	1,183.338 ppb	99.351 %
Concentration RSD	2.3 %	2.0 %	3.6 %	2.9 %	3.6 %	4.5 %	3.0 %	2.2 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,254.035 ppb	12.877 ppb	287.189 ppb	96.701 %	11.072 ppb	14.344 ppb	95.675 %	30.779 ppb	351.579 ppb
Concentration per Run 1	1,270.267 ppb	12.749 ppb	282.162 ppb	96.409 %	11.240 ppb	14.440 ppb	92.456 %	30.348 ppb	346.031 ppb
Concentration per Run 2	1,228.203 ppb	13.104 ppb	287.210 ppb	96.682 %	10.905 ppb	13.683 ppb	98.646 %	30.745 ppb	350.227 ppb
Concentration per Run 3	1,263.635 ppb	12.777 ppb	292.194 ppb	97.013 %	11.072 ppb	14.909 ppb	95.922 %	31.245 ppb	358.479 ppb
Concentration RSD	1.8 %	1.5 %	1.7 %	0.3 %	1.5 %	4.3 %	3.2 %	1.5 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.001 %	98.097 %	0.837 ppb	840.761 ppb	105.231 %
Concentration per Run 1	96.828 %	95.723 %	0.812 ppb	831.538 ppb	105.255 %
Concentration per Run 2	100.933 %	100.079 %	0.842 ppb	839.187 ppb	105.765 %
Concentration per Run 3	99.243 %	98.488 %	0.856 ppb	851.559 ppb	104.672 %
Concentration RSD	2.1 %	2.2 %	2.7 %	1.2 %	0.5 %

Alpha ICPMSQ Full

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Analysis index: 42 Analysis started at: 12/17/2021 11:37:38 PM
 Analysis label: I2156432-13D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.606 %	93.385 %	0.917 ppb	11,467.341 ppb	6,937.566 ppb	15,644.725 ppb	3,070.287 ppb	3,445.457 ppb	107.409 %
Concentration per Run 1	95.678 %	86.769 %	0.928 ppb	11,786.543 ppb	7,180.881 ppb	15,716.000 ppb	2,920.789 ppb	3,443.076 ppb	107.564 %
Concentration per Run 2	93.493 %	99.538 %	0.908 ppb	11,004.939 ppb	6,733.179 ppb	15,517.561 ppb	3,003.556 ppb	3,316.432 ppb	106.872 %
Concentration per Run 3	94.647 %	93.846 %	0.915 ppb	11,610.542 ppb	6,898.638 ppb	15,700.614 ppb	3,286.515 ppb	3,576.864 ppb	107.792 %
Concentration RSD	1.2 %	6.9 %	1.1 %	3.6 %	3.3 %	0.7 %	6.2 %	3.8 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	54.109 ppb	596.637 ppb	318.506 ppb	39,105.559 ppb	12.857 ppb	33.549 ppb	2,632.897 ppb	1,129.127 ppb	97.442 %
Concentration per Run 1	54.045 ppb	600.880 ppb	316.568 ppb	39,279.301 ppb	13.252 ppb	33.505 ppb	2,668.856 ppb	1,125.795 ppb	96.667 %
Concentration per Run 2	55.320 ppb	601.991 ppb	323.500 ppb	39,937.753 ppb	12.862 ppb	33.325 ppb	2,681.866 ppb	1,158.421 ppb	94.847 %
Concentration per Run 3	52.962 ppb	587.041 ppb	315.450 ppb	38,099.623 ppb	12.458 ppb	33.816 ppb	2,547.970 ppb	1,103.164 ppb	100.813 %
Concentration RSD	2.2 %	1.4 %	1.4 %	2.4 %	3.1 %	0.7 %	2.8 %	2.5 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,065.082 ppb	16.255 ppb	194.378 ppb	92.878 %	8.472 ppb	13.486 ppb	94.891 %	38.250 ppb	287.714 ppb
Concentration per Run 1	1,049.609 ppb	15.421 ppb	185.785 ppb	92.350 %	8.546 ppb	13.345 ppb	91.619 %	38.630 ppb	286.259 ppb
Concentration per Run 2	1,104.674 ppb	17.602 ppb	200.491 ppb	93.330 %	8.461 ppb	13.786 ppb	96.145 %	38.158 ppb	288.645 ppb
Concentration per Run 3	1,040.964 ppb	15.741 ppb	196.859 ppb	92.954 %	8.409 ppb	13.328 ppb	96.911 %	37.961 ppb	288.238 ppb
Concentration RSD	3.2 %	7.2 %	3.9 %	0.5 %	0.8 %	1.9 %	3.0 %	0.9 %	0.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.862 %	95.074 %	0.807 ppb	820.504 ppb	103.616 %
Concentration per Run 1	95.430 %	93.939 %	0.763 ppb	809.910 ppb	104.366 %
Concentration per Run 2	95.391 %	95.423 %	0.809 ppb	823.879 ppb	102.884 %
Concentration per Run 3	96.763 %	95.862 %	0.849 ppb	827.723 ppb	103.599 %
Concentration RSD	0.8 %	1.1 %	5.3 %	1.1 %	0.7 %

Alpha ICPMSQ Full

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Analysis index: 43 Analysis started at: 12/17/2021 11:42:28 PM
 Analysis label: I2156432-14D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.172 %	91.026 %	0.968 ppb	11,553.983 ppb	7,130.454 ppb	16,651.474 ppb	3,123.650 ppb	4,059.351 ppb	106.028 %
Concentration per Run 1	93.572 %	90.923 %	0.960 ppb	11,298.103 ppb	6,943.772 ppb	16,039.148 ppb	3,041.030 ppb	3,885.785 ppb	105.691 %
Concentration per Run 2	93.038 %	95.538 %	0.962 ppb	11,225.790 ppb	6,842.026 ppb	16,412.932 ppb	3,108.180 ppb	3,901.959 ppb	106.915 %
Concentration per Run 3	92.905 %	86.615 %	0.982 ppb	12,138.057 ppb	7,605.563 ppb	17,502.343 ppb	3,221.740 ppb	4,390.308 ppb	105.478 %
Concentration RSD	0.4 %	4.9 %	1.3 %	4.4 %	5.8 %	4.6 %	2.9 %	7.1 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	61.322 ppb	667.536 ppb	374.241 ppb	44,130.830 ppb	14.885 ppb	46.260 ppb	3,246.676 ppb	1,412.964 ppb	96.418 %
Concentration per Run 1	60.100 ppb	661.955 ppb	370.549 ppb	44,421.459 ppb	14.817 ppb	48.519 ppb	3,305.259 ppb	1,414.754 ppb	93.491 %
Concentration per Run 2	60.791 ppb	664.782 ppb	366.724 ppb	44,061.190 ppb	15.193 ppb	46.132 ppb	3,262.041 ppb	1,427.064 ppb	95.640 %
Concentration per Run 3	63.074 ppb	675.870 ppb	385.451 ppb	43,909.842 ppb	14.645 ppb	44.128 ppb	3,172.728 ppb	1,397.075 ppb	100.124 %
Concentration RSD	2.5 %	1.1 %	2.6 %	0.6 %	1.9 %	4.8 %	2.1 %	1.1 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	993.344 ppb	14.454 ppb	236.853 ppb	93.723 %	9.320 ppb	18.624 ppb	93.946 %	31.496 ppb	471.675 ppb
Concentration per Run 1	998.484 ppb	14.292 ppb	232.262 ppb	92.956 %	9.497 ppb	18.452 ppb	91.969 %	31.471 ppb	463.668 ppb
Concentration per Run 2	1,008.887 ppb	13.940 ppb	239.878 ppb	94.551 %	9.297 ppb	18.929 ppb	95.482 %	31.467 ppb	472.209 ppb
Concentration per Run 3	972.661 ppb	15.130 ppb	238.419 ppb	93.663 %	9.167 ppb	18.492 ppb	94.388 %	31.549 ppb	479.147 ppb
Concentration RSD	1.9 %	4.2 %	1.7 %	0.9 %	1.8 %	1.4 %	1.9 %	0.1 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.183 %	95.164 %	0.890 ppb	939.124 ppb	105.584 %
Concentration per Run 1	94.589 %	92.641 %	0.880 ppb	938.964 ppb	104.803 %
Concentration per Run 2	96.826 %	95.922 %	0.885 ppb	945.724 ppb	105.314 %
Concentration per Run 3	97.134 %	95.930 %	0.905 ppb	932.684 ppb	106.636 %
Concentration RSD	1.4 %	2.4 %	1.5 %	0.7 %	0.9 %

Alpha ICPMSQ Full

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Analysis index: 44 Analysis started at: 12/17/2021 11:47:18 PM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	82.018 %	84.051 %	64.784 ppb	6,057.529 ppb	6,119.970 ppb	61.321 ppb	6,106.838 ppb	6,244.467 ppb	86.536 %
Concentration per Run 1	82.203 %	80.307 %	64.612 ppb	6,147.543 ppb	6,145.556 ppb	64.542 ppb	6,231.246 ppb	6,483.013 ppb	86.674 %
Concentration per Run 2	82.281 %	83.077 %	64.299 ppb	6,196.939 ppb	6,269.989 ppb	61.827 ppb	6,153.549 ppb	6,410.060 ppb	87.185 %
Concentration per Run 3	81.570 %	88.769 %	65.443 ppb	5,828.106 ppb	5,944.364 ppb	57.594 ppb	5,935.718 ppb	5,840.327 ppb	85.750 %
Recovery Percentage 1			107.974 %	100.959 %	101.999 %	102.201 %	101.781 %	104.074 %	
Concentration RSD	0.5 %	5.1 %	0.9 %	3.3 %	2.7 %	5.7 %	2.5 %	5.6 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	63.908 ppb	62.664 ppb	63.592 ppb	6,334.757 ppb	63.549 ppb	65.109 ppb	64.604 ppb	64.012 ppb	84.254 %
Concentration per Run 1	64.890 ppb	63.453 ppb	65.066 ppb	6,273.255 ppb	64.910 ppb	65.918 ppb	65.314 ppb	64.087 ppb	83.594 %
Concentration per Run 2	64.487 ppb	62.266 ppb	65.065 ppb	6,397.450 ppb	64.510 ppb	64.283 ppb	64.917 ppb	65.313 ppb	84.634 %
Concentration per Run 3	62.346 ppb	62.272 ppb	60.646 ppb	6,333.566 ppb	61.226 ppb	65.127 ppb	63.582 ppb	62.638 ppb	84.534 %
Recovery Percentage 1	106.513 %	104.440 %	105.987 %	105.579 %	105.915 %	108.515 %	107.674 %	106.687 %	
Concentration RSD	2.1 %	1.1 %	4.0 %	1.0 %	3.2 %	1.3 %	1.4 %	2.1 %	0.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	64.672 ppb	64.059 ppb	63.481 ppb	83.253 %	62.969 ppb	64.079 ppb	82.890 %	64.802 ppb	63.279 ppb
Concentration per Run 1	65.081 ppb	61.776 ppb	61.617 ppb	83.347 %	64.146 ppb	64.720 ppb	80.535 %	65.307 ppb	63.493 ppb
Concentration per Run 2	64.545 ppb	63.683 ppb	63.899 ppb	83.057 %	62.226 ppb	63.361 ppb	84.902 %	63.630 ppb	63.680 ppb
Concentration per Run 3	64.391 ppb	66.719 ppb	64.928 ppb	83.356 %	62.536 ppb	64.154 ppb	83.233 %	65.469 ppb	62.663 ppb
Recovery Percentage 1	107.787 %	106.765 %	105.802 %		104.949 %	106.798 %		108.003 %	105.464 %
Concentration RSD	0.6 %	3.9 %	2.7 %	0.2 %	1.6 %	1.1 %	2.7 %	1.6 %	0.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.203 %	87.127 %	65.296 ppb	63.593 ppb	85.510 %
Concentration per Run 1	86.319 %	85.532 %	64.484 ppb	63.209 ppb	85.833 %
Concentration per Run 2	88.370 %	88.471 %	64.794 ppb	63.154 ppb	86.060 %
Concentration per Run 3	86.918 %	87.377 %	66.611 ppb	64.416 ppb	84.636 %
Recovery Percentage 1			108.827 %	105.989 %	
Concentration RSD	1.2 %	1.7 %	1.8 %	1.1 %	0.9 %

Alpha ICPMSQ Full

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Analysis index: 45 Analysis started at: 12/17/2021 11:52:10 PM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	80.083 %	87.025 %	0.012 ppb	-3.002 ppb	-1.437 ppb	0.828 ppb	-12.224 ppb	-13.742 ppb	75.813 %
Concentration per Run 1	79.616 %	85.231 %	0.008 ppb	-5.816 ppb	-1.073 ppb	0.399 ppb	-15.813 ppb	-8.520 ppb	74.935 %
Concentration per Run 2	79.987 %	86.154 %	0.008 ppb	0.148 ppb	-1.098 ppb	0.976 ppb	-13.790 ppb	-8.954 ppb	76.061 %
Concentration per Run 3	80.646 %	89.692 %	0.019 ppb	-3.339 ppb	-2.139 ppb	1.109 ppb	-7.069 ppb	-23.753 ppb	76.443 %
Recovery Percentage 1			2.337 %	-3.002 %	-2.052 %	8.282 %	-12.224 %	-13.742 %	
Concentration RSD	0.7 %	2.7 %	51.2 %	99.8 %	42.3 %	45.6 %	37.4 %	63.1 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.020 ppb	0.004 ppb	0.025 ppb	22.233 ppb	0.003 ppb	0.014 ppb	0.223 ppb	-0.545 ppb	87.874 %
Concentration per Run 1	-0.018 ppb	0.001 ppb	0.036 ppb	25.938 ppb	0.000 ppb	0.059 ppb	0.297 ppb	-0.607 ppb	84.070 %
Concentration per Run 2	0.009 ppb	0.008 ppb	0.031 ppb	26.025 ppb	0.000 ppb	-0.040 ppb	0.177 ppb	-0.503 ppb	89.092 %
Concentration per Run 3	-0.049 ppb	0.002 ppb	0.009 ppb	14.735 ppb	0.009 ppb	0.023 ppb	0.194 ppb	-0.524 ppb	90.460 %
Recovery Percentage 1	-0.392 %	0.390 %	2.537 %	44.466 %	0.592 %	0.690 %	22.255 %	-5.447 %	
Concentration RSD	148.6 %	101.9 %	57.9 %	29.2 %	173.2 %	363.9 %	29.1 %	10.0 %	3.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.380 ppb	0.198 ppb	-0.004 ppb	87.295 %	0.058 ppb	0.003 ppb	87.272 %	0.009 ppb	0.007 ppb
Concentration per Run 1	0.344 ppb	0.197 ppb	0.004 ppb	85.685 %	0.061 ppb	-0.002 ppb	82.991 %	0.023 ppb	0.011 ppb
Concentration per Run 2	0.367 ppb	0.095 ppb	-0.009 ppb	87.851 %	0.060 ppb	0.004 ppb	90.249 %	0.005 ppb	0.017 ppb
Concentration per Run 3	0.429 ppb	0.300 ppb	-0.008 ppb	88.349 %	0.052 ppb	0.007 ppb	88.576 %	-0.001 ppb	-0.009 ppb
Recovery Percentage 1	75.984 %	3.950 %	-0.881 %		14.400 %		1.594 %	0.223 %	1.331 %
Concentration RSD	11.7 %	52.0 %	163.3 %	1.6 %	9.0 %	141.4 %	4.4 %	144.8 %	203.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	89.460 %	89.498 %	0.381 ppb	0.086 ppb	89.399 %
Concentration per Run 1	85.941 %	85.528 %	0.421 ppb	0.090 ppb	87.939 %
Concentration per Run 2	91.781 %	90.639 %	0.377 ppb	0.085 ppb	89.890 %
Concentration per Run 3	90.657 %	92.326 %	0.345 ppb	0.084 ppb	90.369 %
Recovery Percentage 1			38.090 %	8.611 %	
Concentration RSD	3.5 %	4.0 %	10.0 %	3.5 %	1.4 %

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12/18/2021 10:42:07 AM



Analysis index: 46
 Analysis label: WG1583714-1D10 A2-6020T
 Analysis started at: 12/17/2021 11:57:02 PM
 User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	85.850 %	86.410 %	0.010 ppb	-3.168 ppb	-0.059 ppb	0.715 ppb	-13.097 ppb	-16.549 ppb	88.365 %
Concentration per Run 1	85.992 %	90.000 %	0.019 ppb	-4.970 ppb	-2.139 ppb	0.903 ppb	-16.624 ppb	-23.797 ppb	88.260 %
Concentration per Run 2	85.699 %	82.000 %	0.007 ppb	-2.246 ppb	-0.004 ppb	0.498 ppb	-1.425 ppb	-1.816 ppb	87.737 %
Concentration per Run 3	85.860 %	87.231 %	0.005 ppb	-2.289 ppb	1.964 ppb	0.744 ppb	-21.241 ppb	-24.033 ppb	89.100 %
Concentration RSD	0.2 %	4.7 %	76.7 %	49.3 %	3,448.8 %	28.6 %	79.2 %	77.1 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.007 ppb	0.912 ppb	0.146 ppb	15.967 ppb	0.009 ppb	0.419 ppb	0.232 ppb	-0.137 ppb	91.497 %
Concentration per Run 1	0.021 ppb	0.814 ppb	0.086 ppb	15.017 ppb	0.004 ppb	0.339 ppb	0.203 ppb	-0.266 ppb	90.985 %
Concentration per Run 2	-0.006 ppb	0.991 ppb	0.128 ppb	15.249 ppb	0.013 ppb	0.476 ppb	0.278 ppb	-0.080 ppb	92.484 %
Concentration per Run 3	0.008 ppb	0.931 ppb	0.225 ppb	17.633 ppb	0.009 ppb	0.443 ppb	0.215 ppb	-0.064 ppb	91.022 %
Concentration RSD	182.9 %	9.9 %	48.7 %	9.1 %	50.2 %	17.1 %	17.3 %	82.0 %	0.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.328 ppb	0.061 ppb	0.008 ppb	90.808 %	0.103 ppb	0.003 ppb	89.878 %	-0.003 ppb	0.119 ppb
Concentration per Run 1	0.342 ppb	0.054 ppb	-0.004 ppb	89.858 %	0.103 ppb	0.001 ppb	86.569 %	-0.011 ppb	0.152 ppb
Concentration per Run 2	0.394 ppb	0.194 ppb	0.012 ppb	90.789 %	0.103 ppb	0.007 ppb	91.890 %	-0.007 ppb	0.085 ppb
Concentration per Run 3	0.248 ppb	-0.064 ppb	0.017 ppb	91.776 %	0.102 ppb	0.001 ppb	91.176 %	0.007 ppb	0.120 ppb
Concentration RSD	22.6 %	210.0 %	133.2 %	1.1 %	0.7 %	105.6 %	3.2 %	278.7 %	28.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.330 %	92.033 %	0.111 ppb	0.070 ppb	91.740 %
Concentration per Run 1	91.056 %	89.106 %	0.103 ppb	0.075 ppb	92.298 %
Concentration per Run 2	93.060 %	92.964 %	0.113 ppb	0.070 ppb	91.990 %
Concentration per Run 3	92.876 %	94.027 %	0.118 ppb	0.066 ppb	90.931 %
Concentration RSD	1.2 %	2.8 %	6.7 %	6.7 %	0.8 %

Alpha ICPMSQ Full

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Analysis index: 47 Analysis started at: 12/18/2021 12:01:52 AM
 Analysis label: I2156432-15D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.924 %	89.128 %	0.798 ppb	10,685.773 ppb	6,673.444 ppb	14,053.826 ppb	2,769.779 ppb	2,916.498 ppb	112.218 %
Concentration per Run 1	95.093 %	95.846 %	0.743 ppb	9,905.630 ppb	6,167.000 ppb	12,485.697 ppb	2,619.377 ppb	2,687.781 ppb	112.427 %
Concentration per Run 2	95.486 %	83.384 %	0.849 ppb	11,287.597 ppb	7,015.803 ppb	15,100.622 ppb	2,927.989 ppb	3,006.093 ppb	113.068 %
Concentration per Run 3	94.195 %	88.154 %	0.803 ppb	10,864.091 ppb	6,837.527 ppb	14,575.158 ppb	2,761.972 ppb	3,055.619 ppb	111.159 %
Concentration RSD	0.7 %	7.1 %	6.7 %	6.6 %	6.7 %	9.8 %	5.6 %	6.8 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	53.113 ppb	643.378 ppb	353.095 ppb	39,221.979 ppb	14.128 ppb	37.977 ppb	3,170.009 ppb	1,261.598 ppb	100.413 %
Concentration per Run 1	50.938 ppb	619.337 ppb	330.334 ppb	37,764.008 ppb	14.204 ppb	37.369 ppb	3,182.554 ppb	1,259.103 ppb	97.357 %
Concentration per Run 2	53.610 ppb	664.594 ppb	371.082 ppb	40,380.745 ppb	14.148 ppb	38.413 ppb	3,158.040 ppb	1,258.864 ppb	101.738 %
Concentration per Run 3	54.792 ppb	646.202 ppb	357.867 ppb	39,521.183 ppb	14.034 ppb	38.149 ppb	3,169.432 ppb	1,266.827 ppb	102.144 %
Concentration RSD	3.7 %	3.5 %	5.9 %	3.4 %	0.6 %	1.4 %	0.4 %	0.4 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	863.344 ppb	13.591 ppb	247.429 ppb	95.841 %	8.840 ppb	12.331 ppb	95.715 %	37.540 ppb	257.170 ppb
Concentration per Run 1	862.100 ppb	13.170 ppb	241.422 ppb	95.884 %	8.839 ppb	12.030 ppb	92.509 %	37.808 ppb	254.700 ppb
Concentration per Run 2	870.096 ppb	13.790 ppb	250.875 ppb	95.724 %	8.793 ppb	12.421 ppb	98.350 %	37.108 ppb	256.957 ppb
Concentration per Run 3	857.835 ppb	13.814 ppb	249.990 ppb	95.915 %	8.889 ppb	12.541 ppb	96.286 %	37.704 ppb	259.852 ppb
Concentration RSD	0.7 %	2.7 %	2.1 %	0.1 %	0.5 %	2.2 %	3.1 %	1.0 %	1.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.541 %	97.166 %	0.873 ppb	818.130 ppb	106.858 %
Concentration per Run 1	96.991 %	95.434 %	0.848 ppb	812.049 ppb	106.711 %
Concentration per Run 2	99.141 %	98.063 %	0.887 ppb	824.817 ppb	106.347 %
Concentration per Run 3	99.491 %	98.001 %	0.883 ppb	817.525 ppb	107.516 %
Concentration RSD	1.4 %	1.5 %	2.4 %	0.8 %	0.6 %

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Analysis index: 48 Analysis started at: 12/18/2021 12:06:42 AM
 Analysis label: I2156432-16D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.777 %	90.974 %	1.173 ppb	11,131.706 ppb	7,678.765 ppb	19,415.710 ppb	3,318.453 ppb	4,631.371 ppb	108.581 %
Concentration per Run 1	94.988 %	89.692 %	1.093 ppb	11,060.376 ppb	7,641.786 ppb	18,982.874 ppb	3,298.316 ppb	4,633.331 ppb	107.908 %
Concentration per Run 2	94.474 %	90.615 %	1.209 ppb	11,210.809 ppb	7,742.183 ppb	19,828.177 ppb	3,261.545 ppb	4,497.343 ppb	109.983 %
Concentration per Run 3	94.869 %	92.615 %	1.218 ppb	11,123.932 ppb	7,652.326 ppb	19,436.079 ppb	3,395.497 ppb	4,763.438 ppb	107.851 %
Concentration RSD	0.3 %	1.6 %	6.0 %	0.7 %	0.7 %	2.2 %	2.1 %	2.9 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	66.426 ppb	647.374 ppb	403.519 ppb	41,743.500 ppb	15.410 ppb	45.263 ppb	2,217.344 ppb	1,568.993 ppb	96.727 %
Concentration per Run 1	65.605 ppb	645.624 ppb	398.466 ppb	41,827.274 ppb	15.762 ppb	45.783 ppb	2,266.038 ppb	1,600.759 ppb	92.838 %
Concentration per Run 2	68.162 ppb	655.174 ppb	410.904 ppb	42,202.722 ppb	15.406 ppb	44.872 ppb	2,202.535 ppb	1,552.510 ppb	98.251 %
Concentration per Run 3	65.511 ppb	641.323 ppb	401.187 ppb	41,200.503 ppb	15.064 ppb	45.134 ppb	2,183.458 ppb	1,553.708 ppb	99.091 %
Concentration RSD	2.3 %	1.1 %	1.6 %	1.2 %	2.3 %	1.0 %	1.9 %	1.8 %	3.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	717.473 ppb	15.564 ppb	205.902 ppb	93.017 %	8.272 ppb	16.590 ppb	93.885 %	29.384 ppb	573.525 ppb
Concentration per Run 1	724.433 ppb	16.268 ppb	201.730 ppb	93.466 %	8.176 ppb	16.512 ppb	92.781 %	28.441 ppb	558.976 ppb
Concentration per Run 2	724.882 ppb	15.014 ppb	208.610 ppb	92.910 %	8.371 ppb	16.785 ppb	92.967 %	30.087 ppb	578.135 ppb
Concentration per Run 3	703.103 ppb	15.409 ppb	207.366 ppb	92.676 %	8.270 ppb	16.474 ppb	95.909 %	29.625 ppb	583.464 ppb
Concentration RSD	1.7 %	4.1 %	1.8 %	0.4 %	1.2 %	1.0 %	1.9 %	2.9 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.090 %	92.664 %	0.819 ppb	805.843 ppb	105.708 %
Concentration per Run 1	93.933 %	91.435 %	0.803 ppb	807.223 ppb	105.017 %
Concentration per Run 2	95.638 %	92.959 %	0.821 ppb	804.060 ppb	105.766 %
Concentration per Run 3	95.700 %	93.599 %	0.835 ppb	806.246 ppb	106.339 %
Concentration RSD	1.1 %	1.2 %	2.0 %	0.2 %	0.6 %

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Analysis index: 49 Analysis started at: 12/18/2021 12:11:32 AM
 Analysis label: I2156432-17D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	94.904 %	95.128 %	1.062 ppb	9,707.146 ppb	7,204.842 ppb	17,403.485 ppb	3,121.168 ppb	3,792.797 ppb	108.163 %
Concentration per Run 1	95.871 %	94.154 %	1.147 ppb	9,460.455 ppb	7,112.416 ppb	17,021.390 ppb	3,022.416 ppb	3,839.808 ppb	109.754 %
Concentration per Run 2	94.740 %	98.923 %	1.005 ppb	9,433.843 ppb	7,011.752 ppb	17,218.482 ppb	3,096.898 ppb	3,465.023 ppb	107.943 %
Concentration per Run 3	94.101 %	92.308 %	1.034 ppb	10,227.139 ppb	7,490.358 ppb	17,970.582 ppb	3,244.190 ppb	4,073.559 ppb	106.792 %
Concentration RSD	0.9 %	3.6 %	7.1 %	4.6 %	3.5 %	2.9 %	3.6 %	8.1 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.002 ppb	632.068 ppb	384.541 ppb	40,239.726 ppb	15.094 ppb	41.983 ppb	2,433.045 ppb	1,481.786 ppb	99.414 %
Concentration per Run 1	60.256 ppb	634.281 ppb	379.496 ppb	40,523.290 ppb	15.482 ppb	42.539 ppb	2,474.689 ppb	1,494.852 ppb	95.706 %
Concentration per Run 2	62.050 ppb	620.228 ppb	382.712 ppb	39,563.989 ppb	14.551 ppb	40.725 ppb	2,384.644 ppb	1,468.900 ppb	102.219 %
Concentration per Run 3	63.699 ppb	641.694 ppb	391.413 ppb	40,631.900 ppb	15.250 ppb	42.686 ppb	2,439.802 ppb	1,481.605 ppb	100.318 %
Concentration RSD	2.8 %	1.7 %	1.6 %	1.5 %	3.2 %	2.6 %	1.9 %	0.9 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	640.307 ppb	15.652 ppb	199.875 ppb	94.807 %	9.233 ppb	13.535 ppb	94.633 %	34.907 ppb	495.193 ppb
Concentration per Run 1	649.460 ppb	15.067 ppb	195.770 ppb	94.538 %	9.311 ppb	13.569 ppb	93.051 %	34.491 ppb	487.077 ppb
Concentration per Run 2	630.658 ppb	15.823 ppb	200.747 ppb	94.543 %	9.195 ppb	13.606 ppb	95.638 %	34.780 ppb	505.237 ppb
Concentration per Run 3	640.802 ppb	16.065 ppb	203.107 ppb	95.340 %	9.194 ppb	13.430 ppb	95.211 %	35.449 ppb	493.265 ppb
Concentration RSD	1.5 %	3.3 %	1.9 %	0.5 %	0.7 %	0.7 %	1.5 %	1.4 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.704 %	93.981 %	0.763 ppb	835.826 ppb	107.329 %
Concentration per Run 1	95.370 %	92.178 %	0.738 ppb	832.312 ppb	106.804 %
Concentration per Run 2	96.602 %	93.821 %	0.774 ppb	840.059 ppb	107.293 %
Concentration per Run 3	98.141 %	95.945 %	0.777 ppb	835.107 ppb	107.889 %
Concentration RSD	1.4 %	2.0 %	2.9 %	0.5 %	0.5 %

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Analysis index: 50 Analysis started at: 12/18/2021 12:16:22 AM
 Analysis label: I2156432-18D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.867 %	88.974 %	0.899 ppb	11,801.231 ppb	6,961.443 ppb	17,134.550 ppb	3,108.834 ppb	3,876.745 ppb	108.566 %
Concentration per Run 1	94.309 %	89.692 %	0.908 ppb	11,552.885 ppb	6,819.821 ppb	16,178.369 ppb	2,970.037 ppb	3,776.184 ppb	109.478 %
Concentration per Run 2	93.753 %	86.154 %	0.885 ppb	12,161.484 ppb	7,167.511 ppb	17,669.717 ppb	3,155.508 ppb	3,790.334 ppb	107.667 %
Concentration per Run 3	93.540 %	91.077 %	0.904 ppb	11,689.323 ppb	6,896.996 ppb	17,555.565 ppb	3,200.956 ppb	4,063.715 ppb	108.553 %
Concentration RSD	0.4 %	2.9 %	1.4 %	2.7 %	2.6 %	4.8 %	3.9 %	4.2 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	57.938 ppb	537.606 ppb	392.551 ppb	42,233.461 ppb	32.649 ppb	44.410 ppb	3,115.231 ppb	1,358.823 ppb	97.297 %
Concentration per Run 1	56.758 ppb	526.721 ppb	381.713 ppb	41,898.851 ppb	32.128 ppb	43.613 ppb	3,155.353 ppb	1,347.799 ppb	96.057 %
Concentration per Run 2	58.193 ppb	545.940 ppb	400.385 ppb	42,092.181 ppb	32.170 ppb	44.013 ppb	3,060.939 ppb	1,349.269 ppb	99.482 %
Concentration per Run 3	58.862 ppb	540.157 ppb	395.556 ppb	42,709.350 ppb	33.650 ppb	45.603 ppb	3,129.400 ppb	1,379.400 ppb	96.354 %
Concentration RSD	1.9 %	1.8 %	2.5 %	1.0 %	2.7 %	2.4 %	1.6 %	1.3 %	2.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	775.503 ppb	15.289 ppb	466.527 ppb	94.289 %	7.430 ppb	13.485 ppb	95.256 %	39.810 ppb	381.497 ppb
Concentration per Run 1	767.572 ppb	15.348 ppb	452.195 ppb	93.460 %	7.496 ppb	13.367 ppb	92.221 %	40.515 ppb	380.690 ppb
Concentration per Run 2	758.227 ppb	15.664 ppb	471.314 ppb	94.177 %	7.406 ppb	13.558 ppb	97.086 %	39.220 ppb	380.398 ppb
Concentration per Run 3	800.710 ppb	14.856 ppb	476.073 ppb	95.231 %	7.390 ppb	13.531 ppb	96.460 %	39.694 ppb	383.402 ppb
Concentration RSD	2.9 %	2.7 %	2.7 %	0.9 %	0.8 %	0.8 %	2.8 %	1.6 %	0.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.090 %	94.617 %	0.865 ppb	826.269 ppb	102.919 %
Concentration per Run 1	96.097 %	91.395 %	0.845 ppb	819.430 ppb	102.825 %
Concentration per Run 2	97.859 %	96.921 %	0.860 ppb	827.127 ppb	102.856 %
Concentration per Run 3	97.314 %	95.536 %	0.890 ppb	832.250 ppb	103.076 %
Concentration RSD	0.9 %	3.0 %	2.6 %	0.8 %	0.1 %

Alpha ICPMSQ Full

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Analysis index: 51 Analysis started at: 12/18/2021 12:21:12 AM
 Analysis label: I2156432-19D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.326 %	92.308 %	1.029 ppb	11,429.955 ppb	7,759.583 ppb	18,049.437 ppb	3,236.531 ppb	3,562.174 ppb	105.713 %
Concentration per Run 1	93.942 %	98.769 %	1.023 ppb	10,607.505 ppb	7,150.960 ppb	16,335.366 ppb	3,003.480 ppb	3,427.656 ppb	105.434 %
Concentration per Run 2	92.917 %	91.692 %	1.072 ppb	11,476.833 ppb	7,848.395 ppb	18,703.563 ppb	3,224.983 ppb	3,571.267 ppb	105.796 %
Concentration per Run 3	93.119 %	86.461 %	0.991 ppb	12,205.527 ppb	8,279.393 ppb	19,109.381 ppb	3,481.129 ppb	3,687.598 ppb	105.910 %
Concentration RSD	0.6 %	6.7 %	4.0 %	7.0 %	7.3 %	8.3 %	7.4 %	3.7 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	58.513 ppb	520.010 ppb	428.881 ppb	41,011.091 ppb	18.991 ppb	32.190 ppb	2,650.704 ppb	1,006.565 ppb	96.219 %
Concentration per Run 1	57.029 ppb	508.512 ppb	406.320 ppb	39,642.487 ppb	18.750 ppb	33.557 ppb	2,670.681 ppb	1,006.877 ppb	93.485 %
Concentration per Run 2	60.214 ppb	523.712 ppb	436.893 ppb	41,459.347 ppb	19.033 ppb	31.422 ppb	2,637.567 ppb	1,003.927 ppb	97.259 %
Concentration per Run 3	58.295 ppb	527.807 ppb	443.432 ppb	41,931.439 ppb	19.190 ppb	31.591 ppb	2,643.862 ppb	1,008.890 ppb	97.914 %
Concentration RSD	2.7 %	2.0 %	4.6 %	2.9 %	1.2 %	3.7 %	0.7 %	0.2 %	2.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	635.511 ppb	15.852 ppb	287.531 ppb	94.878 %	8.280 ppb	10.318 ppb	95.167 %	34.087 ppb	328.165 ppb
Concentration per Run 1	627.815 ppb	14.520 ppb	280.499 ppb	94.619 %	8.280 ppb	10.464 ppb	92.177 %	34.257 ppb	328.758 ppb
Concentration per Run 2	643.100 ppb	16.725 ppb	289.788 ppb	95.512 %	8.212 ppb	10.125 ppb	95.704 %	34.248 ppb	329.154 ppb
Concentration per Run 3	635.619 ppb	16.312 ppb	292.306 ppb	94.504 %	8.347 ppb	10.365 ppb	97.619 %	33.758 ppb	326.584 ppb
Concentration RSD	1.2 %	7.4 %	2.2 %	0.6 %	0.8 %	1.7 %	2.9 %	0.8 %	0.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.744 %	94.147 %	0.667 ppb	789.126 ppb	105.004 %
Concentration per Run 1	95.067 %	93.075 %	0.648 ppb	786.896 ppb	104.736 %
Concentration per Run 2	96.204 %	94.662 %	0.664 ppb	790.416 ppb	104.462 %
Concentration per Run 3	95.960 %	94.702 %	0.690 ppb	790.067 ppb	105.815 %
Concentration RSD	0.6 %	1.0 %	3.2 %	0.2 %	0.7 %

Alpha ICPMSQ Full

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Analysis index: 52 Analysis started at: 12/18/2021 12:26:02 AM
 Analysis label: L2156432-20D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.528 %	93.077 %	1.135 ppb	10,793.976 ppb	7,498.804 ppb	17,505.317 ppb	3,148.833 ppb	3,540.858 ppb	106.476 %
Concentration per Run 1	94.989 %	93.538 %	1.088 ppb	10,246.142 ppb	7,141.833 ppb	16,396.621 ppb	2,901.706 ppb	3,630.199 ppb	108.127 %
Concentration per Run 2	93.015 %	89.538 %	1.125 ppb	11,312.635 ppb	7,755.593 ppb	18,364.331 ppb	3,314.712 ppb	3,501.142 ppb	105.387 %
Concentration per Run 3	92.580 %	96.154 %	1.191 ppb	10,823.152 ppb	7,598.985 ppb	17,754.999 ppb	3,230.079 ppb	3,491.232 ppb	105.914 %
Concentration RSD	1.4 %	3.6 %	4.6 %	4.9 %	4.3 %	5.8 %	6.9 %	2.2 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	60.924 ppb	561.363 ppb	433.263 ppb	43,465.681 ppb	24.362 ppb	53.002 ppb	2,173.053 ppb	1,155.364 ppb	98.171 %
Concentration per Run 1	59.776 ppb	553.702 ppb	418.388 ppb	42,046.075 ppb	23.860 ppb	54.405 ppb	2,154.085 ppb	1,143.810 ppb	97.338 %
Concentration per Run 2	63.111 ppb	574.811 ppb	449.295 ppb	45,233.688 ppb	24.940 ppb	52.625 ppb	2,215.101 ppb	1,180.801 ppb	96.831 %
Concentration per Run 3	59.886 ppb	555.575 ppb	432.106 ppb	43,117.281 ppb	24.287 ppb	51.974 ppb	2,149.973 ppb	1,141.482 ppb	100.346 %
Concentration RSD	3.1 %	2.1 %	3.6 %	3.7 %	2.2 %	2.4 %	1.7 %	1.9 %	1.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	638.889 ppb	17.294 ppb	314.533 ppb	95.110 %	9.555 ppb	19.259 ppb	95.136 %	28.149 ppb	231.615 ppb
Concentration per Run 1	626.160 ppb	17.026 ppb	303.125 ppb	94.326 %	9.463 ppb	19.363 ppb	92.571 %	27.869 ppb	228.900 ppb
Concentration per Run 2	659.673 ppb	17.514 ppb	324.216 ppb	94.676 %	9.657 ppb	19.226 ppb	97.377 %	27.677 ppb	230.427 ppb
Concentration per Run 3	630.834 ppb	17.340 ppb	316.259 ppb	96.327 %	9.544 ppb	19.186 ppb	95.459 %	28.900 ppb	235.520 ppb
Concentration RSD	2.8 %	1.4 %	3.4 %	1.1 %	1.0 %	0.5 %	2.5 %	2.3 %	1.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.753 %	95.217 %	0.766 ppb	922.690 ppb	108.237 %
Concentration per Run 1	95.352 %	92.442 %	0.748 ppb	919.146 ppb	107.640 %
Concentration per Run 2	99.720 %	97.059 %	0.754 ppb	919.624 ppb	109.003 %
Concentration per Run 3	98.185 %	96.149 %	0.796 ppb	929.300 ppb	108.067 %
Concentration RSD	2.3 %	2.6 %	3.4 %	0.6 %	0.6 %

Alpha ICPMSQ Full

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Analysis index: 53 Analysis started at: 12/18/2021 12:30:52 AM
 Analysis label: I2156432-22D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.280 %	88.205 %	0.950 ppb	13,323.661 ppb	7,316.246 ppb	16,940.792 ppb	2,893.787 ppb	4,947.126 ppb	104.650 %
Concentration per Run 1	92.383 %	89.692 %	0.986 ppb	13,146.582 ppb	7,120.092 ppb	15,853.059 ppb	2,855.194 ppb	5,035.795 ppb	103.690 %
Concentration per Run 2	92.349 %	82.307 %	0.963 ppb	13,899.638 ppb	7,550.032 ppb	17,903.623 ppb	3,127.281 ppb	5,365.143 ppb	105.168 %
Concentration per Run 3	92.107 %	92.615 %	0.902 ppb	12,924.761 ppb	7,278.613 ppb	17,065.694 ppb	2,698.885 ppb	4,440.441 ppb	105.091 %
Concentration RSD	0.2 %	6.0 %	4.6 %	3.8 %	3.0 %	6.1 %	7.5 %	9.5 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	60.031 ppb	645.940 ppb	298.452 ppb	39,045.266 ppb	13.986 ppb	58.090 ppb	4,091.756 ppb	1,297.183 ppb	96.285 %
Concentration per Run 1	59.145 ppb	645.781 ppb	295.492 ppb	39,101.626 ppb	14.012 ppb	59.992 ppb	4,169.235 ppb	1,308.983 ppb	92.197 %
Concentration per Run 2	60.569 ppb	653.618 ppb	303.559 ppb	39,512.892 ppb	14.196 ppb	56.872 ppb	4,094.636 ppb	1,302.128 ppb	98.279 %
Concentration per Run 3	60.378 ppb	638.421 ppb	296.305 ppb	38,521.279 ppb	13.749 ppb	57.406 ppb	4,011.396 ppb	1,280.439 ppb	98.378 %
Concentration RSD	1.3 %	1.2 %	1.5 %	1.3 %	1.6 %	2.9 %	1.9 %	1.1 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,778.463 ppb	21.868 ppb	193.389 ppb	93.712 %	9.925 ppb	20.606 ppb	93.840 %	31.427 ppb	575.482 ppb
Concentration per Run 1	1,803.088 ppb	21.701 ppb	190.466 ppb	93.825 %	9.836 ppb	20.321 ppb	92.459 %	31.464 ppb	560.843 ppb
Concentration per Run 2	1,753.954 ppb	20.342 ppb	195.060 ppb	93.421 %	9.978 ppb	20.660 ppb	94.363 %	31.251 ppb	584.525 ppb
Concentration per Run 3	1,778.347 ppb	23.560 ppb	194.640 ppb	93.889 %	9.962 ppb	20.838 ppb	94.698 %	31.566 ppb	581.078 ppb
Concentration RSD	1.4 %	7.4 %	1.3 %	0.3 %	0.8 %	1.3 %	1.3 %	0.5 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.497 %	94.866 %	1.187 ppb	1,323.179 ppb	108.033 %
Concentration per Run 1	95.503 %	91.853 %	1.165 ppb	1,323.285 ppb	107.345 %
Concentration per Run 2	97.449 %	97.110 %	1.192 ppb	1,322.147 ppb	108.519 %
Concentration per Run 3	96.538 %	95.634 %	1.205 ppb	1,324.105 ppb	108.234 %
Concentration RSD	1.0 %	2.9 %	1.7 %	0.1 %	0.6 %

Alpha ICPMSQ Full

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Analysis index: 54 Analysis started at: 12/18/2021 12:35:42 AM
 Analysis label: I2156432-23D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.900 %	92.102 %	1.104 ppb	12,004.301 ppb	7,164.233 ppb	16,979.582 ppb	2,804.701 ppb	5,607.315 ppb	104.717 %
Concentration per Run 1	93.029 %	94.308 %	1.139 ppb	11,489.649 ppb	6,732.152 ppb	15,608.412 ppb	2,704.041 ppb	5,279.629 ppb	104.447 %
Concentration per Run 2	93.241 %	93.846 %	1.048 ppb	11,876.390 ppb	7,236.959 ppb	17,234.357 ppb	2,695.844 ppb	5,473.249 ppb	105.877 %
Concentration per Run 3	92.430 %	88.154 %	1.124 ppb	12,646.864 ppb	7,523.588 ppb	18,095.976 ppb	3,014.217 ppb	6,069.069 ppb	103.826 %
Concentration RSD	0.5 %	3.7 %	4.4 %	4.9 %	5.6 %	7.4 %	6.5 %	7.3 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	60.898 ppb	518.558 ppb	299.651 ppb	40,544.106 ppb	13.227 ppb	56.482 ppb	2,504.385 ppb	1,275.799 ppb	97.721 %
Concentration per Run 1	58.678 ppb	501.988 ppb	282.307 ppb	39,535.724 ppb	13.103 ppb	55.347 ppb	2,490.985 ppb	1,243.737 ppb	96.696 %
Concentration per Run 2	59.913 ppb	511.148 ppb	301.051 ppb	40,675.727 ppb	13.282 ppb	56.161 ppb	2,467.952 ppb	1,275.510 ppb	99.235 %
Concentration per Run 3	64.103 ppb	542.539 ppb	315.596 ppb	41,420.866 ppb	13.295 ppb	57.938 ppb	2,554.218 ppb	1,308.151 ppb	97.233 %
Concentration RSD	4.7 %	4.1 %	5.6 %	2.3 %	0.8 %	2.3 %	1.8 %	2.5 %	1.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,161.813 ppb	18.947 ppb	172.019 ppb	92.003 %	8.578 ppb	21.614 ppb	92.466 %	23.679 ppb	490.303 ppb
Concentration per Run 1	1,133.908 ppb	18.211 ppb	166.021 ppb	90.746 %	8.696 ppb	21.463 ppb	90.879 %	22.828 ppb	478.689 ppb
Concentration per Run 2	1,164.688 ppb	19.283 ppb	173.000 ppb	92.620 %	8.610 ppb	21.548 ppb	92.540 %	24.505 ppb	501.597 ppb
Concentration per Run 3	1,186.844 ppb	19.347 ppb	177.037 ppb	92.642 %	8.429 ppb	21.830 ppb	93.977 %	23.702 ppb	490.624 ppb
Concentration RSD	2.3 %	3.4 %	3.2 %	1.2 %	1.6 %	0.9 %	1.7 %	3.5 %	2.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.579 %	93.222 %	0.794 ppb	944.105 ppb	108.074 %
Concentration per Run 1	93.794 %	90.488 %	0.769 ppb	932.271 ppb	107.511 %
Concentration per Run 2	96.032 %	94.211 %	0.795 ppb	953.262 ppb	107.808 %
Concentration per Run 3	96.910 %	94.967 %	0.817 ppb	946.782 ppb	108.902 %
Concentration RSD	1.7 %	2.6 %	3.0 %	1.1 %	0.7 %

Alpha ICPMSQ Full

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Analysis index: 55 Analysis started at: 12/18/2021 12:40:32 AM
 Analysis label: I2156432-24D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.459 %	90.359 %	0.971 ppb	9,173.904 ppb	5,912.364 ppb	15,972.278 ppb	2,858.059 ppb	8,765.679 ppb	97.620 %
Concentration per Run 1	89.704 %	80.923 %	0.925 ppb	9,772.197 ppb	6,345.659 ppb	16,143.627 ppb	2,962.940 ppb	9,013.649 ppb	97.516 %
Concentration per Run 2	89.485 %	90.615 %	1.005 ppb	8,954.181 ppb	5,861.514 ppb	16,383.115 ppb	2,876.032 ppb	8,523.000 ppb	97.557 %
Concentration per Run 3	89.187 %	99.538 %	0.984 ppb	8,795.333 ppb	5,529.921 ppb	15,390.091 ppb	2,735.205 ppb	8,760.387 ppb	97.788 %
Concentration RSD	0.3 %	10.3 %	4.3 %	5.7 %	6.9 %	3.2 %	4.0 %	2.8 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	48.585 ppb	415.952 ppb	286.165 ppb	32,945.414 ppb	13.686 ppb	49.939 ppb	1,920.169 ppb	1,067.851 ppb	93.858 %
Concentration per Run 1	50.298 ppb	432.231 ppb	290.057 ppb	34,078.553 ppb	14.389 ppb	52.623 ppb	1,991.020 ppb	1,097.897 ppb	89.886 %
Concentration per Run 2	48.371 ppb	408.719 ppb	282.088 ppb	32,241.419 ppb	13.135 ppb	48.332 ppb	1,875.945 ppb	1,045.881 ppb	97.013 %
Concentration per Run 3	47.087 ppb	406.906 ppb	286.350 ppb	32,516.271 ppb	13.533 ppb	48.864 ppb	1,893.544 ppb	1,059.774 ppb	94.674 %
Concentration RSD	3.3 %	3.4 %	1.4 %	3.0 %	4.7 %	4.7 %	3.2 %	2.5 %	3.9 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	809.845 ppb	15.263 ppb	224.468 ppb	89.022 %	5.117 ppb	14.711 ppb	89.974 %	20.970 ppb	273.439 ppb
Concentration per Run 1	817.658 ppb	17.555 ppb	221.306 ppb	88.713 %	5.109 ppb	14.860 ppb	88.263 %	20.493 ppb	266.149 ppb
Concentration per Run 2	800.518 ppb	14.544 ppb	223.928 ppb	89.128 %	5.182 ppb	14.489 ppb	90.721 %	20.816 ppb	273.100 ppb
Concentration per Run 3	811.358 ppb	13.690 ppb	228.169 ppb	89.225 %	5.059 ppb	14.782 ppb	90.937 %	21.600 ppb	281.067 ppb
Concentration RSD	1.1 %	13.3 %	1.5 %	0.3 %	1.2 %	1.3 %	1.7 %	2.7 %	2.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.480 %	90.780 %	0.921 ppb	871.894 ppb	97.772 %
Concentration per Run 1	91.156 %	88.948 %	0.902 ppb	862.959 ppb	97.384 %
Concentration per Run 2	92.227 %	91.246 %	0.941 ppb	885.454 ppb	97.269 %
Concentration per Run 3	94.055 %	92.146 %	0.922 ppb	867.268 ppb	98.664 %
Concentration RSD	1.6 %	1.8 %	2.1 %	1.4 %	0.8 %

Alpha ICPMSQ Full

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Analysis index: 56 Analysis started at: 12/18/2021 12:45:22 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	79.812 %	76.461 %	63.289 ppb	6,158.288 ppb	6,225.782 ppb	64.217 ppb	6,116.246 ppb	6,233.885 ppb	85.018 %
Concentration per Run 1	79.989 %	75.230 %	62.197 ppb	6,179.648 ppb	6,246.490 ppb	60.838 ppb	6,034.185 ppb	6,159.428 ppb	86.025 %
Concentration per Run 2	79.919 %	78.307 %	63.593 ppb	6,025.990 ppb	6,146.500 ppb	64.167 ppb	6,020.161 ppb	6,346.847 ppb	84.902 %
Concentration per Run 3	79.529 %	75.846 %	64.076 ppb	6,269.226 ppb	6,284.356 ppb	67.647 ppb	6,294.393 ppb	6,195.379 ppb	84.127 %
Recovery Percentage 1			105.481 %	102.638 %	103.763 %	107.029 %	101.937 %	103.898 %	
Concentration RSD	0.3 %	2.1 %	1.5 %	2.0 %	1.1 %	5.3 %	2.5 %	1.6 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.281 ppb	62.607 ppb	61.461 ppb	6,181.242 ppb	62.059 ppb	63.259 ppb	63.505 ppb	62.028 ppb	85.087 %
Concentration per Run 1	63.102 ppb	63.722 ppb	62.773 ppb	6,160.139 ppb	62.343 ppb	62.737 ppb	65.147 ppb	60.956 ppb	83.690 %
Concentration per Run 2	59.237 ppb	60.541 ppb	59.252 ppb	6,051.981 ppb	60.507 ppb	63.436 ppb	61.513 ppb	61.575 ppb	87.373 %
Concentration per Run 3	64.503 ppb	63.557 ppb	62.360 ppb	6,331.607 ppb	63.327 ppb	63.602 ppb	63.857 ppb	63.552 ppb	84.198 %
Recovery Percentage 1	103.801 %	104.345 %	102.436 %	103.021 %	103.432 %	105.431 %	105.842 %	103.379 %	
Concentration RSD	4.4 %	2.9 %	3.1 %	2.3 %	2.3 %	0.7 %	2.9 %	2.2 %	2.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.467 ppb	60.651 ppb	61.296 ppb	82.530 %	61.736 ppb	62.791 ppb	83.133 %	62.713 ppb	61.085 ppb
Concentration per Run 1	59.929 ppb	58.236 ppb	59.298 ppb	82.661 %	62.348 ppb	63.978 ppb	81.048 %	62.123 ppb	61.831 ppb
Concentration per Run 2	60.542 ppb	61.439 ppb	62.214 ppb	82.259 %	60.907 ppb	62.335 ppb	84.224 %	63.062 ppb	61.919 ppb
Concentration per Run 3	63.932 ppb	62.277 ppb	62.376 ppb	82.672 %	61.953 ppb	62.061 ppb	84.126 %	62.954 ppb	59.505 ppb
Recovery Percentage 1	102.446 %	101.084 %	102.160 %		102.894 %	104.652 %		104.522 %	101.808 %
Concentration RSD	3.5 %	3.5 %	2.8 %	0.3 %	1.2 %	1.7 %	2.2 %	0.8 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.099 %	87.003 %	63.885 ppb	62.295 ppb	85.335 %
Concentration per Run 1	86.306 %	85.428 %	63.114 ppb	61.987 ppb	85.422 %
Concentration per Run 2	88.562 %	88.949 %	64.382 ppb	62.354 ppb	85.358 %
Concentration per Run 3	86.428 %	86.632 %	64.159 ppb	62.545 ppb	85.224 %
Recovery Percentage 1			106.475 %	103.826 %	
Concentration RSD	1.5 %	2.1 %	1.1 %	0.5 %	0.1 %

Alpha ICPMSQ Full

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Analysis index: 57 Analysis started at: 12/18/2021 12:50:14 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	78.230 %	76.000 %	0.018 ppb	2.437 ppb	-0.997 ppb	3.803 ppb	-2.675 ppb	-10.597 ppb	73.822 %
Concentration per Run 1	77.560 %	70.769 %	0.017 ppb	1.811 ppb	-2.139 ppb	4.203 ppb	-0.430 ppb	9.347 ppb	72.952 %
Concentration per Run 2	78.232 %	76.461 %	0.028 ppb	2.421 ppb	1.287 ppb	3.846 ppb	-2.223 ppb	-16.663 ppb	74.154 %
Concentration per Run 3	78.899 %	80.769 %	0.008 ppb	3.078 ppb	-2.139 ppb	3.358 ppb	-5.373 ppb	-24.474 ppb	74.361 %
Recovery Percentage 1			3.526 %	2.437 %	-1.424 %	38.026 %	-2.675 %	-10.597 %	
Concentration RSD	0.9 %	6.6 %	54.4 %	26.0 %	198.4 %	11.2 %	93.5 %	167.1 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.035 ppb	0.102 ppb	0.192 ppb	30.572 ppb	0.008 ppb	-0.024 ppb	0.824 ppb	-0.241 ppb	85.194 %
Concentration per Run 1	0.018 ppb	0.134 ppb	0.336 ppb	39.639 ppb	0.010 ppb	-0.096 ppb	0.960 ppb	-0.175 ppb	82.290 %
Concentration per Run 2	0.074 ppb	0.087 ppb	0.100 ppb	25.499 ppb	0.009 ppb	-0.032 ppb	0.854 ppb	-0.335 ppb	87.012 %
Concentration per Run 3	0.012 ppb	0.086 ppb	0.140 ppb	26.579 ppb	0.005 ppb	0.056 ppb	0.659 ppb	-0.213 ppb	86.281 %
Recovery Percentage 1	0.692 %	10.241 %	19.194 %	61.144 %	1.614 %	-1.204 %	82.445 %	-2.409 %	
Concentration RSD	99.0 %	26.6 %	65.6 %	25.7 %	36.3 %	316.8 %	18.5 %	34.8 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.567 ppb	0.123 ppb	0.053 ppb	86.358 %	0.060 ppb	0.009 ppb	86.428 %	0.012 ppb	0.134 ppb
Concentration per Run 1	0.670 ppb	0.156 ppb	0.037 ppb	85.393 %	0.075 ppb	0.014 ppb	83.080 %	0.021 ppb	0.141 ppb
Concentration per Run 2	0.509 ppb	0.105 ppb	0.062 ppb	86.914 %	0.056 ppb	0.004 ppb	87.524 %	0.012 ppb	0.135 ppb
Concentration per Run 3	0.522 ppb	0.109 ppb	0.058 ppb	86.766 %	0.049 ppb	0.010 ppb	88.680 %	0.002 ppb	0.125 ppb
Recovery Percentage 1	113.436 %	2.461 %	10.518 %		15.017 %	4.720 %		0.297 %	26.769 %
Concentration RSD	15.8 %	23.3 %	25.8 %	1.0 %	22.5 %	51.3 %	3.4 %	79.5 %	5.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	88.689 %	88.358 %	0.388 ppb	0.294 ppb	87.197 %
Concentration per Run 1	87.793 %	86.889 %	0.434 ppb	0.307 ppb	86.329 %
Concentration per Run 2	89.116 %	88.852 %	0.387 ppb	0.295 ppb	87.224 %
Concentration per Run 3	89.160 %	89.333 %	0.343 ppb	0.279 ppb	88.038 %
Recovery Percentage 1			38.806 %	29.366 %	
Concentration RSD	0.9 %	1.5 %	11.7 %	4.9 %	1.0 %

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Analysis index: 58 Analysis started at: 12/18/2021 12:55:07 AM
 Analysis label: WG1583714-2D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.395 %	89.692 %	114.872 ppb	1,081.583 ppb	1,770.831 ppb	5,541.568 ppb	1,442.009 ppb	3,190.729 ppb	96.715 %
Concentration per Run 1	86.765 %	87.384 %	114.053 ppb	1,089.333 ppb	1,732.303 ppb	5,427.252 ppb	1,378.374 ppb	3,461.680 ppb	95.718 %
Concentration per Run 2	87.535 %	89.692 %	115.186 ppb	1,066.696 ppb	1,854.638 ppb	5,626.866 ppb	1,472.150 ppb	3,061.695 ppb	96.735 %
Concentration per Run 3	87.884 %	92.000 %	115.377 ppb	1,088.720 ppb	1,725.550 ppb	5,570.585 ppb	1,475.502 ppb	3,048.812 ppb	97.692 %
Concentration RSD	0.7 %	2.6 %	0.6 %	1.2 %	4.1 %	1.9 %	3.8 %	7.4 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	141.234 ppb	92.137 ppb	331.311 ppb	11,760.112 ppb	47.630 ppb	103.356 ppb	46.888 ppb	219.233 ppb	95.939 %
Concentration per Run 1	141.438 ppb	91.952 ppb	327.098 ppb	11,771.995 ppb	47.917 ppb	105.062 ppb	47.807 ppb	220.332 ppb	92.535 %
Concentration per Run 2	140.097 ppb	93.040 ppb	342.971 ppb	11,962.824 ppb	48.235 ppb	103.949 ppb	47.923 ppb	220.494 ppb	97.026 %
Concentration per Run 3	142.166 ppb	91.420 ppb	323.865 ppb	11,545.517 ppb	46.739 ppb	101.057 ppb	44.935 ppb	216.873 ppb	98.256 %
Concentration RSD	0.7 %	0.9 %	3.1 %	1.8 %	1.7 %	2.0 %	3.6 %	0.9 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	63.824 ppb	90.871 ppb	59.153 ppb	93.485 %	35.024 ppb	71.162 ppb	93.386 %	152.433 ppb	181.333 ppb
Concentration per Run 1	64.613 ppb	89.674 ppb	58.053 ppb	92.196 %	35.462 ppb	72.282 ppb	88.966 %	152.865 ppb	182.185 ppb
Concentration per Run 2	64.181 ppb	93.397 ppb	59.764 ppb	94.806 %	34.715 ppb	70.431 ppb	96.332 %	150.770 ppb	177.484 ppb
Concentration per Run 3	62.678 ppb	89.543 ppb	59.641 ppb	93.452 %	34.895 ppb	70.775 ppb	94.861 %	153.665 ppb	184.331 ppb
Concentration RSD	1.6 %	2.4 %	1.6 %	1.4 %	1.1 %	1.4 %	4.2 %	1.0 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.612 %	93.815 %	109.557 ppb	91.319 ppb	93.645 %
Concentration per Run 1	94.142 %	91.579 %	106.162 ppb	89.969 ppb	93.892 %
Concentration per Run 2	96.178 %	94.865 %	111.164 ppb	91.678 ppb	93.706 %
Concentration per Run 3	96.517 %	95.000 %	111.344 ppb	92.310 ppb	93.338 %
Concentration RSD	1.3 %	2.1 %	2.7 %	1.3 %	0.3 %

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Analysis index: 59 Analysis started at: 12/18/2021 12:59:57 AM
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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	92.878 %	91.436 %	8.622 ppb	13,454.847 ppb	9,048.602 ppb	18,643.695 ppb	4,822.025 ppb	4,715.193 ppb	106.957 %
Concentration per Run 1	92.228 %	85.538 %	8.664 ppb	13,705.444 ppb	9,201.023 ppb	18,758.805 ppb	4,779.888 ppb	4,201.197 ppb	105.846 %
Concentration per Run 2	93.441 %	92.154 %	8.434 ppb	13,563.592 ppb	9,256.137 ppb	18,907.337 ppb	5,056.263 ppb	5,041.261 ppb	107.045 %
Concentration per Run 3	92.965 %	96.615 %	8.768 ppb	13,095.505 ppb	8,688.646 ppb	18,264.942 ppb	4,629.924 ppb	4,903.120 ppb	107.979 %
Concentration RSD	0.7 %	6.1 %	2.0 %	2.4 %	3.5 %	1.8 %	4.5 %	9.6 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	136.626 ppb	520.077 ppb	430.880 ppb	42,045.764 ppb	94.245 ppb	128.574 ppb	2,473.194 ppb	1,005.583 ppb	95.123 %
Concentration per Run 1	141.767 ppb	531.621 ppb	436.178 ppb	42,513.204 ppb	95.572 ppb	129.764 ppb	2,530.688 ppb	1,016.543 ppb	91.998 %
Concentration per Run 2	136.286 ppb	525.655 ppb	438.115 ppb	42,743.145 ppb	95.555 ppb	130.699 ppb	2,490.947 ppb	1,014.554 ppb	94.924 %
Concentration per Run 3	131.826 ppb	502.956 ppb	418.346 ppb	40,880.942 ppb	91.609 ppb	125.258 ppb	2,397.948 ppb	985.652 ppb	98.447 %
Concentration RSD	3.6 %	2.9 %	2.5 %	2.4 %	2.4 %	2.3 %	2.8 %	1.7 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	827.565 ppb	36.204 ppb	611.408 ppb	90.402 %	69.056 ppb	23.839 ppb	91.078 %	92.707 ppb	340.499 ppb
Concentration per Run 1	815.886 ppb	36.516 ppb	602.996 ppb	88.653 %	69.038 ppb	23.879 ppb	88.830 %	91.961 ppb	333.853 ppb
Concentration per Run 2	851.192 ppb	36.756 ppb	617.346 ppb	92.177 %	68.758 ppb	23.572 ppb	92.534 %	93.158 ppb	343.723 ppb
Concentration per Run 3	815.615 ppb	35.339 ppb	613.883 ppb	90.375 %	69.371 ppb	24.065 ppb	91.870 %	93.002 ppb	343.920 ppb
Concentration RSD	2.5 %	2.1 %	1.2 %	1.9 %	0.4 %	1.0 %	2.2 %	0.7 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.867 %	91.542 %	17.809 ppb	898.783 ppb	101.978 %
Concentration per Run 1	91.932 %	88.735 %	17.422 ppb	888.816 ppb	102.182 %
Concentration per Run 2	94.074 %	92.216 %	18.164 ppb	904.044 ppb	101.853 %
Concentration per Run 3	95.594 %	93.676 %	17.843 ppb	903.488 ppb	101.900 %
Concentration RSD	2.0 %	2.8 %	2.1 %	1.0 %	0.2 %

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Analysis index: 60 Analysis started at: 12/18/2021 1:04:47 AM
 Analysis label: WG1583714-5D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.292 %	87.590 %	46.038 ppb	15,878.604 ppb	11,864.504 ppb	18,229.266 ppb	7,737.539 ppb	7,524.015 ppb	101.510 %
Concentration per Run 1	88.415 %	87.384 %	45.789 ppb	15,399.329 ppb	11,483.767 ppb	17,436.753 ppb	7,486.515 ppb	6,970.836 ppb	101.990 %
Concentration per Run 2	88.303 %	88.769 %	46.058 ppb	16,009.494 ppb	11,857.806 ppb	18,565.292 ppb	7,716.832 ppb	8,029.409 ppb	100.887 %
Concentration per Run 3	88.159 %	86.615 %	46.268 ppb	16,226.991 ppb	12,251.938 ppb	18,685.753 ppb	8,009.270 ppb	7,571.799 ppb	101.653 %
Concentration RSD	0.1 %	1.2 %	0.5 %	2.7 %	3.2 %	3.8 %	3.4 %	7.1 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	106.266 ppb	534.859 ppb	423.689 ppb	47,982.043 ppb	67.790 ppb	100.491 ppb	2,550.354 ppb	1,002.649 ppb	91.930 %
Concentration per Run 1	107.829 ppb	532.046 ppb	417.427 ppb	47,486.366 ppb	67.987 ppb	100.462 ppb	2,574.078 ppb	992.787 ppb	90.194 %
Concentration per Run 2	103.120 ppb	526.536 ppb	415.709 ppb	47,143.956 ppb	66.213 ppb	98.869 ppb	2,514.657 ppb	989.251 ppb	94.063 %
Concentration per Run 3	107.848 ppb	545.994 ppb	437.929 ppb	49,315.806 ppb	69.171 ppb	102.143 ppb	2,562.328 ppb	1,025.910 ppb	91.532 %
Concentration RSD	2.6 %	1.9 %	2.9 %	2.4 %	2.2 %	1.6 %	1.2 %	2.0 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	879.759 ppb	64.376 ppb	452.436 ppb	86.902 %	18.157 ppb	62.054 ppb	87.524 %	75.512 ppb	313.954 ppb
Concentration per Run 1	872.985 ppb	63.117 ppb	439.014 ppb	86.538 %	18.222 ppb	61.887 ppb	84.783 %	74.820 ppb	309.173 ppb
Concentration per Run 2	866.245 ppb	64.558 ppb	456.803 ppb	86.790 %	18.139 ppb	61.978 ppb	89.150 %	75.414 ppb	317.586 ppb
Concentration per Run 3	900.047 ppb	65.452 ppb	461.492 ppb	87.379 %	18.111 ppb	62.296 ppb	88.640 %	76.302 ppb	315.102 ppb
Concentration RSD	2.0 %	1.8 %	2.6 %	0.5 %	0.3 %	0.3 %	2.7 %	1.0 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	90.924 %	88.615 %	44.695 ppb	876.157 ppb	97.834 %
Concentration per Run 1	89.719 %	87.032 %	43.917 ppb	872.066 ppb	97.590 %
Concentration per Run 2	91.515 %	88.872 %	44.733 ppb	885.161 ppb	97.834 %
Concentration per Run 3	91.538 %	89.942 %	45.436 ppb	871.244 ppb	98.080 %
Concentration RSD	1.1 %	1.7 %	1.7 %	0.9 %	0.3 %

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Analysis index: 61 Analysis started at: 12/18/2021 1:09:37 AM
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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.877 %	88.564 %	1.012 ppb	11,723.179 ppb	7,023.989 ppb	16,533.938 ppb	2,960.862 ppb	3,150.995 ppb	98.940 %
Concentration per Run 1	89.055 %	90.308 %	1.069 ppb	11,247.899 ppb	6,696.698 ppb	15,867.266 ppb	2,737.075 ppb	3,546.457 ppb	98.579 %
Concentration per Run 2	89.320 %	87.538 %	0.993 ppb	11,911.312 ppb	7,128.446 ppb	16,847.041 ppb	3,082.823 ppb	2,898.648 ppb	99.514 %
Concentration per Run 3	88.257 %	87.846 %	0.974 ppb	12,010.325 ppb	7,246.822 ppb	16,887.507 ppb	3,062.687 ppb	3,007.882 ppb	98.728 %
Concentration RSD	0.6 %	1.7 %	5.0 %	3.5 %	4.1 %	3.5 %	6.6 %	11.0 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	54.153 ppb	465.981 ppb	330.559 ppb	38,270.039 ppb	18.054 ppb	52.345 ppb	2,213.480 ppb	875.442 ppb	94.647 %
Concentration per Run 1	51.856 ppb	456.090 ppb	318.137 ppb	37,678.626 ppb	18.173 ppb	53.738 ppb	2,237.264 ppb	877.249 ppb	91.570 %
Concentration per Run 2	55.173 ppb	467.000 ppb	334.759 ppb	38,382.423 ppb	18.127 ppb	52.297 ppb	2,209.612 ppb	880.481 ppb	95.806 %
Concentration per Run 3	55.430 ppb	474.853 ppb	338.782 ppb	38,749.069 ppb	17.861 ppb	50.999 ppb	2,193.565 ppb	868.595 ppb	96.566 %
Concentration RSD	3.7 %	2.0 %	3.3 %	1.4 %	0.9 %	2.6 %	1.0 %	0.7 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	742.293 ppb	18.175 ppb	376.999 ppb	91.492 %	8.985 ppb	15.136 ppb	91.748 %	22.809 ppb	229.792 ppb
Concentration per Run 1	745.381 ppb	17.626 ppb	364.505 ppb	91.029 %	8.964 ppb	14.968 ppb	90.004 %	22.212 ppb	225.190 ppb
Concentration per Run 2	738.988 ppb	18.403 ppb	383.306 ppb	90.907 %	8.930 ppb	14.938 ppb	92.994 %	22.629 ppb	229.655 ppb
Concentration per Run 3	742.509 ppb	18.495 ppb	383.187 ppb	92.539 %	9.061 ppb	15.503 ppb	92.246 %	23.586 ppb	234.531 ppb
Concentration RSD	0.4 %	2.6 %	2.9 %	1.0 %	0.8 %	2.1 %	1.7 %	3.1 %	2.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.366 %	91.717 %	1.450 ppb	754.840 ppb	102.120 %
Concentration per Run 1	92.474 %	89.794 %	1.465 ppb	746.916 ppb	102.047 %
Concentration per Run 2	94.746 %	92.882 %	1.481 ppb	761.378 ppb	101.306 %
Concentration per Run 3	95.878 %	92.475 %	1.403 ppb	756.225 ppb	103.008 %
Concentration RSD	1.8 %	1.8 %	2.8 %	1.0 %	0.8 %

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Analysis index: 62 Analysis started at: 12/18/2021 1:14:28 AM
 Analysis label: I2156432-21D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.479 %	91.231 %	1.104 ppb	11,779.415 ppb	7,720.755 ppb	18,879.075 ppb	3,346.185 ppb	3,386.723 ppb	102.645 %
Concentration per Run 1	90.817 %	88.769 %	1.102 ppb	11,873.601 ppb	7,698.847 ppb	18,643.818 ppb	3,381.796 ppb	3,283.568 ppb	102.828 %
Concentration per Run 2	90.412 %	87.692 %	1.156 ppb	12,256.943 ppb	8,068.178 ppb	19,425.073 ppb	3,419.784 ppb	3,139.867 ppb	101.948 %
Concentration per Run 3	90.209 %	97.231 %	1.053 ppb	11,207.702 ppb	7,395.239 ppb	18,568.334 ppb	3,236.973 ppb	3,736.734 ppb	103.159 %
Concentration RSD	0.3 %	5.7 %	4.7 %	4.5 %	4.4 %	2.5 %	2.9 %	9.2 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.857 ppb	503.841 ppb	387.901 ppb	45,469.946 ppb	21.513 ppb	57.624 ppb	2,622.785 ppb	1,004.052 ppb	94.308 %
Concentration per Run 1	64.897 ppb	513.354 ppb	391.350 ppb	46,268.911 ppb	21.697 ppb	59.029 ppb	2,697.595 ppb	1,017.274 ppb	89.344 %
Concentration per Run 2	63.047 ppb	504.409 ppb	388.807 ppb	45,346.224 ppb	21.090 ppb	57.853 ppb	2,575.022 ppb	991.122 ppb	98.318 %
Concentration per Run 3	60.626 ppb	493.760 ppb	383.545 ppb	44,794.702 ppb	21.751 ppb	55.991 ppb	2,595.737 ppb	1,003.759 ppb	95.263 %
Concentration RSD	3.4 %	1.9 %	1.0 %	1.6 %	1.7 %	2.7 %	2.5 %	1.3 %	4.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	864.076 ppb	20.516 ppb	415.020 ppb	90.551 %	9.785 ppb	16.325 ppb	92.292 %	28.114 ppb	295.227 ppb
Concentration per Run 1	883.612 ppb	20.222 ppb	408.897 ppb	89.293 %	9.599 ppb	16.035 ppb	90.645 %	27.473 ppb	289.953 ppb
Concentration per Run 2	846.289 ppb	20.047 ppb	413.233 ppb	91.085 %	9.800 ppb	16.318 ppb	94.593 %	28.475 ppb	296.762 ppb
Concentration per Run 3	862.326 ppb	21.280 ppb	422.929 ppb	91.274 %	9.955 ppb	16.621 ppb	91.637 %	28.395 ppb	298.966 ppb
Concentration RSD	2.2 %	3.3 %	1.7 %	1.2 %	1.8 %	1.8 %	2.2 %	2.0 %	1.6 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.507 %	91.992 %	1.135 ppb	836.577 ppb	102.488 %
Concentration per Run 1	92.851 %	88.832 %	1.100 ppb	831.751 ppb	101.618 %
Concentration per Run 2	94.759 %	92.636 %	1.160 ppb	835.660 ppb	103.216 %
Concentration per Run 3	95.913 %	94.507 %	1.145 ppb	842.320 ppb	102.630 %
Concentration RSD	1.6 %	3.1 %	2.7 %	0.6 %	0.8 %

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Analysis index: 63 Analysis started at: 12/18/2021 1:19:18 AM
 Analysis label: I2156432-25D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.372 %	93.077 %	0.934 ppb	11,179.355 ppb	5,688.882 ppb	15,123.301 ppb	2,813.767 ppb	5,217.049 ppb	97.887 %
Concentration per Run 1	89.505 %	91.538 %	0.844 ppb	11,003.776 ppb	5,514.989 ppb	14,728.403 ppb	2,747.250 ppb	5,607.323 ppb	98.347 %
Concentration per Run 2	89.520 %	90.923 %	1.044 ppb	11,389.945 ppb	5,805.888 ppb	15,451.812 ppb	2,829.173 ppb	5,244.982 ppb	98.283 %
Concentration per Run 3	89.092 %	96.769 %	0.915 ppb	11,144.343 ppb	5,745.767 ppb	15,189.688 ppb	2,864.877 ppb	4,798.842 ppb	97.032 %
Concentration RSD	0.3 %	3.5 %	10.8 %	1.7 %	2.7 %	2.4 %	2.1 %	7.8 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	48.915 ppb	476.682 ppb	257.943 ppb	32,546.188 ppb	12.806 ppb	49.111 ppb	2,933.172 ppb	1,349.796 ppb	94.737 %
Concentration per Run 1	48.745 ppb	471.986 ppb	250.465 ppb	32,270.912 ppb	13.009 ppb	49.001 ppb	2,971.020 ppb	1,359.358 ppb	91.485 %
Concentration per Run 2	49.079 ppb	476.338 ppb	259.805 ppb	32,333.905 ppb	12.452 ppb	48.069 ppb	2,897.259 ppb	1,342.522 ppb	97.074 %
Concentration per Run 3	48.921 ppb	481.724 ppb	263.560 ppb	33,033.749 ppb	12.956 ppb	50.263 ppb	2,931.238 ppb	1,347.508 ppb	95.651 %
Concentration RSD	0.3 %	1.0 %	2.6 %	1.3 %	2.4 %	2.2 %	1.3 %	0.6 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,344.176 ppb	16.379 ppb	239.087 ppb	90.752 %	5.845 ppb	16.061 ppb	90.968 %	23.360 ppb	270.665 ppb
Concentration per Run 1	1,342.316 ppb	17.034 ppb	233.194 ppb	90.158 %	5.931 ppb	15.898 ppb	87.725 %	22.716 ppb	267.220 ppb
Concentration per Run 2	1,318.220 ppb	15.602 ppb	239.624 ppb	91.797 %	5.764 ppb	16.305 ppb	92.934 %	23.747 ppb	271.173 ppb
Concentration per Run 3	1,371.990 ppb	16.499 ppb	244.443 ppb	90.300 %	5.841 ppb	15.981 ppb	92.244 %	23.617 ppb	273.603 ppb
Concentration RSD	2.0 %	4.4 %	2.4 %	1.0 %	1.4 %	1.3 %	3.1 %	2.4 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	94.086 %	91.521 %	0.954 ppb	927.301 ppb	98.154 %
Concentration per Run 1	92.346 %	90.678 %	0.909 ppb	914.099 ppb	98.615 %
Concentration per Run 2	95.852 %	92.749 %	0.967 ppb	928.036 ppb	98.137 %
Concentration per Run 3	94.058 %	91.137 %	0.987 ppb	939.767 ppb	97.710 %
Concentration RSD	1.9 %	1.2 %	4.2 %	1.4 %	0.5 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 64 Analysis started at: 12/18/2021 1:24:08 AM
 Analysis label: I2156432-26D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.054 %	94.256 %	0.792 ppb	10,819.000 ppb	5,261.014 ppb	13,054.686 ppb	2,687.849 ppb	3,925.902 ppb	100.973 %
Concentration per Run 1	90.818 %	92.154 %	0.804 ppb	10,817.136 ppb	5,218.423 ppb	12,651.964 ppb	2,725.210 ppb	3,690.901 ppb	100.449 %
Concentration per Run 2	89.107 %	93.692 %	0.772 ppb	10,950.776 ppb	5,353.333 ppb	13,452.758 ppb	2,781.833 ppb	4,308.768 ppb	101.675 %
Concentration per Run 3	90.236 %	96.923 %	0.801 ppb	10,689.089 ppb	5,211.286 ppb	13,059.335 ppb	2,556.504 ppb	3,778.038 ppb	100.796 %
Concentration RSD	1.0 %	2.6 %	2.2 %	1.2 %	1.5 %	3.1 %	4.4 %	8.5 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.834 ppb	586.101 ppb	241.243 ppb	29,768.396 ppb	13.986 ppb	51.190 ppb	4,372.625 ppb	1,859.969 ppb	95.122 %
Concentration per Run 1	52.645 ppb	581.902 ppb	239.625 ppb	30,277.534 ppb	14.048 ppb	52.204 ppb	4,437.055 ppb	1,851.590 ppb	92.342 %
Concentration per Run 2	54.226 ppb	601.500 ppb	249.475 ppb	30,020.371 ppb	13.893 ppb	50.554 ppb	4,369.818 ppb	1,876.176 ppb	95.041 %
Concentration per Run 3	51.631 ppb	574.899 ppb	234.628 ppb	29,007.284 ppb	14.016 ppb	50.811 ppb	4,311.001 ppb	1,852.139 ppb	97.983 %
Concentration RSD	2.5 %	2.4 %	3.1 %	2.3 %	0.6 %	1.7 %	1.4 %	0.8 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,524.911 ppb	19.874 ppb	243.932 ppb	92.332 %	7.199 ppb	21.603 ppb	91.814 %	36.804 ppb	348.824 ppb
Concentration per Run 1	1,519.266 ppb	18.810 ppb	237.926 ppb	91.411 %	7.203 ppb	21.205 ppb	90.209 %	36.884 ppb	343.422 ppb
Concentration per Run 2	1,552.493 ppb	20.530 ppb	250.892 ppb	92.785 %	7.223 ppb	21.723 ppb	92.803 %	36.419 ppb	355.100 ppb
Concentration per Run 3	1,502.975 ppb	20.282 ppb	242.978 ppb	92.798 %	7.172 ppb	21.880 ppb	92.430 %	37.109 ppb	347.950 ppb
Concentration RSD	1.7 %	4.7 %	2.7 %	0.9 %	0.4 %	1.6 %	1.5 %	1.0 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	96.934 %	94.545 %	1.129 ppb	1,080.307 ppb	102.246 %
Concentration per Run 1	95.191 %	91.685 %	1.082 ppb	1,074.762 ppb	100.748 %
Concentration per Run 2	97.374 %	94.854 %	1.149 ppb	1,079.792 ppb	102.851 %
Concentration per Run 3	98.236 %	97.098 %	1.158 ppb	1,086.367 ppb	103.139 %
Concentration RSD	1.6 %	2.9 %	3.7 %	0.5 %	1.3 %

Alpha ICPMSQ Full

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Analysis index: 65
Analysis label: L2156432-27D10 A2-6020T

Analysis started at: 12/18/2021 1:28:59 AM
User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.603 %	93.538 %	0.814 ppb	10,667.099 ppb	5,781.612 ppb	13,404.305 ppb	2,561.439 ppb	5,138.159 ppb	100.138 %
Concentration per Run 1	88.910 %	91.384 %	0.745 ppb	10,569.642 ppb	5,792.703 ppb	13,246.534 ppb	2,738.701 ppb	5,142.323 ppb	99.091 %
Concentration per Run 2	90.218 %	97.385 %	0.841 ppb	10,330.320 ppb	5,580.377 ppb	13,386.214 ppb	2,635.797 ppb	5,033.566 ppb	100.840 %
Concentration per Run 3	89.680 %	91.846 %	0.857 ppb	11,101.335 ppb	5,971.756 ppb	13,580.166 ppb	2,309.818 ppb	5,238.588 ppb	100.484 %
Concentration RSD	0.7 %	3.6 %	7.5 %	3.7 %	3.4 %	1.2 %	8.7 %	2.0 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	50.553 ppb	657.225 ppb	248.610 ppb	31,019.327 ppb	13.461 ppb	53.746 ppb	3,632.380 ppb	2,084.037 ppb	95.723 %
Concentration per Run 1	52.149 ppb	661.261 ppb	246.174 ppb	30,754.950 ppb	13.579 ppb	54.522 ppb	3,671.203 ppb	2,114.119 ppb	91.912 %
Concentration per Run 2	48.761 ppb	658.586 ppb	251.708 ppb	31,466.627 ppb	13.497 ppb	54.070 ppb	3,751.680 ppb	2,106.994 ppb	94.662 %
Concentration per Run 3	50.749 ppb	651.830 ppb	247.948 ppb	30,836.403 ppb	13.309 ppb	52.647 ppb	3,474.259 ppb	2,030.999 ppb	100.594 %
Concentration RSD	3.4 %	0.7 %	1.1 %	1.3 %	1.0 %	1.8 %	3.9 %	2.2 %	4.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,363.558 ppb	16.687 ppb	196.291 ppb	91.137 %	8.801 ppb	26.697 ppb	91.301 %	26.993 ppb	322.059 ppb
Concentration per Run 1	1,363.390 ppb	16.059 ppb	191.412 ppb	90.682 %	8.791 ppb	26.658 ppb	88.374 %	26.844 ppb	316.488 ppb
Concentration per Run 2	1,399.582 ppb	17.083 ppb	199.294 ppb	92.085 %	8.605 ppb	26.208 ppb	94.765 %	26.479 ppb	311.957 ppb
Concentration per Run 3	1,327.701 ppb	16.920 ppb	198.166 ppb	90.643 %	9.006 ppb	27.227 ppb	90.764 %	27.656 ppb	337.733 ppb
Concentration RSD	2.6 %	3.3 %	2.2 %	0.9 %	2.3 %	1.9 %	3.5 %	2.2 %	4.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.610 %	93.498 %	1.039 ppb	1,370.638 ppb	103.862 %
Concentration per Run 1	94.015 %	90.228 %	0.982 ppb	1,342.274 ppb	104.565 %
Concentration per Run 2	96.064 %	95.209 %	1.048 ppb	1,375.467 ppb	103.727 %
Concentration per Run 3	96.752 %	95.056 %	1.087 ppb	1,394.172 ppb	103.294 %
Concentration RSD	1.5 %	3.0 %	5.1 %	1.9 %	0.6 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 66 Analysis started at: 12/18/2021 1:33:49 AM
 Analysis label: I2156432-28D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.699 %	90.615 %	0.752 ppb	11,583.801 ppb	5,172.518 ppb	12,124.238 ppb	2,646.187 ppb	3,926.480 ppb	101.112 %
Concentration per Run 1	89.869 %	88.154 %	0.771 ppb	11,427.041 ppb	5,140.204 ppb	11,676.965 ppb	2,630.676 ppb	3,725.512 ppb	101.607 %
Concentration per Run 2	89.686 %	91.846 %	0.763 ppb	11,804.791 ppb	5,288.788 ppb	12,617.552 ppb	2,491.114 ppb	3,984.354 ppb	101.395 %
Concentration per Run 3	89.542 %	91.846 %	0.723 ppb	11,519.572 ppb	5,088.562 ppb	12,078.197 ppb	2,816.772 ppb	4,069.574 ppb	100.333 %
Concentration RSD	0.2 %	2.4 %	3.4 %	1.7 %	2.0 %	3.9 %	6.2 %	4.6 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	49.680 ppb	590.341 ppb	217.891 ppb	29,081.685 ppb	10.593 ppb	37.348 ppb	3,434.490 ppb	1,491.940 ppb	97.594 %
Concentration per Run 1	49.400 ppb	585.406 ppb	214.132 ppb	28,671.280 ppb	10.482 ppb	37.085 ppb	3,446.891 ppb	1,486.413 ppb	95.215 %
Concentration per Run 2	50.449 ppb	597.964 ppb	223.877 ppb	29,931.547 ppb	10.706 ppb	37.827 ppb	3,491.588 ppb	1,506.679 ppb	97.374 %
Concentration per Run 3	49.192 ppb	587.654 ppb	215.665 ppb	28,642.226 ppb	10.593 ppb	37.131 ppb	3,364.991 ppb	1,482.729 ppb	100.195 %
Concentration RSD	1.4 %	1.1 %	2.4 %	2.5 %	1.1 %	1.1 %	1.9 %	0.9 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,034.921 ppb	15.901 ppb	199.250 ppb	92.584 %	7.859 ppb	17.838 ppb	92.507 %	36.090 ppb	323.155 ppb
Concentration per Run 1	1,036.947 ppb	15.553 ppb	194.266 ppb	92.206 %	7.875 ppb	17.894 ppb	89.926 %	35.994 ppb	314.991 ppb
Concentration per Run 2	1,043.826 ppb	17.031 ppb	202.594 ppb	92.915 %	7.993 ppb	18.151 ppb	91.710 %	36.813 ppb	327.860 ppb
Concentration per Run 3	1,023.992 ppb	15.117 ppb	200.892 ppb	92.632 %	7.709 ppb	17.470 ppb	95.884 %	35.463 ppb	326.615 ppb
Concentration RSD	1.0 %	6.3 %	2.2 %	0.4 %	1.8 %	1.9 %	3.3 %	1.9 %	2.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	97.599 %	94.817 %	1.041 ppb	1,237.508 ppb	103.040 %
Concentration per Run 1	96.321 %	92.149 %	1.019 ppb	1,228.672 ppb	102.745 %
Concentration per Run 2	98.515 %	96.463 %	1.054 ppb	1,236.207 ppb	103.108 %
Concentration per Run 3	97.962 %	95.838 %	1.049 ppb	1,247.645 ppb	103.267 %
Concentration RSD	1.2 %	2.5 %	1.8 %	0.8 %	0.3 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 67 Analysis started at: 12/18/2021 1:38:39 AM
 Analysis label: WG1583714-6D50 A2-6020T User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.984 %	87.436 %	0.209 ppb	2,439.192 ppb	1,568.109 ppb	3,864.149 ppb	677.754 ppb	802.571 ppb	95.052 %
Concentration per Run 1	88.890 %	87.077 %	0.205 ppb	2,342.873 ppb	1,499.617 ppb	3,691.565 ppb	608.551 ppb	712.667 ppb	94.776 %
Concentration per Run 2	89.129 %	85.231 %	0.221 ppb	2,572.253 ppb	1,708.532 ppb	4,042.484 ppb	777.500 ppb	875.210 ppb	94.883 %
Concentration per Run 3	88.932 %	90.000 %	0.200 ppb	2,402.451 ppb	1,496.177 ppb	3,858.399 ppb	647.210 ppb	819.836 ppb	95.496 %
Concentration RSD	0.1 %	2.8 %	5.2 %	4.9 %	7.8 %	4.5 %	13.1 %	10.3 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	12.168 ppb	101.174 ppb	78.441 ppb	9,086.482 ppb	4.363 ppb	11.755 ppb	535.191 ppb	208.893 ppb	98.639 %
Concentration per Run 1	12.028 ppb	100.155 ppb	78.988 ppb	9,050.995 ppb	4.466 ppb	11.738 ppb	536.424 ppb	206.696 ppb	95.892 %
Concentration per Run 2	12.698 ppb	104.166 ppb	80.912 ppb	9,299.637 ppb	4.433 ppb	12.330 ppb	545.117 ppb	215.810 ppb	97.776 %
Concentration per Run 3	11.778 ppb	99.200 ppb	75.422 ppb	8,908.814 ppb	4.190 ppb	11.197 ppb	524.032 ppb	204.173 ppb	102.249 %
Concentration RSD	3.9 %	2.6 %	3.6 %	2.2 %	3.4 %	4.8 %	2.0 %	2.9 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	173.027 ppb	4.550 ppb	79.243 ppb	96.919 %	1.925 ppb	3.345 ppb	94.311 %	5.615 ppb	52.171 ppb
Concentration per Run 1	168.989 ppb	4.489 ppb	77.074 ppb	96.324 %	1.996 ppb	3.330 ppb	91.405 %	5.672 ppb	51.771 ppb
Concentration per Run 2	178.673 ppb	4.719 ppb	80.699 ppb	97.936 %	1.878 ppb	3.255 ppb	96.826 %	5.412 ppb	51.564 ppb
Concentration per Run 3	171.418 ppb	4.443 ppb	79.956 ppb	96.496 %	1.903 ppb	3.451 ppb	94.702 %	5.762 ppb	53.179 ppb
Concentration RSD	2.9 %	3.3 %	2.4 %	0.9 %	3.2 %	3.0 %	2.9 %	3.2 %	1.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	99.481 %	96.951 %	0.240 ppb	178.283 ppb	98.011 %
Concentration per Run 1	98.576 %	94.603 %	0.235 ppb	176.728 ppb	97.391 %
Concentration per Run 2	99.612 %	97.361 %	0.245 ppb	179.514 ppb	98.555 %
Concentration per Run 3	100.255 %	98.889 %	0.239 ppb	178.607 ppb	98.088 %
Concentration RSD	0.9 %	2.2 %	2.2 %	0.8 %	0.6 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 68 Analysis started at: 12/18/2021 1:43:29 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	80.198 %	76.205 %	63.028 ppb	6,069.165 ppb	6,068.795 ppb	63.257 ppb	5,998.683 ppb	6,088.037 ppb	86.284 %
Concentration per Run 1	80.700 %	78.307 %	62.878 ppb	5,895.625 ppb	5,772.614 ppb	59.391 ppb	5,759.344 ppb	6,236.554 ppb	87.189 %
Concentration per Run 2	79.270 %	75.077 %	63.308 ppb	6,038.877 ppb	6,181.827 ppb	63.662 ppb	6,096.685 ppb	6,179.228 ppb	85.369 %
Concentration per Run 3	80.624 %	75.230 %	62.899 ppb	6,272.992 ppb	6,251.943 ppb	66.717 ppb	6,140.019 ppb	5,848.329 ppb	86.294 %
Recovery Percentage 1			105.047 %	101.153 %	101.147 %	105.428 %	99.978 %	101.467 %	
Concentration RSD	1.0 %	2.4 %	0.4 %	3.1 %	4.3 %	5.8 %	3.5 %	3.4 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.230 ppb	62.087 ppb	63.143 ppb	6,207.323 ppb	62.523 ppb	63.232 ppb	62.624 ppb	62.897 ppb	83.191 %
Concentration per Run 1	59.590 ppb	60.607 ppb	59.783 ppb	6,072.311 ppb	62.871 ppb	65.162 ppb	64.220 ppb	62.551 ppb	81.403 %
Concentration per Run 2	63.581 ppb	63.371 ppb	63.941 ppb	6,182.298 ppb	61.916 ppb	61.420 ppb	62.544 ppb	63.884 ppb	85.068 %
Concentration per Run 3	63.518 ppb	62.282 ppb	65.706 ppb	6,367.359 ppb	62.783 ppb	63.116 ppb	61.108 ppb	62.255 ppb	83.103 %
Recovery Percentage 1	103.716 %	103.478 %	105.239 %	103.455 %	104.205 %	105.387 %	104.373 %	104.828 %	
Concentration RSD	3.7 %	2.2 %	4.8 %	2.4 %	0.8 %	3.0 %	2.5 %	1.4 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	62.898 ppb	64.318 ppb	59.761 ppb	81.010 %	61.798 ppb	62.323 ppb	81.074 %	63.364 ppb	60.494 ppb
Concentration per Run 1	63.338 ppb	60.981 ppb	59.013 ppb	80.871 %	62.109 ppb	62.271 ppb	79.678 %	62.844 ppb	60.440 ppb
Concentration per Run 2	61.400 ppb	65.747 ppb	59.714 ppb	81.900 %	61.198 ppb	61.870 ppb	82.243 %	63.428 ppb	59.817 ppb
Concentration per Run 3	63.954 ppb	66.225 ppb	60.555 ppb	80.260 %	62.086 ppb	62.829 ppb	81.301 %	63.820 ppb	61.224 ppb
Recovery Percentage 1	104.829 %	107.196 %	99.602 %	102.997 %	103.872 %			105.606 %	100.823 %
Concentration RSD	2.1 %	4.5 %	1.3 %	1.0 %	0.8 %	0.8 %	1.6 %	0.8 %	1.2 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	86.654 %	85.907 %	64.360 ppb	62.463 ppb	83.275 %
Concentration per Run 1	87.349 %	85.864 %	63.283 ppb	61.769 ppb	83.893 %
Concentration per Run 2	86.043 %	85.544 %	64.838 ppb	62.736 ppb	83.125 %
Concentration per Run 3	86.571 %	86.314 %	64.961 ppb	62.885 ppb	82.806 %
Recovery Percentage 1			107.267 %	104.105 %	
Concentration RSD	0.8 %	0.5 %	1.5 %	1.0 %	0.7 %

Alpha ICPMSQ Full

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Analysis index: 69 Analysis started at: 12/18/2021 1:48:22 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	77.116 %	79.128 %	0.033 ppb	-0.838 ppb	-0.240 ppb	0.977 ppb	-6.369 ppb	-13.476 ppb	73.251 %
Concentration per Run 1	76.527 %	77.384 %	0.012 ppb	2.459 ppb	1.326 ppb	2.333 ppb	1.279 ppb	-16.282 ppb	73.033 %
Concentration per Run 2	77.562 %	79.846 %	0.042 ppb	-1.592 ppb	-1.022 ppb	0.137 ppb	-4.963 ppb	-0.225 ppb	73.719 %
Concentration per Run 3	77.259 %	80.154 %	0.045 ppb	-3.380 ppb	-1.025 ppb	0.462 ppb	-15.423 ppb	-23.920 ppb	72.999 %
Recovery Percentage 1			6.516 %	-0.838 %	-0.343 %	9.772 %	-6.369 %	-13.476 %	
Concentration RSD	0.7 %	1.9 %	55.8 %	357.0 %	565.1 %	121.3 %	132.5 %	89.8 %	0.6 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.022 ppb	0.027 ppb	0.085 ppb	23.668 ppb	0.012 ppb	-0.019 ppb	0.347 ppb	-0.316 ppb	83.183 %
Concentration per Run 1	-0.048 ppb	0.078 ppb	0.264 ppb	29.598 ppb	0.025 ppb	0.111 ppb	0.571 ppb	-0.157 ppb	81.053 %
Concentration per Run 2	0.014 ppb	-0.008 ppb	0.017 ppb	21.155 ppb	0.000 ppb	-0.011 ppb	0.205 ppb	-0.395 ppb	84.257 %
Concentration per Run 3	-0.033 ppb	0.012 ppb	-0.025 ppb	20.252 ppb	0.010 ppb	-0.156 ppb	0.264 ppb	-0.395 ppb	84.238 %
Recovery Percentage 1	-0.446 %	2.720 %	8.535 %	47.337 %	2.305 %	-0.928 %	34.651 %	-3.157 %	
Concentration RSD	143.0 %	165.7 %	183.2 %	21.8 %	109.2 %	719.9 %	56.7 %	43.6 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.348 ppb	-0.004 ppb	0.022 ppb	84.131 %	0.064 ppb	0.009 ppb	82.732 %	0.022 ppb	0.026 ppb
Concentration per Run 1	0.367 ppb	0.072 ppb	0.057 ppb	82.405 %	0.081 ppb	0.017 ppb	82.125 %	0.041 ppb	0.030 ppb
Concentration per Run 2	0.316 ppb	-0.020 ppb	0.004 ppb	84.664 %	0.056 ppb	0.005 ppb	83.071 %	0.017 ppb	0.038 ppb
Concentration per Run 3	0.361 ppb	-0.063 ppb	0.006 ppb	85.323 %	0.056 ppb	0.005 ppb	83.000 %	0.008 ppb	0.011 ppb
Recovery Percentage 1	69.589 %	-0.081 %	4.484 %		16.063 %	4.407 %		0.554 %	5.266 %
Concentration RSD	8.1 %	1,710.6 %	135.0 %	1.8 %	22.2 %	84.1 %	0.6 %	77.4 %	53.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	88.136 %	86.603 %	0.446 ppb	0.145 ppb	86.469 %
Concentration per Run 1	87.237 %	85.119 %	0.502 ppb	0.226 ppb	85.953 %
Concentration per Run 2	88.637 %	87.134 %	0.440 ppb	0.112 ppb	86.689 %
Concentration per Run 3	88.532 %	87.555 %	0.395 ppb	0.098 ppb	86.767 %
Recovery Percentage 1			44.594 %	14.547 %	
Concentration RSD	0.9 %	1.5 %	12.1 %	48.4 %	0.5 %



Analysis index: 70 Analysis started at: 12/18/2021 1:53:14 AM
 Analysis label: I2156432-29D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.380 %	90.154 %	0.752 ppb	11,586.351 ppb	5,647.737 ppb	14,304.536 ppb	2,645.299 ppb	3,730.138 ppb	105.112 %
Concentration per Run 1	89.631 %	87.538 %	0.719 ppb	11,530.975 ppb	5,614.019 ppb	14,036.876 ppb	2,742.099 ppb	3,636.610 ppb	104.818 %
Concentration per Run 2	90.274 %	91.077 %	0.777 ppb	11,507.409 ppb	5,702.428 ppb	14,390.750 ppb	2,503.903 ppb	3,757.095 ppb	105.404 %
Concentration per Run 3	88.236 %	91.846 %	0.760 ppb	11,720.668 ppb	5,626.763 ppb	14,485.983 ppb	2,689.894 ppb	3,796.709 ppb	105.113 %
Concentration RSD	1.2 %	2.5 %	3.9 %	1.0 %	0.8 %	1.7 %	4.7 %	2.2 %	0.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	48.393 ppb	667.157 ppb	289.366 ppb	33,071.389 ppb	13.220 ppb	47.556 ppb	4,421.127 ppb	1,685.283 ppb	96.508 %
Concentration per Run 1	47.077 ppb	656.163 ppb	282.255 ppb	32,331.990 ppb	12.973 ppb	47.230 ppb	4,431.266 ppb	1,665.993 ppb	94.487 %
Concentration per Run 2	48.628 ppb	669.533 ppb	289.723 ppb	33,005.727 ppb	13.259 ppb	47.591 ppb	4,424.487 ppb	1,682.178 ppb	98.601 %
Concentration per Run 3	49.472 ppb	675.777 ppb	296.120 ppb	33,876.450 ppb	13.428 ppb	47.847 ppb	4,407.629 ppb	1,707.677 ppb	96.436 %
Concentration RSD	2.5 %	1.5 %	2.4 %	2.3 %	1.7 %	0.7 %	0.3 %	1.2 %	2.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	1,548.386 ppb	14.526 ppb	231.895 ppb	94.089 %	8.185 ppb	22.271 ppb	94.169 %	31.167 ppb	351.052 ppb
Concentration per Run 1	1,527.435 ppb	13.573 ppb	225.676 ppb	92.056 %	8.413 ppb	22.895 ppb	89.838 %	31.869 ppb	349.837 ppb
Concentration per Run 2	1,547.814 ppb	13.944 ppb	233.776 ppb	95.467 %	8.119 ppb	21.978 ppb	94.743 %	31.726 ppb	360.237 ppb
Concentration per Run 3	1,569.909 ppb	16.060 ppb	236.233 ppb	94.744 %	8.023 ppb	21.940 ppb	97.928 %	29.905 ppb	343.081 ppb
Concentration RSD	1.4 %	9.2 %	2.4 %	1.9 %	2.5 %	2.4 %	4.3 %	3.5 %	2.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	98.856 %	95.381 %	1.221 ppb	1,445.456 ppb	105.601 %
Concentration per Run 1	94.873 %	91.579 %	1.181 ppb	1,424.624 ppb	105.298 %
Concentration per Run 2	100.741 %	96.662 %	1.245 ppb	1,454.613 ppb	105.638 %
Concentration per Run 3	100.955 %	97.901 %	1.237 ppb	1,457.131 ppb	105.866 %
Concentration RSD	3.5 %	3.5 %	2.9 %	1.3 %	0.3 %

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Analysis index: 71 Analysis started at: 12/18/2021 1:58:05 AM
 Analysis label: I2156772-01D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	93.996 %	95.692 %	1.349 ppb	6,603.760 ppb	9,452.762 ppb	19,152.577 ppb	3,184.444 ppb	4,819.689 ppb	107.743 %
Concentration per Run 1	93.531 %	92.769 %	1.360 ppb	6,501.758 ppb	9,135.744 ppb	18,452.683 ppb	3,157.352 ppb	4,784.113 ppb	106.788 %
Concentration per Run 2	94.776 %	100.000 %	1.410 ppb	6,567.559 ppb	9,361.854 ppb	18,870.682 ppb	3,064.238 ppb	4,609.339 ppb	108.210 %
Concentration per Run 3	93.682 %	94.308 %	1.276 ppb	6,741.963 ppb	9,860.687 ppb	20,134.365 ppb	3,331.741 ppb	5,065.616 ppb	108.232 %
Concentration RSD	0.7 %	4.0 %	5.0 %	1.9 %	3.9 %	4.6 %	4.3 %	4.8 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	53.171 ppb	77.259 ppb	1,447.786 ppb	50,004.608 ppb	18.536 ppb	45.708 ppb	159.142 ppb	291.770 ppb	96.997 %
Concentration per Run 1	54.121 ppb	76.688 ppb	1,418.487 ppb	49,304.463 ppb	18.560 ppb	47.113 ppb	160.140 ppb	292.621 ppb	95.399 %
Concentration per Run 2	51.178 ppb	75.826 ppb	1,427.598 ppb	49,415.219 ppb	18.373 ppb	44.614 ppb	156.466 ppb	284.763 ppb	99.412 %
Concentration per Run 3	54.214 ppb	79.264 ppb	1,497.274 ppb	51,294.142 ppb	18.674 ppb	45.398 ppb	160.820 ppb	297.927 ppb	96.181 %
Concentration RSD	3.2 %	2.3 %	3.0 %	2.2 %	0.8 %	2.8 %	1.5 %	2.3 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	55.421 ppb	6.086 ppb	89.075 ppb	92.048 %	0.754 ppb	1.271 ppb	92.029 %	1.824 ppb	523.385 ppb
Concentration per Run 1	54.724 ppb	6.161 ppb	85.482 ppb	92.683 %	0.808 ppb	1.311 ppb	89.976 %	1.894 ppb	520.480 ppb
Concentration per Run 2	56.167 ppb	6.083 ppb	90.343 ppb	92.003 %	0.704 ppb	1.222 ppb	93.517 %	1.814 ppb	518.415 ppb
Concentration per Run 3	55.372 ppb	6.014 ppb	91.399 ppb	91.457 %	0.750 ppb	1.280 ppb	92.594 %	1.765 ppb	531.260 ppb
Concentration RSD	1.3 %	1.2 %	3.5 %	0.7 %	6.9 %	3.6 %	2.0 %	3.6 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	95.007 %	91.199 %	0.356 ppb	202.475 ppb	90.598 %
Concentration per Run 1	94.199 %	89.369 %	0.326 ppb	199.844 ppb	90.860 %
Concentration per Run 2	95.396 %	91.996 %	0.374 ppb	203.546 ppb	90.031 %
Concentration per Run 3	95.427 %	92.231 %	0.367 ppb	204.034 ppb	90.902 %
Concentration RSD	0.7 %	1.7 %	7.3 %	1.1 %	0.5 %

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Analysis index: 72 Analysis started at: 12/18/2021 2:02:55 AM
 Analysis label: I2156772-02D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.240 %	87.487 %	1.172 ppb	6,589.363 ppb	9,426.479 ppb	14,840.509 ppb	3,100.778 ppb	6,506.033 ppb	99.330 %
Concentration per Run 1	89.391 %	89.692 %	1.158 ppb	6,423.915 ppb	9,359.636 ppb	13,909.806 ppb	2,982.980 ppb	6,365.967 ppb	99.833 %
Concentration per Run 2	89.571 %	84.769 %	1.146 ppb	6,637.046 ppb	9,590.632 ppb	15,472.713 ppb	3,310.215 ppb	6,787.704 ppb	98.923 %
Concentration per Run 3	88.759 %	88.000 %	1.212 ppb	6,707.129 ppb	9,329.168 ppb	15,139.009 ppb	3,009.140 ppb	6,364.429 ppb	99.234 %
Concentration RSD	0.5 %	2.9 %	3.0 %	2.2 %	1.5 %	5.5 %	5.9 %	3.7 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	47.713 ppb	67.714 ppb	1,287.284 ppb	46,949.247 ppb	18.427 ppb	47.237 ppb	142.387 ppb	295.725 ppb	93.068 %
Concentration per Run 1	48.280 ppb	66.089 ppb	1,270.027 ppb	46,630.790 ppb	18.921 ppb	47.245 ppb	142.244 ppb	291.946 ppb	91.719 %
Concentration per Run 2	47.294 ppb	67.589 ppb	1,269.962 ppb	46,517.424 ppb	17.383 ppb	46.831 ppb	142.417 ppb	294.340 ppb	95.144 %
Concentration per Run 3	47.564 ppb	69.464 ppb	1,321.863 ppb	47,699.526 ppb	18.977 ppb	47.634 ppb	142.501 ppb	300.889 ppb	92.341 %
Concentration RSD	1.1 %	2.5 %	2.3 %	1.4 %	4.9 %	0.8 %	0.1 %	1.6 %	2.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	49.374 ppb	6.299 ppb	86.701 ppb	88.526 %	0.545 ppb	1.278 ppb	88.967 %	1.814 ppb	561.929 ppb
Concentration per Run 1	48.933 ppb	6.898 ppb	84.424 ppb	88.302 %	0.532 ppb	1.261 ppb	88.502 %	1.744 ppb	546.227 ppb
Concentration per Run 2	48.621 ppb	5.593 ppb	86.643 ppb	88.666 %	0.533 ppb	1.317 ppb	88.385 %	1.859 ppb	576.437 ppb
Concentration per Run 3	50.569 ppb	6.408 ppb	89.034 ppb	88.609 %	0.568 ppb	1.254 ppb	90.014 %	1.837 ppb	563.125 ppb
Concentration RSD	2.1 %	10.5 %	2.7 %	0.2 %	3.8 %	2.7 %	1.0 %	3.4 %	2.7 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.971 %	88.705 %	0.320 ppb	173.548 ppb	89.231 %
Concentration per Run 1	92.392 %	87.615 %	0.295 ppb	171.563 ppb	89.598 %
Concentration per Run 2	92.873 %	88.789 %	0.333 ppb	173.765 ppb	89.275 %
Concentration per Run 3	93.649 %	89.710 %	0.333 ppb	175.315 ppb	88.821 %
Concentration RSD	0.7 %	1.2 %	6.8 %	1.1 %	0.4 %

Alpha ICPMSQ Full

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Analysis index: 73 Analysis started at: 12/18/2021 2:07:46 AM
 Analysis label: I2156772-03D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	83.958 %	81.641 %	0.887 ppb	8,586.274 ppb	6,403.242 ppb	12,202.639 ppb	2,213.087 ppb	8,408.399 ppb	91.930 %
Concentration per Run 1	84.377 %	82.615 %	0.856 ppb	8,451.526 ppb	6,241.622 ppb	11,670.294 ppb	2,162.104 ppb	8,585.821 ppb	93.069 %
Concentration per Run 2	83.567 %	79.846 %	0.925 ppb	8,754.122 ppb	6,530.540 ppb	12,673.497 ppb	2,336.765 ppb	8,188.844 ppb	92.005 %
Concentration per Run 3	83.930 %	82.461 %	0.882 ppb	8,553.173 ppb	6,437.563 ppb	12,264.125 ppb	2,140.393 ppb	8,450.531 ppb	90.716 %
Concentration RSD	0.5 %	1.9 %	3.9 %	1.8 %	2.3 %	4.1 %	4.9 %	2.4 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.748 ppb	68.568 ppb	583.204 ppb	35,036.547 ppb	12.913 ppb	33.453 ppb	181.801 ppb	307.297 ppb	86.906 %
Concentration per Run 1	52.653 ppb	69.065 ppb	579.944 ppb	35,044.214 ppb	13.126 ppb	33.244 ppb	188.190 ppb	309.108 ppb	83.668 %
Concentration per Run 2	54.565 ppb	68.256 ppb	585.460 ppb	35,061.322 ppb	12.640 ppb	34.115 ppb	177.690 ppb	306.180 ppb	89.062 %
Concentration per Run 3	51.025 ppb	68.383 ppb	584.207 ppb	35,004.104 ppb	12.974 ppb	33.000 ppb	179.522 ppb	306.603 ppb	87.987 %
Concentration RSD	3.4 %	0.6 %	0.5 %	0.1 %	1.9 %	1.8 %	3.1 %	0.5 %	3.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	76.198 ppb	5.736 ppb	77.262 ppb	83.837 %	0.713 ppb	1.599 ppb	84.205 %	2.362 ppb	364.535 ppb
Concentration per Run 1	77.311 ppb	4.990 ppb	76.247 ppb	83.344 %	0.718 ppb	1.620 ppb	82.907 %	2.290 ppb	361.136 ppb
Concentration per Run 2	76.516 ppb	5.841 ppb	76.472 ppb	84.317 %	0.681 ppb	1.604 ppb	84.152 %	2.358 ppb	365.302 ppb
Concentration per Run 3	74.768 ppb	6.376 ppb	79.067 ppb	83.849 %	0.742 ppb	1.571 ppb	85.554 %	2.437 ppb	367.168 ppb
Concentration RSD	1.7 %	12.2 %	2.0 %	0.6 %	4.3 %	1.6 %	1.6 %	3.1 %	0.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	89.453 %	86.079 %	0.269 ppb	190.917 ppb	86.368 %
Concentration per Run 1	87.972 %	83.357 %	0.254 ppb	188.855 ppb	86.756 %
Concentration per Run 2	90.344 %	87.526 %	0.272 ppb	190.592 ppb	86.462 %
Concentration per Run 3	90.043 %	87.354 %	0.282 ppb	193.302 ppb	85.885 %
Concentration RSD	1.4 %	2.7 %	5.3 %	1.2 %	0.5 %

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Analysis index: 74 Analysis started at: 12/18/2021 2:12:36 AM
 Analysis label: I2156772-04D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	86.037 %	86.769 %	0.892 ppb	9,270.316 ppb	6,481.972 ppb	12,153.679 ppb	2,178.365 ppb	5,068.309 ppb	95.483 %
Concentration per Run 1	86.805 %	80.615 %	0.880 ppb	9,685.099 ppb	6,655.752 ppb	12,305.185 ppb	2,136.920 ppb	4,757.078 ppb	95.562 %
Concentration per Run 2	85.469 %	89.384 %	0.950 ppb	9,105.626 ppb	6,496.447 ppb	12,217.539 ppb	2,159.379 ppb	5,396.297 ppb	94.939 %
Concentration per Run 3	85.837 %	90.308 %	0.845 ppb	9,020.224 ppb	6,293.716 ppb	11,938.315 ppb	2,238.797 ppb	5,051.553 ppb	95.948 %
Concentration RSD	0.8 %	6.2 %	6.0 %	3.9 %	2.8 %	1.6 %	2.5 %	6.3 %	0.5 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.707 ppb	59.942 ppb	569.215 ppb	33,286.026 ppb	12.457 ppb	32.147 ppb	155.652 ppb	254.038 ppb	91.096 %
Concentration per Run 1	52.489 ppb	61.157 ppb	574.413 ppb	33,555.707 ppb	12.427 ppb	34.384 ppb	159.195 ppb	255.595 ppb	88.395 %
Concentration per Run 2	51.493 ppb	60.441 ppb	566.190 ppb	33,380.800 ppb	12.596 ppb	30.899 ppb	154.317 ppb	253.906 ppb	92.224 %
Concentration per Run 3	51.138 ppb	58.227 ppb	567.042 ppb	32,921.571 ppb	12.347 ppb	31.159 ppb	153.445 ppb	252.613 ppb	92.670 %
Concentration RSD	1.4 %	2.5 %	0.8 %	1.0 %	1.0 %	6.0 %	2.0 %	0.6 %	2.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	71.883 ppb	5.404 ppb	62.443 ppb	86.504 %	0.608 ppb	1.386 ppb	85.403 %	2.174 ppb	411.741 ppb
Concentration per Run 1	71.674 ppb	5.439 ppb	60.941 ppb	85.480 %	0.600 ppb	1.273 ppb	83.779 %	2.164 ppb	408.187 ppb
Concentration per Run 2	73.676 ppb	5.640 ppb	63.202 ppb	88.133 %	0.615 ppb	1.424 ppb	86.120 %	2.188 ppb	416.804 ppb
Concentration per Run 3	70.301 ppb	5.134 ppb	63.185 ppb	85.898 %	0.608 ppb	1.461 ppb	86.311 %	2.170 ppb	410.232 ppb
Concentration RSD	2.4 %	4.7 %	2.1 %	1.6 %	1.3 %	7.2 %	1.7 %	0.6 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.603 %	88.330 %	0.239 ppb	161.005 ppb	87.044 %
Concentration per Run 1	90.491 %	86.458 %	0.216 ppb	159.132 ppb	87.667 %
Concentration per Run 2	92.740 %	89.992 %	0.250 ppb	161.987 ppb	86.963 %
Concentration per Run 3	91.577 %	88.540 %	0.251 ppb	161.897 ppb	86.502 %
Concentration RSD	1.2 %	2.0 %	8.3 %	1.0 %	0.7 %

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Analysis index: 75 Analysis started at: 12/18/2021 2:17:27 AM
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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.315 %	82.410 %	0.983 ppb	7,134.596 ppb	6,925.951 ppb	14,100.927 ppb	2,372.706 ppb	5,513.709 ppb	97.150 %
Concentration per Run 1	88.134 %	79.077 %	0.925 ppb	7,042.478 ppb	6,879.695 ppb	13,687.217 ppb	2,441.971 ppb	5,238.950 ppb	96.125 %
Concentration per Run 2	88.902 %	84.000 %	1.064 ppb	7,232.504 ppb	7,162.936 ppb	14,274.231 ppb	2,359.343 ppb	6,048.467 ppb	98.655 %
Concentration per Run 3	87.908 %	84.154 %	0.960 ppb	7,128.807 ppb	6,735.222 ppb	14,341.332 ppb	2,316.805 ppb	5,253.711 ppb	96.671 %
Concentration RSD	0.6 %	3.5 %	7.4 %	1.3 %	3.1 %	2.6 %	2.7 %	8.4 %	1.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	46.424 ppb	47.734 ppb	749.282 ppb	34,543.805 ppb	13.565 ppb	29.831 ppb	129.449 ppb	171.816 ppb	90.923 %
Concentration per Run 1	46.740 ppb	48.480 ppb	739.260 ppb	34,516.790 ppb	13.539 ppb	30.546 ppb	128.981 ppb	170.797 ppb	89.084 %
Concentration per Run 2	48.014 ppb	47.323 ppb	748.362 ppb	34,255.961 ppb	13.632 ppb	29.761 ppb	128.449 ppb	172.519 ppb	91.694 %
Concentration per Run 3	44.518 ppb	47.399 ppb	760.223 ppb	34,858.664 ppb	13.525 ppb	29.186 ppb	130.916 ppb	172.132 ppb	91.989 %
Concentration RSD	3.8 %	1.4 %	1.4 %	0.9 %	0.4 %	2.3 %	1.0 %	0.5 %	1.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	35.888 ppb	4.005 ppb	54.453 ppb	87.473 %	0.355 ppb	0.572 ppb	87.127 %	0.846 ppb	364.533 ppb
Concentration per Run 1	35.314 ppb	4.518 ppb	53.558 ppb	85.732 %	0.356 ppb	0.618 ppb	84.362 %	0.798 ppb	351.787 ppb
Concentration per Run 2	36.636 ppb	3.548 ppb	54.566 ppb	88.292 %	0.345 ppb	0.531 ppb	88.450 %	0.890 ppb	371.772 ppb
Concentration per Run 3	35.714 ppb	3.950 ppb	55.236 ppb	88.395 %	0.366 ppb	0.566 ppb	88.569 %	0.851 ppb	370.040 ppb
Concentration RSD	1.9 %	12.2 %	1.6 %	1.7 %	2.9 %	7.7 %	2.7 %	5.5 %	3.0 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.953 %	88.774 %	0.190 ppb	114.740 ppb	87.179 %
Concentration per Run 1	89.982 %	86.290 %	0.178 ppb	113.140 ppb	86.502 %
Concentration per Run 2	93.729 %	90.671 %	0.197 ppb	114.976 ppb	87.854 %
Concentration per Run 3	92.148 %	89.363 %	0.193 ppb	116.103 ppb	87.181 %
Concentration RSD	2.0 %	2.5 %	5.2 %	1.3 %	0.8 %

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Analysis index: 76 Analysis started at: 12/18/2021 2:22:17 AM
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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	87.414 %	84.102 %	1.075 ppb	6,835.319 ppb	7,940.902 ppb	16,032.417 ppb	2,618.348 ppb	6,370.716 ppb	96.652 %
Concentration per Run 1	88.565 %	82.615 %	1.036 ppb	6,671.767 ppb	7,732.521 ppb	15,583.872 ppb	2,459.359 ppb	6,010.030 ppb	97.054 %
Concentration per Run 2	87.334 %	82.154 %	1.151 ppb	7,080.960 ppb	8,152.214 ppb	16,551.001 ppb	2,641.013 ppb	6,821.488 ppb	96.295 %
Concentration per Run 3	86.344 %	87.538 %	1.039 ppb	6,753.231 ppb	7,937.973 ppb	15,962.378 ppb	2,754.673 ppb	6,280.629 ppb	96.608 %
Concentration RSD	1.3 %	3.5 %	6.1 %	3.2 %	2.6 %	3.0 %	5.7 %	6.5 %	0.4 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	51.595 ppb	48.450 ppb	869.820 ppb	38,811.668 ppb	17.687 ppb	36.008 ppb	65.109 ppb	153.275 ppb	90.787 %
Concentration per Run 1	52.864 ppb	48.318 ppb	870.174 ppb	39,189.363 ppb	18.159 ppb	37.793 ppb	65.593 ppb	155.270 ppb	88.022 %
Concentration per Run 2	51.538 ppb	48.591 ppb	860.825 ppb	38,380.433 ppb	17.685 ppb	34.548 ppb	65.613 ppb	151.655 ppb	92.917 %
Concentration per Run 3	50.381 ppb	48.441 ppb	878.462 ppb	38,865.207 ppb	17.215 ppb	35.683 ppb	64.122 ppb	152.899 ppb	91.421 %
Concentration RSD	2.4 %	0.3 %	1.0 %	1.0 %	2.7 %	4.6 %	1.3 %	1.2 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	27.086 ppb	4.174 ppb	54.427 ppb	87.322 %	0.325 ppb	0.523 ppb	86.773 %	0.667 ppb	353.438 ppb
Concentration per Run 1	26.345 ppb	3.617 ppb	53.316 ppb	86.527 %	0.323 ppb	0.478 ppb	83.433 %	0.713 ppb	347.055 ppb
Concentration per Run 2	27.438 ppb	4.565 ppb	54.820 ppb	86.927 %	0.321 ppb	0.546 ppb	89.131 %	0.626 ppb	353.144 ppb
Concentration per Run 3	27.476 ppb	4.339 ppb	55.145 ppb	88.512 %	0.330 ppb	0.545 ppb	87.755 %	0.663 ppb	360.114 ppb
Concentration RSD	2.4 %	11.9 %	1.8 %	1.2 %	1.4 %	7.4 %	3.4 %	6.6 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.197 %	87.328 %	0.230 ppb	105.858 ppb	86.951 %
Concentration per Run 1	88.890 %	85.125 %	0.218 ppb	104.976 ppb	86.628 %
Concentration per Run 2	92.680 %	88.308 %	0.235 ppb	105.370 ppb	87.821 %
Concentration per Run 3	92.021 %	88.551 %	0.238 ppb	107.229 ppb	86.403 %
Concentration RSD	2.2 %	2.2 %	4.8 %	1.1 %	0.9 %

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Analysis index: 77 Analysis started at: 12/18/2021 2:27:08 AM
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Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.910 %	87.949 %	1.171 ppb	6,865.596 ppb	8,912.135 ppb	17,694.168 ppb	3,116.999 ppb	4,490.313 ppb	100.098 %
Concentration per Run 1	90.089 %	84.615 %	1.155 ppb	6,955.693 ppb	8,783.954 ppb	17,429.867 ppb	3,109.216 ppb	4,388.354 ppb	99.667 %
Concentration per Run 2	89.685 %	82.461 %	1.122 ppb	7,296.427 ppb	9,501.533 ppb	18,907.750 ppb	3,299.147 ppb	4,649.208 ppb	99.753 %
Concentration per Run 3	89.955 %	96.769 %	1.235 ppb	6,344.667 ppb	8,450.919 ppb	16,744.885 ppb	2,942.634 ppb	4,433.379 ppb	100.875 %
Concentration RSD	0.2 %	8.8 %	4.9 %	7.0 %	6.0 %	6.2 %	5.7 %	3.1 %	0.7 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	54.580 ppb	52.042 ppb	1,094.172 ppb	43,587.275 ppb	16.669 ppb	38.275 ppb	74.212 ppb	170.908 ppb	91.758 %
Concentration per Run 1	54.918 ppb	51.916 ppb	1,098.853 ppb	44,514.474 ppb	17.079 ppb	38.523 ppb	75.636 ppb	172.864 ppb	88.744 %
Concentration per Run 2	56.558 ppb	53.620 ppb	1,110.741 ppb	43,886.850 ppb	16.912 ppb	39.848 ppb	75.526 ppb	172.221 ppb	92.507 %
Concentration per Run 3	52.264 ppb	50.591 ppb	1,072.924 ppb	42,360.500 ppb	16.017 ppb	36.453 ppb	71.475 ppb	167.640 ppb	94.025 %
Concentration RSD	4.0 %	2.9 %	1.8 %	2.5 %	3.4 %	4.5 %	3.2 %	1.7 %	3.0 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	30.160 ppb	4.743 ppb	53.418 ppb	88.594 %	0.346 ppb	0.420 ppb	87.725 %	0.814 ppb	340.450 ppb
Concentration per Run 1	30.560 ppb	4.805 ppb	52.583 ppb	88.295 %	0.356 ppb	0.510 ppb	84.628 %	0.905 ppb	336.371 ppb
Concentration per Run 2	30.013 ppb	4.346 ppb	54.025 ppb	88.731 %	0.358 ppb	0.391 ppb	88.366 %	0.766 ppb	337.415 ppb
Concentration per Run 3	29.906 ppb	5.078 ppb	53.646 ppb	88.756 %	0.324 ppb	0.357 ppb	90.182 %	0.771 ppb	347.564 ppb
Concentration RSD	1.2 %	7.8 %	1.4 %	0.3 %	5.6 %	19.2 %	3.2 %	9.6 %	1.8 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	91.898 %	87.449 %	0.196 ppb	121.551 ppb	87.747 %
Concentration per Run 1	90.322 %	85.139 %	0.185 ppb	120.318 ppb	87.859 %
Concentration per Run 2	92.527 %	88.420 %	0.197 ppb	122.171 ppb	87.929 %
Concentration per Run 3	92.846 %	88.789 %	0.205 ppb	122.164 ppb	87.452 %
Concentration RSD	1.5 %	2.3 %	5.2 %	0.9 %	0.3 %

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Analysis index: 78 Analysis started at: 12/18/2021 2:31:58 AM
 Analysis label: I2156772-08D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	89.544 %	89.384 %	1.229 ppb	7,389.163 ppb	8,667.795 ppb	17,991.180 ppb	2,876.573 ppb	4,846.931 ppb	99.666 %
Concentration per Run 1	90.121 %	86.769 %	1.194 ppb	7,488.285 ppb	8,679.591 ppb	17,526.191 ppb	2,778.354 ppb	4,795.392 ppb	99.943 %
Concentration per Run 2	90.182 %	95.077 %	1.262 ppb	7,089.818 ppb	8,358.891 ppb	17,673.139 ppb	2,848.052 ppb	4,655.858 ppb	100.603 %
Concentration per Run 3	88.329 %	86.307 %	1.232 ppb	7,589.386 ppb	8,964.903 ppb	18,774.210 ppb	3,003.312 ppb	5,089.542 ppb	98.452 %
Concentration RSD	1.2 %	5.5 %	2.8 %	3.6 %	3.5 %	3.8 %	4.0 %	4.6 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	55.634 ppb	50.093 ppb	1,040.884 ppb	43,452.004 ppb	16.307 ppb	36.824 ppb	66.863 ppb	146.275 ppb	91.897 %
Concentration per Run 1	55.651 ppb	50.180 ppb	1,023.142 ppb	42,984.186 ppb	16.334 ppb	37.853 ppb	68.935 ppb	146.976 ppb	89.582 %
Concentration per Run 2	55.110 ppb	49.834 ppb	1,032.320 ppb	43,311.712 ppb	16.007 ppb	35.450 ppb	65.733 ppb	145.891 ppb	92.778 %
Concentration per Run 3	56.140 ppb	50.267 ppb	1,067.191 ppb	44,060.113 ppb	16.581 ppb	37.170 ppb	65.920 ppb	145.959 ppb	93.330 %
Concentration RSD	0.9 %	0.5 %	2.2 %	1.3 %	1.8 %	3.4 %	2.7 %	0.4 %	2.2 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	28.063 ppb	4.479 ppb	57.720 ppb	88.415 %	0.412 ppb	0.361 ppb	88.096 %	3.395 ppb	278.661 ppb
Concentration per Run 1	28.249 ppb	4.218 ppb	56.715 ppb	88.119 %	0.408 ppb	0.390 ppb	85.018 %	3.320 ppb	275.377 ppb
Concentration per Run 2	28.182 ppb	4.736 ppb	58.031 ppb	88.998 %	0.427 ppb	0.366 ppb	91.147 %	3.388 ppb	279.433 ppb
Concentration per Run 3	27.756 ppb	4.483 ppb	58.414 ppb	88.128 %	0.402 ppb	0.328 ppb	88.122 %	3.476 ppb	281.174 ppb
Concentration RSD	1.0 %	5.8 %	1.5 %	0.6 %	3.1 %	8.7 %	3.5 %	2.3 %	1.1 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.400 %	87.894 %	0.186 ppb	114.858 ppb	86.899 %
Concentration per Run 1	91.974 %	86.868 %	0.176 ppb	112.924 ppb	86.887 %
Concentration per Run 2	93.392 %	88.991 %	0.179 ppb	115.388 ppb	86.977 %
Concentration per Run 3	91.833 %	87.821 %	0.202 ppb	116.262 ppb	86.833 %
Concentration RSD	0.9 %	1.2 %	7.6 %	1.5 %	0.1 %

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Analysis index: 79 Analysis started at: 12/18/2021 2:36:49 AM
 Analysis label: I2156772-09D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	90.629 %	93.026 %	1.111 ppb	5,358.272 ppb	6,005.026 ppb	13,468.932 ppb	2,107.868 ppb	2,509.136 ppb	97.955 %
Concentration per Run 1	90.572 %	87.538 %	1.005 ppb	5,395.370 ppb	6,075.799 ppb	13,247.331 ppb	2,225.707 ppb	2,430.267 ppb	97.911 %
Concentration per Run 2	90.386 %	98.462 %	1.156 ppb	5,157.712 ppb	5,855.892 ppb	13,212.910 ppb	2,056.522 ppb	2,404.577 ppb	97.795 %
Concentration per Run 3	90.928 %	93.077 %	1.172 ppb	5,521.734 ppb	6,083.388 ppb	13,946.554 ppb	2,041.377 ppb	2,692.563 ppb	98.157 %
Concentration RSD	0.3 %	5.9 %	8.3 %	3.4 %	2.2 %	3.1 %	4.9 %	6.4 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	37.926 ppb	31.918 ppb	461.197 ppb	26,026.426 ppb	10.777 ppb	25.494 ppb	32.270 ppb	82.750 ppb	90.928 %
Concentration per Run 1	39.311 ppb	32.618 ppb	467.038 ppb	26,345.917 ppb	10.650 ppb	26.084 ppb	32.574 ppb	83.231 ppb	87.113 %
Concentration per Run 2	36.595 ppb	31.104 ppb	442.469 ppb	25,176.981 ppb	10.644 ppb	24.608 ppb	32.411 ppb	82.620 ppb	92.880 %
Concentration per Run 3	37.874 ppb	32.033 ppb	474.084 ppb	26,556.378 ppb	11.039 ppb	25.789 ppb	31.826 ppb	82.397 ppb	92.791 %
Concentration RSD	3.6 %	2.4 %	3.6 %	2.9 %	2.1 %	3.1 %	1.2 %	0.5 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	14.025 ppb	4.770 ppb	40.371 ppb	90.180 %	0.196 ppb	0.189 ppb	87.543 %	0.346 ppb	420.343 ppb
Concentration per Run 1	14.036 ppb	4.709 ppb	39.410 ppb	89.173 %	0.207 ppb	0.184 ppb	84.000 %	0.318 ppb	415.223 ppb
Concentration per Run 2	13.639 ppb	4.353 ppb	41.061 ppb	89.861 %	0.184 ppb	0.192 ppb	88.722 %	0.343 ppb	426.817 ppb
Concentration per Run 3	14.401 ppb	5.248 ppb	40.643 ppb	91.505 %	0.198 ppb	0.189 ppb	89.906 %	0.377 ppb	418.988 ppb
Concentration RSD	2.7 %	9.4 %	2.1 %	1.3 %	5.8 %	2.0 %	3.6 %	8.5 %	1.4 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	93.781 %	89.824 %	0.099 ppb	44.402 ppb	87.543 %
Concentration per Run 1	91.356 %	86.318 %	0.090 ppb	44.232 ppb	87.169 %
Concentration per Run 2	95.090 %	92.028 %	0.094 ppb	44.167 ppb	87.831 %
Concentration per Run 3	94.896 %	91.127 %	0.113 ppb	44.808 ppb	87.628 %
Concentration RSD	2.2 %	3.4 %	12.4 %	0.8 %	0.4 %

Alpha ICPMSQ Full

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Analysis index: 80 Analysis started at: 12/18/2021 2:41:39 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	78.051 %	75.795 %	62.998 ppb	6,001.038 ppb	6,034.536 ppb	63.591 ppb	5,803.347 ppb	5,488.991 ppb	82.548 %
Concentration per Run 1	78.818 %	77.077 %	62.359 ppb	5,829.427 ppb	5,803.533 ppb	59.378 ppb	5,575.175 ppb	5,203.117 ppb	83.117 %
Concentration per Run 2	77.851 %	73.692 %	62.327 ppb	6,217.360 ppb	6,113.288 ppb	68.192 ppb	5,936.428 ppb	5,831.120 ppb	82.992 %
Concentration per Run 3	77.483 %	76.615 %	64.307 ppb	5,956.326 ppb	6,186.787 ppb	63.203 ppb	5,898.438 ppb	5,432.736 ppb	81.534 %
Recovery Percentage 1			104.997 %	100.017 %	100.576 %	105.985 %	96.722 %	91.483 %	
Concentration RSD	0.9 %	2.4 %	1.8 %	3.3 %	3.4 %	7.0 %	3.4 %	5.8 %	1.1 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.801 ppb	62.458 ppb	60.957 ppb	6,197.931 ppb	62.198 ppb	61.841 ppb	64.267 ppb	61.920 ppb	83.082 %
Concentration per Run 1	62.502 ppb	62.700 ppb	60.054 ppb	6,240.202 ppb	63.076 ppb	63.399 ppb	65.610 ppb	62.357 ppb	80.396 %
Concentration per Run 2	63.283 ppb	62.151 ppb	61.446 ppb	6,134.712 ppb	61.381 ppb	61.182 ppb	62.217 ppb	61.625 ppb	84.524 %
Concentration per Run 3	62.618 ppb	62.523 ppb	61.372 ppb	6,218.878 ppb	62.138 ppb	60.943 ppb	64.973 ppb	61.777 ppb	84.327 %
Recovery Percentage 1	104.668 %	104.097 %	101.596 %	103.299 %	103.664 %	103.068 %	107.111 %	103.199 %	
Concentration RSD	0.7 %	0.4 %	1.3 %	0.9 %	1.4 %	2.2 %	2.8 %	0.6 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.258 ppb	61.465 ppb	58.896 ppb	80.377 %	61.565 ppb	62.587 ppb	80.423 %	62.620 ppb	61.029 ppb
Concentration per Run 1	60.973 ppb	60.607 ppb	57.312 ppb	80.457 %	62.653 ppb	63.359 ppb	78.214 %	62.472 ppb	61.248 ppb
Concentration per Run 2	61.795 ppb	63.618 ppb	59.031 ppb	81.016 %	60.791 ppb	61.639 ppb	81.686 %	62.800 ppb	62.043 ppb
Concentration per Run 3	61.006 ppb	60.169 ppb	60.346 ppb	79.660 %	61.252 ppb	62.762 ppb	81.369 %	62.588 ppb	59.797 ppb
Recovery Percentage 1	102.097 %	102.441 %	98.161 %		102.609 %	104.311 %		104.367 %	101.715 %
Concentration RSD	0.8 %	3.1 %	2.6 %	0.8 %	1.6 %	1.4 %	2.4 %	0.3 %	1.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	86.668 %	84.911 %	64.081 ppb	62.215 ppb	82.999 %
Concentration per Run 1	86.404 %	82.799 %	63.001 ppb	61.684 ppb	83.904 %
Concentration per Run 2	86.785 %	86.700 %	64.323 ppb	62.475 ppb	82.606 %
Concentration per Run 3	86.816 %	85.233 %	64.919 ppb	62.485 ppb	82.487 %
Recovery Percentage 1			106.801 %	103.691 %	
Concentration RSD	0.3 %	2.3 %	1.5 %	0.7 %	0.9 %

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Analysis index: 81 Analysis started at: 12/18/2021 2:46:32 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	76.229 %	73.282 %	0.028 ppb	-0.305 ppb	-1.343 ppb	0.758 ppb	-5.507 ppb	-10.112 ppb	72.734 %
Concentration per Run 1	76.403 %	72.461 %	0.045 ppb	-1.011 ppb	-2.139 ppb	0.470 ppb	-3.351 ppb	-23.994 ppb	73.424 %
Concentration per Run 2	76.136 %	74.000 %	0.015 ppb	1.389 ppb	0.248 ppb	0.684 ppb	-3.566 ppb	17.528 ppb	73.071 %
Concentration per Run 3	76.150 %	73.384 %	0.026 ppb	-1.292 ppb	-2.139 ppb	1.121 ppb	-9.605 ppb	-23.870 ppb	71.708 %
Recovery Percentage 1			5.689 %	-0.305 %	-1.919 %	7.585 %	-5.507 %	-10.112 %	
Concentration RSD	0.2 %	1.1 %	54.2 %	483.6 %	102.6 %	43.7 %	64.5 %	236.7 %	1.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	0.001 ppb	-0.005 ppb	0.045 ppb	19.391 ppb	0.008 ppb	-0.053 ppb	0.161 ppb	-0.596 ppb	82.720 %
Concentration per Run 1	0.002 ppb	-0.011 ppb	0.090 ppb	25.494 ppb	0.010 ppb	-0.019 ppb	0.230 ppb	-0.604 ppb	81.240 %
Concentration per Run 2	0.001 ppb	-0.022 ppb	0.090 ppb	18.476 ppb	0.000 ppb	-0.076 ppb	0.144 ppb	-0.516 ppb	80.978 %
Concentration per Run 3	-0.001 ppb	0.018 ppb	-0.046 ppb	14.203 ppb	0.014 ppb	-0.065 ppb	0.109 ppb	-0.667 ppb	85.943 %
Recovery Percentage 1	0.012 %	-0.526 %	4.456 %	38.782 %	1.637 %	-2.672 %	16.132 %	-5.956 %	
Concentration RSD	241.6 %	396.4 %	176.6 %	29.4 %	90.6 %	57.0 %	38.7 %	12.7 %	3.4 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.129 ppb	0.113 ppb	0.012 ppb	82.961 %	0.059 ppb	0.005 ppb	81.464 %	-0.009 ppb	0.005 ppb
Concentration per Run 1	0.129 ppb	-0.009 ppb	0.011 ppb	81.869 %	0.060 ppb	0.005 ppb	80.362 %	-0.017 ppb	0.041 ppb
Concentration per Run 2	0.138 ppb	0.252 ppb	0.027 ppb	82.998 %	0.059 ppb	0.005 ppb	82.014 %	-0.008 ppb	-0.026 ppb
Concentration per Run 3	0.120 ppb	0.095 ppb	-0.001 ppb	84.017 %	0.058 ppb	0.005 ppb	82.016 %	-0.003 ppb	0.002 ppb
Recovery Percentage 1	25.821 %	2.252 %	2.451 %		14.758 %	2.333 %		-0.237 %	1.063 %
Concentration RSD	7.0 %	117.1 %	118.0 %	1.3 %	1.3 %	1.6 %	1.2 %	76.5 %	631.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.133 %	85.024 %	0.417 ppb	0.065 ppb	84.979 %
Concentration per Run 1	85.757 %	83.127 %	0.463 ppb	0.064 ppb	84.057 %
Concentration per Run 2	87.496 %	85.584 %	0.418 ppb	0.066 ppb	85.992 %
Concentration per Run 3	88.145 %	86.360 %	0.370 ppb	0.065 ppb	84.889 %
Recovery Percentage 1			41.713 %	6.488 %	
Concentration RSD	1.4 %	2.0 %	11.1 %	2.3 %	1.1 %

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Analysis index: 82 Analysis started at: 12/18/2021 2:51:24 AM
 Analysis label: I2156772-10D10 A2-6020T User name: ALPHALABMetals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	88.516 %	85.487 %	1.078 ppb	8,495.103 ppb	8,351.847 ppb	17,683.868 ppb	2,711.428 ppb	4,198.384 ppb	104.201 %
Concentration per Run 1	89.782 %	88.154 %	1.044 ppb	8,161.093 ppb	7,985.888 ppb	16,351.192 ppb	2,714.341 ppb	3,925.268 ppb	105.355 %
Concentration per Run 2	88.200 %	87.846 %	1.108 ppb	8,276.646 ppb	8,159.211 ppb	17,708.408 ppb	2,647.441 ppb	4,341.651 ppb	103.388 %
Concentration per Run 3	87.566 %	80.461 %	1.081 ppb	9,047.571 ppb	8,910.443 ppb	18,992.005 ppb	2,772.501 ppb	4,328.231 ppb	103.861 %
Concentration RSD	1.3 %	5.1 %	3.0 %	5.7 %	5.9 %	7.5 %	2.3 %	5.6 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	52.708 ppb	48.039 ppb	1,137.258 ppb	43,034.509 ppb	15.217 ppb	35.269 ppb	70.838 ppb	156.240 ppb	93.246 %
Concentration per Run 1	53.304 ppb	48.333 ppb	1,128.016 ppb	43,040.457 ppb	15.436 ppb	35.341 ppb	71.857 ppb	158.281 ppb	89.297 %
Concentration per Run 2	50.653 ppb	46.653 ppb	1,122.272 ppb	42,705.139 ppb	15.352 ppb	34.723 ppb	68.683 ppb	153.606 ppb	95.678 %
Concentration per Run 3	54.167 ppb	49.130 ppb	1,161.487 ppb	43,357.929 ppb	14.864 ppb	35.744 ppb	71.975 ppb	156.834 ppb	94.764 %
Concentration RSD	3.5 %	2.6 %	1.9 %	0.8 %	2.0 %	1.5 %	2.6 %	1.5 %	3.7 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	26.732 ppb	4.762 ppb	50.155 ppb	89.662 %	0.496 ppb	0.403 ppb	88.921 %	0.686 ppb	303.722 ppb
Concentration per Run 1	27.246 ppb	4.468 ppb	49.274 ppb	88.130 %	0.616 ppb	0.367 ppb	84.551 %	0.676 ppb	307.874 ppb
Concentration per Run 2	25.772 ppb	4.542 ppb	50.440 ppb	90.335 %	0.436 ppb	0.403 ppb	91.673 %	0.670 ppb	299.744 ppb
Concentration per Run 3	27.179 ppb	5.278 ppb	50.752 ppb	90.519 %	0.437 ppb	0.440 ppb	90.537 %	0.711 ppb	303.547 ppb
Concentration RSD	3.1 %	9.4 %	1.6 %	1.5 %	20.9 %	9.0 %	4.3 %	3.3 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	92.996 %	88.893 %	0.293 ppb	124.597 ppb	88.802 %
Concentration per Run 1	91.482 %	86.460 %	0.294 ppb	122.563 ppb	89.018 %
Concentration per Run 2	93.857 %	90.021 %	0.298 ppb	125.313 ppb	88.662 %
Concentration per Run 3	93.650 %	90.198 %	0.288 ppb	125.916 ppb	88.727 %
Concentration RSD	1.4 %	2.4 %	1.7 %	1.4 %	0.2 %

Alpha ICPMSQ Full

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Analysis index: 83 Analysis started at: 12/18/2021 2:56:15 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	78.252 %	73.179 %	62.700 ppb	6,157.351 ppb	6,121.081 ppb	62.023 ppb	6,003.298 ppb	5,925.215 ppb	84.535 %
Concentration per Run 1	78.920 %	77.384 %	62.027 ppb	5,784.690 ppb	5,695.554 ppb	57.251 ppb	5,488.012 ppb	5,566.761 ppb	85.767 %
Concentration per Run 2	77.901 %	70.461 %	63.388 ppb	6,469.721 ppb	6,384.469 ppb	65.482 ppb	6,243.225 ppb	6,140.765 ppb	83.821 %
Concentration per Run 3	77.936 %	71.692 %	62.684 ppb	6,217.643 ppb	6,283.219 ppb	63.335 ppb	6,278.656 ppb	6,068.118 ppb	84.016 %
Recovery Percentage 1			104.499 %	102.623 %	102.018 %	103.371 %	100.055 %	98.754 %	
Concentration RSD	0.7 %	5.0 %	1.1 %	5.6 %	6.1 %	6.9 %	7.4 %	5.3 %	1.3 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.800 ppb	62.861 ppb	63.522 ppb	6,221.359 ppb	63.065 ppb	63.918 ppb	63.378 ppb	61.724 ppb	82.226 %
Concentration per Run 1	59.753 ppb	61.466 ppb	62.715 ppb	5,995.062 ppb	61.873 ppb	64.776 ppb	63.047 ppb	61.267 ppb	81.511 %
Concentration per Run 2	65.896 ppb	64.351 ppb	65.082 ppb	6,541.902 ppb	65.187 ppb	64.721 ppb	64.354 ppb	62.248 ppb	81.540 %
Concentration per Run 3	62.752 ppb	62.768 ppb	62.768 ppb	6,127.113 ppb	62.136 ppb	62.258 ppb	62.733 ppb	61.659 ppb	83.626 %
Recovery Percentage 1	104.667 %	104.769 %	105.870 %	103.689 %	105.109 %	106.530 %	105.630 %	102.874 %	
Concentration RSD	4.9 %	2.3 %	2.1 %	4.6 %	2.9 %	2.3 %	1.4 %	0.8 %	1.5 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.036 ppb	63.311 ppb	58.673 ppb	80.867 %	61.490 ppb	62.164 ppb	80.759 %	62.071 ppb	60.378 ppb
Concentration per Run 1	60.184 ppb	61.756 ppb	56.852 ppb	81.289 %	61.783 ppb	61.224 ppb	78.961 %	61.952 ppb	61.296 ppb
Concentration per Run 2	62.169 ppb	65.803 ppb	59.618 ppb	81.057 %	60.776 ppb	62.464 ppb	82.400 %	61.537 ppb	60.053 ppb
Concentration per Run 3	60.754 ppb	62.372 ppb	59.547 ppb	80.256 %	61.911 ppb	62.806 ppb	80.916 %	62.725 ppb	59.784 ppb
Recovery Percentage 1	101.726 %	105.518 %	97.788 %		102.483 %	103.607 %		103.452 %	100.629 %
Concentration RSD	1.7 %	3.4 %	2.7 %	0.7 %	1.0 %	1.3 %	2.1 %	1.0 %	1.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.121 %	85.533 %	62.329 ppb	61.133 ppb	83.750 %
Concentration per Run 1	86.511 %	83.413 %	61.945 ppb	60.762 ppb	83.592 %
Concentration per Run 2	88.558 %	87.970 %	62.014 ppb	61.243 ppb	84.167 %
Concentration per Run 3	86.294 %	85.215 %	63.029 ppb	61.394 ppb	83.492 %
Recovery Percentage 1			103.882 %	101.888 %	
Concentration RSD	1.4 %	2.7 %	1.0 %	0.5 %	0.4 %

Alpha ICPMSQ Full

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Analysis index: 84 Analysis started at: 12/18/2021 3:01:07 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	74.866 %	71.230 %	0.017 ppb	-2.609 ppb	-1.327 ppb	0.963 ppb	-5.991 ppb	-21.075 ppb	71.730 %
Concentration per Run 1	75.165 %	71.077 %	0.015 ppb	-0.681 ppb	-0.909 ppb	0.976 ppb	-5.827 ppb	-23.817 ppb	71.616 %
Concentration per Run 2	74.885 %	69.230 %	0.021 ppb	-3.133 ppb	-2.139 ppb	0.618 ppb	-6.094 ppb	-23.990 ppb	71.647 %
Concentration per Run 3	74.549 %	73.384 %	0.015 ppb	-4.011 ppb	-0.933 ppb	1.295 ppb	-6.052 ppb	-15.418 ppb	71.927 %
Recovery Percentage 1			3.365 %	-2.609 %	-1.895 %	9.631 %	-5.991 %	-21.075 %	
Concentration RSD	0.4 %	2.9 %	19.4 %	66.2 %	53.0 %	35.2 %	2.4 %	23.2 %	0.2 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.026 ppb	0.000 ppb	0.098 ppb	22.917 ppb	0.008 ppb	-0.101 ppb	0.153 ppb	-0.485 ppb	81.509 %
Concentration per Run 1	-0.064 ppb	0.016 ppb	0.070 ppb	27.755 ppb	0.005 ppb	-0.074 ppb	0.259 ppb	-0.542 ppb	80.528 %
Concentration per Run 2	-0.015 ppb	-0.012 ppb	0.131 ppb	22.116 ppb	0.015 ppb	-0.154 ppb	0.090 ppb	-0.500 ppb	84.351 %
Concentration per Run 3	0.002 ppb	-0.006 ppb	0.092 ppb	18.879 ppb	0.005 ppb	-0.074 ppb	0.110 ppb	-0.413 ppb	79.647 %
Recovery Percentage 1	-0.511 %	-0.040 %	9.779 %	45.833 %	1.671 %	-5.043 %	15.298 %	-4.852 %	
Concentration RSD	133.5 %	3,752.3 %	31.9 %	19.6 %	67.2 %	45.7 %	60.1 %	13.6 %	3.1 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.115 ppb	0.056 ppb	0.001 ppb	81.309 %	0.051 ppb	0.005 ppb	80.949 %	-0.010 ppb	0.015 ppb
Concentration per Run 1	0.063 ppb	0.034 ppb	-0.006 ppb	80.839 %	0.060 ppb	0.005 ppb	78.887 %	-0.018 ppb	0.012 ppb
Concentration per Run 2	0.151 ppb	0.104 ppb	0.009 ppb	82.093 %	0.046 ppb	0.005 ppb	81.741 %	0.015 ppb	0.011 ppb
Concentration per Run 3	0.132 ppb	0.032 ppb	-0.001 ppb	80.995 %	0.048 ppb	0.005 ppb	82.220 %	-0.026 ppb	0.021 ppb
Recovery Percentage 1	22.989 %	1.130 %	0.144 %		12.833 %	2.368 %		-0.245 %	2.955 %
Concentration RSD	40.2 %	72.5 %	1,047.0 %	0.8 %	14.2 %	2.3 %	2.2 %	221.0 %	33.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	86.314 %	84.248 %	0.443 ppb	0.060 ppb	84.571 %
Concentration per Run 1	85.133 %	82.166 %	0.475 ppb	0.062 ppb	84.433 %
Concentration per Run 2	86.648 %	84.357 %	0.454 ppb	0.061 ppb	83.775 %
Concentration per Run 3	87.160 %	86.221 %	0.401 ppb	0.058 ppb	85.507 %
Recovery Percentage 1			44.326 %	6.028 %	
Concentration RSD	1.2 %	2.4 %	8.5 %	3.8 %	1.0 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 85 Analysis started at: 12/18/2021 3:05:49 AM
 Analysis label: CCV User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	75.990 %	76.718 %	63.547 ppb	5,932.302 ppb	5,970.414 ppb	62.871 ppb	5,884.304 ppb	5,804.897 ppb	84.063 %
Concentration per Run 1	76.298 %	76.923 %	62.683 ppb	5,853.719 ppb	5,993.826 ppb	60.493 ppb	5,861.604 ppb	5,885.978 ppb	84.201 %
Concentration per Run 2	75.499 %	79.538 %	63.739 ppb	5,732.271 ppb	5,803.264 ppb	63.494 ppb	5,714.927 ppb	5,361.796 ppb	84.836 %
Concentration per Run 3	76.174 %	73.692 %	64.220 ppb	6,210.917 ppb	6,114.154 ppb	64.625 ppb	6,076.381 ppb	6,166.916 ppb	83.151 %
Recovery Percentage 1			105.912 %	98.872 %	99.507 %	104.785 %	98.072 %	96.748 %	
Concentration RSD	0.6 %	3.8 %	1.2 %	4.2 %	2.6 %	3.4 %	3.1 %	7.0 %	1.0 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	62.716 ppb	62.049 ppb	61.457 ppb	6,138.087 ppb	62.266 ppb	63.605 ppb	63.084 ppb	61.813 ppb	81.382 %
Concentration per Run 1	61.992 ppb	61.889 ppb	58.957 ppb	6,214.276 ppb	63.083 ppb	65.984 ppb	65.317 ppb	62.265 ppb	78.968 %
Concentration per Run 2	61.127 ppb	59.753 ppb	59.606 ppb	5,959.012 ppb	60.675 ppb	62.570 ppb	59.993 ppb	59.983 ppb	84.673 %
Concentration per Run 3	65.029 ppb	64.506 ppb	65.808 ppb	6,240.972 ppb	63.039 ppb	62.259 ppb	63.941 ppb	63.192 ppb	80.504 %
Recovery Percentage 1	104.526 %	103.415 %	102.429 %	102.301 %	103.776 %	106.008 %	105.140 %	103.022 %	
Concentration RSD	3.3 %	3.8 %	6.2 %	2.5 %	2.2 %	3.2 %	4.4 %	2.7 %	3.6 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	61.198 ppb	61.594 ppb	58.874 ppb	79.759 %	61.955 ppb	62.265 ppb	79.321 %	62.657 ppb	59.873 ppb
Concentration per Run 1	62.434 ppb	59.401 ppb	57.291 ppb	79.537 %	62.791 ppb	63.119 ppb	77.529 %	62.193 ppb	59.701 ppb
Concentration per Run 2	58.415 ppb	63.925 ppb	58.961 ppb	80.007 %	61.623 ppb	61.709 ppb	80.229 %	62.417 ppb	59.708 ppb
Concentration per Run 3	62.747 ppb	61.456 ppb	60.371 ppb	79.732 %	61.450 ppb	61.966 ppb	80.206 %	63.360 ppb	60.210 ppb
Recovery Percentage 1	101.997 %	102.656 %	98.124 %		103.258 %	103.775 %		104.428 %	99.788 %
Concentration RSD	3.9 %	3.7 %	2.6 %	0.3 %	1.2 %	1.2 %	2.0 %	1.0 %	0.5 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	86.470 %	85.075 %	62.960 ppb	61.064 ppb	84.102 %
Concentration per Run 1	85.925 %	84.042 %	61.916 ppb	60.525 ppb	84.321 %
Concentration per Run 2	86.635 %	86.000 %	62.863 ppb	61.255 ppb	84.877 %
Concentration per Run 3	86.852 %	85.184 %	64.102 ppb	61.411 ppb	83.109 %
Recovery Percentage 1			104.934 %	101.773 %	
Concentration RSD	0.6 %	1.2 %	1.7 %	0.8 %	1.1 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 86 Analysis started at: 12/18/2021 3:10:42 AM
 Analysis label: LLCCV User name: ALPHALAB/Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	75.426 %	77.077 %	0.339 ppb	105.127 ppb	68.349 ppb	14.824 ppb	101.306 ppb	204.093 ppb	74.891 %
Concentration per Run 1	75.429 %	75.538 %	0.357 ppb	104.561 ppb	82.601 ppb	16.656 ppb	75.600 ppb	217.292 ppb	75.451 %
Concentration per Run 2	75.219 %	75.538 %	0.344 ppb	113.013 ppb	67.867 ppb	14.365 ppb	98.407 ppb	181.608 ppb	74.193 %
Concentration per Run 3	75.630 %	80.154 %	0.317 ppb	97.807 ppb	54.578 ppb	13.451 ppb	129.912 ppb	213.379 ppb	75.029 %
Recovery Percentage 1			67.892 %	105.127 %	97.641 %	148.239 %	101.306 %	204.093 %	
Concentration RSD	0.3 %	3.5 %	6.0 %	7.2 %	20.5 %	11.1 %	26.9 %	9.6 %	0.9 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	5.623 ppb	0.572 ppb	1.151 ppb	84.952 ppb	0.616 ppb	2.090 ppb	1.529 ppb	12.320 ppb	81.551 %
Concentration per Run 1	5.827 ppb	0.672 ppb	1.161 ppb	88.583 ppb	0.587 ppb	2.130 ppb	1.650 ppb	12.690 ppb	76.645 %
Concentration per Run 2	5.446 ppb	0.600 ppb	1.110 ppb	97.105 ppb	0.604 ppb	2.110 ppb	1.529 ppb	12.389 ppb	83.213 %
Concentration per Run 3	5.596 ppb	0.443 ppb	1.181 ppb	69.169 ppb	0.655 ppb	2.030 ppb	1.409 ppb	11.880 ppb	84.796 %
Recovery Percentage 1	112.463 %	57.180 %	115.073 %	169.905 %	123.123 %	104.502 %	152.919 %	123.195 %	
Concentration RSD	3.4 %	20.4 %	3.2 %	16.9 %	5.7 %	2.5 %	7.9 %	3.3 %	5.3 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.643 ppb	5.887 ppb	0.591 ppb	82.412 %	0.567 ppb	0.223 ppb	82.140 %	2.100 ppb	0.616 ppb
Concentration per Run 1	0.680 ppb	6.259 ppb	0.593 ppb	81.393 %	0.672 ppb	0.240 ppb	79.439 %	2.203 ppb	0.689 ppb
Concentration per Run 2	0.626 ppb	5.938 ppb	0.579 ppb	83.183 %	0.554 ppb	0.251 ppb	82.622 %	2.082 ppb	0.518 ppb
Concentration per Run 3	0.624 ppb	5.463 ppb	0.600 ppb	82.659 %	0.474 ppb	0.179 ppb	84.360 %	2.014 ppb	0.641 ppb
Recovery Percentage 1	128.682 %	117.739 %	118.195 %		141.694 %	111.716 %		52.499 %	123.201 %
Concentration RSD	5.0 %	6.8 %	1.8 %	1.1 %	17.6 %	17.3 %	3.0 %	4.6 %	14.3 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	85.962 %	84.353 %	0.974 ppb	0.630 ppb	86.287 %
Concentration per Run 1	84.672 %	82.962 %	0.988 ppb	0.679 ppb	86.449 %
Concentration per Run 2	86.325 %	84.865 %	0.992 ppb	0.606 ppb	86.540 %
Concentration per Run 3	86.889 %	85.233 %	0.943 ppb	0.605 ppb	85.872 %
Recovery Percentage 1			97.419 %	63.019 %	
Concentration RSD	1.3 %	1.4 %	2.8 %	6.8 %	0.4 %

Alpha ICPMSQ Full

12/18/2021 10:42:07 AM



Analysis index: 87 Analysis started at: 12/18/2021 3:15:34 AM
 Analysis label: CCB User name: ALPHALAB\Metals-Instrument

Category	6Li (STD AGD)	6Li (KED AGD)	9Be (STD AGD)	23Na (KED AGD)	24Mg (KED AGD)	27Al (KED AGD)	39K (KED AGD)	44Ca (KED AGD)	45Sc (STD AGD)
Concentration average	74.750 %	78.564 %	0.004 ppb	0.378 ppb	-1.356 ppb	-0.040 ppb	-17.902 ppb	-13.169 ppb	70.167 %
Concentration per Run 1	75.447 %	75.538 %	0.012 ppb	1.438 ppb	0.210 ppb	-0.494 ppb	-17.522 ppb	-15.637 ppb	70.395 %
Concentration per Run 2	76.251 %	81.077 %	-0.005 ppb	-1.110 ppb	-2.139 ppb	-0.205 ppb	-18.154 ppb	-23.737 ppb	69.523 %
Concentration per Run 3	72.552 %	79.077 %	0.004 ppb	0.806 ppb	-2.139 ppb	0.579 ppb	-18.029 ppb	-0.133 ppb	70.585 %
Recovery Percentage 1		0.731 %	0.378 %	-1.937 %	-0.400 %	-17.902 %	-13.169 %		
Concentration RSD	2.6 %	3.6 %	231.8 %	351.2 %	100.0 %	1,386.9 %	1.9 %	91.1 %	0.8 %

Category	51V (KED AGD)	52Cr (KED AGD)	55Mn (KED AGD)	57Fe (KED AGD)	59Co (KED AGD)	60Ni (KED AGD)	65Cu (KED AGD)	66Zn (KED AGD)	74Ge (KED AGD)
Concentration average	-0.012 ppb	-0.025 ppb	0.031 ppb	5.378 ppb	0.003 ppb	-0.016 ppb	0.072 ppb	-0.512 ppb	84.007 %
Concentration per Run 1	-0.015 ppb	-0.028 ppb	-0.067 ppb	4.959 ppb	0.005 ppb	-0.040 ppb	0.033 ppb	-0.507 ppb	81.297 %
Concentration per Run 2	-0.033 ppb	-0.019 ppb	0.037 ppb	3.370 ppb	0.000 ppb	-0.013 ppb	0.073 ppb	-0.497 ppb	85.325 %
Concentration per Run 3	0.013 ppb	-0.029 ppb	0.122 ppb	7.805 ppb	0.005 ppb	0.005 ppb	0.109 ppb	-0.534 ppb	85.400 %
Recovery Percentage 1	-0.236 %	-2.524 %	3.065 %	10.756 %	0.652 %	-0.792 %	7.152 %	-5.124 %	
Concentration RSD	197.2 %	21.7 %	309.1 %	41.8 %	86.7 %	142.9 %	53.0 %	3.7 %	2.8 %

Category	75As (KED AGD)	78Se (KED AGD)	88Sr (KED AGD)	103Rh (KED AGD)	107Ag (KED AGD)	111Cd (KED AGD)	115In (KED AGD)	121Sb (KED AGD)	137Ba (KED AGD)
Concentration average	0.084 ppb	-0.032 ppb	-0.007 ppb	83.578 %	0.009 ppb	0.003 ppb	81.330 %	-0.030 ppb	0.011 ppb
Concentration per Run 1	0.081 ppb	-0.101 ppb	0.001 ppb	82.596 %	0.011 ppb	0.005 ppb	79.257 %	-0.050 ppb	-0.007 ppb
Concentration per Run 2	0.094 ppb	-0.059 ppb	-0.011 ppb	84.349 %	0.007 ppb	-0.002 ppb	81.378 %	-0.014 ppb	0.020 ppb
Concentration per Run 3	0.076 ppb	0.064 ppb	-0.013 ppb	83.790 %	0.009 ppb	0.005 ppb	83.355 %	-0.024 ppb	0.020 ppb
Recovery Percentage 1	16.736 %	-0.639 %	-1.493 %		2.281 %	1.270 %		-0.738 %	2.218 %
Concentration RSD	11.2 %	268.0 %	104.4 %	1.1 %	19.5 %	145.2 %	2.5 %	63.3 %	141.9 %

Category	159Tb (KED AGD)	175Lu (KED AGD)	205Tl (KED AGD)	208Pb (KED AGD)	209Bi (KED AGD)
Concentration average	87.526 %	85.694 %	0.243 ppb	0.037 ppb	86.277 %
Concentration per Run 1	85.881 %	83.006 %	0.228 ppb	0.034 ppb	84.908 %
Concentration per Run 2	88.535 %	86.631 %	0.242 ppb	0.037 ppb	87.744 %
Concentration per Run 3	88.162 %	87.446 %	0.258 ppb	0.039 ppb	86.179 %
Recovery Percentage 1			24.303 %	3.676 %	
Concentration RSD	1.6 %	2.8 %	6.2 %	6.0 %	1.6 %



**Interference Check Solutions
(ICP-MS)**

Solution Component	Solution A Concentration (ug/L)	Solution AB Concentration (ug/L)
Al	20,000	20,000
Ca	60,000	60,000
Fe	50,000	50,000
Mg	20,000	20,000
Na	50,000	50,000
K	20,000	20,000
Mo	400	400
As	0.0	20
Cd	0.0	20
Cr	0.0	40
Co	0.0	40
Cu	0.0	40
Mn	0.0	40
Ni	0.0	40
Se	0.0	20
Ag	0.0	10
V	0.0	40
Zn	0.0	20

**LCS & MS Concentrations
(ICP-MS)**

Element	Liquid Concentration (mg/L)
Aluminum	2.00
Antimony	0.5
Arsenic	0.12
Barium	2.00
Beryllium	0.05
Cadmium	0.051
Calcium	10.0
Chromium	0.20
Cobalt	0.50
Copper	0.25
Iron	1.00
Lead	0.51
Magnesium	10.0
Manganese	0.50
Molybdenum	1.00
Nickel	0.50
Potassium	10.0
Selenium	0.12
Silver	0.05
Sodium	10.0
Thallium	0.12
Vanadium	0.50
Zinc	0.50

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D102-540
Certificate Issue Date: June 22, 2018
Expiration Date: January 31, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8160	6.36	3960 - 12400	4080 - 12200
Antimony	120	60.9	9.42	0.822 - 121	12.0 - 166
Arsenic	144	135	5.08	112 - 158	94.6 - 176
Barium	469	443	6.77	366 - 521	332 - 554
Beryllium	207	197	5.86	164 - 229	148 - 246
Boron	213	174	12.6	127 - 221	105 - 244
Cadmium	224	204	6.65	169 - 240	153 - 256
Calcium	5190	4830	9.12	3950 - 5700	3510 - 6150
Chromium	138	132	8.56	109 - 155	92.2 - 171
Cobalt	182	179	7.93	151 - 207	134 - 224
Copper	191	184	6.72	155 - 213	138 - 230
Iron	15000	14400	10.7	8770 - 20000	5120 - 23600
Lead	225	216	7.72	178 - 254	159 - 274
Magnesium	2570	2340	6.13	1780 - 2900	1460 - 3230
Manganese	331	323	6.71	266 - 380	242 - 404
Mercury	16.8	13.2	16.0	8.64 - 17.7	7.89 - 18.5
Molybdenum	193	175	2.39	141 - 209	125 - 226
Nickel	163	152	5.95	126 - 178	106 - 197
Potassium	2420	2050	6.31	1440 - 2660	1210 - 2890
Selenium	81.9	74.9	4.13	59.3 - 90.5	47.0 - 103
Silver	57.6	53.9	9.00	43.0 - 64.8	37.8 - 70.0
Sodium	161	149	12.1	111 - 188	57.7 - 241
Strontium	100	96.2	4.04	78.1 - 114	69.0 - 123
Thallium	253	232	3.54	188 - 276	168 - 296

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	146	134	10.8	106 - 163	79.5 - 189
Titanium	449	340	7.20	70.2 - 609	44.9 - 711
Uranium	114	113	7.10	85.5 - 140	71.9 - 153
Vanadium	180	172	8.85	137 - 207	126 - 218
Zinc	217	211	6.58	171 - 250	147 - 274

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8160	80.8	138	-	-
Antimony	120	60.9	50.8	135	-	-
Arsenic	144	135	93.8	184	-	-
Barium	469	443	94.5	158	-	-
Beryllium	207	197	95.0	148	-	-
Boron	213	174	81.8	107	-	-
Cadmium	224	204	91.3	199	-	-
Calcium	5190	4830	93.0	122	-	-
Chromium	138	132	95.5	172	-	-
Cobalt	182	179	98.4	140	-	-
Copper	191	184	96.3	183	-	-
Iron	15000	14400	95.6	133	-	-
Lead	225	216	96.2	204	-	-
Magnesium	2570	2340	91.2	122	-	-
Manganese	331	323	97.6	147	-	-
Mercury	16.8	13.2	78.3	128	-	-
Molybdenum	193	175	90.8	143	-	-
Nickel	163	152	93.1	185	-	-
Potassium	2420	2050	84.7	121	-	-
Selenium	81.9	74.9	91.5	163	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	57.6	53.9	93.6	150	-	-
Sodium	161	149	92.8	105	-	-
Strontium	100	96.2	96.2	90	-	-
Thallium	253	232	91.6	147	-	-
Tin	146	134	92.0	100	-	-
Titanium	449	340	75.6	93	-	-
Uranium	114	113	98.8	35	-	-
Vanadium	180	172	95.4	139	-	-
Zinc	217	211	97.0	180	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck




ISO/IEC GUIDE 34:2009

ISO/IEC 17025:2005



▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D105-540
Certificate Issue Date: March 19, 2019
Expiration Date: October 12, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8800	8.32	4600 - 13000	4470 - 13100
Antimony	282	147	7.70	6.17 - 289	28.2 - 366
Arsenic	155	143	6.34	119 - 168	100 - 186
Barium	439	415	5.37	343 - 488	311 - 519
Beryllium	192	179	2.78	149 - 210	134 - 224
Boron	216	160	7.08	113 - 208	96.1 - 238
Cadmium	61.5	56.2	0.528	46.6 - 65.9	42.2 - 70.3
Calcium	5190	4960	6.64	4090 - 5840	3610 - 6310
Chromium	104	101	4.75	83.2 - 118	70.5 - 131
Cobalt	196	189	0.500	158 - 219	141 - 236
Copper	65.0	63.1	2.65	53.1 - 73.1	47.3 - 78.9
Iron	15000	15700	8.94	10100 - 21300	6000 - 25400
Lead	126	125	4.77	103 - 146	89.3 - 160
Magnesium	2570	2410	6.26	1860 - 2970	1520 - 3310
Manganese	387	382	5.37	315 - 449	290 - 474
Mercury	7.76	7.61	13.7	5.53 - 9.69	4.57 - 10.7
Molybdenum	120	107	0.500	86.0 - 128	75.5 - 139
Nickel	117	108	0.514	89.5 - 127	75.7 - 141
Potassium	2420	2110	5.62	1500 - 2720	1260 - 2960
Selenium	84.6	77.9	7.10	61.8 - 94.0	49.2 - 107
Silver	34.6	34.3	8.34	27.8 - 40.9	23.6 - 45.1
Sodium	161	145	6.72	106 - 183	54.3 - 235
Strontium	104	104	3.95	85.1 - 123	74.8 - 133
Thallium	123	113	0.500	91.3 - 134	77.1 - 149

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	118	107	0.500	83.5 - 130	61.2 - 152
Titanium	512	421	5.80	114 - 728	0.00 - 854
Uranium	103	104	6.18	79.1 - 128	71.9 - 135
Vanadium	87.3	83.7	8.55	66.8 - 101	54.2 - 113
Zinc	251	240	3.98	194 - 285	168 - 312

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8800	87.1	193	-	-
Antimony	282	147	52.3	216	-	-
Arsenic	155	143	92.5	240	-	-
Barium	439	415	94.6	222	-	-
Beryllium	192	179	93.4	220	-	-
Boron	216	160	74.2	152	-	-
Cadmium	61.5	56.2	91.5	239	-	-
Calcium	5190	4960	95.6	175	-	-
Chromium	104	101	96.8	237	-	-
Cobalt	196	189	96.2	215	-	-
Copper	65.0	63.1	97.1	237	-	-
Iron	15000	15700	105	195	-	-
Lead	126	125	99.0	243	-	-
Magnesium	2570	2410	93.9	177	-	-
Manganese	387	382	98.7	215	-	-
Mercury	7.76	7.61	98.0	157	-	-
Molybdenum	120	107	89.4	216	-	-
Nickel	117	108	92.5	235	-	-
Potassium	2420	2110	87.2	181	-	-
Selenium	84.6	77.9	92.1	231	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
		mg/kg	%			%
Silver	34.6	34.3	99.3	216	-	-
Sodium	161	145	89.8	166	-	-
Strontium	104	104	99.9	148	-	-
Thallium	123	113	91.8	215	-	-
Tin	118	107	90.4	164	-	-
Titanium	512	421	82.2	157	-	-
Uranium	103	104	101	61	-	-
Vanadium	87.3	83.7	95.9	214	-	-
Zinc	251	240	95.5	234	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

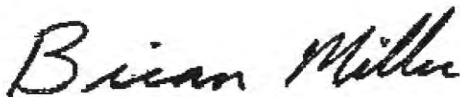
If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck




ISO/IEC 17025:2018

ISO/IEC 17025:2018



ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131913

ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131913

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D109-540
Certificate Issue Date: March 24, 2020
Expiration Date: October 03, 2023
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8130	2.54	3920 - 12300	4060 - 12200
Antimony	259	134	5.03	4.56 - 264	25.9 - 335
Arsenic	171	156	3.38	129 - 183	109 - 203
Barium	253	239	4.81	197 - 280	179 - 298
Beryllium	179	169	6.59	141 - 198	127 - 212
Boron	114	87.5	10.3	62.5 - 113	52.5 - 125
Cadmium	149	137	5.43	113 - 160	103 - 171
Calcium	5190	4760	3.48	3890 - 5640	3460 - 6070
Chromium	163	154	3.79	126 - 181	108 - 200
Cobalt	127	121	5.07	101 - 141	90.8 - 151
Copper	57.0	54.9	4.13	46.1 - 63.6	41.1 - 68.6
Iron	15000	14100	6.27	8470 - 19700	4920 - 23200
Lead	133	130	3.00	107 - 152	93.3 - 167
Magnesium	2570	2320	3.32	1760 - 2880	1440 - 3200
Manganese	277	269	2.67	221 - 317	199 - 340
Mercury	21.6	20.5	7.72	14.7 - 26.3	12.3 - 28.6
Molybdenum	108	95.4	2.61	76.4 - 114	66.9 - 124
Nickel	58.7	53.9	4.97	44.5 - 63.3	37.7 - 70.0
Potassium	2420	2020	3.06	1410 - 2630	1190 - 2850
Selenium	181	167	5.63	132 - 201	113 - 221
Silver	35.5	33.6	5.20	26.8 - 40.3	23.0 - 44.1
Sodium	161	133	2.76	95.1 - 171	46.5 - 220
Strontium	89.7	87.9	4.59	71.7 - 104	62.8 - 113
Thallium	121	112	5.19	90.3 - 133	76.1 - 147

Certified Reference Material

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	83.5	74.0	5.42	57.6 - 90.4	39.7 - 108
Titanium	474	333	7.17	48.6 - 617	46.3 - 620
Uranium	51.9	51.9	3.36	39.6 - 64.3	35.9 - 68.0
Vanadium	68.1	62.6	6.00	49.4 - 75.8	37.0 - 88.3
Zinc	165	158	2.34	128 - 188	111 - 205

▪ Certificate of Analysis ▪

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number ⁶	Recovery
		mg/kg	%			%
Aluminum	10100	8130	80.5	196	-	-
Antimony	259	134	51.8	217	-	-
Arsenic	171	156	91.3	243	-	-
Barium	253	239	94.3	230	-	-
Beryllium	179	169	94.6	223	-	-
Boron	114	87.5	76.7	150	-	-
Cadmium	149	137	91.8	249	-	-
Calcium	5190	4760	91.8	184	-	-
Chromium	163	154	94.4	245	-	-
Cobalt	127	121	95.3	221	-	-
Copper	57.0	54.9	96.2	243	-	-
Iron	15000	14100	93.9	199	-	-
Lead	133	130	97.7	251	-	-
Magnesium	2570	2320	90.1	182	-	-
Manganese	277	269	97.2	220	-	-
Mercury	21.6	20.5	94.7	172	-	-
Molybdenum	108	95.4	88.3	218	-	-
Nickel	58.7	53.9	91.8	242	-	-
Potassium	2420	2020	83.5	187	-	-
Selenium	181	167	92.2	235	-	-
Silver	35.5	33.6	94.5	222	-	-
Sodium	161	133	82.7	177	-	-
Strontium	89.7	87.9	98.0	151	-	-
Thallium	121	112	92.2	219	-	-
Tin	83.5	74.0	88.6	170	-	-
Titanium	474	333	70.3	157	-	-
Uranium	51.9	51.9	100	60	-	-
Vanadium	68.1	62.6	91.9	213	-	-
Zinc	165	158	95.8	238	-	-

▪ **Certificate of Analysis** ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.
2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:

$$U_{expanded} = k * \text{SQRT}((U_{char})^2 + (U_{homogen})^2 + (ULTS)^2 + (USTS)^2 + (URSS)^2)$$

Where:

 - $U_{expanded}$ = Expanded uncertainty.
 - k = Coverage factor.
 - U_{char} = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
 - $U_{homogen}$ = Standard uncertainty of the homogeneity assessment.
 - ULTS = Standard uncertainty associated with long-term stability.
 - USTS = Standard uncertainty associated with short-term (transport) stability.
 - URSS = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).
3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.
4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.
5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.
6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%) = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100**
 The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.
7. The **Reference Values** are equal to the mean recoveries for the parameters as determined in an interlaboratory round robin study. The **Reference Values** represent the expected performance for the analytes in this standard. ERA recommends using the **Reference Values** when assessing or evaluating your results.
8. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.
9. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck





Calculation of Method 6020 Metals

Aqueous Samples

The instrument will calculate the concentration ($\mu\text{g/L}$). This value is divided by 1000 to convert the units to mg/L . If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

$$\text{Result, mg/L} = C_s \times (1\text{mg}/1000\mu\text{g}) \times (\text{DF})$$

Where:

C_s = Concentration of sample ($\mu\text{g/L}$)

DF = Dilution Factor

Sample List Summary

12/18/2021 12:57:15 PM



Instrument Name	Serial Number
iCAP Q	03031R

LabBook	LabBook Path
WG1584574_MSQ121721.imexp	Application Data\Workspace\LabBooks

Index	Label	Survey runs	Main runs	Start time	User name
1	Rinse	1	3	12/17/2021 8:33:30 AM	ALPHALAB\Metals-Instrument
2	CAL LOT#M0304	1	3	12/17/2021 8:38:16 AM	ALPHALAB\Metals-Instrument
3	Blank CD ICPMSQ	1	3	12/17/2021 8:43:03 AM	ALPHALAB\Metals-Instrument
4	0.2/20 Cal	1	3	12/17/2021 8:47:55 AM	ALPHALAB\Metals-Instrument
5	1/100 Cal	1	3	12/17/2021 8:52:43 AM	ALPHALAB\Metals-Instrument
6	10/1000 Cal	1	3	12/17/2021 8:57:31 AM	ALPHALAB\Metals-Instrument
7	60/6000 Cal	1	3	12/17/2021 9:02:20 AM	ALPHALAB\Metals-Instrument
8	120/12000 Cal	1	3	12/17/2021 9:07:10 AM	ALPHALAB\Metals-Instrument
9	Cap on	1	3	12/17/2021 9:12:00 AM	ALPHALAB\Metals-Instrument
10	Wrong location	1	3	12/17/2021 9:16:52 AM	ALPHALAB\Metals-Instrument
11	Sr 200ppb	1	3	12/17/2021 9:21:44 AM	ALPHALAB\Metals-Instrument
12	ICV	1	3	12/17/2021 9:26:37 AM	ALPHALAB\Metals-Instrument
13	ICB	1	3	12/17/2021 9:31:27 AM	ALPHALAB\Metals-Instrument
14	LLCCV	1	3	12/17/2021 9:42:02 AM	ALPHALAB\Metals-Instrument
15	Cap on	1	3	12/17/2021 9:46:55 AM	ALPHALAB\Metals-Instrument
16	ICSA	1	3	12/17/2021 9:49:17 AM	ALPHALAB\Metals-Instrument
17	Rinse	1	3	12/17/2021 9:54:09 AM	ALPHALAB\Metals-Instrument
18	CCV	1	3	12/17/2021 9:58:55 AM	ALPHALAB\Metals-Instrument
19	CCB	1	3	12/17/2021 10:03:47 AM	ALPHALAB\Metals-Instrument
20	WG1582832-3D10 6020TL	1	3	12/17/2021 10:17:48 AM	ALPHALAB\Metals-Instrument
21	WG1582832-5D10 6020TL	1	3	12/17/2021 10:22:36 AM	ALPHALAB\Metals-Instrument
22	WG1582832-4D10 6020TL	1	3	12/17/2021 10:27:24 AM	ALPHALAB\Metals-Instrument
23	I2167147-05D10 6020TL	1	3	12/17/2021 10:32:12 AM	ALPHALAB\Metals-Instrument
24	I2166830-01D10 6020TL	1	3	12/17/2021 10:36:59 AM	ALPHALAB\Metals-Instrument
25	L2166830-03D10 6020TL	1	3	12/17/2021 10:41:48 AM	ALPHALAB\Metals-Instrument
26	I2166830-07D10 6020TL	1	3	12/17/2021 10:46:37 AM	ALPHALAB\Metals-Instrument
27	L2166830-09D10 6020TL	1	3	12/17/2021 10:51:27 AM	ALPHALAB\Metals-Instrument
28	I2166830-11D10 6020TL	1	3	12/17/2021 10:56:17 AM	ALPHALAB\Metals-Instrument
29	WG1582832-6D50 6020TL	1	3	12/17/2021 11:01:07 AM	ALPHALAB\Metals-Instrument
30	CCV	1	3	12/17/2021 11:05:55 AM	ALPHALAB\Metals-Instrument
31	CCB	1	3	12/17/2021 11:10:47 AM	ALPHALAB\Metals-Instrument
32	WG1583661-1 6020SL	1	3	12/17/2021 11:16:55 AM	ALPHALAB\Metals-Instrument
33	WG1583661-2D5 6020SL	1	3	12/17/2021 11:21:45 AM	ALPHALAB\Metals-Instrument
34	WG1583661-3D10 6020SL	1	3	12/17/2021 11:26:36 AM	ALPHALAB\Metals-Instrument
35	WG1583661-5D10 6020SL	1	3	12/17/2021 11:31:22 AM	ALPHALAB\Metals-Instrument
36	WG1583661-4 6020SL	1	3	12/17/2021 11:36:10 AM	ALPHALAB\Metals-Instrument
37	I2168430-01 6020SL	1	3	12/17/2021 11:40:57 AM	ALPHALAB\Metals-Instrument
38	L2168430-02 6020SL	1	3	12/17/2021 11:45:43 AM	ALPHALAB\Metals-Instrument
39	L2168430-03 6020SL	1	3	12/17/2021 11:50:32 AM	ALPHALAB\Metals-Instrument
40	L2168430-04 6020SL	1	3	12/17/2021 11:55:20 AM	ALPHALAB\Metals-Instrument
41	WG1583661-6D5 6020SL	1	3	12/17/2021 12:00:08 PM	ALPHALAB\Metals-Instrument
42	CCV	1	3	12/17/2021 12:04:56 PM	ALPHALAB\Metals-Instrument
43	CCB	1	3	12/17/2021 12:09:48 PM	ALPHALAB\Metals-Instrument
44	WG1582905-1 6020TL	1	3	12/17/2021 12:15:35 PM	ALPHALAB\Metals-Instrument
45	WG1582905-2D5 6020TL	1	3	12/17/2021 12:24:36 PM	ALPHALAB\Metals-Instrument
46	WG1582905-3D10 6020TL	1	3	12/17/2021 12:29:22 PM	ALPHALAB\Metals-Instrument
47	WG1582905-4D10 6020TL	1	3	12/17/2021 12:34:09 PM	ALPHALAB\Metals-Instrument
48	WG1582905-5D10 6020TL	1	3	12/17/2021 12:38:56 PM	ALPHALAB\Metals-Instrument
49	WG1582905-6D5 6020TL	1	3	12/17/2021 12:43:44 PM	ALPHALAB\Metals-Instrument
50	I2167788-03 6020TL	1	3	12/17/2021 12:48:32 PM	ALPHALAB\Metals-Instrument
51	L2168430-05 6020SL	1	3	12/17/2021 12:53:19 PM	ALPHALAB\Metals-Instrument
52	I2168430-06 6020SL	1	3	12/17/2021 12:58:08 PM	ALPHALAB\Metals-Instrument
53	L2168430-08 6020SL	1	3	12/17/2021 1:02:57 PM	ALPHALAB\Metals-Instrument
54	CCV	1	3	12/17/2021 1:07:46 PM	ALPHALAB\Metals-Instrument
55	CCB	1	3	12/17/2021 1:12:38 PM	ALPHALAB\Metals-Instrument
56	I2167575-05 6020TL	1	3	12/17/2021 1:20:30 PM	ALPHALAB\Metals-Instrument
57	L2166721-01 6020TL	1	3	12/17/2021 1:25:17 PM	ALPHALAB\Metals-Instrument
58	I2166721-02 6020TL	1	3	12/17/2021 1:30:05 PM	ALPHALAB\Metals-Instrument
59	I2166721-03 6020TL	1	3	12/17/2021 1:34:54 PM	ALPHALAB\Metals-Instrument
60	L2166721-04 6020TL	1	3	12/17/2021 1:39:42 PM	ALPHALAB\Metals-Instrument
61	L2167575-01 6020TL	1	3	12/17/2021 1:44:32 PM	ALPHALAB\Metals-Instrument
62	L2167575-02 6020TL	1	3	12/17/2021 1:49:21 PM	ALPHALAB\Metals-Instrument
63	L2167575-03 6020TL	1	3	12/17/2021 1:54:11 PM	ALPHALAB\Metals-Instrument

Sample List Summary

12/18/2021 12:57:15 PM



Index	Label	Survey runs	Main runs	Start time	User name
64	L2167575-04 6020TL	1	3	12/17/2021 1:58:58 PM	ALPHALAB\Metals-Instrument
65	L2167658-01 6020TL	1	3	12/17/2021 2:03:46 PM	ALPHALAB\Metals-Instrument
66	CCV	1	3	12/17/2021 2:08:33 PM	ALPHALAB\Metals-Instrument
67	CCB	1	3	12/17/2021 2:13:25 PM	ALPHALAB\Metals-Instrument
68	WG1584061-1 6020TL	1	3	12/17/2021 2:18:17 PM	ALPHALAB\Metals-Instrument
69	I2167788-01 6020TL	1	3	12/17/2021 2:23:05 PM	ALPHALAB\Metals-Instrument
70	WG1584061-2D5 6020TL	1	3	12/17/2021 2:29:57 PM	ALPHALAB\Metals-Instrument
71	I2167788-04 6020TL	1	3	12/17/2021 2:35:31 PM	ALPHALAB\Metals-Instrument
72	I2168430-01 6020TL	1	3	12/17/2021 2:40:19 PM	ALPHALAB\Metals-Instrument
73	I2168430-02 6020TL	1	3	12/17/2021 2:45:08 PM	ALPHALAB\Metals-Instrument
74	L2168430-04 6020TL	1	3	12/17/2021 2:49:56 PM	ALPHALAB\Metals-Instrument
75	L2168430-05 6020TL	1	3	12/17/2021 2:54:45 PM	ALPHALAB\Metals-Instrument
76	I2168430-06 6020TL	1	3	12/17/2021 2:59:34 PM	ALPHALAB\Metals-Instrument
77	I2168430-08 6020TL	1	3	12/17/2021 3:04:23 PM	ALPHALAB\Metals-Instrument
78	CCV	1	3	12/17/2021 3:09:13 PM	ALPHALAB\Metals-Instrument
79	CCB	1	3	12/17/2021 3:14:05 PM	ALPHALAB\Metals-Instrument
80	WG1584061-3D10 6020TL	1	3	12/17/2021 3:18:58 PM	ALPHALAB\Metals-Instrument
81	WG1584061-5D10 6020TL	1	3	12/17/2021 3:23:46 PM	ALPHALAB\Metals-Instrument
82	WG1584061-4 6020TL	1	3	12/17/2021 3:28:34 PM	ALPHALAB\Metals-Instrument
83	L2168543-01 6020TL	1	3	12/17/2021 3:33:22 PM	ALPHALAB\Metals-Instrument
84	I2167658-02 6020TL	1	3	12/17/2021 3:38:10 PM	ALPHALAB\Metals-Instrument
85	L2167658-03 6020TL	1	3	12/17/2021 3:42:59 PM	ALPHALAB\Metals-Instrument
86	L2167658-04 6020TL	1	3	12/17/2021 3:47:47 PM	ALPHALAB\Metals-Instrument
87	L2168106-01 6020TL	1	3	12/17/2021 3:52:37 PM	ALPHALAB\Metals-Instrument
88	I2168106-02 6020TL	1	3	12/17/2021 3:57:26 PM	ALPHALAB\Metals-Instrument
89	I2168430-08D5 6020TL	1	3	12/17/2021 4:02:16 PM	ALPHALAB\Metals-Instrument
90	CCV	1	3	12/17/2021 4:07:04 PM	ALPHALAB\Metals-Instrument
91	CCB	1	3	12/17/2021 4:11:57 PM	ALPHALAB\Metals-Instrument
92	L2168106-06 6020TL	1	3	12/17/2021 4:18:39 PM	ALPHALAB\Metals-Instrument
93	I2168543-05 6020TL	1	3	12/17/2021 4:23:27 PM	ALPHALAB\Metals-Instrument
94	I2168106-03 6020TL	1	3	12/17/2021 4:28:15 PM	ALPHALAB\Metals-Instrument
95	L2168106-04 6020TL	1	3	12/17/2021 4:33:04 PM	ALPHALAB\Metals-Instrument
96	I2168106-05 6020TL	1	3	12/17/2021 4:37:52 PM	ALPHALAB\Metals-Instrument
97	L2168543-02 6020TL	1	3	12/17/2021 4:42:41 PM	ALPHALAB\Metals-Instrument
98	I2168543-03 6020TL	1	3	12/17/2021 4:47:29 PM	ALPHALAB\Metals-Instrument
99	L2168543-04 6020TL	1	3	12/17/2021 4:52:17 PM	ALPHALAB\Metals-Instrument
100	I2168643-01 6020TL	1	3	12/17/2021 4:57:06 PM	ALPHALAB\Metals-Instrument
101	WG1584061-6D5 6020TL	1	3	12/17/2021 5:01:55 PM	ALPHALAB\Metals-Instrument
102	CCV	1	3	12/17/2021 5:06:44 PM	ALPHALAB\Metals-Instrument
103	CCB	1	3	12/17/2021 5:11:36 PM	ALPHALAB\Metals-Instrument
104	WG1583811-4 6020TL	1	3	12/17/2021 5:16:28 PM	ALPHALAB\Metals-Instrument
105	I2168735-05 6020TL	1	3	12/17/2021 5:21:17 PM	ALPHALAB\Metals-Instrument
106	L2168643-03 6020TL	1	3	12/17/2021 5:26:06 PM	ALPHALAB\Metals-Instrument
107	I2168643-02 6020TL	1	3	12/17/2021 5:30:56 PM	ALPHALAB\Metals-Instrument
108	I2168643-04 6020TL	1	3	12/17/2021 5:35:45 PM	ALPHALAB\Metals-Instrument
109	L2168643-05 6020TL	1	3	12/17/2021 5:40:35 PM	ALPHALAB\Metals-Instrument
110	L2168643-06 6020TL	1	3	12/17/2021 5:45:24 PM	ALPHALAB\Metals-Instrument
111	I2167658-02D10 6020TL	1	3	12/17/2021 5:50:12 PM	ALPHALAB\Metals-Instrument
112	I2168106-03D5 6020TL	1	3	12/17/2021 5:55:01 PM	ALPHALAB\Metals-Instrument
113	L2168106-04D5 6020TL	1	3	12/17/2021 5:59:50 PM	ALPHALAB\Metals-Instrument
114	CCV	1	3	12/17/2021 6:04:40 PM	ALPHALAB\Metals-Instrument
115	CCB	1	3	12/17/2021 6:09:32 PM	ALPHALAB\Metals-Instrument
116	WG1583811-1 6020TL	1	3	12/17/2021 6:16:00 PM	ALPHALAB\Metals-Instrument
117	WG1583819-1 6020SL	1	3	12/17/2021 6:20:48 PM	ALPHALAB\Metals-Instrument
118	I2168712-05 6020TL	1	3	12/17/2021 6:25:37 PM	ALPHALAB\Metals-Instrument
119	L2168712-10 6020TL	1	3	12/17/2021 6:30:26 PM	ALPHALAB\Metals-Instrument
120	L2166777-10 6020TL	1	3	12/17/2021 6:35:15 PM	ALPHALAB\Metals-Instrument
121	WG1583819-2D5 6020SL	1	3	12/17/2021 6:42:22 PM	ALPHALAB\Metals-Instrument
122	WG1583811-2D5 6020TL	1	3	12/17/2021 6:52:00 PM	ALPHALAB\Metals-Instrument
123	WG1583811-3D10 6020TL	1	3	12/17/2021 6:56:47 PM	ALPHALAB\Metals-Instrument
124	WG1583811-5d10 6020TL	1	3	12/17/2021 7:01:36 PM	ALPHALAB\Metals-Instrument
125	WG1583811-6D5 6020TL	1	3	12/17/2021 7:06:25 PM	ALPHALAB\Metals-Instrument
126	CCV	1	3	12/17/2021 7:11:15 PM	ALPHALAB\Metals-Instrument
127	CCB	1	3	12/17/2021 7:16:07 PM	ALPHALAB\Metals-Instrument
128	WG1583819-3D10 6020SL	1	3	12/17/2021 7:21:29 PM	ALPHALAB\Metals-Instrument
129	WG1583819-5D10 6020SL	1	3	12/17/2021 7:26:17 PM	ALPHALAB\Metals-Instrument
130	WG1583819-4D10 6020SL	1	3	12/17/2021 7:31:06 PM	ALPHALAB\Metals-Instrument
131	I2166848-12D10 6020SL	1	3	12/17/2021 7:35:55 PM	ALPHALAB\Metals-Instrument
132	WG1583819-6D50 6020SL	1	3	12/17/2021 7:40:44 PM	ALPHALAB\Metals-Instrument
133	I2168712-01 6020TL	1	3	12/17/2021 7:45:34 PM	ALPHALAB\Metals-Instrument
134	I2168712-02 6020TL	1	3	12/17/2021 7:50:23 PM	ALPHALAB\Metals-Instrument
135	L2167138-02 6020SL	1	3	12/17/2021 7:55:11 PM	ALPHALAB\Metals-Instrument
136	L2167143-02 6020SL	1	3	12/17/2021 8:00:01 PM	ALPHALAB\Metals-Instrument

Sample List Summary

12/18/2021 12:57:15 PM



Index	Label	Survey runs	Main runs	Start time	User name
137	L2167143-04 6020SL	1	3	12/17/2021 8:04:51 PM	ALPHALAB\Metals-Instrument
138	CCV	1	3	12/17/2021 8:09:40 PM	ALPHALAB\Metals-Instrument
139	CCB	1	3	12/17/2021 8:14:33 PM	ALPHALAB\Metals-Instrument

Sample List Summary

12/18/2021 10:42:48 AM



Instrument Name	Serial Number
iCAP Q	Undefined

LabBook	LabBook Path
WG1584574_MSQ121721B.imexp	_Application Data\Workspace\LabBooks

Index	Label	Survey runs	Main runs	Start time	User name
1	Rinse	1	3	12/17/2021 8:19:34 PM	ALPHALAB\Metals-Instrument
2	CAL LOT#M0304	1	3	12/17/2021 8:24:20 PM	ALPHALAB\Metals-Instrument
3	Blank WP ICPMSQ	1	3	12/17/2021 8:29:07 PM	ALPHALAB\Metals-Instrument
4	0.2/20 Cal	1	3	12/17/2021 8:34:00 PM	ALPHALAB\Metals-Instrument
5	1/100 Cal	1	3	12/17/2021 8:38:47 PM	ALPHALAB\Metals-Instrument
6	10/1000 Cal	1	3	12/17/2021 8:43:36 PM	ALPHALAB\Metals-Instrument
7	60/6000 Cal	1	3	12/17/2021 8:48:24 PM	ALPHALAB\Metals-Instrument
8	120/12000 Cal	1	3	12/17/2021 8:53:14 PM	ALPHALAB\Metals-Instrument
9	Sr 200ppb	1	3	12/17/2021 8:58:04 PM	ALPHALAB\Metals-Instrument
10	ICV	1	3	12/17/2021 9:02:56 PM	ALPHALAB\Metals-Instrument
11	ICB	1	3	12/17/2021 9:07:47 PM	ALPHALAB\Metals-Instrument
12	A1 0.2	1	3	12/17/2021 9:12:40 PM	ALPHALAB\Metals-Instrument
13	A1 1	1	3	12/17/2021 9:17:29 PM	ALPHALAB\Metals-Instrument
14	A1 3	1	3	12/17/2021 9:22:18 PM	ALPHALAB\Metals-Instrument
15	A1 10	1	3	12/17/2021 9:27:07 PM	ALPHALAB\Metals-Instrument
16	A1 50	1	3	12/17/2021 9:31:56 PM	ALPHALAB\Metals-Instrument
17	CCV	1	3	12/17/2021 9:36:45 PM	ALPHALAB\Metals-Instrument
18	CCB	1	3	12/17/2021 9:41:37 PM	ALPHALAB\Metals-Instrument
19	A1 3	1	3	12/17/2021 9:46:29 PM	ALPHALAB\Metals-Instrument
20	CCV	1	3	12/17/2021 9:51:18 PM	ALPHALAB\Metals-Instrument
21	CCB	1	3	12/17/2021 9:56:10 PM	ALPHALAB\Metals-Instrument
22	WG1583711-1D10 A2-6020T	1	3	12/17/2021 10:01:02 PM	ALPHALAB\Metals-Instrument
23	WG1583711-2D10 A2-6020T	1	3	12/17/2021 10:05:52 PM	ALPHALAB\Metals-Instrument
24	WG1583711-3D10 A2-6020T	1	3	12/17/2021 10:10:41 PM	ALPHALAB\Metals-Instrument
25	WG1583711-5D10 A2-6020T	1	3	12/17/2021 10:15:30 PM	ALPHALAB\Metals-Instrument
26	WG1583711-4D10 A2-6020T	1	3	12/17/2021 10:20:20 PM	ALPHALAB\Metals-Instrument
27	L2156432-01D10 A2-6020T	1	3	12/17/2021 10:25:09 PM	ALPHALAB\Metals-Instrument
28	WG1583711-6D50 A2-6020T	1	3	12/17/2021 10:29:59 PM	ALPHALAB\Metals-Instrument
29	I2156432-02D10 A2-6020T	1	3	12/17/2021 10:34:48 PM	ALPHALAB\Metals-Instrument
30	L2156432-03D10 A2-6020T	1	3	12/17/2021 10:39:37 PM	ALPHALAB\Metals-Instrument
31	I2156432-04D10 A2-6020T	1	3	12/17/2021 10:44:27 PM	ALPHALAB\Metals-Instrument
32	CCV	1	3	12/17/2021 10:49:16 PM	ALPHALAB\Metals-Instrument
33	CCB	1	3	12/17/2021 10:54:08 PM	ALPHALAB\Metals-Instrument
34	I2156432-05D10 A2-6020T	1	3	12/17/2021 10:59:01 PM	ALPHALAB\Metals-Instrument
35	I2156432-06D10 A2-6020T	1	3	12/17/2021 11:03:50 PM	ALPHALAB\Metals-Instrument
36	I2156432-07D10 A2-6020T	1	3	12/17/2021 11:08:40 PM	ALPHALAB\Metals-Instrument
37	I2156432-08D10 A2-6020T	1	3	12/17/2021 11:13:29 PM	ALPHALAB\Metals-Instrument
38	I2156432-09D10 A2-6020T	1	3	12/17/2021 11:18:19 PM	ALPHALAB\Metals-Instrument
39	I2156432-10D10 A2-6020T	1	3	12/17/2021 11:23:08 PM	ALPHALAB\Metals-Instrument
40	I2156432-11D10 A2-6020T	1	3	12/17/2021 11:27:58 PM	ALPHALAB\Metals-Instrument
41	L2156432-12D10 A2-6020T	1	3	12/17/2021 11:32:48 PM	ALPHALAB\Metals-Instrument
42	I2156432-13D10 A2-6020T	1	3	12/17/2021 11:37:38 PM	ALPHALAB\Metals-Instrument
43	I2156432-14D10 A2-6020T	1	3	12/17/2021 11:42:28 PM	ALPHALAB\Metals-Instrument
44	CCV	1	3	12/17/2021 11:47:18 PM	ALPHALAB\Metals-Instrument
45	CCB	1	3	12/17/2021 11:52:10 PM	ALPHALAB\Metals-Instrument
46	WG1583714-1D10 A2-6020T	1	3	12/17/2021 11:57:02 PM	ALPHALAB\Metals-Instrument
47	I2156432-15D10 A2-6020T	1	3	12/18/2021 12:01:52 AM	ALPHALAB\Metals-Instrument
48	I2156432-16D10 A2-6020T	1	3	12/18/2021 12:06:42 AM	ALPHALAB\Metals-Instrument
49	I2156432-17D10 A2-6020T	1	3	12/18/2021 12:11:32 AM	ALPHALAB\Metals-Instrument
50	I2156432-18D10 A2-6020T	1	3	12/18/2021 12:16:22 AM	ALPHALAB\Metals-Instrument
51	I2156432-19D10 A2-6020T	1	3	12/18/2021 12:21:12 AM	ALPHALAB\Metals-Instrument
52	L2156432-20D10 A2-6020T	1	3	12/18/2021 12:26:02 AM	ALPHALAB\Metals-Instrument
53	I2156432-22D10 A2-6020T	1	3	12/18/2021 12:30:52 AM	ALPHALAB\Metals-Instrument
54	I2156432-23D10 A2-6020T	1	3	12/18/2021 12:35:42 AM	ALPHALAB\Metals-Instrument
55	I2156432-24D10 A2-6020T	1	3	12/18/2021 12:40:32 AM	ALPHALAB\Metals-Instrument
56	CCV	1	3	12/18/2021 12:45:22 AM	ALPHALAB\Metals-Instrument
57	CCB	1	3	12/18/2021 12:50:14 AM	ALPHALAB\Metals-Instrument
58	WG1583714-2D10 A2-6020T	1	3	12/18/2021 12:55:07 AM	ALPHALAB\Metals-Instrument
59	WG1583714-3D10 A2-6020T	1	3	12/18/2021 12:59:57 AM	ALPHALAB\Metals-Instrument
60	WG1583714-5D10 A2-6020T	1	3	12/18/2021 1:04:47 AM	ALPHALAB\Metals-Instrument
61	WG1583714-4D10 A2-6020T	1	3	12/18/2021 1:09:37 AM	ALPHALAB\Metals-Instrument
62	I2156432-21D10 A2-6020T	1	3	12/18/2021 1:14:28 AM	ALPHALAB\Metals-Instrument
63	I2156432-25D10 A2-6020T	1	3	12/18/2021 1:19:18 AM	ALPHALAB\Metals-Instrument

Sample List Summary

12/18/2021 10:42:48 AM



Index	Label	Survey runs	Main runs	Start time	User name
64	I2156432-26D10 A2-6020T	1	3	12/18/2021 1:24:08 AM	ALPHALAB\Metals-Instrument
65	L2156432-27D10 A2-6020T	1	3	12/18/2021 1:28:59 AM	ALPHALAB\Metals-Instrument
66	I2156432-28D10 A2-6020T	1	3	12/18/2021 1:33:49 AM	ALPHALAB\Metals-Instrument
67	WG1583714-6D50 A2-6020T	1	3	12/18/2021 1:38:39 AM	ALPHALAB\Metals-Instrument
68	CCV	1	3	12/18/2021 1:43:29 AM	ALPHALAB\Metals-Instrument
69	CCB	1	3	12/18/2021 1:48:22 AM	ALPHALAB\Metals-Instrument
70	I2156432-29D10 A2-6020T	1	3	12/18/2021 1:53:14 AM	ALPHALAB\Metals-Instrument
71	I2156772-01D10 A2-6020T	1	3	12/18/2021 1:58:05 AM	ALPHALAB\Metals-Instrument
72	I2156772-02D10 A2-6020T	1	3	12/18/2021 2:02:55 AM	ALPHALAB\Metals-Instrument
73	I2156772-03D10 A2-6020T	1	3	12/18/2021 2:07:46 AM	ALPHALAB\Metals-Instrument
74	I2156772-04D10 A2-6020T	1	3	12/18/2021 2:12:36 AM	ALPHALAB\Metals-Instrument
75	I2156772-05D10 A2-6020T	1	3	12/18/2021 2:17:27 AM	ALPHALAB\Metals-Instrument
76	I2156772-06D10 A2-6020T	1	3	12/18/2021 2:22:17 AM	ALPHALAB\Metals-Instrument
77	L2156772-07D10 A2-6020T	1	3	12/18/2021 2:27:08 AM	ALPHALAB\Metals-Instrument
78	I2156772-08D10 A2-6020T	1	3	12/18/2021 2:31:58 AM	ALPHALAB\Metals-Instrument
79	I2156772-09D10 A2-6020T	1	3	12/18/2021 2:36:49 AM	ALPHALAB\Metals-Instrument
80	CCV	1	3	12/18/2021 2:41:39 AM	ALPHALAB\Metals-Instrument
81	CCB	1	3	12/18/2021 2:46:32 AM	ALPHALAB\Metals-Instrument
82	I2156772-10D10 A2-6020T	1	3	12/18/2021 2:51:24 AM	ALPHALAB\Metals-Instrument
83	CCV	1	3	12/18/2021 2:56:15 AM	ALPHALAB\Metals-Instrument
84	CCB	1	3	12/18/2021 3:01:07 AM	ALPHALAB\Metals-Instrument
85	CCV	1	3	12/18/2021 3:05:49 AM	ALPHALAB\Metals-Instrument
86	LLCCV	1	3	12/18/2021 3:10:42 AM	ALPHALAB\Metals-Instrument
87	CCB	1	3	12/18/2021 3:15:34 AM	ALPHALAB\Metals-Instrument



METALS ELN REPORT

Workgroup: WG1583811

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
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EPA 3005A	1:1 HNO3	tHNO321461 80043FC	1:1 HCl	tHCL214220 1331LF	METALS	METSPIKE2	IPS,FPS,MIXMETPSMS		IPS,FPS,MIX326	
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Additional Reagent/Std

Sample/Type	Digestion Date	Analyst	Sample Vol Ph ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2166777-10 WATER	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
L2168712-01 WATER	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
L2168712-02 WATER	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
L2168712-05 WATER	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
L2168712-10 WATER	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
L2168735-05 SAMP	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
WG1583811-1 BLANK	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	IFM215015115 9PC
WG1583811-2 LCS	12/16/21 14:52	Joseph Kay	50 <2	.5	12/16/21 14:52	10	95.0	12/16/21 17:52	50	
WG1583811-3 MS	12/16/21 14:52	Joseph Kay	50 <2	.5	12/16/21 14:52	10	95.0	12/16/21 17:52	50	
WG1583811-4 DUP	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
WG1583811-5 PS	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	
WG1583811-6 SERDIL	12/16/21 14:52	Joseph Kay	50 <2		12/16/21 14:52	10	95.0	12/16/21 17:52	50	

Workgroup: WG1583811

Reagent	Actual Volume	Units
1:1 Hydrochloric Acid (H	.5	ml
1:1 Nitric Acid (HNO ₃)	1	ml

Inorganic Data (Mercury Analysis)

Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-01
 Client ID : SI-PSA-RISB14_6-8_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : SOIL
 Analytical Method : 1,7470A
 Lab File ID : WG1584501.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 7470A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 09:15
 Date Received : 12/06/21
 Date Analyzed : 12/17/21 15:43
 Dilution Factor : 1
 Analyst : AC
 Instrument ID : NIC 3
 %Solids : NA
 Date Digested : 12/17/21
 Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-03
Client ID : SI-PSA-RISB20_5-7_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 10:20
Date Received : 12/06/21
Date Analyzed : 12/17/21 15:53
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-04
 Client ID : SI-PSA-RISBX01_5-7_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : SOIL
 Analytical Method : 1,7470A
 Lab File ID : WG1584501.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 7470A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 10:25
 Date Received : 12/06/21
 Date Analyzed : 12/17/21 15:56
 Dilution Factor : 1
 Analyst : AC
 Instrument ID : NIC 3
 %Solids : NA
 Date Digested : 12/17/21
 Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-06
Client ID : SI-PSA-RISB23_0-2_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 11:10
Date Received : 12/06/21
Date Analyzed : 12/17/21 16:00
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-08
 Client ID : SI-PSA-RISB04_1-3_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : SOIL
 Analytical Method : 1,7470A
 Lab File ID : WG1584501.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 7470A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 12:50
 Date Received : 12/06/21
 Date Analyzed : 12/17/21 16:10
 Dilution Factor : 1
 Analyst : AC
 Instrument ID : NIC 3
 %Solids : NA
 Date Digested : 12/17/21
 Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : L2166777-09
 Client ID : SI-PSA-RISB04_4-6_20211206
 Sample Location : YONKERS, NY
 Sample Matrix : SOIL
 Analytical Method : 1,7470A
 Lab File ID : WG1584501.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 7470A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : 12/06/21 12:55
 Date Received : 12/06/21
 Date Analyzed : 12/17/21 16:14
 Dilution Factor : 1
 Analyst : AC
 Instrument ID : NIC 3
 %Solids : NA
 Date Digested : 12/17/21
 Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	0.0025	0.0010	0.0005	



Form 1 METALS

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Lab ID : WG1584681-1
 Client ID : WG1584681-1BLANK
 Sample Location :
 Sample Matrix : SOIL
 Analytical Method : 1,7470A
 Lab File ID : WG1584501.pdf
 Sample Amount : 5ml
 Digestion Method : EPA 7470A

Lab Number : L2166777
 Project Number : 200131
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 12/17/21 15:37
 Dilution Factor : 1
 Analyst : AC
 Instrument ID : NIC 3
 %Solids : NA
 Date Digested : 12/17/21
 Date Extracted : 12/08/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.	Lab Number : L2166777
Project Name : EXCELSIOR BAG	Project Number : 200131
Lab ID : WG1584681-4	Date Collected : 12/06/21 09:15
Client ID : SI-PSA-RISB14_6-8_20211206DUP	Date Received : 12/06/21
Sample Location :	Date Analyzed : 12/17/21 15:50
Sample Matrix : SOIL	Dilution Factor : 1
Analytical Method : 1,7470A	Analyst : AC
Lab File ID : WG1584501.pdf	Instrument ID : NIC 3
Sample Amount : 5ml	%Solids : NA
Digestion Method : EPA 7470A	Date Digested : 12/17/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)										
	Lab ID	Date Analyzed:		True	Found	%R	True	Found	%R	Found	%R	Found	%R	
	R1514077-1	12/17/21 05:40					R1514077-3				R1514077-5			
Mercury		0.00300	0.0030	100		0.0050	0.00500	101		0.00490	99		0.00520	104

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Mercury				0.0050	0.00500	100	0.00490	97	0.00490	99

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Mercury				0.0050	0.00490	98	0.00500	101	0.00500	100

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Mercury				0.0050	0.00470	94	0.00470	95	0.00470	94

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 2A Initial and Continuing Calibration Verification

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)						
	True	Found	%R	True	Found	%R	Found	%R	Found	%R
Mercury				0.0050	0.00480	95	0.00460	93	0.00470	94

Acceptance Criteria:

ICV: 95-105% (Methods 200.7, 245.1)
 90-110% (Methods 200.8, 6010, 6020, 7470, 7471, 7474)
 85-115% (Method 1631)

CCV: 90-110% (Methods 200.7, 245.1, 6010, 6020, 7474)
 85-115% (Methods 200.8, 1631)
 80-120% (Methods 7470, 7471)



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration		Continuing Calibration				Preparation	
	Blank		Blank(s)				Blank	
Lab ID :	R1514077-2		R1514077-4	R1514077-6	R1514077-8		WG1584681-1	
Date Analyzed:	12/17/21 05:43		12/17/21 06:23	12/17/21 07:07	12/17/21 07:58		12/17/21 15:37	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Mercury	0.0000915	U	0.0000915	U	0.0000915	U	0.0005	U



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	Q	
Lab ID :			R1514077-10		R1514077-12		R1514077-14	
Date Analyzed:			12/17/21 08:38		12/17/21 09:17		12/17/21 09:57	
Mercury			0.0000915 U		0.0000915 U		0.0000915 U	



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	Q	
Lab ID :			R1514077-16		R1514077-18		R1514077-20	
Date Analyzed:			12/17/21 10:45		12/17/21 11:27		12/17/21 12:07	
Mercury			0.0000915 U		0.0000915 U		0.0000915 U	



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	Q	
Lab ID :			R1514077-22		R1514077-24		R1514077-26	
Date Analyzed:			12/17/21 12:47		12/17/21 13:30		12/17/21 14:12	
Mercury			0.0000915 U		0.0000915 U		0.0000915 U	



Form 3 Blanks

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3

Lab Number : L2166777
 Project Number : 200131

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	Q	
Lab ID :			R1514077-28		R1514077-30		R1514077-32	
Date Analyzed:			12/17/21 15:22		12/17/21 16:07		12/17/21 16:53	
Mercury			0.0000915 U		0.0000915 U		0.0000915 U	



Form 5a Matrix Spike

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Client Sample ID : SI-PSA-RISB14_6-8_20211206
Lab Sample ID : L2166777-01
Matrix Spike : WG1584681-3
Matrix Spike Dup :

Lab Number : L2166777
Project Number : 200131
Matrix : SOIL
MS Analysis Date : 12/17/21 15:47
MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample			Matrix Spike Duplicate			RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R			
Mercury, TCLP	ND	0.025	0.0228	91				80-120	20	



Form 6 Lab Duplicates

Client	: AKRF, Inc.	Lab Number	: L2166777
Project Name	: EXCELSIOR BAG	Project Number	: 200131
Client Sample ID	: SI-PSA-RISB14_6-8_20211206	Matrix	: SOIL
Lab Sample ID	: L2166777-01	Analysis Date	: 12/17/21 15:43
Dup Sample ID	: WG1584681-4	DUP Analysis Date	: 12/17/21 15:50

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Mercury, TCLP	ND	ND	NC	20



Form 7

Laboratory Control Sample

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Client Sample ID : NA
Lab Sample ID : WG1584681-2
Dup Sample ID :

Lab Number : L2166777
Project Number : 200131
Matrix : SOIL
LCS Analysis Date : 12/17/21 15:40
LCSD Analysis Date:

Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Mercury, TCLP	0.00500	0.00440	88.					80-120	20



Form 12 Preparation Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Matrix : SOIL

Lab Number : L2166777
Project Number : 200131
Prep Method : EPA 7470A

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2166777-01	12/17/21 12:46	-	5
L2166777-03	12/17/21 12:46	-	5
L2166777-04	12/17/21 12:46	-	5
L2166777-06	12/17/21 12:46	-	5
L2166777-08	12/17/21 12:46	-	5
L2166777-09	12/17/21 12:46	-	5
WG1584681-1	12/17/21 12:46	-	5
WG1584681-2	12/17/21 12:46	-	5
WG1584681-3	12/17/21 12:46	-	5
WG1584681-4	12/17/21 12:46	-	5



Form 13 Analysis Run Log

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Instrument ID : NIC 3
Start Date : 12/17/21 05:40

Lab Number : L2166777
Project Number : 200131
Analysis Method : 1,7470A
End Date : 12/17/21 16:53

Sample Number	Dilution Factor	Analysis Time	Mercury, TCLP																	
R1514077-1 ICV	1	05:40:13	X																	
R1514077-2 ICB	1	05:43:32	X																	
R1514077-3 CCV	1	06:19:55	X																	
R1514077-4 CCB	1	06:23:13	X																	
R1514077-5 CCV	1	07:03:52	X																	
R1514077-6 CCB	1	07:07:10	X																	
R1514077-7 CCV	1	07:43:33	X																	
R1514077-8 CCB	1	07:58:48	X																	
R1514077-9 CCV	1	08:35:05	X																	
R1514077-10 CCB	1	08:38:22	X																	
R1514077-11 CCV	1	09:14:39	X																	
R1514077-12 CCB	1	09:17:57	X																	
R1514077-13 CCV	1	09:54:15	X																	
R1514077-14 CCB	1	09:57:33	X																	
R1514077-15 CCV	1	10:42:05	X																	
R1514077-16 CCB	1	10:45:41	X																	
R1514077-17 CCV	1	11:23:38	X																	
R1514077-18 CCB	1	11:27:13	X																	
R1514077-19 CCV	1	12:03:32	X																	
R1514077-20 CCB	1	12:07:18	X																	
R1514077-21 CCV	1	12:43:38	X																	
R1514077-22 CCB	1	12:47:15	X																	
R1514077-23 CCV	1	13:25:37	X																	
R1514077-24 CCB	1	13:30:14	X																	
R1514077-25 CCV	1	14:06:32	X																	
R1514077-26 CCB	1	14:12:29	X																	
R1514077-27 CCV	1	15:19:09	X																	



Form 13 Analysis Run Log

Client : AKRF, Inc.
 Project Name : EXCELSIOR BAG
 Instrument ID : NIC 3
 Start Date : 12/17/21 05:40

Lab Number : L2166777
 Project Number : 200131
 Analysis Method : 1,7470A
 End Date : 12/17/21 16:53

Sample Number	Dilution Factor	Analysis Time	Mercury, TCPLP
R1514077-28 CCB	1	15:22:27	X
WG1584681-1 BLANK	1	15:37:09	X
WG1584681-2 LCS	1	15:40:27	X
L2166777-01	1	15:43:46	X
WG1584681-3 MS	1	15:47:04	X
WG1584681-4 DUP	1	15:50:22	X
L2166777-03	1	15:53:41	X
L2166777-04	1	15:56:58	X
L2166777-06	1	16:00:17	X
R1514077-29 CCV	1	16:03:35	X
R1514077-30 CCB	1	16:07:26	X
L2166777-08	1	16:10:44	X
L2166777-09	1	16:14:02	X
R1514077-31 CCV	1	16:43:49	X
R1514077-32 CCB	1	16:53:53	X





MERCURY by 7470A, 245.1 (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Mercury, Total	7439-97-6	0.0002	0.0000915	mg/l	80-120	20	75-125	20	20		28 days	1 - Plastic 500ml HNO3 preserved

*Please Note that the RL Information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
 Please Note that the Information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.*



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Date Created: 01/22/21
 Created By: Jason Hebert
 File: PM9837-1
 Page: 1

METALS by 7471B (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Mercury, Total	7439-97-6	0.08	0.05216	mg/kg	72-128		80-120	20	20		28 days	Metals Only-Glass 60mL/2oz unpreserv

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
 Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



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Title :
 Date : 12/17/2021
 Name :

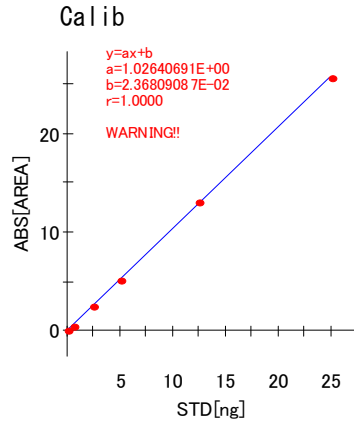
REVIEWED
 By dморisseau at 10:31 am, Dec 20, 2021

Method

STD
 HONH3C1 : 0. 0mL
 (1+1) H2SO4 : 0. 0mL
 10w/v% SnCl2 : 0. 3mL

SMP
 HONH3C1 : 0. 0mL
 (1+1) H2SO4 : 0. 0mL
 10w/v% SnCl2 : 0. 3mL

Measurement Time (sec) : 120sec



STD

No.	STD [ug/L]	SVOL [mL]	CVOL [mL]	DVOL [mL]	STD [ng]	AREA [ON]	MEAS [ng]	Dev [%]	M. TIME	Note
1	0.000	2.500	2.500	2.500	0.000	0.0325	0.0086	-	12/17/2021 05:19	AC, NIC 3
2	0.200	2.500	2.500	2.500	0.500	0.5299	0.4932	1.4	12/17/2021 05:22	AC, NIC 3
3	1.000	2.500	2.500	2.500	2.500	2.5630	2.4740	1.0	12/17/2021 05:26	AC, NIC 3
4	2.000	2.500	2.500	2.500	5.000	5.1182	4.9634	0.7	12/17/2021 05:29	AC, NIC 3
5	5.000	2.500	2.500	2.500	12.500	12.9571	12.6015	0.8	12/17/2021 05:32	AC, NIC 3
6	10.000	2.500	2.500	2.500	25.000	25.6421	24.9593	0.2	12/17/2021 05:36	AC, NIC 3

SMP

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
1	ICV	2.500	2.500	2.500	7.7270	7.5051	3.002	-	12/17/2021 05:40	AC, NIC 3
2	ICB	2.500	2.500	2.500	0.0376	0.0136	0.005	-	12/17/2021 05:43	AC, NIC 3
3	0.2 PPB	2.500	2.500	2.500	0.5123	0.4760	0.190	-	12/17/2021 05:46	AC, NIC 3
4	WG1584247-1 C	2.500	2.500	2.500	0.0377	0.0137	0.005	-	12/17/2021 05:50	AC, NIC 3
5	WG1584247-2 C	2.500	2.500	2.500	2.5610	2.4720	0.989	-	12/17/2021 05:53	AC, NIC 3
6	L2168264-02 C	2.500	2.500	2.500	0.0328	0.0089	0.004	-	12/17/2021 05:56	AC, NIC 3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
7	WG1584247-3 C	2.500	2.500	2.500	12.7872	12.4351	4.974	-	12/17/2021 06:00	AC, NIC 3
8	WG1584247-4 C	2.500	2.500	2.500	0.0196	-0.0040	-0.002	-	12/17/2021 06:03	AC, NIC 3
9	L2168264-03 C	2.500	2.500	2.500	0.0195	-0.0041	-0.002	-	12/17/2021 06:06	AC, NIC 3
10	L2168264-04 C	2.500	2.500	2.500	0.0395	0.0154	0.006	-	12/17/2021 06:10	AC, NIC 3
11	WG1584175-1 C	2.500	2.500	2.500	0.0103	-0.0130	-0.005	-	12/17/2021 06:13	AC, NIC 3
12	WG1584175-2 C	2.500	2.500	2.500	2.5251	2.4371	0.975	-	12/17/2021 06:16	AC, NIC 3
13	Check STD(5ug/L)	2.500	2.500	2.500	12.9365	12.5806	5.032	100.6	12/17/2021 06:19	AC, NIC 3
14	Check Blank	2.500	2.500	2.500	0.0213	-0.0023	-0.001	-	12/17/2021 06:23	AC, NIC 3
15	L2166648-01 C	2.500	2.500	2.500	0.0064	-0.0168	-0.007	-	12/17/2021 06:26	AC, NIC 3
16	WG1584175-3 C	2.500	2.500	2.500	12.7180	12.3677	4.947	-	12/17/2021 06:29	AC, NIC 3
17	WG1584175-4 C	2.500	2.500	2.500	-0.0164	-0.0390	-0.016	-	12/17/2021 06:33	AC, NIC 3
18	WG1583254-1 T	2.500	2.500	2.500	-0.0193	-0.0419	-0.017	-	12/17/2021 06:40	AC, NIC 3
19	WG1583254-2 T	2.500	2.500	2.500	2.3684	2.2844	0.914	-	12/17/2021 06:44	AC, NIC 3
20	WG1583254-3 T	2.500	2.500	2.500	2.3256	2.2427	0.897	-	12/17/2021 06:47	AC, NIC 3
21	L2166467-01 T	2.500	2.500	2.500	-0.0410	-0.0630	-0.025	-	12/17/2021 06:50	AC, NIC 3
22	L2166467-02 T	2.500	2.500	2.500	-0.0482	-0.0700	-0.028	-	12/17/2021 06:53	AC, NIC 3
23	XL2166664-02 T 5X	2.500	2.500	0.500	0.1580	0.1309	0.262	-	12/17/2021 06:57	AC, NIC 3
24	L2166664-02 T	2.500	2.500	2.500	0.8309	0.7865	0.315	-	12/17/2021 07:00	AC, NIC 3
25	Check STD(5ug/L)	2.500	2.500	2.500	12.6931	12.3435	4.937	98.7	12/17/2021 07:03	AC, NIC 3
26	Check Blank	2.500	2.500	2.500	-0.0056	-0.0285	-0.011	-	12/17/2021 07:07	AC, NIC 3
27	WG1583275-1 R	2.500	2.500	2.500	-0.0198	-0.0424	-0.017	-	12/17/2021 07:10	AC, NIC 3
28	WG1583275-2 R	2.500	2.500	2.500	2.3911	2.3065	0.923	-	12/17/2021 07:13	AC, NIC 3
29	L2166827-04 R	2.500	2.500	2.500	-0.0156	-0.0383	-0.015	-	12/17/2021 07:17	AC, NIC 3
30	WG1583275-3 R	2.500	2.500	2.500	12.0831	11.7492	4.700	-	12/17/2021 07:20	AC, NIC 3
31	WG1583275-4 R	2.500	2.500	2.500	0.0104	-0.0129	-0.005	-	12/17/2021 07:23	AC, NIC 3
32	L2166827-05 R	2.500	2.500	2.500	-0.0048	-0.0277	-0.011	-	12/17/2021 07:27	AC, NIC 3
33	WG1583275-5 R	2.500	2.500	2.500	11.5242	11.2046	4.482	-	12/17/2021 07:30	AC, NIC 3
34	WG1583275-6 R	2.500	2.500	2.500	-0.0436	-0.0655	-0.026	-	12/17/2021 07:33	AC, NIC 3
35	L2166827-02 R	2.500	2.500	2.500	-0.0240	-0.0465	-0.019	-	12/17/2021 07:36	AC, NIC 3
36	L2166827-03 R	2.500	2.500	2.500	-0.0292	-0.0515	-0.021	-	12/17/2021 07:40	AC, NIC 3
37	Check STD(5ug/L)	2.500	2.500	2.500	13.3931	13.0255	5.210	104.2	12/17/2021 07:43	AC, NIC 3
38	Check Blank	2.500	2.500	2.500	-0.0146	-0.0373	-0.015	-	12/17/2021 07:58	AC, NIC 3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
39	L2166827-06 R	2.500	2.500	2.500	-0.0281	-0.0504	-0.020	-	12/17/2021 08:02	AC, NIC 3
40	L2166827-07 R	2.500	2.500	2.500	-0.0213	-0.0438	-0.018	-	12/17/2021 08:05	AC, NIC 3
41	L2166827-08 R	2.500	2.500	2.500	-0.0101	-0.0329	-0.013	-	12/17/2021 08:08	AC, NIC 3
42	L2166827-09 R	2.500	2.500	2.500	0.0046	-0.0186	-0.007	-	12/17/2021 08:12	AC, NIC 3
43	L2166827-10 R	2.500	2.500	2.500	1.6563	1.5906	0.636	-	12/17/2021 08:15	AC, NIC 3
44	L2166827-11 R	2.500	2.500	2.500	1.4508	1.3904	0.556	-	12/17/2021 08:18	AC, NIC 3
45	L2166827-12 R	2.500	2.500	2.500	1.6317	1.5666	0.627	-	12/17/2021 08:21	AC, NIC 3
46	WG1584179-1 S	2.500	2.500	2.500	-0.0868	-0.1076	-0.043	-	12/17/2021 08:25	AC, NIC 3
47	WG1584179-2 S	2.500	2.500	2.500	2.3079	2.2255	0.890	-	12/17/2021 08:28	AC, NIC 3
48	L2168781-02 S	2.500	2.500	2.500	0.0326	0.0087	0.003	-	12/17/2021 08:31	AC, NIC 3
49	Check STD(5ug/L)	2.500	2.500	2.500	12.9042	12.5491	5.020	100.4	12/17/2021 08:35	AC, NIC 3
50	Check Blank	2.500	2.500	2.500	-0.0751	-0.0962	-0.038	-	12/17/2021 08:38	AC, NIC 3
51	WG1584179-3 S	2.500	2.500	2.500	11.7060	11.3818	4.553	-	12/17/2021 08:41	AC, NIC 3
52	WG1584179-4 S	2.500	2.500	2.500	0.0156	-0.0079	-0.003	-	12/17/2021 08:44	AC, NIC 3
53	L2168781-01 S	2.500	2.500	2.500	-0.1014	-0.1219	-0.049	-	12/17/2021 08:48	AC, NIC 3
54	L2168781-03 S	2.500	2.500	2.500	-0.0951	-0.1157	-0.046	-	12/17/2021 08:51	AC, NIC 3
55	L2168781-04 S	2.500	2.500	2.500	-0.1057	-0.1261	-0.050	-	12/17/2021 08:54	AC, NIC 3
56	L2168781-05 S	2.500	2.500	2.500	-0.0998	-0.1203	-0.048	-	12/17/2021 08:58	AC, NIC 3
57	L2168781-06 S	2.500	2.500	2.500	-0.1133	-0.1335	-0.053	-	12/17/2021 09:01	AC, NIC 3
58	WG1583812-1 T	2.500	2.500	2.500	1.4113	1.3519	0.541	-	12/17/2021 09:04	AC, NIC 3
59	XWG1583812-2 T	2.500	2.500	2.500	3.2115	3.1058	1.242	-	12/17/2021 09:08	AC, NIC 3
60	L2166777-10 T	2.500	2.500	2.500	0.3455	0.3135	0.125	-	12/17/2021 09:11	AC, NIC 3
61	Check STD(5ug/L)	2.500	2.500	2.500	12.5124	12.1674	4.867	97.3	12/17/2021 09:14	AC, NIC 3
62	Check Blank	2.500	2.500	2.500	-0.0804	-0.1014	-0.041	-	12/17/2021 09:17	AC, NIC 3
63	WG1583812-3 T	2.500	2.500	2.500	12.7978	12.4455	4.978	-	12/17/2021 09:21	AC, NIC 3
64	WG1583812-4 T	2.500	2.500	2.500	0.4265	0.3925	0.157	-	12/17/2021 09:24	AC, NIC 3
65	XL2168712-01 T	2.500	2.500	2.500	0.6126	0.5738	0.230	-	12/17/2021 09:27	AC, NIC 3
66	XL2168712-02 T	2.500	2.500	2.500	1.4490	1.3886	0.555	-	12/17/2021 09:31	AC, NIC 3
67	L2168712-05 T	2.500	2.500	2.500	0.3603	0.3280	0.131	-	12/17/2021 09:34	AC, NIC 3
68	L2168712-10 T	2.500	2.500	2.500	0.2307	0.2017	0.081	-	12/17/2021 09:37	AC, NIC 3
69	L2168735-05 T	2.500	2.500	2.500	0.2988	0.2680	0.107	-	12/17/2021 09:41	AC, NIC 3
70	WG1583812-2 T	2.500	2.500	2.500	3.3231	3.2145	1.286	-	12/17/2021 09:44	AC, NIC 3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
71	WG1581373-1 T	2.500	2.500	2.500	-0.1129	-0.1331	-0.053	-	12/17/2021 09:47	AC, NIC 3
72	WG1581373-2 T	2.500	2.500	2.500	2.2149	2.1348	0.854	-	12/17/2021 09:50	AC, NIC 3
73	Check STD(5ug/L)	2.500	2.500	2.500	12.6907	12.3411	4.936	98.7	12/17/2021 09:54	AC, NIC 3
74	Check Blank	2.500	2.500	2.500	-0.0835	-0.1044	-0.042	-	12/17/2021 09:57	AC, NIC 3
75	L2166879-08 T	2.500	2.500	2.500	-0.0776	-0.0987	-0.039	-	12/17/2021 10:08	AC, NIC 3
76	WG1581373-3 T	2.500	2.500	2.500	11.6681	11.3448	4.538	-	12/17/2021 10:12	AC, NIC 3
77	WG1581373-4 T	2.500	2.500	2.500	11.6549	11.3320	4.533	-	12/17/2021 10:15	AC, NIC 3
78	L2166882-06 T	2.500	2.500	2.500	1.9568	1.8834	0.753	-	12/17/2021 10:18	AC, NIC 3
79	WG1581373-5 T	2.500	2.500	2.500	13.8046	13.4264	5.371	-	12/17/2021 10:22	AC, NIC 3
80	WG1581373-6 T	2.500	2.500	2.500	13.6954	13.3200	5.328	-	12/17/2021 10:25	AC, NIC 3
81	L2166879-02 T	2.500	2.500	2.500	-0.0996	-0.1201	-0.048	-	12/17/2021 10:28	AC, NIC 3
82	L2166879-03 T	2.500	2.500	2.500	-0.0870	-0.1078	-0.043	-	12/17/2021 10:32	AC, NIC 3
83	HG2150171022LC	2.500	2.500	2.500	2.3455	2.2621	0.905	-	12/17/2021 10:35	AC, NIC 3
84	HG2150171022LC	2.500	2.500	2.500	2.4200	2.3347	0.934	-	12/17/2021 10:38	AC, NIC 3
85	Check STD(5ug/L)	2.500	2.500	2.500	12.5906	12.2436	4.897	97.9	12/17/2021 10:42	AC, NIC 3
86	Check Blank	2.500	2.500	2.500	-0.0800	-0.1010	-0.040	-	12/17/2021 10:45	AC, NIC 3
87	L2166879-04 T	2.500	2.500	2.500	-0.1064	-0.1267	-0.051	-	12/17/2021 10:48	AC, NIC 3
88	L2166879-05 T	2.500	2.500	2.500	-0.1064	-0.1267	-0.051	-	12/17/2021 10:52	AC, NIC 3
89	L2166879-06 T	2.500	2.500	2.500	-0.0961	-0.1167	-0.047	-	12/17/2021 10:55	AC, NIC 3
90	L2166879-07 T	2.500	2.500	2.500	-0.1023	-0.1227	-0.049	-	12/17/2021 10:58	AC, NIC 3
91	WG1584350-1 C	2.500	2.500	2.500	-0.0815	-0.1025	-0.041	-	12/17/2021 11:03	AC, NIC 3
92	WG1584350-2 C	2.500	2.500	2.500	2.3347	2.2516	0.901	-	12/17/2021 11:07	AC, NIC 3
93	L2166525-01 C	2.500	2.500	2.500	-0.0579	-0.0795	-0.032	-	12/17/2021 11:10	AC, NIC 3
94	WG1584350-3 C	2.500	2.500	2.500	12.0243	11.6919	4.677	-	12/17/2021 11:13	AC, NIC 3
95	WG1584350-4 C	2.500	2.500	2.500	-0.0527	-0.0744	-0.030	-	12/17/2021 11:17	AC, NIC 3
96	L2166525-02 C	2.500	2.500	2.500	-0.0605	-0.0820	-0.033	-	12/17/2021 11:20	AC, NIC 3
97	Check STD(5ug/L)	2.500	2.500	2.500	12.9778	12.6208	5.048	101.0	12/17/2021 11:23	AC, NIC 3
98	Check Blank	2.500	2.500	2.500	-0.0644	-0.0858	-0.034	-	12/17/2021 11:27	AC, NIC 3
99	L2166879-09 T	2.500	2.500	2.500	-0.0964	-0.1170	-0.047	-	12/17/2021 11:30	AC, NIC 3
100	L2166882-02 T	2.500	2.500	2.500	-0.1064	-0.1267	-0.051	-	12/17/2021 11:33	AC, NIC 3
101	L2166882-03 T	2.500	2.500	2.500	-0.1005	-0.1210	-0.048	-	12/17/2021 11:37	AC, NIC 3
102	L2166882-04 T	2.500	2.500	2.500	-0.1061	-0.1264	-0.051	-	12/17/2021 11:40	AC, NIC 3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
103	L2166882-05 T	2.500	2.500	2.500	-0.0627	-0.0842	-0.034	-	12/17/2021 11:43	AC, NIC 3
104	L2166882-07 T	2.500	2.500	2.500	-0.0953	-0.1159	-0.046	-	12/17/2021 11:47	AC, NIC 3
105	L2166882-08 T	2.500	2.500	2.500	-0.0884	-0.1092	-0.044	-	12/17/2021 11:50	AC, NIC 3
106	L2166882-09 T	2.500	2.500	2.500	-0.0981	-0.1186	-0.047	-	12/17/2021 11:53	AC, NIC 3
107	L2166882-10 T	2.500	2.500	2.500	-0.0993	-0.1198	-0.048	-	12/17/2021 11:56	AC, NIC 3
108	L2166882-11 T	2.500	2.500	2.500	-0.1004	-0.1209	-0.048	-	12/17/2021 12:00	AC, NIC 3
109	Check STD(5ug/L)	2.500	2.500	2.500	12.8847	12.5301	5.012	100.2	12/17/2021 12:03	AC, NIC 3
110	Check Blank	2.500	2.500	2.500	-0.0857	-0.1066	-0.043	-	12/17/2021 12:07	AC, NIC 3
111	L2166882-12 T	2.500	2.500	2.500	-0.0775	-0.0986	-0.039	-	12/17/2021 12:10	AC, NIC 3
112	WG1583660-1 S	2.500	2.500	2.500	-0.1160	-0.1361	-0.054	-	12/17/2021 12:13	AC, NIC 3
113	WG1583660-2 S	2.500	2.500	2.500	2.3865	2.3020	0.921	-	12/17/2021 12:17	AC, NIC 3
114	L2166881-05 S	2.500	2.500	2.500	-0.1056	-0.1260	-0.050	-	12/17/2021 12:20	AC, NIC 3
115	WG1583660-3 S	2.500	2.500	2.500	12.0536	11.7204	4.688	-	12/17/2021 12:23	AC, NIC 3
116	WG1583660-4 S	2.500	2.500	2.500	12.1058	11.7713	4.709	-	12/17/2021 12:27	AC, NIC 3
117	L2166881-02 S	2.500	2.500	2.500	-0.1102	-0.1304	-0.052	-	12/17/2021 12:30	AC, NIC 3
118	L2166881-07 S	2.500	2.500	2.500	-0.1067	-0.1270	-0.051	-	12/17/2021 12:33	AC, NIC 3
119	L2166881-09 S	2.500	2.500	2.500	-0.1138	-0.1339	-0.054	-	12/17/2021 12:37	AC, NIC 3
120	L2166881-11 S	2.500	2.500	2.500	-0.1084	-0.1287	-0.051	-	12/17/2021 12:40	AC, NIC 3
121	Check STD(5ug/L)	2.500	2.500	2.500	12.1151	11.7803	4.712	94.2	12/17/2021 12:43	AC, NIC 3
122	Check Blank	2.500	2.500	2.500	-0.0892	-0.1100	-0.044	-	12/17/2021 12:47	AC, NIC 3
123	L2167894-01 S	2.500	2.500	2.500	-0.0975	-0.1181	-0.047	-	12/17/2021 12:50	AC, NIC 3
124	L2167894-02 S	2.500	2.500	2.500	0.2055	0.1771	0.071	-	12/17/2021 12:53	AC, NIC 3
125	L2167894-03 S	2.500	2.500	2.500	-0.0936	-0.1143	-0.046	-	12/17/2021 12:57	AC, NIC 3
126	L2167894-04 S	2.500	2.500	2.500	-0.1125	-0.1327	-0.053	-	12/17/2021 13:00	AC, NIC 3
127	L2167894-05 S	2.500	2.500	2.500	-0.1083	-0.1286	-0.051	-	12/17/2021 13:03	AC, NIC 3
128	L2167894-06 S	2.500	2.500	2.500	-0.0285	-0.0508	-0.020	-	12/17/2021 13:07	AC, NIC 3
129	L2167894-07 S	2.500	2.500	2.500	-0.1052	-0.1256	-0.050	-	12/17/2021 13:10	AC, NIC 3
130	WG1583812-1 T	2.500	2.500	2.500	-0.1148	-0.1349	-0.054	-	12/17/2021 13:13	AC, NIC 3
131	WG1584235-1 T	2.500	2.500	2.500	-0.0928	-0.1135	-0.045	-	12/17/2021 13:19	AC, NIC 3
132	WG1584235-2 T	2.500	2.500	2.500	2.3044	2.2220	0.889	-	12/17/2021 13:22	AC, NIC 3
133	Check STD(5ug/L)	2.500	2.500	2.500	12.2051	11.8680	4.747	94.9	12/17/2021 13:25	AC, NIC 3
134	Check Blank	2.500	2.500	2.500	-0.0873	-0.1081	-0.043	-	12/17/2021 13:30	AC, NIC 3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
135	L2168861-08 T	2.500	2.500	2.500	-0.1101	-0.1303	-0.052	-	12/17/2021 13:33	AC, NIC 3
136	WG1584235-3 T	2.500	2.500	2.500	11.9009	11.5716	4.629	-	12/17/2021 13:36	AC, NIC 3
137	WG1584235-4 T	2.500	2.500	2.500	-0.1134	-0.1336	-0.053	-	12/17/2021 13:40	AC, NIC 3
138	WG1584547-1 C	2.500	2.500	2.500	-0.1145	-0.1346	-0.054	-	12/17/2021 13:43	AC, NIC 3
139	WG1584547-2 C	2.500	2.500	2.500	2.3192	2.2365	0.895	-	12/17/2021 13:46	AC, NIC 3
140	L2165479-02 C	2.500	2.500	2.500	-0.1181	-0.1381	-0.055	-	12/17/2021 13:50	AC, NIC 3
141	WG1584547-3 C	2.500	2.500	2.500	12.0596	11.7263	4.691	-	12/17/2021 13:53	AC, NIC 3
142	WG1584547-4 C	2.500	2.500	2.500	-0.1093	-0.1296	-0.052	-	12/17/2021 13:56	AC, NIC 3
143	L2165479-04 C	2.500	2.500	2.500	-0.1123	-0.1325	-0.053	-	12/17/2021 13:59	AC, NIC 3
144	L2168045-06 C	2.500	2.500	2.500	-0.1109	-0.1311	-0.052	-	12/17/2021 14:03	AC, NIC 3
145	Check STD(5ug/L)	2.500	2.500	2.500	12.0220	11.6896	4.676	93.5	12/17/2021 14:06	AC, NIC 3
146	Check Blank	2.500	2.500	2.500	-0.0836	-0.1045	-0.042	-	12/17/2021 14:12	AC, NIC 3

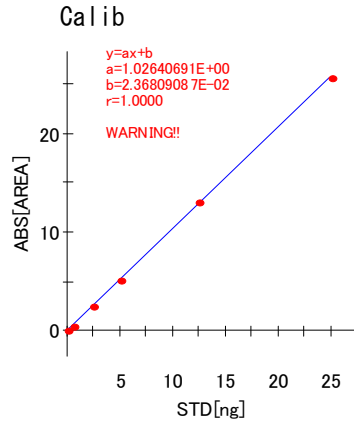
Title :
 Date : 12/17/2021
 Name :

Method

STD
 HONH3C1 : 0.0mL
 (1+1) H2SO4 : 0.0mL
 10w/v% SnCl2 : 0.3mL

SMP
 HONH3C1 : 0.0mL
 (1+1) H2SO4 : 0.0mL
 10w/v% SnCl2 : 0.3mL

Measurement Time (sec) : 120sec



STD

No.	STD [ug/L]	SVOL [mL]	CVOL [mL]	DVOL [mL]	STD [ng]	AREA [ON]	MEAS [ng]	Dev [%]	M-TIME	Note
1	0.000	2.500	2.500	2.500	0.000	0.0325	0.0086	-	12/17/2021 05:19	AC, NIC 3
2	0.200	2.500	2.500	2.500	0.500	0.5299	0.4932	1.4	12/17/2021 05:22	AC, NIC 3
3	1.000	2.500	2.500	2.500	2.500	2.5630	2.4740	1.0	12/17/2021 05:26	AC, NIC 3
4	2.000	2.500	2.500	2.500	5.000	5.1182	4.9634	0.7	12/17/2021 05:29	AC, NIC 3
5	5.000	2.500	2.500	2.500	12.500	12.9571	12.6015	0.8	12/17/2021 05:32	AC, NIC 3
6	10.000	2.500	2.500	2.500	25.000	25.6421	24.9593	0.2	12/17/2021 05:36	AC, NIC 3

SMP

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M-TIME	Note
1	WG1584508-1 S	2.500	2.500	2.500	-0.0807	-0.1017	-0.041	-	12/17/2021 14:46	NB, NIC3
2	WG1584508-2 S	2.500	2.500	2.500	2.2669	2.1855	0.874	-	12/17/2021 14:49	NB, NIC3
3	WG1584508-3 S	2.500	2.500	2.500	2.3355	2.2523	0.901	-	12/17/2021 14:52	NB, NIC3
4	L2168760-07 S	2.500	2.500	2.500	-0.0724	-0.0936	-0.037	-	12/17/2021 14:55	NB, NIC3
5	WG1584508-4 S	2.500	2.500	2.500	11.7882	11.4618	4.585	-	12/17/2021 14:59	NB, NIC3
6	WG1584508-5 S	2.500	2.500	2.500	11.8789	11.5502	4.620	-	12/17/2021 15:02	NB, NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
7	L2168760-03 S	2.500	2.500	2.500	-0.0870	-0.1078	-0.043	-	12/17/2021 15:05	NB,NIC3
8	L2168760-04 S	2.500	2.500	2.500	-0.0833	-0.1042	-0.042	-	12/17/2021 15:09	NB,NIC3
9	L2168760-10 S	2.500	2.500	2.500	-0.0916	-0.1123	-0.045	-	12/17/2021 15:12	NB,NIC3
10	L2168760-11 S	2.500	2.500	2.500	-0.1005	-0.1210	-0.048	-	12/17/2021 15:15	NB,NIC3
11	Check STD(5ug/L)	2.500	2.500	2.500	12.2465	11.9084	4.763	95.3	12/17/2021 15:19	NB,NIC3
12	Check Blank	2.500	2.500	2.500	-0.1070	-0.1273	-0.051	-	12/17/2021 15:22	NB,NIC3
13	L2168760-12 S	2.500	2.500	2.500	-0.0954	-0.1160	-0.046	-	12/17/2021 15:25	NB,NIC3
14	L2168760-14 S	2.500	2.500	2.500	-0.1135	-0.1337	-0.053	-	12/17/2021 15:29	NB,NIC3
15	WG1584681-1 C	2.500	2.500	2.500	-0.0952	-0.1158	-0.046	-	12/17/2021 15:37	NB,NIC3
16	WG1584681-2 C	2.500	2.500	2.500	2.2867	2.2048	0.882	-	12/17/2021 15:40	NB,NIC3
17	I2166777-01 C	2.500	2.500	2.500	-0.0923	-0.1130	-0.045	-	12/17/2021 15:43	NB,NIC3
18	WG1584681-3 C	2.500	2.500	2.500	11.7336	11.4087	4.563	-	12/17/2021 15:47	NB,NIC3
19	WG1584681-4 C	2.500	2.500	2.500	-0.1107	-0.1309	-0.052	-	12/17/2021 15:50	NB,NIC3
20	L2166777-03 C	2.500	2.500	2.500	-0.0999	-0.1204	-0.048	-	12/17/2021 15:53	NB,NIC3
21	L2166777-04 C	2.500	2.500	2.500	-0.1019	-0.1224	-0.049	-	12/17/2021 15:56	NB,NIC3
22	L2166777-06 C	2.500	2.500	2.500	-0.1103	-0.1305	-0.052	-	12/17/2021 16:00	NB,NIC3
23	Check STD(5ug/L)	2.500	2.500	2.500	11.9243	11.5944	4.638	92.8	12/17/2021 16:03	NB,NIC3
24	Check Blank	2.500	2.500	2.500	-0.0842	-0.1051	-0.042	-	12/17/2021 16:07	NB,NIC3
25	L2166777-08 C	2.500	2.500	2.500	-0.0801	-0.1011	-0.040	-	12/17/2021 16:10	NB,NIC3
26	L2166777-09 C	2.500	2.500	2.500	1.3261	1.2689	0.508	-	12/17/2021 16:14	NB,NIC3
27	WG1584191-1 T	2.500	2.500	2.500	-0.1075	-0.1278	-0.051	-	12/17/2021 16:17	NB,NIC3
28	WG1584191-2 T	2.500	2.500	2.500	2.3896	2.3050	0.922	-	12/17/2021 16:20	NB,NIC3
29	L2167172-02 T	2.500	2.500	2.500	-0.1079	-0.1282	-0.051	-	12/17/2021 16:23	NB,NIC3
30	WG1584191-3 T	2.500	2.500	2.500	10.8272	10.5256	4.210	-	12/17/2021 16:27	NB,NIC3
31	WG1584191-4 T	2.500	2.500	2.500	-0.1038	-0.1242	-0.050	-	12/17/2021 16:30	NB,NIC3
32	L2167172-01 T	2.500	2.500	2.500	-0.1023	-0.1227	-0.049	-	12/17/2021 16:33	NB,NIC3
33	L2167172-03 T	2.500	2.500	2.500	-0.0908	-0.1115	-0.045	-	12/17/2021 16:37	NB,NIC3
34	L2167172-04 T	2.500	2.500	2.500	-0.1071	-0.1274	-0.051	-	12/17/2021 16:40	NB,NIC3
35	Check STD(5ug/L)	2.500	2.500	2.500	12.1209	11.7860	4.714	94.3	12/17/2021 16:43	NB,NIC3
36	Check Blank	2.500	2.500	2.500	-0.0853	-0.1062	-0.042	-	12/17/2021 16:53	NB,NIC3
37	L2167172-05 T	2.500	2.500	2.500	-0.0784	-0.0995	-0.040	-	12/17/2021 16:57	NB,NIC3
38	L2167172-06 T	2.500	2.500	2.500	-0.0881	-0.1089	-0.044	-	12/17/2021 17:00	NB,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
39	L2167172-07 T	2.500	2.500	2.500	-0.1032	-0.1236	-0.049	-	12/17/2021 17:03	NB,NIC3
40	L2167172-08 T	2.500	2.500	2.500	-0.0934	-0.1141	-0.046	-	12/17/2021 17:07	NB,NIC3
41	L2167172-09 T	2.500	2.500	2.500	-0.1029	-0.1233	-0.049	-	12/17/2021 17:10	NB,NIC3
42	WG1583773-1 U	2.500	2.500	2.500	-0.0889	-0.1097	-0.044	-	12/17/2021 17:15	NB,NIC3
43	WG1583773-2 U	2.500	2.500	2.500	2.2860	2.2041	0.882	-	12/17/2021 17:18	NB,NIC3
44	L2168586-01 U	2.500	2.500	2.500	-0.0968	-0.1174	-0.047	-	12/17/2021 17:22	NB,NIC3
45	WG1583773-3 U	2.500	2.500	2.500	11.6647	11.3415	4.537	-	12/17/2021 17:25	NB,NIC3
46	WG1583773-4 U	2.500	2.500	2.500	-0.1097	-0.1299	-0.052	-	12/17/2021 17:28	NB,NIC3
47	Check STD(5ug/L)	2.500	2.500	2.500	12.1930	11.8562	4.742	94.8	12/17/2021 17:32	NB,NIC3
48	Check Blank	2.500	2.500	2.500	-0.1121	-0.1323	-0.053	-	12/17/2021 17:35	NB,NIC3
49	L2168586-02 U	2.500	2.500	2.500	-0.1150	-0.1351	-0.054	-	12/17/2021 17:39	NB,NIC3
50	WG1583773-5 U	2.500	2.500	2.500	11.2716	10.9585	4.383	-	12/17/2021 17:42	NB,NIC3
51	WG1583773-6 U	2.500	2.500	2.500	-0.1131	-0.1333	-0.053	-	12/17/2021 17:45	NB,NIC3
52	L2167083-01 U	2.500	2.500	2.500	-0.1186	-0.1386	-0.055	-	12/17/2021 17:49	NB,NIC3
53	L2167083-02 U	2.500	2.500	2.500	-0.1198	-0.1398	-0.056	-	12/17/2021 17:52	NB,NIC3
54	L2167083-03 U	2.500	2.500	2.500	-0.1142	-0.1343	-0.054	-	12/17/2021 17:55	NB,NIC3
55	L2167083-04 U	2.500	2.500	2.500	-0.1113	-0.1315	-0.053	-	12/17/2021 17:59	NB,NIC3
56	L2167083-05 U	2.500	2.500	2.500	-0.1164	-0.1365	-0.055	-	12/17/2021 18:02	NB,NIC3
57	L2167083-06 U	2.500	2.500	2.500	-0.1202	-0.1402	-0.056	-	12/17/2021 18:05	NB,NIC3
58	L2167083-07 U	2.500	2.500	2.500	-0.1186	-0.1386	-0.055	-	12/17/2021 18:08	NB,NIC3
59	Check STD(5ug/L)	2.500	2.500	2.500	12.2418	11.9038	4.762	95.2	12/17/2021 18:12	NB,NIC3
60	Check Blank	2.500	2.500	2.500	-0.1065	-0.1268	-0.051	-	12/17/2021 18:15	NB,NIC3
61	L2167083-08 U	2.500	2.500	2.500	-0.1107	-0.1309	-0.052	-	12/17/2021 18:19	NB,NIC3
62	L2167083-09 U	2.500	2.500	2.500	-0.1102	-0.1304	-0.052	-	12/17/2021 18:22	NB,NIC3
63	L2168670-01 U	2.500	2.500	2.500	-0.0494	-0.0712	-0.028	-	12/17/2021 18:25	NB,NIC3
64	L2168670-02 U	2.500	2.500	2.500	0.0098	-0.0135	-0.005	-	12/17/2021 18:28	NB,NIC3
65	L2168758-01 U	2.500	2.500	2.500	-0.0754	-0.0965	-0.039	-	12/17/2021 18:32	NB,NIC3
66	L2168758-02 U	2.500	2.500	2.500	-0.0986	-0.1191	-0.048	-	12/17/2021 18:35	NB,NIC3
67	WG1583822-1 S	2.500	2.500	2.500	-0.0661	-0.0875	-0.035	-	12/17/2021 18:38	NB,NIC3
68	WG1583822-2 S	2.500	2.500	2.500	2.3215	2.2387	0.895	-	12/17/2021 18:42	NB,NIC3
69	L2167138-02 S	2.500	2.500	2.500	-0.0703	-0.0916	-0.037	-	12/17/2021 18:45	NB,NIC3
70	WG1583822-3 S	2.500	2.500	2.500	11.9805	11.6492	4.660	-	12/17/2021 18:48	NB,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
71	Check STD(5ug/L)	2.500	2.500	2.500	12.0117	11.6796	4.672	93.4	12/17/2021 18:52	NB,NIC3
72	Check Blank	2.500	2.500	2.500	-0.0936	-0.1143	-0.046	-	12/17/2021 19:02	NB,NIC3
73	WG1583822-4 S	2.500	2.500	2.500	-0.0359	-0.0580	-0.023	-	12/17/2021 19:06	NB,NIC3
74	L2167143-02 S	2.500	2.500	2.500	-0.0602	-0.0817	-0.033	-	12/17/2021 19:09	NB,NIC3
75	L2167143-04 S	2.500	2.500	2.500	-0.0562	-0.0778	-0.031	-	12/17/2021 19:12	NB,NIC3
76	Check STD(5ug/L)	2.500	2.500	2.500	11.7226	11.3979	4.559	91.2	12/17/2021 19:15	NB,NIC3
77	Check Blank	2.500	2.500	2.500	-0.0931	-0.1138	-0.046	-	12/17/2021 19:19	NB,NIC3

MERCURY TRUE VALUE CRITERIA

ICV	3 ug/l
LCSW	1 ug/l
MS	1 ug/l
CCV	5 ug/l

As of 6/1/13, Mercury True Value criteria is as follows:

ICV	3 ug/l
LCSW	1 ug/l
MS(aq)	5 ug/l
MS(soil)	1 ug/l
CCV	10 ug/l

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D102-540
Certificate Issue Date: June 22, 2018
Expiration Date: January 31, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8160	6.36	3960 - 12400	4080 - 12200
Antimony	120	60.9	9.42	0.822 - 121	12.0 - 166
Arsenic	144	135	5.08	112 - 158	94.6 - 176
Barium	469	443	6.77	366 - 521	332 - 554
Beryllium	207	197	5.86	164 - 229	148 - 246
Boron	213	174	12.6	127 - 221	105 - 244
Cadmium	224	204	6.65	169 - 240	153 - 256
Calcium	5190	4830	9.12	3950 - 5700	3510 - 6150
Chromium	138	132	8.56	109 - 155	92.2 - 171
Cobalt	182	179	7.93	151 - 207	134 - 224
Copper	191	184	6.72	155 - 213	138 - 230
Iron	15000	14400	10.7	8770 - 20000	5120 - 23600
Lead	225	216	7.72	178 - 254	159 - 274
Magnesium	2570	2340	6.13	1780 - 2900	1460 - 3230
Manganese	331	323	6.71	266 - 380	242 - 404
Mercury	16.8	13.2	16.0	8.64 - 17.7	7.89 - 18.5
Molybdenum	193	175	2.39	141 - 209	125 - 226
Nickel	163	152	5.95	126 - 178	106 - 197
Potassium	2420	2050	6.31	1440 - 2660	1210 - 2890
Selenium	81.9	74.9	4.13	59.3 - 90.5	47.0 - 103
Silver	57.6	53.9	9.00	43.0 - 64.8	37.8 - 70.0
Sodium	161	149	12.1	111 - 188	57.7 - 241
Strontium	100	96.2	4.04	78.1 - 114	69.0 - 123
Thallium	253	232	3.54	188 - 276	168 - 296

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	146	134	10.8	106 - 163	79.5 - 189
Titanium	449	340	7.20	70.2 - 609	44.9 - 711
Uranium	114	113	7.10	85.5 - 140	71.9 - 153
Vanadium	180	172	8.85	137 - 207	126 - 218
Zinc	217	211	6.58	171 - 250	147 - 274

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8160	80.8	138	-	-
Antimony	120	60.9	50.8	135	-	-
Arsenic	144	135	93.8	184	-	-
Barium	469	443	94.5	158	-	-
Beryllium	207	197	95.0	148	-	-
Boron	213	174	81.8	107	-	-
Cadmium	224	204	91.3	199	-	-
Calcium	5190	4830	93.0	122	-	-
Chromium	138	132	95.5	172	-	-
Cobalt	182	179	98.4	140	-	-
Copper	191	184	96.3	183	-	-
Iron	15000	14400	95.6	133	-	-
Lead	225	216	96.2	204	-	-
Magnesium	2570	2340	91.2	122	-	-
Manganese	331	323	97.6	147	-	-
Mercury	16.8	13.2	78.3	128	-	-
Molybdenum	193	175	90.8	143	-	-
Nickel	163	152	93.1	185	-	-
Potassium	2420	2050	84.7	121	-	-
Selenium	81.9	74.9	91.5	163	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	57.6	53.9	93.6	150	-	-
Sodium	161	149	92.8	105	-	-
Strontium	100	96.2	96.2	90	-	-
Thallium	253	232	91.6	147	-	-
Tin	146	134	92.0	100	-	-
Titanium	449	340	75.6	93	-	-
Uranium	114	113	98.8	35	-	-
Vanadium	180	172	95.4	139	-	-
Zinc	217	211	97.0	180	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck




ISO/IEC GUIDE 34:2009

ISO/IEC 17025:2005



Page 3 of 3 Lot: D102-540

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D105-540
Certificate Issue Date: March 19, 2019
Expiration Date: October 12, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8800	8.32	4600 - 13000	4470 - 13100
Antimony	282	147	7.70	6.17 - 289	28.2 - 366
Arsenic	155	143	6.34	119 - 168	100 - 186
Barium	439	415	5.37	343 - 488	311 - 519
Beryllium	192	179	2.78	149 - 210	134 - 224
Boron	216	160	7.08	113 - 208	96.1 - 238
Cadmium	61.5	56.2	0.528	46.6 - 65.9	42.2 - 70.3
Calcium	5190	4960	6.64	4090 - 5840	3610 - 6310
Chromium	104	101	4.75	83.2 - 118	70.5 - 131
Cobalt	196	189	0.500	158 - 219	141 - 236
Copper	65.0	63.1	2.65	53.1 - 73.1	47.3 - 78.9
Iron	15000	15700	8.94	10100 - 21300	6000 - 25400
Lead	126	125	4.77	103 - 146	89.3 - 160
Magnesium	2570	2410	6.26	1860 - 2970	1520 - 3310
Manganese	387	382	5.37	315 - 449	290 - 474
Mercury	7.76	7.61	13.7	5.53 - 9.69	4.57 - 10.7
Molybdenum	120	107	0.500	86.0 - 128	75.5 - 139
Nickel	117	108	0.514	89.5 - 127	75.7 - 141
Potassium	2420	2110	5.62	1500 - 2720	1260 - 2960
Selenium	84.6	77.9	7.10	61.8 - 94.0	49.2 - 107
Silver	34.6	34.3	8.34	27.8 - 40.9	23.6 - 45.1
Sodium	161	145	6.72	106 - 183	54.3 - 235
Strontium	104	104	3.95	85.1 - 123	74.8 - 133
Thallium	123	113	0.500	91.3 - 134	77.1 - 149

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	118	107	0.500	83.5 - 130	61.2 - 152
Titanium	512	421	5.80	114 - 728	0.00 - 854
Uranium	103	104	6.18	79.1 - 128	71.9 - 135
Vanadium	87.3	83.7	8.55	66.8 - 101	54.2 - 113
Zinc	251	240	3.98	194 - 285	168 - 312

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8800	87.1	193	-	-
Antimony	282	147	52.3	216	-	-
Arsenic	155	143	92.5	240	-	-
Barium	439	415	94.6	222	-	-
Beryllium	192	179	93.4	220	-	-
Boron	216	160	74.2	152	-	-
Cadmium	61.5	56.2	91.5	239	-	-
Calcium	5190	4960	95.6	175	-	-
Chromium	104	101	96.8	237	-	-
Cobalt	196	189	96.2	215	-	-
Copper	65.0	63.1	97.1	237	-	-
Iron	15000	15700	105	195	-	-
Lead	126	125	99.0	243	-	-
Magnesium	2570	2410	93.9	177	-	-
Manganese	387	382	98.7	215	-	-
Mercury	7.76	7.61	98.0	157	-	-
Molybdenum	120	107	89.4	216	-	-
Nickel	117	108	92.5	235	-	-
Potassium	2420	2110	87.2	181	-	-
Selenium	84.6	77.9	92.1	231	-	-

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number	Recovery
		mg/kg	%			%
Silver	34.6	34.3	99.3	216	-	-
Sodium	161	145	89.8	166	-	-
Strontium	104	104	99.9	148	-	-
Thallium	123	113	91.8	215	-	-
Tin	118	107	90.4	164	-	-
Titanium	512	421	82.2	157	-	-
Uranium	103	104	101	61	-	-
Vanadium	87.3	83.7	95.9	214	-	-
Zinc	251	240	95.5	234	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.

Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

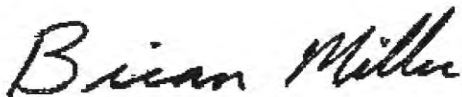
If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck




ISO/IEC 17025:2005

ISO/IEC 17025:2005



ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131912

ENVIRONMENTAL REFERENCE MATERIALS
CERTIFICATE NO. 131912

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No.: D109-540
Certificate Issue Date: March 24, 2020
Expiration Date: October 03, 2023
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8130	2.54	3920 - 12300	4060 - 12200
Antimony	259	134	5.03	4.56 - 264	25.9 - 335
Arsenic	171	156	3.38	129 - 183	109 - 203
Barium	253	239	4.81	197 - 280	179 - 298
Beryllium	179	169	6.59	141 - 198	127 - 212
Boron	114	87.5	10.3	62.5 - 113	52.5 - 125
Cadmium	149	137	5.43	113 - 160	103 - 171
Calcium	5190	4760	3.48	3890 - 5640	3460 - 6070
Chromium	163	154	3.79	126 - 181	108 - 200
Cobalt	127	121	5.07	101 - 141	90.8 - 151
Copper	57.0	54.9	4.13	46.1 - 63.6	41.1 - 68.6
Iron	15000	14100	6.27	8470 - 19700	4920 - 23200
Lead	133	130	3.00	107 - 152	93.3 - 167
Magnesium	2570	2320	3.32	1760 - 2880	1440 - 3200
Manganese	277	269	2.67	221 - 317	199 - 340
Mercury	21.6	20.5	7.72	14.7 - 26.3	12.3 - 28.6
Molybdenum	108	95.4	2.61	76.4 - 114	66.9 - 124
Nickel	58.7	53.9	4.97	44.5 - 63.3	37.7 - 70.0
Potassium	2420	2020	3.06	1410 - 2630	1190 - 2850
Selenium	181	167	5.63	132 - 201	113 - 221
Silver	35.5	33.6	5.20	26.8 - 40.3	23.0 - 44.1
Sodium	161	133	2.76	95.1 - 171	46.5 - 220
Strontium	89.7	87.9	4.59	71.7 - 104	62.8 - 113
Thallium	121	112	5.19	90.3 - 133	76.1 - 147

Certified Reference Material

▪ Certificate of Analysis ▪

Parameter	Certified Value ¹	Reference Value ⁷	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	83.5	74.0	5.42	57.6 - 90.4	39.7 - 108
Titanium	474	333	7.17	48.6 - 617	46.3 - 620
Uranium	51.9	51.9	3.36	39.6 - 64.3	35.9 - 68.0
Vanadium	68.1	62.6	6.00	49.4 - 75.8	37.0 - 88.3
Zinc	165	158	2.34	128 - 188	111 - 205

▪ Certificate of Analysis ▪

ANALYTICAL VERIFICATION

Parameter	Certified Value ¹	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery ⁵	n	SRM Number ⁶	Recovery
		mg/kg	%			%
Aluminum	10100	8130	80.5	196	-	-
Antimony	259	134	51.8	217	-	-
Arsenic	171	156	91.3	243	-	-
Barium	253	239	94.3	230	-	-
Beryllium	179	169	94.6	223	-	-
Boron	114	87.5	76.7	150	-	-
Cadmium	149	137	91.8	249	-	-
Calcium	5190	4760	91.8	184	-	-
Chromium	163	154	94.4	245	-	-
Cobalt	127	121	95.3	221	-	-
Copper	57.0	54.9	96.2	243	-	-
Iron	15000	14100	93.9	199	-	-
Lead	133	130	97.7	251	-	-
Magnesium	2570	2320	90.1	182	-	-
Manganese	277	269	97.2	220	-	-
Mercury	21.6	20.5	94.7	172	-	-
Molybdenum	108	95.4	88.3	218	-	-
Nickel	58.7	53.9	91.8	242	-	-
Potassium	2420	2020	83.5	187	-	-
Selenium	181	167	92.2	235	-	-
Silver	35.5	33.6	94.5	222	-	-
Sodium	161	133	82.7	177	-	-
Strontium	89.7	87.9	98.0	151	-	-
Thallium	121	112	92.2	219	-	-
Tin	83.5	74.0	88.6	170	-	-
Titanium	474	333	70.3	157	-	-
Uranium	51.9	51.9	100	60	-	-
Vanadium	68.1	62.6	91.9	213	-	-
Zinc	165	158	95.8	238	-	-

▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.
2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor ($k=2$). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:

$$U_{\text{expanded}} = k * \text{SQRT}((U_{\text{char}})^2 + (U_{\text{homogen}})^2 + (U_{\text{LTS}})^2 + (U_{\text{STS}})^2 + (U_{\text{RSS}})^2)$$

Where:

 - U_{expanded} = Expanded uncertainty.
 - k = Coverage factor.
 - U_{char} = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
 - U_{homogen} = Standard uncertainty of the homogeneity assessment.
 - U_{LTS} = Standard uncertainty associated with long-term stability.
 - U_{STS} = Standard uncertainty associated with short-term (transport) stability.
 - U_{RSS} = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).
3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.
4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.
5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.
6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%) = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100**
 The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.
7. The **Reference Values** are equal to the mean recoveries for the parameters as determined in an interlaboratory round robin study. The **Reference Values** represent the expected performance for the analytes in this standard. ERA recommends using the **Reference Values** when assessing or evaluating your results.
8. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.
9. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck







Calculation of 7470A Mercury

Calculate Mercury concentration from the daily calibration curve. The curve is generated utilizing a straight-line equation defined as:

$$A = k1 + k2C$$

Where:

A = Average peak height of the sample/standard integrations

C = Sample/Standard Concentration, $\mu\text{g/L}$

k1 = y-intercept

k2 = slope

The instrument will plot peak height against concentration ($\mu\text{g/L}$). The result is generated in $\mu\text{g/L}$. This value is divided by 1000 to convert the units to mg/L . If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

$$\text{Result, mg/L} = (\text{concentration, } \mu\text{g/L}) \times (1\text{mg}/1000\mu\text{g}) \times (\text{DF})$$





Calculation of 7471B Mercury

Calculate Mercury concentration from the daily calibration curve.
The curve is generated utilizing a straight-line equation defined as:

$$A = k1 + k2C$$

Where:

A = Average peak height of the sample/standard integrations

C = Sample/Standard Concentration, $\mu\text{g/L}$

k1 = y-intercept

k2 = slope

The instrument will plot peak height against concentration ($\mu\text{g/L}$).
The result is generated in $\mu\text{g/L}$. This value is divided by 1000 to convert the units to mg/L . If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

$$\text{Result, mg/L} = (\text{concentration, } \mu\text{g/L}) \times (1\text{mg}/1000\mu\text{g}) \times (\text{DF})$$

The result in mg/kg is calculated on a dry weight basis using the sample weight digested (Wt), the final volume of the digestate (FV), and the percent total solids (% TS).

$$\text{Result, mg/kg, wet} = ((\text{result, mg/L}) \times (\text{FV})) / \text{Wt}$$

$$\text{Result, mg/kg, dry wt} = (\text{Result, mg/kg wet}) / (\% \text{ TS})$$

No.	Sample No. NAME
1	1 STD
2	2 STD
3	3 STD
4	4 STD
5	5 STD
6	6 STD
1	7 ICV
2	8 ICB
3	9 0.2 PPB
4	10 WG1584247-1 C
5	11 WG1584247-2 C
6	12 L2168264-02 C
7	13 WG1584247-3 C
8	14 WG1584247-4 C
9	15 L2168264-03 C
10	16 L2168264-04 C
11	17 WG1584175-1 C
12	18 WG1584175-2 C
13	19 Check STD(5ug/L)
14	20 Check Blank
15	21 L2166648-01 C
16	22 WG1584175-3 C
17	23 WG1584175-4 C
18	24 WG1583254-1 T
19	25 WG1583254-2 T
20	26 WG1583254-3 T
21	27 L2166467-01 T
22	28 L2166467-02 T
23	29 XL2166664-02 T 5X
24	30 L2166664-02 T
25	31 Check STD(5ug/L)
26	32 Check Blank
27	33 WG1583275-1 R
28	34 WG1583275-2 R
29	35 L2166827-04 R
30	36 WG1583275-3 R
31	37 WG1583275-4 R
32	38 L2166827-05 R
33	39 WG1583275-5 R
34	40 WG1583275-6 R
35	41 L2166827-02 R
36	42 L2166827-03 R
37	43 Check STD(5ug/L)
38	44 Check Blank
39	45 L2166827-06 R
40	46 L2166827-07 R

REVIEWED

By dморisseau at 10:30 am, Dec 20, 2021

41	47 L2166827-08 R
42	48 L2166827-09 R
43	49 L2166827-10 R
44	50 L2166827-11 R
45	51 L2166827-12 R
46	52 WG1584179-1 S
47	53 WG1584179-2 S
48	54 L2168781-02 S
49	55 Check STD(5ug/L)
50	56 Check Blank
51	57 WG1584179-3 S
52	58 WG1584179-4 S
53	59 L2168781-01 S
54	60 L2168781-03 S
55	61 L2168781-04 S
56	62 L2168781-05 S
57	63 L2168781-06 S
58	64 WG1583812-1 T
59	65 XWG1583812-2 T
60	66 L2166777-10 T
61	67 Check STD(5ug/L)
62	68 Check Blank
63	69 WG1583812-3 T
64	70 WG1583812-4 T
65	71 XL2168712-01 T
66	72 XL2168712-02 T
67	73 L2168712-05 T
68	74 L2168712-10 T
69	75 L2168735-05 T
70	76 WG1583812-2 T
71	77 WG1581373-1 T
72	78 WG1581373-2 T
73	79 Check STD(5ug/L)
74	80 Check Blank
75	1 L2166879-08 T
76	2 WG1581373-3 T
77	3 WG1581373-4 T
78	4 L2166882-06 T
79	5 WG1581373-5 T
80	6 WG1581373-6 T
81	7 L2166879-02 T
82	8 L2166879-03 T
83	9 HG2150171022LC
84	10 HG2150171022LC
85	11 Check STD(5ug/L)
86	12 Check Blank
87	13 L2166879-04 T

88	14 L2166879-05 T
89	15 L2166879-06 T
90	16 L2166879-07 T
91	17 WG1584350-1 C
92	18 WG1584350-2 C
93	19 L2166525-01 C
94	20 WG1584350-3 C
95	21 WG1584350-4 C
96	22 L2166525-02 C
97	23 Check STD(5ug/L)
98	24 Check Blank
99	25 L2166879-09 T
100	26 L2166882-02 T
101	27 L2166882-03 T
102	28 L2166882-04 T
103	29 L2166882-05 T
104	30 L2166882-07 T
105	31 L2166882-08 T
106	32 L2166882-09 T
107	33 L2166882-10 T
108	34 L2166882-11 T
109	35 Check STD(5ug/L)
110	36 Check Blank
111	37 L2166882-12 T
112	38 WG1583660-1 S
113	39 WG1583660-2 S
114	40 L2166881-05 S
115	41 WG1583660-3 S
116	42 WG1583660-4 S
117	43 L2166881-02 S
118	44 L2166881-07 S
119	45 L2166881-09 S
120	46 L2166881-11 S
121	47 Check STD(5ug/L)
122	48 Check Blank
123	49 L2167894-01 S
124	50 L2167894-02 S
125	51 L2167894-03 S
126	52 L2167894-04 S
127	53 L2167894-05 S
128	54 L2167894-06 S
129	55 L2167894-07 S
130	56 WG1583812-1 T
131	57 WG1584235-1 T
132	58 WG1584235-2 T
133	59 Check STD(5ug/L)
134	60 Check Blank

135	61 L2168861-08 T
136	62 WG1584235-3 T
137	63 WG1584235-4 T
138	64 WG1584547-1 C
139	65 WG1584547-2 C
140	66 L2165479-02 C
141	67 WG1584547-3 C
142	68 WG1584547-4 C
143	69 L2165479-04 C
144	70 L2168045-06 C
145	71 Check STD(5ug/L)
146	72 Check Blank
1	11 WG1584508-1 S
2	12 WG1584508-2 S
3	13 WG1584508-3 S
4	14 L2168760-07 S
5	15 WG1584508-4 S
6	16 WG1584508-5 S
7	17 L2168760-03 S
8	18 L2168760-04 S
9	19 L2168760-10 S
10	20 L2168760-11 S
11	21 Check STD(5ug/L)
12	22 Check Blank
13	23 L2168760-12 S
14	24 L2168760-14 S
15	25 WG1584681-1 C
16	26 WG1584681-2 C
17	27 L2166777-01 C
18	28 WG1584681-3 C
19	29 WG1584681-4 C
20	30 L2166777-03 C
21	31 L2166777-04 C
22	32 L2166777-06 C
23	33 Check STD(5ug/L)
24	34 Check Blank
25	35 L2166777-08 C
26	36 L2166777-09 C
27	37 WG1584191-1 T
28	38 WG1584191-2 T
29	39 L2167172-02 T
30	40 WG1584191-3 T
31	41 WG1584191-4 T
32	42 L2167172-01 T
33	43 L2167172-03 T
34	44 L2167172-04 T
35	45 Check STD(5ug/L)

36	46 Check Blank
37	47 L2167172-05 T
38	48 L2167172-06 T
39	49 L2167172-07 T
40	50 L2167172-08 T
41	51 L2167172-09 T
42	52 WG1583773-1 U
43	53 WG1583773-2 U
44	54 L2168586-01 U
45	55 WG1583773-3 U
46	56 WG1583773-4 U
47	57 Check STD(5ug/L)
48	58 Check Blank
49	59 L2168586-02 U
50	60 WG1583773-5 U
51	61 WG1583773-6 U
52	62 L2167083-01 U
53	63 L2167083-02 U
54	64 L2167083-03 U
55	65 L2167083-04 U
56	66 L2167083-05 U
57	67 L2167083-06 U
58	68 L2167083-07 U
59	69 Check STD(5ug/L)
60	70 Check Blank
61	71 L2167083-08 U
62	72 L2167083-09 U
63	73 L2168670-01 U
64	74 L2168670-02 U
65	75 L2168758-01 U
66	76 L2168758-02 U
67	77 WG1583822-1 S
68	78 WG1583822-2 S
69	79 L2167138-02 S
70	80 WG1583822-3 S
71	1 Check STD(5ug/L)
72	2 Check Blank
73	3 WG1583822-4 S
74	4 L2167143-02 S
75	5 L2167143-04 S
76	6 Check STD(5ug/L)
77	7 Check Blank



METALS ELN REPORT

Workgroup: WG1584681

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 7470A	HNO3	21180219	H2SO4	20350169	METALS	METSPIKE	HG21501608	METSPIKE 07JH	HG21501608	259,320 07JH

Additional Reagent/Std		
K2O8S2		PS2150140941CH
KMnO4		PP2150161604CK
NaCl-NH2OH.HCl		HH2150141236AC
		ICV2150160741LC

Sample/Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Tclp Extract Date	Comments
L2166777-01 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
L2166777-03 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
L2166777-04 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
L2166777-06 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
L2166777-08 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
L2166777-09 SOIL	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
WG1584681-1 BLANK	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/08/21 03:33	
WG1584681-2 LCS	12/17/21 12:46	Lucy Cook	5	0.25	12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/08/21 03:33	
WG1584681-3 MS	12/17/21 12:46	Lucy Cook	5	1.25	12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	
WG1584681-4 DUP	12/17/21 12:46	Lucy Cook	5		12/17/21 12:46	5	95.0	12/17/21 14:46	25	12/09/21 06:22	

Workgroup: WG1584681

Reagent	Actual Volume	Units
Sulfuric Acid (H ₂ SO ₄)	1.25	ml
Nitric Acid (HNO ₃)	.625	ml
Potassium Permanganat	3.75	ml
Potassium Persulfate (K:	2	ml
NaCl-Hydroxylamine Hy	1.5	ml

Alpha Analytical, Inc.
 Facility: Westborough, MA
 Department: Organic Extractions
 Title: TCLP Extraction Logbook: Metals Only (Plastic Vessels Only)

ID: 27809
 Revision: 2
 Published Date:
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Balance ID: 28 WG#: 1580432
 TCLP Fluid Lot #: FA100120424A 1:1 HNO₃ Temp (°C) Unit ID#: 266 TCLP Fluid ID
 Prep Date: 12/02/21 pH on Date Used: 4.90 Lot#: 4HNS3120721 Max: 23.6 Min: 23.1 (circle one) #1 #2 DI

Sample Number (Plastic Tumble Vessels only)	Amnt. (g)	Fluid Vol. (mL)	Tumbler I.D.	Date On	Time On	Temp. C° On	Initials	Date Off	Time Off	Temp. C° Off	Initials	pH	1:1 HNO ₃ (preserved)	Filter Initials	Reduce Particle Size (check box)	Comments
Blank - L22169514JM	—	2000	16	12/08/21	6:53	22.4	ANT	12/08/21	14:53	22.6	GN	4.81	2.5mL	AD		max
L22166690-01	100															
-02																
-01																
-04																
-05																
-06																
-07																
-08																
-09																
-10																
L2166869-04	100	2000	13	12/08/21	5:45	22.4	ANT	12/08/21	21:45	22.4		4.89				
-05																
L22166977-01	100	2000	10	12/09/21	6:22	22.2	ANT	12/09/21	22:22	23.7	SD	5.18		ANT		# 285 max 23.9
-02																
-03																
-04																
-05																
-06																
-07																
-08																

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Batch Expires: 12/10/21 0533

Initials: _____
 Date: _____

Alpha Analytical, Inc.
 Facility: Westborough, MA
 Department: Organic Extractions
 Title: TCLP Extraction Logbook: Metals Only (Plastic Vessels Only)

ID: 27809
 Revision: 2
 Published Date:
 Page 8 of 101

Balance ID: 28 WGT: 1580908

TCLP Fluid Lot #: FITCER20421A Lot#: H103120821 Temp (°C) Max: 24.0 Min: 22.4 Unit ID#: 214

Prep Date: 12/04/21 pH on Date Used: 4.90 Acceptable Temp Range: 21°-25°C

TCLP Fluid ID (circle one) #1 #2 DI

Sample Number (Plastic Tumblers Vessels only)	Amt. (g)	Fluid Vol. (mL)	Tumbler I.D.	Date On	Time On	Temp. C° On	Initials	Date Off	Time Off	Temp. C° Off	Initials	pH	1:1 HNO ₃ (preserved)	Filter Initials	Reduce Particle Size (check box)	Comments
Blank 214952421	—	2000	7	12/8/21	22:20	22.4	GM	12/9/21	14:30	23.1	LF	4.85	2.5mL	GM		
12164218-03	100											4.87	2.5mL			
12167234-01												5.15				
12167506-01												5.78				
12166201-31												7.61				
-32												5.63				
-33												8.09				
-34												5.42				
-35												7.81				
-36												5.38				
-37												8.30				
-38												5.43				
-39												7.80				
-40												6.80				
12166797-09	100	2000	16	12/9/21	22:22	22.7	ANT	12/9/21	22:22	23.7	SD	5.37				# 185
12167156-01												5.05				
-01												4.93				
-05																

Sample Number	Date	Time	Initials	Amount (g)	DI Vol. (mL)	pH (i)	1N HCL Vol (mL)	1N HCL Lot #	pH (f)	Fluid Number	Comments
L2166525-01	12/01/21	12:19	ADT	5.0	96.5	>5	3.5mL	HCL11221	2.5	1	
-02											
L2166557-01											
-02											
L2166666-04											
L2167156-01											
L2166790-05											
L2166799-01											
-02											
-03											
-04											
-05											
-06											
-07											
-08											
L2166665-01		12:08									
-02											
-03											
L2166488-01											

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Initials: ADT
 Date: 12.01.21

ATTACHMENT D
DATA USABILITY SUMMARY REPORT

**DATA USABILITY SUMMARY REPORT – DUSR
DATA VALIDATION SUMMARY**

**INORGANIC ANALYSES
TCLP LEAD AND TCLP MERCURY BY ICP/ICPMS/CV**

**For Soil Samples Collected
December 06, 2021
Excelsior Bag Site – Yonkers, New York
Collected by AKRF, Inc.
Project No: 200131**

**SAMPLE DELIVERY GROUP NUMBER:
L2166777
BY ALPHA ANALYTICAL (ELAP #11148)**

SUBMITTED TO:

**Mr. John Sulich
AKRF, Inc.
34 South Broadway, Suite 300
White Plains, NY 10601**

Cc: Mr. Scott Caporizzo/AKRF, Inc.

December 26, 2021

**PREPARED BY:
Lori A. Beyer/President
L.A.B. Validation Corp.
14 West Point Drive
East Northport, NY 11731**

Lori A. Beyer

Excelsior Bag Site – Yonkers, New York
Data Usability Summary Report (Data Validation):
December 2021 Soil Sampling
TCLP Lead and TCLP Mercury

Table of Contents:

- Introduction
- Data Qualifier Definitions
- Sample Receipt

- 1.0 TCLP Metals by ICP/ICPMS/Cold Vapor SW846 Methods 1311/6010D/6020B/7470A
 - 1.1 Holding Times
 - 1.2 Calibration (Initial and Continuing Calibration Verifications)
 - 1.3 Blanks
 - 1.4 Spiked Sample Recovery
 - 1.5 Laboratory/Field Duplicates
 - 1.6 Laboratory Control Sample
 - 1.7 Sample Results Verification
 - 1.8 Overall Assessment of Data

APPENDICES:

- A. Chain of Custody Document and Sample Receipt Checklist
- B. Case Narrative
- C. Data Summary Form I's with Qualifications

Introduction:

A validation was performed on soil and the associated quality control (MS/MSD/Field Duplicate/Field Blank) for inorganic analysis for samples collected under chain of custody documentation by AKRF, Inc. and submitted to Alpha Analytical for subsequent analysis. This report contains the laboratory and validation results for the field samples itemized below with corresponding required analysis. The table below lists are required parameters for each sample location. The samples were analyzed by Alpha Analytical, utilizing SW846 Methods and submitted under NYSDEC ASP Category B equivalent deliverable requirements for the associated analytical methodologies employed.

The analytical testing and data review consisted of TCLP Lead, TCLP Mercury and Total Lead (Field Blank). The data was evaluated in accordance with EPA National Functional Guidelines for Inorganic Data Review and EPA Region II SOPs for Metals and in conjunction with the analytical methodologies for which the samples were analyzed, where applicable and relevant.

Note: Sample identification for SI-PSA-RISB22_0-2_20211206 was updated by AKRF, Inc after submission to the laboratory and therefore does not match the chain of custody document (SI-PSA-RISB13_0-2_20211206). An updated lab report was provided to include the correct sample identification and is incorporated into this report.

Sample ID	Lab ID	Analysis	Date Collected/Received
SI-PSA-RISB14 6-8 20211206	L2166777-01	TCLP Mercury	12/06/2021
SI-PSA-RISB19 4-6 20211206	L2166777-02	TCLP Lead	12/06/2021
SI-PSA-RISB20 5-7 20211206	L2166777-03	TCLP Mercury	12/06/2021
SI-PSA-RISBX01 5-6 20211206 [Field Duplicate of SI-PSA-RISB20 5-7 20211206]	L2166777-04	TCLP Mercury	12/06/2021
SI-PSA-RISB22 0-2 20211206	L2166777-05	TCLP Lead	12/06/2021
SI-PSA-RISB23 0-2 20211206	L2166777-06	TCLP Mercury	12/06/2021
SI-PSA-RISB12 5-7 20211206 [Plus, MS/MSD]	L2166777-07	TCLP Lead	12/06/2021
SI-PSA-RISB04 1-3 20211206	L2166777-08	TCLP Mercury	12/06/2021
SI-PSA-RISB04 4-6 20211206	L2166777-09	TCLP Mercury	12/06/2021
SI-PSA-FB01 20211206	L2166777-10	Total Lead	12/06/2021

Data Qualifier Definitions:

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- J+ - The result is an estimated quantity, but the result may be biased high.
(Equis qualified, JK)
- J- - The result is an estimated quantity, but the result may be biased low.
(Equis qualified, JL)
- D - Analyte concentration is from diluted analysis.

Sample Receipt:

The Chain of Custody document indicates that the samples were received at Alpha Analytical via laboratory courier upon completion of the sampling event. Sample login notes were generated. The cooler temperature for sample receipt was recorded upon receipt and determined to be acceptable (< 6 degrees C). The actual temperature (5.3 degrees C) is documented on the sample receipt checklist provided in Appendix A of this report. No problems and/or discrepancies were noted, consequently, the integrity of the samples has been assumed to be good

The data summary Form I's included in Appendix C and Equis deliverable includes all usable (qualified) and unusable (rejected) results for the samples identified above. The Form I's summarize the detailed narrative section of the report. All data validation qualifications have been reported on the Form I's and onto the excel spreadsheet for ease of review and verification.

NOTE:

L.A.B. Validation Corp. believes it is appropriate to note that the data validation criteria utilized for data evaluation is different than the method requirements utilized by the laboratory. Qualified data does not necessarily mean that the laboratory was non-compliant in the analysis that was performed.

1.0 TCLP Metals by ICP/ICPMS/Cold Vapor SW846 Methods 1311/6010D/6020B/7470A

The following method criteria were reviewed: holding times, CRDL standards, calibration, blanks, MS, laboratory duplicates, LCS, field duplicates and sample results verification. TCLP Lead and TCLP Mercury results are valid and usable with the appropriate qualifiers as notated in the following text:

1.1 Holding Times

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the technical holding time is exceeded, the data may not be considered valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimates, "J." The non-detects (sample quantitation limits) are required to be flagged as estimated, "J," or unusable, "R," if the holding times are grossly exceeded.

Samples were leached, digested, and analyzed for TCLP Lead and Mercury within the method required holding times and the technical holding times for data validation. No qualifications were applied based upon holding time criteria.

1.2 Calibration (Initial and Continuing Calibration Verifications)

Satisfactory instrument calibration is established to ensure that the instruments can produce acceptable quantitative data. An initial calibration demonstrates that the instruments can give acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instruments are giving satisfactory sequential performance and that the initial calibration is still valid.

The ICP/ICPMS and Mercury instruments were calibrated utilizing a minimum of a four-point curve in addition to blanks at the beginning of each analytical run. The calibrations have been determined to be acceptable, yielding correlation coefficients of 0.995 or greater. Acceptable tuning criteria was met (<5%) RSD for ICPMS associated with SI-PSA-FB01_20211206 for Total Lead.

Satisfactory instrument performance near the Contract Required Detection Limit (CRDL) was demonstrated by analyzing a CRDL standard at the beginning and end of the analytical run. The instruments were calibrated properly by analyzing the CRDL solution at the correct levels

and analyzed at the required frequency at the beginning and end of each analytical run. Acceptable ICV/CCV were analyzed.

All recoveries were within acceptable limits of 90-110 % for initial calibration pertaining to field samples. Continuing calibrations were within acceptable limits of 90-110% recovery of the true values for ICPMS/ICP and Mercury (80-120%) for all field samples. No qualifications were applied based upon ICV/CCV analysis.

1.3 Blanks

Quality assurance (QA) blanks, i.e., method, field or preparation blanks are prepared to identify any contamination that may have been introduced into the samples during sample preparation or field activity. Preparation blanks measure laboratory contamination. Field blanks measure cross-contamination of samples during field operations.

No target elements were detected in the TCLP, Method, ICBs, CCBs, or SI-PSA-FB01 20211206.

Blank Result	Sample Result	Action for Samples
>CRQL	>/=MDL but </= CRQL	Report CRQL value with a "U"
	>CRQL but <Blank Value	Report at level of Blank Result with a "U"
	>Blank Result but <10x the Blank Result	Use Professional Judgment to qualify results as estimated, "J."
>MDL but </=CRQL	Non-detect	No action
	>/=MDL but </=CRQL	Report CRQL value with a "U"
	>CRQL	Use Professional Judgment

1.4 Spiked Sample Recovery

The spike data are generated to determine the long terms precision and accuracy of the analytical method in various matrices.

Spike recoveries are qualified based on the criteria below:

Spike Sample Results	Action for Samples
Matrix Spike %R <30% Post-digestion Spike %R <75%	Qualify affect results that are >/= MDL as estimated low "J-" and affected non-detects as unusable, "R."
Matrix Spike %R <30% Post-digestion Spike %R >= 75%	Qualify affected results that are >/=MDL as estimated, "J" and affected non-detects as estimated, "UJ."
Matrix Spike %R 30-74% Post-digestion Spike %R <75%	Qualify affected results that are >/=MDL as estimated low "J-" and affected non-detects as estimated, "UJ."
Matrix Spike %R 30-74%	Qualify affected results that are >/=MDL as estimated, "J" and affected non-detects as estimated, "UJ."
Matrix Spike %R >125% Post-digestion Spike %R >125%	Qualify affected results that are >/=MDL as estimated high, "J+."
Matrix Spike %R >125% Post-digestion Spike %R </=125%	Qualify affected results that are >/=MDL as estimated, "J."
Matrix Spike %R <30% No post-digestion Spike performed	Qualify affected results that are >/=MDL as estimated low, "J-" and affected non-detects as unusable, "R."
Matrix Spike %R 30-74% No post-digestion Spike performed	Qualify affected results that are >/=MDL as estimated low, "J-" and non-detects as estimated, "UJ."
Matrix Spike %R >125% No post-digestion Spike performed	Qualify affected results that are >/=MDL as estimated high, "J+." Non-detects are not qualified.

MS/MSD analysis for TCLP Lead was conducted on SI-PSA-RISB12_5-7_20211206. Acceptable recovery in the MS (99%) and MSD (98%) was obtained. RPD (1%) was also acceptable. MS analysis for TCLP Mercury was performed on SI-PSA-RISB14_6-8_20211206. Recovery was acceptable at 91%.

1.5 Laboratory/Field Duplicates

The laboratory uses duplicate sample determinations to demonstrate acceptable method precision at the time of analysis. Duplicate analyses are also performed to generate data to determine the long-term precision of the analytical method on various matrices.

Laboratory Duplicates:

RPD >35% but <120% - J detected concentrations

RPD >=120% - R all detected and non-detected concentrations

Laboratory duplicate analysis for TCLP Mercury on SI-PSA-RISB14_6-8_20211206 yielded acceptable precision. TCLP Mercury was not detected in either analysis.

Field Duplicates:

Soil: RPD >=50% but <120% - qualify sample and duplicate results >= CRQL "J" where results are >5x the CRQL

RPD >= 120% - rejected sample and duplicate results >= CRQL "R"

TCLP Mercury Field Duplicate analysis on SI-PSA-RISB20_5-7_20211206 as SI-PSA-RISBX01_5-7_20211206 yielded acceptable precision. TCLP Mercury was not detected in the parent or field duplicate as confirmed by raw data.

1.6 Laboratory Control Sample

The laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous and solid Laboratory Control samples shall be analyzed for each analyte utilizing the same sample preparation, analytical methods and QA/QC procedures as employed for the samples.

Acceptable LCS was analyzed and reported for ICPMS and Mercury analysis. Associated LCS recoveries were within the acceptable limits for TCLP Lead (70-130%) and TCLP Mercury (80-120%).

1.7 Sample Results Verification

Analyte quantitation was generated in accordance with protocols. The raw data was verified and found within the linear range of each instrument used for quantitation. Raw data supplied corresponds with reported values. Verification of the calculations yielded reported results.

Soil samples for TCLP Lead (1311/6010D) and TCLP Mercury (1311/7470A) were analyzed by ICP/CV methods. SI-PSA-FB01_20211206 was analyzed by ICPMS Method 6020B for Total Lead. TCLP leachates were generated using TCLP Fluid #1 and an initial weight of 100g to a final volume of 2000mls which resulted in the inherent dilution of 20x as required by the methodology. Samples were analyzed undiluted as notated on the Form I's which was confirmed by laboratory digestion logs and analytical raw data.

1.8 Overall Assessment of Data

The data generated were of acceptable quality. Results are usable at the concentrations and dilutions presented in the validated Form I's.

Reviewer's Signature

Paul A. Bly Date 12/26/2021

**Appendix A
Chain of Custody Document
and Sample Receipt Checklist**

NEW YORK CHAIN OF CUSTODY
 Westborough, MA 01581
 8 Walkup Dr.
 TEL: 508-892-9220
 FAX: 508-892-9193

Mansfield, MA 02048
 320 Forbes Blvd
 TEL: 508-892-9220
 FAX: 508-892-9288

Service Centers
 Marlwell, NJ 07430: 35 Whitney Rd, Suite 5
 Albany, NY 12205: 14 Walker Way
 Tonawanda, NY 14159: 275 Cooper Ave, Suite 105

ALPHA Job # **1216677**

Date Rec'd in Lab **12/6/21**

Page **1** of **1**

Project Name: **Excelsior Bay**

Project Location: **Yonkers NY**

Project # **200131**

Project Manager: **Scott Caporizzo**

ALPHA Quote #:

Turn-Around Time

Standard: Rush (only if pre approved):

Due Date: # of Days:

Client Information
 Client: **AKRF**
 Address: **440 Park Ave S.**
NY NY
 Phone: **203-252-4015**
 Fax:
 Email: **Scaporizzo@akrf.com**

Deliverables
 ASP-A
 EQUS (1 File)
 Other

Regulatory Requirement
 NY TOGS
 AWQ Standards
 NY Restricted Use
 NY Unrestricted Use
 NYC Sewer Discharge

Disposal Site Information
 Please identify below location of applicable disposal facilities.
 Disposal Facility: NJ NY Other

Other project specific requirements/comments:
AKRF EQUS EDDS
 Please specify Metals or TAL.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS	Sample Filtration	Sample Specific Comments
		Date	Time					
66777-01	SI-PSA-RISB14-4-8-20211206	12/6/21	9:15	Soil	CB	TCLP Lead Total Heavy Metals	<input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do	
-02	SI-PSA-RISB19-4-6-20211206		9:40					
-03	SI-PSA-RISB20-5-7-20211206		10:20					
-04	SI-PSA-RISB01-5-7-20211206		10:25					
-05	SI-PSA-RISB13-0-2-20211206		10:55					
-06	SI-PSA-RISB23-0-2-20211206		11:10					
-07	SI-PSA-RISB12-5-7-20211206		11:40					
-08	SI-PSA-RISB04-1-3-20211206		12:50					MS/MSD
-09	SI-PSA-RISB04-4-6-20211206		12:55					
-10	SI-PSA-FB01-20211206		12:00					

Preservative Code:
 A = None
 B = HCl
 C = HNO₃
 D = H₂SO₄
 E = NaOH
 F = MeOH
 G = NaHSO₄
 H = Na₂S₂O₈
 K/E = 2n AcNaOH
 O = Other

Container Code:
 P = Plastic
 A = Amber Glass
 V = Vial
 G = Glass
 B = Bacteria Cup
 C = Cube
 O = Other
 E = Encore
 D = BOD Bottle

Westboro: Certification No: MA935
 Mansfield: Certification No: MA015

Relinquished By: **Chaire Boudier**
 WASHINGTON
 12/6/21 15:00

Received By: **WASHINGTON**
 12/6/21 15:43

Container Type: **A A P**
 Preservative: **A A C**

Date/Time: **12/6/21 13:43**
12/6/21 15:00
12/6/21 17:20

Form No: 01-25 HC (rev. 30-Sept-2013)



Sample Delivery Group Summary

Alpha Job Number : L2166777

Received : 06-DEC-2021

Account Name : AKRF, Inc.

Reviewer : Craig Green

Project Number : 200131

Project Name : EXCELSIOR BAG

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	5.3	

Condition Information

- | | |
|--|-----|
| 1) All samples on COC received? | YES |
| 2) Extra samples received? | NO |
| 3) Are there any sample container discrepancies? | NO |
| 4) Are there any discrepancies between sample labels & COC? | NO |
| 5) Are samples in appropriate containers for requested analysis? | YES |
| 6) Are samples properly preserved for requested analysis? | YES |
| 7) Are samples within holding time for requested analysis? | YES |
| 8) All sampling equipment returned? | NA |

Volatile Organics/VPH

- | | |
|--|----|
| 1) Reagent Water Vials Frozen by Client? | NA |
|--|----|

**Appendix B
Case Narrative**

Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: EXCELSIOR BAG
Project Number: 200131

Lab Number: L2166777
Report Date: 12/21/21

Case Narrative (continued)

Report Revision

December 21, 2021: The Client ID was amended on L2166777-05.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: *Cristen Walker*

Report Date: 12/21/21

Title: Technical Director/Representative

JOT 12/26/21



**Appendix C
Data Summary Form I's
With Qualifications**

Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-02
Client ID : SI-PSA-RISB19_4-6_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,6010D
Lab File ID : WG1585416.pdf
Sample Amount : 5ml
Digestion Method : EPA 3015

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 09:40
Date Received : 12/06/21
Date Analyzed : 12/20/21 14:13
Dilution Factor : 1
Analyst : EW
Instrument ID : TRACE5
%Solids : NA
Date Digested : 12/15/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	0.726	0.500	0.027	

for 12/26/21



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-05
Client ID : SI-PSA-RISB22_0-2_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,6010D
Lab File ID : WG1585416.pdf
Sample Amount : 5ml
Digestion Method : EPA 3015

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 10:55
Date Received : 12/06/21
Date Analyzed : 12/20/21 14:17
Dilution Factor : 1
Analyst : EW
Instrument ID : TRACE5
%Solids : NA
Date Digested : 12/15/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	4.53	0.500	0.027	

for 12/26/21



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-07
Client ID : SI-PSA-RISB12_5-7_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,6010D
Lab File ID : WG1585416.pdf
Sample Amount : 5ml
Digestion Method : EPA 3015

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 11:40
Date Received : 12/06/21
Date Analyzed : 12/20/21 12:50
Dilution Factor : 1
Analyst : EW
Instrument ID : TRACE5
%Solids : NA
Date Digested : 12/15/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, TCLP	0.444	0.500	0.027	J

JET 12/26/21


Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-10
Client ID : SI-PSA-FB01_20211206
Sample Location : YONKERS, NY
Sample Matrix : WATER
Analytical Method : 1,6020B
Lab File ID : WG1584574.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 12:00
Date Received : 12/06/21
Date Analyzed : 12/17/21 18:35
Dilution Factor : 1
Analyst : CD
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 12/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U

for 12/26/21



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-01
Client ID : SI-PSA-RISB14_6-8_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 09:15
Date Received : 12/06/21
Date Analyzed : 12/17/21 15:43
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U

for 12/26/21



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-03
Client ID : SI-PSA-RISB20_5-7_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 10:20
Date Received : 12/06/21
Date Analyzed : 12/17/21 15:53
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U

for 12/20/21



Form 1 METALS

Client : AKRF, Inc.	Lab Number : L2166777
Project Name : EXCELSIOR BAG	Project Number : 200131
Lab ID : L2166777-04	Date Collected : 12/06/21 10:25
Client ID : SI-PSA-RISBX01_5-7_20211206	Date Received : 12/06/21
Sample Location : YONKERS, NY	Date Analyzed : 12/17/21 15:56
Sample Matrix : SOIL	Dilution Factor : 1
Analytical Method : 1,7470A	Analyst : AC
Lab File ID : WG1584501.pdf	Instrument ID : NIC 3
Sample Amount : 5ml	%Solids : NA
Digestion Method : EPA 7470A	Date Digested : 12/17/21
	Date Extracted : 12/09/21

SI-PSA-RISBX01-57-
20211206

CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U

FOR 12/26/21



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-06
Client ID : SI-PSA-RISB23_0-2_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 11:10
Date Received : 12/06/21
Date Analyzed : 12/17/21 16:00
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc.
Project Name : EXCELSIOR BAG
Lab ID : L2166777-08
Client ID : SI-PSA-RISB04_1-3_20211206
Sample Location : YONKERS, NY
Sample Matrix : SOIL
Analytical Method : 1,7470A
Lab File ID : WG1584501.pdf
Sample Amount : 5ml
Digestion Method : EPA 7470A

Lab Number : L2166777
Project Number : 200131
Date Collected : 12/06/21 12:50
Date Received : 12/06/21
Date Analyzed : 12/17/21 16:10
Dilution Factor : 1
Analyst : AC
Instrument ID : NIC 3
%Solids : NA
Date Digested : 12/17/21
Date Extracted : 12/09/21

CAS NO.	Parameter	mg/l			Qualifler
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	ND	0.0010	0.0005	U



Form 1 METALS

Client : AKRF, Inc. Project Name : EXCELSIOR BAG Lab ID : L2166777-09 Client ID : SI-PSA-RISB04_4-6_20211206 Sample Location : YONKERS, NY Sample Matrix : SOIL Analytical Method : 1,7470A Lab File ID : WG1584501.pdf Sample Amount : 5ml Digestion Method : EPA 7470A	Lab Number : L2166777 Project Number : 200131 Date Collected : 12/06/21 12:55 Date Received : 12/06/21 Date Analyzed : 12/17/21 16:14 Dilution Factor : 1 Analyst : AC Instrument ID : NIC 3 %Solids : NA Date Digested : 12/17/21 Date Extracted : 12/09/21
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CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, TCLP	0.0025	0.0010	0.0005	

