



www.alphalab.com



Alpha Analytical

Laboratory Code: 11148

SDG Number: L2454050

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Table of Contents

New York ASP Category B Data Deliverable Package.....	1
Table of Contents	2
Sample ID Cross Reference	7
SDG Narrative	8
Data Qualifier Definitions	10
Instrument Information	13
Sample Log-in Sheet	16
Lims COC (LN01)	18
External Chain of Custody	20
Metals Analysis	22
Inorganic Data (ICP Analysis)	23
Form 1 - Inorganics	24
Form 2A - Inorganics	31
Form 3 - Inorganics	35
Form 4A - Inorganics	38
Form 5A - Inorganics	39
Form 6 - Inorganics	40
Form 7 - Inorganics	41
Form 8 - Inorganics	42
Form 10 - Inorganics	43
Form 11 - Inorganics	62
Form 12 - Inorganics	63
Form 13 - Inorganics	64
MDL Study - Metals by ICP	66
Run Date 09/26/24 Run ID R1880504	68
ICP True Value Summary Form	165
ICP Calculations	180
Instrument TRACE6 Run Date 09/26/24 Run ID R1880504	181
Metals ELN-Workgroup:WG1975631	184
Inorganic Data (ICPMS Analysis)	186
Form 1 - Inorganics	187
Form 2A - Inorganics	193
Form 3 - Inorganics	196
Form 4A - Inorganics	199
Form 5A - Inorganics	200
Form 6 - Inorganics	201
Form 7 - Inorganics	202
Form 12 - Inorganics	203
Form 13 - Inorganics	204
Form 14 - Inorganics	206
Form 15 - Inorganics	207
MDL Study - Metals by ICPMS	209
Tune Report Run Date 09/26/24 Run ID R1880467	211
Run Date 09/26/24 Run ID R1880467	214
ICPMS True Value Summary Form	326
ICPMS Calculations	340
Instrument ICPMSRQ Run Date 09/26/24 Run ID R1880467	341
Metals ELN-Workgroup:WG1975627	344
Inorganic Data (Mercury Analysis)	347
Form 1 - Inorganics	348

Table of Contents

Form 2A - Inorganics	353
Form 3 - Inorganics	355
Form 5A - Inorganics	357
Form 7 - Inorganics	358
Form 12 - Inorganics	359
Form 13 - Inorganics	360
MDL Study - Mercury by 245.1	361
MDL Study - Mercury by 7470A	362
MDL Study - Mercury by 7471B	363
Run Date 09/26/24 Run ID R1880493	364
Hg True Value Summary Form	369
HG Calculations	383
Instrument NIC3 Run Date 09/26/24 Run ID R1880493	385
Metals ELN-Workgroup:WG1975633	388
Wet Chemistry Analysis	390
Color Analysis	391
Results	392
Form 1 - Inorganics	393
Sample Raw Data	398
Wet Chemistry Raw Data	399
Quality Control	400
Form 6 - Inorganics	401
Sample Preparation	402
Prep Log	403
TKN Analysis	404
Results	405
Form 1 - Inorganics	406
Sample Raw Data	412
Wet Chemistry Raw Data	413
Quality Control	434
Form 5A - Inorganics	435
Form 6 - Inorganics	436
Form 7 - Inorganics	437
MDL Study - Total Kjeldahl Nitrogen	438
TKN Calculations	440
Sequence Logs	441
Instrument LACHAT Run Date 09/24/24 Run ID R1879742	442
Sample Preparation	446
Prep Log	447
Ammonia Analysis	448
Results	449
Form 1 - Inorganics	450
Sample Raw Data	457
Wet Chemistry Raw Data	458
Quality Control	461
Form 5A - Inorganics	462
Form 6 - Inorganics	464
Form 7 - Inorganics	466
MDL Study - Ammonia	467
Ammonia Calculations	469

Table of Contents

Sequence Logs	470
Instrument LACHAT Run Date 09/26/24 Run ID R1880537	471
Sample Preparation	472
Prep Log	473
Nitrate-Nitrite Analysis	474
Results	475
Form 1 - Inorganics	476
Sample Raw Data	483
Wet Chemistry Raw Data	484
240920_rawdataA	484
240920_rawdataB	505
240920_rawdataC	519
Quality Control	529
Form 5A - Inorganics	530
Form 6 - Inorganics	532
Form 7 - Inorganics	534
MDL Study - Nitrate and Nitrite	535
Nitrate Nitrite Calculations	537
Sequence Logs	538
Instrument FIA1 Run Date 09/20/24 Run ID R1878230	539
COD Analysis	542
Results	543
Form 1 - Inorganics	544
Sample Raw Data	552
Wet Chemistry Raw Data	553
Quality Control	557
Form 5A - Inorganics	558
Form 6 - Inorganics	560
Form 7 - Inorganics	562
MDL Study - COD	564
COD Calculations	566
BOD/CBOD Analysis	567
Results	568
Form 1 - Inorganics	569
Sample Raw Data	575
Wet Chemistry Raw Data	576
Quality Control	580
Form 5A - Inorganics	581
Form 6 - Inorganics	582
Form 7 - Inorganics	583
MDL Study - BOD	584
BOD Calculations	585
Sample Preparation	586
Prep Log	587
TOC Analysis	588
Results	589
Form 1 - Inorganics	590
Organic Carbon ICAL Raw Data - TOC5	597
Sample Raw Data	599
Wet Chemistry Raw Data	600

Table of Contents

Quality Control	626
Form 5A - Inorganics	627
Form 6 - Inorganics	629
Form 7 - Inorganics	631
MDL Study - Total Organic Carbon	632
Organic Carbon Calculations	633
Sequence Logs	634
Instrument TOCVWS5 Run Date 09/25/24 Run ID R1880359	635
Total Dissolved Solids Analysis	636
Results	637
Form 1 - Inorganics	638
Sample Raw Data	645
Wet Chemistry Raw Data	646
Quality Control	647
Form 6 - Inorganics	648
Form 7 - Inorganics	650
MDL Study - Total Dissolved Solids	651
TDS Calculations	652
Alkalinity Analysis	653
Results	654
Form 1 - Inorganics	655
Sample Raw Data	661
Wet Chemistry Raw Data	662
240924_CAL	662
240924_LCS	663
240924_alk	664
Quality Control	679
Form 5A - Inorganics	680
Form 6 - Inorganics	681
Form 7 - Inorganics	682
MDL Study - Alkalinity	683
Alkalinity Calculations	684
Sequence Logs	685
Instrument TITR5 Run Date 09/24/24 Run ID R1880047	686
Cyanide Analysis	687
Results	688
Form 1 - Inorganics	689
Sample Raw Data	694
Wet Chemistry Raw Data	695
240925_CYANIDE_rawdata	695
240925_CYANIDE_rawdataA	695
240925_CYANIDE_rawdataB	697
240925_CYANIDE_rawdataC	700
Quality Control	703
Form 5A - Inorganics	704
Form 7 - Inorganics	706
MDL Study - Total Cyanide	707
MDL Study - Free Cyanide	709
MDL Study - Physiologically Available Cyanide	711
Cyanide Calculations	713

Table of Contents

Free Cyanide Calculations	714
Sequence Logs	715
Instrument LACHAT6 Run Date 09/25/24 Run ID R1880239	716
Sample Preparation	718
Prep Log	719
Hexavalent Chromium Analysis	722
Results	723
Form 1 - Inorganics	724
Sample Raw Data	730
Wet Chemistry Raw Data	731
Quality Control	733
Form 5A - Inorganics	734
Form 6 - Inorganics	735
Form 7 - Inorganics	736
MDL Study - Hexavalent Chromium	737
Hexavalent Chromium Calculations	739
Phenol Analysis	740
Results	741
Form 1 - Inorganics	742
Sample Raw Data	749
Wet Chemistry Raw Data	750
Quality Control	752
Form 5A - Inorganics	753
Form 6 - Inorganics	755
Form 7 - Inorganics	757
MDL Study - Total Phenolics	758
Total Phenol Calculations	760
Wet Chemistry By IC Methods	761
Results	762
Form 1 - Inorganics	763
Sample Raw Data	770
Wet Chemistry Raw Data	771
Quality Control	834
Form 5A - Inorganics	835
Form 6 - Inorganics	836
Form 7 - Inorganics	837
MDL Study - Ion Chromatography	838
IC Calculations	839

Project Name: CORAM MATERIALS
Project Number: 2232.0006Y005

Lab Number: L2454050
Report Date: 09/26/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2454050-01	MW-4D	WATER	416 MILLER PLACE-YAPHANK ROAD	09/19/24 09:11	09/19/24
L2454050-02	MW-4S	WATER	416 MILLER PLACE-YAPHANK ROAD	09/19/24 10:25	09/19/24
L2454050-03	EQUIPMENT BLANK	EQUIPMENT BLANK	416 MILLER PLACE-YAPHANK ROAD	09/19/24 14:00	09/19/24
L2454050-04	MW-7	WATER	416 MILLER PLACE-YAPHANK ROAD	09/19/24 12:47	09/19/24

Project Name: CORAM MATERIALS
Project Number: 2232.0006Y005

Lab Number: L2454050
Report Date: 09/26/24

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: CORAM MATERIALS
Project Number: 2232.0006Y005

Lab Number: L2454050
Report Date: 09/26/24

Case Narrative (continued)

Report Submission

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

Sample Receipt

L2454050-01, -02, -03, and -04: Sample containers for Volatile Organics were received, but not listed on the chain of custody. At the client's request, the analysis was not performed.

L2454050-01, -02, -03, and -04: Sample containers for Total Cyanide were received, but not listed on the chain of custody. At the client's request, the analysis was performed.

The Total Metals analyte list was specified by the client.

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:

Caitlin Walukha

Report Date: 09/26/24

Title: Technical Director/Representative



DATA PACKAGE 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



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.

Chlordane: 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.)

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'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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.

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

Report Format: DU Report with 'J' Qualifiers



Project Name: CORAM MATERIALS
Project Number: 2232.0006Y005

Lab Number: L2454050
Report Date: 09/26/24

Data Qualifiers

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.
- 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). For calculated parameters, this represents that one or more values used in the calculation were estimated.
- ND or U** - 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 μ L; 2 μ L LVI
Column Type: Restek RXI-5SILMS	df: 0.32 μ m
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

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

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1 μ L
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLP Pesticide 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: 1 μ L
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 : L2454050

Received : 19-SEP-2024

Reviewer : Owen Jefferson

Account Name : Roux Env. Eng. & Geology, DPC

Project Number : 2232.0006Y005

Project Name : CORAM MATERIALS

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	5.1	
B	Absent/	Ice	2.5	
C	Absent/	Ice	2.8	
D	Absent/	Ice	2.5	

Condition Information

1) All samples on COC received? **YES**

2) Extra samples received? **NO**

3) Are there any sample container discrepancies? **YES**

L2454050-01K (ARCHIVE) was received in extra container.
L2454050-01L (ARCHIVE) was received in extra container.
L2454050-01M (ARCHIVE) was received in extra container.
L2454050-02K (ARCHIVE) was received in extra container.
L2454050-02L (ARCHIVE) was received in extra container.
L2454050-02M (ARCHIVE) was received in extra container.
L2454050-03K (ARCHIVE) was received in extra container.
L2454050-03L (ARCHIVE) was received in extra container.
L2454050-03M (ARCHIVE) was received in extra container.
L2454050-04K (ARCHIVE) was received in extra container.
L2454050-04L (ARCHIVE) was received in extra container.
L2454050-04M (ARCHIVE) was received in extra container.

4) Are there any discrepancies between COC & sample labels? **NO**

5) Are samples in appropriate containers for requested analysis? **YES**

6) Are samples properly preserved for requested analysis? **YES**



Sample Delivery Group Summary

Alpha Job Number : L2454050

Received : 19-SEP-2024

Reviewer : Owen Jefferson

Account Name : Roux Env. Eng. & Geology, DPC

Project Number : 2232.0006Y005

Project Name : CORAM MATERIALS

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
Sep 26 2024, 07:25 pm

Login Number: L2454050

Account: ROUX-NY Roux Env. Eng. & Geology, DPCProject: 2232.0006Y005 416 MILLER PLACE-YAPHANK ROAD, MILLER

Received: 19SEP24 Due Date: 26SEP24

Sample # Client ID Mat PR Collected

L2454050-01 MW-4D 1 S0 19SEP24 09:11

Only one result per compound. If a sample requires High AND Low Levels, ok to report both as long as each compound is only reported once (can't have a result reported for a compound from both high AND low runs) Matrix description field has to be filled in appropriately for QC, ex: Trip Blank, Field Blank, etc Only one result per compound ASP-B Package Due Date: 09/26/24

AG-6020T, AL-6020T, ALK-T-2320, ARCHIVE, AS-6020T, ASP-B, B-TI, BA-6020T, BE-6020T, BOD-5210, BR-300, CA-TI, CD-6020T, CL-300, CO-6020T, COD-410-LOW, COLOR-A-2120, CR-6020T, CU-6020T, FE-6020T, HARDT, HEXCR-7196, HG-T, K-6020T, MG-TI, MN-6020T, NA-6020T, NH3-350, NI-6020T, NO3-353, NY-TPHENOL-420, PB-6020T, PREPT, SB-6020T, SE-6020T, S04-300, TCN-9010, TDS-2540, TKN-351, TL-6020T, TOC-5310, V-6020T, ZN-6020T

L2454050-02 MW-4S 1 S0 19SEP24 10:25

Only one result per compound. If a sample requires High AND Low Levels, ok to report both as long as each compound is only reported once (can't have a result reported for a compound from both high AND low runs) Matrix description field has to be filled in appropriately for QC, ex: Trip Blank, Field Blank, etc Only one result per compound Package Due Date: 09/26/24

AG-6020T, AL-6020T, ALK-T-2320, ARCHIVE, AS-6020T, B-TI, BA-6020T, BE-6020T, BOD-5210, BR-300, CA-TI, CD-6020T, CL-300, CO-6020T, COD-410-LOW, COLOR-A-2120, CR-6020T, CU-6020T, FE-6020T, HARDT, HEXCR-7196, HG-T, K-6020T, MG-TI, MN-6020T, NA-6020T, NH3-350, NI-6020T, NO3-353, NY-TPHENOL-420, PB-6020T, PREPT, SB-6020T, SE-6020T, S04-300, TCN-9010, TDS-2540, TKN-351, TL-6020T, TOC-5310, V-6020T, ZN-6020T

L2454050-03 EQUIPMENT BLANK 1 S0 19SEP24 14:00

Only one result per compound. If a sample requires High AND Low Levels, ok to report both as long as each compound is only reported once (can't have a result reported for a compound from both high AND low runs) Matrix description field has to be filled in appropriately for QC, ex: Trip Blank, Field Blank, etc Only one result per compound Package Due Date: 09/26/24

AG-6020T, AL-6020T, ALK-T-2320, ARCHIVE, AS-6020T, B-TI, BA-6020T, BE-6020T, BOD-5210, BR-300, CA-TI, CD-6020T, CL-300, CO-6020T, COD-410-LOW, COLOR-A-2120, CR-6020T, CU-6020T, FE-6020T, HARDT, HEXCR-7196, HG-T, K-6020T, MG-TI, MN-6020T, NA-6020T, NH3-350, NI-6020T, NO3-353, NY-TPHENOL-420, PB-6020T, PREPT, SB-6020T, SE-6020T, S04-300, TCN-9010, TDS-2540, TKN-351, TL-6020T, TOC-5310, V-6020T, ZN-6020T

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Sep 26 2024, 07:25 pm

Login Number: L2454050

Account: ROUX-NY Roux Env. Eng. & Geology, DPCProject: 2232.0006Y005 416 MILLER PLACE-YAPHANK ROAD, MILLER

Sample # Client ID Received: 19SEP24 Due Date: 26SEP24 Mat PR Collected

L2454050-04 MW-7

1 S0 19SEP24 12:47

Only one result per compound. If a sample requires High AND Low Levels, ok to report both as long as each compound is only reported once (can't have a result reported for a compound from both high AND low runs) Matrix description field has to be filled in appropriately for QC, ex: Trip Blank, Field Blank, etc Only one result per compound Package Due Date: 09/26/24

AG-6020T, AL-6020T, ALK-T-2320, ARCHIVE, AS-6020T, B-TI, BA-6020T, BE-6020T, BOD-5210, BR-300, CA-TI, CD-6020T, CL-300, CO-6020T, COD-410-LOW, COLOR-A-2120, CR-6020T, CU-6020T, FE-6020T, HARDT, HEXCR-7196, HG-T, K-6020T, MG-TI, MN-6020T, NA-6020T, NH3-350, NI-6020T, NO3-353, NY-TPHENOL-420, PB-6020T, PREPT, SB-6020T, SE-6020T, S04-300, TCN-9010, TDS-2540, TKN-351, TL-6020T, TOC-5310, V-6020T, ZN-6020T

 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 14160: 275 Cooper Ave, Suite 105		Page 1 1 of 2		Date Rec'd In Lab 9/20/24		ALPHA Job # L 2454050																																																																																																																																																																																																																																													
		Project Information Project Name: CORAM MATERIALS: Closed Landfill Monitoring Project Location: 416 Miller Place-Yaphank Road Project # (Use Project name as Project #) ☐ Project Manager: Julia Michaels ALPHAQuote #: 28577 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: ROUX Env.Eng.&Geology, DPC Address: 209 Shafter Street Islandia, NY 11749-5074 Phone: 631-232-2600 Fax: Email: jmmichaels@rouxinc.com		Regulatory Requirement ☒ NY TOGS ☐ NY Part 375 ☐ AWQ Standards ☐ NY CP-51 ☐ NY Restricted Use ☐ Other ☐ 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:		ANALYSIS		Sample Filtration ☒ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)																																																																																																																																																																																																																																																	
Please specify Metals or TAL.		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">ALPHA Lab ID (Lab Use Only)</th> <th rowspan="2">Sample ID</th> <th colspan="2">Collection</th> <th rowspan="2">Sample Matrix</th> <th rowspan="2">Sampler's Initials</th> <th rowspan="2">CL-300/So4-300/Br-300</th> <th rowspan="2">TOC-5310</th> <th rowspan="2">ALK-T-2320</th> <th rowspan="2">NH3-350</th> <th rowspan="2">BOD-5210</th> <th rowspan="2">Color-A-2120</th> <th rowspan="2">COD-410-LOW</th> <th rowspan="2">HARD-T</th> </tr> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>54050-01</td> <td>MW-4D</td> <td>9/19</td> <td>911</td> <td>AQ</td> <td>AI</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>-02</td> <td>MW-4S</td> <td>9/19</td> <td>1025</td> <td>AQ</td> <td>AI</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>-03</td> <td>Equipment blank</td> <td>9/19</td> <td>1400</td> <td>AQ</td> <td>AI</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>-04</td> <td>MW-7</td> <td>9/19</td> <td>1247</td> <td>AQ</td> <td>AI</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	CL-300/So4-300/Br-300	TOC-5310	ALK-T-2320	NH3-350	BOD-5210	Color-A-2120	COD-410-LOW	HARD-T	Date	Time	54050-01	MW-4D	9/19	911	AQ	AI	X	X	X	X	X	X	X	X	-02	MW-4S	9/19	1025	AQ	AI	X	X	X	X	X	X	X	X	-03	Equipment blank	9/19	1400	AQ	AI	X	X	X	X	X	X	X	X	-04	MW-7	9/19	1247	AQ	AI	X	X	X	X	X	X	X	X																																																																																																																																																																									Sample Specific Comments	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection				Sample Matrix	Sampler's Initials											CL-300/So4-300/Br-300	TOC-5310	ALK-T-2320	NH3-350	BOD-5210	Color-A-2120	COD-410-LOW	HARD-T																																																																																																																																																																																																																												
		Date	Time																																																																																																																																																																																																																																																		
54050-01	MW-4D	9/19	911	AQ	AI	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																								
-02	MW-4S	9/19	1025	AQ	AI	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																								
-03	Equipment blank	9/19	1400	AQ	AI	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																								
-04	MW-7	9/19	1247	AQ	AI	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																								
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ 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																																																																																																																																																																																																																																																	
Relinquished By: <i>WIFI Page</i> Date/Time: 9/19 1420 Received By: <i>Anthony Green</i> Date/Time: 9/19 1450		Relinquished By: <i>Anthony Green</i> Date/Time: 9/20/24 0145 Received By: <i>WIFI Page</i> Date/Time: 9/20/24 0345		Relinquished By: <i>Anthony Green</i> Date/Time: 9/20/24 0345 Received By: <i>WIFI Page</i> Date/Time: 9/20/24 0345																																																																																																																																																																																																																																																	
Form No: 01-25 (rev. 30-Sept-2013)		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.		Total Bottles: 13																																																																																																																																																																																																																																																	

Page 21 of 839

Metals

Inorganic Data (ICP Analysis)

Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 15:45
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: DMC
Lab File ID	: WG1976443.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	53.8	0.660	NA	
7440-42-8	Boron, Total	0.0142	0.0300	0.0016	J
7440-70-2	Calcium, Total	13.5	0.100	0.0350	
7439-95-4	Magnesium, Total	4.89	0.100	0.0153	

Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 16:17
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: DMC
Lab File ID	: WG1976443.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	61.9	0.660	NA	
7440-42-8	Boron, Total	0.0226	0.0300	0.0016	J
7440-70-2	Calcium, Total	17.5	0.100	0.0350	
7439-95-4	Magnesium, Total	4.45	0.100	0.0153	



Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 16:24
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: DMC
Lab File ID	: WG1976443.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	ND	0.660	NA	U
7440-42-8	Boron, Total	ND	0.0300	0.0016	U
7440-70-2	Calcium, Total	ND	0.100	0.0350	U
7439-95-4	Magnesium, Total	ND	0.100	0.0153	U

Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 16:31
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: DMC
Lab File ID	: WG1976443.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	115.	0.660	NA	
7440-42-8	Boron, Total	0.0510	0.0300	0.0016	
7440-70-2	Calcium, Total	27.7	0.100	0.0350	
7439-95-4	Magnesium, Total	11.0	0.100	0.0153	



Form 1

METALS

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975631-1
 Client ID : WG1975631-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,6010D
 Lab File ID : WG1976443.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/26/24 15:31
 Dilution Factor : 1
 Analyst : DMC
 Instrument ID : TRACE6
 %Solids : N/A
 Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	ND	0.660	NA	U
7440-42-8	Boron, Total	ND	0.0300	0.0016	U
7440-70-2	Calcium, Total	ND	0.100	0.0350	U
7439-95-4	Magnesium, Total	ND	0.100	0.0153	U



Form 1

METALS

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975631-4
 Client ID : MW-4DDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,6010D
 Lab File ID : WG1976443.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : 09/19/24 09:11
 Date Received : 09/19/24
 Date Analyzed : 09/26/24 15:58
 Dilution Factor : 1
 Analyst : DMC
 Instrument ID : TRACE6
 %Solids : N/A
 Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-42-8	Boron, Total	0.0145	0.0300	0.002	J
7440-70-2	Calcium, Total	13.8	0.100	0.035	
7439-95-4	Magnesium, Total	4.80	0.100	0.015	
NONE	Hardness	54.3	0.660	NA	



Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975631-6	Date Collected	:
Client ID	: Serial Dilution	Date Received	:
Sample Location	:	Date Analyzed	: 09/26/24 16:11
Sample Matrix	: WATER	Dilution Factor	: 5
Analytical Method	: 1,6010D	Analyst	: DMC
Lab File ID	: WG1976443.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-70-2	Calcium, Total	12.8	0.500	0.175	
7439-95-4	Magnesium, Total	4.76	0.500	0.077	
NONE	Hardness	51.5	3.30	NA	



Form 2A

Initial and Continuing Calibration Verification

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)					
	True	Found	%R	True	Found	%R	Found	%R	Found
Boron	0.500	0.4800	96						
Calcium	0.500	0.5220	104						
Magnesium	0.500	0.5170	103						

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration			Continuing Calibration(s)						
		R1880504-3			R1880504-6			R1880504-8		R1880504-10	
		09/26/24 04:54			09/26/24 07:36			09/26/24 08:55		09/26/24 10:07	
		True	Found	%R	True	Found	%R	Found	%R	Found	%R
Boron		0.500	0.4940	99	0.5000	0.496	99	0.501	100	0.504	101
Calcium		0.500	0.5160	103	0.5000	0.495	99	0.515	103	0.522	104
Magnesium		0.500	0.5140	103	0.5000	0.507	101	0.506	101	0.508	102

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration			Continuing Calibration(s)						
		True	Found	%R	R1880504-12			R1880504-14		R1880504-16	
					09/26/24 11:41			09/26/24 12:58		09/26/24 13:45	
					True	Found	%R	Found	%R	Found	%R
Boron					0.5000	0.508	102	0.504	101	0.516	103
Calcium					0.5000	0.524	105	0.528	106	0.536	107
Magnesium					0.5000	0.510	102	0.510	102	0.509	102

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration			Continuing Calibration(s)						
		True	Found	%R	R1880504-18 09/26/24 15:10			R1880504-20 09/26/24 16:37			
					True	Found	%R	Found	%R	Found	%R
Boron					0.5000	0.520	104	0.516	103		
Calcium					0.5000	0.543	109	0.512	102		
Magnesium					0.5000	0.508	102	0.500	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 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005

Parameter	Initial Calibration		Continuing Calibration				Preparation	
	Blank		Blank(s)				Blank	
Lab ID	: R1880504-2		R1880504-7				WG1975631-1	
Date Analyzed	: 09/26/24 04:39		09/26/24 07:42				09/26/24 15:31	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Boron	0.00160	U	0.00160	U	0.00243	J	0.00160	U
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U
Hardness							0.660	U
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U

Form 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Lab ID :	R1880504-4		R1880504-13		R1880504-15		R1880504-17	
Date Analyzed :	09/26/24 05:00		09/26/24 11:48		09/26/24 13:04		09/26/24 13:51	
Boron	0.00160	U	0.00160	U	0.00160	U	0.00160	U
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U

Form 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : TRACE6

Lab Number : L2454050
 Project Number : 2232.0006Y005

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Boron			0.00160	U	0.00160	U		
Calcium			0.0350	U	0.0350	U		
Magnesium			0.0153	U	0.0153	U		

Form 4a Interference Check Sample

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : TRACE6

Lab Number : L2454050
Project Number : 2232.0006Y005
Concentration Units : mg/l

Analyte	True		Initial Found			Final Found			
	Sol.	Sol.	Sol.	%R	Sol.	%R	Sol.	%R	Sol.
	A	AB	A	%R	AB	%R	A	%R	AB
Boron			0.00192						
Calcium	500		550.	110					
Magnesium	500		468.	94					

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : MW-4D
 Lab Sample ID : L2454050-01
 Matrix Spike : WG1975631-3
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER

MS Analysis Date : 09/26/24 15:51
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Hardness	53.8	66.2	115.	92					75-125	20
Boron, Total	0.0142J	1	0.967	97					75-125	20
Calcium, Total	13.5	10	23.6	101					75-125	20
Magnesium, Total	4.89	10	13.7	88					75-125	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01	Analysis Date	: 09/26/24 15:45
Dup Sample ID	: WG1975631-4	DUP Analysis Date	: 09/26/24 15:58

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Hardness	53.8	54.3	1	20
Boron, Total	0.0142J	0.0145J	NC	20
Calcium, Total	13.5	13.8	2	20
Magnesium, Total	4.89	4.80	2	20

Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975631-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/26/24 15:38
 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			
Hardness	66.2	64.6	98.					80-120	20
Boron, Total	1.00	0.978	98.					80-120	20
Calcium, Total	10.0	10.2	102.					80-120	20
Magnesium, Total	10.0	9.52	95.					80-120	20

Form 8 Serial Dilutions

Client : Roux Env. Eng. & Geology, DPC Project Name : CORAM MATERIALS Client Sample ID : MW-4D Lab Sample ID : L2454050-01 Serial Dilution ID : WG1975631-6	Lab Number : L2454050 Project Number : 2232.0006Y005 Matrix : WATER Analysis Date : 09/26/24 15:45 Analysis Date : 09/26/24 16:11

Parameter	Initial Sample Result (mg/l)	Serial Dilution Result (mg/l)	% Difference	%D Limit
Calcium, Total	13.5	12.8	5	20
Magnesium, Total	4.89	4.76	3	20
Hardness	53.8	51.5	4	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	0.0000000	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
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:

EPA 200.7, EPA 6010D		Linear Dynamic Range					
		All values are in mg/L and are 90% of the established LDR concentration.					
Instrument ID:		Trace 4	Trace 5	Trace 6	Trace 7	Trace 8	Trace 9
2023 Complete		☐	☐	☐	☐	☐	☐
Ag	Silver	36	27	9	13	90	45
Al	Aluminum	900	540	450	900	900	900
As	Arsenic	90	54	90	72	180	90
B	Boron	90	90	9	45	90	54
Ba	Barium	90	27	18	13	135	27
Be	Beryllium	27	36	9	9	11	31
Ca	Calcium	450	900	675	900	900	900
Cd	Cadmium	11	9	9	11	27	18
Co	Cobalt	90	63	45	22	135	90
Cr	Chromium	45	63	9	45	157	90
Cu	Copper	90	54	45	45	90	67
Fe	Iron	630	900	450	450	540	540
K	Potassium	900	900	675	720	900	900
Mg	Magnesium	450	900	360	900	900	900
Mn	Manganese	90	31	90	67	90	90
Mo	Molybdenum	45	36	9	22	67	45
Na	Sodium	675	900	450	405	630	900
Ni	Nickel	90	45	45	22	135	90
Pb	Lead	180	180	90	90	225	90
S	Sulfur	-	90	-	-	-	-
Sb	Antimony	22	45	45	4.5	90	45
Se	Selenium	27	27	45	22	15	45
Si	Silica	45	90	22	22	90	45
Sn	Tin	45	45	13	22	72	45
Sr	Strontium	45	45	9	9	67	45
Ti	Titanium	45	90	9	90	72	45
Tl	Thallium	45	90	45	22	135	45
V	Vanadium	90	90	90	90	112	45
Zn	Zinc	45	27	45	22	63	22

Form 12 Preparation Log

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Matrix	: WATER	Prep Method	: EPA 3005A

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2454050-01	09/24/24 14:02	-	50
L2454050-02	09/24/24 14:02	-	50
L2454050-03	09/24/24 14:02	-	50
L2454050-04	09/24/24 14:02	-	50
WG1975631-1	09/24/24 14:02	-	50
WG1975631-2	09/24/24 14:02	-	50
WG1975631-3	09/24/24 14:02	-	50
WG1975631-4	09/24/24 14:02	-	50
WG1975631-6	09/24/24 14:02	-	50

Form 13

Analysis Run Log

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : TRACE6
Start Date : 09/26/24 04:33

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Method : 1,6010D
End Date : 09/26/24 16:44

Sample Number	Dilution Factor	Analysis Time	Boron, Total		CALCIUM	Calcium, Total	Hardness	MAGNESIUM	Magnesium, Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											



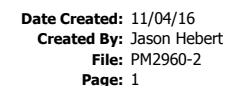
Form 13

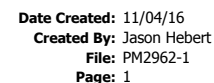
Analysis Run Log

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : TRACE6
Start Date : 09/26/24 04:33

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Method : 1,6010D
End Date : 09/26/24 16:44

[illegible]

[illegible]

[illegible]

Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA



ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: Blank DMC Trace6
 Analysis started at: 9/26/2024 4:20:08 AM
 Rack: 0
 Vial: 1

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-0.1 %	-2.1 %	0.3 %	0.3 %	0.2 %	-1.7 %	0.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-11.8 %	0.1 %	0.1 %	0.0 %	-0.6 %	0.2 %	-5.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	0.5 %	7.9 %	0.2 %	-0.1 %	-0.4 %	-0.1 %	0.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	0.1 %	0.2 %	-3.8 %	-0.4 %	-0.4 %	0.3 %	-0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	0.0000 ppm
Concentration per Run	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	0.0000 ppm
Concentration RSD	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	-0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: ICAL
Analysis started at: 9/26/2024 4:26:51 AM
Rack: 0
Vial: 2

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	10.0000 ppm
Concentration per Run 1	0.9982 ppm	23.9943 ppm	0.9965 ppm	0.9998 ppm	0.9608 ppm	0.9601 ppm	9.5942 ppm
Concentration per Run 2	1.0011 ppm	25.4338 ppm	1.0007 ppm	0.9991 ppm	1.0175 ppm	1.0165 ppm	10.1620 ppm
Concentration per Run 3	1.0007 ppm	25.5719 ppm	1.0028 ppm	1.0011 ppm	1.0217 ppm	1.0234 ppm	10.2439 ppm
Concentration RSD	0.2 %	3.5 %	0.3 %	0.1 %	3.4 %	3.5 %	3.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	25.0000 ppm	35.0000 ppm	10.0000 ppm
Concentration per Run 1	0.9982 ppm	0.9994 ppm	0.9955 ppm	1.0005 ppm	23.9788 ppm	33.6174 ppm	9.9685 ppm
Concentration per Run 2	0.9996 ppm	1.0001 ppm	1.0018 ppm	1.0003 ppm	25.4353 ppm	35.5554 ppm	10.0137 ppm
Concentration per Run 3	1.0023 ppm	1.0006 ppm	1.0027 ppm	0.9992 ppm	25.5859 ppm	35.8272 ppm	10.0179 ppm
Concentration RSD	0.2 %	0.1 %	0.4 %	0.1 %	3.6 %	3.4 %	0.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	1.0000 ppm	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	0.9589 ppm	0.9961 ppm	24.0567 ppm	0.9993 ppm	1.0005 ppm	1.0012 ppm	0.9999 ppm
Concentration per Run 2	1.0154 ppm	0.9996 ppm	25.4012 ppm	0.9998 ppm	0.9987 ppm	0.9988 ppm	1.0012 ppm
Concentration per Run 3	1.0256 ppm	1.0043 ppm	25.5421 ppm	1.0009 ppm	1.0008 ppm	1.0000 ppm	0.9989 ppm
Concentration RSD	3.6 %	0.4 %	3.3 %	0.1 %	0.1 %	0.1 %	0.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	10.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	10.0033 ppm	1.0001 ppm	0.9608 ppm	0.9996 ppm	0.9986 ppm	0.9985 ppm	0.9979 ppm
Concentration per Run 2	9.9965 ppm	0.9991 ppm	1.0173 ppm	1.0000 ppm	0.9985 ppm	1.0014 ppm	0.9999 ppm
Concentration per Run 3	10.0002 ppm	1.0009 ppm	1.0219 ppm	1.0003 ppm	1.0029 ppm	1.0001 ppm	1.0022 ppm
Concentration RSD	0.0 %	0.1 %	3.4 %	0.0 %	0.3 %	0.1 %	0.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.7219 %	96.2321 %	96.9956 %	104.7077 %	90.6519 %	98.5533 %	1.0000 ppm
Concentration per Run 1	104.5276 %	96.3791 %	97.1416 %	109.2061 %	90.9215 %	98.7193 %	0.9585 ppm
Concentration per Run 2	99.1931 %	96.1382 %	96.8770 %	103.0918 %	90.5254 %	98.3757 %	1.0149 ppm
Concentration per Run 3	98.4449 %	96.1790 %	96.9682 %	101.8251 %	90.5089 %	98.5650 %	1.0266 ppm
Concentration RSD	3.3 %	0.1 %	0.1 %	3.8 %	0.3 %	0.2 %	3.6 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: ICV
Analysis started at: 9/26/2024 4:33:09 AM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5073 ppm	0.5116 ppm	0.4768 ppm	0.4802 ppm	0.5089 ppm	0.5219 ppm
Concentration per Run 1	0.5030 ppm	0.5000 ppm	0.4786 ppm	0.4816 ppm	0.4967 ppm	0.5091 ppm
Concentration per Run 2	0.5109 ppm	0.5166 ppm	0.4755 ppm	0.4794 ppm	0.5127 ppm	0.5238 ppm
Concentration per Run 3	0.5080 ppm	0.5183 ppm	0.4762 ppm	0.4796 ppm	0.5173 ppm	0.5329 ppm
Recovery Percentage 1	101.464 %	102.329 %	95.350 %	96.040 %	101.779 %	104.099 %
Concentration RSD	0.8 %	2.0 %	0.3 %	0.3 %	2.1 %	2.3 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4839 ppm	0.4954 ppm	0.5062 ppm	0.4928 ppm	0.5343 ppm	0.5167 ppm
Concentration per Run 1	0.4850 ppm	0.4964 ppm	0.5037 ppm	0.4875 ppm	0.5194 ppm	0.5148 ppm
Concentration per Run 2	0.4832 ppm	0.4948 ppm	0.5091 ppm	0.4969 ppm	0.5399 ppm	0.5184 ppm
Concentration per Run 3	0.4835 ppm	0.4949 ppm	0.5060 ppm	0.4941 ppm	0.5437 ppm	0.5170 ppm
Recovery Percentage 1	96.785 %	99.076 %	101.249 %	98.566 %	106.866 %	103.344 %
Concentration RSD	0.2 %	0.2 %	0.5 %	1.0 %	2.4 %	0.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5117 ppm	0.4817 ppm	10.2606 ppm	0.4969 ppm	0.4988 ppm	0.4812 ppm
Concentration per Run 1	0.5002 ppm	0.4823 ppm	10.0239 ppm	0.4977 ppm	0.5001 ppm	0.4835 ppm
Concentration per Run 2	0.5156 ppm	0.4809 ppm	10.3392 ppm	0.4966 ppm	0.4981 ppm	0.4803 ppm
Concentration per Run 3	0.5193 ppm	0.4818 ppm	10.4188 ppm	0.4965 ppm	0.4982 ppm	0.4798 ppm
Recovery Percentage 1	102.341 %	96.335 %	102.606 %	99.389 %	99.765 %	96.239 %
Concentration RSD	2.0 %	0.1 %	2.0 %	0.1 %	0.2 %	0.4 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.3734 ppm	0.4765 ppm	0.4953 ppm	0.5085 ppm	0.5079 ppm	0.4888 ppm
Concentration per Run 1	5.3886 ppm	0.4767 ppm	0.4838 ppm	0.5043 ppm	0.5098 ppm	0.4904 ppm
Concentration per Run 2	5.3655 ppm	0.4755 ppm	0.4990 ppm	0.5119 ppm	0.5071 ppm	0.4877 ppm
Concentration per Run 3	5.3662 ppm	0.4772 ppm	0.5031 ppm	0.5095 ppm	0.5066 ppm	0.4883 ppm
Recovery Percentage 1	102.351 %	95.299 %	99.061 %	101.709 %	101.571 %	97.766 %
Concentration RSD	0.2 %	0.2 %	2.0 %	0.8 %	0.3 %	0.3 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.9618 %	98.4534 %	99.4141 %	104.5133 %	97.2268 %	0.5046 ppm
Concentration per Run 1	104.7378 %	98.2735 %	99.5320 %	107.1014 %	97.1436 %	0.4939 ppm
Concentration per Run 2	100.3625 %	98.4102 %	99.4115 %	103.1506 %	97.3393 %	0.5057 ppm
Concentration per Run 3	100.7849 %	98.6766 %	99.2988 %	103.2878 %	97.1975 %	0.5142 ppm
Recovery Percentage 1						100.921 %
Concentration RSD	2.4 %	0.2 %	0.1 %	2.1 %	0.1 %	2.0 %

9/26/2024 4:51:53 PM



Sample: ICB
Analysis started at: 9/26/2024 4:39:34 AM
Rack: 0
Vial: 4

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.3760 %	100.6670 %	101.0569 %	101.5420 %	100.1647 %	100.8013 %	0.0012 ppm
Concentration per Run 1	103.0261 %	100.6913 %	101.0899 %	102.5179 %	100.2345 %	100.7198 %	0.0012 ppm
Concentration per Run 2	100.7171 %	100.5158 %	101.1683 %	101.3036 %	100.4508 %	100.7642 %	0.0019 ppm
Concentration per Run 3	100.3847 %	100.7938 %	100.9126 %	100.8045 %	99.8088 %	100.9200 %	0.0006 ppm
Recovery Percentage 1							12.100 %
Concentration RSD	1.4 %	0.1 %	0.1 %	0.9 %	0.3 %	0.1 %	56.9 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: ICV
Analysis started at: 9/26/2024 4:54:26 AM
Rack: 0
Vial: 10

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5109 ppm	0.5111 ppm	0.4739 ppm	0.4946 ppm	0.5063 ppm	0.5155 ppm
Concentration per Run 1	0.5112 ppm	0.4992 ppm	0.4766 ppm	0.4979 ppm	0.4944 ppm	0.5062 ppm
Concentration per Run 2	0.5113 ppm	0.5205 ppm	0.4711 ppm	0.4923 ppm	0.5101 ppm	0.5193 ppm
Concentration per Run 3	0.5103 ppm	0.5137 ppm	0.4740 ppm	0.4935 ppm	0.5142 ppm	0.5203 ppm
Recovery Percentage 1	102.187 %	102.223 %	94.777 %	98.915 %	101.250 %	103.059 %
Concentration RSD	0.1 %	2.1 %	0.6 %	0.6 %	2.1 %	1.5 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4804 ppm	0.4984 ppm	0.4923 ppm	0.4908 ppm	0.5237 ppm	5.3947 ppm
Concentration per Run 1	0.4814 ppm	0.5012 ppm	0.4938 ppm	0.4914 ppm	0.5135 ppm	5.2979 ppm
Concentration per Run 2	0.4788 ppm	0.4962 ppm	0.4926 ppm	0.4910 ppm	0.5267 ppm	5.4404 ppm
Concentration per Run 3	0.4810 ppm	0.4976 ppm	0.4904 ppm	0.4900 ppm	0.5308 ppm	5.4458 ppm
Recovery Percentage 1	96.078 %	99.672 %	98.453 %	98.157 %	104.734 %	107.895 %
Concentration RSD	0.3 %	0.5 %	0.4 %	0.1 %	1.7 %	1.6 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5105 ppm	0.4776 ppm	10.2732 ppm	0.4936 ppm	0.5002 ppm	0.4946 ppm
Concentration per Run 1	0.5025 ppm	0.4793 ppm	10.0628 ppm	0.4968 ppm	0.5033 ppm	0.4981 ppm
Concentration per Run 2	0.5147 ppm	0.4767 ppm	10.3468 ppm	0.4918 ppm	0.4984 ppm	0.4934 ppm
Concentration per Run 3	0.5142 ppm	0.4769 ppm	10.4100 ppm	0.4922 ppm	0.4991 ppm	0.4925 ppm
Recovery Percentage 1	102.093 %	95.520 %	102.732 %	98.718 %	100.049 %	98.929 %
Concentration RSD	1.4 %	0.3 %	1.8 %	0.6 %	0.5 %	0.6 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.4143 ppm	0.4638 ppm	0.4779 ppm	0.5058 ppm	0.5068 ppm	0.4920 ppm
Concentration per Run 1	5.4481 ppm	0.4652 ppm	0.4672 ppm	0.5066 ppm	0.5094 ppm	0.4929 ppm
Concentration per Run 2	5.3934 ppm	0.4616 ppm	0.4812 ppm	0.5063 ppm	0.5055 ppm	0.4922 ppm
Concentration per Run 3	5.4013 ppm	0.4646 ppm	0.4855 ppm	0.5044 ppm	0.5055 ppm	0.4909 ppm
Recovery Percentage 1	103.129 %	92.756 %	95.588 %	101.155 %	101.360 %	98.401 %
Concentration RSD	0.5 %	0.4 %	2.0 %	0.2 %	0.4 %	0.2 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.3779 %	100.8573 %	101.2013 %	105.7454 %	98.1485 %	102.7807 %
Concentration per Run 1	103.1826 %	100.8624 %	100.9909 %	107.4019 %	97.6373 %	102.7889 %
Concentration per Run 2	100.0245 %	100.7171 %	101.4084 %	104.7638 %	98.4746 %	102.6581 %
Concentration per Run 3	100.9265 %	100.9924 %	101.2046 %	105.0707 %	98.3337 %	102.8951 %
Recovery Percentage 1						
Concentration RSD	1.6 %	0.1 %	0.2 %	1.4 %	0.5 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: ICB
Analysis started at: 9/26/2024 5:00:53 AM
Rack: 0
Vial: 4

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0023 ppm	-0.0005 ppm	0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0025 ppm
Concentration per Run 1	0.0005 ppm	-0.0025 ppm	0.0000 ppm	0.0006 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm
Concentration per Run 2	0.0002 ppm	0.0044 ppm	-0.0009 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	0.0061 ppm
Concentration per Run 3	0.0003 ppm	0.0050 ppm	-0.0005 ppm	0.0006 ppm	-0.0001 ppm	0.0000 ppm	0.0014 ppm
Recovery Percentage 1	4.468 %	0.000 %	-9.817 %	2.359 %	-0.150 %	0.759 %	0.000 %
Concentration RSD	44.9 %	180.4 %	94.3 %	22.5 %	367.4 %	58.0 %	130.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0002 ppm	-0.0001 ppm	0.0011 ppm	0.0441 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0018 ppm	0.0408 ppm	0.0004 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0000 ppm	0.0008 ppm	0.0478 ppm	0.0008 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0002 ppm	-0.0002 ppm	0.0006 ppm	0.0437 ppm	-0.0007 ppm
Recovery Percentage 1	-0.178 %	-0.441 %	1.865 %	-1.269 %	0.001 %	1.764 %	0.000 %
Concentration RSD	176.1 %	25.7 %	25.0 %	64.8 %	61.3 %	7.9 %	570.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0007 ppm	-0.0039 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0016 ppm
Concentration per Run 1	0.0001 ppm	0.0007 ppm	0.0008 ppm	-0.0001 ppm	0.0000 ppm	-0.0004 ppm	0.0020 ppm
Concentration per Run 2	0.0003 ppm	0.0007 ppm	-0.0012 ppm	0.0001 ppm	0.0000 ppm	-0.0003 ppm	0.0021 ppm
Concentration per Run 3	-0.0002 ppm	0.0005 ppm	-0.0113 ppm	-0.0001 ppm	-0.0005 ppm	0.0007 ppm	0.0008 ppm
Recovery Percentage 1	0.699 %	1.304 %	-0.196 %	-0.050 %	-1.413 %	0.015 %	16.041 %
Concentration RSD	318.2 %	14.6 %	165.5 %	641.7 %	207.2 %	8,069.2 %	46.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0009 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 1	0.0008 ppm	0.0003 ppm	-0.0001 ppm	0.0001 ppm	0.0002 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0009 ppm	0.0001 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	0.0009 ppm	0.0001 ppm	-0.0001 ppm	0.0001 ppm	-0.0007 ppm	-0.0001 ppm	0.0001 ppm
Recovery Percentage 1	0.172 %	0.322 %	-0.818 %	0.427 %	-1.022 %	-0.938 %	2.159 %
Concentration RSD	8.3 %	68.7 %	53.5 %	273.1 %	210.6 %	28.0 %	22.7 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.8893 %	100.7503 %	100.7158 %	103.8624 %	100.6795 %	101.2290 %	0.0017 ppm
Concentration per Run 1	103.7978 %	100.8735 %	100.6090 %	104.7017 %	100.4259 %	101.3186 %	0.0012 ppm
Concentration per Run 2	100.6745 %	100.5491 %	100.9508 %	103.2671 %	100.9067 %	101.0299 %	0.0010 ppm
Concentration per Run 3	101.1956 %	100.8282 %	100.5877 %	103.6185 %	100.7059 %	101.3385 %	0.0028 ppm
Recovery Percentage 1							16.753 %
Concentration RSD	1.6 %	0.2 %	0.2 %	0.7 %	0.2 %	0.2 %	58.6 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LLOQ RL Check
 Analysis started at: 9/26/2024 5:07:39 AM
 Rack: 0
 Vial: 5

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0055 ppm	0.1093 ppm	0.0053 ppm	0.0308 ppm	0.0105 ppm	0.0054 ppm	0.1110 ppm
Concentration per Run 1	0.0054 ppm	0.1082 ppm	0.0055 ppm	0.0309 ppm	0.0104 ppm	0.0053 ppm	0.1057 ppm
Concentration per Run 2	0.0057 ppm	0.1093 ppm	0.0048 ppm	0.0308 ppm	0.0106 ppm	0.0054 ppm	0.1129 ppm
Concentration per Run 3	0.0055 ppm	0.1104 ppm	0.0058 ppm	0.0308 ppm	0.0106 ppm	0.0054 ppm	0.1145 ppm
Recovery Percentage 1	110.552 %	109.295 %	106.994 %	102.789 %	105.323 %	107.012 %	111.028 %
Concentration RSD	2.9 %	1.0 %	10.2 %	0.1 %	1.3 %	0.9 %	4.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0039 ppm	0.0197 ppm	0.0101 ppm	0.0103 ppm	0.0564 ppm	2.7217 ppm	0.1076 ppm
Concentration per Run 1	0.0040 ppm	0.0198 ppm	0.0102 ppm	0.0102 ppm	0.0559 ppm	2.6698 ppm	0.1073 ppm
Concentration per Run 2	0.0039 ppm	0.0197 ppm	0.0100 ppm	0.0103 ppm	0.0570 ppm	2.7399 ppm	0.1069 ppm
Concentration per Run 3	0.0039 ppm	0.0197 ppm	0.0101 ppm	0.0104 ppm	0.0564 ppm	2.7553 ppm	0.1084 ppm
Recovery Percentage 1	98.372 %	98.627 %	100.911 %	102.849 %	112.802 %	108.867 %	107.562 %
Concentration RSD	0.4 %	0.3 %	0.9 %	0.8 %	1.0 %	1.7 %	0.7 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0111 ppm	0.0488 ppm	2.1209 ppm	0.0195 ppm	0.0095 ppm	0.0488 ppm	0.0098 ppm
Concentration per Run 1	0.0107 ppm	0.0490 ppm	2.0807 ppm	0.0198 ppm	0.0095 ppm	0.0494 ppm	0.0099 ppm
Concentration per Run 2	0.0113 ppm	0.0487 ppm	2.1335 ppm	0.0193 ppm	0.0092 ppm	0.0482 ppm	0.0088 ppm
Concentration per Run 3	0.0111 ppm	0.0488 ppm	2.1486 ppm	0.0195 ppm	0.0099 ppm	0.0489 ppm	0.0107 ppm
Recovery Percentage 1	110.509 %	97.643 %	106.047 %	97.609 %	95.113 %	97.664 %	97.853 %
Concentration RSD	2.9 %	0.3 %	1.7 %	1.3 %	4.1 %	1.2 %	9.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.5115 ppm	0.0490 ppm	0.0103 ppm	0.0519 ppm	0.0193 ppm	0.0104 ppm	0.0053 ppm
Concentration per Run 1	0.5150 ppm	0.0498 ppm	0.0102 ppm	0.0515 ppm	0.0192 ppm	0.0103 ppm	0.0054 ppm
Concentration per Run 2	0.5095 ppm	0.0485 ppm	0.0103 ppm	0.0521 ppm	0.0192 ppm	0.0103 ppm	0.0054 ppm
Concentration per Run 3	0.5101 ppm	0.0488 ppm	0.0104 ppm	0.0520 ppm	0.0195 ppm	0.0105 ppm	0.0052 ppm
Recovery Percentage 1	102.309 %	98.073 %	103.097 %	103.737 %	96.371 %	103.549 %	106.533 %
Concentration RSD	0.6 %	1.4 %	1.2 %	0.7 %	1.0 %	1.3 %	1.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	103.4450 %	100.4047 %	100.2333 %	104.3330 %	100.5874 %	102.8522 %	0.0099 ppm
Concentration per Run 1	106.0550 %	100.3295 %	99.7854 %	106.2704 %	99.8766 %	102.7286 %	0.0098 ppm
Concentration per Run 2	102.0508 %	100.3084 %	100.4327 %	103.5378 %	101.0061 %	102.8304 %	0.0096 ppm
Concentration per Run 3	102.2293 %	100.5761 %	100.4817 %	103.1908 %	100.8795 %	102.9977 %	0.0104 ppm
Recovery Percentage 1							99.371 %
Concentration RSD	2.2 %	0.1 %	0.4 %	1.6 %	0.6 %	0.1 %	3.8 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: ICSA
Analysis started at: 9/26/2024 5:14:20 AM
Rack: 0
Vial: 6

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	516.2891 [SIC 500]	-0.0007 ppm	0.0019 ppm	0.0016 ppm	-0.0001 ppm
Concentration per Run 1	-0.0003 ppm	506.8308 ppm	0.0004 ppm	0.0024 ppm	0.0015 ppm	-0.0001 ppm
Concentration per Run 2	0.0004 ppm	517.1688 ppm	-0.0039 ppm	0.0023 ppm	0.0016 ppm	-0.0001 ppm
Concentration per Run 3	0.0003 ppm	524.8677 ppm	0.0015 ppm	0.0010 ppm	0.0017 ppm	-0.0001 ppm
Recovery Percentage 1	1.506 %	103.258 %	-13.587 %	6.400 %	16.080 %	-2.491 %
Concentration RSD	334.2 %	1.8 %	418.8 %	40.2 %	4.1 %	16.6 %
Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0030 ppm	0.0002 ppm	-0.0004 ppm	-0.0006 ppm	182.6858 ppm	0.0307 ppm
Concentration per Run 1	0.0030 ppm	0.0001 ppm	-0.0003 ppm	-0.0009 ppm	178.6343 ppm	0.0305 ppm
Concentration per Run 2	0.0030 ppm	0.0003 ppm	-0.0005 ppm	-0.0004 ppm	184.4250 ppm	0.0378 ppm
Concentration per Run 3	0.0031 ppm	0.0003 ppm	-0.0004 ppm	-0.0004 ppm	184.9981 ppm	0.0238 ppm
Recovery Percentage 1	75.997 %	1.191 %	-3.866 %	-5.687 %	91.343 %	1.228 %
Concentration RSD	1.3 %	49.4 %	29.7 %	55.9 %	1.9 %	22.9 %
Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0020 ppm	-0.0008 ppm	0.0081 ppm	0.0014 ppm	0.0004 ppm	0.0046 ppm
Concentration per Run 1	0.0018 ppm	-0.0006 ppm	0.0097 ppm	0.0011 ppm	0.0010 ppm	0.0024 ppm
Concentration per Run 2	0.0023 ppm	-0.0007 ppm	0.0105 ppm	0.0013 ppm	0.0003 ppm	0.0043 ppm
Concentration per Run 3	0.0020 ppm	-0.0009 ppm	0.0043 ppm	0.0016 ppm	0.0001 ppm	0.0071 ppm
Recovery Percentage 1	20.089 %	-1.511 %	0.407 %	5.424 %	4.348 %	9.265 %
Concentration RSD	11.4 %	15.1 %	41.5 %	18.1 %	105.7 %	51.1 %
Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	-0.0060 ppm	0.0017 ppm	0.0006 ppm	0.0006 ppm	-0.0054 ppm	0.0005 ppm
Concentration per Run 1	-0.0072 ppm	0.0018 ppm	0.0006 ppm	0.0009 ppm	-0.0071 ppm	0.0005 ppm
Concentration per Run 2	-0.0049 ppm	0.0019 ppm	0.0006 ppm	0.0006 ppm	-0.0064 ppm	0.0005 ppm
Concentration per Run 3	-0.0060 ppm	0.0015 ppm	0.0005 ppm	0.0004 ppm	-0.0027 ppm	0.0006 ppm
Recovery Percentage 1	-1.204 %	3.486 %	5.811 %	6.289 %	-26.979 %	5.287 %
Concentration RSD	19.0 %	13.0 %	13.9 %	38.0 %	43.8 %	7.3 %
Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	94.6038 %	84.3412 %	84.7332 %	97.3625 %	79.5309 %	86.1557 %
Concentration per Run 1	94.9649 %	84.2374 %	84.6400 %	98.9442 %	79.2847 %	86.1204 %
Concentration per Run 2	94.7318 %	84.4063 %	84.9553 %	96.8704 %	79.7018 %	86.2128 %
Concentration per Run 3	94.1148 %	84.3798 %	84.6042 %	96.2728 %	79.6061 %	86.1340 %
Recovery Percentage 1						-477.428 %
Concentration RSD	0.5 %	0.1 %	0.2 %	1.4 %	0.3 %	9.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: SIC Cr Mn V Ti
Analysis started at: 9/26/2024 5:23:25 AM
Rack: 0
Vial: 7

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0007 ppm	0.0116 ppm	-0.0036 ppm	0.0093 ppm	0.0003 ppm	-0.0008 ppm
Concentration per Run 1	0.0007 ppm	0.0121 ppm	-0.0034 ppm	0.0092 ppm	0.0003 ppm	-0.0005 ppm
Concentration per Run 2	0.0006 ppm	0.0122 ppm	-0.0050 ppm	0.0092 ppm	0.0003 ppm	-0.0008 ppm
Concentration per Run 3	0.0007 ppm	0.0107 ppm	-0.0024 ppm	0.0094 ppm	0.0003 ppm	-0.0009 ppm
Recovery Percentage 1	9.644 %	0.002 %	-72.437 %	30.897 %	3.182 %	-15.192 %
Concentration RSD	12.0 %	7.2 %	35.1 %	1.1 %	10.0 %	25.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0028 ppm	-0.0067 ppm	20.2252 ppm	0.0009 ppm	-0.0052 ppm	-0.0168 ppm
Concentration per Run 1	-0.0028 ppm	-0.0067 ppm	20.2577 ppm	0.0008 ppm	-0.0044 ppm	-0.0158 ppm
Concentration per Run 2	-0.0028 ppm	-0.0066 ppm	20.1497 ppm	0.0010 ppm	-0.0055 ppm	-0.0247 ppm
Concentration per Run 3	-0.0028 ppm	-0.0068 ppm	20.2681 ppm	0.0009 ppm	-0.0057 ppm	-0.0099 ppm
Recovery Percentage 1	-69.912 %	-33.589 %	202,251.773 %	9.151 %	-0.003 %	-0.673 %
Concentration RSD	1.4 %	1.8 %	0.3 %	8.8 %	14.0 %	44.3 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	20.5156 [SIC 20]	-0.0014 ppm	-0.0123 ppm	-0.0001 ppm	-0.0015 ppm	-0.0173 ppm
Concentration per Run 1	20.1759 ppm	-0.0013 ppm	-0.0143 ppm	0.0000 ppm	-0.0013 ppm	-0.0182 ppm
Concentration per Run 2	20.5402 ppm	-0.0014 ppm	-0.0071 ppm	-0.0001 ppm	-0.0017 ppm	-0.0169 ppm
Concentration per Run 3	20.8306 ppm	-0.0014 ppm	-0.0155 ppm	-0.0002 ppm	-0.0014 ppm	-0.0170 ppm
Recovery Percentage 1	205,155.624 %	-2.760 %	-0.614 %	-0.382 %	-14.739 %	-34.696 %
Concentration RSD	1.6 %	2.1 %	37.2 %	115.6 %	15.3 %	4.1 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.2683 ppm	-0.0019 ppm	0.0002 ppm	19.8767 ppm	-0.0256 ppm	10.1213 [SIC 10]
Concentration per Run 1	0.2688 ppm	-0.0017 ppm	0.0002 ppm	19.9168 ppm	-0.0247 ppm	10.1474 ppm
Concentration per Run 2	0.2641 ppm	-0.0017 ppm	0.0002 ppm	19.8676 ppm	-0.0245 ppm	10.1441 ppm
Concentration per Run 3	0.2720 ppm	-0.0021 ppm	0.0002 ppm	19.8457 ppm	-0.0274 ppm	10.0724 ppm
Recovery Percentage 1	53.659 %	-3.712 %	2.114 %	198,766.924 %	-127.754 %	101,213.105 %
Concentration RSD	1.5 %	13.8 %	9.1 %	0.2 %	6.3 %	0.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.6470 %	99.9335 %	99.9684 %	106.4014 %	95.2950 %	101.3196 %
Concentration per Run 1	103.4654 %	100.0121 %	100.6487 %	108.0591 %	96.0459 %	101.2610 %
Concentration per Run 2	101.0187 %	100.0246 %	100.7839 %	105.9036 %	95.9156 %	101.3585 %
Concentration per Run 3	100.4568 %	99.7638 %	98.4725 %	105.2417 %	93.9234 %	101.3394 %
Recovery Percentage 1						
Concentration RSD	1.6 %	0.1 %	1.3 %	1.4 %	1.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR Check
Analysis started at: 9/26/2024 5:31:35 AM
Rack: 0
Vial: 8

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0025 ppm	0.0690 ppm	22.0652 ppm	24.7730 [SIC 20]	19.3730 ppm	5.0373 ppm
Concentration per Run 1	0.0026 ppm	0.0588 ppm	22.0480 ppm	24.7484 ppm	19.0589 ppm	4.9679 ppm
Concentration per Run 2	0.0023 ppm	0.0713 ppm	22.0684 ppm	24.7706 ppm	19.5515 ppm	5.1215 ppm
Concentration per Run 3	0.0027 ppm	0.0769 ppm	22.0793 ppm	24.7999 ppm	19.5085 ppm	5.0224 ppm
Recovery Percentage 1	0.000 %	0.000 %	110.326 %	123.865 %	96.865 %	100.745 %
Concentration RSD	6.9 %	13.4 %	0.1 %	0.1 %	1.4 %	1.5 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	5.0614 ppm	5.0746 ppm	-0.0002 ppm	20.1606 [SIC 20]	0.0124 ppm	328.3608 ppm
Concentration per Run 1	5.0673 ppm	5.0761 ppm	-0.0003 ppm	20.3874 ppm	0.0124 ppm	339.5459 ppm
Concentration per Run 2	5.0582 ppm	5.0735 ppm	-0.0001 ppm	20.0754 ppm	0.0115 ppm	326.7192 ppm
Concentration per Run 3	5.0589 ppm	5.0741 ppm	-0.0003 ppm	20.0189 ppm	0.0134 ppm	318.8174 ppm
Recovery Percentage 1	101.229 %	101.491 %	0.000 %	100.803 %	0.000 %	65.672 %
Concentration RSD	0.1 %	0.0 %	59.9 %	1.0 %	7.8 %	3.2 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	5.2600 [SIC 20]	313.2736 [SIC 500]	9.8053 ppm	48.1099 ppm	5.4506 ppm
Concentration per Run 1	0.0006 ppm	5.2544 ppm	320.6720 ppm	9.8056 ppm	48.1051 ppm	5.4448 ppm
Concentration per Run 2	0.0005 ppm	5.2609 ppm	315.1990 ppm	9.8006 ppm	48.0937 ppm	5.4541 ppm
Concentration per Run 3	0.0004 ppm	5.2647 ppm	303.9498 ppm	9.8096 ppm	48.1309 ppm	5.4531 ppm
Recovery Percentage 1	0.000 %	105.200 %	62.655 %	98.053 %	96.220 %	109.013 %
Concentration RSD	13.6 %	0.1 %	2.7 %	0.0 %	0.0 %	0.1 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	22.8887 [SIC 200]	9.5220 ppm	4.7582 ppm	0.0061 ppm	4.5598 ppm	-0.0005 ppm
Concentration per Run 1	22.8476 ppm	9.5282 ppm	4.6645 ppm	0.0063 ppm	4.5591 ppm	-0.0006 ppm
Concentration per Run 2	22.8854 ppm	9.5186 ppm	4.8174 ppm	0.0060 ppm	4.5627 ppm	-0.0006 ppm
Concentration per Run 3	22.9330 ppm	9.5192 ppm	4.7927 ppm	0.0061 ppm	4.5574 ppm	-0.0003 ppm
Recovery Percentage 1	114.443 %	95.220 %	95.164 %	0.000 %	91.195 %	0.000 %
Concentration RSD	0.2 %	0.1 %	1.7 %	2.3 %	0.1 %	32.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.2967 %	84.9907 %	83.2630 %	99.4033 %	77.4402 %	87.0761 %
Concentration per Run 1	96.0246 %	84.9469 %	83.2762 %	100.2529 %	77.5403 %	87.0974 %
Concentration per Run 2	94.3447 %	85.0637 %	83.2462 %	98.5607 %	77.4442 %	87.1014 %
Concentration per Run 3	95.5208 %	84.9614 %	83.2666 %	99.3963 %	77.3361 %	87.0295 %
Recovery Percentage 1						97.496 %
Concentration RSD	0.9 %	0.1 %	0.0 %	0.9 %	0.1 %	0.6 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: IEC 20PPM Ti
Analysis started at: 9/26/2024 6:06:35 AM
Rack: 1
Vial: 1

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	-0.0011 ppm	0.0126 ppm	-0.0006 ppm	0.0062 ppm	0.0023 ppm	-0.0001 ppm	0.5836 ppm
Concentration per Run 1	-0.0011 ppm	0.0117 ppm	-0.0015 ppm	0.0059 ppm	0.0022 ppm	-0.0001 ppm	0.5767 ppm
Concentration per Run 2	-0.0012 ppm	0.0137 ppm	0.0005 ppm	0.0064 ppm	0.0022 ppm	-0.0001 ppm	0.5869 ppm
Concentration per Run 3	-0.0010 ppm	0.0123 ppm	-0.0008 ppm	0.0063 ppm	0.0024 ppm	-0.0002 ppm	0.5872 ppm
Recovery Percentage 1	-15.677 %	0.003 %	-12.736 %	20.730 %	22.738 %	-2.988 %	0.117 %
Concentration RSD	6.8 %	7.9 %	160.1 %	3.9 %	3.5 %	44.8 %	1.0 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0005 ppm	-0.0008 ppm	0.0015 ppm	0.0199 ppm	0.2142 ppm	0.0214 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	-0.0007 ppm	0.0015 ppm	0.0192 ppm	0.2512 ppm	0.0208 ppm
Concentration per Run 2	0.0000 ppm	-0.0007 ppm	-0.0009 ppm	0.0015 ppm	0.0207 ppm	0.2077 ppm	0.0209 ppm
Concentration per Run 3	0.0000 ppm	-0.0005 ppm	-0.0009 ppm	0.0015 ppm	0.0200 ppm	0.1837 ppm	0.0225 ppm
Recovery Percentage 1	-0.238 %	-2.474 %	-8.008 %	14.867 %	0.010 %	8.568 %	0.004 %
Concentration RSD	69.2 %	45.6 %	15.8 %	1.1 %	3.7 %	16.0 %	4.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	0.0002 ppm	0.1494 ppm	0.0028 ppm	0.0052 ppm	-0.0016 ppm	-0.0007 ppm
Concentration per Run 1	0.0005 ppm	0.0002 ppm	0.1505 ppm	0.0027 ppm	0.0052 ppm	-0.0019 ppm	0.0007 ppm
Concentration per Run 2	0.0006 ppm	0.0001 ppm	0.1567 ppm	0.0029 ppm	0.0053 ppm	-0.0011 ppm	0.0000 ppm
Concentration per Run 3	0.0004 ppm	0.0001 ppm	0.1411 ppm	0.0029 ppm	0.0052 ppm	-0.0018 ppm	-0.0027 ppm
Recovery Percentage 1	5.109 %	0.305 %	7.472 %	11.317 %	52.252 %	-3.133 %	-6.853 %
Concentration RSD	20.6 %	12.4 %	5.3 %	2.8 %	1.4 %	28.3 %	263.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0000 ppm	-0.0008 ppm	0.0015 ppm	20.3877 ppm	0.0010 ppm	-0.0018 ppm	-0.0013 ppm
Concentration per Run 1	0.0078 ppm	-0.0007 ppm	0.0014 ppm	20.3501 ppm	0.0020 ppm	-0.0019 ppm	-0.0013 ppm
Concentration per Run 2	-0.0027 ppm	-0.0012 ppm	0.0015 ppm	20.3836 ppm	0.0007 ppm	-0.0015 ppm	-0.0013 ppm
Concentration per Run 3	-0.0051 ppm	-0.0004 ppm	0.0015 ppm	20.4295 ppm	0.0003 ppm	-0.0019 ppm	-0.0014 ppm
Recovery Percentage 1	-0.004 %	-1.547 %	14.788 %	203,877.205 %	5.054 %	-17.913 %	-26.276 %
Concentration RSD	38,892.1 %	47.1 %	3.4 %	0.2 %	86.3 %	14.4 %	6.6 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.2401 %	102.3792 %	102.9261 %	107.1868 %	98.7476 %	102.9778 %	0.0058 ppm
Concentration per Run 1	103.5322 %	102.5679 %	103.2261 %	109.4370 %	99.1643 %	103.1806 %	0.0036 ppm
Concentration per Run 2	100.2651 %	102.5817 %	102.6032 %	106.3505 %	98.3159 %	103.1306 %	0.0075 ppm
Concentration per Run 3	99.9230 %	101.9880 %	102.9489 %	105.7730 %	98.7627 %	102.6223 %	0.0062 ppm
Recovery Percentage 1							57.783 %
Concentration RSD	2.0 %	0.3 %	0.3 %	1.8 %	0.4 %	0.3 %	33.8 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 20PPM Si
Analysis started at: 9/26/2024 6:13:23 AM
Rack: 1
Vial: 2

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0031 ppm	-0.0006 ppm	0.0033 ppm	0.0000 ppm	0.0000 ppm	0.0069 ppm
Concentration per Run 1	0.0000 ppm	0.0045 ppm	-0.0008 ppm	0.0031 ppm	-0.0001 ppm	0.0000 ppm	0.0061 ppm
Concentration per Run 2	0.0002 ppm	0.0043 ppm	0.0000 ppm	0.0033 ppm	0.0000 ppm	0.0001 ppm	0.0072 ppm
Concentration per Run 3	0.0003 ppm	0.0007 ppm	-0.0009 ppm	0.0034 ppm	0.0000 ppm	0.0001 ppm	0.0074 ppm
Concentration RSD	89.6 %	68.2 %	88.8 %	4.5 %	889.1 %	32.6 %	9.8 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0001 ppm	-0.0006 ppm	0.0001 ppm	-0.0001 ppm	0.0035 ppm	0.0441 ppm	0.0020 ppm
Concentration per Run 1	0.0001 ppm	-0.0006 ppm	0.0002 ppm	-0.0002 ppm	0.0044 ppm	0.0523 ppm	0.0021 ppm
Concentration per Run 2	0.0001 ppm	-0.0006 ppm	0.0000 ppm	-0.0001 ppm	0.0030 ppm	0.0242 ppm	0.0027 ppm
Concentration per Run 3	0.0001 ppm	-0.0005 ppm	0.0001 ppm	0.0000 ppm	0.0031 ppm	0.0558 ppm	0.0013 ppm
Concentration RSD	10.5 %	6.5 %	80.3 %	113.8 %	23.6 %	39.3 %	32.7 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0002 ppm	0.0002 ppm	0.0049 ppm	0.0000 ppm	-0.0038 ppm	0.0014 ppm	0.0017 ppm
Concentration per Run 1	0.0004 ppm	0.0001 ppm	0.0033 ppm	0.0000 ppm	-0.0039 ppm	0.0014 ppm	0.0018 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0073 ppm	-0.0002 ppm	-0.0041 ppm	0.0007 ppm	0.0016 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0042 ppm	0.0000 ppm	-0.0036 ppm	0.0023 ppm	0.0016 ppm
Concentration RSD	103.5 %	36.4 %	42.8 %	256.3 %	5.9 %	55.8 %	6.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	20.0861 [SIC 200]	0.0006 ppm	0.0000 ppm	0.0041 ppm	-0.0011 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 1	20.1143 ppm	0.0005 ppm	0.0000 ppm	0.0047 ppm	-0.0016 ppm	0.0001 ppm	0.0002 ppm
Concentration per Run 2	20.1170 ppm	0.0005 ppm	-0.0001 ppm	0.0041 ppm	-0.0009 ppm	-0.0001 ppm	0.0003 ppm
Concentration per Run 3	20.0270 ppm	0.0007 ppm	0.0000 ppm	0.0036 ppm	-0.0008 ppm	0.0001 ppm	0.0003 ppm
Concentration RSD	0.3 %	22.2 %	81.5 %	14.2 %	40.3 %	284.8 %	18.9 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.9551 %	104.1214 %	104.4540 %	106.7324 %	101.9719 %	105.6277 %	0.0040 ppm
Concentration per Run 1	102.1243 %	103.9310 %	104.4854 %	107.2666 %	101.9338 %	105.4163 %	0.0038 ppm
Concentration per Run 2	102.3203 %	104.0814 %	104.4555 %	106.9439 %	101.8511 %	105.6069 %	0.0047 ppm
Concentration per Run 3	101.4206 %	104.3517 %	104.4210 %	105.9868 %	102.1309 %	105.8599 %	0.0034 ppm
Concentration RSD	0.5 %	0.2 %	0.0 %	0.6 %	0.1 %	0.2 %	17.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 20PPM B
Analysis started at: 9/26/2024 6:20:05 AM
Rack: 1
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0024 ppm	0.0010 ppm	18.5471 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	0.0040 ppm	-0.0004 ppm	18.5891 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 2	0.0003 ppm	0.0032 ppm	0.0015 ppm	18.5106 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0002 ppm	0.0001 ppm	0.0018 ppm	18.5416 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	26.5 %	83.8 %	119.9 %	0.2 %	3,189.8 %	26.0 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0026 ppm	0.0209 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0031 ppm	0.0216 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0024 ppm	0.0298 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0002 ppm	-0.0001 ppm	0.0022 ppm	0.0113 ppm
Concentration RSD	130.1 %	24.3 %	148.5 %	26.6 %	17.4 %	44.2 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0002 ppm	-0.0077 ppm	0.0000 ppm	-0.0004 ppm	-0.0005 ppm
Concentration per Run 1	0.0001 ppm	0.0002 ppm	-0.0042 ppm	0.0000 ppm	-0.0005 ppm	-0.0008 ppm
Concentration per Run 2	0.0002 ppm	0.0001 ppm	-0.0115 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm
Concentration per Run 3	-0.0001 ppm	0.0002 ppm	-0.0074 ppm	0.0000 ppm	-0.0003 ppm	-0.0003 ppm
Concentration RSD	228.8 %	19.2 %	47.6 %	19.0 %	32.7 %	49.8 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0037 ppm	0.0001 ppm	0.0000 ppm	-0.0005 ppm	0.0001 ppm	0.0003 ppm
Concentration per Run 1	0.0039 ppm	0.0003 ppm	0.0000 ppm	-0.0008 ppm	0.0002 ppm	0.0002 ppm
Concentration per Run 2	0.0036 ppm	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 3	0.0036 ppm	0.0002 ppm	0.0000 ppm	-0.0003 ppm	0.0001 ppm	0.0003 ppm
Concentration RSD	5.0 %	116.7 %	206.8 %	7,007.3 %	73.0 %	100.8 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	102.0172 %	102.8368 %	102.7573 %	105.4818 %	100.3701 %	104.3789 %
Concentration per Run 1	103.8981 %	102.9925 %	102.5364 %	106.5022 %	100.1097 %	104.5808 %
Concentration per Run 2	100.8112 %	103.0368 %	102.9906 %	104.9957 %	100.6363 %	104.4629 %
Concentration per Run 3	101.3423 %	102.4812 %	102.7450 %	104.9475 %	100.3643 %	104.0931 %
Concentration RSD	1.6 %	0.3 %	0.2 %	0.8 %	0.3 %	0.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 20PPM AS
Analysis started at: 9/26/2024 6:26:47 AM
Rack: 1
Vial: 4

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0046 ppm	18.1801 ppm	0.0200 ppm	0.0000 ppm	0.0000 ppm	0.0044 ppm
Concentration per Run 1	0.0001 ppm	0.0070 ppm	18.2061 ppm	0.0203 ppm	0.0000 ppm	0.0000 ppm	0.0068 ppm
Concentration per Run 2	0.0003 ppm	0.0024 ppm	18.1776 ppm	0.0199 ppm	0.0000 ppm	0.0000 ppm	0.0035 ppm
Concentration per Run 3	0.0003 ppm	0.0046 ppm	18.1565 ppm	0.0198 ppm	0.0000 ppm	0.0000 ppm	0.0031 ppm
Concentration RSD	51.2 %	49.1 %	0.1 %	1.4 %	229.5 %	39.9 %	45.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0036 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0052 ppm	0.0097 ppm	0.0024 ppm
Concentration per Run 1	-0.0036 ppm	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0052 ppm	0.0152 ppm	0.0014 ppm
Concentration per Run 2	-0.0036 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm	0.0051 ppm	0.0076 ppm	0.0039 ppm
Concentration per Run 3	-0.0036 ppm	0.0000 ppm	0.0002 ppm	-0.0001 ppm	0.0052 ppm	0.0061 ppm	0.0019 ppm
Concentration RSD	0.7 %	257.8 %	51.6 %	389.0 %	0.9 %	50.8 %	55.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0010 ppm	0.0001 ppm	-0.0097 ppm	0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0013 ppm
Concentration per Run 1	0.0012 ppm	0.0002 ppm	-0.0086 ppm	0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0023 ppm
Concentration per Run 2	0.0009 ppm	0.0001 ppm	-0.0068 ppm	-0.0001 ppm	0.0002 ppm	0.0005 ppm	0.0002 ppm
Concentration per Run 3	0.0009 ppm	0.0001 ppm	-0.0135 ppm	0.0000 ppm	-0.0002 ppm	0.0004 ppm	0.0016 ppm
Concentration RSD	15.7 %	81.0 %	35.8 %	274.6 %	1,026.1 %	45.9 %	79.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0036 ppm	0.0006 ppm	0.0000 ppm	0.0001 ppm	-0.0009 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 1	0.0038 ppm	0.0005 ppm	0.0001 ppm	0.0000 ppm	-0.0011 ppm	0.0000 ppm	0.0004 ppm
Concentration per Run 2	0.0036 ppm	0.0005 ppm	0.0000 ppm	0.0001 ppm	-0.0012 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 3	0.0035 ppm	0.0007 ppm	0.0000 ppm	0.0002 ppm	-0.0003 ppm	0.0003 ppm	0.0004 ppm
Concentration RSD	4.4 %	19.8 %	312.5 %	123.1 %	59.0 %	72.4 %	9.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.8908 %	103.0717 %	103.1142 %	105.4834 %	101.6527 %	104.3985 %	0.0017 ppm
Concentration per Run 1	104.2953 %	103.0471 %	103.0320 %	106.6855 %	101.4665 %	104.4045 %	0.0008 ppm
Concentration per Run 2	100.6181 %	102.9544 %	103.2097 %	104.8939 %	101.7788 %	104.3261 %	0.0021 ppm
Concentration per Run 3	100.7590 %	103.2137 %	103.1010 %	104.8708 %	101.7128 %	104.4650 %	0.0023 ppm
Concentration RSD	2.0 %	0.1 %	0.1 %	1.0 %	0.2 %	0.1 %	46.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: XLDR 500PPM K
Analysis started at: 9/26/2024 6:33:30 AM
Rack: 1
Vial: 5

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	-0.0002 ppm	0.0048 ppm	0.0112 ppm	0.0131 ppm	0.0001 ppm	0.0000 ppm	0.0044 ppm
Concentration per Run 1	-0.0003 ppm	0.0055 ppm	0.0128 ppm	0.0133 ppm	0.0001 ppm	0.0000 ppm	0.0049 ppm
Concentration per Run 2	0.0001 ppm	0.0049 ppm	0.0118 ppm	0.0130 ppm	0.0000 ppm	0.0000 ppm	0.0017 ppm
Concentration per Run 3	-0.0003 ppm	0.0041 ppm	0.0090 ppm	0.0131 ppm	0.0000 ppm	0.0000 ppm	0.0065 ppm
Concentration RSD	137.0 %	15.1 %	17.7 %	1.0 %	112.1 %	30.2 %	56.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0029 ppm	375.4076 ppm	0.0021 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0036 ppm	397.9111 ppm	0.0038 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0029 ppm	372.3347 ppm	0.0002 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0004 ppm	0.0022 ppm	355.9770 ppm	0.0023 ppm
Concentration RSD	571.2 %	261.2 %	2,813.1 %	17.9 %	23.2 %	5.6 %	86.7 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	-0.0001 ppm	0.0001 ppm	0.0079 ppm	-0.0001 ppm	0.0001 ppm	-0.0003 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0097 ppm	-0.0003 ppm	0.0002 ppm	-0.0005 ppm	0.0010 ppm
Concentration per Run 2	-0.0002 ppm	0.0001 ppm	0.0050 ppm	0.0001 ppm	-0.0002 ppm	-0.0009 ppm	-0.0005 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	0.0090 ppm	0.0000 ppm	0.0004 ppm	0.0004 ppm	0.0004 ppm
Concentration RSD	250.2 %	53.9 %	31.7 %	218.2 %	266.3 %	197.8 %	252.4 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0042 ppm	0.0003 ppm	0.0000 ppm	-0.0001 ppm	-0.0010 ppm	0.0001 ppm	0.0003 ppm
Concentration per Run 1	0.0042 ppm	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0003 ppm
Concentration per Run 2	0.0044 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	-0.0012 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 3	0.0040 ppm	0.0003 ppm	0.0000 ppm	-0.0001 ppm	-0.0019 ppm	0.0000 ppm	0.0002 ppm
Concentration RSD	5.1 %	78.9 %	16.1 %	62.8 %	92.5 %	244.0 %	27.6 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.5624 %	90.6813 %	93.2229 %	101.3475 %	84.1178 %	92.8726 %	0.0037 ppm
Concentration per Run 1	99.8734 %	90.8299 %	93.2102 %	103.3156 %	84.1420 %	92.9489 %	0.0050 ppm
Concentration per Run 2	96.4656 %	90.5741 %	93.2478 %	100.6245 %	84.1105 %	92.8304 %	0.0027 ppm
Concentration per Run 3	96.3481 %	90.6399 %	93.2107 %	100.1024 %	84.1010 %	92.8383 %	0.0033 ppm
Concentration RSD	2.1 %	0.1 %	0.0 %	1.7 %	0.0 %	0.1 %	32.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: XLDR 500PPM NA
Analysis started at: 9/26/2024 6:41:15 AM
Rack: 1
Vial: 6

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0046 ppm	0.0026 ppm	0.0079 ppm	0.0000 ppm	0.0041 ppm
Concentration per Run 1	-0.0002 ppm	0.0091 ppm	0.0028 ppm	0.0079 ppm	0.0000 ppm	0.0050 ppm
Concentration per Run 2	0.0001 ppm	0.0031 ppm	0.0030 ppm	0.0077 ppm	-0.0001 ppm	0.0033 ppm
Concentration per Run 3	0.0000 ppm	0.0015 ppm	0.0019 ppm	0.0080 ppm	0.0000 ppm	0.0041 ppm
Concentration RSD	627.1 %	88.2 %	23.9 %	2.4 %	914.9 %	113.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0003 ppm	0.0004 ppm	0.0021 ppm	1.1285 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0003 ppm	0.0005 ppm	0.0022 ppm	1.3320 ppm
Concentration per Run 2	0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0005 ppm	0.0028 ppm	1.0880 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0004 ppm	0.0014 ppm	0.9654 ppm
Concentration RSD	48.2 %	77.6 %	23.0 %	6.9 %	33.7 %	16.5 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0002 ppm	356.7681 [SIC 500]	0.0000 ppm	0.0002 ppm	-0.0001 ppm
Concentration per Run 1	0.0001 ppm	0.0002 ppm	392.9717 ppm	0.0000 ppm	0.0002 ppm	-0.0003 ppm
Concentration per Run 2	-0.0002 ppm	0.0001 ppm	346.6036 ppm	0.0000 ppm	0.0003 ppm	-0.0003 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	330.7290 ppm	-0.0001 ppm	0.0000 ppm	0.0003 ppm
Concentration RSD	6,621.6 %	45.8 %	9.1 %	272.3 %	73.4 %	369.7 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0032 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0012 ppm	0.0000 ppm
Concentration per Run 1	0.0032 ppm	-0.0001 ppm	0.0000 ppm	0.0001 ppm	-0.0005 ppm	-0.0001 ppm
Concentration per Run 2	0.0035 ppm	-0.0002 ppm	0.0000 ppm	-0.0002 ppm	-0.0014 ppm	0.0001 ppm
Concentration per Run 3	0.0029 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm	-0.0017 ppm	0.0001 ppm
Concentration RSD	9.6 %	194.5 %	227.3 %	633.0 %	53.2 %	235.7 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	94.7952 %	90.1462 %	92.6892 %	97.3325 %	82.2754 %	92.0757 %
Concentration per Run 1	89.2353 %	90.2535 %	92.6922 %	92.1903 %	82.3861 %	92.1301 %
Concentration per Run 2	97.7659 %	90.1878 %	92.6081 %	99.1414 %	82.0201 %	92.1651 %
Concentration per Run 3	97.3844 %	89.9975 %	92.7674 %	100.6659 %	82.4199 %	91.9319 %
Concentration RSD	5.1 %	0.1 %	0.1 %	4.6 %	0.3 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 500PMM FE
Analysis started at: 9/26/2024 6:49:10 AM
Rack: 1
Vial: 7

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0011 ppm	0.0019 ppm	-0.0015 ppm	0.0056 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 1	0.0012 ppm	0.0019 ppm	-0.0029 ppm	0.0058 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 2	0.0010 ppm	-0.0008 ppm	-0.0003 ppm	0.0056 ppm	0.0005 ppm	0.0000 ppm
Concentration per Run 3	0.0009 ppm	0.0047 ppm	-0.0014 ppm	0.0055 ppm	0.0004 ppm	0.0000 ppm
Concentration RSD	14.4 %	144.0 %	85.6 %	2.6 %	11.8 %	19.2 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0124 ppm	-0.0004 ppm	-0.0029 ppm	-0.0118 ppm	478.3968 ppm	0.0950 ppm
Concentration per Run 1	0.0126 ppm	-0.0004 ppm	-0.0029 ppm	-0.0118 ppm	471.9422 ppm	0.1163 ppm
Concentration per Run 2	0.0123 ppm	-0.0004 ppm	-0.0028 ppm	-0.0115 ppm	482.9009 ppm	0.0956 ppm
Concentration per Run 3	0.0121 ppm	-0.0004 ppm	-0.0031 ppm	-0.0120 ppm	480.3475 ppm	0.0730 ppm
Concentration RSD	2.0 %	3.2 %	5.0 %	2.3 %	1.2 %	22.8 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	-0.0033 ppm	0.2013 ppm	0.0119 ppm	0.0050 ppm	-0.0083 ppm
Concentration per Run 1	0.0005 ppm	-0.0033 ppm	0.2337 ppm	0.0124 ppm	0.0049 ppm	-0.0071 ppm
Concentration per Run 2	0.0008 ppm	-0.0032 ppm	0.1999 ppm	0.0116 ppm	0.0055 ppm	-0.0085 ppm
Concentration per Run 3	0.0004 ppm	-0.0032 ppm	0.1701 ppm	0.0118 ppm	0.0046 ppm	-0.0092 ppm
Concentration RSD	36.1 %	2.5 %	15.8 %	3.6 %	9.1 %	13.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0050 ppm	0.0035 ppm	0.0003 ppm	0.0001 ppm	-0.0035 ppm	0.0013 ppm
Concentration per Run 1	0.0047 ppm	0.0040 ppm	0.0003 ppm	0.0000 ppm	-0.0035 ppm	0.0014 ppm
Concentration per Run 2	0.0054 ppm	0.0037 ppm	0.0003 ppm	0.0003 ppm	-0.0029 ppm	0.0014 ppm
Concentration per Run 3	0.0050 ppm	0.0029 ppm	0.0003 ppm	-0.0001 ppm	-0.0042 ppm	0.0010 ppm
Concentration RSD	7.9 %	17.0 %	4.5 %	304.6 %	18.8 %	16.8 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.9960 %	97.2055 %	94.9527 %	105.1698 %	85.2568 %	99.6361 %
Concentration per Run 1	100.1215 %	97.2581 %	94.9090 %	107.4938 %	85.2789 %	99.7438 %
Concentration per Run 2	98.7139 %	97.0875 %	95.1415 %	104.2859 %	85.4383 %	99.5023 %
Concentration per Run 3	98.1526 %	97.2708 %	94.8074 %	103.7296 %	85.0531 %	99.6623 %
Concentration RSD	1.0 %	0.1 %	0.2 %	1.9 %	0.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 1000PPM CA
Analysis started at: 9/26/2024 6:56:57 AM
Rack: 1
Vial: 8

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	-0.0006 ppm	-0.0111 ppm	0.0012 ppm	0.0051 ppm	0.0009 ppm	-0.0002 ppm	949.2928 ppm
Concentration per Run 1	-0.0007 ppm	-0.0114 ppm	0.0002 ppm	0.0054 ppm	0.0009 ppm	-0.0002 ppm	937.1005 ppm
Concentration per Run 2	-0.0005 ppm	-0.0071 ppm	0.0035 ppm	0.0049 ppm	0.0009 ppm	-0.0002 ppm	952.6609 ppm
Concentration per Run 3	-0.0005 ppm	-0.0147 ppm	-0.0001 ppm	0.0049 ppm	0.0009 ppm	-0.0002 ppm	958.1171 ppm
Concentration RSD	19.1 %	34.2 %	170.2 %	5.4 %	2.7 %	15.4 %	1.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0020 ppm	0.0004 ppm	0.0008 ppm	0.0011 ppm	0.0115 ppm	0.0549 ppm	0.0151 ppm
Concentration per Run 1	0.0020 ppm	0.0005 ppm	0.0009 ppm	0.0012 ppm	0.0074 ppm	0.0303 ppm	0.0140 ppm
Concentration per Run 2	0.0020 ppm	0.0004 ppm	0.0009 ppm	0.0011 ppm	0.0193 ppm	0.0773 ppm	0.0163 ppm
Concentration per Run 3	0.0020 ppm	0.0003 ppm	0.0007 ppm	0.0011 ppm	0.0076 ppm	0.0571 ppm	0.0149 ppm
Concentration RSD	0.8 %	32.4 %	14.6 %	6.2 %	59.2 %	42.9 %	7.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0006 ppm	0.0007 ppm	0.0610 ppm	-0.0001 ppm	0.0003 ppm	0.0028 ppm	0.0034 ppm
Concentration per Run 1	0.0005 ppm	0.0007 ppm	0.0589 ppm	-0.0001 ppm	0.0006 ppm	0.0030 ppm	0.0028 ppm
Concentration per Run 2	0.0008 ppm	0.0008 ppm	0.0605 ppm	-0.0003 ppm	-0.0002 ppm	0.0023 ppm	0.0034 ppm
Concentration per Run 3	0.0004 ppm	0.0007 ppm	0.0637 ppm	0.0001 ppm	0.0003 ppm	0.0030 ppm	0.0041 ppm
Concentration RSD	41.1 %	6.7 %	4.0 %	196.5 %	152.4 %	15.9 %	18.9 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0134 ppm	0.0004 ppm	0.0002 ppm	-0.0002 ppm	-0.0034 ppm	0.0009 ppm	0.0030 ppm
Concentration per Run 1	0.0128 ppm	0.0008 ppm	0.0001 ppm	-0.0003 ppm	-0.0032 ppm	0.0009 ppm	0.0031 ppm
Concentration per Run 2	0.0144 ppm	0.0002 ppm	0.0003 ppm	-0.0001 ppm	-0.0039 ppm	0.0010 ppm	0.0030 ppm
Concentration per Run 3	0.0130 ppm	0.0001 ppm	0.0003 ppm	-0.0002 ppm	-0.0031 ppm	0.0007 ppm	0.0029 ppm
Concentration RSD	6.4 %	101.5 %	49.6 %	51.9 %	11.7 %	15.9 %	3.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	92.9092 %	86.7506 %	86.6160 %	98.0438 %	91.1346 %	87.5883 %	-0.0604 ppm
Concentration per Run 1	93.8023 %	86.5613 %	85.8008 %	99.9781 %	90.6390 %	87.4512 %	-0.0633 ppm
Concentration per Run 2	92.5683 %	86.9087 %	87.2351 %	97.5641 %	91.4165 %	87.7681 %	-0.0584 ppm
Concentration per Run 3	92.3571 %	86.7819 %	86.8122 %	96.5893 %	91.3485 %	87.5456 %	-0.0595 ppm
Concentration RSD	0.8 %	0.2 %	0.9 %	1.8 %	0.5 %	0.2 %	4.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: XLDR 200PPM NA
Analysis started at: 9/26/2024 7:17:53 AM
Rack: 1
Vial: 9

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0016 ppm	0.0017 ppm	0.0021 ppm	0.0000 ppm	0.0000 ppm	0.0070 ppm
Concentration per Run 1	0.0002 ppm	-0.0003 ppm	0.0016 ppm	0.0019 ppm	0.0000 ppm	0.0000 ppm	0.0037 ppm
Concentration per Run 2	-0.0001 ppm	0.0022 ppm	0.0014 ppm	0.0024 ppm	0.0001 ppm	0.0000 ppm	0.0092 ppm
Concentration per Run 3	0.0002 ppm	0.0029 ppm	0.0023 ppm	0.0022 ppm	0.0000 ppm	0.0000 ppm	0.0079 ppm
Concentration RSD	195.3 %	104.5 %	27.9 %	12.3 %	69.6 %	104.7 %	41.4 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0004 ppm	0.0026 ppm	0.0881 ppm	0.0013 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0025 ppm	0.0683 ppm	0.0014 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0003 ppm	0.0033 ppm	0.0970 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0006 ppm	0.0019 ppm	0.0990 ppm	0.0024 ppm
Concentration RSD	154.1 %	7.4 %	43.0 %	50.6 %	28.7 %	19.5 %	90.8 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0001 ppm	166.1857 [SIC 500]	0.0002 ppm	-0.0001 ppm	-0.0006 ppm	0.0011 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	160.5420 ppm	0.0002 ppm	0.0000 ppm	-0.0004 ppm	-0.0009 ppm
Concentration per Run 2	0.0001 ppm	0.0000 ppm	169.2100 ppm	0.0002 ppm	-0.0006 ppm	0.0000 ppm	0.0015 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	168.8051 ppm	0.0001 ppm	0.0002 ppm	-0.0012 ppm	0.0028 ppm
Concentration RSD	85.2 %	79.3 %	2.9 %	26.7 %	304.9 %	105.3 %	165.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0043 ppm	0.0003 ppm	0.0003 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 1	0.0045 ppm	0.0009 ppm	0.0002 ppm	-0.0001 ppm	0.0005 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 2	0.0040 ppm	0.0002 ppm	0.0003 ppm	0.0000 ppm	-0.0022 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 3	0.0044 ppm	-0.0001 ppm	0.0003 ppm	0.0001 ppm	-0.0003 ppm	0.0000 ppm	0.0004 ppm
Concentration RSD	5.7 %	150.7 %	17.5 %	340.6 %	210.5 %	65.1 %	11.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.6239 %	93.2482 %	94.8354 %	111.9984 %	86.3340 %	96.6121 %	0.0031 ppm
Concentration per Run 1	96.4245 %	93.3704 %	94.9941 %	117.7995 %	86.3859 %	96.8613 %	0.0026 ppm
Concentration per Run 2	94.8967 %	93.2956 %	94.4082 %	110.3895 %	86.2739 %	96.5869 %	0.0026 ppm
Concentration per Run 3	95.5505 %	93.0787 %	95.1040 %	107.8061 %	86.3421 %	96.3880 %	0.0042 ppm
Concentration RSD	0.8 %	0.2 %	0.4 %	4.6 %	0.1 %	0.2 %	28.9 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: LDR 250PPM K
Analysis started at: 9/26/2024 7:24:46 AM
Rack: 1
Vial: 10

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	-0.0001 ppm	0.0048 ppm	0.0011 ppm	0.0018 ppm	0.0001 ppm	0.0000 ppm	0.0039 ppm
Concentration per Run 1	-0.0002 ppm	0.0058 ppm	0.0010 ppm	0.0017 ppm	0.0001 ppm	0.0000 ppm	0.0058 ppm
Concentration per Run 2	-0.0003 ppm	0.0061 ppm	0.0020 ppm	0.0017 ppm	0.0001 ppm	0.0000 ppm	0.0047 ppm
Concentration per Run 3	0.0001 ppm	0.0024 ppm	0.0002 ppm	0.0019 ppm	0.0001 ppm	0.0000 ppm	0.0012 ppm
Concentration RSD	129.1 %	43.7 %	86.3 %	7.1 %	44.6 %	140.6 %	62.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0004 ppm	0.0034 ppm	235.5728 ppm	0.0026 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0004 ppm	0.0035 ppm	239.9287 ppm	0.0018 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0006 ppm	0.0041 ppm	236.0132 ppm	0.0031 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0003 ppm	0.0027 ppm	230.7765 ppm	0.0028 ppm
Concentration RSD	129.0 %	466.2 %	102.7 %	39.6 %	20.6 %	1.9 %	27.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0001 ppm	0.1011 ppm	-0.0001 ppm	-0.0004 ppm	0.0003 ppm	0.0013 ppm
Concentration per Run 1	-0.0001 ppm	0.0002 ppm	0.1192 ppm	0.0000 ppm	0.0000 ppm	0.0007 ppm	0.0011 ppm
Concentration per Run 2	-0.0001 ppm	0.0001 ppm	0.1006 ppm	-0.0004 ppm	-0.0008 ppm	-0.0003 ppm	0.0021 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	0.0835 ppm	0.0000 ppm	-0.0006 ppm	0.0005 ppm	0.0007 ppm
Concentration RSD	444.7 %	44.4 %	17.7 %	171.6 %	97.5 %	169.6 %	55.0 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0034 ppm	0.0001 ppm	-0.0001 ppm	-0.0001 ppm	-0.0008 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 1	0.0029 ppm	0.0002 ppm	-0.0001 ppm	-0.0001 ppm	-0.0010 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 2	0.0033 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 3	0.0040 ppm	0.0001 ppm	0.0000 ppm	-0.0002 ppm	-0.0010 ppm	0.0001 ppm	0.0002 ppm
Concentration RSD	15.5 %	69.2 %	89.7 %	125.9 %	40.2 %	591.6 %	41.8 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.1130 %	94.1733 %	95.8562 %	103.0805 %	87.4909 %	96.1751 %	0.0026 ppm
Concentration per Run 1	99.1098 %	93.9368 %	95.9047 %	104.5947 %	87.3680 %	96.0173 %	0.0016 ppm
Concentration per Run 2	96.6516 %	94.1034 %	95.9297 %	102.8505 %	87.7404 %	95.9871 %	0.0036 ppm
Concentration per Run 3	95.5777 %	94.4796 %	95.7344 %	101.7962 %	87.3642 %	96.5208 %	0.0025 ppm
Concentration RSD	1.9 %	0.3 %	0.1 %	1.4 %	0.2 %	0.3 %	40.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 7:36:26 AM
Rack: 0
Vial: 3

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5022 ppm	0.4770 ppm	0.4732 ppm	0.4958 ppm	0.4705 ppm	0.4840 ppm	0.4948 ppm
Concentration per Run 1	0.5015 ppm	0.4516 ppm	0.4718 ppm	0.4958 ppm	0.4491 ppm	0.4614 ppm	0.4731 ppm
Concentration per Run 2	0.5026 ppm	0.4810 ppm	0.4734 ppm	0.4948 ppm	0.4747 ppm	0.4901 ppm	0.5010 ppm
Concentration per Run 3	0.5023 ppm	0.4985 ppm	0.4743 ppm	0.4967 ppm	0.4877 ppm	0.5005 ppm	0.5103 ppm
Recovery Percentage 1	100.431 %	95.403 %	94.637 %	99.155 %	94.100 %	96.795 %	98.966 %
Concentration RSD	0.1 %	5.0 %	0.3 %	0.2 %	4.2 %	4.2 %	3.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4808 ppm	0.5082 ppm	0.4849 ppm	0.4889 ppm	0.4958 ppm	5.0562 ppm	0.5066 ppm
Concentration per Run 1	0.4803 ppm	0.5079 ppm	0.4836 ppm	0.4880 ppm	0.4705 ppm	4.8269 ppm	0.5069 ppm
Concentration per Run 2	0.4804 ppm	0.5080 ppm	0.4872 ppm	0.4889 ppm	0.5025 ppm	5.1037 ppm	0.5083 ppm
Concentration per Run 3	0.4818 ppm	0.5087 ppm	0.4838 ppm	0.4900 ppm	0.5143 ppm	5.2380 ppm	0.5047 ppm
Recovery Percentage 1	96.164 %	101.638 %	96.977 %	97.786 %	99.152 %	101.124 %	101.328 %
Concentration RSD	0.2 %	0.1 %	0.4 %	0.2 %	4.6 %	4.1 %	0.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4824 ppm	0.4883 ppm	9.5496 ppm	0.4979 ppm	0.5085 ppm	0.5032 ppm	0.4974 ppm
Concentration per Run 1	0.4601 ppm	0.4872 ppm	9.1165 ppm	0.4977 ppm	0.5090 ppm	0.5018 ppm	0.4967 ppm
Concentration per Run 2	0.4886 ppm	0.4871 ppm	9.6448 ppm	0.4975 ppm	0.5077 ppm	0.5038 ppm	0.4976 ppm
Concentration per Run 3	0.4985 ppm	0.4905 ppm	9.8877 ppm	0.4985 ppm	0.5088 ppm	0.5040 ppm	0.4980 ppm
Recovery Percentage 1	96.480 %	97.654 %	95.496 %	99.581 %	101.706 %	100.635 %	99.480 %
Concentration RSD	4.1 %	0.4 %	4.1 %	0.1 %	0.1 %	0.2 %	0.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.5436 ppm	0.4738 ppm	0.4571 ppm	0.5073 ppm	0.5073 ppm	0.4841 ppm	0.4984 ppm
Concentration per Run 1	5.5441 ppm	0.4742 ppm	0.4365 ppm	0.5069 ppm	0.5066 ppm	0.4833 ppm	0.4972 ppm
Concentration per Run 2	5.5371 ppm	0.4726 ppm	0.4615 ppm	0.5083 ppm	0.5054 ppm	0.4858 ppm	0.4982 ppm
Concentration per Run 3	5.5496 ppm	0.4746 ppm	0.4735 ppm	0.5068 ppm	0.5098 ppm	0.4833 ppm	0.4998 ppm
Recovery Percentage 1	105.593 %	94.761 %	91.427 %	101.470 %	101.454 %	96.828 %	99.680 %
Concentration RSD	0.1 %	0.2 %	4.1 %	0.2 %	0.4 %	0.3 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.9080 %	101.3873 %	101.2409 %	112.0689 %	96.0412 %	103.2386 %	0.4698 ppm
Concentration per Run 1	102.3581 %	101.6793 %	101.3593 %	117.3331 %	96.2257 %	103.5313 %	0.4497 ppm
Concentration per Run 2	98.6158 %	101.1476 %	100.8113 %	110.6160 %	96.1051 %	103.0413 %	0.4753 ppm
Concentration per Run 3	98.7503 %	101.3351 %	101.5520 %	108.2576 %	95.7927 %	103.1433 %	0.4845 ppm
Recovery Percentage 1							93.966 %
Concentration RSD	2.1 %	0.3 %	0.4 %	4.2 %	0.2 %	0.3 %	3.8 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 7:42:49 AM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0011 ppm	-0.0007 ppm	0.0013 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0003 ppm	-0.0007 ppm	-0.0012 ppm	0.0015 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 2	0.0000 ppm	0.0025 ppm	-0.0005 ppm	0.0012 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 3	-0.0001 ppm	0.0015 ppm	-0.0003 ppm	0.0011 ppm	0.0000 ppm	0.0000 ppm
Recovery Percentage 1	0.905 %	0.000 %	-13.744 %	4.249 %	0.281 %	0.613 %
Concentration RSD	355.1 %	152.6 %	68.6 %	17.2 %	21.6 %	173.0 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0016 ppm	0.0444 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0002 ppm	0.0012 ppm	0.0473 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0003 ppm	0.0013 ppm	0.0480 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0021 ppm	0.0381 ppm
Recovery Percentage 1	0.375 %	-0.372 %	-0.831 %	1.673 %	0.001 %	1.778 %
Concentration RSD	69.0 %	25.0 %	263.4 %	53.7 %	31.1 %	12.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0006 ppm	-0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0003 ppm
Concentration per Run 1	-0.0002 ppm	0.0007 ppm	0.0002 ppm	0.0000 ppm	-0.0004 ppm	-0.0001 ppm
Concentration per Run 2	0.0002 ppm	0.0006 ppm	-0.0023 ppm	0.0000 ppm	0.0000 ppm	-0.0003 ppm
Concentration per Run 3	-0.0001 ppm	0.0005 ppm	0.0014 ppm	-0.0001 ppm	-0.0005 ppm	-0.0006 ppm
Recovery Percentage 1	-0.129 %	1.193 %	-0.011 %	-0.111 %	-2.777 %	-0.637 %
Concentration RSD	1,475.0 %	18.4 %	899.7 %	135.7 %	92.4 %	74.8 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0012 ppm	0.0002 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 1	0.0017 ppm	0.0004 ppm	-0.0001 ppm	-0.0001 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 2	0.0007 ppm	0.0004 ppm	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 3	0.0012 ppm	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0003 ppm	0.0003 ppm
Recovery Percentage 1	0.240 %	0.457 %	-0.283 %	-0.709 %	-0.720 %	1.399 %
Concentration RSD	39.6 %	97.5 %	118.8 %	147.5 %	326.2 %	98.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.6253 %	101.5451 %	101.5527 %	103.7412 %	98.3494 %	100.7746 %
Concentration per Run 1	100.6770 %	100.9402 %	101.3874 %	103.9070 %	98.0862 %	99.6341 %
Concentration per Run 2	99.2202 %	101.9149 %	101.7164 %	103.9514 %	98.5219 %	101.3551 %
Concentration per Run 3	98.9786 %	101.7802 %	101.5544 %	103.3652 %	98.4399 %	101.3346 %
Recovery Percentage 1						
Concentration RSD	0.9 %	0.5 %	0.2 %	0.3 %	0.2 %	1.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-1 WG1976276

Analysis started at: 9/26/2024 7:49:38 AM

Rack: 1
Vial: 11

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0038 ppm	-0.0001 ppm	0.0016 ppm	0.0000 ppm	0.0000 ppm	0.0122 ppm
Concentration per Run 1	0.0000 ppm	0.0014 ppm	-0.0004 ppm	0.0017 ppm	0.0000 ppm	0.0000 ppm	0.0091 ppm
Concentration per Run 2	0.0001 ppm	0.0033 ppm	0.0005 ppm	0.0014 ppm	-0.0001 ppm	0.0000 ppm	0.0132 ppm
Concentration per Run 3	0.0002 ppm	0.0066 ppm	-0.0004 ppm	0.0016 ppm	0.0001 ppm	0.0000 ppm	0.0144 ppm
Recovery Percentage 1	1.547 %	0.001 %	-2.181 %	5.306 %	-0.076 %	0.370 %	0.002 %
Concentration RSD	108.3 %	69.5 %	472.5 %	9.2 %	817.7 %	160.5 %	22.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0026 ppm	0.0201 ppm	0.0022 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0002 ppm	0.0034 ppm	-0.0070 ppm	0.0026 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0004 ppm	0.0001 ppm	0.0019 ppm	0.0317 ppm	0.0018 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0002 ppm	0.0025 ppm	0.0356 ppm	0.0023 ppm
Recovery Percentage 1	-0.058 %	-0.540 %	-1.022 %	1.647 %	0.001 %	0.803 %	0.000 %
Concentration RSD	1,229.2 %	55.7 %	274.5 %	45.1 %	29.4 %	117.4 %	19.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0002 ppm	0.0010 ppm	-0.0005 ppm	-0.0005 ppm	0.0007 ppm	0.0011 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	0.0045 ppm	-0.0006 ppm	-0.0011 ppm	-0.0001 ppm	0.0007 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	-0.0017 ppm	-0.0005 ppm	-0.0003 ppm	0.0007 ppm	0.0002 ppm
Concentration per Run 3	0.0001 ppm	0.0003 ppm	0.0002 ppm	-0.0004 ppm	-0.0001 ppm	0.0014 ppm	0.0024 ppm
Recovery Percentage 1	0.542 %	0.489 %	0.049 %	-1.976 %	-5.098 %	1.333 %	11.000 %
Concentration RSD	177.4 %	45.6 %	321.5 %	24.8 %	98.6 %	110.5 %	103.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0071 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	-0.0024 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 1	0.0075 ppm	0.0005 ppm	0.0000 ppm	-0.0001 ppm	-0.0018 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 2	0.0073 ppm	0.0004 ppm	-0.0001 ppm	0.0003 ppm	-0.0031 ppm	-0.0001 ppm	0.0005 ppm
Concentration per Run 3	0.0067 ppm	0.0002 ppm	-0.0001 ppm	-0.0001 ppm	-0.0024 ppm	0.0001 ppm	0.0005 ppm
Recovery Percentage 1	1.427 %	0.695 %	-0.321 %	-0.003 %	-12.157 %	0.112 %	10.082 %
Concentration RSD	5.8 %	38.2 %	151.9 %	71,086.6 %	25.1 %	839.7 %	6.8 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.5987 %	103.0930 %	102.1927 %	106.0262 %	94.7402 %	103.1397 %	0.0025 ppm
Concentration per Run 1	101.1158 %	103.1519 %	102.3040 %	109.1054 %	94.9127 %	103.3769 %	0.0020 ppm
Concentration per Run 2	98.7543 %	103.0909 %	101.8291 %	104.9452 %	94.2775 %	103.1881 %	0.0034 ppm
Concentration per Run 3	98.9259 %	103.0363 %	102.4449 %	104.0280 %	95.0304 %	102.8541 %	0.0019 ppm
Recovery Percentage 1							24.512 %
Concentration RSD	1.3 %	0.1 %	0.3 %	2.6 %	0.4 %	0.3 %	33.8 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-1 WG1976131
Analysis started at: 9/26/2024 7:56:24 AM
Rack: 1
Vial: 18

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0039 ppm	0.0013 ppm	0.0027 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	0.0012 ppm	0.0016 ppm	0.0028 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 2	0.0000 ppm	0.0020 ppm	0.0019 ppm	0.0025 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	0.0085 ppm	0.0005 ppm	0.0027 ppm	0.0001 ppm	0.0000 ppm
Recovery Percentage 1	0.023 %	0.001 %	26.284 %	8.945 %	1.621 %	0.400 %
Concentration RSD	1,081.7 %	102.6 %	55.2 %	5.3 %	28.2 %	100.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0004 ppm	0.0022 ppm	0.0750 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0003 ppm	0.0028 ppm	0.0697 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0003 ppm	0.0004 ppm	0.0015 ppm	0.0922 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0022 ppm	0.0633 ppm
Recovery Percentage 1	-0.315 %	-1.120 %	-0.231 %	3.590 %	0.001 %	3.002 %
Concentration RSD	137.9 %	42.8 %	1,242.1 %	7.6 %	30.1 %	20.3 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0001 ppm	119.5623 [SIC 500]	-0.0003 ppm	-0.0006 ppm	-0.0003 ppm
Concentration per Run 1	0.0002 ppm	0.0002 ppm	117.2649 ppm	-0.0003 ppm	-0.0007 ppm	-0.0004 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	120.1731 ppm	-0.0003 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 3	0.0001 ppm	0.0002 ppm	121.2488 ppm	-0.0002 ppm	-0.0009 ppm	-0.0002 ppm
Recovery Percentage 1	1.143 %	0.280 %	5,978.113 %	-1.123 %	-6.247 %	-0.519 %
Concentration RSD	67.9 %	24.4 %	1.7 %	10.8 %	61.3 %	62.0 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0203 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm	-0.0033 ppm	0.0000 ppm
Concentration per Run 1	0.0196 ppm	0.0004 ppm	0.0000 ppm	-0.0001 ppm	-0.0042 ppm	-0.0001 ppm
Concentration per Run 2	0.0211 ppm	0.0008 ppm	0.0000 ppm	0.0002 ppm	-0.0024 ppm	0.0000 ppm
Concentration per Run 3	0.0201 ppm	0.0012 ppm	-0.0001 ppm	0.0001 ppm	-0.0035 ppm	0.0000 ppm
Recovery Percentage 1	4.051 %	1.631 %	-0.235 %	0.354 %	-16.714 %	-0.430 %
Concentration RSD	3.8 %	47.4 %	126.9 %	460.5 %	27.0 %	205.7 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.1622 %	95.5094 %	96.2296 %	105.2140 %	85.8614 %	97.5512 %
Concentration per Run 1	98.7294 %	95.5195 %	96.2090 %	108.1829 %	85.6577 %	97.8333 %
Concentration per Run 2	96.7848 %	95.3304 %	96.3805 %	104.6009 %	85.9927 %	97.3756 %
Concentration per Run 3	95.9723 %	95.6783 %	96.0993 %	102.8581 %	85.9338 %	97.4446 %
Recovery Percentage 1						31.536 %
Concentration RSD	1.5 %	0.2 %	0.1 %	2.6 %	0.2 %	0.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-2 WG1976131

Analysis started at: 9/26/2024 8:03:11 AM

Rack: 1
Vial: 19

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0478 ppm	1.9088 ppm	0.1223 ppm	0.9782 ppm	1.8805 ppm	0.0488 ppm	9.6457 ppm
Concentration per Run 1	0.0476 ppm	1.8594 ppm	0.1211 ppm	0.9766 ppm	1.8373 ppm	0.0475 ppm	9.4063 ppm
Concentration per Run 2	0.0479 ppm	1.9236 ppm	0.1242 ppm	0.9820 ppm	1.8957 ppm	0.0491 ppm	9.7318 ppm
Concentration per Run 3	0.0479 ppm	1.9433 ppm	0.1215 ppm	0.9758 ppm	1.9084 ppm	0.0497 ppm	9.7991 ppm
Concentration RSD	0.4 %	2.3 %	1.4 %	0.3 %	2.0 %	2.3 %	2.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0532 ppm	0.5005 ppm	0.1865 ppm	0.2415 ppm	0.9912 ppm	9.9702 ppm	8.9358 ppm
Concentration per Run 1	0.0530 ppm	0.4990 ppm	0.1869 ppm	0.2406 ppm	0.9664 ppm	9.7428 ppm	8.9491 ppm
Concentration per Run 2	0.0534 ppm	0.5025 ppm	0.1863 ppm	0.2406 ppm	0.9988 ppm	10.0316 ppm	8.9366 ppm
Concentration per Run 3	0.0532 ppm	0.5000 ppm	0.1861 ppm	0.2433 ppm	1.0082 ppm	10.1362 ppm	8.9218 ppm
Concentration RSD	0.4 %	0.4 %	0.2 %	0.6 %	2.2 %	2.0 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4844 ppm	1.0142 ppm	130.4611 [SIC 500]	0.4933 ppm	0.5279 ppm	0.5123 ppm	0.1254 ppm
Concentration per Run 1	0.4736 ppm	1.0103 ppm	128.4855 ppm	0.4924 ppm	0.5265 ppm	0.5107 ppm	0.1269 ppm
Concentration per Run 2	0.4876 ppm	1.0194 ppm	132.0524 ppm	0.4945 ppm	0.5298 ppm	0.5150 ppm	0.1262 ppm
Concentration per Run 3	0.4919 ppm	1.0127 ppm	130.8453 ppm	0.4930 ppm	0.5273 ppm	0.5111 ppm	0.1231 ppm
Concentration RSD	2.0 %	0.5 %	1.4 %	0.2 %	0.3 %	0.5 %	1.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8781 ppm	0.9348 ppm	0.8955 ppm	0.9817 ppm	0.1089 ppm	0.4741 ppm	0.5154 ppm
Concentration per Run 1	0.8771 ppm	0.9327 ppm	0.8746 ppm	0.9793 ppm	0.1091 ppm	0.4737 ppm	0.5140 ppm
Concentration per Run 2	0.8813 ppm	0.9392 ppm	0.9029 ppm	0.9816 ppm	0.1091 ppm	0.4737 ppm	0.5172 ppm
Concentration per Run 3	0.8761 ppm	0.9326 ppm	0.9090 ppm	0.9842 ppm	0.1086 ppm	0.4749 ppm	0.5151 ppm
Concentration RSD	0.3 %	0.4 %	2.0 %	0.3 %	0.3 %	0.2 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.0697 %	95.1316 %	96.0772 %	104.0860 %	84.5288 %	97.1037 %	0.0016 ppm
Concentration per Run 1	97.1139 %	95.1663 %	96.1509 %	106.8274 %	84.7173 %	97.1611 %	0.0022 ppm
Concentration per Run 2	96.0570 %	95.3258 %	96.0784 %	103.5119 %	84.1990 %	97.3660 %	0.0013 ppm
Concentration per Run 3	95.0382 %	94.9029 %	96.0024 %	101.9187 %	84.6702 %	96.7840 %	0.0013 ppm
Concentration RSD	1.1 %	0.2 %	0.1 %	2.4 %	0.3 %	0.3 %	31.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-2 WG1976276

Analysis started at: 9/26/2024 8:09:42 AM

Rack: 1
Vial: 12

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0436 ppm	1.7547 ppm	0.1060 ppm	0.8714 ppm	1.7364 ppm	0.0446 ppm	8.8717 ppm
Concentration per Run 1	0.0437 ppm	1.7020 ppm	0.1065 ppm	0.8813 ppm	1.6818 ppm	0.0433 ppm	8.6165 ppm
Concentration per Run 2	0.0434 ppm	1.7720 ppm	0.1048 ppm	0.8675 ppm	1.7514 ppm	0.0450 ppm	8.9320 ppm
Concentration per Run 3	0.0436 ppm	1.7900 ppm	0.1066 ppm	0.8653 ppm	1.7759 ppm	0.0456 ppm	9.0668 ppm
Concentration RSD	0.3 %	2.7 %	0.9 %	1.0 %	2.8 %	2.6 %	2.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0476 ppm	0.4557 ppm	0.1741 ppm	0.2232 ppm	0.9147 ppm	9.1720 ppm	8.6335 ppm
Concentration per Run 1	0.0479 ppm	0.4605 ppm	0.1744 ppm	0.2224 ppm	0.8885 ppm	8.9184 ppm	8.6375 ppm
Concentration per Run 2	0.0473 ppm	0.4533 ppm	0.1740 ppm	0.2234 ppm	0.9201 ppm	9.2452 ppm	8.6314 ppm
Concentration per Run 3	0.0474 ppm	0.4533 ppm	0.1739 ppm	0.2237 ppm	0.9356 ppm	9.3525 ppm	8.6317 ppm
Concentration RSD	0.6 %	0.9 %	0.1 %	0.3 %	2.6 %	2.5 %	0.0 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4470 ppm	0.9073 ppm	8.7591 ppm	0.4495 ppm	0.4915 ppm	0.4555 ppm	0.1076 ppm
Concentration per Run 1	0.4340 ppm	0.9155 ppm	8.4791 ppm	0.4538 ppm	0.4968 ppm	0.4624 ppm	0.1088 ppm
Concentration per Run 2	0.4503 ppm	0.9044 ppm	8.8411 ppm	0.4473 ppm	0.4885 ppm	0.4510 ppm	0.1065 ppm
Concentration per Run 3	0.4567 ppm	0.9021 ppm	8.9571 ppm	0.4475 ppm	0.4893 ppm	0.4530 ppm	0.1075 ppm
Concentration RSD	2.6 %	0.8 %	2.8 %	0.8 %	0.9 %	1.3 %	1.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.7685 ppm	0.8541 ppm	0.8284 ppm	0.9042 ppm	0.1059 ppm	0.4374 ppm	0.4516 ppm
Concentration per Run 1	0.7780 ppm	0.8612 ppm	0.8025 ppm	0.9042 ppm	0.1081 ppm	0.4371 ppm	0.4549 ppm
Concentration per Run 2	0.7636 ppm	0.8501 ppm	0.8356 ppm	0.9032 ppm	0.1049 ppm	0.4370 ppm	0.4490 ppm
Concentration per Run 3	0.7639 ppm	0.8509 ppm	0.8469 ppm	0.9053 ppm	0.1046 ppm	0.4381 ppm	0.4510 ppm
Concentration RSD	1.1 %	0.7 %	2.8 %	0.1 %	1.8 %	0.1 %	0.7 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.1086 %	100.4762 %	99.8983 %	107.7705 %	91.2723 %	101.8824 %	0.0022 ppm
Concentration per Run 1	100.5347 %	100.6694 %	99.3062 %	110.4745 %	90.3459 %	101.9272 %	0.0037 ppm
Concentration per Run 2	98.1215 %	100.4863 %	100.3763 %	106.7093 %	91.6517 %	101.9070 %	0.0014 ppm
Concentration per Run 3	98.6697 %	100.2729 %	100.0123 %	106.1278 %	91.8194 %	101.8131 %	0.0016 ppm
Concentration RSD	1.3 %	0.2 %	0.5 %	2.2 %	0.9 %	0.1 %	55.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2453876-01 WG1976131
Analysis started at: 9/26/2024 8:16:06 AM
Rack: 1
Vial: 25

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0121 ppm	0.0041 ppm	0.0414 ppm	0.0063 ppm	0.0000 ppm	41.2275 ppm
Concentration per Run 1	0.0000 ppm	0.0146 ppm	0.0036 ppm	0.0412 ppm	0.0061 ppm	0.0000 ppm	40.2451 ppm
Concentration per Run 2	0.0001 ppm	0.0067 ppm	0.0037 ppm	0.0419 ppm	0.0063 ppm	0.0000 ppm	41.6445 ppm
Concentration per Run 3	-0.0001 ppm	0.0151 ppm	0.0049 ppm	0.0412 ppm	0.0064 ppm	0.0001 ppm	41.7928 ppm
Concentration RSD	6,080.8 %	38.6 %	17.9 %	1.0 %	2.9 %	64.0 %	2.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0014 ppm	0.0001 ppm	0.0026 ppm	0.0327 ppm	2.5122 ppm	2.2086 ppm
Concentration per Run 1	0.0000 ppm	0.0014 ppm	0.0002 ppm	0.0025 ppm	0.0311 ppm	2.4760 ppm	2.2042 ppm
Concentration per Run 2	0.0000 ppm	0.0014 ppm	0.0003 ppm	0.0027 ppm	0.0337 ppm	2.5180 ppm	2.2086 ppm
Concentration per Run 3	0.0000 ppm	0.0013 ppm	-0.0002 ppm	0.0027 ppm	0.0333 ppm	2.5424 ppm	2.2131 ppm
Concentration RSD	39.8 %	3.2 %	309.4 %	4.5 %	4.3 %	1.3 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.1416 ppm	0.0031 ppm	120.3507 [SIC 500]	0.0085 ppm	-0.0006 ppm	0.0008 ppm	0.0031 ppm
Concentration per Run 1	0.1383 ppm	0.0032 ppm	119.4169 ppm	0.0085 ppm	-0.0002 ppm	0.0009 ppm	0.0021 ppm
Concentration per Run 2	0.1428 ppm	0.0029 ppm	121.2848 ppm	0.0085 ppm	-0.0012 ppm	0.0004 ppm	0.0036 ppm
Concentration per Run 3	0.1438 ppm	0.0031 ppm	120.3504 ppm	0.0084 ppm	-0.0004 ppm	0.0011 ppm	0.0036 ppm
Concentration RSD	2.1 %	5.2 %	0.8 %	0.4 %	89.5 %	41.5 %	27.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.5758 ppm	0.0015 ppm	0.0503 ppm	0.0003 ppm	-0.0033 ppm	0.0010 ppm	0.0925 ppm
Concentration per Run 1	0.5745 ppm	0.0013 ppm	0.0492 ppm	0.0001 ppm	-0.0026 ppm	0.0008 ppm	0.0928 ppm
Concentration per Run 2	0.5764 ppm	0.0014 ppm	0.0507 ppm	0.0005 ppm	-0.0033 ppm	0.0010 ppm	0.0923 ppm
Concentration per Run 3	0.5766 ppm	0.0017 ppm	0.0510 ppm	0.0003 ppm	-0.0042 ppm	0.0011 ppm	0.0925 ppm
Concentration RSD	0.2 %	11.1 %	1.9 %	62.2 %	23.5 %	15.9 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.4016 %	94.6975 %	94.9086 %	104.5554 %	84.9086 %	96.7266 %	-0.0004 ppm
Concentration per Run 1	97.3361 %	94.5716 %	95.1473 %	106.9519 %	85.1057 %	96.6009 %	0.0006 ppm
Concentration per Run 2	95.7328 %	94.7317 %	94.8902 %	103.6837 %	84.8209 %	96.7511 %	-0.0008 ppm
Concentration per Run 3	96.1359 %	94.7892 %	94.6884 %	103.0307 %	84.7994 %	96.8278 %	-0.0008 ppm
Concentration RSD	0.9 %	0.1 %	0.2 %	2.0 %	0.2 %	0.1 %	220.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454653-01 WG1976276

Analysis started at: 9/26/2024 8:22:51 AM

Rack: 1
Vial: 13

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0153 ppm	0.0367 ppm	2.0974 ppm	0.0002 ppm	0.0000 ppm	0.0984 ppm
Concentration per Run 1	0.0003 ppm	0.0169 ppm	0.0406 ppm	2.0907 ppm	0.0002 ppm	0.0000 ppm	0.0961 ppm
Concentration per Run 2	0.0001 ppm	0.0129 ppm	0.0363 ppm	2.1001 ppm	0.0002 ppm	0.0000 ppm	0.1015 ppm
Concentration per Run 3	0.0000 ppm	0.0161 ppm	0.0333 ppm	2.1016 ppm	0.0001 ppm	0.0000 ppm	0.0976 ppm
Concentration RSD	158.7 %	13.8 %	10.0 %	0.3 %	40.3 %	107.4 %	2.8 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0013 ppm	0.0063 ppm	0.3755 ppm	0.0222 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0013 ppm	0.0058 ppm	0.3768 ppm	0.0203 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0013 ppm	0.0067 ppm	0.3865 ppm	0.0247 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0013 ppm	0.0063 ppm	0.3632 ppm	0.0216 ppm
Concentration RSD	624.0 %	51.2 %	162.1 %	2.6 %	7.1 %	3.1 %	10.1 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0006 ppm	0.0744 ppm	9.3274 ppm	-0.0007 ppm	-0.0006 ppm	0.0080 ppm	0.0123 ppm
Concentration per Run 1	0.0006 ppm	0.0744 ppm	9.3235 ppm	-0.0007 ppm	-0.0010 ppm	0.0081 ppm	0.0127 ppm
Concentration per Run 2	0.0006 ppm	0.0745 ppm	9.4691 ppm	-0.0006 ppm	-0.0007 ppm	0.0076 ppm	0.0128 ppm
Concentration per Run 3	0.0007 ppm	0.0743 ppm	9.1897 ppm	-0.0007 ppm	-0.0003 ppm	0.0084 ppm	0.0113 ppm
Concentration RSD	8.1 %	0.1 %	1.5 %	11.1 %	55.1 %	5.2 %	7.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0467 ppm	0.0043 ppm	0.0003 ppm	0.0002 ppm	-0.0099 ppm	-0.0001 ppm	0.0009 ppm
Concentration per Run 1	0.0470 ppm	0.0040 ppm	0.0003 ppm	0.0002 ppm	-0.0096 ppm	-0.0002 ppm	0.0009 ppm
Concentration per Run 2	0.0480 ppm	0.0045 ppm	0.0003 ppm	0.0002 ppm	-0.0101 ppm	0.0000 ppm	0.0008 ppm
Concentration per Run 3	0.0451 ppm	0.0044 ppm	0.0004 ppm	0.0001 ppm	-0.0098 ppm	0.0000 ppm	0.0010 ppm
Concentration RSD	3.1 %	6.4 %	12.1 %	26.2 %	2.7 %	109.2 %	7.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.0070 %	101.9507 %	99.1953 %	109.8163 %	89.4267 %	103.9157 %	0.0025 ppm
Concentration per Run 1	100.1060 %	102.1341 %	99.3737 %	110.3605 %	89.7011 %	104.2708 %	0.0016 ppm
Concentration per Run 2	99.7253 %	101.9818 %	99.1374 %	107.3897 %	89.3102 %	103.8491 %	0.0031 ppm
Concentration per Run 3	103.1898 %	101.7361 %	99.0749 %	111.6986 %	89.2687 %	103.6270 %	0.0028 ppm
Concentration RSD	1.9 %	0.2 %	0.2 %	2.0 %	0.3 %	0.3 %	31.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-3 WG1976276

Analysis started at: 9/26/2024 8:29:29 AM

Rack: 1
Vial: 14

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0444 ppm	1.8789 ppm	0.1417 ppm	3.0766 ppm	1.8674 ppm	0.0478 ppm	9.5063 ppm
Concentration per Run 1	0.0443 ppm	1.8544 ppm	0.1432 ppm	3.0749 ppm	1.8466 ppm	0.0473 ppm	9.4206 ppm
Concentration per Run 2	0.0438 ppm	1.8863 ppm	0.1422 ppm	3.0858 ppm	1.8724 ppm	0.0478 ppm	9.5147 ppm
Concentration per Run 3	0.0450 ppm	1.8959 ppm	0.1396 ppm	3.0691 ppm	1.8833 ppm	0.0484 ppm	9.5835 ppm
Concentration RSD	1.4 %	1.2 %	1.3 %	0.3 %	1.0 %	1.1 %	0.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0513 ppm	0.4997 ppm	0.1841 ppm	0.2405 ppm	0.9776 ppm	10.1015 ppm	8.6100 ppm
Concentration per Run 1	0.0514 ppm	0.4999 ppm	0.1829 ppm	0.2390 ppm	0.9647 ppm	10.0049 ppm	8.5652 ppm
Concentration per Run 2	0.0514 ppm	0.5013 ppm	0.1827 ppm	0.2399 ppm	0.9805 ppm	10.1107 ppm	8.5232 ppm
Concentration per Run 3	0.0511 ppm	0.4980 ppm	0.1866 ppm	0.2426 ppm	0.9876 ppm	10.1889 ppm	8.7417 ppm
Concentration RSD	0.3 %	0.3 %	1.2 %	0.8 %	1.2 %	0.9 %	1.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4775 ppm	1.0818 ppm	18.8658 ppm	0.4902 ppm	0.5201 ppm	0.5038 ppm	0.1427 ppm
Concentration per Run 1	0.4728 ppm	1.0789 ppm	18.6861 ppm	0.4903 ppm	0.5204 ppm	0.5024 ppm	0.1430 ppm
Concentration per Run 2	0.4787 ppm	1.0853 ppm	18.9054 ppm	0.4913 ppm	0.5217 ppm	0.5068 ppm	0.1428 ppm
Concentration per Run 3	0.4812 ppm	1.0811 ppm	19.0060 ppm	0.4890 ppm	0.5181 ppm	0.5023 ppm	0.1424 ppm
Concentration RSD	0.9 %	0.3 %	0.9 %	0.2 %	0.3 %	0.5 %	0.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8642 ppm	0.9158 ppm	0.8915 ppm	0.9559 ppm	0.1036 ppm	0.4630 ppm	0.4928 ppm
Concentration per Run 1	0.8638 ppm	0.9171 ppm	0.8812 ppm	0.9494 ppm	0.1040 ppm	0.4599 ppm	0.4941 ppm
Concentration per Run 2	0.8699 ppm	0.9184 ppm	0.8940 ppm	0.9506 ppm	0.1020 ppm	0.4605 ppm	0.4929 ppm
Concentration per Run 3	0.8589 ppm	0.9120 ppm	0.8992 ppm	0.9676 ppm	0.1047 ppm	0.4686 ppm	0.4914 ppm
Concentration RSD	0.6 %	0.4 %	1.0 %	1.1 %	1.4 %	1.1 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.0675 %	98.6585 %	96.5848 %	106.5713 %	85.5229 %	100.5443 %	0.0004 ppm
Concentration per Run 1	97.2266 %	99.3847 %	96.6841 %	107.7160 %	85.5366 %	101.4370 %	-0.0001 ppm
Concentration per Run 2	98.3335 %	98.9915 %	96.0364 %	106.3797 %	85.2941 %	100.8127 %	0.0000 ppm
Concentration per Run 3	98.6423 %	97.5994 %	97.0338 %	105.6182 %	85.7380 %	99.3832 %	0.0015 ppm
Concentration RSD	0.8 %	1.0 %	0.5 %	1.0 %	0.3 %	1.0 %	195.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-4 WG1976276

Analysis started at: 9/26/2024 8:35:49 AM

Rack: 1
Vial: 15

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0141 ppm	0.0142 ppm	2.1504 ppm	0.0002 ppm	0.0000 ppm	0.0938 ppm
Concentration per Run 1	0.0005 ppm	0.0108 ppm	0.0162 ppm	2.1658 ppm	0.0002 ppm	0.0000 ppm	0.0897 ppm
Concentration per Run 2	0.0000 ppm	0.0156 ppm	0.0123 ppm	2.1464 ppm	0.0002 ppm	0.0000 ppm	0.0954 ppm
Concentration per Run 3	0.0001 ppm	0.0159 ppm	0.0141 ppm	2.1390 ppm	0.0002 ppm	0.0000 ppm	0.0963 ppm
Concentration RSD	131.3 %	20.2 %	13.6 %	0.6 %	9.1 %	77.1 %	3.8 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0014 ppm	0.0046 ppm	0.3748 ppm	0.0221 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0015 ppm	0.0054 ppm	0.3601 ppm	0.0226 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0013 ppm	0.0039 ppm	0.3882 ppm	0.0210 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0014 ppm	0.0045 ppm	0.3761 ppm	0.0228 ppm
Concentration RSD	62.5 %	52.8 %	202.4 %	7.5 %	16.3 %	3.8 %	4.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0006 ppm	0.0771 ppm	9.6904 ppm	-0.0005 ppm	-0.0009 ppm	0.0043 ppm	0.0118 ppm
Concentration per Run 1	0.0005 ppm	0.0777 ppm	9.3851 ppm	-0.0005 ppm	-0.0007 ppm	0.0048 ppm	0.0113 ppm
Concentration per Run 2	0.0007 ppm	0.0769 ppm	9.8047 ppm	-0.0004 ppm	-0.0007 ppm	0.0048 ppm	0.0101 ppm
Concentration per Run 3	0.0005 ppm	0.0766 ppm	9.8814 ppm	-0.0005 ppm	-0.0013 ppm	0.0035 ppm	0.0139 ppm
Concentration RSD	29.2 %	0.7 %	2.8 %	11.8 %	38.8 %	17.5 %	16.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0538 ppm	0.0040 ppm	0.0003 ppm	0.0001 ppm	-0.0101 ppm	-0.0001 ppm	0.0010 ppm
Concentration per Run 1	0.0501 ppm	0.0039 ppm	0.0003 ppm	0.0000 ppm	-0.0093 ppm	-0.0001 ppm	0.0009 ppm
Concentration per Run 2	0.0555 ppm	0.0043 ppm	0.0003 ppm	0.0001 ppm	-0.0103 ppm	0.0000 ppm	0.0010 ppm
Concentration per Run 3	0.0557 ppm	0.0038 ppm	0.0003 ppm	0.0001 ppm	-0.0107 ppm	0.0000 ppm	0.0010 ppm
Concentration RSD	5.9 %	5.8 %	10.3 %	8.3 %	6.8 %	97.7 %	4.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.7597 %	102.1991 %	99.1870 %	109.2336 %	88.9697 %	104.2226 %	0.0023 ppm
Concentration per Run 1	102.2654 %	102.2601 %	98.6190 %	112.8491 %	88.3991 %	104.2710 %	0.0017 ppm
Concentration per Run 2	100.6455 %	102.2406 %	99.4305 %	108.6520 %	89.0728 %	104.3164 %	0.0029 ppm
Concentration per Run 3	99.3682 %	102.0966 %	99.5114 %	106.1997 %	89.4374 %	104.0804 %	0.0023 ppm
Concentration RSD	1.4 %	0.1 %	0.5 %	3.1 %	0.6 %	0.1 %	25.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-5 WG1976276

Analysis started at: 9/26/2024 8:42:28 AM

Rack: 1
Vial: 16

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0483 ppm	1.9051 ppm	0.1414 ppm	3.1572 ppm	1.9119 ppm	0.0490 ppm	9.7081 ppm
Concentration per Run 1	0.0489 ppm	1.8551 ppm	0.1420 ppm	3.1621 ppm	1.8573 ppm	0.0477 ppm	9.4629 ppm
Concentration per Run 2	0.0480 ppm	1.9240 ppm	0.1422 ppm	3.1563 ppm	1.9297 ppm	0.0495 ppm	9.7987 ppm
Concentration per Run 3	0.0478 ppm	1.9364 ppm	0.1398 ppm	3.1532 ppm	1.9488 ppm	0.0497 ppm	9.8627 ppm
Concentration RSD	1.3 %	2.3 %	1.0 %	0.1 %	2.5 %	2.3 %	2.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0530 ppm	0.5237 ppm	0.1921 ppm	0.2518 ppm	0.9942 ppm	10.4547 ppm	9.0895 ppm
Concentration per Run 1	0.0531 ppm	0.5245 ppm	0.1955 ppm	0.2565 ppm	0.9642 ppm	10.1569 ppm	9.2820 ppm
Concentration per Run 2	0.0530 ppm	0.5239 ppm	0.1904 ppm	0.2508 ppm	1.0060 ppm	10.5443 ppm	9.0078 ppm
Concentration per Run 3	0.0530 ppm	0.5227 ppm	0.1903 ppm	0.2482 ppm	1.0123 ppm	10.6628 ppm	8.9789 ppm
Concentration RSD	0.1 %	0.2 %	1.5 %	1.7 %	2.6 %	2.5 %	1.8 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4888 ppm	1.1455 ppm	19.1389 ppm	0.5126 ppm	0.5433 ppm	0.5248 ppm	0.1513 ppm
Concentration per Run 1	0.4759 ppm	1.1463 ppm	18.6182 ppm	0.5130 ppm	0.5434 ppm	0.5274 ppm	0.1514 ppm
Concentration per Run 2	0.4928 ppm	1.1469 ppm	19.3315 ppm	0.5133 ppm	0.5431 ppm	0.5244 ppm	0.1501 ppm
Concentration per Run 3	0.4976 ppm	1.1433 ppm	19.4671 ppm	0.5115 ppm	0.5433 ppm	0.5227 ppm	0.1524 ppm
Concentration RSD	2.3 %	0.2 %	2.4 %	0.2 %	0.0 %	0.5 %	0.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.5776 ppm	0.9777 ppm	0.9230 ppm	1.0140 ppm	0.1107 ppm	0.4860 ppm	0.5163 ppm
Concentration per Run 1	0.5824 ppm	0.9798 ppm	0.8969 ppm	1.0334 ppm	0.1109 ppm	0.4963 ppm	0.5175 ppm
Concentration per Run 2	0.5774 ppm	0.9784 ppm	0.9314 ppm	1.0065 ppm	0.1107 ppm	0.4821 ppm	0.5165 ppm
Concentration per Run 3	0.5730 ppm	0.9750 ppm	0.9407 ppm	1.0020 ppm	0.1106 ppm	0.4798 ppm	0.5149 ppm
Concentration RSD	0.8 %	0.3 %	2.5 %	1.7 %	0.1 %	1.8 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.3437 %	99.0773 %	97.3561 %	109.2203 %	85.4358 %	100.4794 %	0.0007 ppm
Concentration per Run 1	101.9113 %	97.5281 %	97.1607 %	112.1831 %	85.2207 %	98.5591 %	-0.0002 ppm
Concentration per Run 2	99.5743 %	99.8648 %	97.4611 %	108.1677 %	85.5066 %	101.2506 %	0.0006 ppm
Concentration per Run 3	99.5454 %	99.8391 %	97.4463 %	107.3101 %	85.5801 %	101.6285 %	0.0017 ppm
Concentration RSD	1.4 %	1.4 %	0.2 %	2.4 %	0.2 %	1.7 %	142.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976276-6D5 WG1976276

Analysis started at: 9/26/2024 8:48:48 AM

Rack: 1
Vial: 17

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0072 ppm	0.0015 ppm	0.4746 ppm	0.0000 ppm	0.0000 ppm	0.0276 ppm
Concentration per Run 1	0.0003 ppm	0.0084 ppm	0.0018 ppm	0.4743 ppm	0.0000 ppm	0.0000 ppm	0.0254 ppm
Concentration per Run 2	0.0002 ppm	0.0076 ppm	0.0013 ppm	0.4757 ppm	0.0001 ppm	0.0000 ppm	0.0302 ppm
Concentration per Run 3	0.0001 ppm	0.0055 ppm	0.0014 ppm	0.4739 ppm	0.0000 ppm	0.0000 ppm	0.0273 ppm
Concentration RSD	69.3 %	20.3 %	14.9 %	0.2 %	293.0 %	338.8 %	8.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0003 ppm	0.0040 ppm	0.1042 ppm	0.0062 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0003 ppm	0.0046 ppm	0.1102 ppm	0.0068 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0035 ppm	0.1092 ppm	0.0062 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0039 ppm	0.0932 ppm	0.0055 ppm
Concentration RSD	37.6 %	215.0 %	44.2 %	14.8 %	12.9 %	9.2 %	10.0 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0002 ppm	0.0165 ppm	2.2448 ppm	-0.0001 ppm	0.0001 ppm	0.0023 ppm	0.0034 ppm
Concentration per Run 1	0.0003 ppm	0.0167 ppm	2.2065 ppm	-0.0003 ppm	0.0002 ppm	0.0019 ppm	0.0046 ppm
Concentration per Run 2	0.0002 ppm	0.0164 ppm	2.2636 ppm	0.0000 ppm	-0.0001 ppm	0.0024 ppm	0.0023 ppm
Concentration per Run 3	0.0001 ppm	0.0163 ppm	2.2643 ppm	0.0000 ppm	0.0001 ppm	0.0027 ppm	0.0032 ppm
Concentration RSD	38.5 %	1.3 %	1.5 %	129.8 %	287.3 %	15.9 %	34.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0133 ppm	0.0010 ppm	0.0001 ppm	0.0001 ppm	-0.0028 ppm	0.0000 ppm	0.0004 ppm
Concentration per Run 1	0.0159 ppm	0.0008 ppm	0.0001 ppm	0.0001 ppm	-0.0027 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 2	0.0127 ppm	0.0010 ppm	0.0001 ppm	0.0001 ppm	-0.0032 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 3	0.0114 ppm	0.0011 ppm	0.0000 ppm	0.0002 ppm	-0.0026 ppm	0.0001 ppm	0.0004 ppm
Concentration RSD	17.4 %	13.9 %	51.6 %	37.8 %	10.4 %	673.6 %	9.5 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	101.4617 %	103.7684 %	102.2923 %	108.9830 %	97.0721 %	104.8992 %	0.0017 ppm
Concentration per Run 1	103.3292 %	103.7766 %	102.6713 %	110.7634 %	97.1852 %	104.9299 %	0.0014 ppm
Concentration per Run 2	100.5693 %	103.9539 %	101.8744 %	108.3927 %	96.9555 %	104.9630 %	0.0020 ppm
Concentration per Run 3	100.4866 %	103.5748 %	102.3313 %	107.7928 %	97.0756 %	104.8046 %	0.0018 ppm
Concentration RSD	1.6 %	0.2 %	0.4 %	1.4 %	0.1 %	0.1 %	16.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 8:55:30 AM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5031 ppm	0.4976 ppm	0.4734 ppm	0.5014 ppm	0.4943 ppm	0.5055 ppm
Concentration per Run 1	0.5030 ppm	0.4950 ppm	0.4714 ppm	0.5004 ppm	0.4872 ppm	0.4985 ppm
Concentration per Run 2	0.5031 ppm	0.4930 ppm	0.4725 ppm	0.5011 ppm	0.4951 ppm	0.5072 ppm
Concentration per Run 3	0.5032 ppm	0.5047 ppm	0.4763 ppm	0.5027 ppm	0.5005 ppm	0.5108 ppm
Recovery Percentage 1	100.614 %	99.510 %	94.679 %	100.282 %	98.854 %	101.100 %
Concentration RSD	0.0 %	1.3 %	0.5 %	0.2 %	1.4 %	1.3 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4810 ppm	0.5111 ppm	0.4828 ppm	0.4893 ppm	0.5173 ppm	5.3370 ppm
Concentration per Run 1	0.4795 ppm	0.5096 ppm	0.4847 ppm	0.4887 ppm	0.5104 ppm	5.2650 ppm
Concentration per Run 2	0.4804 ppm	0.5111 ppm	0.4821 ppm	0.4888 ppm	0.5170 ppm	5.3454 ppm
Concentration per Run 3	0.4832 ppm	0.5126 ppm	0.4816 ppm	0.4905 ppm	0.5244 ppm	5.4006 ppm
Recovery Percentage 1	96.208 %	102.224 %	96.561 %	97.865 %	103.458 %	106.741 %
Concentration RSD	0.4 %	0.3 %	0.3 %	0.2 %	1.4 %	1.3 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5051 ppm	0.4917 ppm	10.1579 ppm	0.4989 ppm	0.5100 ppm	0.5073 ppm
Concentration per Run 1	0.4974 ppm	0.4898 ppm	10.0130 ppm	0.4981 ppm	0.5093 ppm	0.5063 ppm
Concentration per Run 2	0.5075 ppm	0.4918 ppm	10.1843 ppm	0.4981 ppm	0.5093 ppm	0.5073 ppm
Concentration per Run 3	0.5102 ppm	0.4934 ppm	10.2765 ppm	0.5006 ppm	0.5113 ppm	0.5082 ppm
Recovery Percentage 1	101.011 %	98.335 %	101.579 %	99.784 %	101.995 %	101.458 %
Concentration RSD	1.3 %	0.4 %	1.3 %	0.3 %	0.2 %	0.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.5720 ppm	0.4752 ppm	0.4798 ppm	0.5078 ppm	0.5092 ppm	0.4848 ppm
Concentration per Run 1	5.5576 ppm	0.4740 ppm	0.4731 ppm	0.5083 ppm	0.5089 ppm	0.4853 ppm
Concentration per Run 2	5.5713 ppm	0.4747 ppm	0.4807 ppm	0.5068 ppm	0.5075 ppm	0.4847 ppm
Concentration per Run 3	5.5872 ppm	0.4771 ppm	0.4857 ppm	0.5082 ppm	0.5113 ppm	0.4843 ppm
Recovery Percentage 1	106.134 %	95.048 %	95.967 %	101.556 %	101.847 %	96.953 %
Concentration RSD	0.3 %	0.3 %	1.3 %	0.2 %	0.4 %	0.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.1543 %	101.5250 %	101.1841 %	107.3946 %	95.5185 %	102.9946 %
Concentration per Run 1	102.3343 %	101.7853 %	101.3834 %	109.1536 %	95.6427 %	103.3339 %
Concentration per Run 2	99.6661 %	101.4124 %	101.1468 %	107.3811 %	95.4849 %	102.8527 %
Concentration per Run 3	98.4626 %	101.3774 %	101.0220 %	105.6489 %	95.4278 %	102.7971 %
Recovery Percentage 1						98.909 %
Concentration RSD	2.0 %	0.2 %	0.2 %	1.6 %	0.1 %	0.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 9:01:55 AM
Rack: 0
Vial: 4

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	-0.0001 ppm	-0.0007 ppm	0.0024 ppm	0.0000 ppm	0.0000 ppm	0.0030 ppm
Concentration per Run 1	0.0003 ppm	-0.0023 ppm	-0.0001 ppm	0.0024 ppm	0.0000 ppm	0.0001 ppm	0.0029 ppm
Concentration per Run 2	0.0000 ppm	0.0054 ppm	-0.0016 ppm	0.0024 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 3	0.0004 ppm	-0.0033 ppm	-0.0005 ppm	0.0025 ppm	0.0000 ppm	0.0000 ppm	0.0059 ppm
Recovery Percentage 1	3.457 %	0.000 %	-14.492 %	8.114 %	-0.219 %	0.633 %	0.001 %
Concentration RSD	72.6 %	5,430.2 %	102.1 %	1.1 %	114.4 %	124.3 %	94.7 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0016 ppm	0.0022 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0002 ppm	0.0020 ppm	0.0087 ppm	-0.0009 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0011 ppm	0.0087 ppm	-0.0004 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0000 ppm	0.0018 ppm	-0.0108 ppm	0.0012 ppm
Recovery Percentage 1	-0.107 %	0.221 %	-0.350 %	1.630 %	0.001 %	0.087 %	0.000 %
Concentration RSD	797.8 %	135.7 %	669.8 %	64.5 %	28.9 %	516.3 %	4,058.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	-0.0001 ppm	0.0008 ppm	-0.0161 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	0.0009 ppm
Concentration per Run 1	0.0002 ppm	0.0009 ppm	-0.0151 ppm	-0.0001 ppm	-0.0005 ppm	0.0001 ppm	0.0008 ppm
Concentration per Run 2	-0.0002 ppm	0.0008 ppm	-0.0183 ppm	0.0000 ppm	-0.0002 ppm	-0.0006 ppm	0.0004 ppm
Concentration per Run 3	-0.0002 ppm	0.0007 ppm	-0.0150 ppm	0.0001 ppm	-0.0002 ppm	-0.0008 ppm	0.0015 ppm
Recovery Percentage 1	-0.765 %	1.602 %	-0.806 %	-0.101 %	-2.831 %	-0.874 %	9.051 %
Concentration RSD	323.3 %	12.0 %	11.6 %	361.3 %	62.5 %	103.2 %	60.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0013 ppm	0.0003 ppm	-0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 1	0.0011 ppm	0.0003 ppm	-0.0001 ppm	0.0002 ppm	-0.0004 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0016 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0012 ppm	0.0001 ppm	-0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Recovery Percentage 1	0.256 %	0.502 %	-0.844 %	0.846 %	-0.815 %	0.384 %	1.149 %
Concentration RSD	20.7 %	39.8 %	49.9 %	97.0 %	144.1 %	347.4 %	121.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.3780 %	102.1629 %	101.8326 %	104.1437 %	98.0385 %	101.6309 %	0.0003 ppm
Concentration per Run 1	100.9865 %	102.2336 %	101.7708 %	104.7985 %	97.9574 %	101.6890 %	0.0020 ppm
Concentration per Run 2	98.4982 %	102.1180 %	101.8673 %	103.7543 %	98.0843 %	101.5804 %	-0.0013 ppm
Concentration per Run 3	98.6493 %	102.1370 %	101.8599 %	103.8782 %	98.0737 %	101.6234 %	0.0001 ppm
Recovery Percentage 1							2.569 %
Concentration RSD	1.4 %	0.1 %	0.1 %	0.5 %	0.1 %	0.1 %	638.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2453915-01 WG1976131
 Analysis started at: 9/26/2024 9:20:43 AM
 Rack: 1
 Vial: 26

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0176 ppm	-0.0001 ppm	0.0147 ppm	0.0634 ppm	0.0000 ppm	66.1867 ppm
Concentration per Run 1	-0.0001 ppm	0.0205 ppm	0.0005 ppm	0.0144 ppm	0.0620 ppm	0.0000 ppm	65.0092 ppm
Concentration per Run 2	0.0002 ppm	0.0174 ppm	0.0001 ppm	0.0149 ppm	0.0642 ppm	0.0000 ppm	66.8506 ppm
Concentration per Run 3	0.0002 ppm	0.0150 ppm	-0.0011 ppm	0.0150 ppm	0.0641 ppm	0.0000 ppm	66.7003 ppm
Concentration RSD	170.3 %	15.7 %	572.6 %	2.2 %	2.0 %	67.2 %	1.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0017 ppm	0.0001 ppm	0.0007 ppm	0.0078 ppm	0.4594 ppm	2.2208 ppm
Concentration per Run 1	0.0000 ppm	0.0017 ppm	0.0003 ppm	0.0010 ppm	0.0082 ppm	0.4564 ppm	2.2243 ppm
Concentration per Run 2	0.0000 ppm	0.0016 ppm	0.0000 ppm	0.0007 ppm	0.0085 ppm	0.4694 ppm	2.2102 ppm
Concentration per Run 3	0.0001 ppm	0.0017 ppm	0.0001 ppm	0.0006 ppm	0.0066 ppm	0.4523 ppm	2.2280 ppm
Concentration RSD	37.1 %	4.9 %	93.2 %	28.5 %	13.4 %	1.9 %	0.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5661 ppm	0.0005 ppm	124.9324 [SIC 500]	0.0030 ppm	-0.0012 ppm	0.0001 ppm	0.0018 ppm
Concentration per Run 1	0.5539 ppm	0.0005 ppm	124.0366 ppm	0.0030 ppm	-0.0010 ppm	0.0003 ppm	0.0021 ppm
Concentration per Run 2	0.5732 ppm	0.0005 ppm	126.6785 ppm	0.0029 ppm	-0.0008 ppm	-0.0001 ppm	0.0018 ppm
Concentration per Run 3	0.5713 ppm	0.0003 ppm	124.0822 ppm	0.0031 ppm	-0.0017 ppm	0.0002 ppm	0.0016 ppm
Concentration RSD	1.9 %	26.6 %	1.2 %	3.4 %	42.4 %	167.6 %	13.0 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.6701 ppm	0.0005 ppm	0.1846 ppm	0.0007 ppm	-0.0041 ppm	0.0012 ppm	0.0016 ppm
Concentration per Run 1	0.6711 ppm	0.0005 ppm	0.1803 ppm	0.0005 ppm	-0.0037 ppm	0.0013 ppm	0.0015 ppm
Concentration per Run 2	0.6685 ppm	0.0008 ppm	0.1868 ppm	0.0008 ppm	-0.0038 ppm	0.0013 ppm	0.0016 ppm
Concentration per Run 3	0.6706 ppm	0.0001 ppm	0.1868 ppm	0.0007 ppm	-0.0049 ppm	0.0010 ppm	0.0017 ppm
Concentration RSD	0.2 %	69.3 %	2.1 %	21.6 %	16.5 %	11.7 %	5.6 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.6989 %	94.8621 %	94.8710 %	104.2927 %	83.9117 %	96.3014 %	-0.0058 ppm
Concentration per Run 1	95.9902 %	95.0427 %	94.9799 %	106.0639 %	83.8512 %	96.3794 %	-0.0055 ppm
Concentration per Run 2	95.2899 %	94.8986 %	94.8822 %	103.3262 %	83.9965 %	96.3982 %	-0.0067 ppm
Concentration per Run 3	95.8167 %	94.6448 %	94.7510 %	103.4880 %	83.8874 %	96.1267 %	-0.0053 ppm
Concentration RSD	0.4 %	0.2 %	0.1 %	1.5 %	0.1 %	0.2 %	13.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2453929-01 WG1976131
 Analysis started at: 9/26/2024 9:27:29 AM
 Rack: 1
 Vial: 27

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0135 ppm	0.0009 ppm	0.0056 ppm	0.0617 ppm	0.0000 ppm	69.0457 ppm
Concentration per Run 1	-0.0001 ppm	0.0101 ppm	0.0004 ppm	0.0053 ppm	0.0606 ppm	0.0000 ppm	67.6520 ppm
Concentration per Run 2	0.0000 ppm	0.0153 ppm	0.0012 ppm	0.0057 ppm	0.0620 ppm	0.0000 ppm	69.7148 ppm
Concentration per Run 3	0.0001 ppm	0.0151 ppm	0.0011 ppm	0.0057 ppm	0.0626 ppm	0.0000 ppm	69.7703 ppm
Concentration RSD	389.8 %	21.6 %	49.7 %	3.7 %	1.7 %	85.0 %	1.7 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0001 ppm	0.0012 ppm	0.0002 ppm	0.0009 ppm	0.0068 ppm	0.4407 ppm	1.2503 ppm
Concentration per Run 1	-0.0001 ppm	0.0012 ppm	0.0002 ppm	0.0010 ppm	0.0064 ppm	0.4201 ppm	1.2484 ppm
Concentration per Run 2	-0.0001 ppm	0.0011 ppm	0.0000 ppm	0.0009 ppm	0.0071 ppm	0.4292 ppm	1.2496 ppm
Concentration per Run 3	-0.0001 ppm	0.0012 ppm	0.0005 ppm	0.0007 ppm	0.0069 ppm	0.4727 ppm	1.2528 ppm
Concentration RSD	8.5 %	6.6 %	115.7 %	20.0 %	5.1 %	6.4 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.3783 ppm	0.0010 ppm	121.7235 [SIC 500]	0.0017 ppm	-0.0006 ppm	-0.0001 ppm	0.0044 ppm
Concentration per Run 1	0.3700 ppm	0.0010 ppm	120.8355 ppm	0.0017 ppm	-0.0009 ppm	0.0007 ppm	0.0054 ppm
Concentration per Run 2	0.3822 ppm	0.0010 ppm	122.1967 ppm	0.0017 ppm	-0.0010 ppm	-0.0009 ppm	0.0048 ppm
Concentration per Run 3	0.3827 ppm	0.0011 ppm	122.1382 ppm	0.0019 ppm	0.0002 ppm	-0.0002 ppm	0.0032 ppm
Concentration RSD	1.9 %	7.1 %	0.6 %	6.9 %	112.4 %	555.5 %	25.9 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.1893 ppm	0.0011 ppm	0.2813 ppm	0.0000 ppm	-0.0036 ppm	0.0008 ppm	0.0033 ppm
Concentration per Run 1	0.1889 ppm	0.0011 ppm	0.2757 ppm	0.0001 ppm	-0.0043 ppm	0.0007 ppm	0.0033 ppm
Concentration per Run 2	0.1912 ppm	0.0016 ppm	0.2832 ppm	-0.0001 ppm	-0.0034 ppm	0.0008 ppm	0.0033 ppm
Concentration per Run 3	0.1878 ppm	0.0006 ppm	0.2850 ppm	0.0001 ppm	-0.0031 ppm	0.0010 ppm	0.0033 ppm
Concentration RSD	0.9 %	42.9 %	1.8 %	256.5 %	16.6 %	21.2 %	1.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.9302 %	94.3821 %	94.3362 %	105.2612 %	84.1554 %	96.0216 %	-0.0050 ppm
Concentration per Run 1	96.9712 %	94.2874 %	94.3742 %	107.7555 %	84.3059 %	95.8207 %	-0.0061 ppm
Concentration per Run 2	95.6019 %	94.5768 %	94.0251 %	104.5337 %	83.8763 %	96.2498 %	-0.0042 ppm
Concentration per Run 3	95.2173 %	94.2821 %	94.6093 %	103.4945 %	84.2839 %	95.9943 %	-0.0047 ppm
Concentration RSD	1.0 %	0.2 %	0.3 %	2.1 %	0.3 %	0.2 %	19.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2453870-01 WG1976131
 Analysis started at: 9/26/2024 9:34:15 AM
 Rack: 1
 Vial: 20

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	-0.0001 ppm	0.0130 ppm	0.0007 ppm	0.1927 ppm	0.0050 ppm	0.0000 ppm	8.2703 ppm
Concentration per Run 1	-0.0001 ppm	0.0092 ppm	0.0010 ppm	0.1933 ppm	0.0048 ppm	0.0000 ppm	8.0876 ppm
Concentration per Run 2	-0.0001 ppm	0.0170 ppm	0.0008 ppm	0.1923 ppm	0.0050 ppm	0.0000 ppm	8.3436 ppm
Concentration per Run 3	-0.0001 ppm	0.0128 ppm	0.0002 ppm	0.1925 ppm	0.0050 ppm	0.0000 ppm	8.3797 ppm
Concentration RSD	2.8 %	30.1 %	65.0 %	0.3 %	2.6 %	179.5 %	1.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0004 ppm	0.0001 ppm	0.0019 ppm	0.0325 ppm	1.9084 ppm	1.5111 ppm
Concentration per Run 1	0.0000 ppm	0.0003 ppm	0.0003 ppm	0.0020 ppm	0.0305 ppm	1.8606 ppm	1.5186 ppm
Concentration per Run 2	0.0000 ppm	0.0005 ppm	-0.0001 ppm	0.0019 ppm	0.0327 ppm	1.9259 ppm	1.5074 ppm
Concentration per Run 3	0.0000 ppm	0.0003 ppm	0.0000 ppm	0.0019 ppm	0.0342 ppm	1.9387 ppm	1.5073 ppm
Concentration RSD	194.7 %	32.6 %	331.2 %	4.9 %	5.7 %	2.2 %	0.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0590 ppm	0.0004 ppm	118.7413 [SIC 500]	0.0035 ppm	-0.0006 ppm	0.0009 ppm	0.0017 ppm
Concentration per Run 1	0.0572 ppm	0.0004 ppm	117.3327 ppm	0.0038 ppm	-0.0004 ppm	0.0005 ppm	-0.0001 ppm
Concentration per Run 2	0.0599 ppm	0.0004 ppm	119.1869 ppm	0.0033 ppm	-0.0004 ppm	0.0013 ppm	0.0026 ppm
Concentration per Run 3	0.0597 ppm	0.0003 ppm	119.7042 ppm	0.0035 ppm	-0.0009 ppm	0.0008 ppm	0.0027 ppm
Concentration RSD	2.6 %	13.3 %	1.1 %	6.6 %	50.0 %	47.9 %	89.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.2019 ppm	0.0007 ppm	0.0427 ppm	0.0001 ppm	-0.0041 ppm	0.0003 ppm	0.0515 ppm
Concentration per Run 1	0.2020 ppm	0.0008 ppm	0.0416 ppm	0.0003 ppm	-0.0043 ppm	0.0002 ppm	0.0515 ppm
Concentration per Run 2	0.2025 ppm	0.0006 ppm	0.0431 ppm	0.0001 ppm	-0.0039 ppm	0.0002 ppm	0.0515 ppm
Concentration per Run 3	0.2011 ppm	0.0007 ppm	0.0434 ppm	-0.0001 ppm	-0.0042 ppm	0.0004 ppm	0.0515 ppm
Concentration RSD	0.4 %	11.5 %	2.2 %	272.0 %	4.8 %	43.8 %	0.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.6989 %	96.1705 %	96.0034 %	106.4881 %	85.0591 %	97.9934 %	0.0017 ppm
Concentration per Run 1	98.4650 %	96.2413 %	95.9630 %	108.9871 %	84.8675 %	98.0027 %	0.0006 ppm
Concentration per Run 2	96.9830 %	96.1518 %	96.1946 %	105.3343 %	85.1209 %	98.0020 %	0.0020 ppm
Concentration per Run 3	97.6487 %	96.1183 %	95.8527 %	105.1429 %	85.1890 %	97.9754 %	0.0027 ppm
Concentration RSD	0.8 %	0.1 %	0.2 %	2.0 %	0.2 %	0.0 %	59.6 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-3 WG1976131
Analysis started at: 9/26/2024 9:41:02 AM
Rack: 1
Vial: 21

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0458 ppm	1.8478 ppm	0.1187 ppm	1.1512 ppm	1.8309 ppm	0.0472 ppm
Concentration per Run 1	0.0459 ppm	1.8037 ppm	0.1187 ppm	1.1509 ppm	1.7898 ppm	0.0463 ppm
Concentration per Run 2	0.0455 ppm	1.8603 ppm	0.1185 ppm	1.1520 ppm	1.8405 ppm	0.0473 ppm
Concentration per Run 3	0.0462 ppm	1.8793 ppm	0.1190 ppm	1.1508 ppm	1.8623 ppm	0.0481 ppm
Concentration RSD	0.7 %	2.1 %	0.2 %	0.1 %	2.0 %	1.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0510 ppm	0.4871 ppm	0.1799 ppm	0.2392 ppm	0.9895 ppm	11.5652 ppm
Concentration per Run 1	0.0510 ppm	0.4868 ppm	0.1802 ppm	0.2388 ppm	0.9702 ppm	11.3438 ppm
Concentration per Run 2	0.0510 ppm	0.4871 ppm	0.1800 ppm	0.2390 ppm	0.9915 ppm	11.6109 ppm
Concentration per Run 3	0.0510 ppm	0.4874 ppm	0.1794 ppm	0.2399 ppm	1.0067 ppm	11.7409 ppm
Concentration RSD	0.1 %	0.1 %	0.2 %	0.2 %	1.9 %	1.8 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5226 ppm	0.9904 ppm	126.1807 [SIC 500]	0.4817 ppm	0.5131 ppm	0.5027 ppm
Concentration per Run 1	0.5122 ppm	0.9904 ppm	124.2708 ppm	0.4824 ppm	0.5130 ppm	0.5016 ppm
Concentration per Run 2	0.5250 ppm	0.9898 ppm	127.9497 ppm	0.4813 ppm	0.5133 ppm	0.5034 ppm
Concentration per Run 3	0.5308 ppm	0.9908 ppm	126.3217 ppm	0.4814 ppm	0.5130 ppm	0.5031 ppm
Concentration RSD	1.8 %	0.1 %	1.5 %	0.1 %	0.0 %	0.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	1.0595 ppm	0.9063 ppm	0.9127 ppm	0.9500 ppm	0.1058 ppm	0.4594 ppm
Concentration per Run 1	1.0572 ppm	0.9081 ppm	0.8927 ppm	0.9499 ppm	0.1057 ppm	0.4595 ppm
Concentration per Run 2	1.0630 ppm	0.9036 ppm	0.9174 ppm	0.9495 ppm	0.1054 ppm	0.4590 ppm
Concentration per Run 3	1.0584 ppm	0.9070 ppm	0.9279 ppm	0.9506 ppm	0.1062 ppm	0.4596 ppm
Concentration RSD	0.3 %	0.3 %	2.0 %	0.1 %	0.4 %	0.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.6199 %	94.9937 %	94.8370 %	106.0765 %	83.4350 %	96.6659 %
Concentration per Run 1	97.4593 %	95.0541 %	94.8316 %	107.8097 %	83.3522 %	96.7312 %
Concentration per Run 2	97.8364 %	94.9150 %	94.6734 %	105.6279 %	83.3550 %	96.6212 %
Concentration per Run 3	97.5640 %	95.0119 %	95.0060 %	104.7918 %	83.5979 %	96.6453 %
Concentration RSD	0.2 %	0.1 %	0.2 %	1.5 %	0.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-4 WG1976131
Analysis started at: 9/26/2024 9:47:33 AM
Rack: 1
Vial: 22

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0134 ppm	0.0020 ppm	0.1939 ppm	0.0050 ppm	0.0000 ppm	8.2528 ppm
Concentration per Run 1	-0.0001 ppm	0.0142 ppm	0.0003 ppm	0.1930 ppm	0.0049 ppm	0.0000 ppm	8.1106 ppm
Concentration per Run 2	0.0000 ppm	0.0131 ppm	0.0026 ppm	0.1941 ppm	0.0049 ppm	0.0000 ppm	8.3343 ppm
Concentration per Run 3	0.0002 ppm	0.0129 ppm	0.0030 ppm	0.1945 ppm	0.0051 ppm	0.0000 ppm	8.3134 ppm
Concentration RSD	820.7 %	5.5 %	75.8 %	0.4 %	2.1 %	53.9 %	1.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0003 ppm	0.0001 ppm	0.0016 ppm	0.0333 ppm	1.9306 ppm	1.5081 ppm
Concentration per Run 1	0.0000 ppm	0.0003 ppm	0.0002 ppm	0.0016 ppm	0.0330 ppm	1.8945 ppm	1.5122 ppm
Concentration per Run 2	0.0000 ppm	0.0004 ppm	0.0002 ppm	0.0015 ppm	0.0343 ppm	1.9480 ppm	1.4525 ppm
Concentration per Run 3	0.0000 ppm	0.0003 ppm	0.0001 ppm	0.0018 ppm	0.0327 ppm	1.9492 ppm	1.5597 ppm
Concentration RSD	336.8 %	17.1 %	47.7 %	11.0 %	2.6 %	1.6 %	3.6 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0589 ppm	0.0012 ppm	117.3599 [SIC 500]	0.0036 ppm	-0.0008 ppm	0.0002 ppm	0.0041 ppm
Concentration per Run 1	0.0576 ppm	0.0012 ppm	116.9136 ppm	0.0034 ppm	-0.0006 ppm	0.0003 ppm	0.0037 ppm
Concentration per Run 2	0.0596 ppm	0.0012 ppm	119.0502 ppm	0.0036 ppm	-0.0004 ppm	-0.0002 ppm	0.0044 ppm
Concentration per Run 3	0.0594 ppm	0.0011 ppm	116.1158 ppm	0.0038 ppm	-0.0015 ppm	0.0005 ppm	0.0043 ppm
Concentration RSD	1.8 %	7.7 %	1.3 %	5.2 %	67.3 %	160.8 %	9.5 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.2239 ppm	0.0011 ppm	0.0427 ppm	0.0003 ppm	-0.0035 ppm	0.0002 ppm	0.0518 ppm
Concentration per Run 1	0.2260 ppm	0.0011 ppm	0.0419 ppm	0.0002 ppm	-0.0035 ppm	0.0002 ppm	0.0518 ppm
Concentration per Run 2	0.2213 ppm	0.0013 ppm	0.0432 ppm	0.0004 ppm	-0.0030 ppm	0.0001 ppm	0.0518 ppm
Concentration per Run 3	0.2244 ppm	0.0009 ppm	0.0431 ppm	0.0004 ppm	-0.0040 ppm	0.0003 ppm	0.0518 ppm
Concentration RSD	1.1 %	21.1 %	1.7 %	28.8 %	15.1 %	40.0 %	0.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.2079 %	96.4495 %	95.7879 %	106.7620 %	84.8005 %	98.1245 %	0.0010 ppm
Concentration per Run 1	98.8311 %	95.5620 %	96.1226 %	108.3894 %	85.0058 %	97.2616 %	0.0017 ppm
Concentration per Run 2	97.3248 %	99.6189 %	95.5740 %	105.4766 %	84.8026 %	101.8897 %	-0.0002 ppm
Concentration per Run 3	98.4678 %	94.1678 %	95.6671 %	106.4199 %	84.5931 %	95.2222 %	0.0015 ppm
Concentration RSD	0.8 %	2.9 %	0.3 %	1.4 %	0.2 %	3.5 %	103.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-5 WG1976131

Analysis started at: 9/26/2024 9:54:15 AM

Rack: 1
Vial: 23

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0492 ppm	1.9218 ppm	0.1278 ppm	1.2066 ppm	1.9210 ppm	0.0495 ppm	18.0870 ppm
Concentration per Run 1	0.0490 ppm	1.8718 ppm	0.1286 ppm	1.2058 ppm	1.8757 ppm	0.0482 ppm	17.6246 ppm
Concentration per Run 2	0.0493 ppm	1.9385 ppm	0.1259 ppm	1.2023 ppm	1.9381 ppm	0.0500 ppm	18.2302 ppm
Concentration per Run 3	0.0493 ppm	1.9552 ppm	0.1288 ppm	1.2116 ppm	1.9491 ppm	0.0504 ppm	18.4062 ppm
Concentration RSD	0.3 %	2.3 %	1.3 %	0.4 %	2.1 %	2.3 %	2.3 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0530 ppm	0.5129 ppm	0.1888 ppm	0.2505 ppm	1.0240 ppm	12.1583 ppm	10.6553 ppm
Concentration per Run 1	0.0531 ppm	0.5127 ppm	0.1883 ppm	0.2508 ppm	0.9956 ppm	11.8751 ppm	10.6337 ppm
Concentration per Run 2	0.0529 ppm	0.5112 ppm	0.1893 ppm	0.2508 ppm	1.0363 ppm	12.2833 ppm	10.6727 ppm
Concentration per Run 3	0.0532 ppm	0.5147 ppm	0.1888 ppm	0.2500 ppm	1.0401 ppm	12.3166 ppm	10.6595 ppm
Concentration RSD	0.3 %	0.3 %	0.3 %	0.2 %	2.4 %	2.0 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5486 ppm	1.0559 ppm	127.5015 [SIC 500]	0.5066 ppm	0.5364 ppm	0.5278 ppm	0.1318 ppm
Concentration per Run 1	0.5350 ppm	1.0550 ppm	124.9121 ppm	0.5065 ppm	0.5355 ppm	0.5285 ppm	0.1314 ppm
Concentration per Run 2	0.5539 ppm	1.0508 ppm	128.8674 ppm	0.5052 ppm	0.5349 ppm	0.5246 ppm	0.1298 ppm
Concentration per Run 3	0.5568 ppm	1.0618 ppm	128.7249 ppm	0.5081 ppm	0.5389 ppm	0.5303 ppm	0.1342 ppm
Concentration RSD	2.2 %	0.5 %	1.8 %	0.3 %	0.4 %	0.5 %	1.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.7574 ppm	0.9725 ppm	0.9647 ppm	1.0062 ppm	0.1116 ppm	0.4822 ppm	0.5704 ppm
Concentration per Run 1	0.7592 ppm	0.9720 ppm	0.9421 ppm	1.0064 ppm	0.1109 ppm	0.4821 ppm	0.5698 ppm
Concentration per Run 2	0.7523 ppm	0.9700 ppm	0.9730 ppm	1.0064 ppm	0.1113 ppm	0.4822 ppm	0.5693 ppm
Concentration per Run 3	0.7606 ppm	0.9755 ppm	0.9789 ppm	1.0058 ppm	0.1127 ppm	0.4822 ppm	0.5722 ppm
Concentration RSD	0.6 %	0.3 %	2.0 %	0.0 %	0.9 %	0.0 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.6127 %	95.3904 %	95.0513 %	106.2428 %	83.3549 %	97.0598 %	0.0005 ppm
Concentration per Run 1	98.8204 %	95.3823 %	95.0046 %	109.1141 %	83.3064 %	97.0414 %	-0.0012 ppm
Concentration per Run 2	97.2485 %	95.3168 %	95.2376 %	105.1854 %	83.8534 %	97.0112 %	0.0008 ppm
Concentration per Run 3	96.7691 %	95.4721 %	94.9116 %	104.4289 %	82.9049 %	97.1267 %	0.0019 ppm
Concentration RSD	1.1 %	0.1 %	0.2 %	2.4 %	0.6 %	0.1 %	334.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976131-6D5 WG1976131

Analysis started at: 9/26/2024 10:00:47 AM

Rack: 1
Vial: 24

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0004 ppm	0.0025 ppm	-0.0001 ppm	0.0403 ppm	0.0011 ppm	0.0000 ppm	1.7525 ppm
Concentration per Run 1	0.0003 ppm	0.0005 ppm	-0.0002 ppm	0.0405 ppm	0.0012 ppm	0.0000 ppm	1.7163 ppm
Concentration per Run 2	0.0006 ppm	0.0078 ppm	0.0006 ppm	0.0404 ppm	0.0010 ppm	0.0000 ppm	1.7594 ppm
Concentration per Run 3	0.0004 ppm	-0.0007 ppm	-0.0006 ppm	0.0401 ppm	0.0011 ppm	0.0000 ppm	1.7818 ppm
Concentration RSD	40.0 %	182.2 %	620.3 %	0.6 %	9.0 %	5,719.1 %	1.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0004 ppm	0.0092 ppm	0.4130 ppm	0.3344 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0005 ppm	0.0096 ppm	0.4143 ppm	0.3352 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0004 ppm	0.0094 ppm	0.4196 ppm	0.3336 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0085 ppm	0.4050 ppm	0.3344 ppm
Concentration RSD	220.3 %	34.0 %	120.6 %	22.7 %	6.5 %	1.8 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0125 ppm	0.0011 ppm	26.6631 [SIC 500]	0.0006 ppm	-0.0001 ppm	0.0007 ppm	0.0019 ppm
Concentration per Run 1	0.0123 ppm	0.0013 ppm	26.1735 ppm	0.0008 ppm	-0.0001 ppm	0.0018 ppm	0.0014 ppm
Concentration per Run 2	0.0125 ppm	0.0011 ppm	26.7434 ppm	0.0004 ppm	-0.0004 ppm	0.0000 ppm	0.0013 ppm
Concentration per Run 3	0.0126 ppm	0.0010 ppm	27.0725 ppm	0.0007 ppm	0.0001 ppm	0.0004 ppm	0.0032 ppm
Concentration RSD	1.2 %	14.8 %	1.7 %	28.2 %	185.1 %	129.4 %	55.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0420 ppm	0.0003 ppm	0.0089 ppm	0.0001 ppm	-0.0015 ppm	0.0000 ppm	0.0105 ppm
Concentration per Run 1	0.0428 ppm	0.0002 ppm	0.0088 ppm	0.0002 ppm	-0.0017 ppm	0.0001 ppm	0.0105 ppm
Concentration per Run 2	0.0424 ppm	0.0004 ppm	0.0089 ppm	0.0001 ppm	-0.0018 ppm	0.0000 ppm	0.0106 ppm
Concentration per Run 3	0.0406 ppm	0.0003 ppm	0.0090 ppm	0.0001 ppm	-0.0009 ppm	-0.0001 ppm	0.0105 ppm
Concentration RSD	2.8 %	23.0 %	1.4 %	55.1 %	32.6 %	3,181.2 %	0.8 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.9887 %	100.4193 %	100.0946 %	107.4834 %	93.9933 %	101.9849 %	0.0014 ppm
Concentration per Run 1	101.9039 %	100.4501 %	100.1553 %	109.2273 %	94.0378 %	102.0216 %	0.0005 ppm
Concentration per Run 2	99.3501 %	100.4526 %	100.1078 %	107.4282 %	93.7526 %	102.0669 %	0.0016 ppm
Concentration per Run 3	98.7121 %	100.3554 %	100.0207 %	105.7948 %	94.1894 %	101.8661 %	0.0021 ppm
Concentration RSD	1.7 %	0.1 %	0.1 %	1.6 %	0.2 %	0.1 %	58.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 10:07:30 AM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5068 ppm	0.5192 ppm	0.4796 ppm	0.5045 ppm	0.4994 ppm	0.5103 ppm
Concentration per Run 1	0.5069 ppm	0.5117 ppm	0.4801 ppm	0.5046 ppm	0.4904 ppm	0.5018 ppm
Concentration per Run 2	0.5065 ppm	0.5179 ppm	0.4775 ppm	0.5026 ppm	0.5018 ppm	0.5123 ppm
Concentration per Run 3	0.5069 ppm	0.5279 ppm	0.4813 ppm	0.5063 ppm	0.5060 ppm	0.5168 ppm
Recovery Percentage 1	101.360 %	103.840 %	95.930 %	100.902 %	99.876 %	102.059 %
Concentration RSD	0.0 %	1.6 %	0.4 %	0.4 %	1.6 %	1.5 %
Ca 315.887 {107} (Radial)	Mg 279.079 {121} (Axial)	K 766.490 {44} (Radial)	Fe 259.940 {130} (Radial)	Cu 324.754 {104} (Axial)	Co 228.616 {447} (Axial)	Cd 214.438 {457} (Axial)
Concentration average	0.5085 ppm	5.3738 ppm	0.5377 ppm	0.4965 ppm	0.5162 ppm	0.4864 ppm
Concentration per Run 1	0.5069 ppm	5.2921 ppm	0.5249 ppm	0.4959 ppm	0.5155 ppm	0.4849 ppm
Concentration per Run 2	0.5099 ppm	5.4052 ppm	0.5418 ppm	0.4968 ppm	0.5148 ppm	0.4859 ppm
Concentration per Run 3	0.5087 ppm	5.4242 ppm	0.5465 ppm	0.4967 ppm	0.5184 ppm	0.4884 ppm
Recovery Percentage 1	101.695 %	107.477 %	107.548 %	99.292 %	103.248 %	97.283 %
Concentration RSD	0.3 %	1.3 %	2.1 %	0.1 %	0.4 %	0.4 %
Mg 279.079 {121} (Axial)	Se 196.090 {472} (Axial)	Sb 206.833 {463} (Axial)	Pb 220.353 {453} (Axial)	Ni 231.604 {445} (Axial)	Na 589.592 {57} (Radial)	Mo 202.030 {467} (Axial)
Concentration average	0.5061 ppm	0.5112 ppm	0.5167 ppm	0.5052 ppm	10.0547 ppm	0.4972 ppm
Concentration per Run 1	0.5059 ppm	0.5115 ppm	0.5152 ppm	0.5047 ppm	9.8827 ppm	0.4951 ppm
Concentration per Run 2	0.5030 ppm	0.5102 ppm	0.5156 ppm	0.5035 ppm	10.0971 ppm	0.4961 ppm
Concentration per Run 3	0.5094 ppm	0.5121 ppm	0.5192 ppm	0.5074 ppm	10.1843 ppm	0.5005 ppm
Recovery Percentage 1	101.224 %	102.246 %	103.336 %	101.037 %	100.547 %	99.448 %
Concentration RSD	0.6 %	0.2 %	0.4 %	0.4 %	1.5 %	0.6 %
Mo 202.030 {467} (Axial)	Zn 206.200 {463} (Axial)	V 292.402 {115} (Axial)	Ti 190.856 {477} (Axial)	Ti 334.904 {101} (Axial)	Sr 421.552 {80} (Radial)	Sn 189.989 {477} (Axial)
Concentration average	0.5045 ppm	0.4893 ppm	0.5152 ppm	0.5135 ppm	0.4853 ppm	0.4808 ppm
Concentration per Run 1	0.5021 ppm	0.4885 ppm	0.5142 ppm	0.5126 ppm	0.4768 ppm	0.4794 ppm
Concentration per Run 2	0.5042 ppm	0.4899 ppm	0.5134 ppm	0.5141 ppm	0.4875 ppm	0.4802 ppm
Concentration per Run 3	0.5072 ppm	0.4894 ppm	0.5180 ppm	0.5137 ppm	0.4916 ppm	0.4826 ppm
Recovery Percentage 1	100.899 %	97.857 %	103.045 %	102.693 %	97.055 %	96.151 %
Concentration RSD	0.5 %	0.1 %	0.5 %	0.2 %	1.6 %	0.4 %
Sn 189.989 {477} (Axial)	Li 670.784 {50} (Radial)	Sc 361.384 {93} (Axial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Y 224.306 {450} (Axial)	Y 360.073 {94} (Axial)
Concentration average	0.4954 ppm	102.5760 %	94.8643 %	107.4246 %	100.5027 %	100.9718 %
Concentration per Run 1	0.4868 ppm	102.7266 %	94.9020 %	109.4915 %	100.6787 %	101.2069 %
Concentration per Run 2	0.4982 ppm	102.5483 %	95.1909 %	107.3137 %	100.6803 %	100.9122 %
Concentration per Run 3	0.5013 ppm	102.4533 %	94.5001 %	105.4686 %	100.1492 %	100.7963 %
Recovery Percentage 1	99.086 %					
Concentration RSD	1.5 %	0.1 %	0.4 %	1.9 %	0.3 %	0.2 %
Y 360.073 {94} (Axial)	Y 371.030 {91} (Radial)					
Concentration average	100.9718 %					
Concentration per Run 1	101.2069 %					
Concentration per Run 2	100.9122 %					
Concentration per Run 3	100.7963 %					
Recovery Percentage 1						
Concentration RSD	0.2 %					

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 10:13:54 AM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0010 ppm	-0.0009 ppm	0.0012 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	0.0014 ppm	-0.0006 ppm	0.0014 ppm	0.0000 ppm	-0.0009 ppm
Concentration per Run 2	0.0001 ppm	-0.0007 ppm	0.0005 ppm	0.0008 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0002 ppm	0.0022 ppm	-0.0026 ppm	0.0013 ppm	-0.0001 ppm	0.0000 ppm
Recovery Percentage 1	2.470 %	0.000 %	-18.191 %	3.871 %	-0.864 %	0.061 %
Concentration RSD	33.4 %	156.8 %	169.2 %	25.7 %	91.6 %	716.4 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0230 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0203 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0009 ppm	0.0370 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0001 ppm	0.0000 ppm	0.0116 ppm
Recovery Percentage 1	-0.301 %	-0.192 %	-0.747 %	0.803 %	0.000 %	0.919 %
Concentration RSD	79.1 %	47.4 %	315.2 %	44.0 %	110.2 %	56.3 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	-0.0001 ppm	0.0008 ppm	0.0075 ppm	0.0000 ppm	-0.0006 ppm	0.0001 ppm
Concentration per Run 1	-0.0001 ppm	0.0009 ppm	0.0122 ppm	-0.0002 ppm	-0.0012 ppm	0.0000 ppm
Concentration per Run 2	-0.0001 ppm	0.0008 ppm	0.0011 ppm	0.0000 ppm	-0.0003 ppm	0.0003 ppm
Concentration per Run 3	-0.0002 ppm	0.0006 ppm	0.0093 ppm	0.0002 ppm	-0.0002 ppm	-0.0001 ppm
Recovery Percentage 1	-1.073 %	1.534 %	0.376 %	-0.010 %	-5.703 %	0.154 %
Concentration RSD	41.0 %	17.4 %	76.5 %	7,053.1 %	99.0 %	294.4 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0006 ppm	0.0001 ppm	0.0000 ppm	0.0001 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 1	0.0004 ppm	0.0002 ppm	0.0000 ppm	0.0004 ppm	-0.0005 ppm	0.0002 ppm
Concentration per Run 2	0.0009 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0006 ppm	0.0001 ppm	0.0000 ppm	-0.0001 ppm	-0.0011 ppm	0.0000 ppm
Recovery Percentage 1	0.130 %	0.100 %	-0.370 %	0.971 %	-2.539 %	0.619 %
Concentration RSD	36.6 %	329.0 %	43.4 %	284.5 %	123.4 %	153.0 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.2210 %	102.3155 %	101.2680 %	103.6431 %	98.0022 %	101.8710 %
Concentration per Run 1	100.2176 %	103.0925 %	99.8319 %	103.1924 %	96.7732 %	103.2337 %
Concentration per Run 2	98.9224 %	101.6178 %	101.9486 %	103.9905 %	98.4551 %	100.7761 %
Concentration per Run 3	98.5232 %	102.2361 %	102.0236 %	103.7464 %	98.7781 %	101.6031 %
Recovery Percentage 1						
Concentration RSD	0.9 %	0.7 %	1.2 %	0.4 %	1.1 %	1.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976156-1 WG1976156
Analysis started at: 9/26/2024 10:36:09 AM
Rack: 1
Vial: 28

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0033 ppm	-0.0001 ppm	0.0006 ppm	0.0000 ppm	0.0069 ppm
Concentration per Run 1	0.0001 ppm	0.0048 ppm	0.0004 ppm	0.0006 ppm	0.0000 ppm	0.0040 ppm
Concentration per Run 2	0.0004 ppm	0.0037 ppm	-0.0001 ppm	0.0005 ppm	0.0001 ppm	0.0074 ppm
Concentration per Run 3	0.0001 ppm	0.0014 ppm	-0.0005 ppm	0.0006 ppm	0.0000 ppm	0.0093 ppm
Recovery Percentage 1	2.570 %	0.001 %	-1.483 %	1.855 %	0.150 %	0.001 %
Concentration RSD	91.6 %	51.5 %	617.5 %	16.4 %	598.9 %	39.0 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0002 ppm	0.0010 ppm	0.0017 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0004 ppm	0.0002 ppm	0.0013 ppm	0.0030 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0006 ppm	0.0002 ppm	0.0007 ppm	0.0014 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0004 ppm	0.0011 ppm	0.0007 ppm
Recovery Percentage 1	-0.449 %	-0.258 %	-3.210 %	2.394 %	0.001 %	0.000 %
Concentration RSD	56.9 %	55.9 %	88.3 %	46.8 %	31.2 %	71.6 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0002 ppm	-0.0006 ppm	-0.0001 ppm	-0.0003 ppm	0.0010 ppm
Concentration per Run 1	0.0001 ppm	0.0002 ppm	-0.0007 ppm	0.0000 ppm	-0.0005 ppm	0.0015 ppm
Concentration per Run 2	0.0003 ppm	0.0002 ppm	-0.0007 ppm	-0.0001 ppm	0.0000 ppm	0.0004 ppm
Concentration per Run 3	-0.0001 ppm	0.0002 ppm	-0.0005 ppm	-0.0001 ppm	0.0001 ppm	0.0010 ppm
Recovery Percentage 1	0.893 %	0.433 %	-0.031 %	-0.347 %	-1.397 %	9.953 %
Concentration RSD	244.1 %	8.8 %	13.5 %	58.1 %	202.1 %	56.3 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	-0.0005 ppm	-0.0006 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 1	-0.0004 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0002 ppm
Concentration per Run 2	-0.0004 ppm	-0.0004 ppm	0.0000 ppm	0.0002 ppm	-0.0003 ppm	0.0003 ppm
Concentration per Run 3	-0.0008 ppm	-0.0007 ppm	-0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0003 ppm
Recovery Percentage 1	-0.107 %	-1.107 %	-0.351 %	0.672 %	-0.047 %	5.191 %
Concentration RSD	44.5 %	29.1 %	93.8 %	139.4 %	3,573.4 %	15.2 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.9846 %	101.3017 %	101.6420 %	109.2792 %	100.1316 %	0.0008 ppm
Concentration per Run 1	98.6392 %	102.4408 %	101.9308 %	109.9229 %	100.7293 %	0.0012 ppm
Concentration per Run 2	97.7671 %	103.2061 %	101.6180 %	109.5386 %	99.8945 %	0.0001 ppm
Concentration per Run 3	97.5474 %	98.2583 %	101.3771 %	108.3762 %	99.7709 %	0.0013 ppm
Recovery Percentage 1						8.451 %
Concentration RSD	0.6 %	2.6 %	0.3 %	0.7 %	0.5 %	73.3 %

9/26/2024 4:51:53 PM



Sample: WG1976163-1 WG1976163

Analysis started at: 9/26/2024 10:42:51 AM

Rack:	1
Vial:	36

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0060 %	102.8199 %	102.0937 %	97.2258 %	99.0074 %	100.6120 %	-0.0008 ppm
Concentration per Run 1	100.2914 %	102.8305 %	101.9850 %	94.8524 %	98.6629 %	100.3710 %	-0.0009 ppm
Concentration per Run 2	100.4601 %	102.8226 %	102.1208 %	98.4027 %	99.0567 %	100.5661 %	-0.0003 ppm
Concentration per Run 3	99.2665 %	102.8065 %	102.1755 %	98.4224 %	99.3026 %	100.8990 %	-0.0013 ppm
Recovery Percentage 1							-8.333 %
Concentration RSD	0.6 %	0.0 %	0.1 %	2.1 %	0.3 %	0.3 %	58.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976163-2 WG1976163

Analysis started at: 9/26/2024 10:49:37 AM

Rack: 1

Vial: 37

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0511 ppm	2.0663 ppm	0.1154 ppm	0.9704 ppm	2.0391 ppm	0.0517 ppm	10.3725 ppm
Concentration per Run 1	0.0510 ppm	2.1063 ppm	0.1144 ppm	0.9685 ppm	2.0834 ppm	0.0527 ppm	10.5755 ppm
Concentration per Run 2	0.0513 ppm	2.0208 ppm	0.1171 ppm	0.9721 ppm	1.9971 ppm	0.0505 ppm	10.1403 ppm
Concentration per Run 3	0.0511 ppm	2.0719 ppm	0.1148 ppm	0.9707 ppm	2.0366 ppm	0.0518 ppm	10.4016 ppm
Concentration RSD	0.2 %	2.1 %	1.2 %	0.2 %	2.1 %	2.1 %	2.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0515 ppm	0.4979 ppm	0.1909 ppm	0.2515 ppm	1.0479 ppm	10.9851 ppm	9.8950 ppm
Concentration per Run 1	0.0514 ppm	0.4972 ppm	0.1916 ppm	0.2526 ppm	1.0662 ppm	11.2388 ppm	9.9099 ppm
Concentration per Run 2	0.0515 ppm	0.4983 ppm	0.1910 ppm	0.2503 ppm	1.0226 ppm	10.7261 ppm	9.9100 ppm
Concentration per Run 3	0.0515 ppm	0.4981 ppm	0.1902 ppm	0.2515 ppm	1.0548 ppm	10.9905 ppm	9.8649 ppm
Concentration RSD	0.1 %	0.1 %	0.4 %	0.5 %	2.2 %	2.3 %	0.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5228 ppm	0.9639 ppm	10.6258 ppm	0.4917 ppm	0.5429 ppm	0.4976 ppm	0.1213 ppm
Concentration per Run 1	0.5326 ppm	0.9560 ppm	10.8494 ppm	0.4907 ppm	0.5420 ppm	0.4944 ppm	0.1203 ppm
Concentration per Run 2	0.5112 ppm	0.9657 ppm	10.4007 ppm	0.4922 ppm	0.5432 ppm	0.4989 ppm	0.1215 ppm
Concentration per Run 3	0.5246 ppm	0.9699 ppm	10.6273 ppm	0.4922 ppm	0.5435 ppm	0.4996 ppm	0.1220 ppm
Concentration RSD	2.1 %	0.7 %	2.1 %	0.2 %	0.2 %	0.6 %	0.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8165 ppm	0.9285 ppm	0.9756 ppm	1.0112 ppm	0.1211 ppm	0.4842 ppm	0.4943 ppm
Concentration per Run 1	0.8155 ppm	0.9267 ppm	0.9963 ppm	1.0130 ppm	0.1209 ppm	0.4853 ppm	0.4932 ppm
Concentration per Run 2	0.8179 ppm	0.9314 ppm	0.9550 ppm	1.0106 ppm	0.1215 ppm	0.4841 ppm	0.4947 ppm
Concentration per Run 3	0.8160 ppm	0.9272 ppm	0.9756 ppm	1.0101 ppm	0.1208 ppm	0.4831 ppm	0.4949 ppm
Concentration RSD	0.2 %	0.3 %	2.1 %	0.2 %	0.3 %	0.2 %	0.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0605 %	99.7079 %	99.2636 %	103.3761 %	92.5587 %	100.6480 %	0.0001 ppm
Concentration per Run 1	100.9439 %	99.6697 %	99.4534 %	101.7626 %	92.7506 %	100.6029 %	0.0001 ppm
Concentration per Run 2	100.4541 %	99.7460 %	99.1670 %	105.5635 %	92.3877 %	100.6517 %	-0.0003 ppm
Concentration per Run 3	98.7835 %	99.7079 %	99.1705 %	102.8021 %	92.5379 %	100.6893 %	0.0004 ppm
Concentration RSD	1.1 %	0.0 %	0.2 %	1.9 %	0.2 %	0.0 %	461.9 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976156-2 WG1976156

Analysis started at: 9/26/2024 10:55:59 AM

Rack: 1
Vial: 29

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0522 ppm	2.1107 ppm	0.1176 ppm	0.9935 ppm	2.0781 ppm	0.0527 ppm	10.5664 ppm
Concentration per Run 1	0.0526 ppm	2.1429 ppm	0.1167 ppm	0.9971 ppm	2.1040 ppm	0.0535 ppm	10.7980 ppm
Concentration per Run 2	0.0521 ppm	2.0979 ppm	0.1181 ppm	0.9935 ppm	2.0702 ppm	0.0524 ppm	10.4943 ppm
Concentration per Run 3	0.0520 ppm	2.0913 ppm	0.1181 ppm	0.9898 ppm	2.0601 ppm	0.0521 ppm	10.4068 ppm
Concentration RSD	0.6 %	1.3 %	0.7 %	0.4 %	1.1 %	1.4 %	1.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0526 ppm	0.5117 ppm	0.1939 ppm	0.2568 ppm	1.0722 ppm	11.1765 ppm	10.0198 ppm
Concentration per Run 1	0.0527 ppm	0.5134 ppm	0.1937 ppm	0.2570 ppm	1.0914 ppm	11.3708 ppm	10.0428 ppm
Concentration per Run 2	0.0526 ppm	0.5110 ppm	0.1935 ppm	0.2569 ppm	1.0659 ppm	11.1330 ppm	9.9912 ppm
Concentration per Run 3	0.0526 ppm	0.5108 ppm	0.1944 ppm	0.2565 ppm	1.0594 ppm	11.0256 ppm	10.0256 ppm
Concentration RSD	0.2 %	0.3 %	0.3 %	0.1 %	1.6 %	1.6 %	0.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5343 ppm	0.9839 ppm	10.8128 ppm	0.5026 ppm	0.5543 ppm	0.5167 ppm	0.1232 ppm
Concentration per Run 1	0.5444 ppm	0.9818 ppm	10.9766 ppm	0.5040 ppm	0.5558 ppm	0.5155 ppm	0.1216 ppm
Concentration per Run 2	0.5314 ppm	0.9838 ppm	10.7747 ppm	0.5020 ppm	0.5537 ppm	0.5174 ppm	0.1256 ppm
Concentration per Run 3	0.5272 ppm	0.9860 ppm	10.6872 ppm	0.5019 ppm	0.5533 ppm	0.5174 ppm	0.1225 ppm
Concentration RSD	1.7 %	0.2 %	1.4 %	0.2 %	0.2 %	0.2 %	1.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8343 ppm	0.9465 ppm	0.9887 ppm	1.0268 ppm	0.1217 ppm	0.4923 ppm	0.5073 ppm
Concentration per Run 1	0.8392 ppm	0.9475 ppm	1.0015 ppm	1.0291 ppm	0.1225 ppm	0.4927 ppm	0.5077 ppm
Concentration per Run 2	0.8338 ppm	0.9453 ppm	0.9850 ppm	1.0246 ppm	0.1211 ppm	0.4917 ppm	0.5070 ppm
Concentration per Run 3	0.8300 ppm	0.9469 ppm	0.9796 ppm	1.0268 ppm	0.1216 ppm	0.4924 ppm	0.5071 ppm
Concentration RSD	0.6 %	0.1 %	1.2 %	0.2 %	0.6 %	0.1 %	0.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.5622 %	100.1043 %	99.2881 %	103.5007 %	92.2531 %	100.9501 %	-0.0009 ppm
Concentration per Run 1	99.5010 %	100.0723 %	99.2413 %	101.2389 %	91.9851 %	100.8303 %	-0.0003 ppm
Concentration per Run 2	99.3634 %	100.1543 %	99.4149 %	104.1243 %	92.3537 %	101.0077 %	-0.0012 ppm
Concentration per Run 3	99.8222 %	100.0863 %	99.2081 %	105.1388 %	92.4204 %	101.0123 %	-0.0013 ppm
Concentration RSD	0.2 %	0.0 %	0.1 %	2.0 %	0.3 %	0.1 %	55.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976156-3 WG1976156

Analysis started at: 9/26/2024 11:02:20 AM

Rack: 1
Vial: 30

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0514 ppm	2.0804 ppm	0.1163 ppm	0.9781 ppm	2.0536 ppm	0.0516 ppm
Concentration per Run 1	0.0514 ppm	2.1406 ppm	0.1156 ppm	0.9806 ppm	2.1140 ppm	0.0531 ppm
Concentration per Run 2	0.0513 ppm	2.0828 ppm	0.1169 ppm	0.9766 ppm	2.0562 ppm	0.0517 ppm
Concentration per Run 3	0.0515 ppm	2.0176 ppm	0.1164 ppm	0.9773 ppm	1.9906 ppm	0.0501 ppm
Concentration RSD	0.2 %	3.0 %	0.5 %	0.2 %	3.0 %	2.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0517 ppm	0.5040 ppm	0.1901 ppm	0.2553 ppm	1.0536 ppm	11.0052 ppm
Concentration per Run 1	0.0516 ppm	0.5043 ppm	0.1899 ppm	0.2556 ppm	1.0804 ppm	11.3352 ppm
Concentration per Run 2	0.0518 ppm	0.5035 ppm	0.1903 ppm	0.2554 ppm	1.0545 ppm	11.0246 ppm
Concentration per Run 3	0.0516 ppm	0.5041 ppm	0.1903 ppm	0.2548 ppm	1.0260 ppm	10.6559 ppm
Concentration RSD	0.2 %	0.1 %	0.1 %	0.2 %	2.6 %	3.1 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5276 ppm	0.9669 ppm	10.6120 ppm	0.4956 ppm	0.5442 ppm	0.5091 ppm
Concentration per Run 1	0.5425 ppm	0.9633 ppm	10.9353 ppm	0.4961 ppm	0.5445 ppm	0.5077 ppm
Concentration per Run 2	0.5281 ppm	0.9657 ppm	10.6275 ppm	0.4954 ppm	0.5440 ppm	0.5089 ppm
Concentration per Run 3	0.5121 ppm	0.9717 ppm	10.2731 ppm	0.4954 ppm	0.5440 ppm	0.5107 ppm
Concentration RSD	2.9 %	0.4 %	3.1 %	0.1 %	0.1 %	0.3 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8212 ppm	0.9293 ppm	0.9709 ppm	1.0056 ppm	0.1201 ppm	0.4837 ppm
Concentration per Run 1	0.8245 ppm	0.9297 ppm	0.9994 ppm	1.0045 ppm	0.1197 ppm	0.4838 ppm
Concentration per Run 2	0.8208 ppm	0.9293 ppm	0.9720 ppm	1.0063 ppm	0.1200 ppm	0.4836 ppm
Concentration per Run 3	0.8183 ppm	0.9290 ppm	0.9413 ppm	1.0060 ppm	0.1207 ppm	0.4837 ppm
Concentration RSD	0.4 %	0.0 %	3.0 %	0.1 %	0.4 %	0.0 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.1374 %	100.5047 %	99.0355 %	104.1234 %	92.0826 %	101.3312 %
Concentration per Run 1	100.1667 %	100.4622 %	98.8723 %	101.4260 %	91.9289 %	101.2219 %
Concentration per Run 2	99.8842 %	100.6750 %	99.2086 %	104.2191 %	92.2722 %	101.4519 %
Concentration per Run 3	100.3611 %	100.3771 %	99.0256 %	106.7252 %	92.0467 %	101.3198 %
Concentration RSD	0.2 %	0.2 %	0.2 %	2.5 %	0.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454004-01 WG1976156
Analysis started at: 9/26/2024 11:08:42 AM
Rack: 1
Vial: 31

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.1448 ppm	0.0007 ppm	0.0165 ppm	0.0254 ppm	0.0001 ppm	24.2024 ppm
Concentration per Run 1	0.0004 ppm	0.1482 ppm	0.0008 ppm	0.0165 ppm	0.0261 ppm	0.0001 ppm	24.8761 ppm
Concentration per Run 2	0.0003 ppm	0.1450 ppm	0.0012 ppm	0.0165 ppm	0.0252 ppm	0.0001 ppm	24.0862 ppm
Concentration per Run 3	0.0000 ppm	0.1414 ppm	0.0002 ppm	0.0164 ppm	0.0249 ppm	0.0001 ppm	23.6449 ppm
Concentration RSD	103.0 %	2.4 %	72.0 %	0.5 %	2.4 %	15.3 %	2.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0001 ppm	0.0004 ppm	0.0000 ppm	0.0009 ppm	0.1778 ppm	1.1558 ppm	2.8934 ppm
Concentration per Run 1	0.0001 ppm	0.0005 ppm	0.0000 ppm	0.0008 ppm	0.1826 ppm	1.1786 ppm	2.9022 ppm
Concentration per Run 2	0.0001 ppm	0.0005 ppm	-0.0001 ppm	0.0009 ppm	0.1771 ppm	1.1565 ppm	2.9049 ppm
Concentration per Run 3	0.0001 ppm	0.0003 ppm	0.0001 ppm	0.0009 ppm	0.1737 ppm	1.1325 ppm	2.8730 ppm
Concentration RSD	29.2 %	23.0 %	1,829.6 %	6.5 %	2.5 %	2.0 %	0.6 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0144 ppm	0.0022 ppm	33.8347 [SIC 500]	0.0006 ppm	-0.0007 ppm	0.0011 ppm	0.0014 ppm
Concentration per Run 1	0.0147 ppm	0.0026 ppm	34.7505 ppm	0.0006 ppm	-0.0005 ppm	0.0011 ppm	0.0014 ppm
Concentration per Run 2	0.0142 ppm	0.0021 ppm	33.6879 ppm	0.0005 ppm	-0.0014 ppm	0.0009 ppm	0.0020 ppm
Concentration per Run 3	0.0142 ppm	0.0019 ppm	33.0657 ppm	0.0006 ppm	-0.0002 ppm	0.0011 ppm	0.0009 ppm
Concentration RSD	2.0 %	17.0 %	2.5 %	8.9 %	89.8 %	10.6 %	38.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	4.3439 ppm	0.0021 ppm	0.0784 ppm	0.0036 ppm	-0.0008 ppm	0.0002 ppm	0.0012 ppm
Concentration per Run 1	4.3565 ppm	0.0025 ppm	0.0804 ppm	0.0036 ppm	-0.0010 ppm	0.0002 ppm	0.0012 ppm
Concentration per Run 2	4.3496 ppm	0.0019 ppm	0.0780 ppm	0.0036 ppm	-0.0006 ppm	0.0002 ppm	0.0012 ppm
Concentration per Run 3	4.3257 ppm	0.0017 ppm	0.0768 ppm	0.0037 ppm	-0.0009 ppm	0.0003 ppm	0.0012 ppm
Concentration RSD	0.4 %	21.2 %	2.3 %	2.4 %	22.5 %	45.2 %	1.5 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.7028 %	99.5938 %	98.5086 %	98.4416 %	91.6964 %	98.8634 %	-0.0015 ppm
Concentration per Run 1	100.2000 %	99.7612 %	98.5977 %	96.0254 %	91.4731 %	98.8668 %	-0.0011 ppm
Concentration per Run 2	99.5864 %	99.4526 %	98.3879 %	98.9557 %	91.6972 %	98.7164 %	-0.0021 ppm
Concentration per Run 3	99.3221 %	99.5676 %	98.5401 %	100.3436 %	91.9190 %	99.0069 %	-0.0013 ppm
Concentration RSD	0.5 %	0.2 %	0.1 %	2.2 %	0.2 %	0.1 %	36.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454004-02 WG1976156

Analysis started at: 9/26/2024 11:15:21 AM

Rack: 1
Vial: 32

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.2221 ppm	0.0006 ppm	0.0073 ppm	0.0213 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	0.2296 ppm	0.0001 ppm	0.0075 ppm	0.0218 ppm	0.0000 ppm
Concentration per Run 2	0.0003 ppm	0.2222 ppm	0.0006 ppm	0.0071 ppm	0.0211 ppm	0.0000 ppm
Concentration per Run 3	0.0005 ppm	0.2146 ppm	0.0010 ppm	0.0074 ppm	0.0209 ppm	0.0000 ppm
Concentration RSD	38.2 %	3.4 %	75.1 %	2.9 %	2.2 %	325.1 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0014 ppm	0.2566 ppm	2.1968 ppm
Concentration per Run 1	-0.0001 ppm	0.0000 ppm	0.0004 ppm	0.0013 ppm	0.2632 ppm	2.2389 ppm
Concentration per Run 2	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0013 ppm	0.2560 ppm	2.1809 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0016 ppm	0.2506 ppm	2.1704 ppm
Concentration RSD	19.8 %	79.6 %	30.3 %	9.2 %	2.5 %	1.7 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0501 ppm	0.0038 ppm	4.8978 ppm	0.0003 ppm	-0.0004 ppm	0.0016 ppm
Concentration per Run 1	0.0511 ppm	0.0039 ppm	5.0076 ppm	0.0002 ppm	-0.0007 ppm	0.0022 ppm
Concentration per Run 2	0.0500 ppm	0.0039 ppm	4.8841 ppm	0.0005 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 3	0.0492 ppm	0.0037 ppm	4.8018 ppm	0.0003 ppm	-0.0001 ppm	0.0024 ppm
Concentration RSD	2.0 %	3.5 %	2.1 %	51.0 %	68.8 %	79.1 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	4.4279 ppm	0.0014 ppm	0.1344 ppm	0.0091 ppm	-0.0007 ppm	0.0020 ppm
Concentration per Run 1	4.4518 ppm	0.0015 ppm	0.1373 ppm	0.0092 ppm	-0.0009 ppm	0.0020 ppm
Concentration per Run 2	4.4197 ppm	0.0014 ppm	0.1337 ppm	0.0093 ppm	-0.0002 ppm	0.0019 ppm
Concentration per Run 3	4.4121 ppm	0.0013 ppm	0.1321 ppm	0.0089 ppm	-0.0010 ppm	0.0020 ppm
Concentration RSD	0.5 %	8.7 %	2.0 %	2.1 %	58.9 %	3.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.0606 %	99.3815 %	97.9873 %	98.4695 %	92.3534 %	99.1089 %
Concentration per Run 1	100.0160 %	99.4574 %	97.9626 %	96.5941 %	92.1611 %	98.9816 %
Concentration per Run 2	97.9399 %	99.4880 %	97.8896 %	98.1008 %	92.4065 %	99.1276 %
Concentration per Run 3	99.2260 %	99.1991 %	98.1098 %	100.7137 %	92.4927 %	99.2175 %
Concentration RSD	1.1 %	0.2 %	0.1 %	2.1 %	0.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454004-03 WG1976156

Analysis started at: 9/26/2024 11:22:00 AM

Rack: 1
Vial: 33

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0004 ppm	0.4038 ppm	0.0012 ppm	0.0661 ppm	0.0763 ppm	0.0001 ppm
Concentration per Run 1	0.0003 ppm	0.4108 ppm	-0.0001 ppm	0.0662 ppm	0.0776 ppm	0.0000 ppm
Concentration per Run 2	0.0005 ppm	0.3999 ppm	0.0015 ppm	0.0655 ppm	0.0759 ppm	0.0001 ppm
Concentration per Run 3	0.0003 ppm	0.4008 ppm	0.0023 ppm	0.0667 ppm	0.0753 ppm	0.0001 ppm
Concentration RSD	37.4 %	1.5 %	102.3 %	0.9 %	1.6 %	21.7 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0001 ppm	0.0148 ppm	0.0014 ppm	0.0020 ppm	0.7472 ppm	2.9182 ppm
Concentration per Run 1	0.0001 ppm	0.0149 ppm	0.0014 ppm	0.0020 ppm	0.7647 ppm	2.9652 ppm
Concentration per Run 2	0.0001 ppm	0.0145 ppm	0.0014 ppm	0.0020 ppm	0.7414 ppm	2.8888 ppm
Concentration per Run 3	0.0001 ppm	0.0149 ppm	0.0014 ppm	0.0021 ppm	0.7355 ppm	2.9006 ppm
Concentration RSD	3.1 %	1.7 %	1.8 %	3.1 %	2.1 %	1.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	2.6230 ppm	0.0005 ppm	91.4605 [SIC 500]	0.0182 ppm	-0.0013 ppm	0.0002 ppm
Concentration per Run 1	2.6822 ppm	0.0005 ppm	93.8176 ppm	0.0184 ppm	-0.0009 ppm	-0.0001 ppm
Concentration per Run 2	2.6082 ppm	0.0005 ppm	90.8921 ppm	0.0181 ppm	-0.0017 ppm	0.0005 ppm
Concentration per Run 3	2.5786 ppm	0.0007 ppm	89.6717 ppm	0.0182 ppm	-0.0013 ppm	0.0001 ppm
Concentration RSD	2.0 %	25.0 %	2.3 %	0.7 %	33.4 %	175.0 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	8.4858 ppm	0.0002 ppm	0.3497 ppm	0.0220 ppm	-0.0020 ppm	0.0053 ppm
Concentration per Run 1	8.5305 ppm	0.0004 ppm	0.3568 ppm	0.0223 ppm	-0.0016 ppm	0.0053 ppm
Concentration per Run 2	8.4004 ppm	0.0005 ppm	0.3479 ppm	0.0217 ppm	-0.0025 ppm	0.0054 ppm
Concentration per Run 3	8.5263 ppm	-0.0003 ppm	0.3445 ppm	0.0219 ppm	-0.0018 ppm	0.0053 ppm
Concentration RSD	0.9 %	200.8 %	1.8 %	1.2 %	22.4 %	0.7 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.8271 %	95.4610 %	94.6347 %	98.2419 %	86.2569 %	95.3112 %
Concentration per Run 1	99.8392 %	95.6676 %	94.4216 %	96.2792 %	85.9416 %	95.3282 %
Concentration per Run 2	98.4288 %	95.2732 %	95.5276 %	98.6561 %	87.1296 %	95.1634 %
Concentration per Run 3	98.2131 %	95.4421 %	93.9550 %	99.7906 %	85.6995 %	95.4421 %
Concentration RSD	0.9 %	0.2 %	0.9 %	1.8 %	0.9 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454004-04 WG1976156
 Analysis started at: 9/26/2024 11:28:36 AM
 Rack: 1
 Vial: 34

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0267 ppm	0.0019 ppm	0.0337 ppm	0.0581 ppm	0.0000 ppm	93.8110 ppm
Concentration per Run 1	0.0002 ppm	0.0293 ppm	0.0012 ppm	0.0338 ppm	0.0591 ppm	0.0000 ppm	95.8615 ppm
Concentration per Run 2	0.0004 ppm	0.0272 ppm	0.0023 ppm	0.0337 ppm	0.0579 ppm	-0.0001 ppm	93.2932 ppm
Concentration per Run 3	0.0002 ppm	0.0235 ppm	0.0024 ppm	0.0338 ppm	0.0573 ppm	0.0000 ppm	92.2782 ppm
Concentration RSD	64.9 %	10.9 %	34.4 %	0.2 %	1.6 %	89.9 %	2.0 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0001 ppm	0.0006 ppm	0.0002 ppm	0.0008 ppm	0.6142 ppm	5.1572 ppm	14.9535 ppm
Concentration per Run 1	-0.0001 ppm	0.0005 ppm	0.0002 ppm	0.0008 ppm	0.6224 ppm	5.2834 ppm	14.9789 ppm
Concentration per Run 2	-0.0001 ppm	0.0007 ppm	0.0002 ppm	0.0007 ppm	0.6147 ppm	5.1173 ppm	14.9278 ppm
Concentration per Run 3	-0.0001 ppm	0.0007 ppm	0.0002 ppm	0.0008 ppm	0.6056 ppm	5.0708 ppm	14.9537 ppm
Concentration RSD	7.8 %	15.4 %	17.2 %	5.9 %	1.4 %	2.2 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	1.8451 ppm	0.0005 ppm	71.1487 [SIC 500]	0.0158 ppm	-0.0019 ppm	0.0001 ppm	0.0007 ppm
Concentration per Run 1	1.8861 ppm	0.0004 ppm	72.7375 ppm	0.0160 ppm	-0.0023 ppm	-0.0002 ppm	0.0004 ppm
Concentration per Run 2	1.8365 ppm	0.0006 ppm	70.7938 ppm	0.0158 ppm	-0.0023 ppm	0.0002 ppm	-0.0004 ppm
Concentration per Run 3	1.8126 ppm	0.0004 ppm	69.9147 ppm	0.0157 ppm	-0.0013 ppm	0.0003 ppm	0.0020 ppm
Concentration RSD	2.0 %	25.9 %	2.0 %	0.9 %	28.1 %	310.8 %	171.4 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	9.0077 ppm	0.0004 ppm	0.3136 ppm	0.0010 ppm	-0.0013 ppm	0.0034 ppm	0.0012 ppm
Concentration per Run 1	9.0571 ppm	0.0006 ppm	0.3189 ppm	0.0009 ppm	-0.0013 ppm	0.0033 ppm	0.0012 ppm
Concentration per Run 2	8.9979 ppm	0.0003 ppm	0.3125 ppm	0.0010 ppm	-0.0011 ppm	0.0034 ppm	0.0013 ppm
Concentration per Run 3	8.9681 ppm	0.0002 ppm	0.3095 ppm	0.0009 ppm	-0.0013 ppm	0.0034 ppm	0.0012 ppm
Concentration RSD	0.5 %	54.0 %	1.5 %	3.1 %	8.5 %	2.3 %	5.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.9517 %	94.6230 %	93.4478 %	98.2915 %	85.9116 %	95.3517 %	-0.0071 ppm
Concentration per Run 1	98.5774 %	94.9475 %	93.4276 %	96.0938 %	85.5876 %	95.2557 %	-0.0077 ppm
Concentration per Run 2	97.7411 %	94.9352 %	93.6240 %	98.8521 %	86.0699 %	95.3430 %	-0.0056 ppm
Concentration per Run 3	97.5367 %	93.9864 %	93.2918 %	99.9285 %	86.0774 %	95.4564 %	-0.0080 ppm
Concentration RSD	0.6 %	0.6 %	0.2 %	2.0 %	0.3 %	0.1 %	18.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454004-05 WG1976156

Analysis started at: 9/26/2024 11:35:14 AM

Rack: 1
Vial: 35

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.1062 ppm	0.0006 ppm	0.0183 ppm	0.0244 ppm	0.0001 ppm	21.9441 ppm
Concentration per Run 1	0.0004 ppm	0.1095 ppm	0.0013 ppm	0.0185 ppm	0.0249 ppm	0.0001 ppm	22.4547 ppm
Concentration per Run 2	0.0001 ppm	0.1077 ppm	0.0004 ppm	0.0180 ppm	0.0243 ppm	0.0001 ppm	21.8502 ppm
Concentration per Run 3	0.0004 ppm	0.1014 ppm	0.0002 ppm	0.0185 ppm	0.0240 ppm	0.0001 ppm	21.5273 ppm
Concentration RSD	61.8 %	4.0 %	94.5 %	1.6 %	1.8 %	25.0 %	2.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0662 ppm	0.9578 ppm	1.7738 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	-0.0004 ppm	0.0007 ppm	0.0668 ppm	0.9651 ppm	1.7736 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0000 ppm	0.0006 ppm	0.0657 ppm	0.9548 ppm	1.7645 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	-0.0003 ppm	0.0007 ppm	0.0660 ppm	0.9534 ppm	1.7833 ppm
Concentration RSD	352.5 %	51.2 %	70.3 %	5.4 %	0.9 %	0.7 %	0.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0124 ppm	0.0004 ppm	32.1909 [SIC 500]	0.0004 ppm	-0.0006 ppm	-0.0005 ppm	0.0027 ppm
Concentration per Run 1	0.0127 ppm	0.0003 ppm	32.8484 ppm	0.0006 ppm	-0.0006 ppm	0.0003 ppm	0.0016 ppm
Concentration per Run 2	0.0124 ppm	0.0003 ppm	32.0665 ppm	0.0003 ppm	-0.0008 ppm	-0.0008 ppm	0.0024 ppm
Concentration per Run 3	0.0122 ppm	0.0004 ppm	31.6577 ppm	0.0003 ppm	-0.0004 ppm	-0.0011 ppm	0.0042 ppm
Concentration RSD	2.1 %	22.3 %	1.9 %	33.1 %	39.7 %	130.6 %	48.5 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	4.4398 ppm	-0.0001 ppm	0.0602 ppm	0.0013 ppm	-0.0011 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 1	4.4628 ppm	-0.0002 ppm	0.0612 ppm	0.0012 ppm	-0.0009 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 2	4.4225 ppm	-0.0002 ppm	0.0601 ppm	0.0013 ppm	-0.0001 ppm	0.0003 ppm	0.0005 ppm
Concentration per Run 3	4.4340 ppm	0.0001 ppm	0.0594 ppm	0.0015 ppm	-0.0022 ppm	0.0001 ppm	0.0004 ppm
Concentration RSD	0.5 %	252.2 %	1.5 %	8.7 %	97.8 %	50.5 %	9.5 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.2343 %	99.7024 %	98.4490 %	99.6410 %	91.9986 %	99.2305 %	-0.0020 ppm
Concentration per Run 1	100.5737 %	99.6979 %	98.2484 %	97.2973 %	91.5968 %	98.9955 %	-0.0006 ppm
Concentration per Run 2	100.1233 %	99.8377 %	98.6539 %	100.1077 %	92.3340 %	99.3878 %	-0.0036 ppm
Concentration per Run 3	100.0059 %	99.5715 %	98.4448 %	101.5179 %	92.0649 %	99.3081 %	-0.0020 ppm
Concentration RSD	0.3 %	0.1 %	0.2 %	2.2 %	0.4 %	0.2 %	73.8 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 11:41:54 AM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5070 ppm	0.5253 ppm	0.4819 ppm	0.5085 ppm	0.5030 ppm	0.5093 ppm
Concentration per Run 1	0.5056 ppm	0.5179 ppm	0.4855 ppm	0.5108 ppm	0.4970 ppm	0.5052 ppm
Concentration per Run 2	0.4908 ppm	0.5275 ppm	0.4807 ppm	0.5087 ppm	0.5038 ppm	0.5097 ppm
Concentration per Run 3	0.5245 ppm	0.5305 ppm	0.4795 ppm	0.5059 ppm	0.5081 ppm	0.5129 ppm
Recovery Percentage 1	101.392 %	105.062 %	96.380 %	101.696 %	100.592 %	101.851 %
Concentration RSD	3.3 %	1.2 %	0.7 %	0.5 %	1.1 %	0.8 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4868 ppm	0.5210 ppm	0.4854 ppm	0.4936 ppm	0.5398 ppm	5.4053 ppm
Concentration per Run 1	0.4874 ppm	0.5233 ppm	0.4833 ppm	0.4927 ppm	0.5345 ppm	5.3562 ppm
Concentration per Run 2	0.4865 ppm	0.5209 ppm	0.4697 ppm	0.4789 ppm	0.5392 ppm	5.3938 ppm
Concentration per Run 3	0.4865 ppm	0.5187 ppm	0.5032 ppm	0.5093 ppm	0.5457 ppm	5.4659 ppm
Recovery Percentage 1	97.359 %	104.192 %	97.083 %	98.727 %	107.962 %	108.106 %
Concentration RSD	0.1 %	0.4 %	3.5 %	3.1 %	1.0 %	1.0 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5114 ppm	0.5008 ppm	10.0116 ppm	0.5077 ppm	0.5182 ppm	0.5190 ppm
Concentration per Run 1	0.5069 ppm	0.5019 ppm	9.9065 ppm	0.5090 ppm	0.5202 ppm	0.5218 ppm
Concentration per Run 2	0.5119 ppm	0.5010 ppm	10.0275 ppm	0.5079 ppm	0.5177 ppm	0.5183 ppm
Concentration per Run 3	0.5154 ppm	0.4996 ppm	10.1010 ppm	0.5062 ppm	0.5167 ppm	0.5169 ppm
Recovery Percentage 1	102.278 %	100.167 %	100.116 %	101.540 %	103.637 %	103.800 %
Concentration RSD	0.8 %	0.2 %	1.0 %	0.3 %	0.3 %	0.5 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.6881 ppm	0.4825 ppm	0.4862 ppm	0.5142 ppm	0.5190 ppm	0.4889 ppm
Concentration per Run 1	5.7295 ppm	0.4842 ppm	0.4809 ppm	0.5124 ppm	0.5198 ppm	0.4870 ppm
Concentration per Run 2	5.6877 ppm	0.4811 ppm	0.4870 ppm	0.4981 ppm	0.5204 ppm	0.4737 ppm
Concentration per Run 3	5.6470 ppm	0.4821 ppm	0.4906 ppm	0.5320 ppm	0.5166 ppm	0.5060 ppm
Recovery Percentage 1	108.344 %	96.500 %	97.235 %	102.831 %	103.792 %	97.781 %
Concentration RSD	0.7 %	0.3 %	1.0 %	3.3 %	0.4 %	3.3 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0785 %	101.0698 %	99.7265 %	106.5689 %	93.4492 %	102.3480 %
Concentration per Run 1	101.3101 %	101.1353 %	99.0372 %	107.5949 %	92.9642 %	102.4364 %
Concentration per Run 2	99.6948 %	103.6437 %	99.9656 %	106.5604 %	93.4640 %	105.2765 %
Concentration per Run 3	99.2306 %	98.4305 %	100.1767 %	105.5514 %	93.9193 %	99.3312 %
Recovery Percentage 1						
Concentration RSD	1.1 %	2.6 %	0.6 %	1.0 %	0.5 %	2.9 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 11:48:19 AM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0015 ppm	-0.0007 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0004 ppm	0.0017 ppm	-0.0019 ppm	0.0008 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	0.0000 ppm	0.0022 ppm	-0.0006 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 3	0.0002 ppm	0.0007 ppm	0.0005 ppm	0.0006 ppm	-0.0001 ppm	0.0000 ppm
Recovery Percentage 1	3.009 %	0.000 %	-13.570 %	2.692 %	-0.421 %	-0.134 %
Concentration RSD	91.4 %	49.2 %	176.4 %	18.4 %	34.3 %	248.7 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0010 ppm	0.0173 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0015 ppm	0.0152 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0012 ppm	0.0223 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0003 ppm	0.0143 ppm
Recovery Percentage 1	-0.162 %	-0.188 %	-1.119 %	0.530 %	0.000 %	0.692 %
Concentration RSD	33.3 %	65.8 %	117.6 %	124.9 %	63.9 %	25.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0007 ppm	-0.0002 ppm	-0.0001 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 1	0.0001 ppm	0.0009 ppm	0.0028 ppm	-0.0003 ppm	0.0001 ppm	-0.0002 ppm
Concentration per Run 2	0.0001 ppm	0.0007 ppm	-0.0028 ppm	0.0000 ppm	-0.0002 ppm	0.0013 ppm
Concentration per Run 3	0.0002 ppm	0.0004 ppm	-0.0007 ppm	0.0000 ppm	-0.0003 ppm	0.0001 ppm
Recovery Percentage 1	0.993 %	1.309 %	-0.012 %	-0.526 %	-1.447 %	0.741 %
Concentration RSD	68.9 %	32.2 %	1,195.9 %	133.9 %	137.9 %	221.4 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0004 ppm	0.0005 ppm	0.0000 ppm	-0.0008 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 1	0.0001 ppm	0.0008 ppm	0.0000 ppm	-0.0004 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0004 ppm	0.0005 ppm	0.0000 ppm	-0.0001 ppm	-0.0007 ppm	-0.0002 ppm
Concentration per Run 3	0.0008 ppm	0.0002 ppm	-0.0001 ppm	0.0001 ppm	-0.0012 ppm	-0.0001 ppm
Recovery Percentage 1	0.085 %	0.954 %	-0.333 %	0.321 %	-3.876 %	-0.819 %
Concentration RSD	79.0 %	59.9 %	146.1 %	451.1 %	48.0 %	162.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.9317 %	101.5942 %	100.3523 %	102.7100 %	97.1904 %	101.0611 %
Concentration per Run 1	99.3028 %	101.6176 %	100.3729 %	102.0699 %	97.0612 %	100.9850 %
Concentration per Run 2	98.4869 %	101.5406 %	100.4101 %	102.7519 %	97.4146 %	101.0949 %
Concentration per Run 3	99.0054 %	101.6245 %	100.2738 %	103.3083 %	97.0955 %	101.1034 %
Recovery Percentage 1						20.972 %
Concentration RSD	0.4 %	0.0 %	0.1 %	0.6 %	0.2 %	37.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-1 WG1976619
Analysis started at: 9/26/2024 11:58:22 AM
Rack: 1
Vial: 46

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0000 ppm	0.0053 ppm	0.0012 ppm	0.0024 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	-0.0003 ppm	0.0041 ppm	0.0020 ppm	0.0021 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 2	0.0002 ppm	0.0076 ppm	-0.0002 ppm	0.0026 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 3	0.0002 ppm	0.0041 ppm	0.0018 ppm	0.0026 ppm	0.0000 ppm	0.0000 ppm
Recovery Percentage 1	0.490 %	0.001 %	23.963 %	8.090 %	0.243 %	0.361 %
Concentration RSD	771.7 %	38.9 %	102.8 %	10.2 %	95.8 %	114.1 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0004 ppm	0.0036 ppm	0.0219 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0003 ppm	0.0032 ppm	0.0147 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0005 ppm	0.0036 ppm	0.0084 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0005 ppm	0.0041 ppm	0.0426 ppm
Recovery Percentage 1	0.005 %	-1.019 %	0.971 %	4.234 %	0.002 %	0.877 %
Concentration RSD	12,622.7 %	51.4 %	137.6 %	24.5 %	12.6 %	83.0 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0003 ppm	125.6231 [SIC 500]	-0.0003 ppm	-0.0006 ppm	0.0008 ppm
Concentration per Run 1	0.0000 ppm	0.0004 ppm	125.2183 ppm	-0.0004 ppm	-0.0003 ppm	-0.0002 ppm
Concentration per Run 2	0.0001 ppm	0.0003 ppm	126.8456 ppm	-0.0005 ppm	-0.0012 ppm	0.0009 ppm
Concentration per Run 3	0.0002 ppm	0.0003 ppm	124.8054 ppm	-0.0002 ppm	-0.0003 ppm	0.0016 ppm
Recovery Percentage 1	1.049 %	0.630 %	6,281.155 %	-1.393 %	-6.126 %	1.500 %
Concentration RSD	69.0 %	15.2 %	0.9 %	43.7 %	84.5 %	121.6 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0324 ppm	0.0014 ppm	0.0000 ppm	0.0000 ppm	-0.0036 ppm	0.0000 ppm
Concentration per Run 1	0.0305 ppm	0.0016 ppm	-0.0001 ppm	0.0000 ppm	-0.0034 ppm	0.0001 ppm
Concentration per Run 2	0.0323 ppm	0.0012 ppm	0.0000 ppm	0.0001 ppm	-0.0041 ppm	-0.0001 ppm
Concentration per Run 3	0.0344 ppm	0.0014 ppm	0.0000 ppm	-0.0001 ppm	-0.0034 ppm	-0.0001 ppm
Recovery Percentage 1	6.477 %	2.807 %	-0.135 %	0.286 %	-18.048 %	-0.155 %
Concentration RSD	6.1 %	16.7 %	480.0 %	399.4 %	10.9 %	500.9 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.0230 %	95.3011 %	95.6269 %	104.9752 %	84.3139 %	97.2076 %
Concentration per Run 1	96.6883 %	95.3088 %	95.5126 %	106.9188 %	84.2239 %	97.2056 %
Concentration per Run 2	95.6737 %	95.2944 %	95.6821 %	104.3214 %	84.5145 %	97.2233 %
Concentration per Run 3	95.7069 %	95.3001 %	95.6859 %	103.6854 %	84.2034 %	97.1938 %
Recovery Percentage 1						
Concentration RSD	0.6 %	0.0 %	0.1 %	1.6 %	0.2 %	0.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-1 WG1976622
Analysis started at: 9/26/2024 12:05:15 PM
Rack: 1
Vial: 53

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0074 ppm	-0.0013 ppm	0.0418 ppm	0.0242 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	0.0077 ppm	-0.0010 ppm	0.0421 ppm	0.0234 ppm	0.0000 ppm
Concentration per Run 2	0.0000 ppm	0.0107 ppm	-0.0021 ppm	0.0416 ppm	0.0245 ppm	0.0000 ppm
Concentration per Run 3	0.0003 ppm	0.0038 ppm	-0.0009 ppm	0.0418 ppm	0.0246 ppm	0.0000 ppm
Recovery Percentage 1	2.382 %	0.001 %	-26.199 %	139.489 %	241.818 %	0.015 %
Concentration RSD	101.4 %	46.5 %	50.5 %	0.6 %	2.6 %	815.6 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0008 ppm	0.0038 ppm	0.1136 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0008 ppm	0.0037 ppm	0.0965 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	-0.0002 ppm	0.0009 ppm	0.0031 ppm	0.1244 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0001 ppm	0.0008 ppm	0.0044 ppm	0.1200 ppm
Recovery Percentage 1	-0.047 %	-1.465 %	-0.890 %	8.144 %	0.002 %	4.545 %
Concentration RSD	1,593.6 %	8.7 %	174.7 %	8.4 %	17.8 %	13.2 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0002 ppm	0.0002 ppm	1.6013 ppm	-0.0005 ppm	-0.0006 ppm	0.0004 ppm
Concentration per Run 1	0.0002 ppm	0.0003 ppm	1.5512 ppm	-0.0003 ppm	-0.0004 ppm	0.0002 ppm
Concentration per Run 2	0.0003 ppm	0.0001 ppm	1.6222 ppm	-0.0005 ppm	-0.0008 ppm	0.0007 ppm
Concentration per Run 3	0.0002 ppm	0.0004 ppm	1.6305 ppm	-0.0006 ppm	-0.0005 ppm	0.0003 ppm
Recovery Percentage 1	2.341 %	0.478 %	80.065 %	-1.996 %	-5.612 %	0.866 %
Concentration RSD	13.4 %	64.4 %	2.7 %	30.2 %	36.5 %	60.8 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0458 ppm	0.0006 ppm	0.0009 ppm	0.0001 ppm	-0.0026 ppm	0.0001 ppm
Concentration per Run 1	0.0478 ppm	0.0006 ppm	0.0009 ppm	0.0002 ppm	-0.0026 ppm	0.0002 ppm
Concentration per Run 2	0.0432 ppm	0.0005 ppm	0.0009 ppm	-0.0001 ppm	-0.0021 ppm	0.0000 ppm
Concentration per Run 3	0.0465 ppm	0.0006 ppm	0.0009 ppm	0.0002 ppm	-0.0031 ppm	0.0000 ppm
Recovery Percentage 1	9.167 %	1.197 %	9.070 %	0.712 %	-12.939 %	0.533 %
Concentration RSD	5.2 %	10.6 %	3.7 %	246.5 %	19.5 %	194.9 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.6603 %	103.4301 %	102.1114 %	107.6597 %	93.9684 %	104.8824 %
Concentration per Run 1	100.9488 %	103.4313 %	102.2230 %	111.0119 %	94.0997 %	104.8715 %
Concentration per Run 2	98.9991 %	103.4788 %	102.0926 %	106.3588 %	93.8508 %	104.9107 %
Concentration per Run 3	99.0330 %	103.3804 %	102.0185 %	105.6084 %	93.9545 %	104.8649 %
Recovery Percentage 1						
Concentration RSD	1.1 %	0.0 %	0.1 %	2.7 %	0.1 %	0.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-2 WG1976622

Analysis started at: 9/26/2024 12:11:57 PM

Rack: 1
Vial: 54

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0463 ppm	1.9416 ppm	0.1145 ppm	1.0078 ppm	1.9347 ppm	0.0485 ppm	10.1287 ppm
Concentration per Run 1	0.0468 ppm	1.8788 ppm	0.1146 ppm	1.0097 ppm	1.8725 ppm	0.0469 ppm	9.8191 ppm
Concentration per Run 2	0.0459 ppm	1.9630 ppm	0.1151 ppm	1.0074 ppm	1.9547 ppm	0.0491 ppm	10.2388 ppm
Concentration per Run 3	0.0462 ppm	1.9830 ppm	0.1139 ppm	1.0063 ppm	1.9769 ppm	0.0496 ppm	10.3282 ppm
Concentration RSD	1.0 %	2.8 %	0.5 %	0.2 %	2.8 %	3.0 %	2.7 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0520 ppm	0.5031 ppm	0.1891 ppm	0.2438 ppm	1.0051 ppm	10.3710 ppm	9.4720 ppm
Concentration per Run 1	0.0522 ppm	0.5049 ppm	0.1884 ppm	0.2439 ppm	0.9744 ppm	10.0753 ppm	9.4266 ppm
Concentration per Run 2	0.0521 ppm	0.5031 ppm	0.1898 ppm	0.2434 ppm	1.0115 ppm	10.4424 ppm	9.5056 ppm
Concentration per Run 3	0.0518 ppm	0.5014 ppm	0.1891 ppm	0.2440 ppm	1.0292 ppm	10.5955 ppm	9.4838 ppm
Concentration RSD	0.3 %	0.3 %	0.4 %	0.1 %	2.8 %	2.6 %	0.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4893 ppm	1.0279 ppm	11.6754 ppm	0.4952 ppm	0.5277 ppm	0.4997 ppm	0.1168 ppm
Concentration per Run 1	0.4743 ppm	1.0303 ppm	11.3161 ppm	0.4959 ppm	0.5299 ppm	0.5006 ppm	0.1172 ppm
Concentration per Run 2	0.4945 ppm	1.0273 ppm	11.7945 ppm	0.4956 ppm	0.5276 ppm	0.4988 ppm	0.1173 ppm
Concentration per Run 3	0.4992 ppm	1.0260 ppm	11.9155 ppm	0.4942 ppm	0.5256 ppm	0.4996 ppm	0.1159 ppm
Concentration RSD	2.7 %	0.2 %	2.7 %	0.2 %	0.4 %	0.2 %	0.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	1.4999 ppm	0.9661 ppm	0.9262 ppm	1.0053 ppm	0.1133 ppm	0.4776 ppm	0.5347 ppm
Concentration per Run 1	1.5077 ppm	0.9688 ppm	0.8971 ppm	1.0041 ppm	0.1136 ppm	0.4768 ppm	0.5365 ppm
Concentration per Run 2	1.4981 ppm	0.9692 ppm	0.9353 ppm	1.0072 ppm	0.1134 ppm	0.4780 ppm	0.5357 ppm
Concentration per Run 3	1.4939 ppm	0.9605 ppm	0.9462 ppm	1.0044 ppm	0.1130 ppm	0.4780 ppm	0.5320 ppm
Concentration RSD	0.5 %	0.5 %	2.8 %	0.2 %	0.2 %	0.1 %	0.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.6264 %	99.7102 %	98.8615 %	107.4667 %	89.1484 %	101.3964 %	-0.0005 ppm
Concentration per Run 1	100.1736 %	99.8172 %	98.9568 %	110.7202 %	89.0317 %	101.5288 %	0.0004 ppm
Concentration per Run 2	97.6910 %	99.6871 %	98.9691 %	106.3601 %	89.1802 %	101.4386 %	-0.0010 ppm
Concentration per Run 3	98.0146 %	99.6264 %	98.6586 %	105.3197 %	89.2333 %	101.2218 %	-0.0008 ppm
Concentration RSD	1.4 %	0.1 %	0.2 %	2.7 %	0.1 %	0.2 %	169.9 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-2 WG1976619

Analysis started at: 9/26/2024 12:18:18 PM

Rack: 1

Vial: 47

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0475 ppm	1.9563 ppm	0.1223 ppm	1.0149 ppm	1.9238 ppm	0.0495 ppm	9.9542 ppm
Concentration per Run 1	0.0477 ppm	1.9041 ppm	0.1227 ppm	1.0151 ppm	1.8718 ppm	0.0483 ppm	9.7095 ppm
Concentration per Run 2	0.0474 ppm	1.9828 ppm	0.1213 ppm	1.0137 ppm	1.9453 ppm	0.0501 ppm	10.0564 ppm
Concentration per Run 3	0.0475 ppm	1.9819 ppm	0.1229 ppm	1.0160 ppm	1.9541 ppm	0.0502 ppm	10.0966 ppm
Concentration RSD	0.3 %	2.3 %	0.7 %	0.1 %	2.3 %	2.2 %	2.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0543 ppm	0.5125 ppm	0.1912 ppm	0.2470 ppm	1.0172 ppm	10.3557 ppm	9.2110 ppm
Concentration per Run 1	0.0543 ppm	0.5125 ppm	0.1906 ppm	0.2471 ppm	0.9900 ppm	10.0913 ppm	9.1892 ppm
Concentration per Run 2	0.0543 ppm	0.5127 ppm	0.1918 ppm	0.2472 ppm	1.0250 ppm	10.4582 ppm	9.2082 ppm
Concentration per Run 3	0.0542 ppm	0.5124 ppm	0.1914 ppm	0.2466 ppm	1.0365 ppm	10.5175 ppm	9.2358 ppm
Concentration RSD	0.1 %	0.0 %	0.3 %	0.1 %	2.4 %	2.2 %	0.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4901 ppm	1.0592 ppm	131.7187 [SIC 500]	0.5054 ppm	0.5264 ppm	0.5266 ppm	0.1274 ppm
Concentration per Run 1	0.4769 ppm	1.0594 ppm	130.3857 ppm	0.5057 ppm	0.5268 ppm	0.5265 ppm	0.1258 ppm
Concentration per Run 2	0.4960 ppm	1.0592 ppm	133.2484 ppm	0.5053 ppm	0.5258 ppm	0.5276 ppm	0.1281 ppm
Concentration per Run 3	0.4975 ppm	1.0590 ppm	131.5221 ppm	0.5052 ppm	0.5266 ppm	0.5258 ppm	0.1281 ppm
Concentration RSD	2.3 %	0.0 %	1.1 %	0.1 %	0.1 %	0.2 %	1.0 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	1.5456 ppm	0.9785 ppm	0.9268 ppm	1.0130 ppm	0.1094 ppm	0.4860 ppm	0.5230 ppm
Concentration per Run 1	1.5467 ppm	0.9784 ppm	0.9025 ppm	1.0118 ppm	0.1091 ppm	0.4851 ppm	0.5229 ppm
Concentration per Run 2	1.5450 ppm	0.9797 ppm	0.9364 ppm	1.0131 ppm	0.1098 ppm	0.4862 ppm	0.5231 ppm
Concentration per Run 3	1.5452 ppm	0.9773 ppm	0.9414 ppm	1.0142 ppm	0.1091 ppm	0.4866 ppm	0.5229 ppm
Concentration RSD	0.1 %	0.1 %	2.3 %	0.1 %	0.4 %	0.2 %	0.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.4185 %	94.5182 %	94.6619 %	105.5237 %	83.2605 %	96.5122 %	0.0009 ppm
Concentration per Run 1	98.4045 %	94.5303 %	94.6192 %	108.2360 %	83.1980 %	96.5869 %	0.0001 ppm
Concentration per Run 2	96.8602 %	94.7024 %	94.7070 %	104.4896 %	83.3754 %	96.6481 %	0.0005 ppm
Concentration per Run 3	96.9908 %	94.3219 %	94.6595 %	103.8456 %	83.2082 %	96.3016 %	0.0020 ppm
Concentration RSD	0.9 %	0.2 %	0.0 %	2.2 %	0.1 %	0.2 %	109.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454465-01 WG1976619

Analysis started at: 9/26/2024 12:24:50 PM

Rack: 1
Vial: 48

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0217 ppm	0.0009 ppm	0.0284 ppm	0.0269 ppm	0.0000 ppm	77.3929 ppm
Concentration per Run 1	0.0003 ppm	0.0211 ppm	-0.0003 ppm	0.0288 ppm	0.0265 ppm	0.0000 ppm	76.1970 ppm
Concentration per Run 2	0.0003 ppm	0.0215 ppm	0.0028 ppm	0.0281 ppm	0.0270 ppm	0.0000 ppm	78.0372 ppm
Concentration per Run 3	-0.0002 ppm	0.0224 ppm	0.0001 ppm	0.0282 ppm	0.0272 ppm	0.0001 ppm	77.9446 ppm
Concentration RSD	179.9 %	3.1 %	193.2 %	1.3 %	1.4 %	184.9 %	1.3 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0001 ppm	0.0005 ppm	0.0004 ppm	0.0016 ppm	0.0084 ppm	1.4720 ppm	1.2875 ppm
Concentration per Run 1	-0.0001 ppm	0.0005 ppm	0.0005 ppm	0.0015 ppm	0.0075 ppm	1.4537 ppm	1.2870 ppm
Concentration per Run 2	-0.0001 ppm	0.0005 ppm	0.0005 ppm	0.0017 ppm	0.0087 ppm	1.4893 ppm	1.2901 ppm
Concentration per Run 3	-0.0001 ppm	0.0004 ppm	0.0003 ppm	0.0016 ppm	0.0089 ppm	1.4728 ppm	1.2855 ppm
Concentration RSD	20.0 %	8.2 %	23.8 %	5.5 %	8.6 %	1.2 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.1207 ppm	0.0025 ppm	127.6666 [SIC 500]	0.0006 ppm	-0.0008 ppm	0.0010 ppm	0.0026 ppm
Concentration per Run 1	0.1186 ppm	0.0027 ppm	126.0376 ppm	0.0006 ppm	-0.0012 ppm	0.0008 ppm	0.0032 ppm
Concentration per Run 2	0.1217 ppm	0.0024 ppm	127.0531 ppm	0.0007 ppm	-0.0006 ppm	0.0007 ppm	0.0044 ppm
Concentration per Run 3	0.1217 ppm	0.0023 ppm	129.9091 ppm	0.0007 ppm	-0.0004 ppm	0.0015 ppm	0.0002 ppm
Concentration RSD	1.5 %	8.3 %	1.6 %	8.3 %	57.5 %	43.8 %	84.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	3.2431 ppm	0.0010 ppm	0.2897 ppm	0.0010 ppm	-0.0041 ppm	0.0011 ppm	0.0043 ppm
Concentration per Run 1	3.2446 ppm	0.0011 ppm	0.2848 ppm	0.0008 ppm	-0.0035 ppm	0.0013 ppm	0.0043 ppm
Concentration per Run 2	3.2398 ppm	0.0012 ppm	0.2915 ppm	0.0010 ppm	-0.0046 ppm	0.0011 ppm	0.0043 ppm
Concentration per Run 3	3.2449 ppm	0.0006 ppm	0.2927 ppm	0.0011 ppm	-0.0043 ppm	0.0010 ppm	0.0042 ppm
Concentration RSD	0.1 %	37.4 %	1.5 %	12.5 %	13.6 %	10.8 %	1.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.4794 %	93.5632 %	92.9801 %	104.6361 %	83.2333 %	95.7303 %	-0.0044 ppm
Concentration per Run 1	97.1392 %	93.7346 %	93.0846 %	106.6916 %	83.3419 %	95.9181 %	-0.0059 ppm
Concentration per Run 2	95.8253 %	93.3098 %	92.9835 %	103.2719 %	83.3210 %	95.3875 %	-0.0043 ppm
Concentration per Run 3	96.4737 %	93.6451 %	92.8722 %	103.9448 %	83.0369 %	95.8853 %	-0.0030 ppm
Concentration RSD	0.7 %	0.2 %	0.1 %	1.7 %	0.2 %	0.3 %	32.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-3 WG1976619
Analysis started at: 9/26/2024 12:31:39 PM
Rack: 1
Vial: 49

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0487 ppm	2.0484 ppm	0.1272 ppm	1.0537 ppm	2.0136 ppm	0.0509 ppm	85.2135 ppm
Concentration per Run 1	0.0485 ppm	1.9891 ppm	0.1262 ppm	1.0527 ppm	1.9555 ppm	0.0496 ppm	82.9321 ppm
Concentration per Run 2	0.0486 ppm	2.1000 ppm	0.1282 ppm	1.0542 ppm	2.0617 ppm	0.0522 ppm	87.4133 ppm
Concentration per Run 3	0.0490 ppm	2.0561 ppm	0.1272 ppm	1.0543 ppm	2.0235 ppm	0.0510 ppm	85.2950 ppm
Concentration RSD	0.5 %	2.7 %	0.8 %	0.1 %	2.7 %	2.6 %	2.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0537 ppm	0.5096 ppm	0.1925 ppm	0.2532 ppm	1.0468 ppm	12.1300 ppm	10.4366 ppm
Concentration per Run 1	0.0536 ppm	0.5095 ppm	0.1919 ppm	0.2528 ppm	1.0179 ppm	11.8361 ppm	10.3967 ppm
Concentration per Run 2	0.0537 ppm	0.5099 ppm	0.1930 ppm	0.2528 ppm	1.0745 ppm	12.3866 ppm	10.4566 ppm
Concentration per Run 3	0.0537 ppm	0.5095 ppm	0.1926 ppm	0.2539 ppm	1.0482 ppm	12.1675 ppm	10.4564 ppm
Concentration RSD	0.1 %	0.0 %	0.3 %	0.3 %	2.7 %	2.3 %	0.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.6189 ppm	1.0691 ppm	131.7471 [SIC 500]	0.5041 ppm	0.5245 ppm	0.5345 ppm	0.1307 ppm
Concentration per Run 1	0.6024 ppm	1.0675 ppm	129.4460 ppm	0.5041 ppm	0.5250 ppm	0.5335 ppm	0.1311 ppm
Concentration per Run 2	0.6349 ppm	1.0695 ppm	134.5047 ppm	0.5041 ppm	0.5245 ppm	0.5358 ppm	0.1306 ppm
Concentration per Run 3	0.6194 ppm	1.0702 ppm	131.2907 ppm	0.5040 ppm	0.5240 ppm	0.5343 ppm	0.1305 ppm
Concentration RSD	2.6 %	0.1 %	1.9 %	0.0 %	0.1 %	0.2 %	0.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	4.7512 ppm	0.9821 ppm	1.2433 ppm	1.0262 ppm	0.1089 ppm	0.4926 ppm	0.5197 ppm
Concentration per Run 1	4.7452 ppm	0.9821 ppm	1.2083 ppm	1.0240 ppm	0.1093 ppm	0.4909 ppm	0.5200 ppm
Concentration per Run 2	4.7571 ppm	0.9826 ppm	1.2724 ppm	1.0280 ppm	0.1081 ppm	0.4941 ppm	0.5197 ppm
Concentration per Run 3	4.7513 ppm	0.9815 ppm	1.2493 ppm	1.0265 ppm	0.1092 ppm	0.4928 ppm	0.5193 ppm
Concentration RSD	0.1 %	0.1 %	2.6 %	0.2 %	0.6 %	0.3 %	0.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.8526 %	93.0312 %	92.4047 %	102.7248 %	82.1579 %	95.0990 %	-0.0072 ppm
Concentration per Run 1	96.4294 %	93.0524 %	92.3684 %	105.6925 %	82.0694 %	95.1511 %	-0.0075 ppm
Concentration per Run 2	94.7560 %	92.9472 %	92.4528 %	99.9015 %	82.2569 %	94.9871 %	-0.0064 ppm
Concentration per Run 3	96.3725 %	93.0938 %	92.3930 %	102.5804 %	82.1474 %	95.1589 %	-0.0078 ppm
Concentration RSD	1.0 %	0.1 %	0.0 %	2.8 %	0.1 %	0.1 %	10.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-4 WG1976619

Analysis started at: 9/26/2024 12:38:08 PM

Rack: 1
Vial: 50

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0203 ppm	0.0003 ppm	0.0270 ppm	0.0260 ppm	0.0000 ppm	74.3256 ppm
Concentration per Run 1	0.0004 ppm	0.0206 ppm	0.0006 ppm	0.0270 ppm	0.0255 ppm	0.0000 ppm	73.2214 ppm
Concentration per Run 2	0.0003 ppm	0.0220 ppm	0.0000 ppm	0.0275 ppm	0.0263 ppm	0.0000 ppm	75.0683 ppm
Concentration per Run 3	0.0001 ppm	0.0183 ppm	0.0004 ppm	0.0266 ppm	0.0262 ppm	0.0000 ppm	74.6871 ppm
Concentration RSD	63.0 %	9.1 %	91.4 %	1.8 %	1.6 %	2,486.3 %	1.3 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	-0.0001 ppm	0.0004 ppm	0.0006 ppm	0.0015 ppm	0.0074 ppm	1.4178 ppm	1.2520 ppm
Concentration per Run 1	-0.0001 ppm	0.0003 ppm	0.0005 ppm	0.0015 ppm	0.0072 ppm	1.4111 ppm	1.2443 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	0.0009 ppm	0.0014 ppm	0.0073 ppm	1.4196 ppm	1.2311 ppm
Concentration per Run 3	-0.0001 ppm	0.0005 ppm	0.0005 ppm	0.0015 ppm	0.0078 ppm	1.4226 ppm	1.2805 ppm
Concentration RSD	11.3 %	27.0 %	36.6 %	5.5 %	4.7 %	0.4 %	2.0 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.1165 ppm	0.0023 ppm	119.8637 [SIC 500]	0.0008 ppm	-0.0009 ppm	0.0013 ppm	0.0024 ppm
Concentration per Run 1	0.1148 ppm	0.0025 ppm	118.2547 ppm	0.0009 ppm	-0.0008 ppm	0.0015 ppm	0.0016 ppm
Concentration per Run 2	0.1173 ppm	0.0022 ppm	121.1844 ppm	0.0007 ppm	-0.0006 ppm	0.0011 ppm	0.0038 ppm
Concentration per Run 3	0.1173 ppm	0.0023 ppm	120.1520 ppm	0.0008 ppm	-0.0012 ppm	0.0012 ppm	0.0017 ppm
Concentration RSD	1.2 %	6.3 %	1.2 %	15.9 %	34.9 %	15.7 %	54.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	3.0809 ppm	0.0012 ppm	0.2796 ppm	0.0008 ppm	-0.0037 ppm	0.0012 ppm	0.0036 ppm
Concentration per Run 1	3.0765 ppm	0.0010 ppm	0.2753 ppm	0.0008 ppm	-0.0028 ppm	0.0011 ppm	0.0035 ppm
Concentration per Run 2	3.0899 ppm	0.0014 ppm	0.2816 ppm	0.0006 ppm	-0.0040 ppm	0.0012 ppm	0.0037 ppm
Concentration per Run 3	3.0762 ppm	0.0013 ppm	0.2818 ppm	0.0008 ppm	-0.0043 ppm	0.0012 ppm	0.0035 ppm
Concentration RSD	0.3 %	15.1 %	1.3 %	14.3 %	21.3 %	3.6 %	3.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.0312 %	91.2881 %	92.4128 %	102.8332 %	82.9166 %	93.7706 %	-0.0049 ppm
Concentration per Run 1	96.6505 %	92.4579 %	92.6365 %	104.3228 %	83.1145 %	94.5043 %	-0.0045 ppm
Concentration per Run 2	95.5198 %	92.6658 %	92.2517 %	101.7952 %	82.6528 %	95.0527 %	-0.0057 ppm
Concentration per Run 3	95.9233 %	88.7407 %	92.3503 %	102.3814 %	82.9825 %	91.7548 %	-0.0044 ppm
Concentration RSD	0.6 %	2.4 %	0.2 %	1.3 %	0.3 %	1.9 %	15.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-5 WG1976619
Analysis started at: 9/26/2024 12:44:55 PM
Rack: 1
Vial: 51

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0486 ppm	1.9216 ppm	0.1242 ppm	1.0087 ppm	1.9167 ppm	0.0484 ppm
Concentration per Run 1	0.0486 ppm	1.8789 ppm	0.1231 ppm	1.0098 ppm	1.8771 ppm	0.0473 ppm
Concentration per Run 2	0.0487 ppm	1.9402 ppm	0.1262 ppm	1.0069 ppm	1.9333 ppm	0.0488 ppm
Concentration per Run 3	0.0486 ppm	1.9458 ppm	0.1232 ppm	1.0094 ppm	1.9398 ppm	0.0491 ppm
Concentration RSD	0.1 %	1.9 %	1.4 %	0.2 %	1.8 %	2.0 %
Ca 315.887 {107} (Radial)	85.2527 ppm	83.3424 ppm	86.1656 ppm	86.2501 ppm	1.9 %	
Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0513 ppm	0.4947 ppm	0.1840 ppm	0.2460 ppm	0.9794 ppm	11.5831 ppm
Concentration per Run 1	0.0514 ppm	0.4956 ppm	0.1842 ppm	0.2460 ppm	0.9570 ppm	11.3537 ppm
Concentration per Run 2	0.0513 ppm	0.4938 ppm	0.1847 ppm	0.2462 ppm	0.9928 ppm	11.6745 ppm
Concentration per Run 3	0.0513 ppm	0.4948 ppm	0.1832 ppm	0.2459 ppm	0.9883 ppm	11.7212 ppm
Concentration RSD	0.1 %	0.2 %	0.4 %	0.1 %	2.0 %	1.7 %
Mg 279.079 {121} (Axial)	10.0544 ppm	10.0607 ppm	10.0685 ppm	10.0338 ppm	0.2 %	
Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5973 ppm	1.0325 ppm	130.8069 [SIC 500]	0.4874 ppm	0.5151 ppm	0.5195 ppm
Concentration per Run 1	0.5839 ppm	1.0332 ppm	128.9420 ppm	0.4883 ppm	0.5159 ppm	0.5199 ppm
Concentration per Run 2	0.6039 ppm	1.0306 ppm	131.6140 ppm	0.4862 ppm	0.5141 ppm	0.5186 ppm
Concentration per Run 3	0.6042 ppm	1.0338 ppm	131.8646 ppm	0.4877 ppm	0.5153 ppm	0.5200 ppm
Concentration RSD	1.9 %	0.2 %	1.2 %	0.2 %	0.2 %	0.2 %
Se 196.090 {472} (Axial)	0.1281 ppm	0.1298 ppm	0.1260 ppm	0.1285 ppm	1.5 %	
Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	3.8322 ppm	0.9471 ppm	1.1941 ppm	0.9862 ppm	0.4756 ppm	0.5021 ppm
Concentration per Run 1	3.8298 ppm	0.9481 ppm	1.1683 ppm	0.9865 ppm	0.1080 ppm	0.4755 ppm
Concentration per Run 2	3.8262 ppm	0.9446 ppm	1.2047 ppm	0.9855 ppm	0.1070 ppm	0.4757 ppm
Concentration per Run 3	3.8407 ppm	0.9486 ppm	1.2094 ppm	0.9865 ppm	0.1057 ppm	0.4755 ppm
Concentration RSD	0.2 %	0.2 %	1.9 %	0.1 %	1.1 %	0.0 %
Zn 206.200 {463} (Axial)	0.5021 ppm	0.5029 ppm	0.5011 ppm	0.5024 ppm	0.2 %	
Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	95.3559 %	92.4976 %	91.4659 %	103.0099 %	81.0833 %	94.3286 %
Concentration per Run 1	96.3237 %	92.3943 %	91.3256 %	105.3397 %	80.9613 %	94.2022 %
Concentration per Run 2	94.6020 %	92.5822 %	91.5230 %	101.7798 %	81.2360 %	94.3925 %
Concentration per Run 3	95.1420 %	92.5163 %	91.5492 %	101.9103 %	81.0527 %	94.3911 %
Concentration RSD	0.9 %	0.1 %	0.1 %	2.0 %	0.2 %	0.1 %
Li 670.784 {50} (Radial)	-0.0070 ppm	-0.0063 ppm	-0.0069 ppm	-0.0076 ppm	9.7 %	

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976619-6D5 WG1976619

Analysis started at: 9/26/2024 12:51:25 PM

Rack: 1
Vial: 52

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0078 ppm	0.0002 ppm	0.0070 ppm	0.0057 ppm	0.0000 ppm	16.3304 ppm
Concentration per Run 1	0.0004 ppm	0.0044 ppm	0.0000 ppm	0.0069 ppm	0.0057 ppm	0.0000 ppm	16.2547 ppm
Concentration per Run 2	0.0004 ppm	0.0109 ppm	0.0001 ppm	0.0068 ppm	0.0056 ppm	0.0000 ppm	16.3564 ppm
Concentration per Run 3	0.0002 ppm	0.0081 ppm	0.0006 ppm	0.0072 ppm	0.0057 ppm	0.0000 ppm	16.3802 ppm
Concentration RSD	39.8 %	41.9 %	150.8 %	3.1 %	0.5 %	1,936.5 %	0.4 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0041 ppm	0.3118 ppm	0.2875 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0046 ppm	0.3153 ppm	0.2866 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0006 ppm	0.0034 ppm	0.2880 ppm	0.2894 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0044 ppm	0.3321 ppm	0.2865 ppm
Concentration RSD	69.2 %	62.6 %	194.5 %	18.1 %	16.4 %	7.1 %	0.6 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0256 ppm	0.0012 ppm	28.7916 [SIC 500]	0.0001 ppm	0.0000 ppm	0.0011 ppm	0.0025 ppm
Concentration per Run 1	0.0253 ppm	0.0015 ppm	28.5574 ppm	0.0001 ppm	-0.0001 ppm	0.0020 ppm	0.0015 ppm
Concentration per Run 2	0.0257 ppm	0.0011 ppm	28.8369 ppm	0.0001 ppm	-0.0005 ppm	0.0011 ppm	0.0034 ppm
Concentration per Run 3	0.0257 ppm	0.0011 ppm	28.9805 ppm	0.0000 ppm	0.0005 ppm	0.0002 ppm	0.0026 ppm
Concentration RSD	0.8 %	22.5 %	0.7 %	92.3 %	1,071.4 %	83.1 %	39.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.6493 ppm	0.0003 ppm	0.0611 ppm	0.0004 ppm	-0.0015 ppm	0.0003 ppm	0.0011 ppm
Concentration per Run 1	0.6503 ppm	0.0004 ppm	0.0606 ppm	0.0006 ppm	-0.0016 ppm	0.0002 ppm	0.0011 ppm
Concentration per Run 2	0.6464 ppm	-0.0001 ppm	0.0612 ppm	0.0004 ppm	-0.0014 ppm	0.0004 ppm	0.0010 ppm
Concentration per Run 3	0.6511 ppm	0.0005 ppm	0.0614 ppm	0.0003 ppm	-0.0013 ppm	0.0004 ppm	0.0011 ppm
Concentration RSD	0.4 %	117.5 %	0.7 %	33.2 %	10.5 %	44.3 %	8.5 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.1027 %	98.6758 %	97.6362 %	105.1548 %	91.8717 %	100.3362 %	0.0007 ppm
Concentration per Run 1	100.3305 %	98.6856 %	97.7403 %	105.3800 %	91.7118 %	100.3331 %	0.0005 ppm
Concentration per Run 2	98.9171 %	98.7095 %	97.7937 %	105.5153 %	92.2335 %	100.3568 %	0.0007 ppm
Concentration per Run 3	98.0605 %	98.6322 %	97.3744 %	104.5691 %	91.6697 %	100.3186 %	0.0009 ppm
Concentration RSD	1.2 %	0.0 %	0.2 %	0.5 %	0.3 %	0.0 %	30.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 12:58:05 PM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5058 ppm	0.5295 ppm	0.4819 ppm	0.5037 ppm	0.5043 ppm	0.5133 ppm
Concentration per Run 1	0.5062 ppm	0.5220 ppm	0.4814 ppm	0.5045 ppm	0.4985 ppm	0.5089 ppm
Concentration per Run 2	0.5056 ppm	0.5328 ppm	0.4814 ppm	0.5017 ppm	0.5055 ppm	0.5145 ppm
Concentration per Run 3	0.5055 ppm	0.5337 ppm	0.4827 ppm	0.5050 ppm	0.5089 ppm	0.5165 ppm
Recovery Percentage 1	101.155 %	105.895 %	96.371 %	100.747 %	100.861 %	102.656 %
Concentration RSD	0.1 %	1.2 %	0.2 %	0.4 %	1.1 %	0.8 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4853 ppm	0.5161 ppm	0.4860 ppm	0.4960 ppm	0.5461 ppm	5.4161 ppm
Concentration per Run 1	0.4847 ppm	0.5162 ppm	0.4863 ppm	0.4966 ppm	0.5453 ppm	5.3611 ppm
Concentration per Run 2	0.4851 ppm	0.5154 ppm	0.4859 ppm	0.4956 ppm	0.5439 ppm	5.4147 ppm
Concentration per Run 3	0.4863 ppm	0.5166 ppm	0.4857 ppm	0.4959 ppm	0.5491 ppm	5.4725 ppm
Recovery Percentage 1	97.069 %	103.215 %	97.199 %	99.203 %	109.215 %	108.322 %
Concentration RSD	0.2 %	0.1 %	0.1 %	0.1 %	0.5 %	1.0 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5106 ppm	0.4980 ppm	10.1183 ppm	0.5059 ppm	0.5140 ppm	0.5137 ppm
Concentration per Run 1	0.5061 ppm	0.4974 ppm	10.0222 ppm	0.5060 ppm	0.5137 ppm	0.5155 ppm
Concentration per Run 2	0.5125 ppm	0.4970 ppm	10.1328 ppm	0.5048 ppm	0.5136 ppm	0.5131 ppm
Concentration per Run 3	0.5131 ppm	0.4995 ppm	10.1998 ppm	0.5068 ppm	0.5148 ppm	0.5123 ppm
Recovery Percentage 1	102.113 %	99.595 %	101.183 %	101.171 %	102.806 %	102.730 %
Concentration RSD	0.8 %	0.3 %	0.9 %	0.2 %	0.1 %	0.3 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.6351 ppm	0.4811 ppm	0.4905 ppm	0.5125 ppm	0.5165 ppm	0.4902 ppm
Concentration per Run 1	5.6443 ppm	0.4808 ppm	0.4853 ppm	0.5128 ppm	0.5177 ppm	0.4903 ppm
Concentration per Run 2	5.6232 ppm	0.4807 ppm	0.4914 ppm	0.5130 ppm	0.5157 ppm	0.4905 ppm
Concentration per Run 3	5.6379 ppm	0.4818 ppm	0.4948 ppm	0.5117 ppm	0.5163 ppm	0.4897 ppm
Recovery Percentage 1	107.336 %	96.222 %	98.094 %	102.497 %	103.309 %	98.031 %
Concentration RSD	0.2 %	0.1 %	1.0 %	0.1 %	0.2 %	0.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.1700 %	100.4625 %	99.4699 %	107.2575 %	93.9547 %	102.0131 %
Concentration per Run 1	101.6355 %	100.3369 %	99.3583 %	108.3671 %	93.7461 %	101.8833 %
Concentration per Run 2	99.4827 %	100.6289 %	99.4539 %	106.8954 %	94.2055 %	102.1407 %
Concentration per Run 3	99.3917 %	100.4218 %	99.5974 %	106.5102 %	93.9124 %	102.0155 %
Recovery Percentage 1						100.095 %
Concentration RSD	1.3 %	0.1 %	0.1 %	0.9 %	0.2 %	1.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 1:04:30 PM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0032 ppm	-0.0008 ppm	0.0012 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0004 ppm	0.0030 ppm	-0.0006 ppm	0.0014 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 2	0.0002 ppm	-0.0004 ppm	-0.0012 ppm	0.0012 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 3	0.0002 ppm	0.0071 ppm	-0.0007 ppm	0.0011 ppm	-0.0002 ppm	0.0000 ppm
Recovery Percentage 1	3.704 %	0.001 %	-16.486 %	4.038 %	-0.389 %	0.282 %
Concentration RSD	35.7 %	115.2 %	37.0 %	12.0 %	272.4 %	110.3 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0015 ppm	0.0155 ppm	0.0008 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0001 ppm	0.0020 ppm	0.0187 ppm	-0.0001 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0016 ppm	0.0213 ppm	0.0025 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0009 ppm	0.0066 ppm	0.0001 ppm
Recovery Percentage 1	-0.449 %	0.154 %	0.704 %	1.331 %	0.001 %	0.622 %
Concentration RSD	87.5 %	81.0 %	41.6 %	63.4 %	36.3 %	50.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0007 ppm	0.0025 ppm	-0.0001 ppm	0.0001 ppm	-0.0004 ppm
Concentration per Run 1	0.0000 ppm	0.0007 ppm	0.0060 ppm	-0.0002 ppm	-0.0003 ppm	-0.0006 ppm
Concentration per Run 2	0.0002 ppm	0.0008 ppm	0.0029 ppm	0.0000 ppm	0.0000 ppm	-0.0012 ppm
Concentration per Run 3	0.0003 ppm	0.0008 ppm	-0.0015 ppm	-0.0001 ppm	0.0005 ppm	0.0007 ppm
Recovery Percentage 1	1.497 %	1.472 %	0.124 %	-0.366 %	0.680 %	-0.731 %
Concentration RSD	93.7 %	8.4 %	151.1 %	82.0 %	598.2 %	264.7 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0011 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0014 ppm	0.0002 ppm	0.0000 ppm	-0.0001 ppm	0.0009 ppm	-0.0001 ppm
Concentration per Run 2	0.0013 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 3	0.0006 ppm	0.0002 ppm	-0.0001 ppm	0.0001 ppm	-0.0007 ppm	0.0000 ppm
Recovery Percentage 1	0.222 %	0.183 %	-0.581 %	0.381 %	1.036 %	-0.256 %
Concentration RSD	41.0 %	222.1 %	58.1 %	202.2 %	399.9 %	194.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.4071 %	101.1895 %	99.8738 %	101.7406 %	96.7660 %	100.6123 %
Concentration per Run 1	98.9334 %	101.2443 %	99.6546 %	100.1896 %	96.5470 %	100.3294 %
Concentration per Run 2	98.4500 %	101.1890 %	99.9684 %	102.5845 %	97.0961 %	100.6794 %
Concentration per Run 3	97.8379 %	101.1350 %	99.9982 %	102.4477 %	96.6550 %	100.8283 %
Recovery Percentage 1						5.865 %
Concentration RSD	0.6 %	0.1 %	0.2 %	1.3 %	0.3 %	0.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2455012-01 WG1976622

Analysis started at: 9/26/2024 1:12:29 PM

Rack: 1
Vial: 55

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0091 ppm	-0.0013 ppm	0.0193 ppm	0.0269 ppm	0.0000 ppm
Concentration per Run 1	0.0003 ppm	0.0082 ppm	-0.0019 ppm	0.0193 ppm	0.0255 ppm	0.0000 ppm
Concentration per Run 2	0.0004 ppm	0.0109 ppm	-0.0014 ppm	0.0194 ppm	0.0273 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	0.0081 ppm	-0.0006 ppm	0.0191 ppm	0.0277 ppm	0.0001 ppm
Concentration RSD	82.7 %	17.6 %	52.0 %	0.9 %	4.3 %	69.3 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0007 ppm	0.0037 ppm	0.0081 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0007 ppm	0.0035 ppm	0.0095 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0007 ppm	0.0037 ppm	0.0084 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0007 ppm	0.0039 ppm	0.0065 ppm
Concentration RSD	197.1 %	11.1 %	91.4 %	3.8 %	5.1 %	18.6 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	0.0014 ppm	1.3306 ppm	-0.0006 ppm	-0.0007 ppm	0.0032 ppm
Concentration per Run 1	0.0005 ppm	0.0015 ppm	1.2618 ppm	-0.0006 ppm	-0.0005 ppm	0.0049 ppm
Concentration per Run 2	0.0004 ppm	0.0015 ppm	1.3453 ppm	-0.0006 ppm	-0.0005 ppm	0.0019 ppm
Concentration per Run 3	0.0005 ppm	0.0014 ppm	1.3848 ppm	-0.0007 ppm	-0.0012 ppm	0.0028 ppm
Concentration RSD	7.1 %	5.5 %	4.7 %	12.9 %	47.8 %	48.3 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.4405 ppm	0.0004 ppm	0.0228 ppm	0.0003 ppm	-0.0030 ppm	0.0003 ppm
Concentration per Run 1	0.4426 ppm	0.0004 ppm	0.0216 ppm	0.0004 ppm	-0.0030 ppm	0.0003 ppm
Concentration per Run 2	0.4452 ppm	0.0005 ppm	0.0231 ppm	0.0003 ppm	-0.0030 ppm	0.0002 ppm
Concentration per Run 3	0.4336 ppm	0.0003 ppm	0.0236 ppm	0.0001 ppm	-0.0031 ppm	0.0004 ppm
Concentration RSD	1.4 %	29.1 %	4.6 %	53.5 %	2.0 %	36.6 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.1623 %	101.3542 %	98.9014 %	109.1088 %	89.0828 %	102.0459 %
Concentration per Run 1	101.0652 %	101.2610 %	98.7230 %	114.6306 %	88.8112 %	101.9817 %
Concentration per Run 2	97.9787 %	101.4419 %	99.0795 %	106.9251 %	89.2746 %	102.1515 %
Concentration per Run 3	98.4429 %	101.3596 %	98.9017 %	105.7708 %	89.1626 %	102.0045 %
Concentration RSD	1.7 %	0.1 %	0.2 %	4.4 %	0.3 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-3 WG1976622

Analysis started at: 9/26/2024 1:19:07 PM

Rack: 1
Vial: 56

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0480 ppm	2.0323 ppm	0.1197 ppm	1.0358 ppm	2.0261 ppm	0.0506 ppm
Concentration per Run 1	0.0482 ppm	2.0194 ppm	0.1186 ppm	1.0378 ppm	2.0074 ppm	0.0502 ppm
Concentration per Run 2	0.0479 ppm	2.0453 ppm	0.1206 ppm	1.0343 ppm	2.0362 ppm	0.0509 ppm
Concentration per Run 3	0.0479 ppm	2.0322 ppm	0.1200 ppm	1.0352 ppm	2.0349 ppm	0.0507 ppm
Concentration RSD	0.4 %	0.6 %	0.9 %	0.2 %	0.8 %	0.7 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0535 ppm	0.5230 ppm	0.1926 ppm	0.2520 ppm	1.0570 ppm	10.8050 ppm
Concentration per Run 1	0.0534 ppm	0.5230 ppm	0.1926 ppm	0.2516 ppm	1.0462 ppm	10.7338 ppm
Concentration per Run 2	0.0536 ppm	0.5226 ppm	0.1924 ppm	0.2525 ppm	1.0660 ppm	10.8657 ppm
Concentration per Run 3	0.0536 ppm	0.5233 ppm	0.1929 ppm	0.2518 ppm	1.0587 ppm	10.8155 ppm
Concentration RSD	0.2 %	0.1 %	0.1 %	0.2 %	0.9 %	0.6 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5095 ppm	1.0774 ppm	11.9959 ppm	0.5120 ppm	0.5451 ppm	0.5331 ppm
Concentration per Run 1	0.5047 ppm	1.0767 ppm	11.9048 ppm	0.5117 ppm	0.5448 ppm	0.5344 ppm
Concentration per Run 2	0.5125 ppm	1.0763 ppm	12.0661 ppm	0.5121 ppm	0.5443 ppm	0.5319 ppm
Concentration per Run 3	0.5114 ppm	1.0790 ppm	12.0169 ppm	0.5123 ppm	0.5462 ppm	0.5329 ppm
Concentration RSD	0.8 %	0.1 %	0.7 %	0.1 %	0.2 %	0.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	2.0045 ppm	1.0030 ppm	0.9916 ppm	1.0382 ppm	0.1171 ppm	0.4920 ppm
Concentration per Run 1	2.0046 ppm	1.0013 ppm	0.9825 ppm	1.0367 ppm	0.1174 ppm	0.4917 ppm
Concentration per Run 2	2.0044 ppm	1.0039 ppm	0.9967 ppm	1.0398 ppm	0.1166 ppm	0.4916 ppm
Concentration per Run 3	2.0044 ppm	1.0036 ppm	0.9954 ppm	1.0382 ppm	0.1172 ppm	0.4926 ppm
Concentration RSD	0.0 %	0.1 %	0.8 %	0.2 %	0.3 %	0.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.6598 %	98.8229 %	97.2311 %	105.6296 %	86.2113 %	100.0432 %
Concentration per Run 1	98.0990 %	98.7943 %	96.9926 %	106.4833 %	86.0106 %	100.0722 %
Concentration per Run 2	97.0256 %	98.7825 %	97.4619 %	104.7244 %	86.4434 %	99.9334 %
Concentration per Run 3	97.8547 %	98.8920 %	97.2388 %	105.6809 %	86.1799 %	100.1238 %
Concentration RSD	0.6 %	0.1 %	0.2 %	0.8 %	0.3 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-4 WG1976622

Analysis started at: 9/26/2024 1:25:29 PM

Rack: 1
Vial: 57

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0099 ppm	-0.0011 ppm	0.0215 ppm	0.0300 ppm	0.0000 ppm	6.2049 ppm
Concentration per Run 1	0.0003 ppm	0.0101 ppm	-0.0013 ppm	0.0220 ppm	0.0296 ppm	0.0000 ppm	6.0973 ppm
Concentration per Run 2	0.0002 ppm	0.0085 ppm	-0.0005 ppm	0.0214 ppm	0.0302 ppm	0.0000 ppm	6.2199 ppm
Concentration per Run 3	0.0003 ppm	0.0111 ppm	-0.0016 ppm	0.0211 ppm	0.0303 ppm	0.0000 ppm	6.2976 ppm
Concentration RSD	17.1 %	13.2 %	50.8 %	2.1 %	1.1 %	84.4 %	1.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0007 ppm	0.0030 ppm	0.0251 ppm	10.1507 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0006 ppm	0.0035 ppm	0.0147 ppm	10.0365 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0001 ppm	0.0008 ppm	0.0033 ppm	0.0386 ppm	10.2700 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0006 ppm	0.0021 ppm	0.0220 ppm	10.1457 ppm
Concentration RSD	84.6 %	28.9 %	45.2 %	16.2 %	24.9 %	48.9 %	1.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0004 ppm	0.0024 ppm	1.4914 ppm	-0.0005 ppm	-0.0009 ppm	0.0037 ppm	0.0016 ppm
Concentration per Run 1	0.0003 ppm	0.0025 ppm	1.4664 ppm	-0.0004 ppm	-0.0011 ppm	0.0031 ppm	0.0027 ppm
Concentration per Run 2	0.0005 ppm	0.0024 ppm	1.4981 ppm	-0.0007 ppm	-0.0008 ppm	0.0046 ppm	0.0007 ppm
Concentration per Run 3	0.0004 ppm	0.0022 ppm	1.5095 ppm	-0.0006 ppm	-0.0006 ppm	0.0033 ppm	0.0014 ppm
Concentration RSD	26.1 %	7.4 %	1.5 %	27.0 %	30.0 %	22.5 %	60.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.4806 ppm	0.0304 ppm	0.0255 ppm	0.0003 ppm	-0.0030 ppm	0.0004 ppm	0.0018 ppm
Concentration per Run 1	0.4841 ppm	0.0306 ppm	0.0251 ppm	0.0005 ppm	-0.0026 ppm	0.0004 ppm	0.0018 ppm
Concentration per Run 2	0.4796 ppm	0.0303 ppm	0.0256 ppm	0.0002 ppm	-0.0044 ppm	0.0005 ppm	0.0019 ppm
Concentration per Run 3	0.4782 ppm	0.0302 ppm	0.0258 ppm	0.0002 ppm	-0.0020 ppm	0.0003 ppm	0.0019 ppm
Concentration RSD	0.6 %	0.7 %	1.5 %	63.9 %	41.7 %	26.4 %	2.5 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.8401 %	101.2825 %	99.3798 %	106.3526 %	88.9852 %	101.8127 %	0.0031 ppm
Concentration per Run 1	99.8560 %	101.1236 %	99.3836 %	107.8454 %	88.8839 %	102.7458 %	0.0052 ppm
Concentration per Run 2	98.6440 %	101.1260 %	99.5251 %	106.1240 %	89.1108 %	100.8298 %	0.0028 ppm
Concentration per Run 3	98.0202 %	101.5979 %	99.2308 %	105.0884 %	88.9609 %	101.8626 %	0.0015 ppm
Concentration RSD	0.9 %	0.3 %	0.1 %	1.3 %	0.1 %	0.9 %	59.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-5 WG1976622

Analysis started at: 9/26/2024 1:32:09 PM

Rack: 1
Vial: 58

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0473 ppm	1.8940 ppm	0.1157 ppm	0.9725 ppm	1.9146 ppm	0.0479 ppm
Concentration per Run 1	0.0473 ppm	1.8496 ppm	0.1155 ppm	0.9732 ppm	1.8790 ppm	0.0468 ppm
Concentration per Run 2	0.0475 ppm	1.9079 ppm	0.1156 ppm	0.9718 ppm	1.9235 ppm	0.0483 ppm
Concentration per Run 3	0.0470 ppm	1.9246 ppm	0.1160 ppm	0.9725 ppm	1.9413 ppm	0.0485 ppm
Concentration RSD	0.6 %	2.1 %	0.2 %	0.1 %	1.7 %	1.9 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0505 ppm	0.4987 ppm	0.1830 ppm	0.2405 ppm	0.9725 ppm	10.1715 ppm
Concentration per Run 1	0.0504 ppm	0.4980 ppm	0.1827 ppm	0.2408 ppm	0.9511 ppm	9.9582 ppm
Concentration per Run 2	0.0505 ppm	0.4982 ppm	0.1832 ppm	0.2406 ppm	0.9804 ppm	10.2510 ppm
Concentration per Run 3	0.0507 ppm	0.4998 ppm	0.1831 ppm	0.2400 ppm	0.9861 ppm	10.3052 ppm
Concentration RSD	0.3 %	0.2 %	0.1 %	0.2 %	1.9 %	1.8 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4837 ppm	1.0206 ppm	11.0954 ppm	0.4885 ppm	0.5303 ppm	0.5055 ppm
Concentration per Run 1	0.4738 ppm	1.0201 ppm	10.8922 ppm	0.4876 ppm	0.5306 ppm	0.5047 ppm
Concentration per Run 2	0.4882 ppm	1.0203 ppm	11.1581 ppm	0.4881 ppm	0.5295 ppm	0.5066 ppm
Concentration per Run 3	0.4891 ppm	1.0215 ppm	11.2358 ppm	0.4898 ppm	0.5307 ppm	0.5052 ppm
Concentration RSD	1.8 %	0.1 %	1.6 %	0.2 %	0.1 %	0.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.9745 ppm	0.9509 ppm	0.9328 ppm	0.9804 ppm	0.1150 ppm	0.4670 ppm
Concentration per Run 1	0.9885 ppm	0.9491 ppm	0.9156 ppm	0.9790 ppm	0.1144 ppm	0.4656 ppm
Concentration per Run 2	0.9687 ppm	0.9482 ppm	0.9369 ppm	0.9799 ppm	0.1158 ppm	0.4675 ppm
Concentration per Run 3	0.9664 ppm	0.9554 ppm	0.9458 ppm	0.9823 ppm	0.1149 ppm	0.4681 ppm
Concentration RSD	1.2 %	0.4 %	1.7 %	0.2 %	0.6 %	0.3 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.5012 %	99.2743 %	97.2994 %	106.3204 %	86.4915 %	100.6107 %
Concentration per Run 1	98.8808 %	99.1694 %	97.0087 %	108.5117 %	86.3714 %	100.5396 %
Concentration per Run 2	96.6630 %	99.2246 %	97.3024 %	105.1945 %	86.5326 %	100.5487 %
Concentration per Run 3	96.9599 %	99.4289 %	97.5869 %	105.2549 %	86.5704 %	100.7438 %
Concentration RSD	1.2 %	0.1 %	0.3 %	1.8 %	0.1 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976622-6D5 WG1976622

Analysis started at: 9/26/2024 1:38:30 PM

Rack: 1
Vial: 59

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0047 ppm	-0.0009 ppm	0.0054 ppm	0.0060 ppm	0.0001 ppm	1.2536 ppm
Concentration per Run 1	0.0004 ppm	0.0040 ppm	-0.0017 ppm	0.0055 ppm	0.0062 ppm	0.0001 ppm	1.2785 ppm
Concentration per Run 2	0.0003 ppm	0.0080 ppm	-0.0015 ppm	0.0053 ppm	0.0058 ppm	0.0000 ppm	1.2093 ppm
Concentration per Run 3	0.0002 ppm	0.0021 ppm	0.0006 ppm	0.0055 ppm	0.0061 ppm	0.0000 ppm	1.2730 ppm
Concentration RSD	41.3 %	64.4 %	150.2 %	2.3 %	3.6 %	58.0 %	3.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0031 ppm	0.0197 ppm	2.1284 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0003 ppm	0.0026 ppm	0.0229 ppm	2.1352 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0029 ppm	0.0145 ppm	2.1201 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0038 ppm	0.0218 ppm	2.1298 ppm
Concentration RSD	92.5 %	93.8 %	153.7 %	37.0 %	21.0 %	23.1 %	0.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0001 ppm	0.0011 ppm	0.2980 ppm	-0.0003 ppm	-0.0007 ppm	0.0011 ppm	0.0002 ppm
Concentration per Run 1	0.0001 ppm	0.0013 ppm	0.3101 ppm	-0.0003 ppm	-0.0008 ppm	0.0013 ppm	-0.0007 ppm
Concentration per Run 2	-0.0001 ppm	0.0010 ppm	0.2803 ppm	-0.0003 ppm	-0.0009 ppm	0.0006 ppm	0.0010 ppm
Concentration per Run 3	0.0002 ppm	0.0010 ppm	0.3037 ppm	-0.0003 ppm	-0.0004 ppm	0.0014 ppm	0.0003 ppm
Concentration RSD	238.9 %	17.3 %	5.3 %	4.6 %	40.4 %	38.1 %	406.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0940 ppm	0.0000 ppm	0.0052 ppm	0.0001 ppm	-0.0011 ppm	0.0001 ppm	0.0006 ppm
Concentration per Run 1	0.0943 ppm	-0.0002 ppm	0.0053 ppm	0.0002 ppm	-0.0012 ppm	0.0001 ppm	0.0005 ppm
Concentration per Run 2	0.0926 ppm	0.0003 ppm	0.0049 ppm	-0.0001 ppm	-0.0006 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 3	0.0950 ppm	-0.0001 ppm	0.0053 ppm	0.0001 ppm	-0.0016 ppm	0.0001 ppm	0.0007 ppm
Concentration RSD	1.3 %	1,955.7 %	4.7 %	261.9 %	43.2 %	45.9 %	19.9 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.7548 %	102.3697 %	100.3728 %	105.1834 %	93.7965 %	101.7949 %	0.0005 ppm
Concentration per Run 1	98.8345 %	102.3586 %	100.6696 %	103.1408 %	93.8813 %	101.7446 %	0.0002 ppm
Concentration per Run 2	102.1588 %	102.5009 %	100.6057 %	108.8228 %	94.0398 %	101.8536 %	0.0010 ppm
Concentration per Run 3	98.2712 %	102.2495 %	99.8432 %	103.5868 %	93.4685 %	101.7866 %	0.0003 ppm
Concentration RSD	2.1 %	0.1 %	0.5 %	3.0 %	0.3 %	0.1 %	84.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 1:45:14 PM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5090 ppm	0.5242 ppm	0.4849 ppm	0.5165 ppm	0.5117 ppm	0.5178 ppm
Concentration per Run 1	0.5091 ppm	0.5307 ppm	0.4852 ppm	0.5193 ppm	0.5160 ppm	0.5236 ppm
Concentration per Run 2	0.5102 ppm	0.5215 ppm	0.4864 ppm	0.5159 ppm	0.5089 ppm	0.5150 ppm
Concentration per Run 3	0.5076 ppm	0.5204 ppm	0.4830 ppm	0.5143 ppm	0.5104 ppm	0.5146 ppm
Recovery Percentage 1	101.793 %	104.841 %	96.971 %	103.299 %	102.345 %	103.551 %
Concentration RSD	0.3 %	1.1 %	0.4 %	0.5 %	0.7 %	1.0 %
0.8 %						
Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4868 ppm	0.5266 ppm	0.4816 ppm	0.4973 ppm	0.5396 ppm	5.5345 ppm
Concentration per Run 1	0.4868 ppm	0.5285 ppm	0.4814 ppm	0.4976 ppm	0.5449 ppm	5.5984 ppm
Concentration per Run 2	0.4863 ppm	0.5256 ppm	0.4823 ppm	0.4975 ppm	0.5376 ppm	5.4949 ppm
Concentration per Run 3	0.4873 ppm	0.5257 ppm	0.4809 ppm	0.4969 ppm	0.5362 ppm	5.5102 ppm
Recovery Percentage 1	97.361 %	105.319 %	96.313 %	99.468 %	107.917 %	110.690 %
Concentration RSD	0.1 %	0.3 %	0.1 %	0.1 %	0.9 %	1.0 %
0.4 %						
Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5205 ppm	0.5061 ppm	10.5539 ppm	0.5104 ppm	0.5228 ppm	0.5261 ppm
Concentration per Run 1	0.5258 ppm	0.5072 ppm	10.6501 ppm	0.5115 ppm	0.5223 ppm	0.5296 ppm
Concentration per Run 2	0.5182 ppm	0.5048 ppm	10.5057 ppm	0.5092 ppm	0.5228 ppm	0.5259 ppm
Concentration per Run 3	0.5175 ppm	0.5064 ppm	10.5058 ppm	0.5104 ppm	0.5232 ppm	0.5228 ppm
Recovery Percentage 1	104.102 %	101.225 %	105.539 %	102.073 %	104.553 %	105.222 %
Concentration RSD	0.9 %	0.2 %	0.8 %	0.2 %	0.1 %	0.7 %
0.2 %						
Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.7694 ppm	0.4847 ppm	0.4961 ppm	0.5164 ppm	0.5217 ppm	0.4896 ppm
Concentration per Run 1	5.7966 ppm	0.4856 ppm	0.5004 ppm	0.5168 ppm	0.5240 ppm	0.4897 ppm
Concentration per Run 2	5.7565 ppm	0.4842 ppm	0.4937 ppm	0.5172 ppm	0.5200 ppm	0.4894 ppm
Concentration per Run 3	5.7550 ppm	0.4841 ppm	0.4941 ppm	0.5151 ppm	0.5210 ppm	0.4897 ppm
Recovery Percentage 1	109.893 %	96.931 %	99.214 %	103.274 %	104.334 %	97.921 %
Concentration RSD	0.4 %	0.2 %	0.8 %	0.2 %	0.4 %	0.0 %
0.1 %						
Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.0744 %	100.3505 %	99.0804 %	105.5655 %	92.0749 %	101.4651 %
Concentration per Run 1	98.3688 %	100.1030 %	98.7909 %	104.6134 %	91.5735 %	101.2644 %
Concentration per Run 2	98.2062 %	100.3654 %	99.1967 %	105.7308 %	92.2829 %	101.4513 %
Concentration per Run 3	97.6483 %	100.5830 %	99.2535 %	106.3522 %	92.3685 %	101.6796 %
Recovery Percentage 1						
Concentration RSD	0.4 %	0.2 %	0.3 %	0.8 %	0.5 %	0.2 %
0.8 %						

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 1:51:38 PM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0059 ppm	-0.0009 ppm	0.0012 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	0.0011 ppm	-0.0024 ppm	0.0012 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 2	0.0001 ppm	0.0069 ppm	0.0006 ppm	0.0013 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	0.0001 ppm	0.0097 ppm	-0.0009 ppm	0.0012 ppm	-0.0001 ppm	0.0000 ppm
Recovery Percentage 1	1.313 %	0.001 %	-17.309 %	4.148 %	-0.486 %	0.775 %
Concentration RSD	50.7 %	74.4 %	173.1 %	2.4 %	68.1 %	50.2 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0012 ppm	0.0041 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0016 ppm	0.0013 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0006 ppm	-0.0165 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0014 ppm	0.0275 ppm
Recovery Percentage 1	-0.426 %	-0.060 %	-0.773 %	1.898 %	0.001 %	0.163 %
Concentration RSD	78.0 %	670.5 %	115.6 %	81.2 %	46.8 %	542.0 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0007 ppm	-0.0146 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	0.0008 ppm	-0.0171 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0002 ppm	0.0006 ppm	-0.0152 ppm	-0.0002 ppm	-0.0003 ppm	0.0003 ppm
Concentration per Run 3	0.0000 ppm	0.0006 ppm	-0.0114 ppm	-0.0002 ppm	0.0001 ppm	0.0004 ppm
Recovery Percentage 1	0.270 %	1.390 %	-0.729 %	-0.418 %	-1.102 %	0.540 %
Concentration RSD	402.0 %	14.7 %	19.8 %	122.9 %	208.1 %	68.5 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0007 ppm	0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0001 ppm
Concentration per Run 1	0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 2	0.0007 ppm	-0.0003 ppm	0.0000 ppm	0.0002 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 3	0.0010 ppm	0.0004 ppm	0.0000 ppm	0.0001 ppm	0.0006 ppm	0.0002 ppm
Recovery Percentage 1	0.139 %	0.144 %	-0.232 %	0.690 %	1.108 %	0.838 %
Concentration RSD	49.5 %	459.4 %	134.5 %	122.3 %	270.1 %	82.8 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.2763 %	101.7258 %	99.4103 %	101.7011 %	95.4193 %	100.9650 %
Concentration per Run 1	98.3411 %	101.6175 %	99.6113 %	99.9143 %	95.4947 %	100.7979 %
Concentration per Run 2	98.3557 %	101.8697 %	99.6654 %	102.3510 %	95.5629 %	101.1315 %
Concentration per Run 3	98.1320 %	101.6900 %	98.9543 %	102.8378 %	95.2004 %	100.9656 %
Recovery Percentage 1						4.876 %
Concentration RSD	0.1 %	0.1 %	0.4 %	1.5 %	0.2 %	0.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976278-1 WG1976278

Analysis started at: 9/26/2024 2:02:10 PM

Rack: 1
Vial: 60

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0004 ppm	0.0064 ppm	-0.0011 ppm	0.0014 ppm	0.0000 ppm	0.0000 ppm	0.0189 ppm
Concentration per Run 1	0.0004 ppm	0.0095 ppm	-0.0006 ppm	0.0019 ppm	-0.0001 ppm	0.0000 ppm	0.0197 ppm
Concentration per Run 2	0.0004 ppm	0.0018 ppm	-0.0013 ppm	0.0011 ppm	0.0000 ppm	0.0000 ppm	0.0174 ppm
Concentration per Run 3	0.0003 ppm	0.0080 ppm	-0.0015 ppm	0.0012 ppm	0.0001 ppm	0.0000 ppm	0.0194 ppm
Concentration RSD	17.1 %	64.1 %	43.1 %	30.4 %	1,083.4 %	40.0 %	6.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0003 ppm	0.0051 ppm	-0.0065 ppm	0.0010 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0056 ppm	-0.0105 ppm	0.0019 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0004 ppm	0.0047 ppm	-0.0055 ppm	0.0009 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0002 ppm	0.0049 ppm	-0.0034 ppm	0.0000 ppm
Concentration RSD	842.8 %	12.1 %	123.1 %	31.5 %	8.9 %	56.3 %	97.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0004 ppm	0.0004 ppm	-0.0075 ppm	-0.0005 ppm	-0.0007 ppm	0.0004 ppm	0.0019 ppm
Concentration per Run 1	0.0005 ppm	0.0003 ppm	-0.0051 ppm	-0.0006 ppm	-0.0005 ppm	0.0001 ppm	0.0021 ppm
Concentration per Run 2	0.0004 ppm	0.0005 ppm	-0.0111 ppm	-0.0004 ppm	-0.0007 ppm	0.0001 ppm	0.0007 ppm
Concentration per Run 3	0.0005 ppm	0.0003 ppm	-0.0063 ppm	-0.0005 ppm	-0.0008 ppm	0.0009 ppm	0.0030 ppm
Concentration RSD	17.8 %	27.3 %	42.8 %	21.1 %	26.6 %	124.2 %	58.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0104 ppm	0.0006 ppm	0.0000 ppm	0.0001 ppm	-0.0018 ppm	0.0000 ppm	0.0010 ppm
Concentration per Run 1	0.0091 ppm	0.0005 ppm	0.0000 ppm	0.0001 ppm	-0.0021 ppm	0.0000 ppm	0.0011 ppm
Concentration per Run 2	0.0104 ppm	0.0007 ppm	0.0000 ppm	0.0003 ppm	-0.0017 ppm	0.0000 ppm	0.0011 ppm
Concentration per Run 3	0.0118 ppm	0.0007 ppm	0.0000 ppm	-0.0001 ppm	-0.0017 ppm	-0.0001 ppm	0.0009 ppm
Concentration RSD	13.1 %	16.5 %	161.6 %	192.6 %	10.0 %	180.0 %	10.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.4774 %	102.4936 %	100.0838 %	109.9929 %	91.1547 %	102.4516 %	0.0009 ppm
Concentration per Run 1	98.7240 %	102.4495 %	100.0082 %	115.1238 %	91.3237 %	102.4519 %	0.0017 ppm
Concentration per Run 2	96.7196 %	102.3488 %	100.1165 %	108.1787 %	91.0972 %	102.3287 %	0.0005 ppm
Concentration per Run 3	96.9887 %	102.6825 %	100.1266 %	106.6761 %	91.0430 %	102.5743 %	0.0005 ppm
Concentration RSD	1.1 %	0.2 %	0.1 %	4.1 %	0.2 %	0.1 %	82.6 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976278-2 WG1976278

Analysis started at: 9/26/2024 2:08:55 PM

Rack: 2

Vial: 1

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0491 ppm	1.9368 ppm	0.1162 ppm	0.9888 ppm	1.9389 ppm	0.0489 ppm	9.6765 ppm
Concentration per Run 1	0.0489 ppm	1.9170 ppm	0.1174 ppm	1.0022 ppm	1.9211 ppm	0.0482 ppm	9.5322 ppm
Concentration per Run 2	0.0489 ppm	1.9534 ppm	0.1158 ppm	0.9814 ppm	1.9603 ppm	0.0495 ppm	9.7722 ppm
Concentration per Run 3	0.0493 ppm	1.9402 ppm	0.1155 ppm	0.9828 ppm	1.9354 ppm	0.0489 ppm	9.7251 ppm
Concentration RSD	0.4 %	1.0 %	0.9 %	1.2 %	1.0 %	1.3 %	1.3 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0524 ppm	0.5144 ppm	0.1871 ppm	0.2470 ppm	0.9968 ppm	10.2807 ppm	9.4288 ppm
Concentration per Run 1	0.0529 ppm	0.5212 ppm	0.1870 ppm	0.2454 ppm	0.9822 ppm	10.1770 ppm	9.4413 ppm
Concentration per Run 2	0.0521 ppm	0.5109 ppm	0.1863 ppm	0.2476 ppm	1.0097 ppm	10.3889 ppm	9.3758 ppm
Concentration per Run 3	0.0521 ppm	0.5110 ppm	0.1880 ppm	0.2478 ppm	0.9985 ppm	10.2762 ppm	9.4692 ppm
Concentration RSD	0.9 %	1.1 %	0.4 %	0.5 %	1.4 %	1.0 %	0.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4947 ppm	1.0147 ppm	9.9693 ppm	0.5032 ppm	0.5424 ppm	0.5179 ppm	0.1208 ppm
Concentration per Run 1	0.4888 ppm	1.0262 ppm	9.8672 ppm	0.5093 ppm	0.5486 ppm	0.5244 ppm	0.1227 ppm
Concentration per Run 2	0.5002 ppm	1.0085 ppm	10.0750 ppm	0.5001 ppm	0.5388 ppm	0.5138 ppm	0.1203 ppm
Concentration per Run 3	0.4951 ppm	1.0094 ppm	9.9655 ppm	0.5001 ppm	0.5398 ppm	0.5154 ppm	0.1195 ppm
Concentration RSD	1.1 %	1.0 %	1.0 %	1.1 %	1.0 %	1.1 %	1.4 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8036 ppm	0.9526 ppm	0.9178 ppm	0.9950 ppm	0.1169 ppm	0.4791 ppm	0.5042 ppm
Concentration per Run 1	0.8134 ppm	0.9627 ppm	0.9092 ppm	0.9951 ppm	0.1172 ppm	0.4792 ppm	0.5094 ppm
Concentration per Run 2	0.7976 ppm	0.9472 ppm	0.9280 ppm	0.9934 ppm	0.1164 ppm	0.4784 ppm	0.5012 ppm
Concentration per Run 3	0.7996 ppm	0.9480 ppm	0.9163 ppm	0.9966 ppm	0.1171 ppm	0.4799 ppm	0.5021 ppm
Concentration RSD	1.1 %	0.9 %	1.0 %	0.2 %	0.4 %	0.2 %	0.9 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.5569 %	99.5634 %	97.2471 %	108.5640 %	87.9328 %	100.7891 %	0.0000 ppm
Concentration per Run 1	101.0336 %	99.5965 %	95.9927 %	110.2350 %	86.7769 %	100.8596 %	0.0003 ppm
Concentration per Run 2	98.4051 %	99.5759 %	97.7724 %	107.4718 %	88.4389 %	100.8248 %	-0.0012 ppm
Concentration per Run 3	99.2319 %	99.5176 %	97.9762 %	107.9853 %	88.5827 %	100.6829 %	0.0007 ppm
Concentration RSD	1.4 %	0.0 %	1.1 %	1.4 %	1.1 %	0.1 %	2,631.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454653-02 WG1976278

Analysis started at: 9/26/2024 2:15:17 PM

Rack: 2

Vial: 2

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0052 ppm	-0.0011 ppm	0.0363 ppm	0.0002 ppm	0.0000 ppm	0.1028 ppm
Concentration per Run 1	-0.0001 ppm	0.0092 ppm	0.0003 ppm	0.0362 ppm	0.0002 ppm	0.0000 ppm	0.0972 ppm
Concentration per Run 2	0.0005 ppm	0.0073 ppm	-0.0024 ppm	0.0365 ppm	0.0001 ppm	0.0000 ppm	0.1087 ppm
Concentration per Run 3	0.0004 ppm	-0.0009 ppm	-0.0012 ppm	0.0362 ppm	0.0001 ppm	0.0000 ppm	0.1024 ppm
Concentration RSD	106.9 %	103.1 %	122.5 %	0.5 %	51.1 %	19.4 %	5.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0069 ppm	0.0376 ppm	0.0339 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0069 ppm	0.0550 ppm	0.0330 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0071 ppm	0.0316 ppm	0.0338 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0005 ppm	0.0066 ppm	0.0262 ppm	0.0349 ppm
Concentration RSD	1,074.9 %	45.4 %	120.0 %	14.2 %	3.7 %	40.7 %	2.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0006 ppm	0.0028 ppm	0.5403 ppm	0.0041 ppm	-0.0006 ppm	0.0004 ppm	0.0015 ppm
Concentration per Run 1	0.0006 ppm	0.0029 ppm	0.5211 ppm	0.0040 ppm	-0.0003 ppm	0.0004 ppm	0.0022 ppm
Concentration per Run 2	0.0006 ppm	0.0028 ppm	0.5536 ppm	0.0041 ppm	-0.0011 ppm	0.0000 ppm	0.0008 ppm
Concentration per Run 3	0.0004 ppm	0.0027 ppm	0.5461 ppm	0.0042 ppm	-0.0003 ppm	0.0006 ppm	0.0014 ppm
Concentration RSD	18.3 %	3.9 %	3.1 %	2.8 %	75.1 %	77.6 %	48.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0454 ppm	0.0006 ppm	0.0006 ppm	0.0002 ppm	-0.0020 ppm	0.0000 ppm	0.0272 ppm
Concentration per Run 1	0.0454 ppm	0.0009 ppm	0.0005 ppm	0.0003 ppm	-0.0012 ppm	0.0001 ppm	0.0272 ppm
Concentration per Run 2	0.0453 ppm	0.0004 ppm	0.0006 ppm	0.0001 ppm	-0.0030 ppm	0.0000 ppm	0.0272 ppm
Concentration per Run 3	0.0455 ppm	0.0006 ppm	0.0006 ppm	0.0003 ppm	-0.0019 ppm	-0.0001 ppm	0.0273 ppm
Concentration RSD	0.2 %	31.4 %	7.8 %	40.1 %	42.7 %	8,920.3 %	0.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.1282 %	103.4813 %	100.9892 %	105.5465 %	92.4917 %	104.0103 %	0.0012 ppm
Concentration per Run 1	100.1541 %	103.4516 %	101.3109 %	109.4618 %	92.9257 %	103.9899 %	0.0015 ppm
Concentration per Run 2	92.7354 %	103.3530 %	100.8540 %	102.7832 %	92.3469 %	103.9015 %	0.0020 ppm
Concentration per Run 3	98.4951 %	103.6393 %	100.8029 %	104.3945 %	92.2026 %	104.1396 %	0.0001 ppm
Concentration RSD	4.0 %	0.1 %	0.3 %	3.3 %	0.4 %	0.1 %	84.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976278-3 WG1976278

Analysis started at: 9/26/2024 2:22:02 PM

Rack: 2

Vial: 3

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0473 ppm	1.9123 ppm	0.1121 ppm	0.9742 ppm	1.9036 ppm	0.0477 ppm	9.6432 ppm
Concentration per Run 1	0.0473 ppm	1.9036 ppm	0.1117 ppm	0.9718 ppm	1.8931 ppm	0.0476 ppm	9.6175 ppm
Concentration per Run 2	0.0472 ppm	1.9134 ppm	0.1126 ppm	0.9759 ppm	1.9014 ppm	0.0474 ppm	9.6166 ppm
Concentration per Run 3	0.0474 ppm	1.9199 ppm	0.1120 ppm	0.9749 ppm	1.9162 ppm	0.0480 ppm	9.6955 ppm
Concentration RSD	0.3 %	0.4 %	0.4 %	0.2 %	0.6 %	0.7 %	0.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0506 ppm	0.4997 ppm	0.1822 ppm	0.2401 ppm	0.9855 ppm	10.1409 ppm	9.1399 ppm
Concentration per Run 1	0.0505 ppm	0.4989 ppm	0.1817 ppm	0.2400 ppm	0.9813 ppm	10.1100 ppm	9.1111 ppm
Concentration per Run 2	0.0506 ppm	0.4999 ppm	0.1815 ppm	0.2413 ppm	0.9803 ppm	10.1279 ppm	9.1043 ppm
Concentration per Run 3	0.0507 ppm	0.5004 ppm	0.1835 ppm	0.2390 ppm	0.9950 ppm	10.1848 ppm	9.2043 ppm
Concentration RSD	0.1 %	0.2 %	0.6 %	0.5 %	0.8 %	0.4 %	0.6 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4861 ppm	0.9910 ppm	10.3480 ppm	0.4922 ppm	0.5261 ppm	0.5020 ppm	0.1165 ppm
Concentration per Run 1	0.4838 ppm	0.9881 ppm	10.2955 ppm	0.4915 ppm	0.5250 ppm	0.5031 ppm	0.1160 ppm
Concentration per Run 2	0.4857 ppm	0.9917 ppm	10.3323 ppm	0.4925 ppm	0.5276 ppm	0.5018 ppm	0.1159 ppm
Concentration per Run 3	0.4888 ppm	0.9933 ppm	10.4163 ppm	0.4925 ppm	0.5258 ppm	0.5010 ppm	0.1175 ppm
Concentration RSD	0.5 %	0.3 %	0.6 %	0.1 %	0.2 %	0.2 %	0.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8090 ppm	0.9232 ppm	0.9036 ppm	0.9694 ppm	0.1147 ppm	0.4648 ppm	0.5131 ppm
Concentration per Run 1	0.8078 ppm	0.9228 ppm	0.8994 ppm	0.9678 ppm	0.1154 ppm	0.4636 ppm	0.5132 ppm
Concentration per Run 2	0.8108 ppm	0.9227 ppm	0.9019 ppm	0.9684 ppm	0.1142 ppm	0.4647 ppm	0.5129 ppm
Concentration per Run 3	0.8085 ppm	0.9241 ppm	0.9095 ppm	0.9720 ppm	0.1145 ppm	0.4663 ppm	0.5133 ppm
Concentration RSD	0.2 %	0.1 %	0.6 %	0.2 %	0.5 %	0.3 %	0.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.0715 %	100.2886 %	98.2537 %	107.7689 %	88.1397 %	101.6494 %	0.0005 ppm
Concentration per Run 1	99.8746 %	100.3989 %	98.5830 %	108.5488 %	88.5070 %	101.7082 %	-0.0005 ppm
Concentration per Run 2	98.7308 %	100.2125 %	98.1471 %	107.7520 %	87.9940 %	101.5522 %	-0.0005 ppm
Concentration per Run 3	98.6091 %	100.2543 %	98.0308 %	107.0058 %	87.9180 %	101.6878 %	0.0023 ppm
Concentration RSD	0.7 %	0.1 %	0.3 %	0.7 %	0.4 %	0.1 %	341.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976278-4 WG1976278

Analysis started at: 9/26/2024 2:28:24 PM

Rack: 2

Vial: 4

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0002 ppm	-0.0003 ppm	0.0360 ppm	0.0002 ppm	0.0000 ppm	0.1040 ppm
Concentration per Run 1	0.0003 ppm	-0.0011 ppm	-0.0002 ppm	0.0360 ppm	0.0002 ppm	0.0000 ppm	0.0999 ppm
Concentration per Run 2	0.0002 ppm	-0.0009 ppm	0.0005 ppm	0.0361 ppm	0.0001 ppm	0.0000 ppm	0.1021 ppm
Concentration per Run 3	0.0003 ppm	0.0025 ppm	-0.0012 ppm	0.0359 ppm	0.0002 ppm	0.0000 ppm	0.1100 ppm
Concentration RSD	29.6 %	1,160.5 %	293.3 %	0.2 %	22.4 %	453.9 %	5.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0005 ppm	0.0058 ppm	0.0273 ppm	0.0321 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0005 ppm	0.0064 ppm	0.0252 ppm	0.0315 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0006 ppm	0.0053 ppm	0.0419 ppm	0.0332 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0004 ppm	0.0057 ppm	0.0149 ppm	0.0316 ppm
Concentration RSD	53.4 %	43.3 %	11.6 %	16.7 %	9.2 %	49.9 %	3.0 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0003 ppm	0.0029 ppm	0.5374 ppm	0.0042 ppm	-0.0007 ppm	0.0009 ppm	0.0021 ppm
Concentration per Run 1	0.0003 ppm	0.0030 ppm	0.5333 ppm	0.0043 ppm	-0.0007 ppm	0.0015 ppm	0.0014 ppm
Concentration per Run 2	0.0003 ppm	0.0029 ppm	0.5367 ppm	0.0040 ppm	-0.0014 ppm	0.0004 ppm	0.0019 ppm
Concentration per Run 3	0.0003 ppm	0.0028 ppm	0.5423 ppm	0.0042 ppm	0.0000 ppm	0.0008 ppm	0.0029 ppm
Concentration RSD	7.0 %	4.5 %	0.9 %	4.0 %	100.9 %	65.4 %	37.0 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0446 ppm	0.0006 ppm	0.0006 ppm	0.0000 ppm	-0.0026 ppm	0.0000 ppm	0.0274 ppm
Concentration per Run 1	0.0443 ppm	0.0009 ppm	0.0006 ppm	0.0001 ppm	-0.0022 ppm	0.0000 ppm	0.0274 ppm
Concentration per Run 2	0.0448 ppm	0.0003 ppm	0.0006 ppm	0.0001 ppm	-0.0024 ppm	0.0001 ppm	0.0274 ppm
Concentration per Run 3	0.0446 ppm	0.0005 ppm	0.0006 ppm	0.0000 ppm	-0.0032 ppm	0.0000 ppm	0.0274 ppm
Concentration RSD	0.5 %	49.9 %	5.4 %	173.3 %	20.7 %	815.8 %	0.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.3544 %	103.8336 %	100.9986 %	107.8320 %	92.2521 %	104.4497 %	0.0006 ppm
Concentration per Run 1	100.4094 %	103.8470 %	101.0706 %	109.2736 %	92.3850 %	104.4331 %	0.0007 ppm
Concentration per Run 2	98.9733 %	104.0264 %	101.0045 %	107.5004 %	92.2248 %	104.5974 %	-0.0001 ppm
Concentration per Run 3	98.6806 %	103.6273 %	100.9206 %	106.7221 %	92.1466 %	104.3186 %	0.0014 ppm
Concentration RSD	0.9 %	0.2 %	0.1 %	1.2 %	0.1 %	0.1 %	112.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976694-1 WG1976694

Analysis started at: 9/26/2024 2:36:48 PM

Rack: 2

Vial: 5

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0057 ppm	0.0002 ppm	0.0029 ppm	0.0000 ppm	0.0000 ppm	0.0079 ppm
Concentration per Run 1	0.0003 ppm	0.0029 ppm	0.0005 ppm	0.0030 ppm	-0.0001 ppm	0.0000 ppm	0.0089 ppm
Concentration per Run 2	-0.0001 ppm	0.0115 ppm	0.0004 ppm	0.0029 ppm	0.0000 ppm	0.0000 ppm	0.0062 ppm
Concentration per Run 3	0.0003 ppm	0.0026 ppm	-0.0003 ppm	0.0027 ppm	0.0000 ppm	0.0000 ppm	0.0087 ppm
Concentration RSD	119.9 %	88.9 %	209.6 %	5.1 %	236.4 %	186.5 %	18.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0011 ppm	0.0018 ppm	0.0230 ppm	0.0013 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0011 ppm	0.0017 ppm	0.0214 ppm	0.0016 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0011 ppm	0.0014 ppm	0.0256 ppm	0.0014 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0012 ppm	0.0023 ppm	0.0222 ppm	0.0010 ppm
Concentration RSD	93.6 %	33.5 %	822.4 %	6.1 %	25.6 %	9.6 %	24.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0002 ppm	0.0005 ppm	126.3012 [SIC 500]	-0.0005 ppm	-0.0007 ppm	-0.0004 ppm	0.0042 ppm
Concentration per Run 1	0.0001 ppm	0.0004 ppm	126.9486 ppm	-0.0005 ppm	-0.0006 ppm	-0.0002 ppm	0.0050 ppm
Concentration per Run 2	0.0001 ppm	0.0006 ppm	126.5034 ppm	-0.0005 ppm	-0.0007 ppm	-0.0004 ppm	0.0044 ppm
Concentration per Run 3	0.0002 ppm	0.0004 ppm	125.4517 ppm	-0.0006 ppm	-0.0007 ppm	-0.0006 ppm	0.0033 ppm
Concentration RSD	33.6 %	18.7 %	0.6 %	17.2 %	7.9 %	42.0 %	20.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0321 ppm	0.0004 ppm	-0.0001 ppm	0.0001 ppm	-0.0041 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 1	0.0334 ppm	0.0007 ppm	0.0000 ppm	0.0002 ppm	-0.0040 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 2	0.0327 ppm	0.0003 ppm	-0.0001 ppm	-0.0001 ppm	-0.0040 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 3	0.0303 ppm	0.0003 ppm	-0.0001 ppm	0.0001 ppm	-0.0041 ppm	0.0001 ppm	0.0002 ppm
Concentration RSD	5.1 %	55.0 %	63.7 %	137.7 %	2.1 %	89.4 %	16.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.0328 %	94.8449 %	94.3286 %	106.4904 %	82.2824 %	96.2670 %	0.0011 ppm
Concentration per Run 1	97.8459 %	95.2237 %	94.2953 %	107.7297 %	82.0647 %	96.4254 %	0.0014 ppm
Concentration per Run 2	96.8123 %	94.7246 %	94.3332 %	106.1511 %	82.3691 %	96.3399 %	0.0015 ppm
Concentration per Run 3	96.4403 %	94.5865 %	94.3574 %	105.5904 %	82.4132 %	96.0356 %	0.0004 ppm
Concentration RSD	0.8 %	0.4 %	0.0 %	1.0 %	0.2 %	0.2 %	52.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976694-2 WG1976694
Analysis started at: 9/26/2024 2:43:41 PM
Rack: 2
Vial: 6

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0490 ppm	1.9536 ppm	0.1249 ppm	1.0233 ppm	1.9439 ppm	0.0497 ppm
Concentration per Run 1	0.0468 ppm	1.9493 ppm	0.1251 ppm	1.0253 ppm	1.9354 ppm	0.0496 ppm
Concentration per Run 2	0.0519 ppm	1.9568 ppm	0.1250 ppm	1.0223 ppm	1.9500 ppm	0.0496 ppm
Concentration per Run 3	0.0483 ppm	1.9546 ppm	0.1246 ppm	1.0225 ppm	1.9464 ppm	0.0498 ppm
Concentration RSD	5.3 %	0.2 %	0.2 %	0.2 %	0.4 %	0.1 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0540 ppm	0.5205 ppm	0.1913 ppm	0.2549 ppm	1.0095 ppm	10.4957 ppm
Concentration per Run 1	0.0540 ppm	0.5216 ppm	0.1819 ppm	0.2432 ppm	1.0077 ppm	10.4728 ppm
Concentration per Run 2	0.0539 ppm	0.5205 ppm	0.2028 ppm	0.2706 ppm	1.0124 ppm	10.5197 ppm
Concentration per Run 3	0.0540 ppm	0.5193 ppm	0.1892 ppm	0.2509 ppm	1.0084 ppm	10.4948 ppm
Concentration RSD	0.1 %	0.2 %	5.5 %	5.5 %	0.3 %	0.2 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4952 ppm	1.0615 ppm	133.1880 [SIC 500]	0.5081 ppm	0.5404 ppm	0.5390 ppm
Concentration per Run 1	0.4949 ppm	1.0620 ppm	134.7461 ppm	0.5089 ppm	0.5412 ppm	0.5399 ppm
Concentration per Run 2	0.4960 ppm	1.0607 ppm	133.2241 ppm	0.5077 ppm	0.5398 ppm	0.5382 ppm
Concentration per Run 3	0.4948 ppm	1.0617 ppm	131.5939 ppm	0.5077 ppm	0.5403 ppm	0.5388 ppm
Concentration RSD	0.1 %	0.1 %	1.2 %	0.1 %	0.1 %	0.2 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8570 ppm	0.9663 ppm	0.9308 ppm	1.0316 ppm	0.1115 ppm	0.4914 ppm
Concentration per Run 1	0.8579 ppm	0.9670 ppm	0.9271 ppm	0.9823 ppm	0.1118 ppm	0.4686 ppm
Concentration per Run 2	0.8560 ppm	0.9655 ppm	0.9334 ppm	1.0939 ppm	0.1107 ppm	0.5202 ppm
Concentration per Run 3	0.8571 ppm	0.9663 ppm	0.9320 ppm	1.0185 ppm	0.1118 ppm	0.4854 ppm
Concentration RSD	0.1 %	0.1 %	0.4 %	5.5 %	0.5 %	5.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.0160 %	91.8304 %	93.4252 %	104.8394 %	80.9192 %	94.0122 %
Concentration per Run 1	96.3735 %	95.6114 %	93.4960 %	104.8887 %	80.7257 %	98.0055 %
Concentration per Run 2	95.5349 %	85.8279 %	93.3927 %	104.7722 %	81.0944 %	98.2442 %
Concentration per Run 3	96.1396 %	94.0517 %	93.3869 %	104.8573 %	80.9375 %	94.7870 %
Concentration RSD	0.5 %	5.7 %	0.1 %	0.1 %	0.2 %	4.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454994-01 WG1976694

Analysis started at: 9/26/2024 2:50:12 PM

Rack: 2

Vial: 7

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0124 ppm	0.0008 ppm	0.0053 ppm	0.0014 ppm	0.0000 ppm	0.3464 ppm
Concentration per Run 1	0.0004 ppm	0.0129 ppm	0.0006 ppm	0.0057 ppm	0.0013 ppm	0.0000 ppm	0.3395 ppm
Concentration per Run 2	0.0002 ppm	0.0147 ppm	0.0010 ppm	0.0051 ppm	0.0013 ppm	0.0000 ppm	0.3501 ppm
Concentration per Run 3	0.0002 ppm	0.0095 ppm	0.0007 ppm	0.0050 ppm	0.0014 ppm	0.0000 ppm	0.3497 ppm
Concentration RSD	39.9 %	21.1 %	29.1 %	7.6 %	2.6 %	17.0 %	1.7 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0200 ppm	0.0883 ppm	0.0593 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0211 ppm	0.0980 ppm	0.0605 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0003 ppm	0.0187 ppm	0.0860 ppm	0.0597 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0203 ppm	0.0811 ppm	0.0578 ppm
Concentration RSD	349.6 %	46.4 %	1,716.6 %	32.7 %	6.0 %	9.8 %	2.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0012 ppm	0.0011 ppm	117.5245 [SIC 500]	-0.0004 ppm	-0.0008 ppm	-0.0001 ppm	0.0025 ppm
Concentration per Run 1	0.0013 ppm	0.0013 ppm	118.8104 ppm	-0.0004 ppm	-0.0007 ppm	0.0000 ppm	0.0025 ppm
Concentration per Run 2	0.0013 ppm	0.0011 ppm	115.9274 ppm	-0.0004 ppm	-0.0008 ppm	-0.0003 ppm	0.0025 ppm
Concentration per Run 3	0.0012 ppm	0.0011 ppm	117.8357 ppm	-0.0004 ppm	-0.0009 ppm	-0.0001 ppm	0.0025 ppm
Concentration RSD	5.0 %	11.7 %	1.2 %	3.8 %	14.3 %	133.4 %	1.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0413 ppm	0.0007 ppm	0.0005 ppm	0.0002 ppm	-0.0033 ppm	0.0001 ppm	0.0056 ppm
Concentration per Run 1	0.0417 ppm	0.0011 ppm	0.0005 ppm	0.0000 ppm	-0.0036 ppm	0.0002 ppm	0.0056 ppm
Concentration per Run 2	0.0397 ppm	0.0002 ppm	0.0005 ppm	0.0003 ppm	-0.0026 ppm	0.0001 ppm	0.0056 ppm
Concentration per Run 3	0.0424 ppm	0.0007 ppm	0.0004 ppm	0.0002 ppm	-0.0037 ppm	-0.0001 ppm	0.0057 ppm
Concentration RSD	3.5 %	64.1 %	11.8 %	100.5 %	19.4 %	275.1 %	0.7 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.6977 %	95.3560 %	94.0424 %	106.3152 %	82.4806 %	97.3116 %	0.0010 ppm
Concentration per Run 1	97.1387 %	95.3063 %	94.2853 %	107.7873 %	82.6708 %	97.2268 %	0.0003 ppm
Concentration per Run 2	96.6880 %	95.4709 %	94.0595 %	106.0772 %	82.5563 %	97.4577 %	0.0022 ppm
Concentration per Run 3	96.2664 %	95.2906 %	93.7825 %	105.0811 %	82.2148 %	97.2503 %	0.0004 ppm
Concentration RSD	0.5 %	0.1 %	0.3 %	1.3 %	0.3 %	0.1 %	111.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976694-3 WG1976694
Analysis started at: 9/26/2024 2:57:03 PM
Rack: 2
Vial: 8

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0476 ppm	1.9238 ppm	0.1235 ppm	1.0046 ppm	1.9066 ppm	0.0483 ppm
Concentration per Run 1	0.0479 ppm	1.8803 ppm	0.1237 ppm	1.0047 ppm	1.8691 ppm	0.0473 ppm
Concentration per Run 2	0.0474 ppm	1.9376 ppm	0.1230 ppm	1.0042 ppm	1.9194 ppm	0.0486 ppm
Concentration per Run 3	0.0476 ppm	1.9536 ppm	0.1238 ppm	1.0048 ppm	1.9312 ppm	0.0490 ppm
Concentration RSD	0.5 %	2.0 %	0.3 %	0.0 %	1.7 %	1.8 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0536 ppm	0.5192 ppm	0.1851 ppm	0.2465 ppm	1.0021 ppm	10.2592 ppm
Concentration per Run 1	0.0537 ppm	0.5201 ppm	0.1853 ppm	0.2465 ppm	0.9844 ppm	10.0491 ppm
Concentration per Run 2	0.0537 ppm	0.5199 ppm	0.1846 ppm	0.2469 ppm	1.0083 ppm	10.3399 ppm
Concentration per Run 3	0.0534 ppm	0.5177 ppm	0.1854 ppm	0.2462 ppm	1.0135 ppm	10.3885 ppm
Concentration RSD	0.3 %	0.3 %	0.2 %	0.2 %	1.5 %	1.8 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4865 ppm	1.0521 ppm	122.2134 [SIC 500]	0.5051 ppm	0.5360 ppm	0.5358 ppm
Concentration per Run 1	0.4762 ppm	1.0513 ppm	121.4415 ppm	0.5058 ppm	0.5362 ppm	0.5350 ppm
Concentration per Run 2	0.4910 ppm	1.0532 ppm	121.3516 ppm	0.5058 ppm	0.5374 ppm	0.5345 ppm
Concentration per Run 3	0.4925 ppm	1.0517 ppm	123.8470 ppm	0.5038 ppm	0.5343 ppm	0.5378 ppm
Concentration RSD	1.9 %	0.1 %	1.2 %	0.2 %	0.3 %	0.3 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.8563 ppm	0.9570 ppm	0.9069 ppm	0.9948 ppm	0.1104 ppm	0.4765 ppm
Concentration per Run 1	0.8538 ppm	0.9588 ppm	0.8886 ppm	0.9931 ppm	0.1110 ppm	0.4752 ppm
Concentration per Run 2	0.8575 ppm	0.9587 ppm	0.9131 ppm	0.9953 ppm	0.1101 ppm	0.4760 ppm
Concentration per Run 3	0.8576 ppm	0.9535 ppm	0.9188 ppm	0.9961 ppm	0.1100 ppm	0.4784 ppm
Concentration RSD	0.3 %	0.3 %	1.8 %	0.2 %	0.5 %	0.3 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.8773 %	94.9088 %	93.8262 %	106.9752 %	81.0117 %	96.7137 %
Concentration per Run 1	97.5399 %	94.9836 %	93.8909 %	109.1863 %	81.1492 %	96.8566 %
Concentration per Run 2	96.9731 %	94.8516 %	93.7580 %	106.5579 %	81.0130 %	96.5950 %
Concentration per Run 3	96.1188 %	94.8911 %	93.8297 %	105.1815 %	80.8730 %	96.6894 %
Concentration RSD	0.7 %	0.1 %	0.1 %	1.9 %	0.2 %	0.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1976694-4 WG1976694

Analysis started at: 9/26/2024 3:03:34 PM

Rack: 2

Vial: 9

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0164 ppm	0.0001 ppm	0.0055 ppm	0.0013 ppm	0.0000 ppm	0.3480 ppm
Concentration per Run 1	0.0003 ppm	0.0186 ppm	0.0006 ppm	0.0056 ppm	0.0012 ppm	0.0000 ppm	0.3487 ppm
Concentration per Run 2	0.0003 ppm	0.0147 ppm	-0.0005 ppm	0.0057 ppm	0.0013 ppm	0.0000 ppm	0.3480 ppm
Concentration per Run 3	0.0005 ppm	0.0160 ppm	0.0002 ppm	0.0052 ppm	0.0014 ppm	0.0000 ppm	0.3471 ppm
Concentration RSD	41.4 %	12.1 %	500.1 %	5.3 %	5.5 %	271.6 %	0.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0003 ppm	0.0194 ppm	0.1115 ppm	0.0595 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0003 ppm	0.0191 ppm	0.1168 ppm	0.0600 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0002 ppm	0.0188 ppm	0.0903 ppm	0.0612 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0004 ppm	0.0204 ppm	0.1273 ppm	0.0573 ppm
Concentration RSD	323.1 %	24.4 %	4,749.3 %	35.2 %	4.3 %	17.1 %	3.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0013 ppm	0.0012 ppm	116.5334 [SIC 500]	-0.0005 ppm	-0.0008 ppm	0.0006 ppm	0.0034 ppm
Concentration per Run 1	0.0012 ppm	0.0015 ppm	118.8593 ppm	-0.0003 ppm	-0.0010 ppm	0.0018 ppm	0.0023 ppm
Concentration per Run 2	0.0014 ppm	0.0012 ppm	115.4466 ppm	-0.0007 ppm	-0.0012 ppm	0.0007 ppm	0.0043 ppm
Concentration per Run 3	0.0013 ppm	0.0010 ppm	115.2944 ppm	-0.0006 ppm	-0.0003 ppm	-0.0007 ppm	0.0037 ppm
Concentration RSD	7.3 %	21.8 %	1.7 %	40.2 %	58.0 %	215.6 %	29.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0396 ppm	0.0010 ppm	0.0005 ppm	0.0000 ppm	-0.0030 ppm	0.0001 ppm	0.0057 ppm
Concentration per Run 1	0.0404 ppm	0.0015 ppm	0.0004 ppm	-0.0003 ppm	-0.0018 ppm	0.0001 ppm	0.0056 ppm
Concentration per Run 2	0.0397 ppm	0.0011 ppm	0.0005 ppm	0.0000 ppm	-0.0035 ppm	0.0001 ppm	0.0058 ppm
Concentration per Run 3	0.0388 ppm	0.0005 ppm	0.0006 ppm	0.0002 ppm	-0.0037 ppm	0.0001 ppm	0.0056 ppm
Concentration RSD	1.9 %	47.1 %	12.3 %	1,036.8 %	35.0 %	32.6 %	1.7 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.4573 %	95.1722 %	93.8345 %	104.5586 %	81.8366 %	96.9920 %	0.0007 ppm
Concentration per Run 1	96.7993 %	95.2917 %	93.9042 %	104.5234 %	81.9092 %	97.0827 %	0.0012 ppm
Concentration per Run 2	96.3818 %	95.0136 %	93.7589 %	104.6677 %	81.7470 %	96.8575 %	0.0008 ppm
Concentration per Run 3	96.1907 %	95.2114 %	93.8404 %	104.4847 %	81.8534 %	97.0359 %	0.0002 ppm
Concentration RSD	0.3 %	0.2 %	0.1 %	0.1 %	0.1 %	0.1 %	66.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 3:10:22 PM
Rack: 0
Vial: 3

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5089 ppm	0.5376 ppm	0.4857 ppm	0.5196 ppm	0.5219 ppm	0.5266 ppm
Concentration per Run 1	0.5106 ppm	0.5498 ppm	0.4871 ppm	0.5215 ppm	0.5312 ppm	0.5552 ppm
Concentration per Run 2	0.5079 ppm	0.5274 ppm	0.4839 ppm	0.5186 ppm	0.5115 ppm	0.5148 ppm
Concentration per Run 3	0.5082 ppm	0.5357 ppm	0.4862 ppm	0.5186 ppm	0.5232 ppm	0.5275 ppm
Recovery Percentage 1	101.778 %	107.524 %	97.145 %	103.912 %	104.389 %	105.322 %
Concentration RSD	0.3 %	2.1 %	0.3 %	0.3 %	1.9 %	2.2 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4864 ppm	0.5280 ppm	0.4808 ppm	0.5004 ppm	0.5493 ppm	5.6376 ppm
Concentration per Run 1	0.4853 ppm	0.5285 ppm	0.4816 ppm	0.5016 ppm	0.5599 ppm	5.7505 ppm
Concentration per Run 2	0.4868 ppm	0.5271 ppm	0.4805 ppm	0.4994 ppm	0.5360 ppm	5.5031 ppm
Concentration per Run 3	0.4872 ppm	0.5283 ppm	0.4803 ppm	0.5002 ppm	0.5521 ppm	5.6590 ppm
Recovery Percentage 1	97.282 %	105.594 %	96.160 %	100.078 %	109.869 %	112.751 %
Concentration RSD	0.2 %	0.1 %	0.1 %	0.2 %	2.2 %	2.2 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5313 ppm	0.5084 ppm	10.4083 ppm	0.5120 ppm	0.5228 ppm	0.5286 ppm
Concentration per Run 1	0.5434 ppm	0.5085 ppm	10.6053 ppm	0.5126 ppm	0.5225 ppm	0.5315 ppm
Concentration per Run 2	0.5186 ppm	0.5081 ppm	10.1780 ppm	0.5114 ppm	0.5226 ppm	0.5264 ppm
Concentration per Run 3	0.5320 ppm	0.5086 ppm	10.4415 ppm	0.5119 ppm	0.5233 ppm	0.5280 ppm
Recovery Percentage 1	106.265 %	101.685 %	104.083 %	102.397 %	104.555 %	105.723 %
Concentration RSD	2.3 %	0.1 %	2.1 %	0.1 %	0.1 %	0.5 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.8083 ppm	0.4857 ppm	0.5059 ppm	0.5175 ppm	0.5231 ppm	0.4888 ppm
Concentration per Run 1	5.8369 ppm	0.4849 ppm	0.5149 ppm	0.5193 ppm	0.5242 ppm	0.4893 ppm
Concentration per Run 2	5.7951 ppm	0.4857 ppm	0.4957 ppm	0.5171 ppm	0.5218 ppm	0.4889 ppm
Concentration per Run 3	5.7927 ppm	0.4864 ppm	0.5072 ppm	0.5163 ppm	0.5233 ppm	0.4883 ppm
Recovery Percentage 1	110.634 %	97.134 %	101.186 %	103.510 %	104.618 %	97.764 %
Concentration RSD	0.4 %	0.1 %	1.9 %	0.3 %	0.2 %	0.1 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	96.9068 %	100.4450 %	98.1450 %	103.6126 %	91.1129 %	101.4330 %
Concentration per Run 1	96.4479 %	100.2069 %	97.9385 %	101.0994 %	90.7932 %	101.0261 %
Concentration per Run 2	98.6533 %	100.5146 %	98.3030 %	106.1028 %	91.3374 %	101.5254 %
Concentration per Run 3	95.6191 %	100.6135 %	98.1936 %	103.6357 %	91.2081 %	101.7476 %
Recovery Percentage 1						104.096 %
Concentration RSD	1.6 %	0.2 %	0.2 %	2.4 %	0.3 %	0.4 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 3:16:47 PM
Rack: 0
Vial: 4

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0004 ppm	0.0023 ppm	-0.0003 ppm	0.0012 ppm	0.0000 ppm	0.0010 ppm
Concentration per Run 1	0.0002 ppm	0.0031 ppm	0.0003 ppm	0.0014 ppm	0.0000 ppm	0.0011 ppm
Concentration per Run 2	0.0005 ppm	0.0028 ppm	-0.0006 ppm	0.0010 ppm	0.0000 ppm	0.0006 ppm
Concentration per Run 3	0.0007 ppm	0.0009 ppm	-0.0007 ppm	0.0011 ppm	0.0000 ppm	0.0014 ppm
Recovery Percentage 1	6.373 %	0.000 %	-6.650 %	4.005 %	-0.262 %	0.565 %
Concentration RSD	58.8 %	52.5 %	167.5 %	17.0 %	44.8 %	63.2 %

Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0018 ppm	0.0177 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0013 ppm	0.0149 ppm	0.0012 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0023 ppm	0.0142 ppm	-0.0013 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0019 ppm	0.0239 ppm	-0.0004 ppm
Recovery Percentage 1	-0.232 %	-0.087 %	-0.441 %	2.242 %	0.001 %	0.708 %
Concentration RSD	110.9 %	266.4 %	384.2 %	35.2 %	25.3 %	30.4 %

Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	-0.0001 ppm	0.0007 ppm	0.0056 ppm	-0.0001 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 1	-0.0001 ppm	0.0009 ppm	0.0101 ppm	0.0000 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 2	-0.0001 ppm	0.0005 ppm	0.0050 ppm	-0.0002 ppm	-0.0008 ppm	-0.0001 ppm
Concentration per Run 3	-0.0002 ppm	0.0005 ppm	0.0017 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Recovery Percentage 1	-1.271 %	1.305 %	0.280 %	-0.266 %	-2.692 %	0.118 %
Concentration RSD	29.8 %	31.0 %	75.7 %	123.5 %	169.9 %	344.5 %

Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0010 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	-0.0006 ppm	0.0001 ppm
Concentration per Run 1	0.0012 ppm	0.0009 ppm	-0.0001 ppm	0.0000 ppm	-0.0007 ppm	0.0001 ppm
Concentration per Run 2	0.0007 ppm	-0.0002 ppm	-0.0001 ppm	-0.0001 ppm	-0.0003 ppm	0.0002 ppm
Concentration per Run 3	0.0011 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0007 ppm	0.0000 ppm
Recovery Percentage 1	0.198 %	0.100 %	-0.956 %	-0.429 %	-2.807 %	0.807 %
Concentration RSD	25.4 %	1,519.0 %	6.1 %	104.7 %	38.7 %	122.4 %

Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.3001 %	101.3618 %	98.9004 %	101.8601 %	94.5920 %	100.6469 %
Concentration per Run 1	98.5980 %	101.4335 %	98.7229 %	99.5704 %	94.4979 %	100.6511 %
Concentration per Run 2	98.4685 %	101.2601 %	98.8643 %	102.8290 %	94.3734 %	100.6360 %
Concentration per Run 3	97.8337 %	101.3918 %	99.1140 %	103.1808 %	94.9047 %	100.6535 %
Recovery Percentage 1						5.101 %
Concentration RSD	0.4 %	0.1 %	0.2 %	2.0 %	0.3 %	0.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-1 WG1975631

Analysis started at: 9/26/2024 3:31:54 PM

Rack: 2
Vial: 10

Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0038 ppm	0.0000 ppm	0.0010 ppm	0.0000 ppm	0.0062 ppm
Concentration per Run 1	0.0002 ppm	0.0011 ppm	-0.0004 ppm	0.0013 ppm	0.0000 ppm	0.0040 ppm
Concentration per Run 2	0.0003 ppm	0.0030 ppm	0.0007 ppm	0.0008 ppm	0.0000 ppm	0.0075 ppm
Concentration per Run 3	0.0004 ppm	0.0073 ppm	-0.0003 ppm	0.0009 ppm	0.0000 ppm	0.0071 ppm
Concentration RSD	38.1 %	83.4 %	3,388.8 %	23.0 %	54.7 %	51.8 %
Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0003 ppm	0.0020 ppm	0.0053 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0004 ppm	0.0025 ppm	-0.0084 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0003 ppm	0.0002 ppm	0.0019 ppm	-0.0047 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0003 ppm	0.0015 ppm	0.0290 ppm
Concentration RSD	49.8 %	111.6 %	24.4 %	31.0 %	23.0 %	388.9 %
Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0002 ppm	-0.0035 ppm	0.0000 ppm	0.0000 ppm	-0.0005 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	-0.0029 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 2	-0.0001 ppm	0.0001 ppm	-0.0039 ppm	0.0001 ppm	0.0002 ppm	-0.0007 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	-0.0038 ppm	0.0000 ppm	0.0001 ppm	-0.0008 ppm
Concentration RSD	99.9 %	26.1 %	14.8 %	168.6 %	465.1 %	81.7 %
Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0034 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm
Concentration per Run 1	0.0034 ppm	-0.0003 ppm	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	-0.0002 ppm
Concentration per Run 2	0.0028 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm	-0.0005 ppm	-0.0001 ppm
Concentration per Run 3	0.0040 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0006 ppm	0.0000 ppm
Concentration RSD	17.6 %	41.6 %	127.9 %	101.8 %	410.7 %	154.3 %
Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.3747 %	101.6559 %	98.8951 %	108.5513 %	95.9709 %	102.6778 %
Concentration per Run 1	97.0473 %	101.5471 %	98.9123 %	107.3986 %	96.0239 %	102.8088 %
Concentration per Run 2	97.7246 %	101.9453 %	98.9905 %	109.4905 %	95.9713 %	102.9488 %
Concentration per Run 3	97.3524 %	101.4752 %	98.7824 %	108.7648 %	95.9176 %	102.2758 %
Concentration RSD	0.3 %	0.2 %	0.1 %	1.0 %	0.1 %	0.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-2 WG1975631
Analysis started at: 9/26/2024 3:38:39 PM
Rack: 2
Vial: 11

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0519 ppm	2.1143 ppm	0.1158 ppm	0.9780 ppm	2.1021 ppm	0.0524 ppm	10.1833 ppm
Concentration per Run 1	0.0524 ppm	2.1716 ppm	0.1158 ppm	0.9802 ppm	2.1647 ppm	0.0538 ppm	10.4737 ppm
Concentration per Run 2	0.0522 ppm	2.0893 ppm	0.1160 ppm	0.9756 ppm	2.0801 ppm	0.0520 ppm	10.1031 ppm
Concentration per Run 3	0.0511 ppm	2.0818 ppm	0.1158 ppm	0.9784 ppm	2.0615 ppm	0.0514 ppm	9.9731 ppm
Concentration RSD	1.3 %	2.4 %	0.1 %	0.2 %	2.6 %	2.4 %	2.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0520 ppm	0.5148 ppm	0.1891 ppm	0.2553 ppm	1.0665 ppm	10.9134 ppm	9.5186 ppm
Concentration per Run 1	0.0522 ppm	0.5162 ppm	0.1908 ppm	0.2573 ppm	1.0950 ppm	11.2491 ppm	9.6077 ppm
Concentration per Run 2	0.0519 ppm	0.5140 ppm	0.1903 ppm	0.2577 ppm	1.0578 ppm	10.7791 ppm	9.5860 ppm
Concentration per Run 3	0.0519 ppm	0.5142 ppm	0.1863 ppm	0.2509 ppm	1.0466 ppm	10.7120 ppm	9.3621 ppm
Concentration RSD	0.3 %	0.2 %	1.3 %	1.5 %	2.4 %	2.7 %	1.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5372 ppm	0.9629 ppm	10.5880 ppm	0.5047 ppm	0.5385 ppm	0.5238 ppm	0.1216 ppm
Concentration per Run 1	0.5533 ppm	0.9609 ppm	10.9118 ppm	0.5063 ppm	0.5388 ppm	0.5248 ppm	0.1213 ppm
Concentration per Run 2	0.5325 ppm	0.9617 ppm	10.4873 ppm	0.5043 ppm	0.5375 ppm	0.5206 ppm	0.1213 ppm
Concentration per Run 3	0.5257 ppm	0.9662 ppm	10.3650 ppm	0.5034 ppm	0.5391 ppm	0.5259 ppm	0.1224 ppm
Concentration RSD	2.7 %	0.3 %	2.7 %	0.3 %	0.2 %	0.5 %	0.5 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.7666 ppm	0.9220 ppm	0.9719 ppm	0.9849 ppm	0.1198 ppm	0.4863 ppm	0.5011 ppm
Concentration per Run 1	0.7694 ppm	0.9229 ppm	1.0011 ppm	0.9938 ppm	0.1202 ppm	0.4903 ppm	0.5028 ppm
Concentration per Run 2	0.7644 ppm	0.9210 ppm	0.9618 ppm	0.9926 ppm	0.1206 ppm	0.4899 ppm	0.5010 ppm
Concentration per Run 3	0.7661 ppm	0.9220 ppm	0.9526 ppm	0.9682 ppm	0.1184 ppm	0.4786 ppm	0.4996 ppm
Concentration RSD	0.3 %	0.1 %	2.6 %	1.5 %	1.0 %	1.4 %	0.3 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.4386 %	99.8558 %	96.4742 %	103.8577 %	89.1063 %	100.8335 %	-0.0007 ppm
Concentration per Run 1	99.5427 %	99.1977 %	96.6246 %	101.3044 %	88.9685 %	99.9857 %	-0.0010 ppm
Concentration per Run 2	99.3080 %	99.3163 %	96.6686 %	104.5645 %	89.3380 %	100.1532 %	-0.0009 ppm
Concentration per Run 3	99.4651 %	101.0535 %	96.1295 %	105.7043 %	89.0125 %	102.3616 %	-0.0003 ppm
Concentration RSD	0.1 %	1.0 %	0.3 %	2.2 %	0.2 %	1.3 %	46.2 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454050-01 WG1975631

Analysis started at: 9/26/2024 3:45:03 PM

Rack: 2
Vial: 12

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0065 ppm	-0.0006 ppm	0.0142 ppm	0.0087 ppm	0.0000 ppm	13.4875 ppm
Concentration per Run 1	0.0002 ppm	0.0069 ppm	-0.0009 ppm	0.0143 ppm	0.0088 ppm	0.0000 ppm	13.7076 ppm
Concentration per Run 2	0.0003 ppm	0.0075 ppm	0.0000 ppm	0.0143 ppm	0.0087 ppm	0.0000 ppm	13.4229 ppm
Concentration per Run 3	0.0002 ppm	0.0051 ppm	-0.0011 ppm	0.0140 ppm	0.0086 ppm	0.0000 ppm	13.3321 ppm
Concentration RSD	33.9 %	18.5 %	92.5 %	1.4 %	1.1 %	196.8 %	1.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0006 ppm	0.0010 ppm	0.0173 ppm	1.0958 ppm	4.8875 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0011 ppm	0.0175 ppm	1.1092 ppm	4.9259 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0007 ppm	0.0009 ppm	0.0177 ppm	1.0918 ppm	4.8937 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0008 ppm	0.0009 ppm	0.0165 ppm	1.0863 ppm	4.8429 ppm
Concentration RSD	319.9 %	216.7 %	42.8 %	12.6 %	3.7 %	1.1 %	0.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	0.0015 ppm	7.0689 ppm	0.0002 ppm	-0.0018 ppm	0.0005 ppm	0.0013 ppm
Concentration per Run 1	0.0004 ppm	0.0018 ppm	7.1717 ppm	0.0001 ppm	-0.0019 ppm	0.0007 ppm	0.0016 ppm
Concentration per Run 2	0.0005 ppm	0.0015 ppm	7.0696 ppm	0.0002 ppm	-0.0022 ppm	-0.0001 ppm	0.0005 ppm
Concentration per Run 3	0.0005 ppm	0.0013 ppm	6.9655 ppm	0.0002 ppm	-0.0014 ppm	0.0009 ppm	0.0018 ppm
Concentration RSD	16.6 %	16.0 %	1.5 %	32.1 %	21.9 %	110.1 %	52.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	10.1346 ppm	0.0013 ppm	0.0811 ppm	0.0002 ppm	-0.0006 ppm	0.0001 ppm	0.0019 ppm
Concentration per Run 1	10.1220 ppm	0.0014 ppm	0.0822 ppm	0.0002 ppm	-0.0007 ppm	0.0002 ppm	0.0019 ppm
Concentration per Run 2	10.1384 ppm	0.0009 ppm	0.0810 ppm	0.0003 ppm	-0.0007 ppm	-0.0001 ppm	0.0019 ppm
Concentration per Run 3	10.1434 ppm	0.0016 ppm	0.0803 ppm	0.0002 ppm	-0.0003 ppm	0.0001 ppm	0.0020 ppm
Concentration RSD	0.1 %	26.7 %	1.2 %	8.7 %	44.0 %	202.4 %	3.1 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0575 %	99.8764 %	97.5711 %	100.3550 %	92.2643 %	99.6741 %	0.0012 ppm
Concentration per Run 1	101.2549 %	99.7467 %	97.9821 %	99.1140 %	92.3125 %	99.1929 %	0.0020 ppm
Concentration per Run 2	99.8935 %	99.9633 %	97.5189 %	100.6275 %	92.2925 %	99.5617 %	0.0015 ppm
Concentration per Run 3	99.0241 %	99.9190 %	97.2122 %	101.3235 %	92.1879 %	100.2679 %	0.0002 ppm
Concentration RSD	1.1 %	0.1 %	0.4 %	1.1 %	0.1 %	0.5 %	75.3 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-3 WG1975631

Analysis started at: 9/26/2024 3:51:44 PM

Rack: 2
Vial: 13

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0509 ppm	2.1704 ppm	0.1110 ppm	0.9672 ppm	2.1584 ppm	0.0541 ppm	23.5500 ppm
Concentration per Run 1	0.0482 ppm	2.2997 ppm	0.1102 ppm	0.9608 ppm	2.2804 ppm	0.0571 ppm	25.0053 ppm
Concentration per Run 2	0.0532 ppm	2.1164 ppm	0.1127 ppm	0.9809 ppm	2.1158 ppm	0.0530 ppm	23.0109 ppm
Concentration per Run 3	0.0513 ppm	2.0951 ppm	0.1101 ppm	0.9599 ppm	2.0791 ppm	0.0522 ppm	22.6339 ppm
Concentration RSD	5.0 %	5.2 %	1.3 %	1.2 %	5.0 %	4.9 %	5.4 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0511 ppm	0.5032 ppm	0.1845 ppm	0.2496 ppm	1.1040 ppm	11.9632 ppm	13.7275 ppm
Concentration per Run 1	0.0508 ppm	0.5001 ppm	0.1733 ppm	0.2361 ppm	1.1655 ppm	12.6544 ppm	12.9194 ppm
Concentration per Run 2	0.0518 ppm	0.5104 ppm	0.1932 ppm	0.2604 ppm	1.0799 ppm	11.7119 ppm	14.3537 ppm
Concentration per Run 3	0.0507 ppm	0.4992 ppm	0.1871 ppm	0.2524 ppm	1.0666 ppm	11.5233 ppm	13.9092 ppm
Concentration RSD	1.2 %	1.2 %	5.5 %	5.0 %	4.9 %	5.1 %	5.3 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5496 ppm	0.9065 ppm	17.5192 ppm	0.4923 ppm	0.5078 ppm	0.5144 ppm	0.1192 ppm
Concentration per Run 1	0.5827 ppm	0.8935 ppm	18.5323 ppm	0.4892 ppm	0.5052 ppm	0.5099 ppm	0.1196 ppm
Concentration per Run 2	0.5392 ppm	0.9197 ppm	17.1549 ppm	0.4987 ppm	0.5144 ppm	0.5210 ppm	0.1212 ppm
Concentration per Run 3	0.5270 ppm	0.9064 ppm	16.8705 ppm	0.4892 ppm	0.5037 ppm	0.5124 ppm	0.1169 ppm
Concentration RSD	5.3 %	1.4 %	5.1 %	1.1 %	1.1 %	1.1 %	1.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	11.2303 ppm	0.8764 ppm	1.0433 ppm	0.9317 ppm	0.1129 ppm	0.4716 ppm	0.4965 ppm
Concentration per Run 1	11.1707 ppm	0.8683 ppm	1.1018 ppm	0.8791 ppm	0.1122 ppm	0.4441 ppm	0.4930 ppm
Concentration per Run 2	11.3922 ppm	0.8878 ppm	1.0231 ppm	0.9737 ppm	0.1145 ppm	0.4932 ppm	0.5024 ppm
Concentration per Run 3	11.1281 ppm	0.8731 ppm	1.0052 ppm	0.9422 ppm	0.1119 ppm	0.4775 ppm	0.4942 ppm
Concentration RSD	1.3 %	1.2 %	4.9 %	5.2 %	1.3 %	5.3 %	1.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.2181 %	100.0256 %	95.7522 %	99.2460 %	88.1983 %	100.8611 %	0.0008 ppm
Concentration per Run 1	95.9827 %	105.5522 %	96.4656 %	93.7141 %	88.5609 %	106.1454 %	0.0017 ppm
Concentration per Run 2	99.6223 %	95.4546 %	94.2568 %	101.2925 %	87.0765 %	96.7403 %	0.0000 ppm
Concentration per Run 3	99.0493 %	99.0700 %	96.5341 %	102.7315 %	88.9575 %	99.6976 %	0.0008 ppm
Concentration RSD	2.0 %	5.1 %	1.4 %	4.9 %	1.1 %	4.8 %	100.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-4 WG1975631
Analysis started at: 9/26/2024 3:58:06 PM
Rack: 2
Vial: 14

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0089 ppm	-0.0012 ppm	0.0145 ppm	0.0089 ppm	0.0000 ppm	13.8296 ppm
Concentration per Run 1	0.0005 ppm	0.0057 ppm	-0.0014 ppm	0.0147 ppm	0.0095 ppm	0.0001 ppm	14.5938 ppm
Concentration per Run 2	0.0001 ppm	0.0140 ppm	-0.0015 ppm	0.0146 ppm	0.0086 ppm	0.0000 ppm	13.5939 ppm
Concentration per Run 3	0.0001 ppm	0.0070 ppm	-0.0008 ppm	0.0142 ppm	0.0085 ppm	0.0000 ppm	13.3011 ppm
Concentration RSD	118.1 %	50.1 %	30.6 %	1.8 %	6.2 %	126.9 %	4.9 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0001 ppm	0.0005 ppm	0.0011 ppm	0.0194 ppm	1.1245 ppm	4.8002 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0007 ppm	0.0205 ppm	1.1991 ppm	4.8322 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0012 ppm	0.0191 ppm	1.0826 ppm	4.7853 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0004 ppm	0.0010 ppm	0.0186 ppm	1.0919 ppm	4.7830 ppm
Concentration RSD	1,524.1 %	55.8 %	47.3 %	8.5 %	5.1 %	5.8 %	0.6 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0005 ppm	0.0019 ppm	7.2591 ppm	0.0003 ppm	-0.0022 ppm	0.0010 ppm	0.0007 ppm
Concentration per Run 1	0.0007 ppm	0.0021 ppm	7.6839 ppm	0.0003 ppm	-0.0019 ppm	0.0008 ppm	0.0022 ppm
Concentration per Run 2	0.0003 ppm	0.0018 ppm	7.1218 ppm	0.0004 ppm	-0.0025 ppm	0.0011 ppm	0.0014 ppm
Concentration per Run 3	0.0006 ppm	0.0017 ppm	6.9716 ppm	0.0000 ppm	-0.0021 ppm	0.0009 ppm	-0.0015 ppm
Concentration RSD	36.5 %	12.6 %	5.2 %	78.4 %	14.4 %	17.2 %	285.1 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	10.1221 ppm	0.0019 ppm	0.0828 ppm	0.0005 ppm	-0.0007 ppm	0.0000 ppm	0.0018 ppm
Concentration per Run 1	10.2063 ppm	0.0022 ppm	0.0874 ppm	0.0006 ppm	-0.0013 ppm	0.0000 ppm	0.0019 ppm
Concentration per Run 2	10.1639 ppm	0.0023 ppm	0.0813 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0018 ppm
Concentration per Run 3	9.9961 ppm	0.0013 ppm	0.0797 ppm	0.0004 ppm	-0.0006 ppm	0.0001 ppm	0.0018 ppm
Concentration RSD	1.1 %	26.9 %	5.0 %	33.9 %	84.0 %	214.0 %	4.8 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.2718 %	101.2180 %	98.2588 %	97.9869 %	92.1077 %	100.6842 %	0.0015 ppm
Concentration per Run 1	97.6841 %	101.1954 %	97.7926 %	93.0988 %	91.4583 %	100.3610 %	0.0011 ppm
Concentration per Run 2	99.9715 %	101.3983 %	98.4221 %	99.3096 %	91.7786 %	100.8998 %	0.0016 ppm
Concentration per Run 3	100.1598 %	101.0605 %	98.5618 %	101.5523 %	93.0863 %	100.7918 %	0.0019 ppm
Concentration RSD	1.4 %	0.2 %	0.4 %	4.5 %	0.9 %	0.3 %	28.1 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-5 WG1975631

Analysis started at: 9/26/2024 4:04:46 PM

Rack: 2
Vial: 15

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0497 ppm	2.1197 ppm	0.1158 ppm	1.0031 ppm	2.1187 ppm	0.0535 ppm	23.6907 ppm
Concentration per Run 1	0.0494 ppm	2.2486 ppm	0.1171 ppm	1.0096 ppm	2.2384 ppm	0.0566 ppm	25.2946 ppm
Concentration per Run 2	0.0496 ppm	2.0832 ppm	0.1159 ppm	0.9983 ppm	2.0888 ppm	0.0527 ppm	23.2622 ppm
Concentration per Run 3	0.0500 ppm	2.0273 ppm	0.1145 ppm	1.0014 ppm	2.0289 ppm	0.0510 ppm	22.5152 ppm
Concentration RSD	0.7 %	5.4 %	1.1 %	0.6 %	5.1 %	5.3 %	6.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0497 ppm	0.4904 ppm	0.1823 ppm	0.2488 ppm	1.0835 ppm	12.4975 ppm	14.1226 ppm
Concentration per Run 1	0.0499 ppm	0.4931 ppm	0.1826 ppm	0.2498 ppm	1.1478 ppm	13.2386 ppm	14.1308 ppm
Concentration per Run 2	0.0497 ppm	0.4893 ppm	0.1820 ppm	0.2484 ppm	1.0688 ppm	12.3115 ppm	14.0914 ppm
Concentration per Run 3	0.0495 ppm	0.4888 ppm	0.1822 ppm	0.2481 ppm	1.0339 ppm	11.9423 ppm	14.1456 ppm
Concentration RSD	0.4 %	0.5 %	0.2 %	0.4 %	5.4 %	5.3 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.5380 ppm	0.9508 ppm	17.9050 ppm	0.4809 ppm	0.5257 ppm	0.4912 ppm	0.1225 ppm
Concentration per Run 1	0.5730 ppm	0.9491 ppm	18.9790 ppm	0.4843 ppm	0.5283 ppm	0.4905 ppm	0.1219 ppm
Concentration per Run 2	0.5285 ppm	0.9492 ppm	17.6295 ppm	0.4798 ppm	0.5247 ppm	0.4911 ppm	0.1221 ppm
Concentration per Run 3	0.5126 ppm	0.9543 ppm	17.1065 ppm	0.4785 ppm	0.5241 ppm	0.4920 ppm	0.1236 ppm
Concentration RSD	5.8 %	0.3 %	5.4 %	0.6 %	0.4 %	0.1 %	0.8 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	10.5889 ppm	0.9301 ppm	1.0969 ppm	0.9869 ppm	0.1182 ppm	0.4676 ppm	0.4858 ppm
Concentration per Run 1	10.6586 ppm	0.9346 ppm	1.1594 ppm	0.9900 ppm	0.1185 ppm	0.4684 ppm	0.4876 ppm
Concentration per Run 2	10.5443 ppm	0.9272 ppm	1.0813 ppm	0.9846 ppm	0.1172 ppm	0.4663 ppm	0.4860 ppm
Concentration per Run 3	10.5638 ppm	0.9286 ppm	1.0499 ppm	0.9862 ppm	0.1188 ppm	0.4680 ppm	0.4838 ppm
Concentration RSD	0.6 %	0.4 %	5.1 %	0.3 %	0.7 %	0.2 %	0.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.8894 %	98.7067 %	96.1434 %	99.2396 %	88.7629 %	99.6480 %	0.0013 ppm
Concentration per Run 1	95.0429 %	98.8130 %	95.8143 %	93.2996 %	88.2665 %	99.5443 %	0.0009 ppm
Concentration per Run 2	98.6692 %	98.7720 %	96.5607 %	100.6546 %	89.0907 %	99.7992 %	0.0015 ppm
Concentration per Run 3	99.9562 %	98.5352 %	96.0553 %	103.7646 %	88.9315 %	99.6006 %	0.0016 ppm
Concentration RSD	2.6 %	0.2 %	0.4 %	5.4 %	0.5 %	0.1 %	28.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: WG1975631-6d5 WG1975631

Analysis started at: 9/26/2024 4:11:07 PM

Rack: 2
Vial: 16

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0061 ppm	-0.0003 ppm	0.0041 ppm	0.0016 ppm	0.0000 ppm	2.5553 ppm
Concentration per Run 1	0.0000 ppm	0.0028 ppm	0.0007 ppm	0.0044 ppm	0.0017 ppm	0.0000 ppm	2.6566 ppm
Concentration per Run 2	0.0002 ppm	0.0097 ppm	-0.0003 ppm	0.0040 ppm	0.0017 ppm	0.0000 ppm	2.5230 ppm
Concentration per Run 3	0.0002 ppm	0.0057 ppm	-0.0011 ppm	0.0038 ppm	0.0015 ppm	0.0000 ppm	2.4863 ppm
Concentration RSD	86.1 %	57.0 %	347.9 %	7.0 %	6.4 %	515.3 %	3.5 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0003 ppm	0.0061 ppm	0.2271 ppm	0.9521 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0003 ppm	0.0063 ppm	0.2340 ppm	0.9500 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm	0.0070 ppm	0.2239 ppm	0.9104 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0006 ppm	0.0004 ppm	0.0049 ppm	0.2232 ppm	0.9958 ppm
Concentration RSD	59.1 %	317.7 %	84.9 %	48.0 %	17.6 %	2.7 %	4.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0019 ppm	1.3447 ppm	0.0001 ppm	-0.0006 ppm	0.0025 ppm	0.0012 ppm
Concentration per Run 1	0.0001 ppm	0.0021 ppm	1.3972 ppm	0.0001 ppm	-0.0007 ppm	0.0022 ppm	0.0005 ppm
Concentration per Run 2	0.0000 ppm	0.0019 ppm	1.3231 ppm	0.0003 ppm	-0.0006 ppm	0.0021 ppm	0.0010 ppm
Concentration per Run 3	0.0000 ppm	0.0018 ppm	1.3138 ppm	0.0000 ppm	-0.0006 ppm	0.0033 ppm	0.0021 ppm
Concentration RSD	127.8 %	7.2 %	3.4 %	90.5 %	5.8 %	25.5 %	64.9 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	2.0027 ppm	0.0040 ppm	0.0153 ppm	0.0002 ppm	-0.0012 ppm	0.0000 ppm	0.0007 ppm
Concentration per Run 1	1.9900 ppm	0.0047 ppm	0.0158 ppm	0.0002 ppm	-0.0022 ppm	0.0001 ppm	0.0006 ppm
Concentration per Run 2	1.9968 ppm	0.0038 ppm	0.0151 ppm	0.0003 ppm	-0.0008 ppm	0.0001 ppm	0.0006 ppm
Concentration per Run 3	2.0215 ppm	0.0034 ppm	0.0150 ppm	0.0002 ppm	-0.0006 ppm	-0.0001 ppm	0.0008 ppm
Concentration RSD	0.8 %	16.5 %	2.8 %	34.7 %	72.4 %	503.6 %	12.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.4232 %	101.6384 %	99.1425 %	103.4601 %	94.7906 %	102.7532 %	0.0005 ppm
Concentration per Run 1	98.7496 %	102.0604 %	98.6974 %	100.0981 %	94.1409 %	102.7828 %	0.0002 ppm
Concentration per Run 2	99.4605 %	104.5576 %	99.2586 %	104.2289 %	95.1052 %	106.3373 %	0.0002 ppm
Concentration per Run 3	100.0594 %	98.2971 %	99.4715 %	106.0532 %	95.1257 %	99.1397 %	0.0012 ppm
Concentration RSD	0.7 %	3.1 %	0.4 %	2.9 %	0.6 %	3.5 %	108.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454050-02 WG1975631
Analysis started at: 9/26/2024 4:17:49 PM
Rack: 2
Vial: 17

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0003 ppm	0.0241 ppm	0.0013 ppm	0.0226 ppm	0.1141 ppm	0.0000 ppm	17.4632 ppm
Concentration per Run 1	0.0003 ppm	0.0252 ppm	0.0006 ppm	0.0227 ppm	0.1205 ppm	0.0000 ppm	18.5725 ppm
Concentration per Run 2	0.0002 ppm	0.0261 ppm	0.0013 ppm	0.0227 ppm	0.1117 ppm	0.0000 ppm	17.0872 ppm
Concentration per Run 3	0.0002 ppm	0.0211 ppm	0.0020 ppm	0.0223 ppm	0.1100 ppm	0.0000 ppm	16.7299 ppm
Concentration RSD	24.9 %	11.0 %	55.0 %	1.0 %	5.0 %	33.9 %	5.6 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0002 ppm	0.0001 ppm	0.0025 ppm	0.0172 ppm	3.1523 ppm	4.4465 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	0.0000 ppm	0.0024 ppm	0.0177 ppm	3.3414 ppm	4.3985 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0002 ppm	0.0024 ppm	0.0171 ppm	3.1026 ppm	4.3708 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0026 ppm	0.0167 ppm	3.0130 ppm	4.5700 ppm
Concentration RSD	37.8 %	19.3 %	101.7 %	3.6 %	2.8 %	5.4 %	2.4 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0433 ppm	0.0007 ppm	82.2248 [SIC 500]	0.0005 ppm	-0.0004 ppm	0.0001 ppm	0.0015 ppm
Concentration per Run 1	0.0460 ppm	0.0007 ppm	87.2594 ppm	0.0004 ppm	-0.0004 ppm	0.0008 ppm	0.0024 ppm
Concentration per Run 2	0.0423 ppm	0.0006 ppm	80.4903 ppm	0.0007 ppm	-0.0005 ppm	-0.0006 ppm	0.0014 ppm
Concentration per Run 3	0.0416 ppm	0.0008 ppm	78.9247 ppm	0.0005 ppm	-0.0004 ppm	-0.0001 ppm	0.0006 ppm
Concentration RSD	5.4 %	11.1 %	5.4 %	27.4 %	13.5 %	936.7 %	60.2 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	3.4825 ppm	0.0001 ppm	0.0939 ppm	0.0003 ppm	-0.0008 ppm	0.0003 ppm	0.0034 ppm
Concentration per Run 1	3.4886 ppm	0.0001 ppm	0.0990 ppm	0.0002 ppm	-0.0017 ppm	0.0003 ppm	0.0035 ppm
Concentration per Run 2	3.4891 ppm	0.0003 ppm	0.0920 ppm	0.0002 ppm	-0.0009 ppm	0.0002 ppm	0.0033 ppm
Concentration per Run 3	3.4698 ppm	-0.0002 ppm	0.0906 ppm	0.0004 ppm	0.0001 ppm	0.0004 ppm	0.0033 ppm
Concentration RSD	0.3 %	354.5 %	4.8 %	35.7 %	114.3 %	31.2 %	3.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	97.8686 %	95.3891 %	94.6100 %	97.5583 %	86.4096 %	95.3162 %	-0.0012 ppm
Concentration per Run 1	95.0992 %	97.0576 %	94.9194 %	92.4543 %	86.2197 %	96.3930 %	-0.0027 ppm
Concentration per Run 2	99.4316 %	96.8909 %	94.4675 %	99.4036 %	86.3596 %	96.5060 %	-0.0008 ppm
Concentration per Run 3	99.0750 %	92.2189 %	94.4430 %	100.8171 %	86.6496 %	93.0496 %	-0.0001 ppm
Concentration RSD	2.5 %	2.9 %	0.3 %	4.6 %	0.3 %	2.1 %	110.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454050-03 WG1975631

Analysis started at: 9/26/2024 4:24:28 PM

Rack: 2
Vial: 18

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0002 ppm	0.0067 ppm	-0.0001 ppm	0.0016 ppm	0.0003 ppm	0.0000 ppm	0.0191 ppm
Concentration per Run 1	-0.0001 ppm	0.0075 ppm	0.0007 ppm	0.0014 ppm	0.0004 ppm	0.0000 ppm	0.0198 ppm
Concentration per Run 2	0.0003 ppm	0.0070 ppm	0.0000 ppm	0.0017 ppm	0.0003 ppm	0.0000 ppm	0.0169 ppm
Concentration per Run 3	0.0004 ppm	0.0056 ppm	-0.0010 ppm	0.0017 ppm	0.0003 ppm	0.0000 ppm	0.0206 ppm
Concentration RSD	132.7 %	14.1 %	776.1 %	12.9 %	12.0 %	78.7 %	10.2 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0008 ppm	0.0124 ppm	0.0120 ppm	0.0026 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0009 ppm	0.0133 ppm	0.0205 ppm	0.0030 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0003 ppm	0.0008 ppm	0.0119 ppm	0.0007 ppm	0.0025 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0008 ppm	0.0121 ppm	0.0148 ppm	0.0024 ppm
Concentration RSD	176.7 %	134.3 %	254.4 %	7.4 %	6.2 %	84.9 %	13.1 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0012 ppm	0.0003 ppm	0.0282 ppm	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0006 ppm
Concentration per Run 1	0.0013 ppm	0.0003 ppm	0.0308 ppm	0.0000 ppm	0.0001 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 2	0.0010 ppm	0.0002 ppm	0.0269 ppm	0.0001 ppm	0.0001 ppm	-0.0007 ppm	0.0011 ppm
Concentration per Run 3	0.0011 ppm	0.0004 ppm	0.0269 ppm	-0.0003 ppm	-0.0004 ppm	0.0001 ppm	0.0007 ppm
Concentration RSD	13.1 %	34.1 %	7.9 %	498.3 %	589.0 %	148.2 %	105.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0198 ppm	0.0000 ppm	0.0001 ppm	0.0001 ppm	-0.0005 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 1	0.0201 ppm	0.0002 ppm	0.0000 ppm	0.0001 ppm	-0.0016 ppm	0.0000 ppm	0.0004 ppm
Concentration per Run 2	0.0192 ppm	-0.0002 ppm	0.0002 ppm	0.0002 ppm	0.0003 ppm	0.0001 ppm	0.0005 ppm
Concentration per Run 3	0.0202 ppm	0.0000 ppm	0.0001 ppm	0.0001 ppm	-0.0002 ppm	-0.0001 ppm	0.0005 ppm
Concentration RSD	2.9 %	594.3 %	93.3 %	50.0 %	195.6 %	356.4 %	11.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.4394 %	102.3560 %	99.2682 %	98.5583 %	95.3999 %	100.9286 %	0.0007 ppm
Concentration per Run 1	98.9608 %	102.2473 %	99.0770 %	94.8340 %	95.1912 %	100.6469 %	0.0014 ppm
Concentration per Run 2	99.8713 %	102.4447 %	99.7180 %	99.7716 %	95.5298 %	100.9562 %	0.0003 ppm
Concentration per Run 3	99.4861 %	102.3760 %	99.0095 %	101.0693 %	95.4787 %	101.1828 %	0.0006 ppm
Concentration RSD	0.5 %	0.1 %	0.4 %	3.3 %	0.2 %	0.3 %	78.5 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: L2454050-04 WG1975631

Analysis started at: 9/26/2024 4:31:13 PM

Rack: 2
Vial: 19

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0005 ppm	0.0578 ppm	-0.0010 ppm	0.0510 ppm	0.0734 ppm	0.0000 ppm	27.7315 ppm
Concentration per Run 1	0.0005 ppm	0.0609 ppm	-0.0013 ppm	0.0513 ppm	0.0766 ppm	0.0000 ppm	29.0024 ppm
Concentration per Run 2	0.0006 ppm	0.0563 ppm	-0.0018 ppm	0.0509 ppm	0.0723 ppm	0.0000 ppm	27.4022 ppm
Concentration per Run 3	0.0005 ppm	0.0561 ppm	0.0001 ppm	0.0509 ppm	0.0713 ppm	0.0000 ppm	26.7901 ppm
Concentration RSD	10.2 %	4.7 %	95.8 %	0.4 %	3.8 %	78.9 %	4.1 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0002 ppm	0.0090 ppm	0.0010 ppm	0.0010 ppm	5.9624 ppm	3.2377 ppm	11.0193 ppm
Concentration per Run 1	0.0002 ppm	0.0090 ppm	0.0013 ppm	0.0012 ppm	6.2119 ppm	3.3851 ppm	11.0398 ppm
Concentration per Run 2	0.0002 ppm	0.0090 ppm	0.0009 ppm	0.0009 ppm	5.8800 ppm	3.1951 ppm	11.0291 ppm
Concentration per Run 3	0.0002 ppm	0.0089 ppm	0.0009 ppm	0.0010 ppm	5.7952 ppm	3.1329 ppm	10.9891 ppm
Concentration RSD	9.1 %	0.7 %	21.9 %	14.0 %	3.7 %	4.1 %	0.2 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	6.6156 ppm	0.0003 ppm	6.9088 ppm	0.0038 ppm	-0.0019 ppm	-0.0003 ppm	-0.0001 ppm
Concentration per Run 1	6.9062 ppm	0.0002 ppm	7.2128 ppm	0.0037 ppm	-0.0019 ppm	0.0001 ppm	0.0004 ppm
Concentration per Run 2	6.5307 ppm	0.0003 ppm	6.8112 ppm	0.0040 ppm	-0.0021 ppm	-0.0005 ppm	0.0003 ppm
Concentration per Run 3	6.4100 ppm	0.0004 ppm	6.7025 ppm	0.0038 ppm	-0.0016 ppm	-0.0004 ppm	-0.0011 ppm
Concentration RSD	3.9 %	17.8 %	3.9 %	4.4 %	13.1 %	119.7 %	741.6 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Tl 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	7.3297 ppm	-0.0004 ppm	0.2076 ppm	0.0027 ppm	-0.0039 ppm	0.0109 ppm	0.0018 ppm
Concentration per Run 1	7.3985 ppm	-0.0007 ppm	0.2165 ppm	0.0028 ppm	-0.0043 ppm	0.0110 ppm	0.0018 ppm
Concentration per Run 2	7.2833 ppm	0.0000 ppm	0.2046 ppm	0.0027 ppm	-0.0038 ppm	0.0109 ppm	0.0017 ppm
Concentration per Run 3	7.3074 ppm	-0.0005 ppm	0.2018 ppm	0.0026 ppm	-0.0038 ppm	0.0109 ppm	0.0019 ppm
Concentration RSD	0.8 %	99.8 %	3.8 %	3.5 %	7.5 %	0.5 %	4.2 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	99.1362 %	99.1650 %	96.1362 %	100.6641 %	89.7708 %	99.4680 %	0.0001 ppm
Concentration per Run 1	98.4671 %	99.2616 %	95.6143 %	96.7898 %	89.1093 %	99.3777 %	0.0007 ppm
Concentration per Run 2	99.4840 %	99.0275 %	96.5559 %	101.8361 %	90.2217 %	99.3892 %	0.0001 ppm
Concentration per Run 3	99.4575 %	99.2057 %	96.2385 %	103.3664 %	89.9814 %	99.6371 %	-0.0006 ppm
Concentration RSD	0.6 %	0.1 %	0.5 %	3.4 %	0.7 %	0.1 %	1,168.7 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCV
Analysis started at: 9/26/2024 4:37:51 PM
Rack: 0
Vial: 3

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.5066 ppm	0.5010 ppm	0.4852 ppm	0.5156 ppm	0.4943 ppm	0.5003 ppm	0.5120 ppm
Concentration per Run 1	0.5063 ppm	0.4958 ppm	0.4853 ppm	0.5155 ppm	0.4839 ppm	0.4912 ppm	0.5022 ppm
Concentration per Run 2	0.5066 ppm	0.5015 ppm	0.4847 ppm	0.5155 ppm	0.4960 ppm	0.5022 ppm	0.5175 ppm
Concentration per Run 3	0.5070 ppm	0.5056 ppm	0.4856 ppm	0.5157 ppm	0.5031 ppm	0.5074 ppm	0.5161 ppm
Recovery Percentage 1	101.325 %	100.197 %	97.039 %	103.115 %	98.866 %	100.054 %	102.390 %
Concentration RSD	0.1 %	1.0 %	0.1 %	0.0 %	2.0 %	1.7 %	1.7 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.4833 ppm	0.5234 ppm	0.4773 ppm	0.4996 ppm	0.5205 ppm	5.3368 ppm	0.4996 ppm
Concentration per Run 1	0.4835 ppm	0.5237 ppm	0.4763 ppm	0.4990 ppm	0.5114 ppm	5.2488 ppm	0.4946 ppm
Concentration per Run 2	0.4835 ppm	0.5231 ppm	0.4775 ppm	0.5007 ppm	0.5230 ppm	5.3752 ppm	0.5016 ppm
Concentration per Run 3	0.4829 ppm	0.5234 ppm	0.4782 ppm	0.4991 ppm	0.5271 ppm	5.3865 ppm	0.5027 ppm
Recovery Percentage 1	96.662 %	104.681 %	95.467 %	99.925 %	104.102 %	106.736 %	99.923 %
Concentration RSD	0.1 %	0.1 %	0.2 %	0.2 %	1.6 %	1.4 %	0.9 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.4991 ppm	0.5046 ppm	10.1317 ppm	0.5095 ppm	0.5198 ppm	0.5255 ppm	0.5178 ppm
Concentration per Run 1	0.4912 ppm	0.5038 ppm	9.9678 ppm	0.5100 ppm	0.5179 ppm	0.5256 ppm	0.5174 ppm
Concentration per Run 2	0.4999 ppm	0.5047 ppm	10.1536 ppm	0.5087 ppm	0.5207 ppm	0.5249 ppm	0.5166 ppm
Concentration per Run 3	0.5061 ppm	0.5053 ppm	10.2738 ppm	0.5096 ppm	0.5208 ppm	0.5260 ppm	0.5194 ppm
Recovery Percentage 1	99.810 %	100.923 %	101.317 %	101.890 %	103.962 %	105.098 %	103.560 %
Concentration RSD	1.5 %	0.1 %	1.5 %	0.1 %	0.3 %	0.1 %	0.3 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	5.7673 ppm	0.4846 ppm	0.4804 ppm	0.5126 ppm	0.5219 ppm	0.4856 ppm	0.5031 ppm
Concentration per Run 1	5.7724 ppm	0.4847 ppm	0.4706 ppm	0.5113 ppm	0.5209 ppm	0.4850 ppm	0.5031 ppm
Concentration per Run 2	5.7610 ppm	0.4859 ppm	0.4819 ppm	0.5133 ppm	0.5239 ppm	0.4857 ppm	0.5032 ppm
Concentration per Run 3	5.7686 ppm	0.4833 ppm	0.4887 ppm	0.5132 ppm	0.5210 ppm	0.4860 ppm	0.5031 ppm
Recovery Percentage 1	109.854 %	96.925 %	96.076 %	102.522 %	104.388 %	97.121 %	100.622 %
Concentration RSD	0.1 %	0.3 %	1.9 %	0.2 %	0.3 %	0.1 %	0.0 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	100.0910 %	99.9076 %	97.6199 %	110.0925 %	90.9802 %	101.3034 %	0.4922 ppm
Concentration per Run 1	100.9614 %	99.8005 %	97.6669 %	111.6793 %	90.9644 %	101.1737 %	0.4809 ppm
Concentration per Run 2	99.4154 %	99.9991 %	97.6798 %	109.3694 %	91.0051 %	101.3816 %	0.4953 ppm
Concentration per Run 3	99.8963 %	99.9232 %	97.5129 %	109.2288 %	90.9712 %	101.3548 %	0.5003 ppm
Recovery Percentage 1							98.433 %
Concentration RSD	0.8 %	0.1 %	0.1 %	1.2 %	0.0 %	0.1 %	2.0 %

ICP DataTrace 6

9/26/2024 4:51:53 PM



LabBook: WG1976443_09262024T6.imexp

Sample: CCB
Analysis started at: 9/26/2024 4:44:15 PM
Rack: 0
Vial: 4

	Ag 328.068 {103} (Axial)	Al 396.152 {85} (Radial)	As 189.042 {478} (Axial)	B 208.959 {461} (Axial)	Ba 455.403 {74} (Radial)	Be 313.042 {108} (Radial)	Ca 315.887 {107} (Radial)
Concentration average	0.0001 ppm	0.0015 ppm	-0.0008 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm	0.0025 ppm
Concentration per Run 1	0.0003 ppm	0.0024 ppm	-0.0004 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	0.0045 ppm
Concentration per Run 2	0.0000 ppm	0.0004 ppm	-0.0012 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 3	0.0001 ppm	0.0017 ppm	-0.0009 ppm	0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0027 ppm
Recovery Percentage 1	2.067 %	0.000 %	-15.840 %	2.794 %	-0.021 %	0.619 %	0.000 %
Concentration RSD	91.4 %	68.8 %	50.4 %	14.2 %	2,082.3 %	61.3 %	85.4 %

	Cd 214.438 {457} (Axial)	Co 228.616 {447} (Axial)	Cr 267.716 {126} (Axial)	Cu 324.754 {104} (Axial)	Fe 259.940 {130} (Radial)	K 766.490 {44} (Radial)	Mg 279.079 {121} (Axial)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0009 ppm	0.0089 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0012 ppm	-0.0024 ppm	-0.0013 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0005 ppm	0.0142 ppm	0.0008 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0002 ppm	0.0009 ppm	0.0148 ppm	0.0002 ppm
Recovery Percentage 1	-0.174 %	0.065 %	0.210 %	1.647 %	0.000 %	0.355 %	0.000 %
Concentration RSD	150.1 %	733.6 %	674.1 %	48.4 %	44.7 %	110.0 %	894.5 %

	Mn 257.610 {131} (Radial)	Mo 202.030 {467} (Axial)	Na 589.592 {57} (Radial)	Ni 231.604 {445} (Axial)	Pb 220.353 {453} (Axial)	Sb 206.833 {463} (Axial)	Se 196.090 {472} (Axial)
Concentration average	0.0000 ppm	0.0007 ppm	-0.0080 ppm	-0.0001 ppm	-0.0004 ppm	0.0008 ppm	0.0006 ppm
Concentration per Run 1	-0.0001 ppm	0.0008 ppm	-0.0111 ppm	-0.0003 ppm	-0.0006 ppm	0.0002 ppm	0.0008 ppm
Concentration per Run 2	0.0001 ppm	0.0006 ppm	-0.0055 ppm	0.0001 ppm	-0.0005 ppm	0.0011 ppm	0.0015 ppm
Concentration per Run 3	-0.0002 ppm	0.0006 ppm	-0.0074 ppm	0.0000 ppm	-0.0001 ppm	0.0012 ppm	-0.0004 ppm
Recovery Percentage 1	-0.408 %	1.309 %	-0.399 %	-0.250 %	-4.031 %	1.634 %	6.200 %
Concentration RSD	327.0 %	24.8 %	36.0 %	321.3 %	55.6 %	66.7 %	161.7 %

	Si 212.412 {459} (Axial)	Sn 189.989 {477} (Axial)	Sr 421.552 {80} (Radial)	Ti 334.904 {101} (Axial)	Ti 190.856 {477} (Axial)	V 292.402 {115} (Axial)	Zn 206.200 {463} (Axial)
Concentration average	0.0010 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0007 ppm	0.0005 ppm	0.0000 ppm	0.0001 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	0.0010 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 3	0.0012 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm
Recovery Percentage 1	0.196 %	0.969 %	-0.390 %	0.399 %	0.693 %	0.107 %	0.872 %
Concentration RSD	25.5 %	10.0 %	31.9 %	222.8 %	191.1 %	506.8 %	147.4 %

	Y 371.030 {91} (Radial)	Y 360.073 {94} (Axial)	Y 224.306 {450} (Axial)	Sc 361.384 {93} (Radial)	Sc 227.318 {448} (Axial)	Sc 361.384 {93} (Axial)	Li 670.784 {50} (Radial)
Concentration average	98.9021 %	101.6381 %	98.7746 %	104.5374 %	95.1245 %	101.1137 %	0.0015 ppm
Concentration per Run 1	99.5770 %	101.7085 %	98.9779 %	103.7486 %	95.2769 %	101.0828 %	0.0022 ppm
Concentration per Run 2	98.6232 %	101.5395 %	98.7552 %	105.0437 %	95.1881 %	101.0057 %	0.0005 ppm
Concentration per Run 3	98.5061 %	101.6663 %	98.5907 %	104.8200 %	94.9084 %	101.2526 %	0.0019 ppm
Recovery Percentage 1							15.394 %
Concentration RSD	0.6 %	0.1 %	0.2 %	0.7 %	0.2 %	0.1 %	61.2 %

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				Be	0.01
	Al	250		Bi	0.02
	Ca	250		B	0.10
	Fe	100		Cd	0.01
ICSB	Mg	250		Ca	0.40
				Cr	0.02
	Al	9.00		Co	0.10
	Sb	1.00		Cu	0.05
	As	1.00		Fe	0.20
	Ba	0.30		Pb	0.05
	Be	0.10		Mg	0.40
	Bi	1.00		Mn	0.03
	B	0.50		Mo	0.10
	Cd	0.30		Ni	0.08
	Ca	45.00		K	5.00
	Cr	0.30		Se	0.02
	Co	0.30		Si	1.00
	Cu	0.30		Ag	0.02
	Fe	37.50		Na	5.00
	Pb	1.00		Sr	0.02
	Mg	22.50		Tl	0.02
	Mn	0.20		Sn	0.02
	Mo	0.30		Ti	0.02
	Ni	0.30		V	0.10
	K	20.00		Zn	0.04
	Se	0.50			
	Si	1.23			
	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 water spike)x(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		n	NIST Traceability	
		Mean	Recovery ⁵		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



A Waters Company

Reference Material

▪ 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

Page 1 of 3 Lot: D105-540

16341 Table Mountain Pkwy • Golden, CO 80403 • T: 800.372.0122 • 303.431.8454 • www.eraqc.com

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number	Recovery
	mg/kg	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


Page 3 of 3 Lot: D105-540

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number ⁶	Recovery
	mg/kg	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 (%)** = $[(\% \text{ recovery ERA certified reference material}) / (\% \text{ recovery NIST SRM})] * 100$

The traceability data shown were compiled by analyzing this ERA certified reference material and/or its 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

Brian Miller

Matthew Seebeck





A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D113-540
Certificate Issue Date: March 23, 2021
Expiration Date: October 13, 2024
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	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8630	12.0	4420 - 12800	4370 - 12900
Antimony	256	129	16.8	0.742 - 257	25.6 - 323
Arsenic	91.6	84.5	15.1	70.0 - 99.0	59.2 - 110
Barium	259	249	9.94	206 - 292	187 - 311
Beryllium	175	163	3.89	135 - 191	122 - 204
Boron	95.7	76.7	12.8	55.7 - 97.7	48.0 - 107
Cadmium	107	99.0	11.5	82.2 - 116	74.2 - 124
Calcium	5190	4760	11.8	3890 - 5640	3460 - 6070
Chromium	129	122	14.6	101 - 144	85.7 - 159
Cobalt	63.6	61.7	11.5	51.9 - 71.6	46.3 - 77.2
Copper	62.3	61.5	12.3	51.9 - 71.0	46.1 - 76.8
Iron	15000	14500	15.7	8860 - 20100	5190 - 23800
Lead	122	123	13.9	103 - 144	88.3 - 158
Lithium	6.42	7.30	18.7	5.13 - 9.48	3.20 - 11.4
Magnesium	2570	2360	8.87	1810 - 2920	1480 - 3250
Manganese	470	456	13.4	375 - 538	350 - 563
Mercury	22.1	18.9	14.5	13.0 - 24.8	11.3 - 26.4
Molybdenum	80.1	72.8	11.0	58.7 - 87.0	50.5 - 95.2
Nickel	143	135	14.2	112 - 158	94.7 - 176
Potassium	2420	2090	8.21	1480 - 2700	1240 - 2940
Selenium	128	121	11.7	96.9 - 146	80.4 - 162
Silver	45.4	44.1	6.69	35.5 - 52.8	30.7 - 57.6
Sodium	161	136	9.34	97.4 - 174	48.1 - 223
Strontium	82.2	82.3	8.42	67.4 - 97.1	58.6 - 106

Page 1 of 4 Lot: D113-540

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

Certified Reference Material

▪ 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
Thallium	154	144	7.54	117 - 171	101 - 187
Tin	89.7	79.8	14.0	62.2 - 97.4	43.5 - 116
Titanium	705	546	10.3	123 - 969	118 - 974
Uranium	29.5	30.9	3.38	23.9 - 37.9	21.3 - 40.5
Vanadium	196	186	14.2	148 - 224	138 - 235
Zinc	307	295	10.4	240 - 351	207 - 384

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

Sequence Trace 6

9/26/2024 4:53:00 PM



LabBook: WG1976443_09262024T6.imexp

Index:	Label:	Rack	Vial	Start time:
1	Blank DMC Trace6	0	1	9/26/2024 4:20:08 AM
2	ICAL	0	2	9/26/2024 4:26:51 AM
3	ICV	0	3	9/26/2024 4:33:09 AM
4	ICB	0	4	9/26/2024 4:39:34 AM
5	ICV	0	10	9/26/2024 4:54:26 AM
6	ICB	0	4	9/26/2024 5:00:53 AM
7	LLOQ RL Check	0	5	9/26/2024 5:07:39 AM
8	ICSA	0	6	9/26/2024 5:14:20 AM
9	SIC Cr Mn V Ti	0	7	9/26/2024 5:23:25 AM
10	LDR Check	0	8	9/26/2024 5:31:35 AM
11	IEC 20PPM Ti	1	1	9/26/2024 6:06:35 AM
12	LDR 20PPM Si	1	2	9/26/2024 6:13:23 AM
13	LDR 20PPM B	1	3	9/26/2024 6:20:05 AM
14	LDR 20PPM AS	1	4	9/26/2024 6:26:47 AM
15	XLDR 500PPM K	1	5	9/26/2024 6:33:30 AM
16	XLDR 500PPM NA	1	6	9/26/2024 6:41:15 AM
17	LDR 500PPM FE	1	7	9/26/2024 6:49:10 AM
18	LDR 1000PPM CA	1	8	9/26/2024 6:56:57 AM
19	XLDR 200PPM NA	1	9	9/26/2024 7:17:53 AM
20	LDR 250PPM K	1	10	9/26/2024 7:24:46 AM
21	CCV	0	3	9/26/2024 7:36:26 AM
22	CCB	0	4	9/26/2024 7:42:49 AM
23	WG1976276-1 WG1976276	1	11	9/26/2024 7:49:38 AM
24	WG1976131-1 WG1976131	1	18	9/26/2024 7:56:24 AM
25	WG1976131-2 WG1976131	1	19	9/26/2024 8:03:11 AM
26	WG1976276-2 WG1976276	1	12	9/26/2024 8:09:42 AM
27	L2453876-01 WG1976131	1	25	9/26/2024 8:16:06 AM
28	L2454653-01 WG1976276	1	13	9/26/2024 8:22:51 AM
29	WG1976276-3 WG1976276	1	14	9/26/2024 8:29:29 AM
30	WG1976276-4 WG1976276	1	15	9/26/2024 8:35:49 AM
31	WG1976276-5 WG1976276	1	16	9/26/2024 8:42:28 AM
32	WG1976276-6D5 WG1976276	1	17	9/26/2024 8:48:48 AM
33	CCV	0	3	9/26/2024 8:55:30 AM
34	CCB	0	4	9/26/2024 9:01:55 AM
35	L2453915-01 WG1976131	1	26	9/26/2024 9:20:43 AM
36	L2453929-01 WG1976131	1	27	9/26/2024 9:27:29 AM
37	L2453870-01 WG1976131	1	20	9/26/2024 9:34:15 AM
38	WG1976131-3 WG1976131	1	21	9/26/2024 9:41:02 AM
39	WG1976131-4 WG1976131	1	22	9/26/2024 9:47:33 AM
40	WG1976131-5 WG1976131	1	23	9/26/2024 9:54:15 AM
41	WG1976131-6D5 WG1976131	1	24	9/26/2024 10:00:47 AM
42	CCV	0	3	9/26/2024 10:07:30 AM
43	CCB	0	4	9/26/2024 10:13:54 AM
44	WG1976156-1 WG1976156	1	28	9/26/2024 10:36:09 AM
45	WG1976163-1 WG1976163	1	36	9/26/2024 10:42:51 AM
46	WG1976163-2 WG1976163	1	37	9/26/2024 10:49:37 AM
47	WG1976156-2 WG1976156	1	29	9/26/2024 10:55:59 AM
48	WG1976156-3 WG1976156	1	30	9/26/2024 11:02:20 AM
49	L2454004-01 WG1976156	1	31	9/26/2024 11:08:42 AM
50	L2454004-02 WG1976156	1	32	9/26/2024 11:15:21 AM
51	L2454004-03 WG1976156	1	33	9/26/2024 11:22:00 AM
52	L2454004-04 WG1976156	1	34	9/26/2024 11:28:36 AM
53	L2454004-05 WG1976156	1	35	9/26/2024 11:35:14 AM
54	CCV	0	3	9/26/2024 11:41:54 AM
55	CCB	0	4	9/26/2024 11:48:19 AM
56	WG1976619-1 WG1976619	1	46	9/26/2024 11:58:22 AM
57	WG1976622-1 WG1976622	1	53	9/26/2024 12:05:15 PM
58	WG1976622-2 WG1976622	1	54	9/26/2024 12:11:57 PM
59	WG1976619-2 WG1976619	1	47	9/26/2024 12:18:18 PM
60	L2454465-01 WG1976619	1	48	9/26/2024 12:24:50 PM
61	WG1976619-3 WG1976619	1	49	9/26/2024 12:31:39 PM
62	WG1976619-4 WG1976619	1	50	9/26/2024 12:38:08 PM
63	WG1976619-5 WG1976619	1	51	9/26/2024 12:44:55 PM
64	WG1976619-6D5 WG1976619	1	52	9/26/2024 12:51:25 PM
65	CCV	0	3	9/26/2024 12:58:05 PM
66	CCB	0	4	9/26/2024 1:04:30 PM
67	L2455012-01 WG1976622	1	55	9/26/2024 1:12:29 PM
68	WG1976622-3 WG1976622	1	56	9/26/2024 1:19:07 PM
69	WG1976622-4 WG1976622	1	57	9/26/2024 1:25:29 PM
70	WG1976622-5 WG1976622	1	58	9/26/2024 1:32:09 PM
71	WG1976622-6D5 WG1976622	1	59	9/26/2024 1:38:30 PM
72	CCV	0	3	9/26/2024 1:45:14 PM

Sequence Trace 6

9/26/2024 4:53:00 PM



Index:	Label:	Rack	Vial	Start time:
73	CCB	0	4	9/26/2024 1:51:38 PM
74	WG1976278-1 WG1976278	1	60	9/26/2024 2:02:10 PM
75	WG1976278-2 WG1976278	2	1	9/26/2024 2:08:55 PM
76	L2454653-02 WG1976278	2	2	9/26/2024 2:15:17 PM
77	WG1976278-3 WG1976278	2	3	9/26/2024 2:22:02 PM
78	WG1976278-4 WG1976278	2	4	9/26/2024 2:28:24 PM
79	WG1976694-1 WG1976694	2	5	9/26/2024 2:36:48 PM
80	WG1976694-2 WG1976694	2	6	9/26/2024 2:43:41 PM
81	L2454994-01 WG1976694	2	7	9/26/2024 2:50:12 PM
82	WG1976694-3 WG1976694	2	8	9/26/2024 2:57:03 PM
83	WG1976694-4 WG1976694	2	9	9/26/2024 3:03:34 PM
84	CCV	0	3	9/26/2024 3:10:22 PM
85	CCB	0	4	9/26/2024 3:16:47 PM
86	WG1975631-1 WG1975631	2	10	9/26/2024 3:31:54 PM
87	WG1975631-2 WG1975631	2	11	9/26/2024 3:38:39 PM
88	L2454050-01 WG1975631	2	12	9/26/2024 3:45:03 PM
89	WG1975631-3 WG1975631	2	13	9/26/2024 3:51:44 PM
90	WG1975631-4 WG1975631	2	14	9/26/2024 3:58:06 PM
91	WG1975631-5 WG1975631	2	15	9/26/2024 4:04:46 PM
92	WG1975631-6d5 WG1975631	2	16	9/26/2024 4:11:07 PM
93	L2454050-02 WG1975631	2	17	9/26/2024 4:17:49 PM
94	L2454050-03 WG1975631	2	18	9/26/2024 4:24:28 PM
95	L2454050-04 WG1975631	2	19	9/26/2024 4:31:13 PM
96	CCV	0	3	9/26/2024 4:37:51 PM
97	CCB	0	4	9/26/2024 4:44:15 PM
98	L2453389-02 WG1976163	1	43	
99	L2453389-03 WG1976163	1	44	
100	L2453389-04 WG1976163	1	45	
101	L2453389-01 WG1976163	1	38	
102	WG1976163-3 WG1976163	1	39	
103	WG1976163-4 WG1976163	1	40	
104	WG1976163-5 WG1976163	1	41	
105	WG1976163-6D5 WG1976163	1	42	
106	CCV	0	3	
107	CCB	0	4	
108		2	20	
109		2	21	
110		2	22	
111		2	23	
112		2	24	
113		2	25	
114		2	26	
115		2	27	
116		2	28	
117		2	29	
118		2	30	
119		2	31	
120		2	32	
121		2	33	
122		2	34	
123		2	35	
124		2	36	
125		2	37	
126		2	38	
127		2	39	
128		2	40	
129		2	41	
130		2	42	
131		2	43	
132		2	44	
133		2	45	
134		2	46	
135		2	47	
136		2	48	
137		2	49	
138		2	50	
139		2	51	
140		2	52	
141	CCV	0	3	
142	CCB	0	4	
143	CCV	0	3	
144	CCB	0	4	
145	LLOQ RL check	0	5	

Sequence Trace 6

9/26/2024 4:53:00 PM





METALS ELN REPORT

Workgroup: WG1975631

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 3005A	1:1 HNO3	tHN0324382 01155JDH	1:1 HCl	tHCL243421 0713CME	METALS	METSPIKE2	IPS,FPS,MIX	METSPIKE2	IPS,FPS,MIX	140, 326

Additional Reagent/Std

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2454050-01 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-02 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-03 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-04 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975631-1 BLANK	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	eln: JDH
WG1975631-2 LCS	09/24/24 14:02	Ethan Moeller	50	<2	.5	09/24/24 14:02	10	94.1	09/24/24 17:02	50	FM2438201045 AJT
WG1975631-3 MS	09/24/24 14:02	Ethan Moeller	50	<2	.5	09/24/24 14:02	10	94.1	09/24/24 17:02	50	IPS243315040 5CLH
WG1975631-4 DUP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975631-5 PS	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975631-6 SERDIL	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	



METALS ELN REPORT

Workgroup: WG1975631

Reagent	Actual Volume	Units
1:1 Hydrochloric Acid (H	.5	ml
1:1 Nitric Acid (HNO3)	1	ml

Inorganic Data (ICPMS Analysis)

Form 1 METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 13:14
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: NTB
Lab File ID	: WG1976493.pdf	Instrument ID	: ICPMSRQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00848	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-47-3	Chromium, Total	0.00085	0.00100	0.00017	J
7440-48-4	Cobalt, Total	0.00026	0.00050	0.00016	J
7440-50-8	Copper, Total	0.00056	0.00100	0.00038	J
7439-89-6	Iron, Total	0.0201	0.0500	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	1.03	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	6.63	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1 METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 13:18
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: NTB
Lab File ID	: WG1976493.pdf	Instrument ID	: ICPMSRQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.0172	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.1089	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	0.00007	0.00020	0.00005	J
7440-47-3	Chromium, Total	0.00035	0.00100	0.00017	J
7440-48-4	Cobalt, Total	0.00027	0.00050	0.00016	J
7440-50-8	Copper, Total	0.00190	0.00100	0.00038	
7439-89-6	Iron, Total	ND	0.0500	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-96-5	Manganese, Total	0.04023	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00241	0.00200	0.00055	
7440-09-7	Potassium, Total	2.90	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	80.8	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.01018	0.01000	0.00341	

Form 1 METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 13:23
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: NTB
Lab File ID	: WG1976493.pdf	Instrument ID	: ICPMSRQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.00416	0.0100	0.00327	J
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00026	0.00050	0.00017	J
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00048	0.00100	0.00038	J
7439-89-6	Iron, Total	ND	0.0500	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-96-5	Manganese, Total	0.00110	0.00100	0.00044	
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	ND	0.100	0.0309	U
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	ND	0.100	0.0293	U
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1 METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 12:24
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: NTB
Lab File ID	: WG1976493.pdf	Instrument ID	: ICPMSRQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.0449	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	0.00125	0.00050	0.00016	
7440-39-3	Barium, Total	0.07374	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	0.00009	0.00020	0.00005	J
7440-47-3	Chromium, Total	0.00044	0.00100	0.00017	J
7440-48-4	Cobalt, Total	0.00950	0.00050	0.00016	
7440-50-8	Copper, Total	0.00070	0.00100	0.00038	J
7439-89-6	Iron, Total	6.09	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-96-5	Manganese, Total	6.200	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00451	0.00200	0.00055	
7440-09-7	Potassium, Total	3.18	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	6.74	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U



Form 1 METALS

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1975627-1
Client ID : WG1975627-1BLANK
Sample Location :
Sample Matrix : WATER
Analytical Method : 1,6020B
Lab File ID : WG1976493.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : NA
Date Received : NA
Date Analyzed : 09/26/24 12:41
Dilution Factor : 1
Analyst : NTB
Instrument ID : ICPMSRQ
%Solids : N/A
Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	ND	0.00050	0.00017	U
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	ND	0.0500	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	ND	0.100	0.0309	U
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	ND	0.100	0.0293	U
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U



Form 1

METALS

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975627-11
 Client ID : WG1975627-11 DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,6020B
 Lab File ID : WG1976493.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected :
 Date Received : 02/23/24
 Date Analyzed : 09/26/24 13:49
 Dilution Factor : 1
 Analyst : NTB
 Instrument ID : ICPMSRQ
 %Solids : N/A
 Date Digested : 09/24/24

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : ICPMSRQ

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : ug/l

Parameter	Initial Calibration			Continuing Calibration(s)							
	Lab ID	: R1880467-1		R1880467-4		R1880467-6		R1880467-9			
	Date Analyzed:	09/26/24 07:35		09/26/24 07:59		09/26/24 08:57		09/26/24 09:42			
	True	Found	%R	True	Found	%R	Found	%R	Found	%R	
Aluminum	50.0	50.1000	100	60.0000	62.2	104	59.1	98	58.0	97	
Antimony	50.0	51.6000	103	60.0000	60.2	100	61.5	102	63.6	106	
Arsenic	50.0	51.5000	103	60.0000	60.5	101	60.3	100	61.2	102	
Barium	50.0	52.6000	105	60.0000	60.5	101	61.9	103	65.3	109	
Beryllium	50.0	49.2000	98	60.0000	61.6	103	61.8	103	57.4	96	
Cadmium	50.0	50.8000	102	60.0000	59.4	99	61.2	102	61.1	102	
Chromium	50.0	53.3000	107	60.0000	60.9	102	59.9	100	60.1	100	
Cobalt	50.0	52.4000	105	60.0000	61.1	102	59.9	100	61.7	103	
Copper	50.0	52.4000	105	60.0000	62.3	104	60.8	101	60.4	101	
Iron	5000	5150.0000	103	6000.0000	6040	101	6100	102	6080	101	
Lead	50.0	49.0000	98	60.0000	57.4	96	59.2	99	59.9	100	
Manganese	50.0	52.5000	105	60.0000	60.9	102	61.2	102	62.4	104	
Nickel	50.0	51.4000	103	60.0000	61.2	102	61.5	102	59.8	100	
Potassium	5000	5240.0000	105	6000.0000	6010	100	6010	100	6410	107	
Selenium	50.0	51.3000	103	60.0000	60.6	101	60.4	101	60.5	101	
Silver	50.0	48.8000	98	60.0000	60.0	100	61.4	102	61.5	102	
Sodium	5000	5240.0000	105	6000.0000	5980	100	6010	100	6280	105	
Thallium	50.0	48.3000	97	60.0000	59.9	100	61.1	102	63.1	105	
Vanadium	50.0	54.0000	108	60.0000	61.6	103	60.6	101	62.5	104	
Zinc	50.0	52.5000	105	60.0000	62.1	104	61.6	103	60.6	101	

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : ICPMSRQ

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : ug/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration		Continuing Calibration(s)							
		True	Found	%R	R1880467-11 09/26/24 10:39		R1880467-13 09/26/24 10:56		R1880467-15 09/26/24 11:55		
					True	Found	%R	Found	%R	Found	%R
Aluminum					60.0000	63.5	106	58.2	97	63.5	106
Antimony					60.0000	66.1	110	62.4	104	60.2	100
Arsenic					60.0000	63.3	106	59.9	100	59.4	99
Barium					60.0000	65.7	110	63.3	106	61.1	102
Beryllium					60.0000	58.7	98	62.4	104	55.6	93
Cadmium					60.0000	64.1	107	61.0	102	58.6	98
Chromium					60.0000	64.1	107	57.5	96	54.4	91
Cobalt					60.0000	63.5	106	59.0	98	58.4	97
Copper					60.0000	64.3	107	59.8	100	57.8	96
Iron					6000.0000	6350	106	5970	100	5920	99
Lead					60.0000	62.0	103	59.1	98	57.4	96
Manganese					60.0000	65.0	108	60.4	101	60.6	101
Nickel					60.0000	63.9	106	59.6	99	58.3	97
Potassium					6000.0000	6240	104	6180	103	6170	103
Selenium					60.0000	62.1	104	59.0	98	61.0	102
Silver					60.0000	64.0	107	61.1	102	59.1	98
Sodium					6000.0000	6440	107	6170	103	6160	103
Thallium					60.0000	67.2	112	65.3	109	57.9	96
Vanadium					60.0000	63.1	105	60.7	101	56.6	94
Zinc					60.0000	63.4	106	59.1	98	59.5	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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : ICPMSRQ

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : ug/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration		Continuing Calibration(s)						
		True	Found	%R	R1880467-17 09/26/24 12:28		R1880467-19 09/26/24 13:28		R1880467-21 09/26/24 13:54	
					True	Found	%R	Found	%R	Found
Aluminum				60.0000	64.4	107	58.1	97	61.0	102
Antimony				60.0000	65.4	109	62.1	104	63.3	106
Arsenic				60.0000	62.7	104	60.6	101	63.4	106
Barium				60.0000	64.9	108	61.5	102	62.1	104
Beryllium				60.0000	58.3	97	58.8	98	58.8	98
Cadmium				60.0000	63.8	106	60.8	101	62.5	104
Chromium				60.0000	60.4	101	56.4	94	58.8	98
Cobalt				60.0000	64.3	107	61.5	102	63.0	105
Copper				60.0000	64.5	108	62.2	104	65.4	109
Iron				6000.0000	6610	110	6020	100	6420	107
Lead				60.0000	62.6	104	59.4	99	61.8	103
Manganese				60.0000	63.4	106	61.7	103	64.3	107
Nickel				60.0000	64.6	108	61.8	103	63.9	106
Potassium				6000.0000	6010	100	6340	106	6530	109
Selenium				60.0000	63.2	105	57.4	96	60.6	101
Silver				60.0000	64.1	107	61.8	103	63.7	106
Sodium				6000.0000	6600	110	6090	102	6550	109
Thallium				60.0000	64.6	108	58.0	97	61.0	102
Vanadium				60.0000	63.2	105	57.7	96	60.9	102
Zinc				60.0000	63.9	106	60.5	101	63.0	105

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 : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ

Lab Number : L2454050
Project Number : 2232.0006Y005

Parameter	Lab ID	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
		R1880467-2		R1880467-5		R1880467-7		R1880467-10		WG1975627-1	
		Date Analyzed: 09/26/24 07:39		09/26/24 08:03		09/26/24 09:02		09/26/24 09:46		09/26/24 12:41	
		ug/l	Q	ug/l	Q	ug/l	Q	ug/l	Q	mg/l	Q
Aluminum		3.27	U	3.27	U	3.27	U	3.27	U	0.00327	U
Antimony		0.429	U	0.429	U	0.429	U	0.429	U	0.00042	U
Arsenic		0.165	U	0.165	U	0.165	U	0.165	U	0.00016	U
Barium		0.173	U	0.173	U	0.173	U	0.173	U	0.00017	U
Beryllium		0.107	U	0.107	U	0.107	U	0.107	U	0.00010	U
Cadmium		0.0599	U	0.0599	U	0.0599	U	0.0599	U	0.00005	U
Chromium		0.178	U	0.178	U	0.178	U	0.178	U	0.00017	U
Cobalt		0.163	U	0.163	U	0.163	U	0.163	U	0.00016	U
Copper		0.384	U	0.384	U	0.384	U	0.384	U	0.00038	U
Iron		19.1	U	19.1	U	19.1	U	19.1	U	0.0191	U
Lead		0.343	U	0.343	U	0.343	U	0.343	U	0.00034	U
Manganese		0.440	U	0.440	U	0.440	U	0.440	U	0.00044	U
Nickel		0.556	U	0.556	U	0.556	U	0.556	U	0.00055	U
Potassium		30.9	U	30.9	U	30.9	U	30.9	U	0.0309	U
Selenium		1.73	U	1.73	U	1.73	U	1.73	U	0.00173	U
Silver		0.163	U	0.163	U	0.163	U	0.163	U	0.00016	U
Sodium		29.3	U	29.3	U	29.3	U	29.3	U	0.0293	U
Thallium		0.260	J	0.296	J	0.288	J	0.278	J	0.00014	U
Vanadium		1.57	U	1.57	U	1.57	U	1.57	U	0.00157	U
Zinc		3.41	U	3.41	U	3.41	U	3.41	U	0.00341	U

Form 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ

Lab Number : L2454050
Project Number : 2232.0006Y005

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank
	ug/l	Q	ug/l	Q	ug/l	Q	ug/l	Q	Q
Aluminum			3.27	U	3.27	U	3.27	U	
Antimony			0.429	U	0.429	U	0.429	U	
Arsenic			0.165	U	0.165	U	0.165	U	
Barium			0.173	U	0.173	U	0.173	U	
Beryllium			0.107	U	0.107	U	0.107	U	
Cadmium			0.0599	U	0.0599	U	0.0599	U	
Chromium			0.178	U	0.178	U	0.178	U	
Cobalt			0.163	U	0.163	U	0.163	U	
Copper			0.384	U	0.384	U	0.384	U	
Iron			19.1	U	19.1	U	19.1	U	
Lead			0.343	U	0.343	U	0.343	U	
Manganese			0.440	U	0.440	U	0.440	U	
Nickel			0.556	U	0.556	U	0.556	U	
Potassium			30.9	U	30.9	U	30.9	U	
Selenium			1.73	U	1.73	U	1.73	U	
Silver			0.163	U	0.163	U	0.163	U	
Sodium			29.3	U	29.3	U	29.3	U	
Thallium			0.301	J	0.317	J	0.280	J	
Vanadium			1.57	U	1.57	U	1.57	U	
Zinc			3.41	U	3.41	U	3.41	U	

Form 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ

Lab Number : L2454050
Project Number : 2232.0006Y005

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank
	ug/l	Q	ug/l	Q	ug/l	Q	ug/l	Q	Q
Aluminum			3.27	U	3.27	U	3.27	U	
Antimony			0.429	U	0.429	U	0.429	U	
Arsenic			0.165	U	0.165	U	0.165	U	
Barium			0.173	U	0.173	U	0.173	U	
Beryllium			0.107	U	0.107	U	0.107	U	
Cadmium			0.0599	U	0.0599	U	0.0599	U	
Chromium			0.178	U	0.178	U	0.178	U	
Cobalt			0.163	U	0.163	U	0.163	U	
Copper			0.384	U	0.384	U	0.384	U	
Iron			19.1	U	19.1	U	19.1	U	
Lead			0.343	U	0.343	U	0.343	U	
Manganese			0.440	U	0.440	U	0.440	U	
Nickel			0.556	U	0.556	U	0.556	U	
Potassium			30.9	U	30.9	U	30.9	U	
Selenium			1.73	U	1.73	U	1.73	U	
Silver			0.163	U	0.163	U	0.163	U	
Sodium			29.3	U	29.3	U	29.3	U	
Thallium			0.310	J	0.313	J	0.286	J	
Vanadium			1.57	U	1.57	U	1.57	U	
Zinc			3.41	U	3.41	U	3.41	U	

Form 4a Interference Check Sample

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ

Lab Number : L2454050
Project Number : 2232.0006Y005
Concentration Units : ug/l

Analyte	True		Initial Found				Final Found			
	Lab ID : Analysis Date :		R1880467-3 09/26/24 07:44							
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	100000		91400	91						
Antimony			0.242							
Arsenic			0.478							
Barium			1.50							
Beryllium			0.0295							
Cadmium			0.359							
Chromium			1.58							
Cobalt			2.22							
Copper			1.33							
Iron	250000		247000	99						
Lead			5.13							
Manganese			4.78							
Nickel			3.72							
Potassium	100000		93600	94						
Selenium			4.68							
Silver			0.0402							
Sodium	250000		269000	108						
Thallium			0.0987							
Vanadium			0.0304							
Zinc			3.49							

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2409778-152
 Matrix Spike : WG1975627-3
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/26/24 12:55
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Aluminum, Total	0.003J	2	1.90	95					75-125	20
Antimony, Total	ND	0.5	0.5171	103					75-125	20
Arsenic, Total	ND	0.12	0.1182	98					75-125	20
Barium, Total	0.1343	2	2.245	106					75-125	20
Beryllium, Total	ND	0.05	0.04932	99					75-125	20
Cadmium, Total	ND	0.053	0.05448	103					75-125	20
Chromium, Total	0.0003J	0.2	0.1959	98					75-125	20
Cobalt, Total	ND	0.5	0.5420	108					75-125	20
Copper, Total	ND	0.25	0.2669	107					75-125	20
Iron, Total	4.14	1	4.57	43 Q					75-125	20
Lead, Total	ND	0.53	0.5164	97					75-125	20
Manganese, Total	0.1625	0.5	0.7214	112					75-125	20
Nickel, Total	ND	0.5	0.5425	108					75-125	20
Potassium, Total	1.02	10	11.9	109					75-125	20
Selenium, Total	ND	0.12	0.106	88					75-125	20
Silver, Total	ND	0.05	0.05282	106					75-125	20
Sodium, Total	5.77	10	16.0	102					75-125	20
Thallium, Total	ND	0.12	0.1180	98					75-125	20
Vanadium, Total	ND	0.5	0.4897	98					75-125	20
Zinc, Total	ND	0.5	0.5329	106					75-125	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/26/24 12:50
Dup Sample ID	: WG1975627-11	DUP Analysis Date	: 09/26/24 13:49

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Lead, Total	ND	ND	NC	20

Form 7 Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975627-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/26/24 12:46
 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			
Aluminum, Total	2.00	1.92	96.					80-120	20
Antimony, Total	0.500	0.508	102.					80-120	20
Arsenic, Total	0.120	0.122	102.					80-120	20
Barium, Total	2.00	2.14	107.					80-120	20
Beryllium, Total	0.0500	0.0499	100.					80-120	20
Cadmium, Total	0.0530	0.0560	106.					80-120	20
Chromium, Total	0.200	0.196	98.					80-120	20
Cobalt, Total	0.500	0.559	112.					80-120	20
Copper, Total	0.250	0.271	108.					80-120	20
Iron, Total	1.00	1.11	111.					80-120	20
Lead, Total	0.530	0.527	99.					80-120	20
Manganese, Total	0.500	0.555	111.					80-120	20
Nickel, Total	0.500	0.533	106.					80-120	20
Potassium, Total	10.0	11.4	114.					80-120	20
Selenium, Total	0.120	0.116	97.					80-120	20
Silver, Total	0.0500	0.0533	106.					80-120	20
Sodium, Total	10.0	10.6	106.					80-120	20
Thallium, Total	0.120	0.120	100.					80-120	20
Vanadium, Total	0.500	0.500	100.					80-120	20
Zinc, Total	0.500	0.537	107.					80-120	20



Form 12

Preparation Log

Client : Roux Env. Eng. & Geology, DPC Lab Number : L2454050
Project Name : CORAM MATERIALS Project Number : 2232.0006Y005
Matrix : WATER Prep Method : EPA 3005A

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2454050-01	09/24/24 14:02	-	50
L2454050-02	09/24/24 14:02	-	50
L2454050-03	09/24/24 14:02	-	50
L2454050-04	09/24/24 14:02	-	50
WG1975627-1	09/24/24 14:02	-	50
WG1975627-2	09/24/24 14:02	-	50
WG1975627-3	09/24/24 14:02	-	50
WG1975627-11	09/24/24 14:02	-	50



Form 13

Analysis Run Log

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ
Start Date : 09/26/24 06:32

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Method : 1,6020B
End Date : 09/26/24 13:59

[illegible]

Form 13

Analysis Run Log

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : ICPMSRQ
Start Date : 09/26/24 06:32

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Method : 1,6020B
End Date : 09/26/24 13:59

[illegible]

Form 14

ICP-MS Tune

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab Sample ID : R1880467-8
ICP-MS Instrument : iCAP RQ

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Date : 09/26/24 06:32

Mass Element	Avg Measured Mass (amu)	Avg. Peak Width at 10% Peak Height (amu)	%RSD
59 Co	58.9372	0.681	0.6
115 In	114.8953	0.704	1.1
7 Li	7.0385	0.664	0.7
238 U	238.0655	0.717	1

Form 15

ICP-MS Internal Standards Relative Intensity Summary

Client : Roux Env. Eng. & Geology, DPC Lab Number : L2454050
 Project Name : CORAM MATERIALS Project Number : 2232.0006Y005
 Instrument ID : ICPMSRQ Analysis Method : 1,6020B
 Start Date : 09/26/24 End Date : 09/26/24

Sample #	Time	Internal Standards %RI For:				
		Lithium	Scandium	Ge	In	Bismuth
R1880467-1 ICV	07:35:04	95	96	101	98	99
R1880467-2 ICB	07:39:47	95	98	100	101	102
R1880467-3 ICSA	07:44:57	72	88	93	84	84
R1880467-4 CCV	07:59:03	92	95	98	95	93
R1880467-5 CCB	08:03:48	95	95	100	101	101
R1880467-6 CCV	08:57:56	96	100	101	98	97
R1880467-7 CCB	09:02:40	104	102	101	101	103
R1880467-9 CCV	09:42:04	105	106	107	105	101
R1880467-10 CCB	09:46:49	105	105	105	104	101
R1880467-11 CCV	10:39:14	102	103	104	103	101
R1880467-12 CCB	10:43:59	106	105	104	105	102
R1880467-13 CCV	10:56:16	102	100	101	98	94
R1880467-14 CCB	11:01:00	108	106	106	109	103
R1880467-15 CCV	11:55:01	100	101	99	96	94
R1880467-16 CCB	11:59:45	104	98	100	99	97
L2454050-04	12:24:15	107	109	107	101	98
R1880467-17 CCV	12:28:57	105	106	104	101	94
R1880467-18 CCB	12:33:42	110	106	106	106	100
WG1975627-1 BLANK	12:41:30	105	104	100	99	94
WG1975627-2 LCS	12:46:13	107	105	102	101	92
WG1975627-3 MS	12:55:33	108	106	104	101	92
L2454050-01	13:14:15	107	110	103	100	92
L2454050-02	13:18:56	102	104	102	95	89
L2454050-03	13:23:38	111	109	105	100	97
R1880467-19 CCV	13:28:20	103	104	98	99	90
R1880467-20 CCB	13:33:05	106	101	102	102	94
WG1975627-11 DUP	13:49:33	106	109	104	99	92

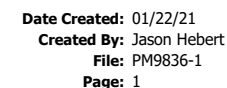


Form 15
ICP-MS Internal Standards Relative Intensity Summary

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Instrument ID	: ICPMSRQ	Analysis Method	: 1,6020B
Start Date	: 09/26/24	End Date	: 09/26/24

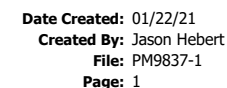
Sample #	Time	Internal Standards %RI For:				
		Lithium	Scandium	Ge	In	Bismuth
R1880467-21 CCV	13:54:14	105	106	100	98	92
R1880467-22 CCB	13:59:00	107	103	101	100	95



[illegible]

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.



[illegible]

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.



System

Start time: 9/26/2024 6:32:38 AM
Instrument: iCAP RQ
Operator: ALPHALAB\ICPMSRQ
Template: STD_DEF
Instrument Serial Number: RQ01904
Last Autotune: Autotune-Alpha CustomTorch Alignment Indium ONLY STD Mode-20240925-193927262.imatdat
Solution: No solution specified

Sensitivity & Stability Test

Result	Runs	Sweeps
Passed	5	10

Sensitivity

Analyte	Result	Value	Condition	Limit
Bkg4.5	Passed	9.4 CPS	Less than	10.0 CPS
Bkg220.7	Passed	0.0 CPS	Less than	10.0 CPS
7Li	Passed	67,360.0 CPS	Greater than	10,000.0 CPS
59Co	Passed	197,110.0 CPS	Greater than	1,000.0 CPS
238U	Passed	157,284.0 CPS	Greater than	20,000.0 CPS
140Ce.16O/140Ce	Passed	0.0188	Less than	0.025
137Ba++/137Ba	Passed	0.0229	Less than	0.034
115In	Passed	137,233.0 CPS	Greater than	5,000.0 CPS

Stability

Analyte	Value	Limit
7Li	0.7%	5
59Co	0.6%	5
238U	1.0%	5
115In	1.1%	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	7.0385	0.0225	0.664	0.600	0.900
59Co	Passed	58.9372	0.0040	0.681	0.600	0.900
115In	Passed	114.8953	0.0085	0.704	0.600	0.900
238U	Passed	238.0655	0.0147	0.717	0.600	0.900

Tune Settings

Parameter	Value
Additional Gas Flow 1	0.00
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-382.40
Auxiliary Flow	0.80
CCT Bias	-3.50
CCT Entry Lens	-102.01
CCT Exit Lens	-160.01
CCT Focus Lens	-1.99
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	-210.01
D2 Lens	-80.00
Deflection Entry Lens	-35.01
Dry Pump Speed	100.00
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-110.87
Focus Lens	21.00
Nebulizer Flow	1.00
Peristaltic Pump Speed	17.00
Plasma Power	1549.58
Pole Bias	-0.93
Quad Entry Lens	-30.79
Sampling Depth	5.00
Spray Chamber Temperature	2.68
Torch Horizontal Position	-0.13
Torch Vertical Position	-0.80
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	-45.00

Vacuum Check

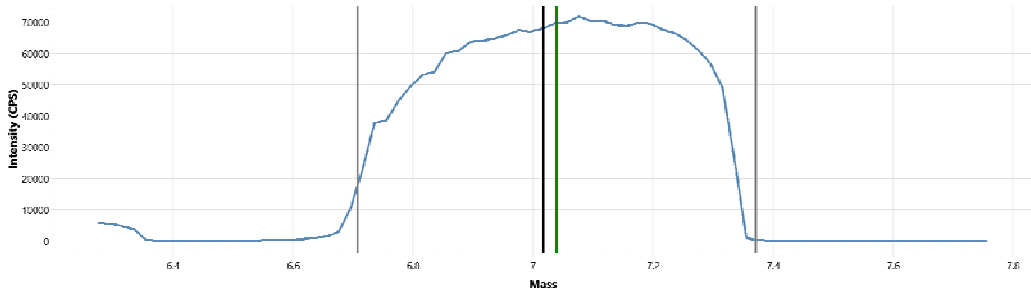
Parameter	Result	Value
Analyzer Pressure	Vacuum ok	2.514e-7
Interface Pressure		1.617e+0

Detector Voltages

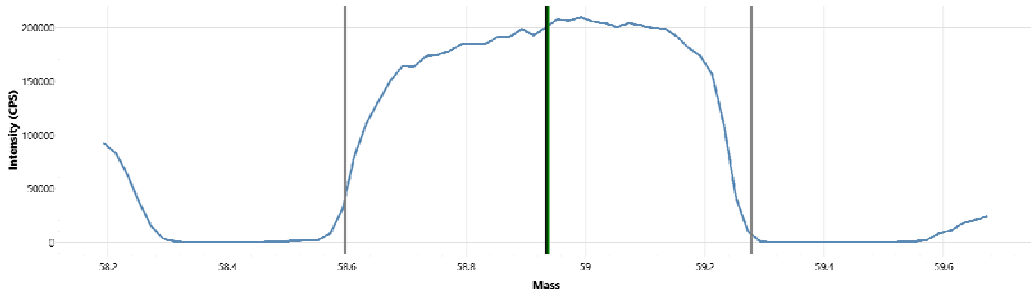
Analog	Counting
-2875.00	1675.00

Mass Calibration Peaks

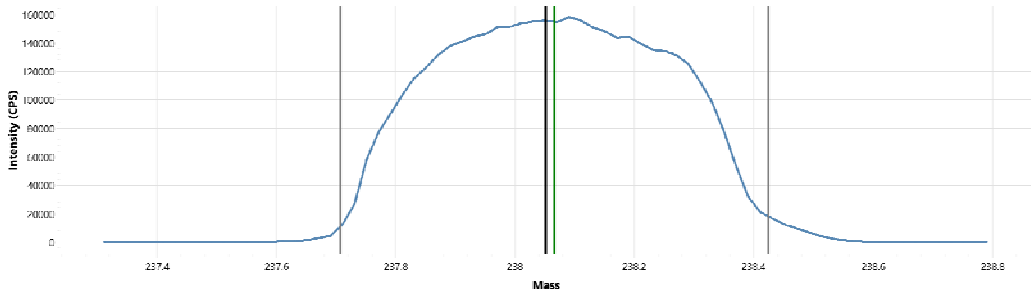
Analyte: 7Li



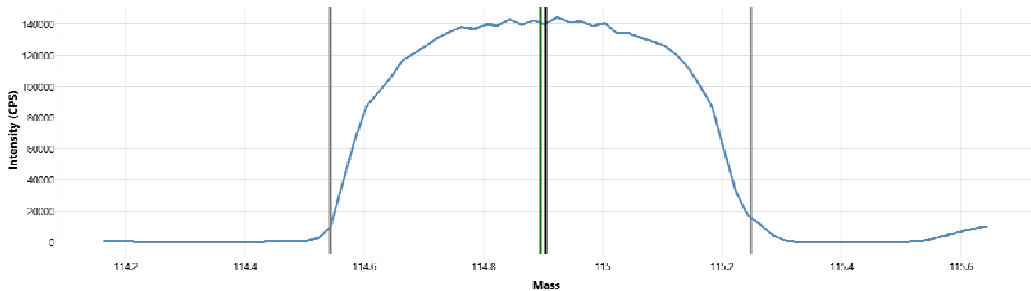
Analyte: 59Co



Analyte: 238U

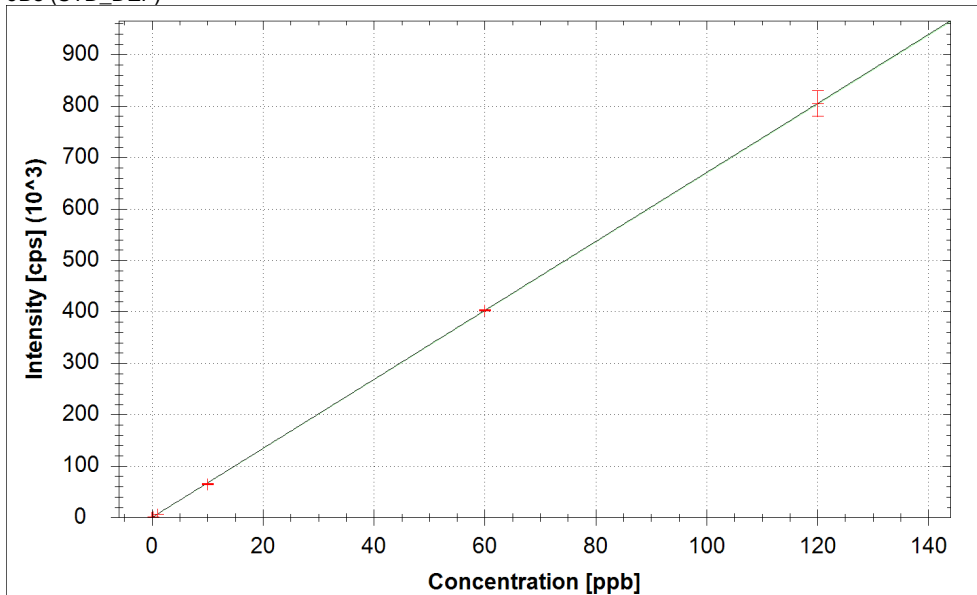


Analyte: 115In



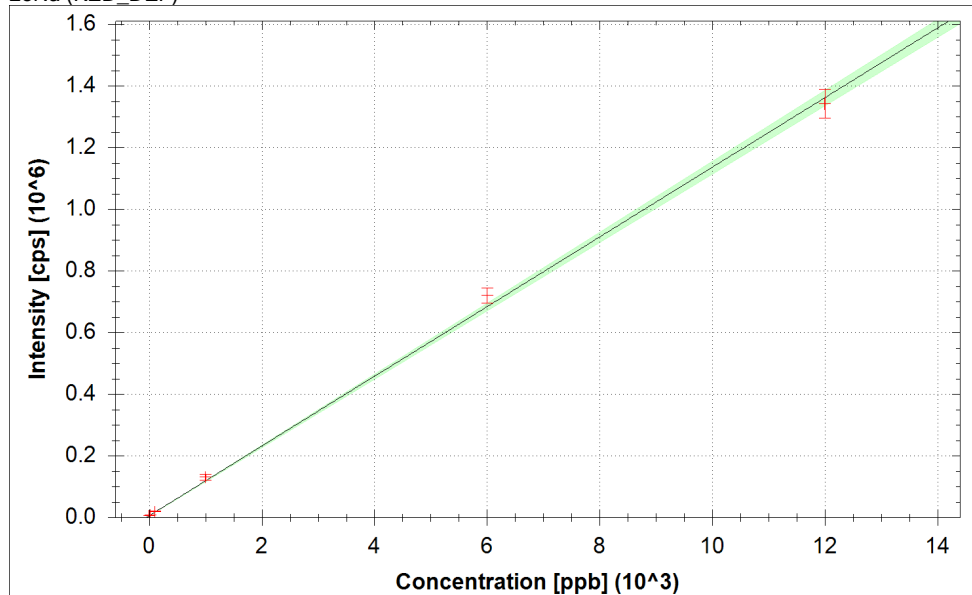
Calibration Curves:

9Be (STD_DEF)



$f(x) = 6703.7118x + 104.4666$
 $R^2 = 1.0000$
BEC = 0.016 ppb
LoD = 0.0025 ppb

23Na (KED_DEF)



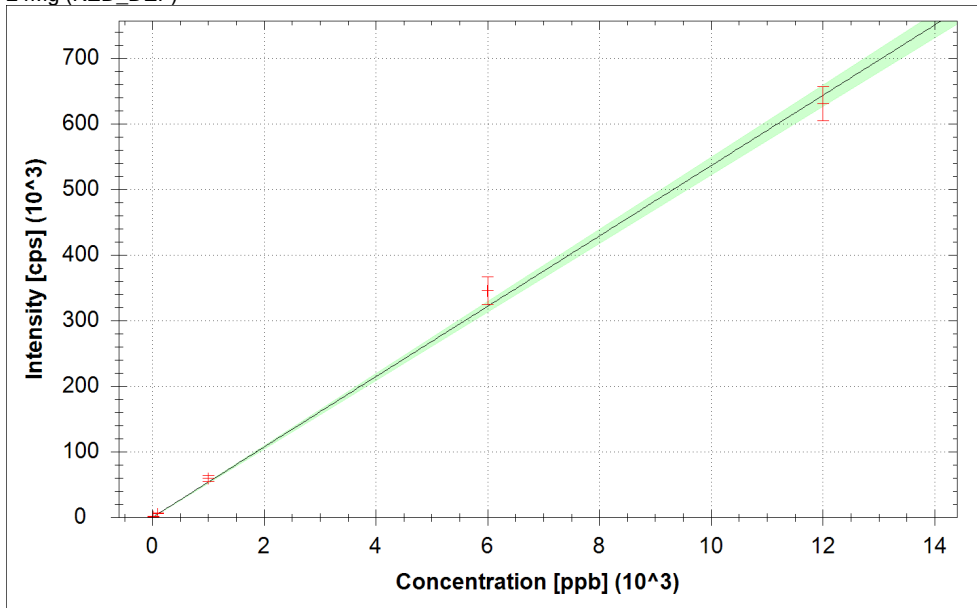
$f(x) = 113.0032x + 5675.8371$
 $R^2 = 0.9988$
BEC = 50.227 ppb
LoD = 3.8589 ppb

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM

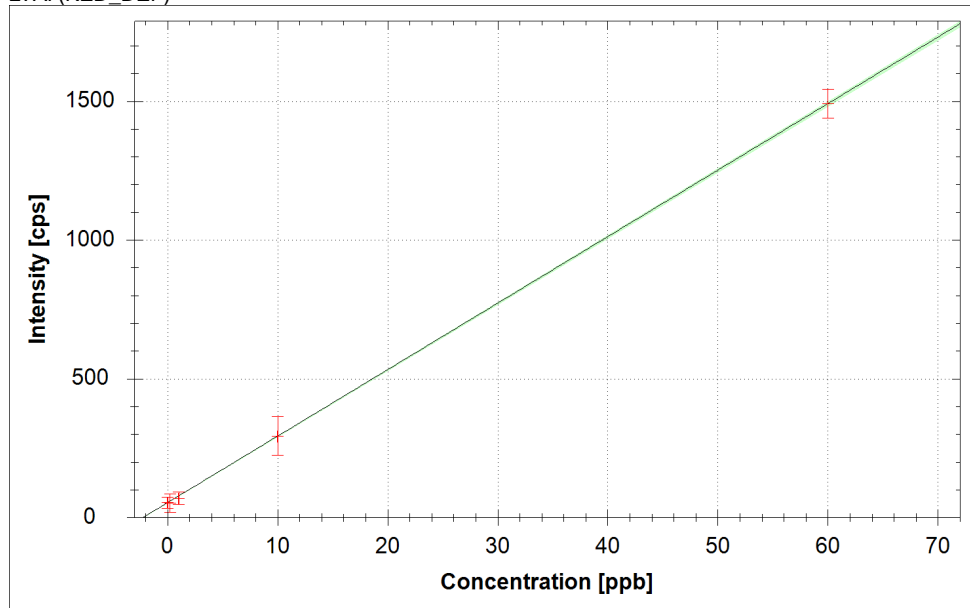


²⁴Mg (KED_DEF)



$f(x) = 53.6000 \cdot x + 109.0646$
 $R^2 = 0.9977$
BEC = 2.035 ppb
LoD = 1.9255 ppb

²⁷Al (KED_DEF)



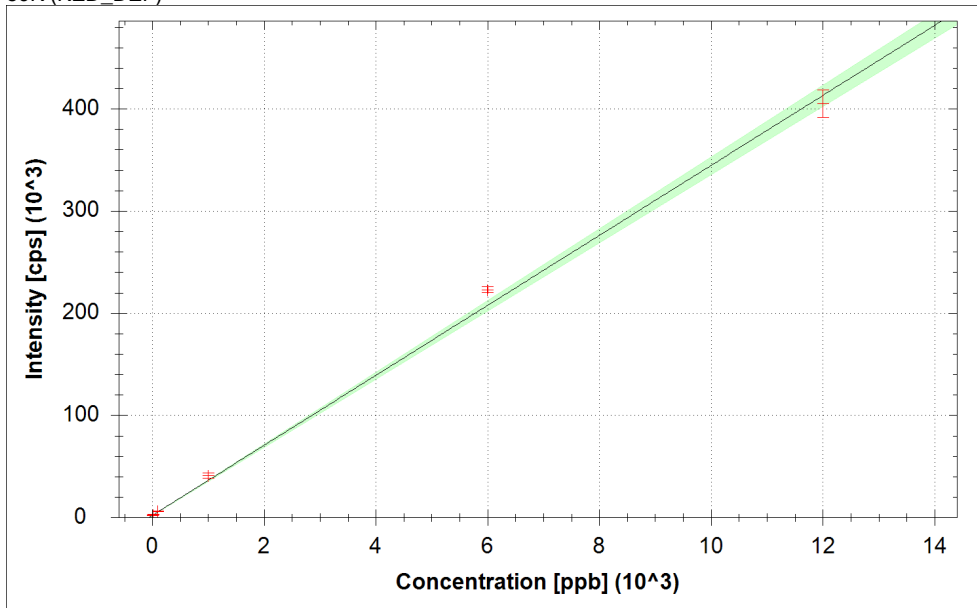
$f(x) = 23.9591 \cdot x + 53.3759$
 $R^2 = 0.9999$
BEC = 2.228 ppb
LoD = 2.5299 ppb

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM

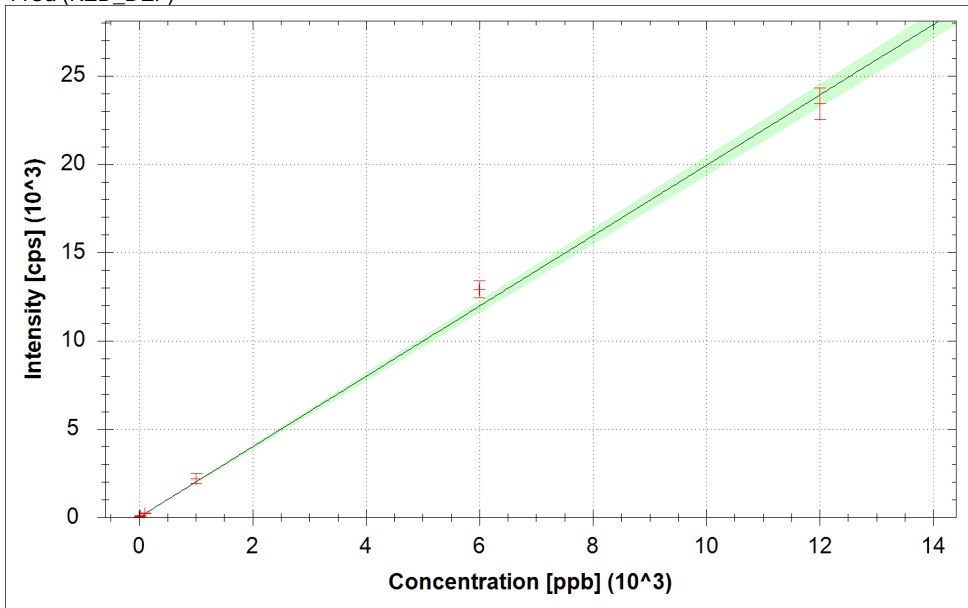


39K (KED_DEF)



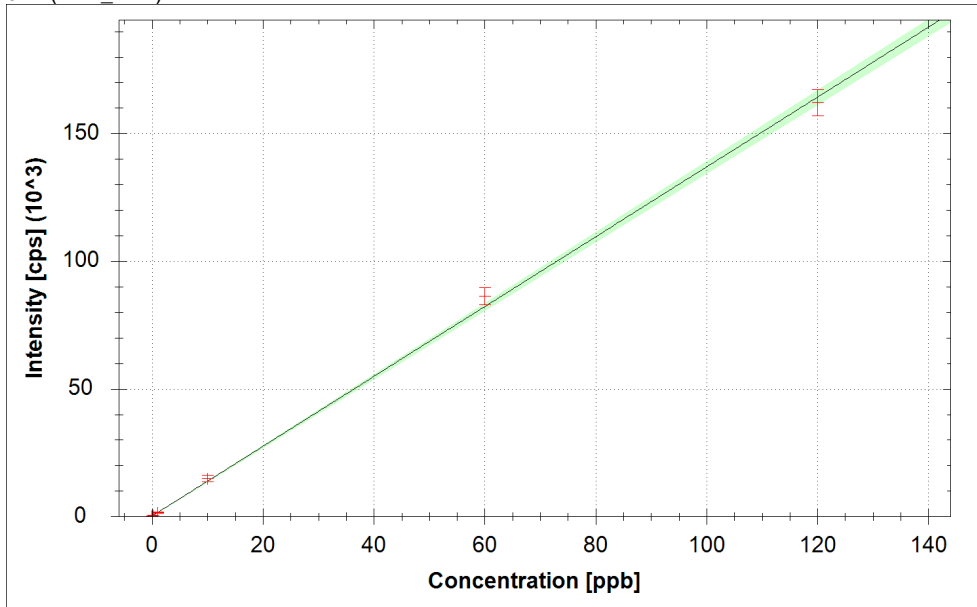
$f(x) = 34.2473x + 2021.8352$
 $R^2 = 0.9977$
BEC = 59.036 ppb
LoD = 7.9085 ppb

44Ca (KED_DEF)



$f(x) = 1.9917x + 11.4916$
 $R^2 = 0.9975$
BEC = 5.770 ppb
LoD = 18.0800 ppb

51V (KED_DEF)



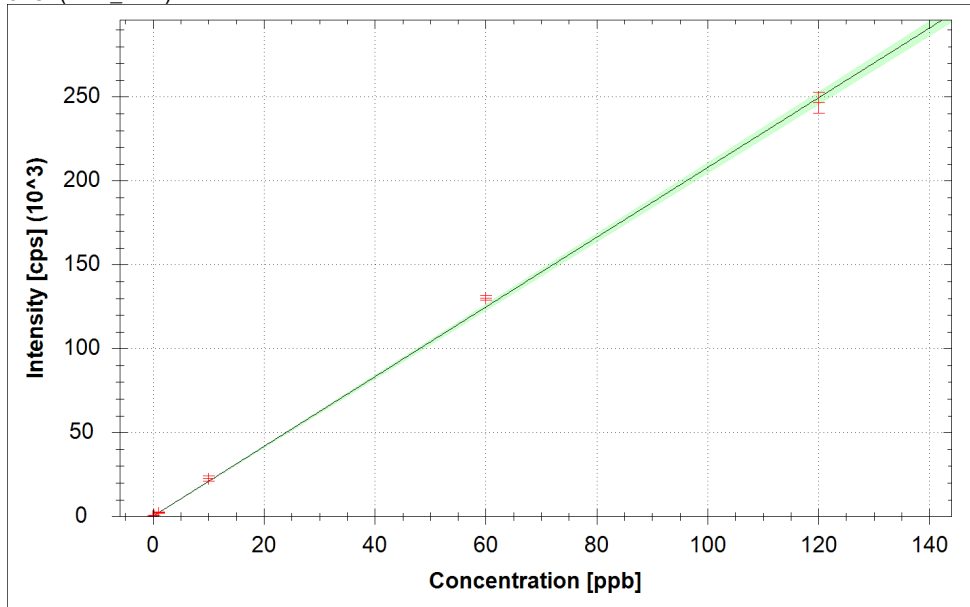
$$f(x) = 1367.5098 \cdot x + 124.2669$$

$$R^2 = 0.9990$$

$$\text{BEC} = 0.091 \text{ ppb}$$

$$\text{LoD} = 0.0838 \text{ ppb}$$

52Cr (KED_DEF)



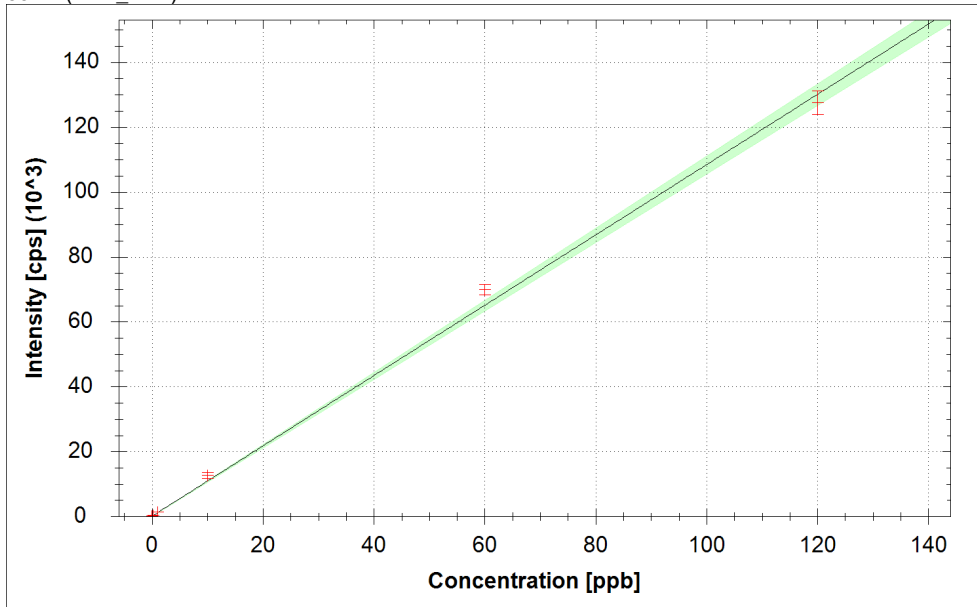
$$f(x) = 2076.2574 \cdot x + 172.0595$$

$$R^2 = 0.9992$$

$$\text{BEC} = 0.083 \text{ ppb}$$

$$\text{LoD} = 0.0387 \text{ ppb}$$

55Mn (KED_DEF)



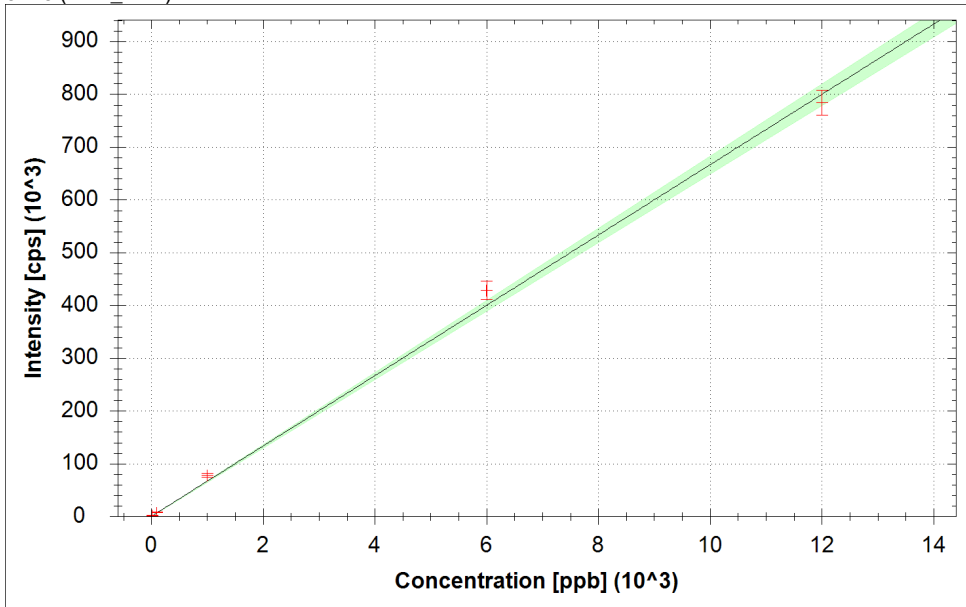
$$f(x) = 1083.4013 \cdot x + 73.4026$$

$$R^2 = 0.9977$$

$$\text{BEC} = 0.068 \text{ ppb}$$

$$\text{LoD} = 0.0299 \text{ ppb}$$

57Fe (KED_DEF)



$$f(x) = 66.6175 \cdot x + 122.1324$$

$$R^2 = 0.9977$$

$$\text{BEC} = 1.833 \text{ ppb}$$

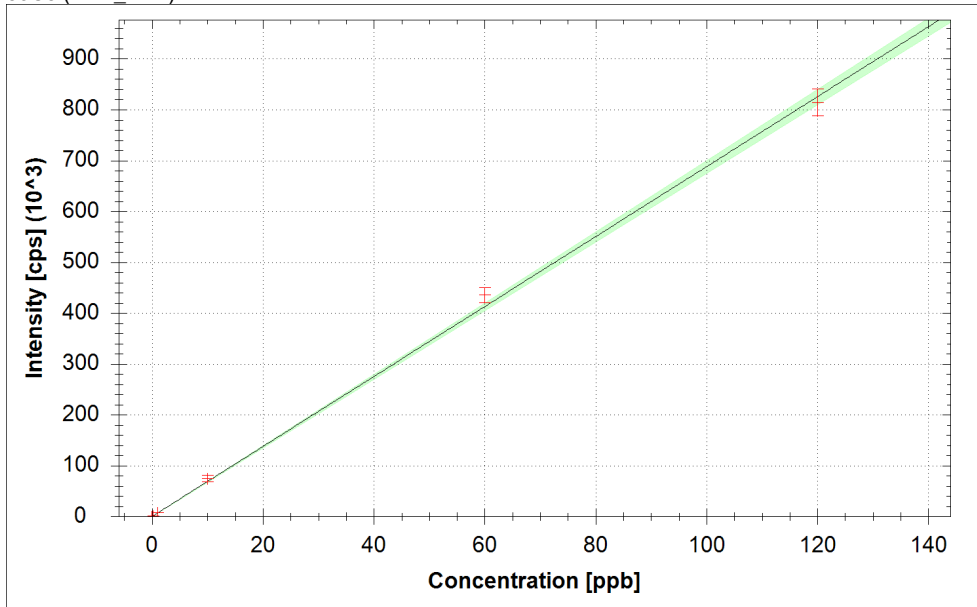
$$\text{LoD} = 1.6395 \text{ ppb}$$

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



⁵⁹Co (KED_DEF)



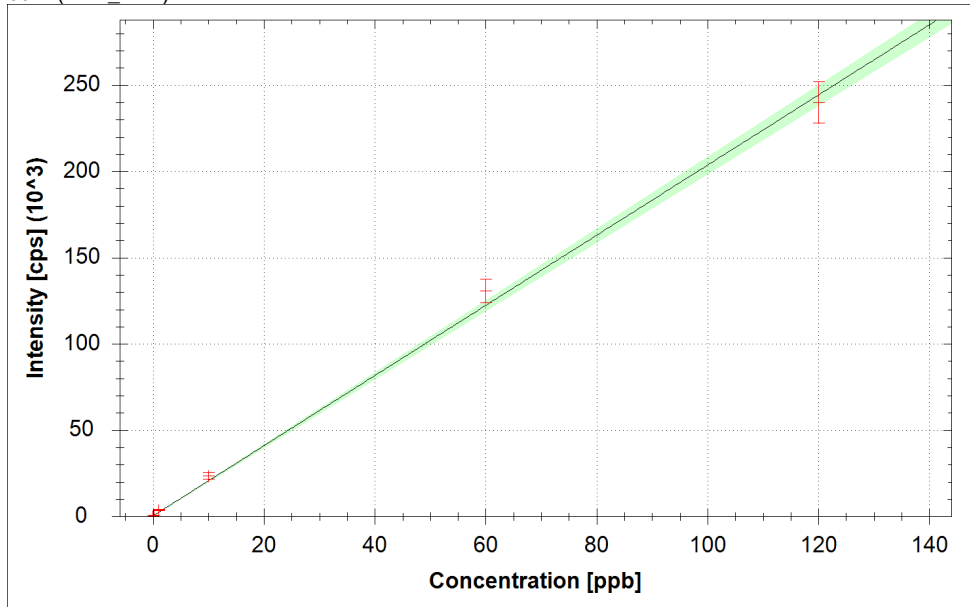
$$f(x) = 6878.3009 \cdot x + 17.8197$$

$$R^2 = 0.9988$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0034 \text{ ppb}$$

⁶⁰Ni (KED_DEF)



$$f(x) = 2032.9598 \cdot x + 341.9304$$

$$R^2 = 0.9980$$

$$\text{BEC} = 0.168 \text{ ppb}$$

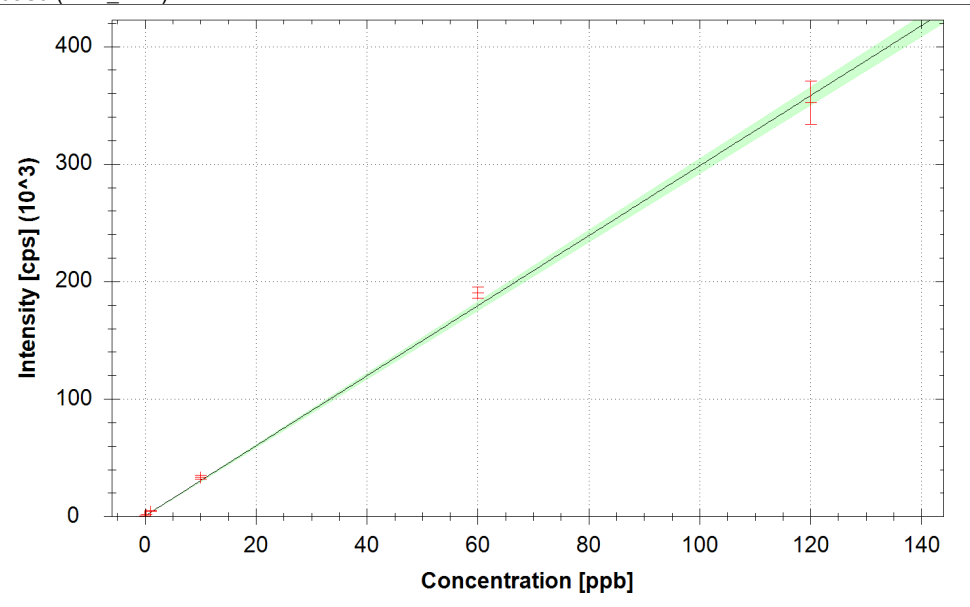
$$\text{LoD} = 0.0918 \text{ ppb}$$

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



⁶⁵Cu (KED_DEF)



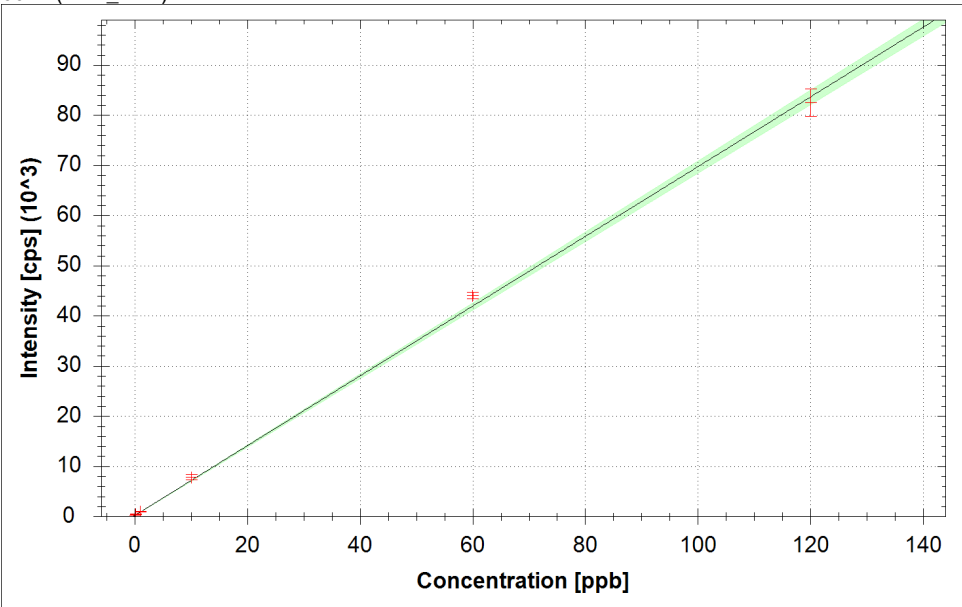
$$f(x) = 2978.8758 \cdot x + 522.2395$$

$$R^2 = 0.9984$$

$$\text{BEC} = 0.175 \text{ ppb}$$

$$\text{LoD} = 0.0622 \text{ ppb}$$

⁶⁶Zn (KED_DEF)



$$f(x) = 694.8967 \cdot x + 222.2027$$

$$R^2 = 0.9989$$

$$\text{BEC} = 0.320 \text{ ppb}$$

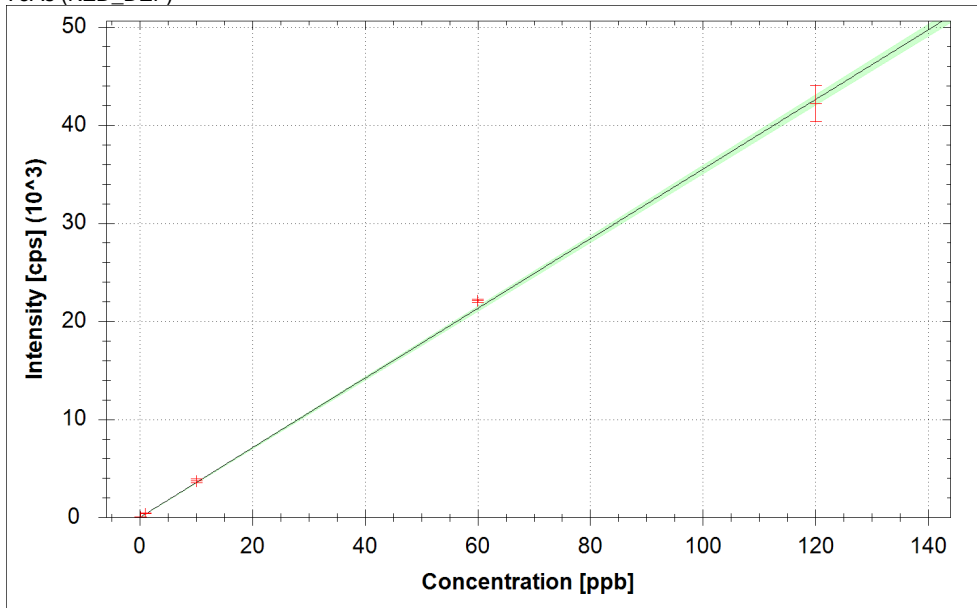
$$\text{LoD} = 0.0721 \text{ ppb}$$

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM

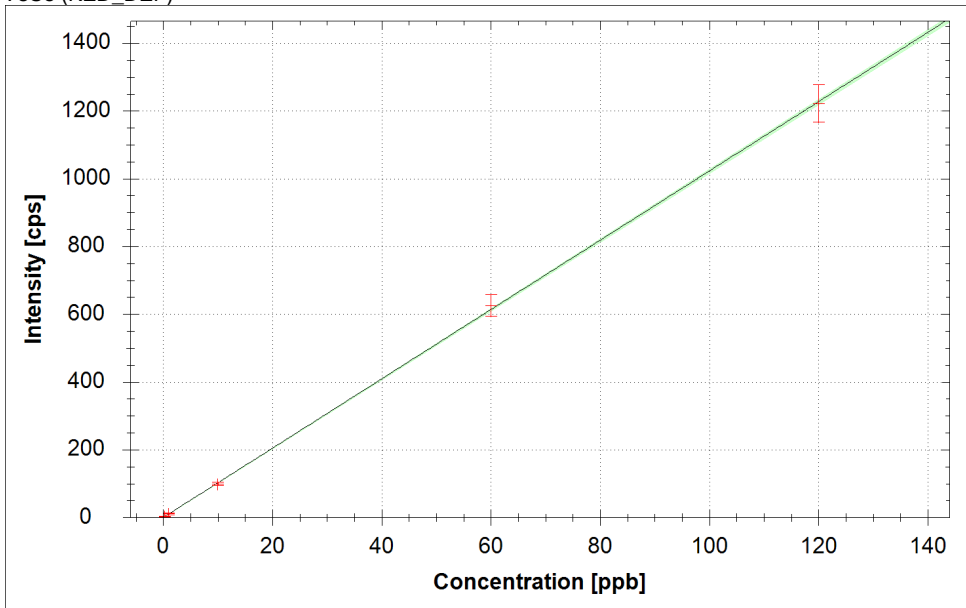


75As (KED_DEF)



$f(x) = 354.9108 \cdot x + 6.2681$
 $R^2 = 0.9995$
BEC = 0.018 ppb
LoD = 0.2363 ppb

78Se (KED_DEF)



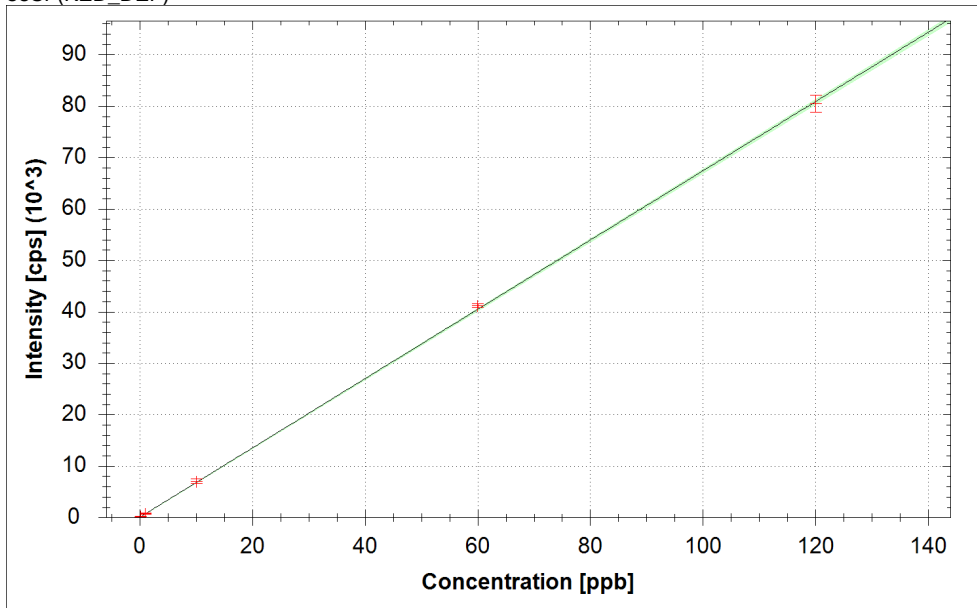
$f(x) = 10.2246 \cdot x + 0.0209$
 $R^2 = 0.9999$
BEC = 0.002 ppb
LoD = 0.0740 ppb

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



88Sr (KED_DEF)



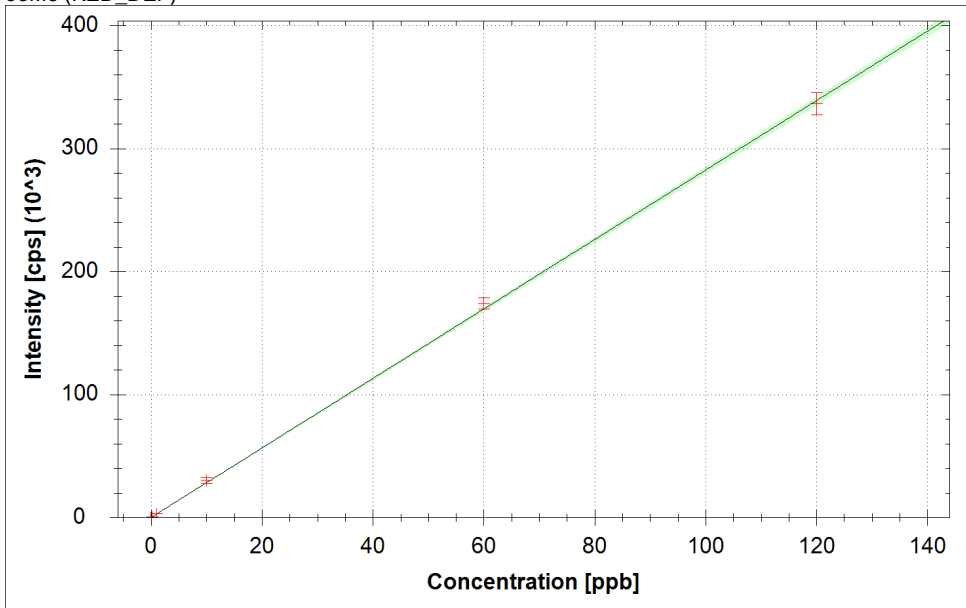
$$f(x) = 673.1889 \cdot x + 55.7079$$

$$R^2 = 0.9999$$

$$\text{BEC} = 0.083 \text{ ppb}$$

$$\text{LoD} = 0.0727 \text{ ppb}$$

95Mo (KED_DEF)



$$f(x) = 2823.3438 \cdot x + 24.6002$$

$$R^2 = 0.9997$$

$$\text{BEC} = 0.009 \text{ ppb}$$

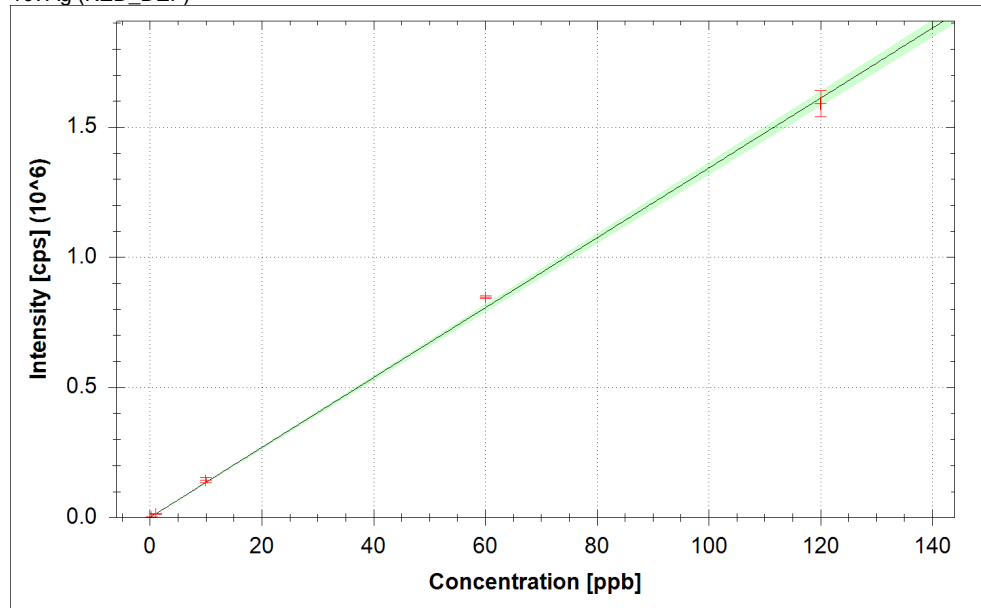
$$\text{LoD} = 0.0153 \text{ ppb}$$

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM

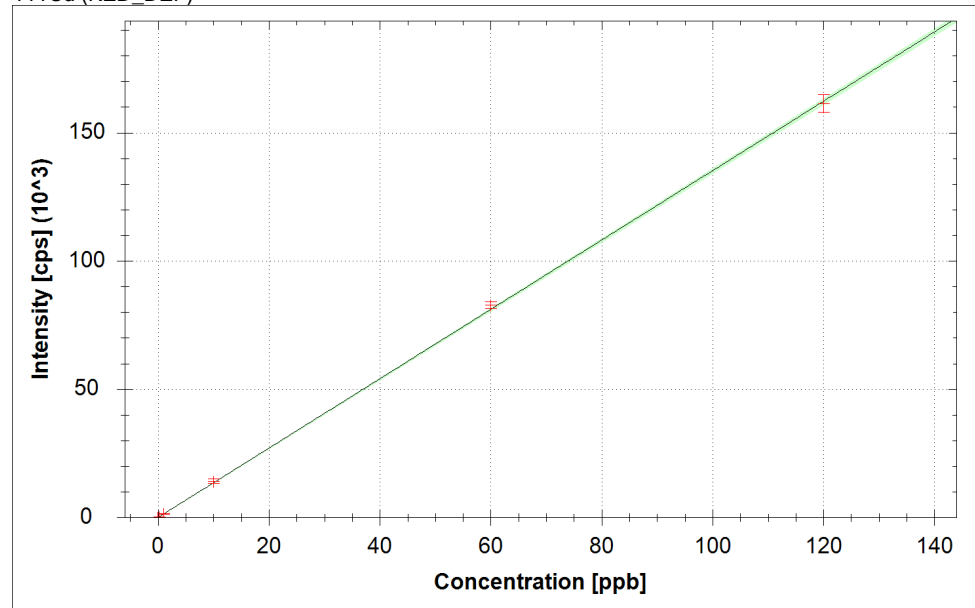


107Ag (KED_DEF)



$f(x) = 13423.1703 \cdot x + 27.7005$
 $R^2 = 0.9990$
BEC = 0.002 ppb
LoD = 0.0015 ppb

111Cd (KED_DEF)



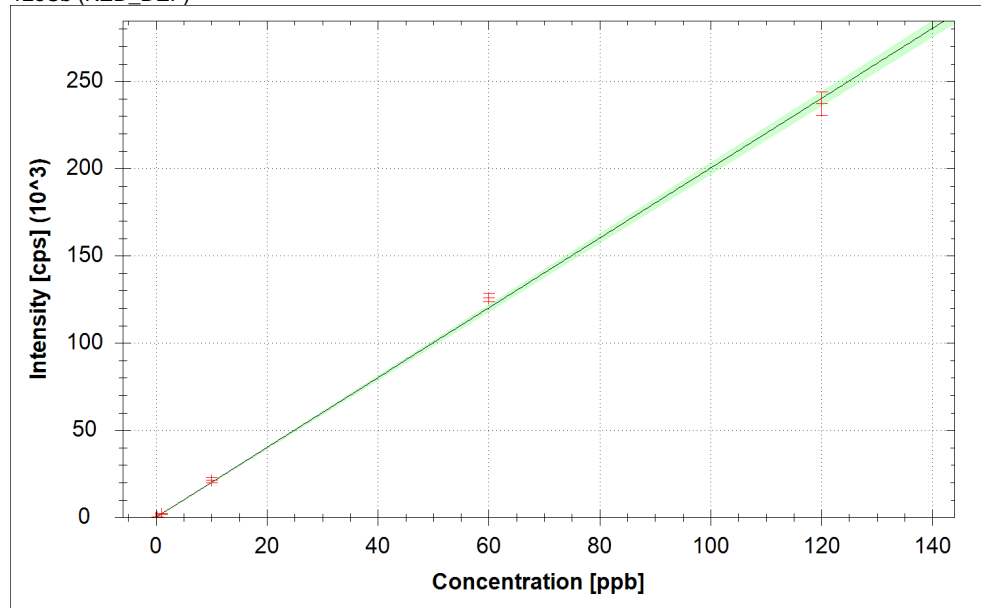
$f(x) = 1351.6097 \cdot x + 0.8955$
 $R^2 = 0.9998$
BEC = 0.001 ppb
LoD = 0.0017 ppb

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



¹²³Sb (KED_DEF)



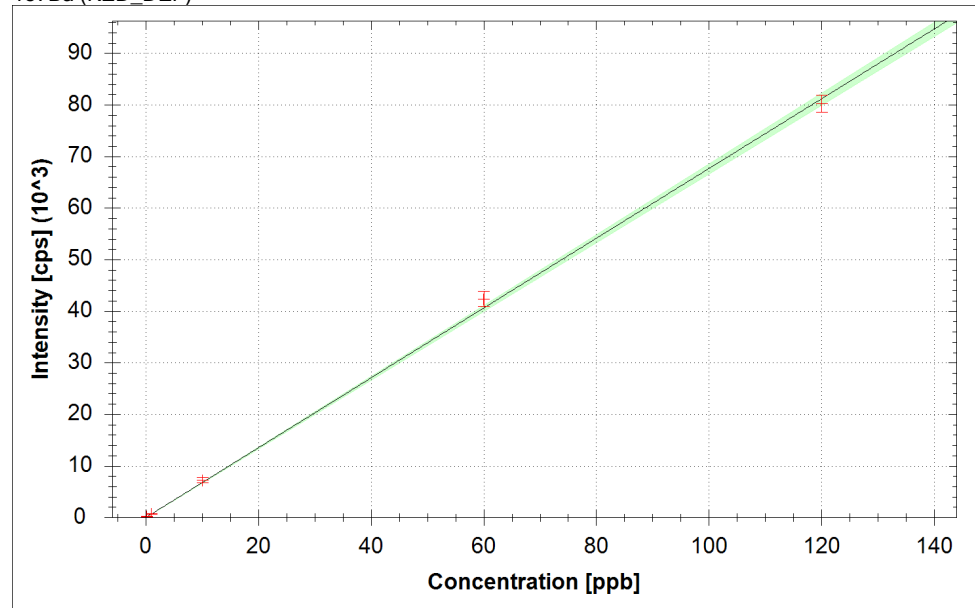
$$f(x) = 2001.0523 \cdot x + 42.6409$$

$$R^2 = 0.9991$$

$$\text{BEC} = 0.021 \text{ ppb}$$

$$\text{LoD} = 0.0064 \text{ ppb}$$

¹³⁷Ba (KED_DEF)



$$f(x) = 676.0958 \cdot x + 6.6670$$

$$R^2 = 0.9992$$

$$\text{BEC} = 0.010 \text{ ppb}$$

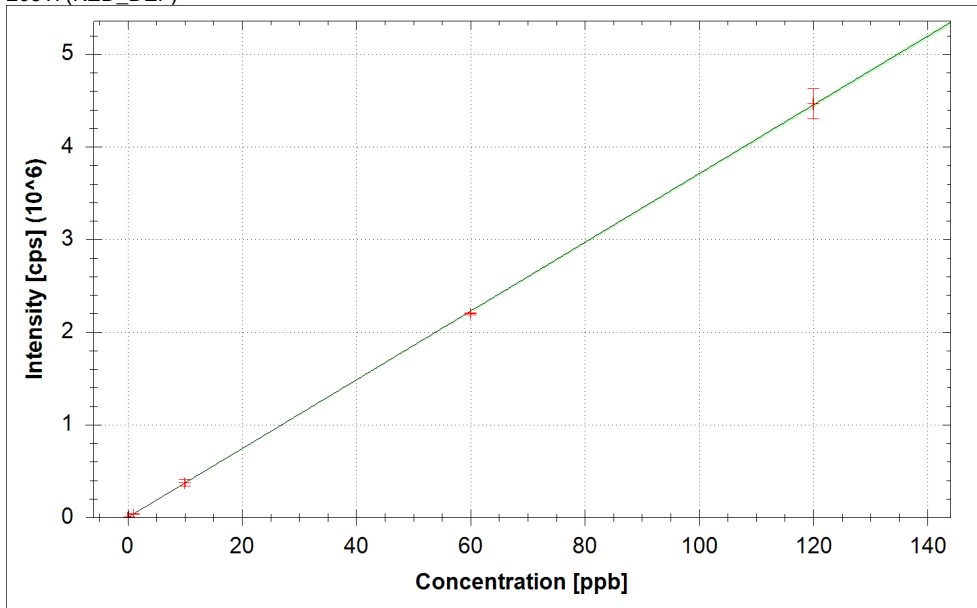
$$\text{LoD} = 0.0003 \text{ ppb}$$

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM

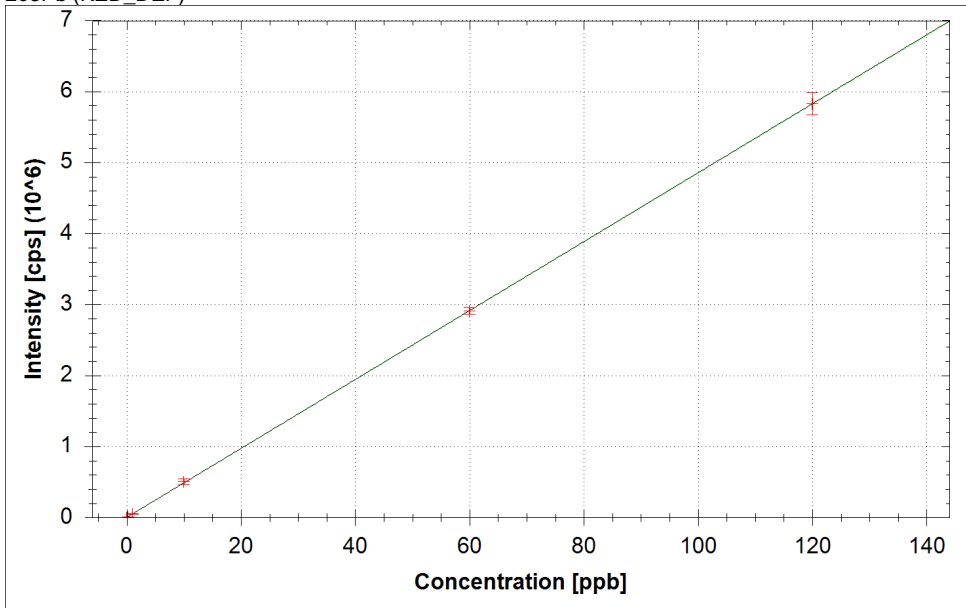


205TI (KED_DEF)



$f(x) = 37091.8790 \cdot x + 288.5132$
 $R^2 = 0.9999$
BEC = 0.008 ppb
LoD = 0.0102 ppb

208Pb (KED_DEF)



$f(x) = 48547.6954 \cdot x + 424.1193$
 $R^2 = 1.0000$
BEC = 0.009 ppb
LoD = 0.0034 ppb

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Standards:

Analysis Index: 4
 Analysis Name: 0.2/20 Cal
 Analysis Type: STD
 Analysis Started at: 9/26/2024 7:00:57 AM
 Total Dilution Factor: 50000
 Rack: 0
 Vial: 2

Category	Concentration average	Concentration RSD	Standard Concentration	Standard Relative Difference
6Li (STD_DEF)	101.253 %	1.3 %		0.000 %
6Li (KED_DEF)	93.981 %	6.3 %		0.000 %
9Be (STD_DEF)	0.190 ppb	3.3 %	0.200 ppb	4.887 %
23Na (KED_DEF)	21.714 ppb	7.8 %	20.000 ppb	8.571 %
24Mg (KED_DEF)	21.866 ppb	8.6 %	20.000 ppb	9.332 %
27Al (KED_DEF)	-0.103 ppb	1,314.0 %	0.200 ppb	151.358 %
39K (KED_DEF)	16.496 ppb	31.9 %	20.000 ppb	17.518 %
44Ca (KED_DEF)	37.267 ppb	14.6 %	20.000 ppb	86.333 %
45Sc (STD_DEF)	98.497 %	1.4 %		0.000 %
45Sc (KED_DEF)	99.179 %	1.0 %		0.000 %
51V (KED_DEF)	0.240 ppb	9.1 %	0.200 ppb	19.771 %
52Cr (KED_DEF)	0.179 ppb	4.5 %	0.200 ppb	10.589 %
55Mn (KED_DEF)	0.296 ppb	1.2 %	0.200 ppb	48.098 %
57Fe (KED_DEF)	22.045 ppb	8.5 %	20.000 ppb	10.224 %
59Co (KED_DEF)	0.205 ppb	8.1 %	0.200 ppb	2.321 %
60Ni (KED_DEF)	0.212 ppb	4.4 %	0.200 ppb	6.137 %
65Cu (KED_DEF)	0.320 ppb	17.5 %	0.200 ppb	59.857 %
66Zn (KED_DEF)	0.308 ppb	18.3 %	0.200 ppb	53.807 %
74Ge (STD_DEF)	99.011 %	1.9 %		0.000 %
74Ge (KED_DEF)	97.434 %	1.0 %		0.000 %
75As (KED_DEF)	0.166 ppb	13.0 %	0.200 ppb	16.799 %
78Se (KED_DEF)	0.266 ppb	26.6 %	0.200 ppb	33.080 %
88Sr (KED_DEF)	0.190 ppb	5.0 %	0.200 ppb	4.895 %
95Mo (KED_DEF)	0.181 ppb	10.1 %	0.200 ppb	9.717 %
103Rh (STD_DEF)	97.223 %	0.5 %		0.000 %
103Rh (KED_DEF)	100.061 %	2.2 %		0.000 %
107Ag (KED_DEF)	0.202 ppb	4.2 %	0.200 ppb	1.104 %
111Cd (KED_DEF)	0.202 ppb	6.4 %	0.200 ppb	1.195 %
115In (STD_DEF)	100.642 %	1.0 %		0.000 %
115In (KED_DEF)	99.221 %	1.6 %		0.000 %
123Sb (KED_DEF)	0.188 ppb	3.7 %	0.200 ppb	5.930 %
137Ba (KED_DEF)	0.237 ppb	33.9 %	0.200 ppb	18.358 %
159Tb (STD_DEF)	98.920 %	0.7 %		0.000 %
159Tb (KED_DEF)	98.938 %	1.4 %		0.000 %
175Lu (STD_DEF)	99.934 %	1.7 %		0.000 %
175Lu (KED_DEF)	96.804 %	1.5 %		0.000 %
205Tl (KED_DEF)	0.191 ppb	2.1 %	0.200 ppb	4.289 %
208Pb (KED_DEF)	0.195 ppb	0.8 %	0.200 ppb	2.478 %
209Bi (STD_DEF)	98.799 %	1.6 %		0.000 %
209Bi (KED_DEF)	96.933 %	0.1 %		0.000 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Standards:

Analysis Index: 5
 Analysis Name: 1/100 Cal
 Analysis Type: STD
 Analysis Started at: 9/26/2024 7:05:37 AM
 Total Dilution Factor: 10000
 Rack: 0
 Vial: 3

Category	Concentration average	Concentration RSD	Standard Concentration	Standard Relative Difference
6Li (STD_DEF)	101.058 %	0.7 %		0.000 %
6Li (KED_DEF)	90.328 %	5.7 %		0.000 %
9Be (STD_DEF)	0.920 ppb	0.6 %	1.000 ppb	7.986 %
23Na (KED_DEF)	116.175 ppb	8.9 %	100.000 ppb	16.175 %
24Mg (KED_DEF)	111.248 ppb	4.5 %	100.000 ppb	11.248 %
27Al (KED_DEF)	0.646 ppb	142.3 %	1.000 ppb	35.448 %
39K (KED_DEF)	117.479 ppb	6.1 %	100.000 ppb	17.479 %
44Ca (KED_DEF)	113.455 ppb	13.3 %	100.000 ppb	13.455 %
45Sc (STD_DEF)	98.599 %	5.4 %		0.000 %
45Sc (KED_DEF)	92.250 %	4.6 %		0.000 %
51V (KED_DEF)	1.062 ppb	17.8 %	1.000 ppb	6.248 %
52Cr (KED_DEF)	1.019 ppb	15.2 %	1.000 ppb	1.867 %
55Mn (KED_DEF)	1.185 ppb	7.1 %	1.000 ppb	18.515 %
57Fe (KED_DEF)	111.980 ppb	7.3 %	100.000 ppb	11.980 %
59Co (KED_DEF)	1.072 ppb	7.4 %	1.000 ppb	7.174 %
60Ni (KED_DEF)	1.618 ppb	8.4 %	1.000 ppb	61.798 %
65Cu (KED_DEF)	1.348 ppb	11.5 %	1.000 ppb	34.778 %
66Zn (KED_DEF)	1.046 ppb	7.7 %	1.000 ppb	4.615 %
74Ge (STD_DEF)	101.883 %	1.7 %		0.000 %
74Ge (KED_DEF)	93.234 %	6.2 %		0.000 %
75As (KED_DEF)	1.067 ppb	9.0 %	1.000 ppb	6.741 %
78Se (KED_DEF)	1.005 ppb	33.9 %	1.000 ppb	0.543 %
88Sr (KED_DEF)	1.022 ppb	12.1 %	1.000 ppb	2.185 %
95Mo (KED_DEF)	1.037 ppb	3.1 %	1.000 ppb	3.685 %
103Rh (STD_DEF)	97.125 %	2.0 %		0.000 %
103Rh (KED_DEF)	95.520 %	6.3 %		0.000 %
107Ag (KED_DEF)	1.030 ppb	6.4 %	1.000 ppb	2.966 %
111Cd (KED_DEF)	1.018 ppb	5.4 %	1.000 ppb	1.808 %
115In (STD_DEF)	100.489 %	1.5 %		0.000 %
115In (KED_DEF)	96.021 %	5.0 %		0.000 %
123Sb (KED_DEF)	1.002 ppb	7.0 %	1.000 ppb	0.204 %
137Ba (KED_DEF)	0.989 ppb	12.8 %	1.000 ppb	1.071 %
159Tb (STD_DEF)	99.689 %	1.3 %		0.000 %
159Tb (KED_DEF)	96.202 %	4.5 %		0.000 %
175Lu (STD_DEF)	98.676 %	1.5 %		0.000 %
175Lu (KED_DEF)	95.038 %	4.9 %		0.000 %
205Tl (KED_DEF)	0.966 ppb	6.8 %	1.000 ppb	3.398 %
208Pb (KED_DEF)	1.014 ppb	5.8 %	1.000 ppb	1.377 %
209Bi (STD_DEF)	99.052 %	1.2 %		0.000 %
209Bi (KED_DEF)	93.067 %	5.7 %		0.000 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Standards:

Analysis Index: 6
 Analysis Name: 10/10000 Cal
 Analysis Type: STD
 Analysis Started at: 9/26/2024 7:10:18 AM
 Total Dilution Factor: 1000
 Rack: 0
 Vial: 4

Category	Concentration average	Concentration RSD	Standard Concentration	Standard Relative Difference
6Li (STD_DEF)	97.721 %	0.6 %		0.000 %
6Li (KED_DEF)	94.354 %	7.2 %		0.000 %
9Be (STD_DEF)	9.686 ppb	1.7 %	10.000 ppb	3.139 %
23Na (KED_DEF)	1,104.436 ppb	8.0 %	1,000.000 ppb	10.444 %
24Mg (KED_DEF)	1,103.858 ppb	7.3 %	1,000.000 ppb	10.386 %
27Al (KED_DEF)	10.015 ppb	28.8 %	10.000 ppb	0.147 %
39K (KED_DEF)	1,129.346 ppb	6.8 %	1,000.000 ppb	12.935 %
44Ca (KED_DEF)	1,097.923 ppb	12.0 %	1,000.000 ppb	9.792 %
45Sc (STD_DEF)	98.258 %	0.6 %		0.000 %
45Sc (KED_DEF)	91.876 %	5.0 %		0.000 %
51V (KED_DEF)	10.784 ppb	9.2 %	10.000 ppb	7.845 %
52Cr (KED_DEF)	10.808 ppb	6.4 %	10.000 ppb	8.076 %
55Mn (KED_DEF)	11.563 ppb	6.9 %	10.000 ppb	15.635 %
57Fe (KED_DEF)	1,169.932 ppb	5.3 %	1,000.000 ppb	16.993 %
59Co (KED_DEF)	10.808 ppb	8.1 %	10.000 ppb	8.077 %
60Ni (KED_DEF)	11.327 ppb	8.2 %	10.000 ppb	13.270 %
65Cu (KED_DEF)	10.981 ppb	5.4 %	10.000 ppb	9.807 %
66Zn (KED_DEF)	10.943 ppb	6.9 %	10.000 ppb	9.434 %
74Ge (STD_DEF)	98.719 %	1.8 %		0.000 %
74Ge (KED_DEF)	94.509 %	6.2 %		0.000 %
75As (KED_DEF)	10.412 ppb	5.6 %	10.000 ppb	4.121 %
78Se (KED_DEF)	9.690 ppb	5.2 %	10.000 ppb	3.100 %
88Sr (KED_DEF)	10.353 ppb	6.6 %	10.000 ppb	3.526 %
95Mo (KED_DEF)	10.668 ppb	8.0 %	10.000 ppb	6.685 %
103Rh (STD_DEF)	96.911 %	0.6 %		0.000 %
103Rh (KED_DEF)	94.777 %	6.6 %		0.000 %
107Ag (KED_DEF)	10.688 ppb	7.2 %	10.000 ppb	6.876 %
111Cd (KED_DEF)	10.420 ppb	6.7 %	10.000 ppb	4.198 %
115In (STD_DEF)	98.715 %	1.9 %		0.000 %
115In (KED_DEF)	95.518 %	6.1 %		0.000 %
123Sb (KED_DEF)	10.598 ppb	6.8 %	10.000 ppb	5.978 %
137Ba (KED_DEF)	10.715 ppb	6.7 %	10.000 ppb	7.152 %
159Tb (STD_DEF)	98.531 %	2.3 %		0.000 %
159Tb (KED_DEF)	93.971 %	7.1 %		0.000 %
175Lu (STD_DEF)	100.193 %	1.0 %		0.000 %
175Lu (KED_DEF)	93.691 %	6.1 %		0.000 %
205Tl (KED_DEF)	10.050 ppb	10.3 %	10.000 ppb	0.503 %
208Pb (KED_DEF)	10.323 ppb	7.7 %	10.000 ppb	3.234 %
209Bi (STD_DEF)	98.660 %	2.0 %		0.000 %
209Bi (KED_DEF)	93.152 %	7.2 %		0.000 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Standards:

Analysis Index: 7
 Analysis Name: 60/6000 Cal
 Analysis Type: STD
 Analysis Started at: 9/26/2024 7:15:00 AM
 Total Dilution Factor: 166.6666666
 Rack: 0
 Vial: 5

Category	Concentration average	Concentration RSD	Standard Concentration	Standard Relative Difference
6Li (STD_DEF)	93.559 %	0.3 %		0.000 %
6Li (KED_DEF)	91.117 %	5.0 %		0.000 %
9Be (STD_DEF)	60.093 ppb	0.3 %	60.000 ppb	0.154 %
23Na (KED_DEF)	6,321.241 ppb	3.3 %	6,000.000 ppb	5.354 %
24Mg (KED_DEF)	6,448.716 ppb	6.1 %	6,000.000 ppb	7.479 %
27Al (KED_DEF)	60.004 ppb	3.6 %	60.000 ppb	0.007 %
39K (KED_DEF)	6,443.109 ppb	1.3 %	6,000.000 ppb	7.385 %
44Ca (KED_DEF)	6,471.522 ppb	3.7 %	6,000.000 ppb	7.859 %
45Sc (STD_DEF)	99.497 %	3.1 %		0.000 %
45Sc (KED_DEF)	98.936 %	2.9 %		0.000 %
51V (KED_DEF)	63.003 ppb	3.9 %	60.000 ppb	5.006 %
52Cr (KED_DEF)	62.573 ppb	1.0 %	60.000 ppb	4.288 %
55Mn (KED_DEF)	64.415 ppb	2.4 %	60.000 ppb	7.359 %
57Fe (KED_DEF)	6,436.163 ppb	4.0 %	6,000.000 ppb	7.269 %
59Co (KED_DEF)	63.248 ppb	3.4 %	60.000 ppb	5.414 %
60Ni (KED_DEF)	64.123 ppb	5.2 %	60.000 ppb	6.872 %
65Cu (KED_DEF)	63.740 ppb	2.5 %	60.000 ppb	6.233 %
66Zn (KED_DEF)	63.043 ppb	1.4 %	60.000 ppb	5.071 %
74Ge (STD_DEF)	98.977 %	3.0 %		0.000 %
74Ge (KED_DEF)	95.815 %	1.7 %		0.000 %
75As (KED_DEF)	62.223 ppb	0.7 %	60.000 ppb	3.705 %
78Se (KED_DEF)	61.151 ppb	5.2 %	60.000 ppb	1.918 %
88Sr (KED_DEF)	61.089 ppb	0.9 %	60.000 ppb	1.815 %
95Mo (KED_DEF)	61.581 ppb	2.7 %	60.000 ppb	2.635 %
103Rh (STD_DEF)	94.515 %	0.7 %		0.000 %
103Rh (KED_DEF)	97.440 %	2.9 %		0.000 %
107Ag (KED_DEF)	62.988 ppb	0.7 %	60.000 ppb	4.979 %
111Cd (KED_DEF)	61.232 ppb	1.5 %	60.000 ppb	2.054 %
115In (STD_DEF)	99.096 %	1.9 %		0.000 %
115In (KED_DEF)	96.918 %	2.7 %		0.000 %
123Sb (KED_DEF)	62.914 ppb	2.0 %	60.000 ppb	4.856 %
137Ba (KED_DEF)	62.584 ppb	3.5 %	60.000 ppb	4.307 %
159Tb (STD_DEF)	101.053 %	3.3 %		0.000 %
159Tb (KED_DEF)	98.666 %	3.5 %		0.000 %
175Lu (STD_DEF)	102.327 %	1.8 %		0.000 %
175Lu (KED_DEF)	98.603 %	2.3 %		0.000 %
205Tl (KED_DEF)	59.200 ppb	0.5 %	60.000 ppb	1.334 %
208Pb (KED_DEF)	59.863 ppb	1.5 %	60.000 ppb	0.228 %
209Bi (STD_DEF)	97.254 %	0.7 %		0.000 %
209Bi (KED_DEF)	96.378 %	0.4 %		0.000 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Standards:

Analysis Index: 8
 Analysis Name: 120/120000 Cal
 Analysis Type: STD
 Analysis Started at: 9/26/2024 7:19:42 AM
 Total Dilution Factor: 83.33333333
 Rack: 0
 Vial: 6

Category	Concentration average	Concentration RSD	Standard Concentration	Standard Relative Difference
6Li (STD_DEF)	89.610 %	2.3 %		0.000 %
6Li (KED_DEF)	90.950 %	4.5 %		0.000 %
9Be (STD_DEF)	119.981 ppb	3.1 %	120.000 ppb	0.016 %
23Na (KED_DEF)	11,830.539 ppb	3.5 %	12,000.000 ppb	1.412 %
24Mg (KED_DEF)	11,766.890 ppb	4.1 %	12,000.000 ppb	1.943 %
27Al (KED_DEF)	106.341 ppb	2.5 %	120.000 ppb	11.382 %
39K (KED_DEF)	11,767.527 ppb	3.4 %	12,000.000 ppb	1.937 %
44Ca (KED_DEF)	11,755.938 ppb	3.8 %	12,000.000 ppb	2.034 %
45Sc (STD_DEF)	94.444 %	4.6 %		0.000 %
45Sc (KED_DEF)	103.962 %	2.5 %		0.000 %
51V (KED_DEF)	118.432 ppb	3.1 %	120.000 ppb	1.306 %
52Cr (KED_DEF)	118.646 ppb	2.5 %	120.000 ppb	1.128 %
55Mn (KED_DEF)	117.660 ppb	2.8 %	120.000 ppb	1.950 %
57Fe (KED_DEF)	11,767.654 ppb	3.0 %	12,000.000 ppb	1.936 %
59Co (KED_DEF)	118.308 ppb	3.3 %	120.000 ppb	1.410 %
60Ni (KED_DEF)	117.823 ppb	5.0 %	120.000 ppb	1.814 %
65Cu (KED_DEF)	118.045 ppb	5.2 %	120.000 ppb	1.629 %
66Zn (KED_DEF)	118.399 ppb	3.4 %	120.000 ppb	1.334 %
74Ge (STD_DEF)	96.476 %	2.0 %		0.000 %
74Ge (KED_DEF)	96.944 %	4.1 %		0.000 %
75As (KED_DEF)	118.854 ppb	4.4 %	120.000 ppb	0.955 %
78Se (KED_DEF)	119.450 ppb	4.5 %	120.000 ppb	0.458 %
88Sr (KED_DEF)	119.426 ppb	2.1 %	120.000 ppb	0.478 %
95Mo (KED_DEF)	119.154 ppb	2.7 %	120.000 ppb	0.705 %
103Rh (STD_DEF)	91.589 %	1.7 %		0.000 %
103Rh (KED_DEF)	96.437 %	1.2 %		0.000 %
107Ag (KED_DEF)	118.449 ppb	3.2 %	120.000 ppb	1.293 %
111Cd (KED_DEF)	119.349 ppb	2.1 %	120.000 ppb	0.543 %
115In (STD_DEF)	95.411 %	3.1 %		0.000 %
115In (KED_DEF)	99.196 %	2.6 %		0.000 %
123Sb (KED_DEF)	118.493 ppb	2.8 %	120.000 ppb	1.255 %
137Ba (KED_DEF)	118.648 ppb	2.0 %	120.000 ppb	1.126 %
159Tb (STD_DEF)	99.335 %	1.5 %		0.000 %
159Tb (KED_DEF)	102.091 %	1.7 %		0.000 %
175Lu (STD_DEF)	102.433 %	2.3 %		0.000 %
175Lu (KED_DEF)	101.528 %	4.0 %		0.000 %
205Tl (KED_DEF)	120.396 ppb	3.6 %	120.000 ppb	0.330 %
208Pb (KED_DEF)	120.041 ppb	2.7 %	120.000 ppb	0.034 %
209Bi (STD_DEF)	93.153 %	0.8 %		0.000 %
209Bi (KED_DEF)	98.226 %	2.3 %		0.000 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 1 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: Rinse Rack 0
 Analysis started at: 9/26/2024 6:46:53 AM Vial 1

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.871 %	97.509 %	0.048 ppb	5.133 ppb	0.228 ppb	0.534 ppb	2.071 ppb	14.726 ppb	97.128 %
Concentration per Run 1	103.773 %	102.242 %	0.007 ppb	3.074 ppb	0.002 ppb	0.446 ppb	-1.985 ppb	9.060 ppb	95.712 %
Concentration per Run 2	105.856 %	99.626 %	0.006 ppb	2.171 ppb	0.743 ppb	0.460 ppb	-0.513 ppb	18.240 ppb	98.311 %
Concentration per Run 3	101.985 %	90.660 %	0.130 ppb	10.155 ppb	-0.061 ppb	0.697 ppb	8.712 ppb	16.877 ppb	97.361 %
Concentration RSD	1.9 %	6.2 %	150.1 %	85.2 %	195.8 %	26.4 %	279.9 %	33.6 %	1.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	103.835 %	0.022 ppb	0.009 ppb	0.027 ppb	1.300 ppb	0.008 ppb	0.099 ppb	0.117 ppb	0.333 ppb
Concentration per Run 1	105.620 %	0.042 ppb	-0.006 ppb	0.031 ppb	1.552 ppb	0.004 ppb	0.087 ppb	0.097 ppb	0.306 ppb
Concentration per Run 2	106.903 %	0.032 ppb	0.003 ppb	0.032 ppb	1.076 ppb	0.009 ppb	0.081 ppb	0.117 ppb	0.311 ppb
Concentration per Run 3	98.983 %	-0.008 ppb	0.028 ppb	0.025 ppb	1.273 ppb	0.011 ppb	0.130 ppb	0.137 ppb	0.383 ppb
Concentration RSD	4.1 %	117.8 %	208.0 %	13.5 %	18.4 %	47.0 %	26.8 %	17.0 %	12.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.979 %	104.981 %	0.010 ppb	-0.017 ppb	0.008 ppb	0.001 ppb	101.055 %	103.280 %	0.001 ppb
Concentration per Run 1	100.180 %	107.528 %	0.049 ppb	-0.017 ppb	0.003 ppb	0.000 ppb	97.624 %	108.845 %	0.000 ppb
Concentration per Run 2	104.724 %	106.282 %	-0.009 ppb	-0.013 ppb	0.011 ppb	-0.006 ppb	104.965 %	104.501 %	0.002 ppb
Concentration per Run 3	101.034 %	101.135 %	-0.008 ppb	-0.020 ppb	0.009 ppb	0.011 ppb	100.575 %	96.494 %	0.001 ppb
Concentration RSD	2.4 %	3.2 %	315.0 %	19.7 %	51.8 %	625.1 %	3.7 %	6.1 %	86.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	101.065 %	106.571 %	-0.006 ppb	0.023 ppb	100.018 %	102.672 %	100.990 %	103.804 %
Concentration per Run 1	-0.001 ppb	99.628 %	113.715 %	-0.009 ppb	0.013 ppb	98.339 %	106.590 %	99.320 %	108.324 %
Concentration per Run 2	0.000 ppb	104.488 %	106.920 %	-0.009 ppb	0.041 ppb	103.732 %	104.784 %	104.602 %	106.397 %
Concentration per Run 3	-0.001 ppb	99.079 %	99.078 %	-0.001 ppb	0.015 ppb	97.982 %	96.642 %	99.049 %	96.691 %
Concentration RSD	152.2 %	2.9 %	6.9 %	72.7 %	69.0 %	3.2 %	5.2 %	3.1 %	6.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.001 ppb	0.012 ppb	101.354 %	100.350 %
Concentration per Run 1	-0.002 ppb	0.011 ppb	98.898 %	102.310 %
Concentration per Run 2	0.001 ppb	0.011 ppb	104.883 %	103.897 %
Concentration per Run 3	0.004 ppb	0.014 ppb	100.282 %	94.843 %
Concentration RSD	341.6 %	15.1 %	3.1 %	4.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 2 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CAL LOT #M24-1045 Rack: 0
 Analysis started at: 9/26/2024 6:51:33 AM Vial: 1

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.925 %	97.883 %	0.005 ppb	6.361 ppb	-0.039 ppb	-0.083 ppb	2.792 ppb	7.751 ppb	98.614 %
Concentration per Run 1	100.963 %	96.389 %	0.007 ppb	7.885 ppb	-0.862 ppb	-1.060 ppb	-2.063 ppb	0.344 ppb	101.506 %
Concentration per Run 2	99.881 %	96.762 %	0.002 ppb	6.368 ppb	0.034 ppb	0.378 ppb	1.988 ppb	10.876 ppb	96.897 %
Concentration per Run 3	98.932 %	100.498 %	0.005 ppb	4.831 ppb	0.712 ppb	0.431 ppb	8.452 ppb	12.034 ppb	97.440 %
Concentration RSD	1.0 %	2.3 %	47.6 %	24.0 %	2,048.8 %	1,014.3 %	189.9 %	83.1 %	2.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.874 %	0.055 ppb	0.013 ppb	0.036 ppb	0.613 ppb	0.008 ppb	0.081 ppb	0.129 ppb	0.399 ppb
Concentration per Run 1	94.335 %	0.043 ppb	0.017 ppb	0.040 ppb	0.814 ppb	0.007 ppb	0.113 ppb	0.120 ppb	0.374 ppb
Concentration per Run 2	95.514 %	0.056 ppb	-0.003 ppb	0.035 ppb	0.338 ppb	0.008 ppb	0.051 ppb	0.111 ppb	0.340 ppb
Concentration per Run 3	88.774 %	0.066 ppb	0.024 ppb	0.033 ppb	0.686 ppb	0.009 ppb	0.078 ppb	0.154 ppb	0.484 ppb
Concentration RSD	3.9 %	20.6 %	108.5 %	10.6 %	40.2 %	15.4 %	38.2 %	17.5 %	18.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.906 %	96.122 %	0.047 ppb	0.057 ppb	-0.004 ppb	0.001 ppb	98.682 %	95.875 %	0.001 ppb
Concentration per Run 1	101.712 %	94.727 %	0.097 ppb	0.022 ppb	0.001 ppb	0.006 ppb	99.526 %	94.438 %	0.002 ppb
Concentration per Run 2	103.292 %	98.577 %	0.046 ppb	0.021 ppb	-0.011 ppb	-0.002 ppb	97.608 %	98.879 %	0.001 ppb
Concentration per Run 3	97.715 %	95.061 %	-0.002 ppb	0.129 ppb	-0.003 ppb	-0.001 ppb	98.913 %	94.308 %	0.001 ppb
Concentration RSD	2.8 %	2.2 %	105.3 %	108.4 %	136.7 %	377.5 %	1.0 %	2.7 %	83.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	100.877 %	95.340 %	-0.006 ppb	0.030 ppb	100.062 %	95.100 %	99.510 %	94.131 %
Concentration per Run 1	-0.001 ppb	101.596 %	94.266 %	-0.011 ppb	0.032 ppb	100.021 %	94.278 %	99.653 %	90.108 %
Concentration per Run 2	-0.001 ppb	100.345 %	99.416 %	-0.006 ppb	0.030 ppb	99.853 %	98.374 %	100.857 %	97.941 %
Concentration per Run 3	0.001 ppb	100.690 %	92.339 %	0.000 ppb	0.027 ppb	100.310 %	92.649 %	98.021 %	94.344 %
Concentration RSD	2,744.8 %	0.6 %	3.8 %	91.2 %	7.6 %	0.2 %	3.1 %	1.4 %	4.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.002 ppb	0.013 ppb	102.629 %	92.889 %
Concentration per Run 1	0.000 ppb	0.014 ppb	101.379 %	91.705 %
Concentration per Run 2	0.001 ppb	0.011 ppb	103.247 %	93.748 %
Concentration per Run 3	0.004 ppb	0.013 ppb	103.260 %	93.213 %
Concentration RSD	125.2 %	13.9 %	1.1 %	1.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 3 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: Blank NTB ICPMSRQ Rack 4
 Analysis started at: 9/26/2024 6:56:13 AM Vial 49

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
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 %	0.1 %	0.0 %	0.3 %	0.4 %	0.0 %	1.0 %	0.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration per Run	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration RSD	0.0 %	0.3 %	0.2 %	0.1 %	0.3 %	0.4 %	0.2 %	0.1 %	0.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	100.000 %	0.000 ppb
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	100.000 %	0.000 ppb
Concentration RSD	0.0 %	0.0 %	4.5 %	12.1 %	0.3 %	0.6 %	0.0 %	0.0 %	0.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %	100.000 %	100.000 %	100.000 %
Concentration per Run	0.000 ppb	100.000 %	100.000 %	0.000 ppb	0.000 ppb	100.000 %	100.000 %	100.000 %	100.000 %
Concentration RSD	0.9 %	0.0 %	0.0 %	0.1 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.000 ppb	0.000 ppb	100.000 %	100.000 %
Concentration per Run	0.000 ppb	0.000 ppb	100.000 %	100.000 %
Concentration RSD	0.4 %	0.1 %	0.0 %	0.0 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 4 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: 0.2/20 Cal Rack: 0
 Analysis started at: 9/26/2024 7:00:57 AM Vial: 2

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.253 %	93.981 %	0.190 ppb	21.714 ppb	21.866 ppb	-0.103 ppb	16.496 ppb	37.267 ppb	98.497 %
Concentration per Run 1	102.557 %	95.890 %	0.184 ppb	20.343 ppb	19.949 ppb	-1.372 ppb	14.681 ppb	41.912 ppb	99.302 %
Concentration per Run 2	101.255 %	98.755 %	0.196 ppb	21.181 ppb	21.942 ppb	-0.251 ppb	12.380 ppb	38.586 ppb	96.951 %
Concentration per Run 3	99.947 %	87.297 %	0.190 ppb	23.618 ppb	23.708 ppb	1.315 ppb	22.428 ppb	31.301 ppb	99.237 %
Concentration RSD	1.3 %	6.3 %	3.3 %	7.8 %	8.6 %	1,314.0 %	31.9 %	14.6 %	1.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	99.179 %	0.240 ppb	0.179 ppb	0.296 ppb	22.045 ppb	0.205 ppb	0.212 ppb	0.320 ppb	0.308 ppb
Concentration per Run 1	98.982 %	0.241 ppb	0.172 ppb	0.299 ppb	22.569 ppb	0.189 ppb	0.218 ppb	0.275 ppb	0.284 ppb
Concentration per Run 2	98.347 %	0.217 ppb	0.177 ppb	0.297 ppb	19.957 ppb	0.204 ppb	0.218 ppb	0.383 ppb	0.267 ppb
Concentration per Run 3	100.208 %	0.261 ppb	0.187 ppb	0.292 ppb	23.608 ppb	0.222 ppb	0.201 ppb	0.301 ppb	0.372 ppb
Concentration RSD	1.0 %	9.1 %	4.5 %	1.2 %	8.5 %	8.1 %	4.4 %	17.5 %	18.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.011 %	97.434 %	0.166 ppb	0.266 ppb	0.190 ppb	0.181 ppb	97.223 %	100.061 %	0.202 ppb
Concentration per Run 1	101.017 %	96.652 %	0.144 ppb	0.324 ppb	0.184 ppb	0.195 ppb	97.644 %	99.240 %	0.211 ppb
Concentration per Run 2	98.645 %	97.091 %	0.187 ppb	0.287 ppb	0.201 ppb	0.160 ppb	96.765 %	98.342 %	0.202 ppb
Concentration per Run 3	97.372 %	98.559 %	0.168 ppb	0.187 ppb	0.185 ppb	0.187 ppb	97.261 %	102.600 %	0.194 ppb
Concentration RSD	1.9 %	1.0 %	13.0 %	26.6 %	5.0 %	10.1 %	0.5 %	2.2 %	4.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.202 ppb	100.642 %	99.221 %	0.188 ppb	0.237 ppb	98.920 %	98.938 %	99.934 %	96.804 %
Concentration per Run 1	0.206 ppb	100.607 %	97.710 %	0.196 ppb	0.185 ppb	99.116 %	99.764 %	101.288 %	95.125 %
Concentration per Run 2	0.213 ppb	99.607 %	99.021 %	0.183 ppb	0.196 ppb	99.500 %	97.341 %	98.084 %	97.914 %
Concentration per Run 3	0.188 ppb	101.713 %	100.931 %	0.185 ppb	0.329 ppb	98.143 %	99.711 %	100.431 %	97.374 %
Concentration RSD	6.4 %	1.0 %	1.6 %	3.7 %	33.9 %	0.7 %	1.4 %	1.7 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.191 ppb	0.195 ppb	98.799 %	96.933 %
Concentration per Run 1	0.189 ppb	0.196 ppb	98.491 %	97.022 %
Concentration per Run 2	0.189 ppb	0.193 ppb	97.387 %	96.909 %
Concentration per Run 3	0.196 ppb	0.196 ppb	100.519 %	96.867 %
Concentration RSD	2.1 %	0.8 %	1.6 %	0.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 5 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: 1/100 Cal Rack: 0
 Analysis started at: 9/26/2024 7:05:37 AM Vial: 3

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.058 %	90.328 %	0.920 ppb	116.175 ppb	111.248 ppb	0.646 ppb	117.479 ppb	113.455 ppb	98.599 %
Concentration per Run 1	101.797 %	84.807 %	0.919 ppb	127.564 ppb	116.494 ppb	1.626 ppb	121.917 ppb	124.113 ppb	101.593 %
Concentration per Run 2	100.510 %	91.283 %	0.915 ppb	113.427 ppb	110.747 ppb	0.506 ppb	121.285 ppb	120.052 ppb	92.428 %
Concentration per Run 3	100.865 %	94.894 %	0.926 ppb	107.534 ppb	106.503 ppb	-0.196 ppb	109.234 ppb	96.200 ppb	101.777 %
Concentration RSD	0.7 %	5.7 %	0.6 %	8.9 %	4.5 %	142.3 %	6.1 %	13.3 %	5.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.250 %	1.062 ppb	1.019 ppb	1.185 ppb	111.980 ppb	1.072 ppb	1.618 ppb	1.348 ppb	1.046 ppb
Concentration per Run 1	88.219 %	1.202 ppb	1.190 ppb	1.280 ppb	121.437 ppb	1.160 ppb	1.727 ppb	1.526 ppb	1.131 ppb
Concentration per Run 2	91.872 %	1.139 ppb	0.980 ppb	1.119 ppb	107.831 ppb	1.005 ppb	1.662 ppb	1.260 ppb	1.038 ppb
Concentration per Run 3	96.659 %	0.847 ppb	0.887 ppb	1.157 ppb	106.671 ppb	1.051 ppb	1.465 ppb	1.258 ppb	0.970 ppb
Concentration RSD	4.6 %	17.8 %	15.2 %	7.1 %	7.3 %	7.4 %	8.4 %	11.5 %	7.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.883 %	93.234 %	1.067 ppb	1.005 ppb	1.022 ppb	1.037 ppb	97.125 %	95.520 %	1.030 ppb
Concentration per Run 1	102.237 %	86.577 %	1.116 ppb	0.852 ppb	1.164 ppb	1.043 ppb	98.195 %	88.525 %	1.104 ppb
Concentration per Run 2	100.032 %	96.179 %	0.957 ppb	0.768 ppb	0.939 ppb	1.065 ppb	94.853 %	98.842 %	1.009 ppb
Concentration per Run 3	103.379 %	96.946 %	1.129 ppb	1.396 ppb	0.962 ppb	1.002 ppb	98.326 %	99.193 %	0.976 ppb
Concentration RSD	1.7 %	6.2 %	9.0 %	33.9 %	12.1 %	3.1 %	2.0 %	6.3 %	6.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	1.018 ppb	100.489 %	96.021 %	1.002 ppb	0.989 ppb	99.689 %	96.202 %	98.676 %	95.038 %
Concentration per Run 1	1.068 ppb	100.235 %	90.474 %	1.078 ppb	1.135 ppb	100.140 %	91.281 %	99.158 %	89.763 %
Concentration per Run 2	0.959 ppb	99.159 %	98.765 %	0.941 ppb	0.921 ppb	98.238 %	99.276 %	96.984 %	97.036 %
Concentration per Run 3	1.027 ppb	102.073 %	98.824 %	0.988 ppb	0.912 ppb	100.688 %	98.050 %	99.886 %	98.316 %
Concentration RSD	5.4 %	1.5 %	5.0 %	7.0 %	12.8 %	1.3 %	4.5 %	1.5 %	4.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.966 ppb	1.014 ppb	99.052 %	93.067 %
Concentration per Run 1	1.042 ppb	1.081 ppb	100.203 %	87.118 %
Concentration per Run 2	0.919 ppb	0.982 ppb	97.919 %	94.899 %
Concentration per Run 3	0.937 ppb	0.979 ppb	99.034 %	97.185 %
Concentration RSD	6.8 %	5.8 %	1.2 %	5.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 6 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: 10/10000 Cal Rack: 0
 Analysis started at: 9/26/2024 7:10:18 AM Vial: 4

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	97.721 %	94.354 %	9.686 ppb	1,104.436 ppb	1,103.858 ppb	10.015 ppb	1,129.346 ppb	1,097.923 ppb	98.258 %
Concentration per Run 1	98.351 %	87.920 %	9.873 ppb	1,202.141 ppb	1,190.031 ppb	10.829 ppb	1,204.297 ppb	1,205.981 ppb	97.649 %
Concentration per Run 2	97.387 %	93.649 %	9.620 ppb	1,079.229 ppb	1,092.366 ppb	12.402 ppb	1,133.116 ppb	1,137.355 ppb	98.852 %
Concentration per Run 3	97.423 %	101.494 %	9.565 ppb	1,031.938 ppb	1,029.176 ppb	6.813 ppb	1,050.626 ppb	950.434 ppb	98.274 %
Concentration RSD	0.6 %	7.2 %	1.7 %	8.0 %	7.3 %	28.8 %	6.8 %	12.0 %	0.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	91.876 %	10.784 ppb	10.808 ppb	11.563 ppb	1,169.932 ppb	10.808 ppb	11.327 ppb	10.981 ppb	10.943 ppb
Concentration per Run 1	86.913 %	11.916 ppb	11.532 ppb	12.461 ppb	1,240.272 ppb	11.824 ppb	12.322 ppb	11.616 ppb	11.793 ppb
Concentration per Run 2	92.809 %	10.086 ppb	10.732 ppb	11.283 ppb	1,144.459 ppb	10.317 ppb	11.178 ppb	10.891 ppb	10.692 ppb
Concentration per Run 3	95.907 %	10.351 ppb	10.159 ppb	10.946 ppb	1,125.066 ppb	10.283 ppb	10.481 ppb	10.435 ppb	10.345 ppb
Concentration RSD	5.0 %	9.2 %	6.4 %	6.9 %	5.3 %	8.1 %	8.2 %	5.4 %	6.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.719 %	94.509 %	10.412 ppb	9.690 ppb	10.353 ppb	10.668 ppb	96.911 %	94.777 %	10.688 ppb
Concentration per Run 1	100.683 %	87.809 %	11.087 ppb	10.099 ppb	11.146 ppb	11.619 ppb	97.434 %	87.525 %	11.569 ppb
Concentration per Run 2	98.075 %	96.881 %	10.035 ppb	9.121 ppb	9.924 ppb	9.957 ppb	96.953 %	98.216 %	10.181 ppb
Concentration per Run 3	97.399 %	98.836 %	10.114 ppb	9.850 ppb	9.988 ppb	10.429 ppb	96.346 %	98.591 %	10.313 ppb
Concentration RSD	1.8 %	6.2 %	5.6 %	5.2 %	6.6 %	8.0 %	0.6 %	6.6 %	7.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	10.420 ppb	98.715 %	95.518 %	10.598 ppb	10.715 ppb	98.531 %	93.971 %	100.193 %	93.691 %
Concentration per Run 1	11.222 ppb	99.612 %	88.844 %	11.382 ppb	11.372 ppb	101.172 %	86.284 %	99.696 %	87.187 %
Concentration per Run 2	9.974 ppb	96.597 %	99.742 %	9.981 ppb	9.944 ppb	97.159 %	96.956 %	99.543 %	96.027 %
Concentration per Run 3	10.064 ppb	99.935 %	97.968 %	10.430 ppb	10.830 ppb	97.262 %	98.673 %	101.340 %	97.858 %
Concentration RSD	6.7 %	1.9 %	6.1 %	6.8 %	6.7 %	2.3 %	7.1 %	1.0 %	6.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	10.050 ppb	10.323 ppb	98.660 %	93.152 %
Concentration per Run 1	11.229 ppb	11.222 ppb	98.858 %	85.859 %
Concentration per Run 2	9.626 ppb	10.038 ppb	96.578 %	94.507 %
Concentration per Run 3	9.297 ppb	9.710 ppb	100.545 %	99.089 %
Concentration RSD	10.3 %	7.7 %	2.0 %	7.2 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 7 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: 60/6000 Cal Rack: 0
 Analysis started at: 9/26/2024 7:15:00 AM Vial: 5

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	93.559 %	91.117 %	60.093 ppb	6,321.241 ppb	6,448.716 ppb	60.004 ppb	6,443.109 ppb	6,471.522 ppb	99.497 %
Concentration per Run 1	93.932 %	86.301 %	60.178 ppb	6,506.502 ppb	6,904.379 ppb	59.097 ppb	6,532.075 ppb	6,728.966 ppb	98.418 %
Concentration per Run 2	93.368 %	91.656 %	59.878 ppb	6,366.628 ppb	6,238.884 ppb	58.426 ppb	6,435.996 ppb	6,426.593 ppb	103.024 %
Concentration per Run 3	93.378 %	95.392 %	60.221 ppb	6,090.592 ppb	6,202.884 ppb	62.490 ppb	6,361.258 ppb	6,259.006 ppb	97.049 %
Concentration RSD	0.3 %	5.0 %	0.3 %	3.3 %	6.1 %	3.6 %	1.3 %	3.7 %	3.1 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.936 %	63.003 ppb	62.573 ppb	64.415 ppb	6,436.163 ppb	63.248 ppb	64.123 ppb	63.740 ppb	63.043 ppb
Concentration per Run 1	96.254 %	65.788 ppb	63.315 ppb	66.059 ppb	6,555.836 ppb	64.649 ppb	67.798 ppb	65.525 ppb	64.068 ppb
Concentration per Run 2	98.659 %	62.133 ppb	62.307 ppb	64.117 ppb	6,138.274 ppb	64.345 ppb	61.393 ppb	63.137 ppb	62.406 ppb
Concentration per Run 3	101.896 %	61.089 ppb	62.097 ppb	63.071 ppb	6,614.379 ppb	60.751 ppb	63.178 ppb	62.558 ppb	62.654 ppb
Concentration RSD	2.9 %	3.9 %	1.0 %	2.4 %	4.0 %	3.4 %	5.2 %	2.5 %	1.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.977 %	95.815 %	62.223 ppb	61.151 ppb	61.089 ppb	61.581 ppb	94.515 %	97.440 %	62.988 ppb
Concentration per Run 1	100.595 %	93.944 %	62.017 ppb	63.070 ppb	61.675 ppb	63.047 ppb	94.801 %	94.459 %	63.141 ppb
Concentration per Run 2	95.540 %	96.475 %	62.721 ppb	57.503 ppb	61.008 ppb	61.887 ppb	94.990 %	97.799 %	63.317 ppb
Concentration per Run 3	100.795 %	97.027 %	61.932 ppb	62.881 ppb	60.584 ppb	59.809 ppb	93.753 %	100.061 %	62.504 ppb
Concentration RSD	3.0 %	1.7 %	0.7 %	5.2 %	0.9 %	2.7 %	0.7 %	2.9 %	0.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	61.232 ppb	99.096 %	96.918 %	62.914 ppb	62.584 ppb	101.053 %	98.666 %	102.327 %	98.603 %
Concentration per Run 1	62.122 ppb	99.262 %	93.925 %	64.244 ppb	63.710 ppb	98.032 %	94.682 %	100.378 %	96.168 %
Concentration per Run 2	61.326 ppb	100.880 %	98.085 %	61.722 ppb	60.088 ppb	104.626 %	100.606 %	104.151 %	99.010 %
Concentration per Run 3	60.249 ppb	97.146 %	98.744 %	62.775 ppb	63.955 ppb	100.500 %	100.710 %	102.452 %	100.629 %
Concentration RSD	1.5 %	1.9 %	2.7 %	2.0 %	3.5 %	3.3 %	3.5 %	1.8 %	2.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	59.200 ppb	59.863 ppb	97.254 %	96.378 %
Concentration per Run 1	59.063 ppb	58.837 ppb	97.501 %	96.086 %
Concentration per Run 2	59.015 ppb	60.124 ppb	97.820 %	96.197 %
Concentration per Run 3	59.521 ppb	60.630 ppb	96.441 %	96.850 %
Concentration RSD	0.5 %	1.5 %	0.7 %	0.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 8 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: 120/120000 Cal Rack 0
 Analysis started at: 9/26/2024 7:19:42 AM Vial 6

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	89.610 %	90.950 %	119.981 ppb	11,830.539 ppb	11,766.890 ppb		11,767.527 ppb	11,755.938 ppb	94.444 %
Concentration per Run 1	91.946 %	86.550 %	115.847 ppb	12,263.113 ppb	12,327.059 ppb	109.010 ppb	12,222.177 ppb	12,213.351 ppb	94.568 %
Concentration per Run 2	88.904 %	94.520 %	121.017 ppb	11,431.565 ppb	11,510.044 ppb	106.268 ppb	11,502.440 ppb	11,314.375 ppb	98.715 %
Concentration per Run 3	87.982 %	91.781 %	123.078 ppb	11,796.939 ppb	11,463.569 ppb	103.746 ppb	11,577.963 ppb	11,740.088 ppb	90.047 %
Concentration RSD	2.3 %	4.5 %	3.1 %	3.5 %	4.1 %		3.4 %	3.8 %	4.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	103.962 %	118.432 ppb	118.646 ppb	117.660 ppb	11,767.654 ppb	118.308 ppb	117.823 ppb	118.045 ppb	118.399 ppb
Concentration per Run 1	101.434 %	122.586 ppb	121.946 ppb	121.381 ppb	12,178.661 ppb	122.740 ppb	124.624 ppb	124.220 ppb	122.956 ppb
Concentration per Run 2	103.804 %	117.301 ppb	116.186 ppb	116.529 ppb	11,591.079 ppb	115.667 ppb	113.944 ppb	111.936 ppb	115.690 ppb
Concentration per Run 3	106.648 %	115.410 ppb	117.806 ppb	115.071 ppb	11,533.223 ppb	116.517 ppb	114.900 ppb	117.979 ppb	116.553 ppb
Concentration RSD	2.5 %	3.1 %	2.5 %	2.8 %	3.0 %	3.3 %	5.0 %	5.2 %	3.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	96.476 %	96.944 %	118.854 ppb	119.450 ppb	119.426 ppb	119.154 ppb	91.589 %	96.437 %	118.449 ppb
Concentration per Run 1	98.678 %	92.575 %	124.737 ppb	125.548 ppb	122.061 ppb	115.509 ppb	92.393 %	95.778 %	122.795 ppb
Concentration per Run 2	95.796 %	100.187 %	114.923 ppb	115.207 ppb	117.144 ppb	120.375 ppb	92.587 %	95.785 %	116.397 ppb
Concentration per Run 3	94.955 %	98.070 %	116.901 ppb	117.595 ppb	119.073 ppb	121.577 ppb	89.786 %	97.748 %	116.154 ppb
Concentration RSD	2.0 %	4.1 %	4.4 %	4.5 %	2.1 %	2.7 %	1.7 %	1.2 %	3.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	119.349 ppb	95.411 %	99.196 %	118.493 ppb	118.648 ppb	99.335 %	102.091 %	102.433 %	101.528 %
Concentration per Run 1	122.287 ppb	98.651 %	96.367 %	122.353 ppb	121.275 ppb	101.006 %	100.137 %	104.581 %	96.795 %
Concentration per Run 2	117.952 ppb	94.714 %	99.765 %	117.033 ppb	116.524 ppb	98.458 %	102.894 %	102.762 %	103.595 %
Concentration per Run 3	117.807 ppb	92.867 %	101.457 %	116.094 ppb	118.145 ppb	98.542 %	103.241 %	99.957 %	104.193 %
Concentration RSD	2.1 %	3.1 %	2.6 %	2.8 %	2.0 %	1.5 %	1.7 %	2.3 %	4.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	120.396 ppb	120.041 ppb	93.153 %	98.226 %
Concentration per Run 1	125.385 ppb	123.360 ppb	93.852 %	95.752 %
Concentration per Run 2	117.209 ppb	119.923 ppb	92.451 %	98.697 %
Concentration per Run 3	118.595 ppb	116.840 ppb	93.157 %	100.230 %
Concentration RSD	3.6 %	2.7 %	0.8 %	2.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 9 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: Sr 200ppb Rack: 4
 Analysis started at: 9/26/2024 7:30:19 AM Vial: 55

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.476 %	97.385 %	0.035 ppb	-4.014 ppb	0.494 ppb	-0.499 ppb	-6.924 ppb	-0.881 ppb	93.986 %
Concentration per Run 1	98.268 %	98.879 %	0.035 ppb	-2.223 ppb	1.374 ppb	-0.331 ppb	-5.029 ppb	0.736 ppb	98.495 %
Concentration per Run 2	90.233 %	96.513 %	0.039 ppb	-5.702 ppb	0.159 ppb	-1.417 ppb	-7.736 ppb	-52.752 ppb	90.319 %
Concentration per Run 3	97.927 %	96.762 %	0.031 ppb	-4.116 ppb	-0.052 ppb	0.252 ppb	-8.007 ppb	49.372 ppb	93.145 %
Concentration RSD	4.8 %	1.3 %	11.1 %	43.4 %	155.9 %	169.9 %	23.8 %	5,796.2 %	4.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	106.352 %	-0.057 ppb	-0.017 ppb	0.133 ppb	5.304 ppb	0.004 ppb	0.101 ppb	0.068 ppb	0.413 ppb
Concentration per Run 1	105.989 %	-0.068 ppb	-0.012 ppb	0.146 ppb	4.701 ppb	0.005 ppb	0.086 ppb	0.033 ppb	0.377 ppb
Concentration per Run 2	108.475 %	-0.045 ppb	-0.013 ppb	0.120 ppb	5.830 ppb	0.003 ppb	0.120 ppb	0.095 ppb	0.503 ppb
Concentration per Run 3	104.590 %	-0.058 ppb	-0.027 ppb	0.134 ppb	5.382 ppb	0.003 ppb	0.097 ppb	0.077 ppb	0.358 ppb
Concentration RSD	1.9 %	20.0 %	50.0 %	9.7 %	10.7 %	28.0 %	17.1 %	47.1 %	19.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	96.174 %	102.414 %	0.009 ppb	0.080 ppb	192.215 ppb	0.081 ppb	95.689 %	105.561 %	0.004 ppb
Concentration per Run 1	98.486 %	105.221 %	-0.011 ppb	0.078 ppb	188.113 ppb	0.065 ppb	97.578 %	104.974 %	0.005 ppb
Concentration per Run 2	92.847 %	98.784 %	0.068 ppb	0.025 ppb	196.980 ppb	0.078 ppb	91.675 %	106.074 %	0.004 ppb
Concentration per Run 3	97.188 %	103.237 %	-0.030 ppb	0.138 ppb	191.552 ppb	0.099 ppb	97.813 %	105.635 %	0.002 ppb
Concentration RSD	3.1 %	3.2 %	588.2 %	70.8 %	2.3 %	21.2 %	3.6 %	0.5 %	37.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.006 ppb	99.475 %	108.810 %	0.058 ppb	0.241 ppb	98.500 %	106.228 %	98.712 %	106.986 %
Concentration per Run 1	0.004 ppb	98.497 %	110.003 %	0.052 ppb	0.235 ppb	98.744 %	107.418 %	99.381 %	107.206 %
Concentration per Run 2	0.008 ppb	95.450 %	109.183 %	0.057 ppb	0.266 ppb	95.769 %	105.539 %	96.641 %	107.138 %
Concentration per Run 3	0.007 ppb	104.480 %	107.243 %	0.063 ppb	0.222 ppb	100.987 %	105.726 %	100.115 %	106.614 %
Concentration RSD	31.7 %	4.6 %	1.3 %	9.6 %	9.4 %	2.7 %	1.0 %	1.9 %	0.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.107 ppb	0.013 ppb	96.661 %	106.326 %
Concentration per Run 1	0.064 ppb	0.014 ppb	97.367 %	108.618 %
Concentration per Run 2	0.122 ppb	0.013 ppb	93.356 %	104.964 %
Concentration per Run 3	0.134 ppb	0.013 ppb	99.261 %	105.397 %
Concentration RSD	34.9 %	3.7 %	3.1 %	1.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 10 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: ICV Rack: 0
 Analysis started at: 9/26/2024 7:35:04 AM Vial: 7

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.091 %	89.041 %	49.184 ppb	5,238.988 ppb	5,335.879 ppb	50.083 ppb	5,243.119 ppb	5,454.813 ppb	95.568 %
Concentration per Run 1	98.081 %	88.543 %	48.726 ppb	5,321.831 ppb	5,312.318 ppb	49.426 ppb	5,280.567 ppb	5,520.135 ppb	95.314 %
Concentration per Run 2	94.837 %	89.041 %	48.899 ppb	5,238.066 ppb	5,380.739 ppb	53.099 ppb	5,280.723 ppb	5,662.712 ppb	95.071 %
Concentration per Run 3	92.354 %	89.539 %	49.927 ppb	5,157.066 ppb	5,314.579 ppb	47.724 ppb	5,168.066 ppb	5,181.593 ppb	96.318 %
Recovery Percentage 1			98.368 %	104.780 %	106.718 %	100.166 %	104.862 %	109.096 %	
Concentration RSD	3.0 %	0.6 %	1.3 %	1.6 %	0.7 %	5.5 %	1.2 %	4.5 %	0.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	100.235 %	54.017 ppb	53.314 ppb	52.460 ppb	5,146.099 ppb	52.422 ppb	51.386 ppb	52.442 ppb	52.519 ppb
Concentration per Run 1	99.191 %	55.393 ppb	54.306 ppb	53.197 ppb	5,236.254 ppb	52.379 ppb	52.766 ppb	51.863 ppb	52.280 ppb
Concentration per Run 2	99.283 %	54.666 ppb	52.807 ppb	51.867 ppb	5,237.900 ppb	53.063 ppb	51.256 ppb	52.736 ppb	53.206 ppb
Concentration per Run 3	102.231 %	51.991 ppb	52.831 ppb	52.318 ppb	4,964.142 ppb	51.823 ppb	50.135 ppb	52.727 ppb	52.071 ppb
Recovery Percentage 1		108.034 %	106.629 %	104.921 %	102.922 %	104.843 %	102.772 %	104.884 %	105.038 %
Concentration RSD	1.7 %	3.3 %	1.6 %	1.3 %	3.1 %	1.2 %	2.6 %	1.0 %	1.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.183 %	97.820 %	51.481 ppb	51.299 ppb	48.843 ppb	52.572 ppb	96.252 %	99.129 %	48.794 ppb
Concentration per Run 1	101.981 %	96.536 %	51.825 ppb	51.847 ppb	49.792 ppb	53.428 ppb	94.224 %	96.641 %	49.819 ppb
Concentration per Run 2	102.717 %	98.881 %	51.424 ppb	50.242 ppb	48.280 ppb	50.219 ppb	97.242 %	99.370 %	48.643 ppb
Concentration per Run 3	98.852 %	98.043 %	51.194 ppb	51.808 ppb	48.457 ppb	54.070 ppb	97.291 %	101.375 %	47.920 ppb
Recovery Percentage 1			102.962 %	102.599 %	97.686 %	105.145 %			97.588 %
Concentration RSD	2.0 %	1.2 %	0.6 %	1.8 %	1.7 %	3.9 %	1.8 %	2.4 %	2.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	50.765 ppb	98.292 %	100.306 %	51.586 ppb	52.620 ppb	102.342 %	101.026 %	104.836 %	102.635 %
Concentration per Run 1	51.182 ppb	97.483 %	98.878 %	51.748 ppb	53.268 ppb	100.231 %	97.583 %	103.781 %	100.194 %
Concentration per Run 2	51.655 ppb	96.934 %	98.484 %	52.923 ppb	52.991 ppb	104.597 %	104.305 %	106.770 %	103.397 %
Concentration per Run 3	49.458 ppb	100.458 %	103.555 %	50.087 ppb	51.600 ppb	102.199 %	101.190 %	103.958 %	104.312 %
Recovery Percentage 1	101.530 %			103.172 %	105.239 %				
Concentration RSD	2.3 %	1.9 %	2.8 %	2.8 %	1.7 %	2.1 %	3.3 %	1.6 %	2.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	48.321 ppb	48.999 ppb	99.228 %	100.696 %
Concentration per Run 1	49.799 ppb	49.825 ppb	100.827 %	99.421 %
Concentration per Run 2	48.000 ppb	48.931 ppb	99.120 %	100.609 %
Concentration per Run 3	47.164 ppb	48.240 ppb	97.736 %	102.057 %
Recovery Percentage 1	96.642 %	97.998 %		
Concentration RSD	2.8 %	1.6 %	1.6 %	1.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 11 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: ICB Rack: 0
 Analysis started at: 9/26/2024 7:39:47 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.412 %	93.856 %	0.038 ppb	-5.335 ppb	0.075 ppb	-0.626 ppb	-8.055 ppb	6.217 ppb	98.194 %
Concentration per Run 1	96.367 %	100.498 %	0.042 ppb	-7.118 ppb	0.026 ppb	-1.147 ppb	-6.623 ppb	5.930 ppb	97.091 %
Concentration per Run 2	94.088 %	91.283 %	0.036 ppb	-4.652 ppb	0.157 ppb	-0.512 ppb	-12.865 ppb	9.542 ppb	98.161 %
Concentration per Run 3	95.780 %	89.788 %	0.035 ppb	-4.237 ppb	0.040 ppb	-0.218 ppb	-4.676 ppb	3.177 ppb	99.331 %
Recovery Percentage 1			7.516 %	-5.335 %	0.106 %	-6.257 %	-8.055 %	6.217 %	
Concentration RSD	1.2 %	6.2 %	9.8 %	29.2 %	96.7 %	75.9 %	53.1 %	51.4 %	1.1 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	103.534 %	-0.066 ppb	-0.010 ppb	-0.004 ppb	2.354 ppb	0.002 ppb	0.051 ppb	-0.056 ppb	-0.016 ppb
Concentration per Run 1	105.076 %	-0.072 ppb	-0.029 ppb	-0.005 ppb	1.176 ppb	0.000 ppb	0.049 ppb	-0.081 ppb	-0.023 ppb
Concentration per Run 2	102.497 %	-0.081 ppb	-0.006 ppb	-0.013 ppb	2.017 ppb	0.003 ppb	0.069 ppb	-0.051 ppb	-0.031 ppb
Concentration per Run 3	103.029 %	-0.043 ppb	0.003 ppb	0.004 ppb	3.868 ppb	0.003 ppb	0.035 ppb	-0.038 ppb	0.007 ppb
Recovery Percentage 1		-1.311 %	-1.033 %	-0.442 %	4.707 %	0.435 %	2.552 %	-5.647 %	-0.316 %
Concentration RSD	1.3 %	30.3 %	160.9 %	188.2 %	58.5 %	77.1 %	32.8 %	38.9 %	129.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.877 %	100.042 %	-0.009 ppb	0.038 ppb	0.003 ppb	0.200 ppb	98.087 %	104.038 %	0.002 ppb
Concentration per Run 1	101.764 %	100.302 %	-0.011 ppb	-0.008 ppb	0.010 ppb	0.157 ppb	98.621 %	105.534 %	0.002 ppb
Concentration per Run 2	98.178 %	99.750 %	-0.038 ppb	0.074 ppb	0.009 ppb	0.216 ppb	97.825 %	103.012 %	0.003 ppb
Concentration per Run 3	99.689 %	100.073 %	0.022 ppb	0.049 ppb	-0.011 ppb	0.226 ppb	97.816 %	103.570 %	0.002 ppb
Recovery Percentage 1			-1.834 %	0.766 %	0.539 %	9.975 %			0.615 %
Concentration RSD	1.8 %	0.3 %	326.8 %	109.5 %	431.6 %	18.7 %	0.5 %	1.3 %	2.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.008 ppb	101.374 %	104.780 %	0.049 ppb	0.015 ppb	101.982 %	106.144 %	102.310 %	105.908 %
Concentration per Run 1	0.008 ppb	102.578 %	103.928 %	0.027 ppb	0.014 ppb	104.437 %	106.739 %	105.937 %	106.506 %
Concentration per Run 2	0.009 ppb	100.617 %	101.781 %	0.057 ppb	0.004 ppb	100.783 %	105.334 %	100.407 %	107.152 %
Concentration per Run 3	0.009 ppb	100.927 %	108.631 %	0.063 ppb	0.027 ppb	100.726 %	106.358 %	100.587 %	104.065 %
Recovery Percentage 1				1.225 %	2.986 %				
Concentration RSD	6.9 %	1.0 %	3.3 %	40.1 %	75.5 %	2.1 %	0.7 %	3.1 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.260 ppb	0.007 ppb	101.548 %	107.021 %
Concentration per Run 1	0.163 ppb	0.007 ppb	103.664 %	107.623 %
Concentration per Run 2	0.293 ppb	0.007 ppb	101.029 %	106.167 %
Concentration per Run 3	0.324 ppb	0.007 ppb	99.952 %	107.272 %
Recovery Percentage 1	26.000 %	0.690 %		
Concentration RSD	32.8 %	4.1 %	1.9 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 12 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: ICSA Rack: 4
 Analysis started at: 9/26/2024 7:44:57 AM Vial: 53

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	71.855 %	73.017 %	0.029 ppb	269,179.776 ppb	101,916.803 ppb	91,459.708 ppb	93,614.407 ppb	329,632.296 ppb	87.941 %
Concentration per Run 1	72.615 %	73.225 %	0.032 ppb	273,185.427 ppb	106,429.072 ppb	91,100.895 ppb	96,309.337 ppb	334,971.527 ppb	87.559 %
Concentration per Run 2	71.677 %	69.613 %	0.032 ppb	268,409.909 ppb	101,736.799 ppb	91,606.080 ppb	92,846.533 ppb	322,721.487 ppb	88.555 %
Concentration per Run 3	71.272 %	76.214 %	0.024 ppb	265,943.991 ppb	97,584.538 ppb	91,672.148 ppb	91,687.351 ppb	331,203.874 ppb	87.709 %
Recovery Percentage 1			2.948 %	107.672 %	101.917 %	91.460 %	93.614 %	109.877 %	
Concentration RSD	1.0 %	4.5 %	14.8 %	1.4 %	4.3 %	0.3 %	2.6 %	1.9 %	0.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.069 %	0.030 ppb	1.578 ppb	4.780 ppb	246,696.036 ppb	2.217 ppb	3.717 ppb	1.330 ppb	3.486 ppb
Concentration per Run 1	94.358 %	0.037 ppb	1.561 ppb	4.767 ppb	246,389.837 ppb	2.184 ppb	3.754 ppb	1.244 ppb	3.533 ppb
Concentration per Run 2	97.283 %	0.035 ppb	1.563 ppb	4.832 ppb	254,767.297 ppb	2.253 ppb	3.817 ppb	1.291 ppb	3.593 ppb
Concentration per Run 3	96.566 %	0.019 ppb	1.609 ppb	4.740 ppb	238,930.973 ppb	2.213 ppb	3.581 ppb	1.456 ppb	3.333 ppb
Recovery Percentage 1		0.609 %	47.807 %	83.854 %	98.678 %	77.240 %	60.939 %	47.180 %	30.582 %
Concentration RSD	1.6 %	32.6 %	1.7 %	1.0 %	3.2 %	1.6 %	3.3 %	8.3 %	3.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	93.129 %	98.100 %	0.478 ppb	4.685 ppb	2.656 ppb	2,174.713 ppb	79.969 %	88.079 %	0.040 ppb
Concentration per Run 1	94.081 %	97.215 %	0.542 ppb	4.751 ppb	2.567 ppb	2,222.938 ppb	80.057 %	86.738 %	0.041 ppb
Concentration per Run 2	93.368 %	95.878 %	0.384 ppb	4.830 ppb	2.689 ppb	2,238.235 ppb	81.013 %	87.201 %	0.041 ppb
Concentration per Run 3	91.936 %	101.208 %	0.508 ppb	4.474 ppb	2.711 ppb	2,062.967 ppb	78.837 %	90.298 %	0.039 ppb
Recovery Percentage 1			29.337 %	36.317 %	98.354 %	108.736 %			5.020 %
Concentration RSD	1.2 %	2.8 %	17.4 %	4.0 %	2.9 %	4.5 %	1.4 %	2.2 %	2.8 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.359 ppb	84.466 %	95.643 %	0.242 ppb	1.503 ppb	95.802 %	101.911 %	98.829 %	107.143 %
Concentration per Run 1	0.367 ppb	83.128 %	92.264 %	0.257 ppb	1.514 ppb	95.035 %	99.923 %	98.894 %	104.004 %
Concentration per Run 2	0.357 ppb	86.093 %	98.434 %	0.214 ppb	1.471 ppb	96.901 %	102.001 %	99.696 %	109.709 %
Concentration per Run 3	0.353 ppb	84.175 %	96.231 %	0.254 ppb	1.523 ppb	95.470 %	103.808 %	97.895 %	107.717 %
Recovery Percentage 1	89.733 %			3.020 %	79.934 %				
Concentration RSD	2.0 %	1.8 %	3.3 %	9.9 %	1.9 %	1.0 %	1.9 %	0.9 %	2.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.099 ppb	5.127 ppb	84.156 %	92.370 %
Concentration per Run 1	0.063 ppb	5.142 ppb	84.373 %	90.100 %
Concentration per Run 2	0.104 ppb	5.025 ppb	84.792 %	94.718 %
Concentration per Run 3	0.129 ppb	5.213 ppb	83.303 %	92.292 %
Recovery Percentage 1	4.933 %	165.377 %		
Concentration RSD	33.7 %	1.8 %	0.9 %	2.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 13 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: LDR Check Rack: 4
 Analysis started at: 9/26/2024 7:49:41 AM Vial: 1

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	91.234 %	90.992 %	0.003 ppb	25.756 ppb	7.032 ppb	11.702 ppb	12.245 ppb	26.474 ppb	97.630 %
Concentration per Run 1	90.063 %	90.037 %	0.002 ppb	29.068 ppb	8.006 ppb	10.779 ppb	19.745 ppb	7.124 ppb	97.474 %
Concentration per Run 2	89.835 %	92.030 %	0.004 ppb	24.807 ppb	7.308 ppb	9.497 ppb	12.111 ppb	45.245 ppb	98.892 %
Concentration per Run 3	93.804 %	90.909 %	0.002 ppb	23.394 ppb	5.781 ppb	14.830 ppb	4.880 ppb	27.053 ppb	96.525 %
Recovery Percentage 1									
Concentration RSD	2.4 %	1.1 %	52.5 %	11.5 %	16.2 %	23.8 %	60.7 %	72.0 %	1.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	99.954 %	-0.050 ppb	0.090 ppb	9,693.139 ppb	30.035 ppb	0.060 ppb	9,418.791 ppb	9,788.659 ppb	9,625.812 ppb
Concentration per Run 1	101.619 %	-0.062 ppb	0.087 ppb	9,429.892 ppb	30.285 ppb	0.060 ppb	8,948.414 ppb	9,558.269 ppb	9,577.167 ppb
Concentration per Run 2	97.422 %	-0.027 ppb	0.090 ppb	9,830.301 ppb	28.827 ppb	0.059 ppb	9,864.038 ppb	10,185.883 ppb	9,709.290 ppb
Concentration per Run 3	100.821 %	-0.062 ppb	0.094 ppb	9,819.224 ppb	30.992 ppb	0.062 ppb	9,443.922 ppb	9,621.824 ppb	9,590.977 ppb
Recovery Percentage 1				96.931 %			94.188 %	97.887 %	96.258 %
Concentration RSD	2.2 %	40.9 %	4.1 %	2.4 %	3.7 %	2.8 %	4.9 %	3.5 %	0.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.328 %	103.465 %	981.575 ppb	0.551 ppb	0.232 ppb	2.709 ppb	94.859 %	103.627 %	0.139 ppb
Concentration per Run 1	99.428 %	103.793 %	972.538 ppb	0.673 ppb	0.217 ppb	2.229 ppb	94.144 %	106.340 %	0.131 ppb
Concentration per Run 2	97.857 %	102.591 %	986.197 ppb	0.338 ppb	0.248 ppb	3.005 ppb	95.861 %	101.174 %	0.155 ppb
Concentration per Run 3	97.700 %	104.011 %	985.989 ppb	0.641 ppb	0.232 ppb	2.891 ppb	94.572 %	103.367 %	0.132 ppb
Recovery Percentage 1			98.157 %						
Concentration RSD	1.0 %	0.7 %	0.8 %	33.5 %	6.6 %	15.5 %	0.9 %	2.5 %	9.8 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.018 ppb	96.484 %	107.366 %	0.834 ppb	10,296.369 ppb	99.331 %	104.794 %	98.611 %	107.530 %
Concentration per Run 1	0.016 ppb	94.258 %	111.370 %	0.773 ppb	10,118.110 ppb	97.560 %	108.711 %	97.875 %	109.005 %
Concentration per Run 2	0.014 ppb	97.120 %	106.343 %	0.852 ppb	10,343.087 ppb	100.753 %	103.320 %	97.193 %	105.351 %
Concentration per Run 3	0.024 ppb	98.075 %	104.385 %	0.877 ppb	10,427.911 ppb	99.679 %	102.351 %	100.765 %	108.232 %
Recovery Percentage 1					102.964 %				
Concentration RSD	27.6 %	2.1 %	3.4 %	6.5 %	1.6 %	1.6 %	3.3 %	1.9 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.080 ppb	10,070.883 ppb	97.490 %	104.458 %
Concentration per Run 1	0.054 ppb	9,730.288 ppb	97.337 %	108.221 %
Concentration per Run 2	0.088 ppb	10,323.118 ppb	97.835 %	100.944 %
Concentration per Run 3	0.099 ppb	10,159.243 ppb	97.299 %	104.209 %
Recovery Percentage 1		100.709 %		
Concentration RSD	28.8 %	3.0 %	0.3 %	3.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 14 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: Rinse Rack: 0
 Analysis started at: 9/26/2024 7:54:24 AM Vial: 1

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.062 %	92.777 %	0.005 ppb	20.813 ppb	8.429 ppb	5.164 ppb	15.021 ppb	23.452 ppb	98.735 %
Concentration per Run 1	95.125 %	94.022 %	0.003 ppb	0.989 ppb	0.062 ppb	-0.471 ppb	8.560 ppb	3.597 ppb	95.610 %
Concentration per Run 2	94.970 %	93.773 %	0.010 ppb	1.961 ppb	1.458 ppb	0.942 ppb	12.582 ppb	9.932 ppb	96.327 %
Concentration per Run 3	95.091 %	90.535 %	0.003 ppb	59.488 ppb	23.767 ppb	15.019 ppb	23.920 ppb	56.827 ppb	104.267 %
Concentration RSD	0.1 %	2.1 %	73.8 %	160.9 %	157.8 %	165.9 %	53.0 %	124.0 %	4.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.011 %	-0.069 ppb	0.016 ppb	1.360 ppb	17.410 ppb	0.005 ppb	1.233 ppb	1.227 ppb	2.230 ppb
Concentration per Run 1	95.907 %	-0.081 ppb	0.011 ppb	0.271 ppb	5.846 ppb	0.004 ppb	0.302 ppb	0.175 ppb	1.517 ppb
Concentration per Run 2	98.925 %	-0.066 ppb	0.000 ppb	0.260 ppb	6.953 ppb	0.003 ppb	0.245 ppb	0.197 ppb	1.401 ppb
Concentration per Run 3	99.202 %	-0.061 ppb	0.036 ppb	3.550 ppb	39.432 ppb	0.008 ppb	3.154 ppb	3.310 ppb	3.771 ppb
Concentration RSD	1.9 %	14.6 %	115.2 %	139.4 %	109.6 %	55.9 %	134.9 %	147.0 %	59.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.214 %	95.299 %	0.489 ppb	0.069 ppb	0.033 ppb	1.067 ppb	97.038 %	98.680 %	0.006 ppb
Concentration per Run 1	100.406 %	94.044 %	0.391 ppb	0.061 ppb	0.013 ppb	0.496 ppb	96.532 %	95.405 %	0.001 ppb
Concentration per Run 2	100.452 %	96.590 %	0.428 ppb	0.053 ppb	0.025 ppb	0.614 ppb	97.177 %	98.784 %	0.002 ppb
Concentration per Run 3	99.784 %	95.264 %	0.648 ppb	0.093 ppb	0.060 ppb	2.091 ppb	97.405 %	101.852 %	0.015 ppb
Concentration RSD	0.4 %	1.3 %	28.4 %	31.1 %	74.3 %	83.3 %	0.5 %	3.3 %	133.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.006 ppb	99.892 %	98.692 %	0.049 ppb	3.412 ppb	98.801 %	99.343 %	99.589 %	99.249 %
Concentration per Run 1	0.000 ppb	98.410 %	97.805 %	0.041 ppb	0.223 ppb	99.092 %	96.775 %	98.660 %	95.767 %
Concentration per Run 2	0.002 ppb	100.079 %	97.286 %	0.037 ppb	0.200 ppb	98.596 %	100.468 %	98.615 %	99.935 %
Concentration per Run 3	0.015 ppb	101.188 %	100.985 %	0.069 ppb	9.812 ppb	98.716 %	100.785 %	101.491 %	102.043 %
Concentration RSD	134.3 %	1.4 %	2.0 %	35.6 %	162.5 %	0.3 %	2.2 %	1.7 %	3.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.041 ppb	2.548 ppb	98.752 %	97.837 %
Concentration per Run 1	0.017 ppb	0.814 ppb	98.694 %	96.572 %
Concentration per Run 2	0.044 ppb	0.724 ppb	98.498 %	99.851 %
Concentration per Run 3	0.060 ppb	6.106 ppb	99.065 %	97.087 %
Concentration RSD	53.5 %	121.0 %	0.3 %	1.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 15 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 7:59:03 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	91.898 %	92.237 %	61.558 ppb	5,981.820 ppb	6,240.990 ppb	62.199 ppb	6,011.694 ppb	6,277.728 ppb	94.754 %
Concentration per Run 1	93.488 %	96.139 %	59.847 ppb	5,820.572 ppb	6,025.757 ppb	60.102 ppb	5,884.340 ppb	6,417.295 ppb	99.318 %
Concentration per Run 2	91.217 %	90.037 %	61.692 ppb	6,158.184 ppb	6,372.136 ppb	60.776 ppb	6,280.081 ppb	6,326.064 ppb	95.167 %
Concentration per Run 3	90.989 %	90.535 %	63.135 ppb	5,966.706 ppb	6,325.077 ppb	65.718 ppb	5,870.660 ppb	6,089.825 ppb	89.777 %
Recovery Percentage 1			102.597 %	99.697 %	104.017 %	103.665 %	100.195 %	104.629 %	
Concentration RSD	1.5 %	3.7 %	2.7 %	2.8 %	3.0 %	4.9 %	3.9 %	2.7 %	5.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	103.033 %	61.563 ppb	60.910 ppb	60.892 ppb	6,043.187 ppb	61.120 ppb	61.238 ppb	62.349 ppb	62.143 ppb
Concentration per Run 1	103.446 %	61.451 ppb	60.213 ppb	59.567 ppb	6,075.106 ppb	59.705 ppb	59.665 ppb	59.777 ppb	61.045 ppb
Concentration per Run 2	101.399 %	62.377 ppb	61.372 ppb	62.440 ppb	6,127.156 ppb	64.596 ppb	62.398 ppb	65.376 ppb	63.154 ppb
Concentration per Run 3	104.255 %	60.859 ppb	61.146 ppb	60.669 ppb	5,927.300 ppb	59.060 ppb	61.651 ppb	61.895 ppb	62.229 ppb
Recovery Percentage 1		102.604 %	101.517 %	101.487 %	100.720 %	101.867 %	102.063 %	103.915 %	103.571 %
Concentration RSD	1.4 %	1.2 %	1.0 %	2.4 %	1.7 %	5.0 %	2.3 %	4.5 %	1.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.080 %	96.394 %	60.544 ppb	60.588 ppb	60.279 ppb	59.271 ppb	93.755 %	98.821 %	60.011 ppb
Concentration per Run 1	102.185 %	97.460 %	58.663 ppb	60.885 ppb	58.302 ppb	59.985 ppb	96.518 %	100.068 %	58.669 ppb
Concentration per Run 2	96.182 %	94.403 %	61.521 ppb	61.617 ppb	62.364 ppb	58.205 ppb	93.751 %	98.388 %	60.391 ppb
Concentration per Run 3	95.874 %	97.318 %	61.449 ppb	59.261 ppb	60.172 ppb	59.623 ppb	90.995 %	98.006 %	60.972 ppb
Recovery Percentage 1			100.907 %	100.980 %	100.465 %	98.785 %			100.018 %
Concentration RSD	3.6 %	1.8 %	2.7 %	2.0 %	3.4 %	1.6 %	2.9 %	1.1 %	2.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	59.389 ppb	95.312 %	100.744 %	60.204 ppb	60.489 ppb	97.879 %	103.061 %	97.210 %	102.369 %
Concentration per Run 1	58.384 ppb	97.912 %	101.813 %	58.748 ppb	58.967 ppb	100.738 %	104.210 %	97.263 %	103.414 %
Concentration per Run 2	58.745 ppb	95.787 %	100.987 %	60.357 ppb	61.556 ppb	96.307 %	103.296 %	96.872 %	100.597 %
Concentration per Run 3	61.039 ppb	92.236 %	99.433 %	61.506 ppb	60.943 ppb	96.590 %	101.678 %	97.494 %	103.097 %
Recovery Percentage 1	98.982 %			100.340 %	100.815 %				
Concentration RSD	2.4 %	3.0 %	1.2 %	2.3 %	2.2 %	2.5 %	1.2 %	0.3 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	59.861 ppb	57.429 ppb	93.299 %	100.587 %
Concentration per Run 1	54.632 ppb	55.856 ppb	96.791 %	102.205 %
Concentration per Run 2	62.647 ppb	58.429 ppb	92.146 %	99.397 %
Concentration per Run 3	62.306 ppb	58.002 ppb	90.958 %	100.160 %
Recovery Percentage 1	99.769 %	95.715 %		
Concentration RSD	7.6 %	2.4 %	3.3 %	1.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 16 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: CCB Rack 0
 Analysis started at: 9/26/2024 8:03:48 AM Vial 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.369 %	91.947 %	0.065 ppb	-2.734 ppb	0.572 ppb	-0.826 ppb	5.183 ppb	-0.727 ppb	95.124 %
Concentration per Run 1	96.313 %	88.294 %	0.131 ppb	-2.301 ppb	1.154 ppb	-0.681 ppb	9.933 ppb	0.628 ppb	92.951 %
Concentration per Run 2	95.171 %	92.528 %	0.037 ppb	-3.467 ppb	0.230 ppb	-1.335 ppb	0.969 ppb	-3.225 ppb	94.438 %
Concentration per Run 3	94.622 %	95.019 %	0.026 ppb	-2.434 ppb	0.333 ppb	-0.461 ppb	4.646 ppb	0.417 ppb	97.983 %
Recovery Percentage 1			12.926 %	-2.734 %	0.818 %	-8.256 %	5.183 %	-0.727 %	
Concentration RSD	0.9 %	3.7 %	90.0 %	23.3 %	88.5 %	55.1 %	86.9 %	298.0 %	2.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	93.244 %	-0.058 ppb	0.014 ppb	0.025 ppb	4.717 ppb	-0.001 ppb	0.100 ppb	-0.036 ppb	0.109 ppb
Concentration per Run 1	91.363 %	-0.059 ppb	0.017 ppb	0.028 ppb	3.749 ppb	-0.002 ppb	0.152 ppb	-0.039 ppb	0.095 ppb
Concentration per Run 2	94.369 %	-0.049 ppb	0.011 ppb	0.022 ppb	5.360 ppb	0.001 ppb	0.072 ppb	-0.008 ppb	0.173 ppb
Concentration per Run 3	93.999 %	-0.065 ppb	0.014 ppb	0.025 ppb	5.041 ppb	-0.001 ppb	0.077 ppb	-0.062 ppb	0.060 ppb
Recovery Percentage 1		-1.152 %	1.404 %	2.486 %	9.433 %	-0.101 %	5.015 %	-3.643 %	2.182 %
Concentration RSD	1.8 %	13.7 %	18.7 %	12.5 %	18.1 %	202.2 %	44.4 %	74.4 %	53.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.574 %	91.424 %	0.071 ppb	0.060 ppb	-0.001 ppb	0.354 ppb	99.285 %	96.756 %	0.004 ppb
Concentration per Run 1	99.259 %	87.183 %	0.084 ppb	0.026 ppb	-0.001 ppb	0.328 ppb	102.109 %	92.713 %	0.005 ppb
Concentration per Run 2	99.937 %	91.563 %	0.099 ppb	0.093 ppb	0.003 ppb	0.354 ppb	97.904 %	98.050 %	0.004 ppb
Concentration per Run 3	99.525 %	95.526 %	0.031 ppb	0.060 ppb	-0.006 ppb	0.380 ppb	97.843 %	99.506 %	0.003 ppb
Recovery Percentage 1			14.278 %	1.191 %	-0.247 %	17.705 %			1.032 %
Concentration RSD	0.3 %	4.6 %	50.1 %	56.3 %	345.2 %	7.4 %	2.5 %	3.7 %	23.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.004 ppb	101.321 %	96.164 %	0.058 ppb	0.012 ppb	101.352 %	96.843 %	102.986 %	96.319 %
Concentration per Run 1	0.005 ppb	101.489 %	94.150 %	0.054 ppb	0.011 ppb	98.984 %	94.079 %	102.012 %	94.058 %
Concentration per Run 2	0.000 ppb	99.794 %	97.946 %	0.052 ppb	0.016 ppb	102.534 %	95.686 %	101.579 %	96.100 %
Concentration per Run 3	0.008 ppb	102.681 %	96.397 %	0.069 ppb	0.010 ppb	102.537 %	100.764 %	105.366 %	98.798 %
Recovery Percentage 1				1.456 %	2.456 %				
Concentration RSD	90.8 %	1.4 %	2.0 %	15.3 %	23.7 %	2.0 %	3.6 %	2.0 %	2.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.296 ppb	0.154 ppb	101.195 %	98.259 %
Concentration per Run 1	0.188 ppb	0.158 ppb	100.343 %	97.293 %
Concentration per Run 2	0.343 ppb	0.160 ppb	101.912 %	98.207 %
Concentration per Run 3	0.358 ppb	0.144 ppb	101.330 %	99.276 %
Recovery Percentage 1	29.641 %	15.413 %		
Concentration RSD	31.8 %	5.5 %	0.8 %	1.0 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 17 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1973761-1d2 A2-6020T Rack: 1
 Analysis started at: 9/26/2024 8:09:51 AM Vial: 1

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.589 %	95.226 %	0.018 ppb	-1.262 ppb	1.210 ppb	-0.652 ppb	-6.161 ppb	11.133 ppb	101.738 %
Concentration per Run 1	99.740 %	93.151 %	0.017 ppb	-1.631 ppb	1.453 ppb	-1.401 ppb	-3.267 ppb	14.778 ppb	105.563 %
Concentration per Run 2	101.268 %	96.887 %	0.018 ppb	-3.071 ppb	1.321 ppb	-0.845 ppb	-9.206 ppb	-0.625 ppb	99.724 %
Concentration per Run 3	97.760 %	95.641 %	0.018 ppb	0.918 ppb	0.856 ppb	0.289 ppb	-6.010 ppb	19.245 ppb	99.926 %
Concentration RSD	1.8 %	2.0 %	1.4 %	160.1 %	25.9 %	132.1 %	48.2 %	93.6 %	3.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.756 %	-0.061 ppb	0.147 ppb	0.123 ppb	16.901 ppb	0.003 ppb	0.078 ppb	0.000 ppb	0.452 ppb
Concentration per Run 1	107.654 %	-0.054 ppb	0.124 ppb	0.106 ppb	17.893 ppb	0.002 ppb	0.055 ppb	-0.002 ppb	0.412 ppb
Concentration per Run 2	103.816 %	-0.072 ppb	0.163 ppb	0.129 ppb	14.947 ppb	0.005 ppb	0.056 ppb	0.000 ppb	0.499 ppb
Concentration per Run 3	102.798 %	-0.057 ppb	0.153 ppb	0.136 ppb	17.863 ppb	0.002 ppb	0.123 ppb	0.002 ppb	0.444 ppb
Concentration RSD	2.4 %	15.4 %	13.7 %	12.9 %	10.0 %	55.3 %	49.9 %	21,400.6 %	9.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.610 %	99.729 %	0.038 ppb	0.012 ppb	0.027 ppb	0.194 ppb	100.583 %	101.423 %	0.002 ppb
Concentration per Run 1	103.118 %	101.283 %	0.019 ppb	0.056 ppb	0.033 ppb	0.161 ppb	99.888 %	103.388 %	0.001 ppb
Concentration per Run 2	103.721 %	97.949 %	0.040 ppb	-0.012 ppb	0.035 ppb	0.189 ppb	102.354 %	101.148 %	0.002 ppb
Concentration per Run 3	103.991 %	99.954 %	0.054 ppb	-0.008 ppb	0.012 ppb	0.233 ppb	99.506 %	99.732 %	0.003 ppb
Concentration RSD	0.4 %	1.7 %	47.7 %	318.3 %	46.5 %	18.5 %	1.5 %	1.8 %	50.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.002 ppb	103.539 %	101.351 %	0.026 ppb	0.040 ppb	102.677 %	104.790 %	103.441 %	103.441 %
Concentration per Run 1	0.003 ppb	102.358 %	101.430 %	0.025 ppb	0.037 ppb	102.872 %	107.805 %	103.149 %	105.543 %
Concentration per Run 2	0.003 ppb	103.451 %	102.207 %	0.022 ppb	0.024 ppb	101.666 %	102.619 %	102.671 %	101.330 %
Concentration per Run 3	0.000 ppb	104.808 %	100.416 %	0.030 ppb	0.058 ppb	103.493 %	103.945 %	104.504 %	103.450 %
Concentration RSD	74.2 %	1.2 %	0.9 %	15.4 %	43.0 %	0.9 %	2.6 %	0.9 %	2.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.082 ppb	0.119 ppb	101.040 %	102.000 %
Concentration per Run 1	0.044 ppb	0.118 ppb	101.736 %	103.741 %
Concentration per Run 2	0.098 ppb	0.124 ppb	101.581 %	100.339 %
Concentration per Run 3	0.103 ppb	0.114 ppb	99.802 %	101.921 %
Concentration RSD	40.0 %	4.3 %	1.1 %	1.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 18
 Analysis label: WG1973761-2d10 A2-6020T
 Analysis started at: 9/26/2024 8:15:46 AM

User name: ALPHALAB\ICPMSRQ
 Rack: 1
 Vial: 2

Comment: <Comment>

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	100.546 %	94.645 %	9.316 ppb	2,053.247 ppb	2,006.515 ppb	372.937 ppb	2,083.929 ppb	2,031.484 ppb	100.076 %
Concentration per Run 1	99.680 %	95.268 %	9.400 ppb	2,058.627 ppb	1,977.040 ppb	373.738 ppb	2,082.958 ppb	1,863.755 ppb	103.258 %
Concentration per Run 2	100.684 %	94.520 %	9.226 ppb	2,075.359 ppb	2,090.687 ppb	395.049 ppb	2,153.452 ppb	2,160.759 ppb	98.105 %
Concentration per Run 3	101.274 %	94.147 %	9.323 ppb	2,025.754 ppb	1,951.819 ppb	350.025 ppb	2,015.379 ppb	2,069.938 ppb	98.865 %
Concentration RSD	0.8 %	0.6 %	0.9 %	1.2 %	3.7 %	6.0 %	3.3 %	7.5 %	2.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.352 %	105.067 ppb	42.063 ppb	104.788 ppb	216.266 ppb	102.717 ppb	100.630 ppb	50.823 ppb	101.589 ppb
Concentration per Run 1	97.087 %	107.288 ppb	42.524 ppb	106.668 ppb	222.554 ppb	106.631 ppb	100.476 ppb	51.132 ppb	101.967 ppb
Concentration per Run 2	95.167 %	108.576 ppb	43.473 ppb	107.454 ppb	217.577 ppb	106.525 ppb	101.748 ppb	52.989 ppb	104.218 ppb
Concentration per Run 3	99.803 %	99.337 ppb	40.191 ppb	100.242 ppb	208.666 ppb	94.995 ppb	99.668 ppb	48.348 ppb	98.580 ppb
Concentration RSD	2.4 %	4.8 %	4.0 %	3.8 %	3.3 %	6.5 %	1.0 %	4.6 %	2.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.022 %	95.932 %	23.864 ppb	22.193 ppb	189.239 ppb	200.970 ppb	100.289 %	98.766 %	9.768 ppb
Concentration per Run 1	103.083 %	94.536 %	23.920 ppb	22.318 ppb	192.905 ppb	210.415 ppb	99.688 %	94.160 %	10.121 ppb
Concentration per Run 2	103.114 %	93.472 %	24.635 ppb	21.994 ppb	190.298 ppb	196.657 ppb	101.554 %	101.164 %	9.784 ppb
Concentration per Run 3	102.868 %	99.788 %	23.035 ppb	22.268 ppb	184.516 ppb	195.838 ppb	99.624 %	100.973 %	9.399 ppb
Concentration RSD	0.1 %	3.5 %	3.4 %	0.8 %	2.3 %	4.1 %	1.1 %	4.0 %	3.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	10.252 ppb	102.998 %	102.586 %	95.443 ppb	385.868 ppb	103.777 %	101.687 %	104.373 %	99.338 %
Concentration per Run 1	10.603 ppb	102.909 %	99.375 %	99.108 ppb	402.711 ppb	104.602 %	96.937 %	103.840 %	96.702 %
Concentration per Run 2	10.297 ppb	103.655 %	101.678 %	96.143 ppb	384.289 ppb	102.870 %	100.383 %	105.921 %	97.945 %
Concentration per Run 3	9.857 ppb	102.431 %	106.705 %	91.079 ppb	370.604 ppb	103.860 %	107.741 %	103.358 %	103.368 %
Concentration RSD	3.7 %	0.6 %	3.7 %	4.3 %	4.2 %	0.8 %	5.4 %	1.3 %	3.6 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	22.433 ppb	107.336 ppb	100.936 %	98.357 %
Concentration per Run 1	23.743 ppb	110.881 ppb	102.418 %	94.883 %
Concentration per Run 2	22.516 ppb	108.953 ppb	99.813 %	98.126 %
Concentration per Run 3	21.040 ppb	102.173 ppb	100.577 %	102.063 %
Concentration RSD	6.0 %	4.3 %	1.3 %	3.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 19 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1973761-3d10 A2-6020T Rack: 1
 Analysis started at: 9/26/2024 8:20:26 AM Vial: 3

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.321 %	97.758 %	9.846 ppb	2,002.485 ppb	2,022.607 ppb	358.845 ppb	2,021.073 ppb	2,185.721 ppb	105.441 %
Concentration per Run 1	101.307 %	98.381 %	9.872 ppb	1,965.050 ppb	1,949.997 ppb	361.571 ppb	1,920.389 ppb	1,914.695 ppb	105.744 %
Concentration per Run 2	102.561 %	97.509 %	9.750 ppb	1,979.914 ppb	2,083.556 ppb	344.455 ppb	2,092.337 ppb	2,386.712 ppb	105.326 %
Concentration per Run 3	100.096 %	97.385 %	9.917 ppb	2,062.491 ppb	2,034.269 ppb	370.510 ppb	2,050.493 ppb	2,255.755 ppb	105.255 %
Concentration RSD	1.2 %	0.6 %	0.9 %	2.6 %	3.3 %	3.7 %	4.4 %	11.1 %	0.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.274 %	101.507 ppb	40.639 ppb	101.102 ppb	213.641 ppb	100.012 ppb	101.426 ppb	50.717 ppb	99.545 ppb
Concentration per Run 1	105.087 %	97.286 ppb	40.606 ppb	99.202 ppb	213.331 ppb	96.883 ppb	100.234 ppb	51.351 ppb	98.475 ppb
Concentration per Run 2	103.700 %	103.055 ppb	40.442 ppb	101.444 ppb	206.010 ppb	101.091 ppb	102.489 ppb	50.197 ppb	98.648 ppb
Concentration per Run 3	104.035 %	104.179 ppb	40.869 ppb	102.660 ppb	221.581 ppb	102.061 ppb	101.553 ppb	50.604 ppb	101.511 ppb
Concentration RSD	0.7 %	3.6 %	0.5 %	1.7 %	3.6 %	2.8 %	1.1 %	1.2 %	1.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.573 %	100.247 %	23.558 ppb	22.823 ppb	186.661 ppb	201.366 ppb	102.162 %	100.254 %	9.775 ppb
Concentration per Run 1	105.648 %	98.887 %	23.470 ppb	23.381 ppb	182.459 ppb	199.685 ppb	104.173 %	101.365 %	9.728 ppb
Concentration per Run 2	104.353 %	101.195 %	23.759 ppb	21.181 ppb	187.815 ppb	200.666 ppb	101.415 %	99.303 %	9.682 ppb
Concentration per Run 3	103.719 %	100.659 %	23.446 ppb	23.907 ppb	189.709 ppb	203.748 ppb	100.899 %	100.092 %	9.916 ppb
Concentration RSD	0.9 %	1.2 %	0.7 %	6.3 %	2.0 %	1.1 %	1.7 %	1.0 %	1.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	10.332 ppb	107.771 %	103.262 %	97.101 ppb	393.657 ppb	105.005 %	102.853 %	105.189 %	103.457 %
Concentration per Run 1	10.121 ppb	109.281 %	102.770 %	97.168 ppb	383.098 ppb	106.372 %	103.961 %	105.891 %	105.647 %
Concentration per Run 2	10.488 ppb	108.482 %	102.460 %	96.917 ppb	398.208 ppb	103.521 %	100.939 %	104.014 %	104.578 %
Concentration per Run 3	10.386 ppb	105.551 %	104.556 %	97.217 ppb	399.666 ppb	105.122 %	103.660 %	105.662 %	100.144 %
Concentration RSD	1.8 %	1.8 %	1.1 %	0.2 %	2.3 %	1.4 %	1.6 %	1.0 %	2.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	23.041 ppb	108.211 ppb	102.855 %	101.140 %
Concentration per Run 1	22.172 ppb	103.435 ppb	103.208 %	103.561 %
Concentration per Run 2	23.509 ppb	111.170 ppb	102.809 %	98.491 %
Concentration per Run 3	23.441 ppb	110.028 ppb	102.547 %	101.369 %
Concentration RSD	3.3 %	3.9 %	0.3 %	2.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 20 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2452574-02d2 A2-6020T Rack: 1
 Analysis started at: 9/26/2024 8:25:06 AM Vial: 4

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	105.299 %	94.479 %	0.013 ppb	89.763 ppb	81.302 ppb	33.000 ppb	9.832 ppb	376.753 ppb	102.818 %
Concentration per Run 1	104.924 %	103.736 %	0.015 ppb	70.171 ppb	68.909 ppb	29.639 ppb	3.148 ppb	326.793 ppb	103.499 %
Concentration per Run 2	104.393 %	88.418 %	0.014 ppb	107.814 ppb	94.878 ppb	35.345 ppb	17.119 ppb	474.409 ppb	99.866 %
Concentration per Run 3	106.580 %	91.283 %	0.011 ppb	91.304 ppb	80.119 ppb	34.015 ppb	9.228 ppb	329.057 ppb	105.090 %
Concentration RSD	1.1 %	8.6 %	18.0 %	21.0 %	16.0 %	9.0 %	71.3 %	22.4 %	2.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.576 %	-0.014 ppb	2.754 ppb	0.998 ppb	26.939 ppb	0.022 ppb	0.337 ppb	0.957 ppb	1.720 ppb
Concentration per Run 1	107.308 %	-0.026 ppb	2.274 ppb	0.837 ppb	19.043 ppb	0.022 ppb	0.280 ppb	0.908 ppb	1.524 ppb
Concentration per Run 2	85.133 %	-0.016 ppb	3.217 ppb	1.199 ppb	31.596 ppb	0.028 ppb	0.380 ppb	1.071 ppb	1.932 ppb
Concentration per Run 3	94.289 %	0.001 ppb	2.770 ppb	0.959 ppb	30.178 ppb	0.015 ppb	0.350 ppb	0.891 ppb	1.705 ppb
Concentration RSD	11.7 %	100.9 %	17.1 %	18.5 %	25.5 %	29.3 %	15.1 %	10.4 %	11.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	106.825 %	94.854 %	0.067 ppb	0.031 ppb	0.723 ppb	0.945 ppb	103.376 %	96.856 %	0.008 ppb
Concentration per Run 1	109.532 %	100.543 %	0.018 ppb	0.051 ppb	0.605 ppb	0.750 ppb	102.347 %	106.502 %	0.007 ppb
Concentration per Run 2	103.781 %	84.874 %	0.134 ppb	-0.014 ppb	0.845 ppb	1.106 ppb	102.098 %	85.569 %	0.009 ppb
Concentration per Run 3	107.161 %	99.144 %	0.048 ppb	0.056 ppb	0.719 ppb	0.980 ppb	105.684 %	98.496 %	0.008 ppb
Concentration RSD	2.7 %	9.1 %	89.9 %	125.4 %	16.6 %	19.1 %	1.9 %	10.9 %	16.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.004 ppb	106.211 %	95.281 %	0.197 ppb	1.032 ppb	105.471 %	97.176 %	105.828 %	97.005 %
Concentration per Run 1	0.006 ppb	105.966 %	103.606 %	0.155 ppb	0.814 ppb	104.087 %	104.740 %	107.431 %	105.821 %
Concentration per Run 2	0.002 ppb	106.000 %	84.048 %	0.231 ppb	1.321 ppb	105.988 %	84.899 %	104.525 %	87.533 %
Concentration per Run 3	0.005 ppb	106.668 %	98.190 %	0.204 ppb	0.961 ppb	106.336 %	101.889 %	105.526 %	97.661 %
Concentration RSD	53.6 %	0.4 %	10.6 %	19.6 %	25.3 %	1.1 %	11.0 %	1.4 %	9.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.251 ppb	0.346 ppb	107.231 %	97.912 %
Concentration per Run 1	0.123 ppb	0.307 ppb	108.090 %	107.191 %
Concentration per Run 2	0.332 ppb	0.403 ppb	104.770 %	87.282 %
Concentration per Run 3	0.299 ppb	0.330 ppb	108.832 %	99.264 %
Concentration RSD	44.8 %	14.5 %	2.0 %	10.2 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 21 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453966-01d2 A2-6020T Rack: 1
 Analysis started at: 9/26/2024 8:29:47 AM Vial: 5

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	98.377 %	98.049 %	0.017 ppb	88.630 ppb	75.977 ppb	26.953 ppb	5.240 ppb	373.330 ppb	98.655 %
Concentration per Run 1	104.934 %	98.755 %	0.013 ppb	84.289 ppb	72.789 ppb	26.456 ppb	2.768 ppb	338.418 ppb	107.547 %
Concentration per Run 2	91.732 %	97.634 %	0.023 ppb	91.879 ppb	77.524 ppb	27.506 ppb	10.593 ppb	378.262 ppb	91.626 %
Concentration per Run 3	98.463 %	97.758 %	0.014 ppb	89.723 ppb	77.616 ppb	26.896 ppb	2.358 ppb	403.310 ppb	96.791 %
Concentration RSD	6.7 %	0.6 %	33.5 %	4.4 %	3.6 %	2.0 %	88.6 %	8.8 %	8.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	102.528 %	-0.009 ppb	2.188 ppb	1.167 ppb	13.220 ppb	0.016 ppb	0.238 ppb	0.742 ppb	0.988 ppb
Concentration per Run 1	104.521 %	0.027 ppb	2.125 ppb	1.189 ppb	11.476 ppb	0.018 ppb	0.226 ppb	0.675 ppb	0.958 ppb
Concentration per Run 2	100.543 %	-0.018 ppb	2.335 ppb	1.172 ppb	14.329 ppb	0.018 ppb	0.227 ppb	0.703 ppb	0.914 ppb
Concentration per Run 3	102.521 %	-0.038 ppb	2.103 ppb	1.141 ppb	13.856 ppb	0.013 ppb	0.260 ppb	0.849 ppb	1.092 ppb
Concentration RSD	1.9 %	355.7 %	5.8 %	2.1 %	11.6 %	17.7 %	8.2 %	12.6 %	9.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.891 %	97.517 %	0.029 ppb	0.045 ppb	0.714 ppb	0.242 ppb	96.745 %	101.092 %	0.003 ppb
Concentration per Run 1	104.174 %	97.240 %	0.110 ppb	0.027 ppb	0.687 ppb	0.197 ppb	100.999 %	102.575 %	0.005 ppb
Concentration per Run 2	92.023 %	96.993 %	-0.015 ppb	0.021 ppb	0.716 ppb	0.249 ppb	90.481 %	99.454 %	0.003 ppb
Concentration per Run 3	100.476 %	98.319 %	-0.010 ppb	0.087 ppb	0.739 ppb	0.280 ppb	98.756 %	101.247 %	0.003 ppb
Concentration RSD	6.3 %	0.7 %	248.5 %	80.5 %	3.7 %	17.5 %	5.7 %	1.5 %	27.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.005 ppb	97.600 %	99.624 %	0.040 ppb	0.973 ppb	97.464 %	102.291 %	98.583 %	100.228 %
Concentration per Run 1	0.006 ppb	102.960 %	101.234 %	0.036 ppb	0.973 ppb	102.267 %	103.352 %	106.040 %	100.267 %
Concentration per Run 2	0.005 ppb	90.056 %	98.601 %	0.036 ppb	1.003 ppb	91.899 %	100.883 %	91.457 %	99.226 %
Concentration per Run 3	0.004 ppb	99.782 %	99.036 %	0.048 ppb	0.944 ppb	98.225 %	102.638 %	98.252 %	101.191 %
Concentration RSD	17.7 %	6.9 %	1.4 %	17.9 %	3.1 %	5.4 %	1.2 %	7.4 %	1.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.089 ppb	0.104 ppb	97.078 %	102.082 %
Concentration per Run 1	0.045 ppb	0.102 ppb	101.838 %	104.225 %
Concentration per Run 2	0.106 ppb	0.106 ppb	90.363 %	99.637 %
Concentration per Run 3	0.116 ppb	0.104 ppb	99.031 %	102.384 %
Concentration RSD	43.2 %	1.9 %	6.2 %	2.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 22 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2450748-02 A2-6020T Rack: 1
 Analysis started at: 9/26/2024 8:34:28 AM Vial: 6

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	98.398 %	96.098 %	0.786 ppb	36,133.289 ppb	18,262.136 ppb	239.900 ppb	7,605.710 ppb	292,939.420 ppb	101.726 %
Concentration per Run 1	98.681 %	98.755 %	0.809 ppb	35,336.016 ppb	18,055.427 ppb	226.263 ppb	7,446.007 ppb	295,382.762 ppb	102.736 %
Concentration per Run 2	100.335 %	94.396 %	0.759 ppb	36,533.035 ppb	18,369.942 ppb	241.376 ppb	7,702.899 ppb	289,388.992 ppb	102.082 %
Concentration per Run 3	96.179 %	95.143 %	0.792 ppb	36,530.815 ppb	18,361.041 ppb	252.060 ppb	7,668.223 ppb	294,046.507 ppb	100.359 %
Concentration RSD	2.1 %	2.4 %	3.2 %	1.9 %	1.0 %	5.4 %	1.8 %	1.1 %	1.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	101.121 %	0.064 ppb	0.393 ppb	3,256.927 ppb	2,959.433 ppb	2.018 ppb	4.629 ppb	31.367 ppb	18.792 ppb
Concentration per Run 1	100.393 %	0.072 ppb	0.372 ppb	3,252.384 ppb	2,956.728 ppb	2.079 ppb	4.487 ppb	31.621 ppb	18.931 ppb
Concentration per Run 2	101.989 %	0.065 ppb	0.436 ppb	3,251.351 ppb	2,969.099 ppb	2.022 ppb	4.842 ppb	31.421 ppb	19.171 ppb
Concentration per Run 3	100.983 %	0.055 ppb	0.372 ppb	3,267.046 ppb	2,952.471 ppb	1.954 ppb	4.557 ppb	31.059 ppb	18.274 ppb
Concentration RSD	0.8 %	13.1 %	9.3 %	0.3 %	0.3 %	3.1 %	4.1 %	0.9 %	2.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.761 %	95.048 %	0.122 ppb	0.395 ppb	694.283 ppb	0.309 ppb	92.492 %	92.101 %	0.004 ppb
Concentration per Run 1	100.002 %	93.779 %	0.055 ppb	0.363 ppb	685.831 ppb	0.248 ppb	92.894 %	90.092 %	0.003 ppb
Concentration per Run 2	102.762 %	93.819 %	0.181 ppb	0.537 ppb	704.500 ppb	0.272 ppb	92.268 %	93.424 %	0.004 ppb
Concentration per Run 3	99.519 %	97.546 %	0.129 ppb	0.284 ppb	692.518 ppb	0.408 ppb	92.313 %	92.786 %	0.004 ppb
Concentration RSD	1.7 %	2.3 %	52.3 %	32.8 %	1.4 %	27.9 %	0.4 %	1.9 %	22.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.214 ppb	97.528 %	96.108 %	0.060 ppb	44.117 ppb	99.988 %	98.457 %	103.070 %	98.126 %
Concentration per Run 1	0.213 ppb	98.276 %	94.620 %	0.055 ppb	44.520 ppb	99.039 %	96.679 %	103.035 %	94.472 %
Concentration per Run 2	0.217 ppb	95.959 %	95.426 %	0.064 ppb	43.682 ppb	99.729 %	98.955 %	104.204 %	99.067 %
Concentration per Run 3	0.211 ppb	98.348 %	98.277 %	0.061 ppb	44.148 ppb	101.197 %	99.737 %	101.970 %	100.839 %
Concentration RSD	1.4 %	1.4 %	2.0 %	7.4 %	1.0 %	1.1 %	1.6 %	1.1 %	3.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.246 ppb	0.112 ppb	93.389 %	91.613 %
Concentration per Run 1	0.228 ppb	0.110 ppb	91.967 %	90.773 %
Concentration per Run 2	0.251 ppb	0.113 ppb	93.139 %	90.991 %
Concentration per Run 3	0.259 ppb	0.114 ppb	95.062 %	93.076 %
Concentration RSD	6.4 %	2.1 %	1.7 %	1.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 23 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: xl2450862-01 6020TL Rack: 1
 Analysis started at: 9/26/2024 8:39:09 AM Vial: 7

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	102.050 %	93.234 %	0.001 ppb	3,297.103 ppb	15,242.770 ppb	1.035 ppb	2,127.928 ppb	28,463.761 ppb	103.151 %
Concentration per Run 1	104.354 %	85.554 %	0.000 ppb	3,553.525 ppb	16,434.022 ppb	1.232 ppb	2,166.807 ppb	29,153.487 ppb	101.566 %
Concentration per Run 2	100.935 %	100.249 %	0.003 ppb	3,130.626 ppb	14,460.187 ppb	1.795 ppb	2,083.495 ppb	29,368.013 ppb	103.551 %
Concentration per Run 3	100.860 %	93.898 %	0.001 ppb	3,207.157 ppb	14,834.102 ppb	0.077 ppb	2,133.483 ppb	26,869.782 ppb	104.336 %
Concentration RSD	2.0 %	7.9 %	133.2 %	6.8 %	6.9 %	84.7 %	2.0 %	4.9 %	1.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	94.578 %	4.182 ppb	4.333 ppb	2.475 ppb	10.353 ppb	0.008 ppb	0.065 ppb	4.306 ppb	2.818 ppb
Concentration per Run 1	90.947 %	4.305 ppb	4.722 ppb	4.004 ppb	12.985 ppb	0.010 ppb	0.037 ppb	4.520 ppb	3.024 ppb
Concentration per Run 2	93.895 %	4.116 ppb	4.141 ppb	1.755 ppb	7.774 ppb	0.004 ppb	0.050 ppb	4.289 ppb	2.830 ppb
Concentration per Run 3	98.890 %	4.126 ppb	4.137 ppb	1.667 ppb	10.301 ppb	0.008 ppb	0.107 ppb	4.109 ppb	2.600 ppb
Concentration RSD	4.2 %	2.5 %	7.8 %	53.5 %	25.2 %	38.9 %	57.9 %	4.8 %	7.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.001 %	97.897 %	0.062 ppb	0.298 ppb	2,017.050 ppb	0.747 ppb	96.298 %	93.340 %	0.002 ppb
Concentration per Run 1	102.233 %	91.505 %	0.052 ppb	0.312 ppb	2,176.144 ppb	0.751 ppb	96.455 %	87.497 %	0.002 ppb
Concentration per Run 2	102.273 %	101.110 %	0.072 ppb	0.402 ppb	1,924.725 ppb	0.756 ppb	95.968 %	95.813 %	0.002 ppb
Concentration per Run 3	101.498 %	101.076 %	0.063 ppb	0.181 ppb	1,950.281 ppb	0.734 ppb	96.470 %	96.708 %	0.001 ppb
Concentration RSD	0.4 %	5.7 %	15.4 %	37.3 %	6.9 %	1.5 %	0.3 %	5.4 %	51.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	100.641 %	96.125 %	0.013 ppb	105.015 ppb	101.364 %	97.892 %	101.678 %	98.361 %
Concentration per Run 1	0.000 ppb	100.597 %	91.787 %	0.008 ppb	111.694 ppb	102.037 %	93.482 %	100.712 %	92.560 %
Concentration per Run 2	-0.001 ppb	100.791 %	97.981 %	0.018 ppb	103.086 ppb	101.893 %	99.429 %	102.132 %	100.295 %
Concentration per Run 3	0.004 ppb	100.535 %	98.606 %	0.013 ppb	100.266 ppb	100.161 %	100.766 %	102.191 %	102.228 %
Concentration RSD	192.0 %	0.1 %	3.9 %	36.8 %	5.7 %	1.0 %	4.0 %	0.8 %	5.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.041 ppb	0.164 ppb	99.793 %	96.223 %
Concentration per Run 1	0.022 ppb	0.173 ppb	100.414 %	91.703 %
Concentration per Run 2	0.049 ppb	0.163 ppb	99.805 %	97.223 %
Concentration per Run 3	0.052 ppb	0.157 ppb	99.160 %	99.744 %
Concentration RSD	40.4 %	4.8 %	0.6 %	4.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 24 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453945-01 2008TL Rack: 1
 Analysis started at: 9/26/2024 8:43:51 AM Vial: 8

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	75.839 %	78.414 %	0.029 ppb	410,160.493 ppb	26,414.620 ppb	4,173.793 ppb	23,715.124 ppb	109,657.947 ppb	91.357 %
Concentration per Run 1	76.351 %	80.074 %	0.031 ppb	412,100.301 ppb	26,051.616 ppb	4,127.098 ppb	24,097.165 ppb	106,184.961 ppb	91.160 %
Concentration per Run 2	75.891 %	78.082 %	0.027 ppb	407,846.782 ppb	26,604.365 ppb	4,186.910 ppb	23,575.900 ppb	112,569.558 ppb	91.021 %
Concentration per Run 3	75.274 %	77.086 %	0.028 ppb	410,534.396 ppb	26,587.879 ppb	4,207.371 ppb	23,472.307 ppb	110,219.322 ppb	91.889 %
Concentration RSD	0.7 %	1.9 %	6.0 %	0.5 %	1.2 %	1.0 %	1.4 %	2.9 %	0.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	91.629 %	2.530 ppb	0.667 ppb	527.759 ppb	2,412.704 ppb	0.551 ppb	1.513 ppb	4.031 ppb	17.526 ppb
Concentration per Run 1	90.589 %	2.675 ppb	0.707 ppb	529.239 ppb	2,448.561 ppb	0.567 ppb	1.458 ppb	4.069 ppb	17.253 ppb
Concentration per Run 2	92.381 %	2.515 ppb	0.643 ppb	523.088 ppb	2,348.091 ppb	0.558 ppb	1.481 ppb	3.907 ppb	17.592 ppb
Concentration per Run 3	91.918 %	2.401 ppb	0.650 ppb	530.950 ppb	2,441.461 ppb	0.528 ppb	1.600 ppb	4.118 ppb	17.733 ppb
Concentration RSD	1.0 %	5.5 %	5.3 %	0.8 %	2.3 %	3.8 %	5.0 %	2.7 %	1.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	86.577 %	93.636 %	6.969 ppb	0.360 ppb	831.618 ppb	4.623 ppb	79.219 %	89.152 %	0.010 ppb
Concentration per Run 1	86.673 %	93.245 %	7.003 ppb	0.366 ppb	807.671 ppb	4.549 ppb	80.143 %	88.939 %	0.007 ppb
Concentration per Run 2	88.395 %	94.502 %	6.945 ppb	0.433 ppb	827.272 ppb	4.574 ppb	78.379 %	89.083 %	0.013 ppb
Concentration per Run 3	84.664 %	93.161 %	6.961 ppb	0.283 ppb	859.912 ppb	4.747 ppb	79.134 %	89.435 %	0.011 ppb
Concentration RSD	2.2 %	0.8 %	0.4 %	20.9 %	3.2 %	2.3 %	1.1 %	0.3 %	25.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.056 ppb	83.696 %	95.034 %	0.220 ppb	275.611 ppb	93.777 %	102.621 %	96.893 %	107.101 %
Concentration per Run 1	0.051 ppb	86.025 %	94.990 %	0.196 ppb	274.461 ppb	93.716 %	100.703 %	98.138 %	106.758 %
Concentration per Run 2	0.057 ppb	83.389 %	94.393 %	0.221 ppb	274.659 ppb	94.145 %	102.072 %	96.638 %	106.803 %
Concentration per Run 3	0.059 ppb	81.675 %	95.721 %	0.243 ppb	277.711 ppb	93.470 %	105.089 %	95.903 %	107.741 %
Concentration RSD	7.4 %	2.6 %	0.7 %	10.7 %	0.7 %	0.4 %	2.2 %	1.2 %	0.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.036 ppb	10.297 ppb	86.501 %	96.271 %
Concentration per Run 1	0.020 ppb	10.128 ppb	87.601 %	96.200 %
Concentration per Run 2	0.039 ppb	10.348 ppb	86.197 %	96.734 %
Concentration per Run 3	0.048 ppb	10.413 ppb	85.704 %	95.880 %
Concentration RSD	40.5 %	1.4 %	1.1 %	0.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 25 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454072-01 2008TL Rack: 1
 Analysis started at: 9/26/2024 8:48:32 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	92.050 %	88.750 %	0.136 ppb	16,982.651 ppb	15,391.288 ppb	1,141.142 ppb	6,240.732 ppb	34,359.214 ppb	99.640 %
Concentration per Run 1	91.956 %	87.671 %	0.131 ppb	16,933.847 ppb	15,406.063 ppb	1,139.453 ppb	6,134.170 ppb	34,771.157 ppb	98.192 %
Concentration per Run 2	91.818 %	88.045 %	0.139 ppb	16,940.992 ppb	15,377.801 ppb	1,120.963 ppb	6,275.196 ppb	33,409.252 ppb	103.097 %
Concentration per Run 3	92.375 %	90.535 %	0.138 ppb	17,073.115 ppb	15,390.000 ppb	1,163.009 ppb	6,312.831 ppb	34,897.233 ppb	97.632 %
Concentration RSD	0.3 %	1.8 %	3.3 %	0.5 %	0.1 %	1.8 %	1.5 %	2.4 %	3.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.440 %	4.345 ppb	5.803 ppb	64.533 ppb	1,840.869 ppb	1.251 ppb	4.608 ppb	2.154 ppb	6.461 ppb
Concentration per Run 1	104.058 %	3.983 ppb	5.722 ppb	63.472 ppb	1,760.325 ppb	1.237 ppb	4.444 ppb	2.084 ppb	6.365 ppb
Concentration per Run 2	104.613 %	4.692 ppb	5.863 ppb	64.549 ppb	1,860.546 ppb	1.230 ppb	4.576 ppb	2.158 ppb	6.370 ppb
Concentration per Run 3	104.648 %	4.361 ppb	5.823 ppb	65.578 ppb	1,901.737 ppb	1.287 ppb	4.805 ppb	2.221 ppb	6.647 ppb
Concentration RSD	0.3 %	8.2 %	1.2 %	1.6 %	4.0 %	2.5 %	4.0 %	3.2 %	2.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.219 %	98.789 %	1.317 ppb	5.784 ppb	827.345 ppb	8.536 ppb	90.932 %	96.120 %	0.004 ppb
Concentration per Run 1	96.486 %	98.682 %	1.367 ppb	5.614 ppb	807.169 ppb	8.560 ppb	89.753 %	96.604 %	0.008 ppb
Concentration per Run 2	99.176 %	100.106 %	1.448 ppb	6.466 ppb	828.707 ppb	8.743 ppb	89.895 %	95.157 %	0.002 ppb
Concentration per Run 3	98.993 %	97.578 %	1.136 ppb	5.270 ppb	846.159 ppb	8.306 ppb	93.147 %	96.598 %	0.002 ppb
Concentration RSD	1.5 %	1.3 %	12.3 %	10.7 %	2.4 %	2.6 %	2.1 %	0.9 %	79.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.041 ppb	93.882 %	104.081 %	1.439 ppb	48.293 ppb	99.089 %	106.957 %	100.751 %	108.610 %
Concentration per Run 1	0.038 ppb	91.818 %	102.312 %	1.432 ppb	47.171 ppb	97.528 %	108.748 %	99.907 %	111.462 %
Concentration per Run 2	0.041 ppb	94.190 %	104.431 %	1.464 ppb	48.365 ppb	100.227 %	106.034 %	102.050 %	108.884 %
Concentration per Run 3	0.045 ppb	95.639 %	105.500 %	1.421 ppb	49.342 ppb	99.511 %	106.089 %	100.295 %	105.483 %
Concentration RSD	8.4 %	2.1 %	1.6 %	1.5 %	2.3 %	1.4 %	1.5 %	1.1 %	2.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.037 ppb	0.802 ppb	96.541 %	103.118 %
Concentration per Run 1	0.019 ppb	0.793 ppb	95.686 %	103.937 %
Concentration per Run 2	0.042 ppb	0.810 ppb	97.015 %	102.606 %
Concentration per Run 3	0.051 ppb	0.802 ppb	96.922 %	102.812 %
Concentration RSD	44.8 %	1.1 %	0.8 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 26 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2450862-01 6020TL Rack: 1
 Analysis started at: 9/26/2024 8:53:14 AM Vial: 7

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.084 %	94.562 %	-0.002 ppb	3,053.213 ppb	14,066.170 ppb	1.045 ppb	1,962.827 ppb	23,908.873 ppb	104.008 %
Concentration per Run 1	100.383 %	92.652 %	-0.003 ppb	3,097.422 ppb	14,009.469 ppb	1.409 ppb	1,911.765 ppb	24,385.667 ppb	106.133 %
Concentration per Run 2	96.436 %	95.392 %	-0.002 ppb	3,006.927 ppb	13,981.179 ppb	0.022 ppb	1,979.655 ppb	23,142.181 ppb	104.276 %
Concentration per Run 3	100.435 %	95.641 %	0.000 ppb	3,055.289 ppb	14,207.862 ppb	1.704 ppb	1,997.061 ppb	24,198.771 ppb	101.614 %
Concentration RSD	2.3 %	1.8 %	101.0 %	1.5 %	0.9 %	85.9 %	2.3 %	2.8 %	2.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	103.114 %	3.776 ppb	3.976 ppb	1.665 ppb	8.981 ppb	0.004 ppb	0.089 ppb	4.027 ppb	2.762 ppb
Concentration per Run 1	105.319 %	3.918 ppb	3.837 ppb	1.606 ppb	6.605 ppb	0.004 ppb	0.110 ppb	3.973 ppb	2.618 ppb
Concentration per Run 2	101.977 %	3.668 ppb	4.149 ppb	1.719 ppb	10.557 ppb	0.003 ppb	0.085 ppb	4.077 ppb	2.796 ppb
Concentration per Run 3	102.046 %	3.744 ppb	3.942 ppb	1.670 ppb	9.782 ppb	0.005 ppb	0.071 ppb	4.031 ppb	2.873 ppb
Concentration RSD	1.9 %	3.4 %	4.0 %	3.4 %	23.3 %	22.1 %	22.3 %	1.3 %	4.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.321 %	99.616 %	0.019 ppb	0.174 ppb	1,951.152 ppb	0.761 ppb	95.199 %	97.590 %	0.003 ppb
Concentration per Run 1	101.382 %	100.143 %	-0.001 ppb	0.182 ppb	1,900.097 ppb	0.748 ppb	94.904 %	98.544 %	0.002 ppb
Concentration per Run 2	102.881 %	97.571 %	0.057 ppb	0.192 ppb	1,958.665 ppb	0.748 ppb	93.555 %	98.534 %	0.002 ppb
Concentration per Run 3	102.700 %	101.134 %	0.001 ppb	0.148 ppb	1,994.694 ppb	0.788 ppb	97.137 %	95.693 %	0.004 ppb
Concentration RSD	0.8 %	1.8 %	175.8 %	13.1 %	2.4 %	3.1 %	1.9 %	1.7 %	33.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	98.675 %	103.436 %	0.002 ppb	97.558 ppb	101.518 %	103.561 %	103.277 %	105.655 %
Concentration per Run 1	0.000 ppb	101.370 %	103.105 %	-0.003 ppb	95.785 ppb	101.061 %	105.531 %	102.405 %	107.203 %
Concentration per Run 2	-0.001 ppb	97.356 %	102.889 %	-0.002 ppb	97.716 ppb	102.273 %	103.379 %	104.736 %	106.295 %
Concentration per Run 3	0.003 ppb	97.300 %	104.313 %	0.011 ppb	99.173 ppb	101.218 %	101.772 %	102.690 %	103.469 %
Concentration RSD	211.4 %	2.4 %	0.7 %	345.6 %	1.7 %	0.6 %	1.8 %	1.2 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.023 ppb	0.115 ppb	97.748 %	102.551 %
Concentration per Run 1	0.007 ppb	0.114 ppb	97.646 %	103.788 %
Concentration per Run 2	0.029 ppb	0.114 ppb	97.228 %	100.947 %
Concentration per Run 3	0.034 ppb	0.118 ppb	98.370 %	102.918 %
Concentration RSD	61.9 %	2.1 %	0.6 %	1.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 27 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 8:57:56 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	96.307 %	95.600 %	61.811 ppb	6,014.755 ppb	6,184.152 ppb	59.080 ppb	6,008.694 ppb	6,188.590 ppb	100.539 %
Concentration per Run 1	93.618 %	96.762 %	64.541 ppb	5,958.091 ppb	6,074.686 ppb	52.142 ppb	5,856.332 ppb	6,212.390 ppb	95.997 %
Concentration per Run 2	97.349 %	99.751 %	60.457 ppb	5,874.835 ppb	6,084.006 ppb	59.905 ppb	6,166.467 ppb	6,316.217 ppb	102.515 %
Concentration per Run 3	97.954 %	90.286 %	60.436 ppb	6,211.340 ppb	6,393.765 ppb	65.194 ppb	6,003.285 ppb	6,037.162 ppb	103.104 %
Recovery Percentage 1			103.019 %	100.246 %	103.069 %	98.467 %	100.145 %	103.143 %	
Concentration RSD	2.4 %	5.1 %	3.8 %	2.9 %	2.9 %	11.1 %	2.6 %	2.3 %	3.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.536 %	60.647 ppb	59.865 ppb	61.227 ppb	6,096.663 ppb	59.883 ppb	61.473 ppb	60.844 ppb	61.558 ppb
Concentration per Run 1	105.261 %	58.872 ppb	58.083 ppb	60.030 ppb	5,963.969 ppb	58.504 ppb	61.471 ppb	59.763 ppb	59.657 ppb
Concentration per Run 2	103.307 %	62.197 ppb	60.441 ppb	61.631 ppb	6,163.976 ppb	60.049 ppb	61.100 ppb	61.222 ppb	62.506 ppb
Concentration per Run 3	105.041 %	60.872 ppb	61.071 ppb	62.018 ppb	6,162.044 ppb	61.097 ppb	61.847 ppb	61.547 ppb	62.511 ppb
Recovery Percentage 1		101.078 %	99.775 %	102.044 %	101.611 %	99.806 %	102.455 %	101.407 %	102.597 %
Concentration RSD	1.0 %	2.8 %	2.6 %	1.7 %	1.9 %	2.2 %	0.6 %	1.6 %	2.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.100 %	98.290 %	60.285 ppb	60.449 ppb	60.758 ppb	61.264 ppb	94.408 %	98.706 %	61.378 ppb
Concentration per Run 1	97.515 %	100.553 %	58.303 ppb	57.276 ppb	58.917 ppb	60.324 ppb	91.511 %	97.675 %	60.848 ppb
Concentration per Run 2	104.479 %	97.906 %	60.059 ppb	64.860 ppb	61.795 ppb	61.032 ppb	95.676 %	98.582 %	62.293 ppb
Concentration per Run 3	101.306 %	96.412 %	62.493 ppb	59.211 ppb	61.562 ppb	62.436 ppb	96.037 %	99.860 %	60.991 ppb
Recovery Percentage 1			100.475 %	100.748 %	101.263 %	102.106 %			102.296 %
Concentration RSD	3.4 %	2.1 %	3.5 %	6.5 %	2.6 %	1.8 %	2.7 %	1.1 %	1.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	61.182 ppb	97.924 %	99.852 %	61.547 ppb	61.896 ppb	99.427 %	102.030 %	101.123 %	101.323 %
Concentration per Run 1	60.139 ppb	94.814 %	99.597 %	60.640 ppb	61.049 ppb	95.688 %	102.693 %	98.550 %	100.430 %
Concentration per Run 2	62.218 ppb	101.051 %	98.912 %	62.504 ppb	62.860 ppb	101.121 %	101.905 %	102.942 %	101.409 %
Concentration per Run 3	61.190 ppb	97.909 %	101.046 %	61.499 ppb	61.779 ppb	101.472 %	101.493 %	101.877 %	102.130 %
Recovery Percentage 1	101.970 %			102.579 %	103.160 %				
Concentration RSD	1.7 %	3.2 %	1.1 %	1.5 %	1.5 %	3.3 %	0.6 %	2.3 %	0.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	61.064 ppb	59.194 ppb	97.201 %	100.096 %
Concentration per Run 1	60.739 ppb	57.431 ppb	91.897 %	101.294 %
Concentration per Run 2	58.617 ppb	61.617 ppb	99.885 %	98.232 %
Concentration per Run 3	63.836 ppb	58.534 ppb	99.820 %	100.763 %
Recovery Percentage 1	101.773 %	98.657 %		
Concentration RSD	4.3 %	3.7 %	4.7 %	1.6 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 28 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 9:02:40 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.723 %	97.426 %	0.032 ppb	-1.963 ppb	-0.175 ppb	-0.258 ppb	-1.400 ppb	2.136 ppb	101.903 %
Concentration per Run 1	103.676 %	103.736 %	0.018 ppb	-2.529 ppb	-0.458 ppb	-0.597 ppb	-3.848 ppb	-3.605 ppb	100.467 %
Concentration per Run 2	103.536 %	91.781 %	0.063 ppb	0.885 ppb	0.473 ppb	-0.170 ppb	4.031 ppb	10.294 ppb	102.084 %
Concentration per Run 3	103.957 %	96.762 %	0.016 ppb	-4.244 ppb	-0.538 ppb	-0.007 ppb	-4.383 ppb	-0.282 ppb	103.158 %
Recovery Percentage 1			6.490 %	-1.963 %	-0.250 %	-2.581 %	-1.400 %	2.136 %	
Concentration RSD	0.2 %	6.2 %	82.3 %	133.0 %	321.7 %	118.0 %	336.5 %	339.9 %	1.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	100.520 %	0.002 ppb	0.007 ppb	0.020 ppb	1.920 ppb	0.001 ppb	0.085 ppb	-0.029 ppb	-0.030 ppb
Concentration per Run 1	101.202 %	-0.004 ppb	0.024 ppb	0.022 ppb	1.640 ppb	0.001 ppb	0.092 ppb	-0.020 ppb	-0.060 ppb
Concentration per Run 2	97.133 %	0.025 ppb	0.017 ppb	0.023 ppb	1.479 ppb	-0.001 ppb	0.107 ppb	-0.031 ppb	-0.043 ppb
Concentration per Run 3	103.226 %	-0.014 ppb	-0.020 ppb	0.015 ppb	2.639 ppb	0.003 ppb	0.055 ppb	-0.037 ppb	0.014 ppb
Recovery Percentage 1		0.043 %	0.682 %	2.004 %	3.839 %	0.259 %	4.230 %	-2.943 %	-0.592 %
Concentration RSD	3.1 %	941.9 %	341.3 %	21.9 %	32.7 %	146.6 %	31.8 %	30.8 %	131.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.378 %	97.804 %	0.094 ppb	0.099 ppb	0.013 ppb	0.188 ppb	100.949 %	101.493 %	0.006 ppb
Concentration per Run 1	101.239 %	100.306 %	0.115 ppb	0.087 ppb	0.015 ppb	0.135 ppb	98.481 %	102.616 %	0.007 ppb
Concentration per Run 2	101.564 %	96.023 %	0.028 ppb	0.093 ppb	0.018 ppb	0.239 ppb	102.713 %	100.358 %	0.005 ppb
Concentration per Run 3	101.329 %	97.084 %	0.138 ppb	0.117 ppb	0.007 ppb	0.189 ppb	101.653 %	101.505 %	0.007 ppb
Recovery Percentage 1			18.729 %	1.983 %	2.677 %	9.381 %			1.587 %
Concentration RSD	0.2 %	2.3 %	62.2 %	16.0 %	42.6 %	27.7 %	2.2 %	1.1 %	13.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.004 ppb	100.906 %	100.849 %	0.051 ppb	0.019 ppb	101.074 %	99.966 %	102.930 %	100.006 %
Concentration per Run 1	0.003 ppb	100.101 %	101.486 %	0.055 ppb	0.038 ppb	98.456 %	102.626 %	103.243 %	101.479 %
Concentration per Run 2	0.006 ppb	101.817 %	99.524 %	0.050 ppb	0.005 ppb	103.035 %	98.136 %	103.076 %	99.230 %
Concentration per Run 3	0.003 ppb	100.801 %	101.538 %	0.049 ppb	0.015 ppb	101.730 %	99.135 %	102.471 %	99.310 %
Recovery Percentage 1				1.287 %	3.884 %				
Concentration RSD	41.5 %	0.9 %	1.1 %	6.6 %	88.4 %	2.3 %	2.4 %	0.4 %	1.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.288 ppb	0.037 ppb	103.016 %	103.217 %
Concentration per Run 1	0.167 ppb	0.039 ppb	102.505 %	104.559 %
Concentration per Run 2	0.338 ppb	0.037 ppb	102.537 %	102.710 %
Concentration per Run 3	0.359 ppb	0.035 ppb	104.006 %	102.383 %
Recovery Percentage 1	28.811 %	3.693 %		
Concentration RSD	36.7 %	4.8 %	0.8 %	1.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 29 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453858-01 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:08:25 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	125.594 %	117.144 %	7.118 ppb	32,252.459 ppb	21,021.806 ppb	9,319.698 ppb	5,103.973 ppb	53,303.734 ppb	120.251 %
Concentration per Run 1	125.442 %	124.285 %	7.168 ppb	30,454.759 ppb	19,935.588 ppb	8,799.145 ppb	4,816.263 ppb	50,868.598 ppb	118.212 %
Concentration per Run 2	125.563 %	112.952 %	7.063 ppb	33,171.048 ppb	21,527.362 ppb	9,552.053 ppb	5,269.587 ppb	54,508.318 ppb	122.026 %
Concentration per Run 3	125.778 %	114.197 %	7.122 ppb	33,131.569 ppb	21,602.467 ppb	9,607.896 ppb	5,226.067 ppb	54,534.286 ppb	120.514 %
Concentration RSD	0.1 %	5.3 %	0.7 %	4.8 %	4.5 %	4.8 %	4.9 %	4.0 %	1.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	105.481 %	0.124 ppb	0.564 ppb	3,398.970 ppb	38,375.402 ppb	107.740 ppb	159.781 ppb	18.028 ppb	402.341 ppb
Concentration per Run 1	109.181 %	0.145 ppb	0.563 ppb	3,270.278 ppb	36,494.689 ppb	107.295 ppb	150.489 ppb	17.305 ppb	393.270 ppb
Concentration per Run 2	104.035 %	0.104 ppb	0.509 ppb	3,480.724 ppb	40,084.895 ppb	108.858 ppb	165.314 ppb	18.469 ppb	410.048 ppb
Concentration per Run 3	103.226 %	0.122 ppb	0.619 ppb	3,445.908 ppb	38,546.622 ppb	107.066 ppb	163.541 ppb	18.309 ppb	403.705 ppb
Concentration RSD	3.1 %	16.8 %	9.7 %	3.3 %	4.7 %	0.9 %	5.1 %	3.5 %	2.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	106.977 %	99.819 %	0.049 ppb	15.567 ppb	626.166 ppb	0.078 ppb	98.822 %	96.570 %	0.004 ppb
Concentration per Run 1	105.960 %	100.499 %	0.093 ppb	15.141 ppb	595.657 ppb	0.060 ppb	97.387 %	99.510 %	-0.001 ppb
Concentration per Run 2	107.642 %	97.657 %	-0.201 ppb	15.224 ppb	636.844 ppb	0.060 ppb	100.852 %	95.904 %	0.001 ppb
Concentration per Run 3	107.329 %	101.302 %	0.254 ppb	16.335 ppb	645.998 ppb	0.114 ppb	98.226 %	94.295 %	0.011 ppb
Concentration RSD	0.8 %	1.9 %	473.8 %	4.3 %	4.3 %	40.1 %	1.8 %	2.8 %	170.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	2.625 ppb	104.344 %	99.233 %	0.036 ppb	14.838 ppb	109.575 %	103.127 %	108.734 %	102.555 %
Concentration per Run 1	2.560 ppb	105.413 %	102.156 %	0.003 ppb	14.024 ppb	108.333 %	104.846 %	108.181 %	104.084 %
Concentration per Run 2	2.713 ppb	104.749 %	97.225 %	0.010 ppb	15.428 ppb	110.409 %	100.993 %	109.601 %	101.811 %
Concentration per Run 3	2.604 ppb	102.871 %	98.317 %	0.093 ppb	15.061 ppb	109.985 %	103.543 %	108.421 %	101.769 %
Concentration RSD	3.0 %	1.3 %	2.6 %	141.0 %	4.9 %	1.0 %	1.9 %	0.7 %	1.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.430 ppb	2.287 ppb	99.938 %	99.311 %
Concentration per Run 1	0.373 ppb	2.133 ppb	100.976 %	103.529 %
Concentration per Run 2	0.411 ppb	2.352 ppb	100.763 %	96.851 %
Concentration per Run 3	0.507 ppb	2.377 ppb	98.074 %	97.554 %
Concentration RSD	16.1 %	5.9 %	1.6 %	3.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 30 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1974915-5d10 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:13:08 AM Vial: 11

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	110.726 %	98.838 %	5.583 ppb	4,840.987 ppb	3,520.070 ppb	1,274.345 ppb	1,660.981 ppb	7,038.173 ppb	109.828 %
Concentration per Run 1	109.771 %	103.861 %	5.655 ppb	4,659.458 ppb	3,424.414 ppb	1,229.707 ppb	1,632.119 ppb	6,776.422 ppb	108.686 %
Concentration per Run 2	111.657 %	97.260 %	5.518 ppb	4,937.656 ppb	3,529.237 ppb	1,308.873 ppb	1,723.863 ppb	7,523.310 ppb	111.435 %
Concentration per Run 3	110.751 %	95.392 %	5.574 ppb	4,925.845 ppb	3,606.559 ppb	1,284.455 ppb	1,626.959 ppb	6,814.787 ppb	109.363 %
Concentration RSD	0.9 %	4.5 %	1.2 %	3.2 %	2.6 %	3.2 %	3.3 %	6.0 %	1.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	101.411 %	51.556 ppb	20.152 ppb	440.217 ppb	4,444.688 ppb	63.260 ppb	69.532 ppb	27.508 ppb	93.583 ppb
Concentration per Run 1	101.561 %	50.997 ppb	20.128 ppb	439.415 ppb	4,523.675 ppb	65.536 ppb	68.571 ppb	26.947 ppb	96.260 ppb
Concentration per Run 2	99.584 %	52.780 ppb	20.685 ppb	449.344 ppb	4,651.019 ppb	62.384 ppb	71.915 ppb	28.690 ppb	93.760 ppb
Concentration per Run 3	103.087 %	50.891 ppb	19.642 ppb	431.891 ppb	4,159.370 ppb	61.861 ppb	68.109 ppb	26.888 ppb	90.729 ppb
Concentration RSD	1.7 %	2.1 %	2.6 %	2.0 %	5.7 %	3.1 %	3.0 %	3.7 %	3.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	107.019 %	98.755 %	12.641 ppb	14.032 ppb	161.400 ppb	98.743 ppb	102.900 %	99.741 %	5.012 ppb
Concentration per Run 1	106.825 %	94.509 %	12.941 ppb	15.403 ppb	161.238 ppb	96.513 ppb	101.777 %	100.262 %	4.984 ppb
Concentration per Run 2	105.868 %	97.623 %	12.939 ppb	12.721 ppb	163.548 ppb	103.407 ppb	103.592 %	99.041 %	5.041 ppb
Concentration per Run 3	108.363 %	104.133 %	12.044 ppb	13.972 ppb	159.413 ppb	96.310 ppb	103.330 %	99.920 %	5.012 ppb
Concentration RSD	1.2 %	5.0 %	4.1 %	9.6 %	1.3 %	4.1 %	1.0 %	0.6 %	0.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.527 ppb	106.105 %	100.208 %	50.799 ppb	202.397 ppb	105.319 %	101.472 %	105.875 %	99.894 %
Concentration per Run 1	5.341 ppb	105.531 %	101.222 %	49.179 ppb	193.991 ppb	103.721 %	102.728 %	102.713 %	101.398 %
Concentration per Run 2	5.621 ppb	105.555 %	99.126 %	52.521 ppb	208.109 ppb	104.705 %	100.513 %	106.015 %	97.829 %
Concentration per Run 3	5.618 ppb	107.229 %	100.274 %	50.695 ppb	205.092 ppb	107.532 %	101.176 %	108.897 %	100.454 %
Concentration RSD	2.9 %	0.9 %	1.0 %	3.3 %	3.7 %	1.9 %	1.1 %	2.9 %	1.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	11.830 ppb	52.830 ppb	103.246 %	100.901 %
Concentration per Run 1	11.793 ppb	51.481 ppb	102.267 %	102.747 %
Concentration per Run 2	11.829 ppb	52.813 ppb	105.754 %	101.340 %
Concentration per Run 3	11.867 ppb	54.197 ppb	101.716 %	98.616 %
Concentration RSD	0.3 %	2.6 %	2.1 %	2.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 31 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1974915-6d10 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:17:50 AM Vial: 12

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	110.435 %	102.200 %	5.693 ppb	4,805.705 ppb	3,515.303 ppb	1,236.341 ppb	1,670.337 ppb	6,801.777 ppb	106.609 %
Concentration per Run 1	111.008 %	102.615 %	5.649 ppb	4,711.856 ppb	3,402.463 ppb	1,219.414 ppb	1,613.049 ppb	6,156.585 ppb	105.609 %
Concentration per Run 2	110.324 %	102.242 %	5.717 ppb	4,924.375 ppb	3,534.129 ppb	1,273.119 ppb	1,710.159 ppb	7,200.364 ppb	104.925 %
Concentration per Run 3	109.974 %	101.743 %	5.712 ppb	4,780.884 ppb	3,609.318 ppb	1,216.489 ppb	1,687.803 ppb	7,048.382 ppb	109.292 %
Concentration RSD	0.5 %	0.4 %	0.7 %	2.3 %	3.0 %	2.6 %	3.0 %	8.3 %	2.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	101.738 %	53.076 ppb	20.201 ppb	440.042 ppb	4,316.762 ppb	63.951 ppb	69.331 ppb	28.668 ppb	93.998 ppb
Concentration per Run 1	104.405 %	51.767 ppb	19.384 ppb	428.621 ppb	4,215.301 ppb	62.968 ppb	66.743 ppb	28.231 ppb	91.883 ppb
Concentration per Run 2	99.063 %	54.143 ppb	20.554 ppb	446.179 ppb	4,322.322 ppb	65.336 ppb	70.226 ppb	28.497 ppb	94.680 ppb
Concentration per Run 3	101.746 %	53.317 ppb	20.665 ppb	445.325 ppb	4,412.664 ppb	63.548 ppb	71.025 ppb	29.277 ppb	95.431 ppb
Concentration RSD	2.6 %	2.3 %	3.5 %	2.2 %	2.3 %	1.9 %	3.3 %	1.9 %	2.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.344 %	101.094 %	12.722 ppb	13.608 ppb	159.726 ppb	102.366 ppb	102.436 %	99.383 %	5.312 ppb
Concentration per Run 1	104.864 %	101.302 %	12.628 ppb	13.247 ppb	156.189 ppb	101.156 ppb	103.463 %	101.230 %	5.266 ppb
Concentration per Run 2	104.248 %	102.386 %	12.689 ppb	13.785 ppb	159.761 ppb	103.651 ppb	100.490 %	98.402 %	5.347 ppb
Concentration per Run 3	106.920 %	99.593 %	12.850 ppb	13.792 ppb	163.228 ppb	102.291 ppb	103.355 %	98.517 %	5.324 ppb
Concentration RSD	1.3 %	1.4 %	0.9 %	2.3 %	2.2 %	1.2 %	1.6 %	1.6 %	0.8 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.872 ppb	105.536 %	99.007 %	53.119 ppb	212.768 ppb	104.795 %	99.920 %	104.049 %	97.347 %
Concentration per Run 1	5.793 ppb	104.313 %	98.322 %	52.429 ppb	205.643 ppb	104.734 %	101.300 %	104.421 %	98.546 %
Concentration per Run 2	5.999 ppb	105.534 %	96.983 %	54.461 ppb	216.657 ppb	104.670 %	98.393 %	104.954 %	95.169 %
Concentration per Run 3	5.824 ppb	106.760 %	101.715 %	52.467 ppb	216.002 ppb	104.982 %	100.066 %	102.772 %	98.327 %
Concentration RSD	1.9 %	1.2 %	2.5 %	2.2 %	2.9 %	0.2 %	1.5 %	1.1 %	1.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	11.982 ppb	53.258 ppb	103.681 %	100.082 %
Concentration per Run 1	11.669 ppb	51.742 ppb	103.664 %	101.755 %
Concentration per Run 2	12.208 ppb	54.125 ppb	104.487 %	98.838 %
Concentration per Run 3	12.069 ppb	53.907 ppb	102.892 %	99.652 %
Concentration RSD	2.3 %	2.5 %	0.8 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 32 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453858-02 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:22:34 AM Vial: 13

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	97.052 %	95.890 %	1.033 ppb	103,117.976 ppb	203,248.416 ppb	22.015 ppb	20,968.029 ppb	429,325.957 ppb	105.817 %
Concentration per Run 1	99.419 %	99.253 %	1.015 ppb	101,576.609 ppb	201,023.339 ppb	26.104 ppb	21,052.642 ppb	436,320.524 ppb	105.546 %
Concentration per Run 2	96.894 %	96.264 %	1.041 ppb	103,356.069 ppb	207,078.509 ppb	24.114 ppb	21,243.425 ppb	429,741.462 ppb	106.985 %
Concentration per Run 3	94.843 %	92.154 %	1.043 ppb	104,421.250 ppb	201,643.398 ppb	15.826 ppb	20,608.020 ppb	421,915.884 ppb	104.919 %
Concentration RSD	2.4 %	3.7 %	1.5 %	1.4 %	1.6 %	24.8 %	1.6 %	1.7 %	1.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	94.446 %	0.180 ppb	0.023 ppb	6,762.284 ppb	745.072 ppb	68.677 ppb	568.481 ppb	4.546 ppb	151.521 ppb
Concentration per Run 1	93.676 %	0.127 ppb	0.035 ppb	6,827.368 ppb	757.467 ppb	70.410 ppb	577.258 ppb	4.596 ppb	151.921 ppb
Concentration per Run 2	94.046 %	0.276 ppb	0.031 ppb	6,798.675 ppb	774.178 ppb	68.653 ppb	578.811 ppb	4.606 ppb	152.704 ppb
Concentration per Run 3	95.618 %	0.137 ppb	0.002 ppb	6,660.808 ppb	703.571 ppb	66.967 ppb	549.374 ppb	4.435 ppb	149.939 ppb
Concentration RSD	1.1 %	46.3 %	79.6 %	1.3 %	5.0 %	2.5 %	2.9 %	2.1 %	0.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.755 %	96.827 %	0.061 ppb	5.232 ppb	2,269.652 ppb	0.573 ppb	89.333 %	89.054 %	0.003 ppb
Concentration per Run 1	97.993 %	95.372 %	0.115 ppb	5.512 ppb	2,244.995 ppb	0.543 ppb	89.914 %	87.138 %	0.002 ppb
Concentration per Run 2	99.526 %	95.661 %	0.234 ppb	5.427 ppb	2,300.484 ppb	0.529 ppb	90.570 %	89.684 %	0.004 ppb
Concentration per Run 3	98.748 %	99.447 %	-0.168 ppb	4.758 ppb	2,263.477 ppb	0.647 ppb	87.514 %	90.342 %	0.003 ppb
Concentration RSD	0.8 %	2.3 %	340.5 %	7.9 %	1.2 %	11.3 %	1.8 %	1.9 %	36.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	2.129 ppb	94.161 %	92.301 %	0.132 ppb	39.695 ppb	98.651 %	96.672 %	102.241 %	95.214 %
Concentration per Run 1	2.147 ppb	92.862 %	89.817 %	0.122 ppb	40.173 ppb	98.642 %	93.112 %	102.573 %	91.804 %
Concentration per Run 2	2.096 ppb	95.640 %	91.927 %	0.137 ppb	39.274 ppb	99.199 %	97.879 %	100.447 %	95.582 %
Concentration per Run 3	2.142 ppb	93.983 %	95.158 %	0.137 ppb	39.640 ppb	98.113 %	99.026 %	103.704 %	98.257 %
Concentration RSD	1.3 %	1.5 %	2.9 %	6.8 %	1.1 %	0.6 %	3.2 %	1.6 %	3.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.178 ppb	0.187 ppb	89.344 %	87.551 %
Concentration per Run 1	0.140 ppb	0.191 ppb	88.873 %	85.023 %
Concentration per Run 2	0.196 ppb	0.185 ppb	89.607 %	87.342 %
Concentration per Run 3	0.198 ppb	0.183 ppb	89.551 %	90.289 %
Concentration RSD	18.6 %	2.2 %	0.5 %	3.0 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 33 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453858-03 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:27:13 AM Vial: 14

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.497 %	96.762 %	1.504 ppb	15,395.598 ppb	5,744.557 ppb	1,371.251 ppb	2,436.166 ppb	13,887.832 ppb	106.879 %
Concentration per Run 1	105.554 %	96.388 %	1.450 ppb	14,771.802 ppb	5,588.051 ppb	1,347.079 ppb	2,293.008 ppb	13,439.809 ppb	107.443 %
Concentration per Run 2	99.293 %	94.147 %	1.558 ppb	15,921.067 ppb	5,894.263 ppb	1,433.651 ppb	2,463.227 ppb	13,656.428 ppb	106.904 %
Concentration per Run 3	99.643 %	99.751 %	1.504 ppb	15,493.926 ppb	5,751.357 ppb	1,333.022 ppb	2,552.264 ppb	14,567.257 ppb	106.290 %
Concentration RSD	3.5 %	2.9 %	3.6 %	3.8 %	2.7 %	4.0 %	5.4 %	4.3 %	0.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	102.628 %	0.197 ppb	0.160 ppb	506.060 ppb	1,640.942 ppb	15.281 ppb	19.064 ppb	0.458 ppb	37.116 ppb
Concentration per Run 1	105.712 %	0.178 ppb	0.142 ppb	486.458 ppb	1,569.870 ppb	14.726 ppb	18.336 ppb	0.460 ppb	36.166 ppb
Concentration per Run 2	100.428 %	0.233 ppb	0.188 ppb	517.295 ppb	1,647.360 ppb	15.703 ppb	19.816 ppb	0.482 ppb	37.878 ppb
Concentration per Run 3	101.746 %	0.180 ppb	0.149 ppb	514.427 ppb	1,705.596 ppb	15.415 ppb	19.039 ppb	0.433 ppb	37.303 ppb
Concentration RSD	2.7 %	15.8 %	15.5 %	3.4 %	4.1 %	3.3 %	3.9 %	5.3 %	2.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.247 %	103.293 %	0.117 ppb	1.917 ppb	112.448 ppb	0.239 ppb	96.089 %	97.327 %	0.005 ppb
Concentration per Run 1	101.686 %	102.700 %	0.125 ppb	2.258 ppb	109.032 ppb	0.108 ppb	95.027 %	100.249 %	0.002 ppb
Concentration per Run 2	102.053 %	101.982 %	0.100 ppb	1.784 ppb	118.701 ppb	0.417 ppb	95.238 %	94.364 %	0.011 ppb
Concentration per Run 3	106.003 %	105.196 %	0.125 ppb	1.708 ppb	109.612 ppb	0.191 ppb	98.001 %	97.369 %	0.001 ppb
Concentration RSD	2.3 %	1.6 %	12.3 %	15.6 %	4.8 %	67.0 %	1.7 %	3.0 %	117.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.249 ppb	99.947 %	104.142 %	0.063 ppb	31.588 ppb	104.852 %	104.748 %	106.453 %	106.313 %
Concentration per Run 1	0.238 ppb	100.425 %	105.034 %	0.032 ppb	30.655 ppb	105.000 %	105.710 %	105.392 %	106.383 %
Concentration per Run 2	0.263 ppb	99.331 %	102.353 %	0.112 ppb	32.603 ppb	107.845 %	103.980 %	106.597 %	105.365 %
Concentration per Run 3	0.248 ppb	100.086 %	105.038 %	0.045 ppb	31.506 ppb	101.710 %	104.554 %	107.372 %	107.192 %
Concentration RSD	5.0 %	0.6 %	1.5 %	67.9 %	3.1 %	2.9 %	0.8 %	0.9 %	0.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.146 ppb	1.350 ppb	100.663 %	103.975 %
Concentration per Run 1	0.117 ppb	1.340 ppb	100.092 %	104.294 %
Concentration per Run 2	0.154 ppb	1.377 ppb	101.177 %	104.301 %
Concentration per Run 3	0.167 ppb	1.334 ppb	100.720 %	103.330 %
Concentration RSD	18.1 %	1.7 %	0.5 %	0.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 34 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2453858-04 2008SL Rack: 1
 Analysis started at: 9/26/2024 9:36:32 AM Vial: 15

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.926 %	99.253 %	0.256 ppb	53,006.493 ppb	67,628.252 ppb	13.378 ppb	11,996.165 ppb	158,192.787 ppb	116.962 %
Concentration per Run 1	106.370 %	92.279 %	0.252 ppb	57,352.395 ppb	74,079.744 ppb	14.841 ppb	12,765.097 ppb	170,875.036 ppb	112.853 %
Concentration per Run 2	101.530 %	102.989 %	0.267 ppb	50,277.968 ppb	64,915.993 ppb	15.770 ppb	11,601.719 ppb	153,410.877 ppb	120.902 %
Concentration per Run 3	106.877 %	102.491 %	0.250 ppb	51,389.116 ppb	63,889.020 ppb	9.523 ppb	11,621.679 ppb	150,292.447 ppb	117.132 %
Concentration RSD	2.8 %	6.1 %	3.7 %	7.2 %	8.3 %	25.2 %	5.6 %	7.0 %	3.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	102.081 %	0.065 ppb	0.035 ppb	1,304.690 ppb	41,699.315 ppb	22.657 ppb	87.355 ppb	-0.012 ppb	83.692 ppb
Concentration per Run 1	96.497 %	0.085 ppb	0.038 ppb	1,387.047 ppb	44,365.201 ppb	24.199 ppb	94.551 ppb	-0.001 ppb	89.034 ppb
Concentration per Run 2	104.105 %	0.045 ppb	0.040 ppb	1,279.727 ppb	41,068.797 ppb	21.882 ppb	85.851 ppb	-0.028 ppb	81.943 ppb
Concentration per Run 3	105.642 %	0.065 ppb	0.027 ppb	1,247.297 ppb	39,663.949 ppb	21.890 ppb	81.662 ppb	-0.007 ppb	80.099 ppb
Concentration RSD	4.8 %	30.9 %	20.3 %	5.6 %	5.8 %	5.9 %	7.5 %	122.4 %	5.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	110.018 %	104.830 %	0.742 ppb	0.759 ppb	847.690 ppb	0.100 ppb	95.343 %	94.759 %	0.001 ppb
Concentration per Run 1	107.325 %	99.561 %	0.860 ppb	0.958 ppb	891.940 ppb	0.102 ppb	94.296 %	89.206 %	0.000 ppb
Concentration per Run 2	110.481 %	104.731 %	0.685 ppb	0.785 ppb	826.746 ppb	0.089 ppb	93.314 %	97.150 %	0.002 ppb
Concentration per Run 3	112.248 %	110.198 %	0.682 ppb	0.534 ppb	824.383 ppb	0.110 ppb	98.420 %	97.922 %	0.001 ppb
Concentration RSD	2.3 %	5.1 %	13.8 %	28.1 %	4.5 %	10.7 %	2.8 %	5.1 %	130.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.184 ppb	102.189 %	98.314 %	0.037 ppb	16.883 ppb	103.348 %	99.941 %	107.569 %	101.947 %
Concentration per Run 1	0.187 ppb	101.650 %	93.597 %	0.035 ppb	18.072 ppb	102.664 %	95.720 %	104.877 %	95.263 %
Concentration per Run 2	0.197 ppb	101.503 %	99.664 %	0.037 ppb	16.936 ppb	101.447 %	100.362 %	108.836 %	104.045 %
Concentration per Run 3	0.169 ppb	103.415 %	101.681 %	0.040 ppb	15.641 ppb	105.934 %	103.742 %	108.995 %	106.533 %
Concentration RSD	7.6 %	1.0 %	4.3 %	7.3 %	7.2 %	2.2 %	4.0 %	2.2 %	5.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.036 ppb	0.065 ppb	96.803 %	93.864 %
Concentration per Run 1	0.025 ppb	0.070 ppb	97.752 %	89.986 %
Concentration per Run 2	0.038 ppb	0.068 ppb	93.752 %	94.733 %
Concentration per Run 3	0.046 ppb	0.058 ppb	98.904 %	96.873 %
Concentration RSD	29.1 %	9.3 %	2.8 %	3.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 35 User name ALPHALAB\ICPMSRQ Comment <Comment>
Analysis label: CCV Rack 0
Analysis started at: 9/26/2024 9:42:04 AM Vial 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.736 %	94.271 %	57.370 ppb	6,284.542 ppb	6,284.628 ppb	58.051 ppb	6,412.378 ppb	6,558.190 ppb	105.759 %
Concentration per Run 1	105.234 %	93.275 %	57.859 ppb	6,255.326 ppb	6,163.950 ppb	57.563 ppb	6,337.344 ppb	6,522.106 ppb	107.194 %
Concentration per Run 2	105.225 %	92.403 %	56.914 ppb	6,465.203 ppb	6,538.174 ppb	57.511 ppb	6,486.358 ppb	6,704.768 ppb	103.885 %
Concentration per Run 3	103.749 %	97.136 %	57.337 ppb	6,133.098 ppb	6,151.758 ppb	59.079 ppb	6,413.432 ppb	6,447.698 ppb	106.198 %
Recovery Percentage 1			95.617 %	104.742 %	104.744 %	96.752 %	106.873 %	109.303 %	
Concentration RSD	0.8 %	2.7 %	0.8 %	2.7 %	3.5 %	1.5 %	1.2 %	2.0 %	1.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.910 %	62.472 ppb	60.109 ppb	62.378 ppb	6,084.753 ppb	61.744 ppb	59.753 ppb	60.385 ppb	60.606 ppb
Concentration per Run 1	104.151 %	64.214 ppb	61.161 ppb	62.963 ppb	6,177.034 ppb	62.955 ppb	60.064 ppb	61.282 ppb	60.985 ppb
Concentration per Run 2	103.330 %	61.670 ppb	60.733 ppb	62.405 ppb	6,124.983 ppb	62.658 ppb	60.543 ppb	60.332 ppb	60.716 ppb
Concentration per Run 3	107.250 %	61.531 ppb	58.433 ppb	61.766 ppb	5,952.242 ppb	59.619 ppb	58.653 ppb	59.540 ppb	60.115 ppb
Recovery Percentage 1		104.119 %	100.182 %	103.963 %	101.413 %	102.907 %	99.589 %	100.641 %	101.009 %
Concentration RSD	2.0 %	2.4 %	2.4 %	1.0 %	1.9 %	3.0 %	1.6 %	1.4 %	0.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	107.312 %	102.607 %	61.250 ppb	60.531 ppb	61.126 ppb	62.323 ppb	100.697 %	100.426 %	61.476 ppb
Concentration per Run 1	107.630 %	98.808 %	63.310 ppb	61.049 ppb	61.800 ppb	61.124 ppb	100.165 %	101.267 %	61.515 ppb
Concentration per Run 2	107.164 %	103.561 %	60.331 ppb	61.730 ppb	61.147 ppb	63.495 ppb	102.626 %	99.205 %	62.367 ppb
Concentration per Run 3	107.141 %	105.451 %	60.108 ppb	58.813 ppb	60.430 ppb	62.348 ppb	99.302 %	100.805 %	60.546 ppb
Recovery Percentage 1			102.083 %	100.885 %	101.876 %	103.871 %			102.460 %
Concentration RSD	0.3 %	3.3 %	2.9 %	2.5 %	1.1 %	1.9 %	1.7 %	1.1 %	1.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	61.131 ppb	104.828 %	101.932 %	63.574 ppb	65.261 ppb	104.469 %	100.014 %	106.950 %	101.013 %
Concentration per Run 1	61.219 ppb	105.947 %	101.601 %	62.849 ppb	65.152 ppb	106.045 %	99.806 %	105.725 %	102.577 %
Concentration per Run 2	60.904 ppb	104.549 %	102.124 %	64.009 ppb	64.785 ppb	101.288 %	100.362 %	107.670 %	98.817 %
Concentration per Run 3	61.269 ppb	103.989 %	102.069 %	63.865 ppb	65.846 ppb	106.076 %	99.873 %	107.453 %	101.646 %
Recovery Percentage 1	101.884 %			105.957 %	108.768 %				
Concentration RSD	0.3 %	1.0 %	0.3 %	1.0 %	0.8 %	2.6 %	0.3 %	1.0 %	1.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	63.143 ppb	59.884 ppb	100.626 %	99.070 %
Concentration per Run 1	66.074 ppb	59.664 ppb	101.918 %	98.811 %
Concentration per Run 2	58.335 ppb	59.454 ppb	99.988 %	99.507 %
Concentration per Run 3	65.021 ppb	60.535 ppb	99.972 %	98.893 %
Recovery Percentage 1	105.239 %	99.807 %		
Concentration RSD	6.6 %	1.0 %	1.1 %	0.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 36 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 9:46:49 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.928 %	93.068 %	0.026 ppb	-3.604 ppb	0.136 ppb	-0.198 ppb	-1.513 ppb	4.706 ppb	105.166 %
Concentration per Run 1	106.211 %	96.139 %	0.011 ppb	-3.826 ppb	-0.492 ppb	-0.504 ppb	-2.169 ppb	10.561 ppb	105.372 %
Concentration per Run 2	104.322 %	90.660 %	0.054 ppb	-2.704 ppb	0.479 ppb	0.126 ppb	-0.909 ppb	0.206 ppb	105.450 %
Concentration per Run 3	104.251 %	92.403 %	0.012 ppb	-4.281 ppb	0.421 ppb	-0.217 ppb	-1.460 ppb	3.351 ppb	104.675 %
Recovery Percentage 1			5.111 %	-3.604 %	0.195 %	-1.981 %	-1.513 %	4.706 %	
Concentration RSD	1.1 %	3.0 %	95.0 %	22.5 %	400.0 %	159.2 %	41.7 %	112.8 %	0.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.670 %	-0.027 ppb	-0.009 ppb	0.028 ppb	4.199 ppb	-0.001 ppb	0.014 ppb	-0.033 ppb	0.002 ppb
Concentration per Run 1	97.422 %	-0.041 ppb	-0.001 ppb	0.031 ppb	3.047 ppb	-0.001 ppb	0.025 ppb	-0.015 ppb	0.019 ppb
Concentration per Run 2	97.907 %	-0.012 ppb	-0.011 ppb	0.028 ppb	5.993 ppb	0.001 ppb	0.002 ppb	-0.049 ppb	0.012 ppb
Concentration per Run 3	100.682 %	-0.028 ppb	-0.015 ppb	0.025 ppb	3.556 ppb	-0.003 ppb	0.014 ppb	-0.034 ppb	-0.024 ppb
Recovery Percentage 1		-0.543 %	-0.911 %	2.800 %	8.398 %	-0.129 %	0.679 %	-3.270 %	0.047 %
Concentration RSD	1.8 %	53.9 %	79.6 %	9.5 %	37.5 %	301.1 %	83.2 %	52.2 %	995.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.399 %	102.116 %	0.063 ppb	0.066 ppb	-0.011 ppb	0.216 ppb	101.966 %	100.673 %	0.003 ppb
Concentration per Run 1	104.889 %	99.837 %	0.135 ppb	0.021 ppb	-0.011 ppb	0.157 ppb	102.857 %	99.697 %	0.003 ppb
Concentration per Run 2	107.889 %	102.340 %	0.024 ppb	0.094 ppb	-0.011 ppb	0.249 ppb	100.805 %	101.499 %	0.002 ppb
Concentration per Run 3	103.417 %	104.171 %	0.028 ppb	0.083 ppb	-0.009 ppb	0.242 ppb	102.235 %	100.823 %	0.005 ppb
Recovery Percentage 1			12.521 %	1.313 %	-2.101 %	10.798 %			0.801 %
Concentration RSD	2.2 %	2.1 %	100.8 %	59.9 %	9.6 %	23.7 %	1.0 %	0.9 %	36.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.004 ppb	104.017 %	99.985 %	0.054 ppb	0.013 ppb	101.120 %	98.108 %	102.748 %	99.102 %
Concentration per Run 1	0.004 ppb	103.080 %	97.642 %	0.047 ppb	0.016 ppb	101.128 %	95.414 %	102.326 %	96.422 %
Concentration per Run 2	0.003 ppb	104.141 %	99.795 %	0.053 ppb	0.010 ppb	101.082 %	100.049 %	102.893 %	99.569 %
Concentration per Run 3	0.003 ppb	104.828 %	102.520 %	0.062 ppb	0.015 ppb	101.151 %	98.861 %	103.024 %	101.315 %
Recovery Percentage 1				1.359 %	2.678 %				
Concentration RSD	17.9 %	0.8 %	2.4 %	14.1 %	23.1 %	0.0 %	2.5 %	0.4 %	2.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.278 ppb	0.021 ppb	101.083 %	98.290 %
Concentration per Run 1	0.161 ppb	0.020 ppb	100.884 %	99.550 %
Concentration per Run 2	0.326 ppb	0.022 ppb	100.951 %	96.994 %
Concentration per Run 3	0.345 ppb	0.021 ppb	101.413 %	98.327 %
Recovery Percentage 1	27.764 %	2.100 %		
Concentration RSD	36.5 %	4.9 %	0.3 %	1.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 37 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: WG1975067-1 6020SL Rack 1
 Analysis started at: 9/26/2024 9:52:24 AM Vial 16

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.200 %	101.993 %	0.007 ppb	52.251 ppb	1.220 ppb	1.363 ppb	-6.064 ppb	13.224 ppb	107.115 %
Concentration per Run 1	107.942 %	100.996 %	0.008 ppb	47.845 ppb	1.531 ppb	1.209 ppb	-4.811 ppb	14.570 ppb	109.701 %
Concentration per Run 2	107.228 %	100.249 %	0.007 ppb	55.757 ppb	1.882 ppb	2.417 ppb	-13.185 ppb	12.495 ppb	107.196 %
Concentration per Run 3	106.430 %	104.732 %	0.007 ppb	53.151 ppb	0.247 ppb	0.464 ppb	-0.196 ppb	12.608 ppb	104.449 %
Concentration RSD	0.7 %	2.4 %	9.2 %	7.7 %	70.5 %	72.3 %	108.6 %	8.8 %	2.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	104.768 %	-0.009 ppb	0.026 ppb	0.172 ppb	2.045 ppb	0.000 ppb	-0.014 ppb	0.060 ppb	0.541 ppb
Concentration per Run 1	108.926 %	0.004 ppb	0.016 ppb	0.171 ppb	1.289 ppb	-0.001 ppb	-0.003 ppb	0.064 ppb	0.550 ppb
Concentration per Run 2	103.203 %	0.008 ppb	0.054 ppb	0.174 ppb	2.698 ppb	0.000 ppb	-0.010 ppb	0.055 ppb	0.523 ppb
Concentration per Run 3	102.174 %	-0.039 ppb	0.008 ppb	0.171 ppb	2.148 ppb	0.001 ppb	-0.028 ppb	0.060 ppb	0.550 ppb
Concentration RSD	3.5 %	298.9 %	94.4 %	1.1 %	34.7 %	459.5 %	95.6 %	8.2 %	2.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	108.894 %	103.414 %	0.027 ppb	0.030 ppb	0.023 ppb	0.059 ppb	106.259 %	104.221 %	0.000 ppb
Concentration per Run 1	111.149 %	101.305 %	0.026 ppb	0.012 ppb	0.027 ppb	0.037 ppb	107.556 %	104.024 %	0.000 ppb
Concentration per Run 2	108.720 %	104.636 %	0.023 ppb	0.082 ppb	0.020 ppb	0.075 ppb	107.147 %	103.968 %	0.000 ppb
Concentration per Run 3	106.813 %	104.302 %	0.032 ppb	-0.004 ppb	0.023 ppb	0.066 ppb	104.073 %	104.670 %	-0.001 ppb
Concentration RSD	2.0 %	1.8 %	16.2 %	151.2 %	15.9 %	33.5 %	1.8 %	0.4 %	104.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	106.423 %	104.510 %	0.016 ppb	0.091 ppb	104.410 %	103.023 %	106.075 %	101.807 %
Concentration per Run 1	0.002 ppb	107.295 %	105.003 %	0.004 ppb	0.103 ppb	104.936 %	104.785 %	105.713 %	104.105 %
Concentration per Run 2	-0.001 ppb	106.091 %	104.342 %	0.015 ppb	0.105 ppb	105.127 %	101.226 %	106.979 %	101.033 %
Concentration per Run 3	0.001 ppb	105.884 %	104.186 %	0.028 ppb	0.066 ppb	103.167 %	103.059 %	105.531 %	100.283 %
Concentration RSD	158.2 %	0.7 %	0.4 %	75.8 %	23.9 %	1.0 %	1.7 %	0.7 %	2.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.070 ppb	0.018 ppb	105.321 %	102.771 %
Concentration per Run 1	0.030 ppb	0.017 ppb	106.817 %	106.542 %
Concentration per Run 2	0.085 ppb	0.020 ppb	104.957 %	99.776 %
Concentration per Run 3	0.097 ppb	0.017 ppb	104.188 %	101.994 %
Concentration RSD	51.1 %	8.6 %	1.3 %	3.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 38 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: WG1975067-2d10 6020SL Rack 1
 Analysis started at: 9/26/2024 9:57:04 AM Vial 17

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.150 %	96.472 %	4.928 ppb	1,104.472 ppb	1,116.587 ppb	203.329 ppb	1,149.395 ppb	1,074.518 ppb	106.100 %
Concentration per Run 1	106.040 %	94.147 %	5.056 ppb	1,139.233 ppb	1,113.890 ppb	202.108 ppb	1,171.172 ppb	1,143.406 ppb	100.559 %
Concentration per Run 2	107.446 %	99.751 %	4.851 ppb	1,089.348 ppb	1,065.992 ppb	211.787 ppb	1,145.383 ppb	1,149.685 ppb	107.466 %
Concentration per Run 3	104.963 %	95.517 %	4.877 ppb	1,084.834 ppb	1,169.878 ppb	196.092 ppb	1,131.629 ppb	930.463 ppb	110.275 %
Concentration RSD	1.2 %	3.0 %	2.3 %	2.7 %	4.7 %	3.9 %	1.7 %	11.6 %	4.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.734 %	53.402 ppb	20.554 ppb	55.730 ppb	113.301 ppb	53.353 ppb	54.153 ppb	26.747 ppb	53.687 ppb
Concentration per Run 1	95.098 %	54.635 ppb	20.665 ppb	56.386 ppb	114.745 ppb	53.735 ppb	54.983 ppb	26.917 ppb	54.264 ppb
Concentration per Run 2	97.803 %	52.493 ppb	20.289 ppb	54.964 ppb	109.121 ppb	53.098 ppb	54.086 ppb	26.702 ppb	53.063 ppb
Concentration per Run 3	100.301 %	53.078 ppb	20.708 ppb	55.839 ppb	116.036 ppb	53.225 ppb	53.389 ppb	26.621 ppb	53.735 ppb
Concentration RSD	2.7 %	2.1 %	1.1 %	1.3 %	3.2 %	0.6 %	1.5 %	0.6 %	1.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.642 %	98.285 %	12.983 ppb	12.976 ppb	99.515 ppb	105.569 ppb	101.113 %	97.689 %	5.275 ppb
Concentration per Run 1	105.213 %	96.453 %	12.984 ppb	12.290 ppb	100.050 ppb	107.496 ppb	100.143 %	94.813 %	5.445 ppb
Concentration per Run 2	104.775 %	99.537 %	12.753 ppb	13.433 ppb	98.059 ppb	102.018 ppb	100.564 %	100.757 %	5.072 ppb
Concentration per Run 3	100.937 %	98.865 %	13.212 ppb	13.205 ppb	100.437 ppb	107.194 ppb	102.630 %	97.497 %	5.307 ppb
Concentration RSD	2.3 %	1.7 %	1.8 %	4.7 %	1.3 %	2.9 %	1.3 %	3.0 %	3.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.519 ppb	104.218 %	98.309 %	50.381 ppb	217.998 ppb	102.793 %	94.438 %	103.690 %	94.253 %
Concentration per Run 1	5.556 ppb	103.810 %	95.509 %	50.402 ppb	217.031 ppb	106.392 %	91.959 %	105.565 %	93.514 %
Concentration per Run 2	5.385 ppb	104.292 %	99.198 %	50.477 ppb	219.523 ppb	99.609 %	94.883 %	101.605 %	93.357 %
Concentration per Run 3	5.618 ppb	104.552 %	100.220 %	50.265 ppb	217.441 ppb	102.377 %	96.473 %	103.900 %	95.888 %
Concentration RSD	2.2 %	0.4 %	2.5 %	0.2 %	0.6 %	3.3 %	2.4 %	1.9 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	12.595 ppb	55.285 ppb	100.076 %	94.612 %
Concentration per Run 1	12.736 ppb	56.978 ppb	103.625 %	92.087 %
Concentration per Run 2	12.815 ppb	55.021 ppb	99.870 %	95.421 %
Concentration per Run 3	12.233 ppb	53.858 ppb	96.734 %	96.328 %
Concentration RSD	2.5 %	2.9 %	3.4 %	2.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 39 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: L2454036-05 6020SL Rack 1
 Analysis started at: 9/26/2024 10:01:45 AM Vial 18

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.746 %	93.939 %	0.009 ppb	71,188.975 ppb	24,959.517 ppb	6.119 ppb	1,457.102 ppb	97,500.189 ppb	112.734 %
Concentration per Run 1	98.635 %	95.019 %	0.012 ppb	69,872.249 ppb	25,021.731 ppb	3.496 ppb	1,452.346 ppb	96,032.019 ppb	114.639 %
Concentration per Run 2	102.552 %	90.660 %	0.008 ppb	72,577.399 ppb	25,514.269 ppb	6.803 ppb	1,448.275 ppb	96,763.715 ppb	111.468 %
Concentration per Run 3	98.049 %	96.139 %	0.006 ppb	71,117.276 ppb	24,342.551 ppb	8.059 ppb	1,470.686 ppb	99,704.832 ppb	112.097 %
Concentration RSD	2.5 %	3.1 %	33.9 %	1.9 %	2.4 %	38.5 %	0.8 %	2.0 %	1.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	99.087 %	1.200 ppb	0.274 ppb	8.871 ppb	6.754 ppb	0.149 ppb	1.217 ppb	1.682 ppb	2.731 ppb
Concentration per Run 1	99.133 %	1.147 ppb	0.268 ppb	8.814 ppb	6.598 ppb	0.145 ppb	1.202 ppb	1.778 ppb	2.690 ppb
Concentration per Run 2	99.688 %	1.156 ppb	0.254 ppb	8.795 ppb	4.685 ppb	0.157 ppb	1.310 ppb	1.564 ppb	2.593 ppb
Concentration per Run 3	98.439 %	1.297 ppb	0.299 ppb	9.004 ppb	8.978 ppb	0.145 ppb	1.138 ppb	1.704 ppb	2.910 ppb
Concentration RSD	0.6 %	7.0 %	8.5 %	1.3 %	31.8 %	4.5 %	7.2 %	6.4 %	5.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.310 %	99.165 %	0.441 ppb	0.594 ppb	330.703 ppb	0.577 ppb	96.014 %	93.254 %	0.003 ppb
Concentration per Run 1	103.445 %	97.651 %	0.516 ppb	0.620 ppb	320.584 ppb	0.487 ppb	95.638 %	95.795 %	0.002 ppb
Concentration per Run 2	101.203 %	99.928 %	0.481 ppb	0.649 ppb	325.957 ppb	0.627 ppb	96.802 %	93.202 %	0.002 ppb
Concentration per Run 3	105.282 %	99.917 %	0.327 ppb	0.515 ppb	345.566 ppb	0.617 ppb	95.601 %	90.765 %	0.004 ppb
Concentration RSD	2.0 %	1.3 %	22.8 %	11.9 %	4.0 %	13.6 %	0.7 %	2.7 %	33.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.009 ppb	97.883 %	94.496 %	0.935 ppb	234.861 ppb	100.396 %	95.985 %	102.749 %	96.567 %
Concentration per Run 1	0.010 ppb	98.316 %	95.525 %	0.819 ppb	226.806 ppb	99.342 %	98.410 %	100.781 %	96.713 %
Concentration per Run 2	0.010 ppb	97.988 %	93.992 %	1.005 ppb	239.819 ppb	101.940 %	92.851 %	102.279 %	95.894 %
Concentration per Run 3	0.007 ppb	97.344 %	93.972 %	0.982 ppb	237.957 ppb	99.906 %	96.693 %	105.189 %	97.094 %
Concentration RSD	19.7 %	0.5 %	0.9 %	10.9 %	3.0 %	1.4 %	3.0 %	2.2 %	0.6 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.043 ppb	0.042 ppb	92.510 %	90.297 %
Concentration per Run 1	0.022 ppb	0.038 ppb	90.746 %	91.520 %
Concentration per Run 2	0.052 ppb	0.044 ppb	93.925 %	90.330 %
Concentration per Run 3	0.057 ppb	0.044 ppb	92.858 %	89.040 %
Concentration RSD	43.0 %	7.6 %	1.7 %	1.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 40 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: WG1975067-3d10 6020SL Rack 1
 Analysis started at: 9/26/2024 10:06:25 AM Vial 19

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.125 %	99.668 %	5.027 ppb	8,424.440 ppb	3,838.448 ppb	206.845 ppb	1,255.653 ppb	11,635.430 ppb	105.073 %
Concentration per Run 1	106.539 %	99.875 %	5.046 ppb	8,299.799 ppb	3,816.125 ppb	209.192 ppb	1,251.439 ppb	11,259.232 ppb	106.663 %
Concentration per Run 2	105.435 %	97.883 %	4.958 ppb	8,600.386 ppb	3,904.643 ppb	210.774 ppb	1,258.164 ppb	12,261.846 ppb	102.828 %
Concentration per Run 3	106.400 %	101.245 %	5.076 ppb	8,373.135 ppb	3,794.576 ppb	200.569 ppb	1,257.355 ppb	11,385.213 ppb	105.728 %
Concentration RSD	0.6 %	1.7 %	1.2 %	1.9 %	1.5 %	2.7 %	0.3 %	4.7 %	1.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.871 %	49.794 ppb	19.117 ppb	54.603 ppb	110.035 ppb	52.761 ppb	50.450 ppb	25.528 ppb	51.905 ppb
Concentration per Run 1	99.214 %	47.919 ppb	18.333 ppb	53.361 ppb	108.765 ppb	52.238 ppb	49.721 ppb	24.880 ppb	51.774 ppb
Concentration per Run 2	97.364 %	51.102 ppb	19.125 ppb	55.290 ppb	111.627 ppb	53.068 ppb	49.940 ppb	26.359 ppb	51.070 ppb
Concentration per Run 3	100.035 %	50.363 ppb	19.893 ppb	55.157 ppb	109.713 ppb	52.977 ppb	51.690 ppb	25.344 ppb	52.870 ppb
Concentration RSD	1.4 %	3.3 %	4.1 %	2.0 %	1.3 %	0.9 %	2.1 %	3.0 %	1.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.087 %	101.647 %	12.589 ppb	12.207 ppb	129.970 ppb	103.849 ppb	97.601 %	98.253 %	5.167 ppb
Concentration per Run 1	105.377 %	102.465 %	12.637 ppb	12.229 ppb	125.282 ppb	102.489 ppb	95.368 %	99.001 %	5.147 ppb
Concentration per Run 2	104.540 %	101.941 %	12.180 ppb	11.751 ppb	131.086 ppb	106.874 ppb	98.851 %	96.295 %	5.313 ppb
Concentration per Run 3	105.345 %	100.536 %	12.951 ppb	12.642 ppb	133.542 ppb	102.183 ppb	98.585 %	99.464 %	5.042 ppb
Concentration RSD	0.5 %	1.0 %	3.1 %	3.7 %	3.3 %	2.5 %	2.0 %	1.7 %	2.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.388 ppb	103.439 %	99.517 %	51.509 ppb	237.809 ppb	103.259 %	96.181 %	101.095 %	96.371 %
Concentration per Run 1	5.419 ppb	102.365 %	98.947 %	50.984 ppb	238.324 ppb	102.113 %	95.831 %	99.821 %	96.575 %
Concentration per Run 2	5.447 ppb	104.352 %	98.525 %	52.671 ppb	238.292 ppb	102.695 %	95.954 %	101.682 %	95.352 %
Concentration per Run 3	5.296 ppb	103.598 %	101.078 %	50.872 ppb	236.810 ppb	104.968 %	96.759 %	101.782 %	97.186 %
Concentration RSD	1.5 %	1.0 %	1.4 %	2.0 %	0.4 %	1.5 %	0.5 %	1.1 %	1.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	12.175 ppb	53.274 ppb	95.498 %	94.214 %
Concentration per Run 1	12.080 ppb	52.596 ppb	97.032 %	94.887 %
Concentration per Run 2	12.200 ppb	53.955 ppb	93.148 %	93.506 %
Concentration per Run 3	12.245 ppb	53.272 ppb	96.315 %	94.248 %
Concentration RSD	0.7 %	1.3 %	2.2 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 41 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975067-4d10 6020SL Rack: 1
 Analysis started at: 9/26/2024 10:11:06 AM Vial: 20

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.131 %	95.475 %	5.174 ppb	8,729.391 ppb	3,833.584 ppb	207.551 ppb	1,229.977 ppb	11,353.432 ppb	102.457 %
Concentration per Run 1	105.519 %	98.506 %	5.041 ppb	8,400.021 ppb	3,649.525 ppb	195.175 ppb	1,175.909 ppb	10,881.737 ppb	107.284 %
Concentration per Run 2	99.119 %	97.011 %	5.344 ppb	8,773.343 ppb	3,856.527 ppb	203.224 ppb	1,278.455 ppb	11,747.862 ppb	100.814 %
Concentration per Run 3	104.754 %	90.909 %	5.137 ppb	9,014.809 ppb	3,994.699 ppb	224.254 ppb	1,235.566 ppb	11,430.698 ppb	99.272 %
Concentration RSD	3.4 %	4.2 %	3.0 %	3.5 %	4.5 %	7.2 %	4.2 %	3.9 %	4.1 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.628 %	50.305 ppb	19.716 ppb	54.514 ppb	108.451 ppb	51.466 ppb	52.219 ppb	26.630 ppb	75.838 ppb
Concentration per Run 1	101.202 %	47.960 ppb	19.087 ppb	52.576 ppb	102.675 ppb	51.940 ppb	50.085 ppb	25.244 ppb	73.092 ppb
Concentration per Run 2	95.965 %	52.448 ppb	20.379 ppb	55.742 ppb	110.552 ppb	51.824 ppb	52.699 ppb	27.392 ppb	77.629 ppb
Concentration per Run 3	98.717 %	50.507 ppb	19.683 ppb	55.225 ppb	112.127 ppb	50.633 ppb	53.871 ppb	27.255 ppb	76.792 ppb
Concentration RSD	2.7 %	4.5 %	3.3 %	3.1 %	4.7 %	1.4 %	3.7 %	4.5 %	3.2 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.137 %	100.492 %	12.262 ppb	12.301 ppb	127.208 ppb	100.006 ppb	97.697 %	97.391 %	5.181 ppb
Concentration per Run 1	103.370 %	100.840 %	11.766 ppb	12.252 ppb	125.959 ppb	99.489 ppb	100.449 %	98.157 %	5.129 ppb
Concentration per Run 2	102.724 %	99.326 %	12.445 ppb	11.922 ppb	126.607 ppb	101.616 ppb	96.370 %	96.382 %	5.313 ppb
Concentration per Run 3	100.317 %	101.310 %	12.575 ppb	12.729 ppb	129.060 ppb	98.913 ppb	96.271 %	97.633 %	5.101 ppb
Concentration RSD	1.6 %	1.0 %	3.5 %	3.3 %	1.3 %	1.4 %	2.4 %	0.9 %	2.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.367 ppb	101.643 %	99.432 %	52.037 ppb	235.409 ppb	99.200 %	95.968 %	100.865 %	95.498 %
Concentration per Run 1	5.175 ppb	102.973 %	100.209 %	51.106 ppb	228.936 ppb	98.348 %	97.299 %	102.456 %	96.598 %
Concentration per Run 2	5.512 ppb	100.695 %	96.903 %	53.411 ppb	241.432 ppb	98.367 %	95.321 %	99.629 %	94.526 %
Concentration per Run 3	5.413 ppb	101.260 %	101.185 %	51.594 ppb	235.858 ppb	100.887 %	95.284 %	100.511 %	95.370 %
Concentration RSD	3.2 %	1.2 %	2.3 %	2.3 %	2.7 %	1.5 %	1.2 %	1.4 %	1.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	12.080 ppb	53.287 ppb	93.722 %	93.080 %
Concentration per Run 1	11.489 ppb	51.786 ppb	94.348 %	96.042 %
Concentration per Run 2	12.227 ppb	53.833 ppb	93.819 %	92.116 %
Concentration per Run 3	12.523 ppb	54.242 ppb	92.998 %	91.082 %
Concentration RSD	4.4 %	2.5 %	0.7 %	2.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 42 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975067-5d10 6020SL Rack: 1
 Analysis started at: 9/26/2024 10:15:47 AM Vial: 21

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.471 %	94.894 %	49.744 ppb	12,469.429 ppb	7,753.895 ppb	48.762 ppb	5,397.903 ppb	15,411.698 ppb	102.955 %
Concentration per Run 1	100.191 %	93.524 %	49.718 ppb	12,528.040 ppb	7,683.375 ppb	46.029 ppb	5,289.292 ppb	14,943.626 ppb	103.791 %
Concentration per Run 2	99.252 %	94.894 %	49.720 ppb	12,688.106 ppb	7,916.832 ppb	51.585 ppb	5,556.451 ppb	15,790.523 ppb	104.833 %
Concentration per Run 3	98.969 %	96.264 %	49.796 ppb	12,192.141 ppb	7,661.477 ppb	48.672 ppb	5,347.965 ppb	15,500.944 ppb	100.242 %
Concentration RSD	0.6 %	1.4 %	0.1 %	2.0 %	1.8 %	5.7 %	2.6 %	2.8 %	2.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.738 %	51.159 ppb	49.254 ppb	52.309 ppb	5,086.298 ppb	49.672 ppb	51.564 ppb	49.727 ppb	51.018 ppb
Concentration per Run 1	97.607 %	50.232 ppb	48.679 ppb	51.372 ppb	4,927.109 ppb	47.983 ppb	49.816 ppb	49.474 ppb	49.596 ppb
Concentration per Run 2	95.364 %	52.413 ppb	50.636 ppb	53.530 ppb	5,292.730 ppb	50.949 ppb	52.840 ppb	50.439 ppb	51.375 ppb
Concentration per Run 3	100.243 %	50.833 ppb	48.445 ppb	52.024 ppb	5,039.056 ppb	50.084 ppb	52.035 ppb	49.267 ppb	52.083 ppb
Concentration RSD	2.5 %	2.2 %	2.4 %	2.1 %	3.7 %	3.1 %	3.0 %	1.3 %	2.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.707 %	99.126 %	50.482 ppb	48.222 ppb	82.070 ppb	53.654 ppb	95.414 %	94.137 %	6.390 ppb
Concentration per Run 1	102.015 %	101.122 %	49.838 ppb	47.948 ppb	80.174 ppb	54.510 ppb	98.904 %	93.925 %	6.272 ppb
Concentration per Run 2	101.405 %	99.824 %	50.488 ppb	48.178 ppb	82.550 ppb	54.239 ppb	92.813 %	93.184 %	6.463 ppb
Concentration per Run 3	104.702 %	96.434 %	51.119 ppb	48.540 ppb	83.487 ppb	52.214 ppb	94.523 %	95.301 %	6.434 ppb
Concentration RSD	1.7 %	2.4 %	1.3 %	0.6 %	2.1 %	2.3 %	3.3 %	1.1 %	1.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	50.928 ppb	103.132 %	95.166 %	53.849 ppb	76.820 ppb	101.835 %	95.470 %	103.445 %	95.113 %
Concentration per Run 1	49.889 ppb	105.075 %	96.176 %	51.685 ppb	75.917 ppb	102.120 %	95.342 %	105.013 %	95.308 %
Concentration per Run 2	51.629 ppb	101.835 %	93.953 %	55.434 ppb	77.450 ppb	102.368 %	96.217 %	101.869 %	96.962 %
Concentration per Run 3	51.265 ppb	102.486 %	95.369 %	54.427 ppb	77.092 ppb	101.016 %	94.851 %	103.454 %	93.070 %
Concentration RSD	1.8 %	1.7 %	1.2 %	3.6 %	1.0 %	0.7 %	0.7 %	1.5 %	2.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	49.689 ppb	50.145 ppb	97.043 %	92.208 %
Concentration per Run 1	48.831 ppb	49.764 ppb	97.186 %	92.169 %
Concentration per Run 2	50.099 ppb	50.730 ppb	96.088 %	91.420 %
Concentration per Run 3	50.139 ppb	49.939 ppb	97.857 %	93.035 %
Concentration RSD	1.5 %	1.0 %	0.9 %	0.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 43 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975067-6d5 6020SL Rack: 1
 Analysis started at: 9/26/2024 10:20:28 AM Vial: 22

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.524 %	96.098 %	0.025 ppb	14,115.921 ppb	5,237.717 ppb	2.060 ppb	293.271 ppb	19,797.090 ppb	106.773 %
Concentration per Run 1	106.115 %	95.019 %	0.018 ppb	14,144.783 ppb	5,259.582 ppb	3.249 ppb	290.468 ppb	19,688.075 ppb	104.223 %
Concentration per Run 2	105.636 %	93.649 %	0.037 ppb	14,423.101 ppb	5,259.072 ppb	-0.478 ppb	296.862 ppb	20,158.673 ppb	110.651 %
Concentration per Run 3	101.822 %	99.626 %	0.020 ppb	13,779.880 ppb	5,194.497 ppb	3.408 ppb	292.484 ppb	19,544.524 ppb	105.445 %
Concentration RSD	2.3 %	3.3 %	41.8 %	2.3 %	0.7 %	106.8 %	1.1 %	1.6 %	3.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.580 %	0.250 ppb	0.060 ppb	1.875 ppb	4.113 ppb	0.042 ppb	0.291 ppb	0.262 ppb	0.751 ppb
Concentration per Run 1	97.838 %	0.226 ppb	0.051 ppb	1.856 ppb	4.745 ppb	0.040 ppb	0.249 ppb	0.310 ppb	0.735 ppb
Concentration per Run 2	96.925 %	0.249 ppb	0.070 ppb	1.884 ppb	4.594 ppb	0.049 ppb	0.315 ppb	0.237 ppb	0.698 ppb
Concentration per Run 3	97.977 %	0.275 ppb	0.060 ppb	1.885 ppb	3.001 ppb	0.035 ppb	0.309 ppb	0.240 ppb	0.819 ppb
Concentration RSD	0.6 %	9.7 %	15.9 %	0.9 %	23.5 %	16.2 %	12.6 %	15.8 %	8.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.401 %	100.478 %	0.112 ppb	0.174 ppb	66.463 ppb	0.372 ppb	97.786 %	93.811 %	0.010 ppb
Concentration per Run 1	104.634 %	100.378 %	0.058 ppb	0.242 ppb	65.071 ppb	0.318 ppb	98.282 %	95.335 %	0.010 ppb
Concentration per Run 2	105.261 %	99.747 %	0.181 ppb	0.221 ppb	66.668 ppb	0.399 ppb	97.856 %	92.463 %	0.007 ppb
Concentration per Run 3	106.309 %	101.308 %	0.097 ppb	0.059 ppb	67.649 ppb	0.398 ppb	97.220 %	93.636 %	0.012 ppb
Concentration RSD	0.8 %	0.8 %	55.9 %	57.5 %	2.0 %	12.4 %	0.5 %	1.5 %	25.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.004 ppb	101.889 %	94.497 %	0.223 ppb	49.101 ppb	99.844 %	95.883 %	102.361 %	94.532 %
Concentration per Run 1	0.000 ppb	102.767 %	95.201 %	0.186 ppb	47.627 ppb	100.773 %	94.866 %	103.652 %	95.235 %
Concentration per Run 2	0.007 ppb	101.253 %	94.377 %	0.236 ppb	49.599 ppb	98.971 %	97.582 %	102.909 %	92.897 %
Concentration per Run 3	0.006 ppb	101.647 %	93.913 %	0.248 ppb	50.079 ppb	99.787 %	95.200 %	100.522 %	95.466 %
Concentration RSD	80.0 %	0.8 %	0.7 %	14.7 %	2.6 %	0.9 %	1.5 %	1.6 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.280 ppb	0.024 ppb	96.104 %	92.497 %
Concentration per Run 1	0.160 ppb	0.021 ppb	96.099 %	93.680 %
Concentration per Run 2	0.321 ppb	0.024 ppb	94.910 %	91.028 %
Concentration per Run 3	0.358 ppb	0.026 ppb	97.303 %	92.782 %
Concentration RSD	37.6 %	9.2 %	1.2 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 44 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: L2454036-01 6020SL Rack 1
 Analysis started at: 9/26/2024 10:25:10 AM Vial 23

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	97.356 %	91.615 %	0.017 ppb	55,981.807 ppb	8,319.179 ppb	20.931 ppb	1,606.326 ppb	46,281.815 ppb	105.619 %
Concentration per Run 1	97.630 %	90.162 %	0.015 ppb	54,987.119 ppb	8,206.442 ppb	22.273 ppb	1,520.612 ppb	43,251.773 ppb	110.181 %
Concentration per Run 2	99.464 %	92.030 %	0.016 ppb	55,846.182 ppb	8,502.138 ppb	19.160 ppb	1,638.148 ppb	47,676.338 ppb	103.194 %
Concentration per Run 3	94.975 %	92.652 %	0.019 ppb	57,112.119 ppb	8,248.956 ppb	21.360 ppb	1,660.217 ppb	47,917.334 ppb	103.482 %
Concentration RSD	2.3 %	1.4 %	13.1 %	1.9 %	1.9 %	7.6 %	4.7 %	5.7 %	3.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.239 %	0.740 ppb	0.288 ppb	34.780 ppb	21.687 ppb	0.179 ppb	1.658 ppb	8.270 ppb	25.765 ppb
Concentration per Run 1	97.780 %	0.630 ppb	0.295 ppb	33.353 ppb	20.737 ppb	0.193 ppb	1.634 ppb	7.966 ppb	24.496 ppb
Concentration per Run 2	95.086 %	0.836 ppb	0.264 ppb	35.512 ppb	19.958 ppb	0.167 ppb	1.675 ppb	8.491 ppb	26.939 ppb
Concentration per Run 3	95.849 %	0.755 ppb	0.306 ppb	35.475 ppb	24.366 ppb	0.176 ppb	1.664 ppb	8.353 ppb	25.859 ppb
Concentration RSD	1.4 %	14.0 %	7.6 %	3.6 %	10.8 %	7.4 %	1.3 %	3.3 %	4.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.196 %	100.502 %	0.345 ppb	0.845 ppb	87.356 ppb	0.366 ppb	92.733 %	94.271 %	0.010 ppb
Concentration per Run 1	103.180 %	102.587 %	0.281 ppb	1.042 ppb	82.478 ppb	0.329 ppb	93.424 %	96.008 %	0.009 ppb
Concentration per Run 2	99.317 %	98.370 %	0.336 ppb	0.723 ppb	89.243 ppb	0.342 ppb	91.465 %	92.667 %	0.009 ppb
Concentration per Run 3	101.093 %	100.550 %	0.418 ppb	0.771 ppb	90.346 ppb	0.427 ppb	93.311 %	94.139 %	0.012 ppb
Concentration RSD	1.9 %	2.1 %	20.0 %	20.4 %	4.9 %	14.5 %	1.2 %	1.8 %	18.8 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.247 ppb	94.793 %	94.154 %	0.301 ppb	110.949 ppb	98.657 %	96.312 %	99.038 %	96.379 %
Concentration per Run 1	0.240 ppb	96.531 %	95.339 %	0.379 ppb	108.053 ppb	99.139 %	97.282 %	99.139 %	96.368 %
Concentration per Run 2	0.222 ppb	91.876 %	91.353 %	0.272 ppb	113.235 ppb	99.052 %	95.319 %	98.995 %	96.321 %
Concentration per Run 3	0.278 ppb	95.971 %	95.769 %	0.253 ppb	111.560 ppb	97.779 %	96.336 %	98.980 %	96.446 %
Concentration RSD	11.6 %	2.7 %	2.6 %	22.5 %	2.4 %	0.8 %	1.0 %	0.1 %	0.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.116 ppb	0.298 ppb	90.467 %	92.385 %
Concentration per Run 1	0.132 ppb	0.342 ppb	92.722 %	93.303 %
Concentration per Run 2	0.102 ppb	0.276 ppb	89.227 %	91.814 %
Concentration per Run 3	0.114 ppb	0.277 ppb	89.452 %	92.038 %
Concentration RSD	12.9 %	12.8 %	2.2 %	0.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 45 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-02 6020SL Rack: 1
 Analysis started at: 9/26/2024 10:29:52 AM Vial: 24

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	96.016 %	95.600 %	0.024 ppb	67,224.804 ppb	9,319.508 ppb	24.584 ppb	1,431.064 ppb	67,856.761 ppb	109.697 %
Concentration per Run 1	95.950 %	96.015 %	0.013 ppb	66,360.927 ppb	9,235.946 ppb	19.910 ppb	1,419.706 ppb	67,204.816 ppb	107.127 %
Concentration per Run 2	96.099 %	92.154 %	0.014 ppb	69,608.564 ppb	9,459.874 ppb	26.720 ppb	1,456.155 ppb	68,606.937 ppb	112.283 %
Concentration per Run 3	95.998 %	98.630 %	0.043 ppb	65,704.922 ppb	9,262.704 ppb	27.123 ppb	1,417.331 ppb	67,758.531 ppb	109.680 %
Concentration RSD	0.1 %	3.4 %	71.9 %	3.1 %	1.3 %	16.5 %	1.5 %	1.0 %	2.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.333 %	1.120 ppb	0.514 ppb	850.945 ppb	24.915 ppb	0.341 ppb	2.108 ppb	19.359 ppb	53.285 ppb
Concentration per Run 1	97.445 %	1.136 ppb	0.584 ppb	852.161 ppb	27.499 ppb	0.364 ppb	2.208 ppb	19.633 ppb	54.153 ppb
Concentration per Run 2	97.745 %	1.004 ppb	0.505 ppb	849.368 ppb	24.730 ppb	0.319 ppb	2.085 ppb	19.355 ppb	53.008 ppb
Concentration per Run 3	96.809 %	1.221 ppb	0.452 ppb	851.307 ppb	22.516 ppb	0.341 ppb	2.033 ppb	19.089 ppb	52.695 ppb
Concentration RSD	0.5 %	9.8 %	12.9 %	0.2 %	10.0 %	6.7 %	4.3 %	1.4 %	1.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.161 %	99.733 %	0.397 ppb	0.389 ppb	98.416 ppb	0.687 ppb	94.339 %	93.027 %	0.005 ppb
Concentration per Run 1	99.227 %	96.954 %	0.472 ppb	0.400 ppb	99.625 ppb	0.704 ppb	94.879 %	92.137 %	0.005 ppb
Concentration per Run 2	103.550 %	100.996 %	0.355 ppb	0.352 ppb	96.890 ppb	0.603 ppb	93.954 %	94.179 %	0.006 ppb
Concentration per Run 3	103.706 %	101.250 %	0.363 ppb	0.414 ppb	98.732 ppb	0.754 ppb	94.185 %	92.764 %	0.006 ppb
Concentration RSD	2.5 %	2.4 %	16.4 %	8.3 %	1.4 %	11.1 %	0.5 %	1.1 %	13.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.697 ppb	100.181 %	96.295 %	0.231 ppb	140.370 ppb	101.976 %	98.776 %	105.276 %	99.314 %
Concentration per Run 1	0.695 ppb	100.318 %	98.146 %	0.202 ppb	136.758 ppb	98.747 %	98.355 %	103.967 %	97.365 %
Concentration per Run 2	0.682 ppb	99.696 %	94.290 %	0.241 ppb	140.877 ppb	102.149 %	99.979 %	104.769 %	99.981 %
Concentration per Run 3	0.713 ppb	100.529 %	96.448 %	0.249 ppb	143.475 ppb	105.031 %	97.994 %	107.091 %	100.596 %
Concentration RSD	2.3 %	0.4 %	2.0 %	10.9 %	2.4 %	3.1 %	1.1 %	1.5 %	1.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.067 ppb	0.191 ppb	97.082 %	93.709 %
Concentration per Run 1	0.059 ppb	0.216 ppb	96.354 %	92.234 %
Concentration per Run 2	0.066 ppb	0.177 ppb	97.270 %	93.775 %
Concentration per Run 3	0.076 ppb	0.179 ppb	97.621 %	95.118 %
Concentration RSD	12.9 %	11.5 %	0.7 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 46 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-03 6020SL Rack: 1
 Analysis started at: 9/26/2024 10:34:35 AM Vial: 25

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	95.756 %	92.030 %	0.010 ppb	56,273.206 ppb	13,160.553 ppb	16.515 ppb	1,292.938 ppb	73,351.897 ppb	105.537 %
Concentration per Run 1	96.325 %	85.554 %	0.014 ppb	57,068.536 ppb	13,342.126 ppb	14.730 ppb	1,265.227 ppb	72,247.714 ppb	101.982 %
Concentration per Run 2	95.957 %	99.626 %	0.009 ppb	54,558.105 ppb	12,940.861 ppb	19.748 ppb	1,301.168 ppb	74,205.237 ppb	106.218 %
Concentration per Run 3	94.988 %	90.909 %	0.008 ppb	57,192.975 ppb	13,198.673 ppb	15.067 ppb	1,312.418 ppb	73,602.741 ppb	108.410 %
Concentration RSD	0.7 %	7.7 %	28.6 %	2.6 %	1.5 %	17.0 %	1.9 %	1.4 %	3.1 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	98.921 %	0.909 ppb	0.244 ppb	3.479 ppb	28.773 ppb	0.080 ppb	0.556 ppb	0.625 ppb	11.474 ppb
Concentration per Run 1	100.370 %	0.967 ppb	0.224 ppb	3.357 ppb	27.772 ppb	0.069 ppb	0.503 ppb	0.647 ppb	11.127 ppb
Concentration per Run 2	98.023 %	0.839 ppb	0.249 ppb	3.514 ppb	33.637 ppb	0.079 ppb	0.575 ppb	0.648 ppb	11.812 ppb
Concentration per Run 3	98.370 %	0.919 ppb	0.259 ppb	3.567 ppb	24.910 ppb	0.093 ppb	0.591 ppb	0.581 ppb	11.484 ppb
Concentration RSD	1.3 %	7.1 %	7.4 %	3.1 %	15.5 %	14.8 %	8.4 %	6.2 %	3.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.546 %	101.532 %	0.212 ppb	0.486 ppb	118.380 ppb	0.520 ppb	94.726 %	94.351 %	0.005 ppb
Concentration per Run 1	103.756 %	102.904 %	0.225 ppb	0.636 ppb	113.793 ppb	0.414 ppb	93.288 %	95.663 %	0.004 ppb
Concentration per Run 2	102.128 %	100.477 %	0.145 ppb	0.477 ppb	119.952 ppb	0.519 ppb	94.962 %	94.592 %	0.004 ppb
Concentration per Run 3	101.754 %	101.214 %	0.266 ppb	0.344 ppb	121.394 ppb	0.627 ppb	95.928 %	92.799 %	0.006 ppb
Concentration RSD	1.0 %	1.2 %	29.0 %	30.0 %	3.4 %	20.4 %	1.4 %	1.5 %	16.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.051 ppb	99.817 %	97.088 %	0.212 ppb	130.764 ppb	101.445 %	98.049 %	102.360 %	97.979 %
Concentration per Run 1	0.056 ppb	99.303 %	94.036 %	0.216 ppb	132.369 ppb	101.035 %	95.112 %	101.843 %	95.168 %
Concentration per Run 2	0.049 ppb	100.590 %	98.478 %	0.194 ppb	129.896 ppb	102.440 %	99.320 %	102.613 %	99.079 %
Concentration per Run 3	0.049 ppb	99.558 %	98.750 %	0.225 ppb	130.029 ppb	100.860 %	99.716 %	102.624 %	99.690 %
Concentration RSD	7.3 %	0.7 %	2.7 %	7.5 %	1.1 %	0.9 %	2.6 %	0.4 %	2.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.037 ppb	0.208 ppb	96.556 %	93.285 %
Concentration per Run 1	0.015 ppb	0.207 ppb	96.955 %	92.067 %
Concentration per Run 2	0.043 ppb	0.205 ppb	96.454 %	92.250 %
Concentration per Run 3	0.051 ppb	0.210 ppb	96.260 %	95.539 %
Concentration RSD	51.0 %	1.3 %	0.4 %	2.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 47 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 10:39:14 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.541 %	92.777 %	58.677 ppb	6,439.960 ppb	6,541.603 ppb	63.521 ppb	6,242.762 ppb	6,246.759 ppb	103.141 %
Concentration per Run 1	104.618 %	89.041 %	57.039 ppb	6,863.808 ppb	6,755.259 ppb	68.056 ppb	6,715.620 ppb	7,070.736 ppb	102.627 %
Concentration per Run 2	99.689 %	95.268 %	59.417 ppb	6,229.096 ppb	6,420.523 ppb	59.800 ppb	6,017.092 ppb	5,971.385 ppb	104.904 %
Concentration per Run 3	100.315 %	94.022 %	59.574 ppb	6,226.975 ppb	6,449.028 ppb	62.708 ppb	5,995.575 ppb	5,698.156 ppb	101.892 %
Recovery Percentage 1			97.795 %	107.333 %	109.027 %	105.869 %	104.046 %	104.113 %	
Concentration RSD	2.6 %	3.6 %	2.4 %	5.7 %	2.8 %	6.6 %	6.6 %	11.6 %	1.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.724 %	63.138 ppb	64.114 ppb	65.037 ppb	6,353.664 ppb	63.511 ppb	63.882 ppb	64.287 ppb	63.397 ppb
Concentration per Run 1	94.265 %	67.057 ppb	66.781 ppb	68.751 ppb	6,611.605 ppb	69.147 ppb	70.087 ppb	68.256 ppb	66.899 ppb
Concentration per Run 2	96.636 %	61.697 ppb	63.720 ppb	63.683 ppb	6,223.512 ppb	60.429 ppb	61.566 ppb	62.878 ppb	61.898 ppb
Concentration per Run 3	99.272 %	60.658 ppb	61.842 ppb	62.677 ppb	6,225.876 ppb	60.957 ppb	59.991 ppb	61.727 ppb	61.393 ppb
Recovery Percentage 1		105.230 %	106.857 %	108.395 %	105.894 %	105.852 %	106.469 %	107.145 %	105.662 %
Concentration RSD	2.6 %	5.4 %	3.9 %	5.0 %	3.5 %	7.7 %	8.5 %	5.4 %	4.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.588 %	97.884 %	63.285 ppb	62.139 ppb	62.466 ppb	65.441 ppb	98.645 %	95.473 %	64.059 ppb
Concentration per Run 1	105.428 %	91.616 %	67.522 ppb	65.448 ppb	65.116 ppb	68.344 ppb	99.087 %	92.525 %	67.797 ppb
Concentration per Run 2	106.204 %	101.145 %	60.491 ppb	58.085 ppb	60.084 ppb	64.559 ppb	98.448 %	96.886 %	61.304 ppb
Concentration per Run 3	102.130 %	100.890 %	61.841 ppb	62.885 ppb	62.196 ppb	63.420 ppb	98.401 %	97.007 %	63.077 ppb
Recovery Percentage 1			105.474 %	103.565 %	104.109 %	109.068 %			106.765 %
Concentration RSD	2.1 %	5.5 %	5.9 %	6.0 %	4.0 %	3.9 %	0.4 %	2.7 %	5.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	64.147 ppb	102.858 %	96.194 %	66.139 ppb	65.742 ppb	103.928 %	95.930 %	105.361 %	94.926 %
Concentration per Run 1	68.341 ppb	102.461 %	89.999 %	71.557 ppb	71.619 ppb	104.304 %	89.771 %	104.969 %	90.106 %
Concentration per Run 2	62.090 ppb	104.331 %	100.004 %	62.626 ppb	62.955 ppb	105.132 %	96.736 %	106.129 %	95.655 %
Concentration per Run 3	62.011 ppb	101.782 %	98.578 %	64.235 ppb	62.651 ppb	102.348 %	101.283 %	104.986 %	99.017 %
Recovery Percentage 1	106.912 %			110.232 %	109.570 %				
Concentration RSD	5.7 %	1.3 %	5.6 %	7.2 %	7.7 %	1.4 %	6.0 %	0.6 %	4.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	67.215 ppb	61.999 ppb	100.960 %	95.789 %
Concentration per Run 1	70.452 ppb	66.835 ppb	99.148 %	89.907 %
Concentration per Run 2	65.325 ppb	60.104 ppb	103.272 %	98.065 %
Concentration per Run 3	65.867 ppb	59.057 ppb	100.460 %	99.396 %
Recovery Percentage 1	112.024 %	103.331 %		
Concentration RSD	4.2 %	6.8 %	2.1 %	5.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 48 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 10:43:59 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	105.871 %	93.939 %	0.016 ppb	-2.767 ppb	0.452 ppb	-0.383 ppb	-2.934 ppb	3.753 ppb	104.900 %
Concentration per Run 1	106.719 %	95.268 %	0.019 ppb	-2.460 ppb	1.336 ppb	-0.490 ppb	-2.557 ppb	0.269 ppb	107.023 %
Concentration per Run 2	106.009 %	92.901 %	0.015 ppb	-1.614 ppb	0.889 ppb	-0.743 ppb	-2.193 ppb	7.536 ppb	101.503 %
Concentration per Run 3	104.885 %	93.649 %	0.014 ppb	-4.228 ppb	-0.867 ppb	0.085 ppb	-4.052 ppb	3.455 ppb	106.173 %
Recovery Percentage 1			3.160 %	-2.767 %	0.646 %	-3.826 %	-2.934 %	3.753 %	
Concentration RSD	0.9 %	1.3 %	17.0 %	48.2 %	257.4 %	110.9 %	33.6 %	97.0 %	2.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.539 %	-0.010 ppb	-0.011 ppb	0.014 ppb	2.002 ppb	0.002 ppb	0.059 ppb	-0.078 ppb	0.012 ppb
Concentration per Run 1	96.740 %	-0.001 ppb	-0.028 ppb	0.004 ppb	1.959 ppb	0.002 ppb	0.023 ppb	-0.077 ppb	0.030 ppb
Concentration per Run 2	94.416 %	-0.014 ppb	0.001 ppb	0.022 ppb	2.202 ppb	0.004 ppb	0.048 ppb	-0.066 ppb	0.004 ppb
Concentration per Run 3	98.462 %	-0.016 ppb	-0.004 ppb	0.018 ppb	1.846 ppb	-0.002 ppb	0.107 ppb	-0.090 ppb	0.003 ppb
Recovery Percentage 1		-0.209 %	-1.060 %	1.430 %	4.005 %	0.344 %	2.953 %	-7.792 %	0.242 %
Concentration RSD	2.1 %	82.4 %	147.6 %	66.5 %	9.1 %	177.2 %	73.1 %	15.7 %	125.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.516 %	98.677 %	0.035 ppb	0.050 ppb	-0.006 ppb	0.218 ppb	102.370 %	99.543 %	0.004 ppb
Concentration per Run 1	105.257 %	98.893 %	0.094 ppb	0.077 ppb	-0.009 ppb	0.221 ppb	103.332 %	98.530 %	0.003 ppb
Concentration per Run 2	104.387 %	99.968 %	0.022 ppb	0.023 ppb	-0.011 ppb	0.247 ppb	102.595 %	98.230 %	0.002 ppb
Concentration per Run 3	103.904 %	97.171 %	-0.010 ppb	0.050 ppb	0.001 ppb	0.186 ppb	101.184 %	101.869 %	0.005 ppb
Recovery Percentage 1			7.048 %	1.000 %	-1.229 %	10.909 %			0.875 %
Concentration RSD	0.7 %	1.4 %	151.4 %	54.2 %	101.1 %	14.0 %	1.1 %	2.0 %	33.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	105.096 %	99.244 %	0.070 ppb	0.023 ppb	101.188 %	97.387 %	101.761 %	96.897 %
Concentration per Run 1	-0.001 ppb	105.244 %	97.541 %	0.061 ppb	0.016 ppb	101.232 %	96.354 %	102.018 %	96.651 %
Concentration per Run 2	0.001 ppb	106.244 %	99.440 %	0.060 ppb	0.020 ppb	99.298 %	97.211 %	101.102 %	96.565 %
Concentration per Run 3	0.000 ppb	103.799 %	100.752 %	0.088 ppb	0.035 ppb	103.035 %	98.594 %	102.164 %	97.475 %
Recovery Percentage 1				1.743 %	4.697 %				
Concentration RSD	305.0 %	1.2 %	1.6 %	23.0 %	42.4 %	1.8 %	1.2 %	0.6 %	0.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.301 ppb	0.009 ppb	102.490 %	99.579 %
Concentration per Run 1	0.164 ppb	0.010 ppb	103.459 %	100.151 %
Concentration per Run 2	0.350 ppb	0.008 ppb	101.781 %	97.819 %
Concentration per Run 3	0.388 ppb	0.010 ppb	102.230 %	100.768 %
Recovery Percentage 1	30.089 %	0.950 %		
Concentration RSD	39.8 %	10.1 %	0.8 %	1.6 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 49 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 10:56:16 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	102.329 %	98.257 %	62.408 ppb	6,168.977 ppb	6,174.704 ppb	58.182 ppb	6,179.533 ppb	6,314.223 ppb	99.577 %
Concentration per Run 1	96.120 %	103.487 %	68.906 ppb	5,923.763 ppb	5,846.618 ppb	61.979 ppb	6,003.065 ppb	6,056.349 ppb	96.191 %
Concentration per Run 2	105.499 %	98.257 %	59.729 ppb	6,150.424 ppb	6,351.735 ppb	53.823 ppb	6,249.118 ppb	6,447.750 ppb	100.960 %
Concentration per Run 3	105.368 %	93.026 %	58.589 ppb	6,432.744 ppb	6,325.758 ppb	58.744 ppb	6,286.417 ppb	6,438.571 ppb	101.581 %
Recovery Percentage 1			104.013 %	102.816 %	102.912 %	96.970 %	102.992 %	105.237 %	
Concentration RSD	5.3 %	5.3 %	9.1 %	4.1 %	4.6 %	7.1 %	2.5 %	3.5 %	3.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	113.536 %	60.672 ppb	57.519 ppb	60.371 ppb	5,973.891 ppb	59.010 ppb	59.587 ppb	59.836 ppb	59.123 ppb
Concentration per Run 1	116.547 %	59.628 ppb	55.805 ppb	59.025 ppb	5,758.880 ppb	58.269 ppb	58.646 ppb	59.678 ppb	56.853 ppb
Concentration per Run 2	113.089 %	61.746 ppb	57.845 ppb	60.316 ppb	6,038.838 ppb	59.802 ppb	60.782 ppb	60.321 ppb	60.221 ppb
Concentration per Run 3	110.973 %	60.643 ppb	58.908 ppb	61.771 ppb	6,123.956 ppb	58.960 ppb	59.331 ppb	59.510 ppb	60.294 ppb
Recovery Percentage 1		101.120 %	95.866 %	100.618 %	99.565 %	98.351 %	99.311 %	99.727 %	98.538 %
Concentration RSD	2.5 %	1.7 %	2.7 %	2.3 %	3.2 %	1.3 %	1.8 %	0.7 %	3.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.317 %	104.384 %	59.934 ppb	59.028 ppb	60.363 ppb	61.959 ppb	96.747 %	102.310 %	61.143 ppb
Concentration per Run 1	93.555 %	105.669 %	58.625 ppb	55.598 ppb	59.213 ppb	60.502 ppb	86.315 %	105.122 %	58.376 ppb
Concentration per Run 2	105.376 %	104.339 %	61.381 ppb	61.292 ppb	60.405 ppb	62.678 ppb	100.859 %	100.977 %	61.500 ppb
Concentration per Run 3	105.019 %	103.144 %	59.796 ppb	60.193 ppb	61.470 ppb	62.698 ppb	103.068 %	100.832 %	63.554 ppb
Recovery Percentage 1			99.890 %	98.379 %	100.604 %	103.266 %			101.905 %
Concentration RSD	6.6 %	1.2 %	2.3 %	5.1 %	1.9 %	2.0 %	9.4 %	2.4 %	4.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	60.966 ppb	98.251 %	103.885 %	62.404 ppb	63.310 ppb	100.872 %	102.507 %	100.257 %	103.181 %
Concentration per Run 1	58.827 ppb	90.460 %	106.968 %	59.889 ppb	60.250 ppb	91.331 %	105.205 %	92.116 %	106.906 %
Concentration per Run 2	62.086 ppb	101.991 %	103.180 %	63.446 ppb	63.914 ppb	105.775 %	102.702 %	103.289 %	101.344 %
Concentration per Run 3	61.984 ppb	102.301 %	101.506 %	63.878 ppb	65.767 ppb	105.509 %	99.613 %	105.366 %	101.294 %
Recovery Percentage 1	101.610 %		104.007 %	105.517 %					
Concentration RSD	3.0 %	6.9 %	2.7 %	3.5 %	4.4 %	8.2 %	2.7 %	7.1 %	3.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	65.302 ppb	59.099 ppb	93.681 %	100.963 %
Concentration per Run 1	62.808 ppb	56.909 ppb	86.489 %	103.186 %
Concentration per Run 2	67.754 ppb	61.700 ppb	94.932 %	99.070 %
Concentration per Run 3	65.343 ppb	58.689 ppb	99.622 %	100.632 %
Recovery Percentage 1	108.836 %	98.499 %		
Concentration RSD	3.8 %	4.1 %	7.1 %	2.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 50 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 11:01:00 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.938 %	102.325 %	0.021 ppb	6.631 ppb	6.733 ppb	-0.470 ppb	1.031 ppb	13.231 ppb	105.520 %
Concentration per Run 1	108.798 %	101.744 %	0.020 ppb	36.994 ppb	19.816 ppb	-1.129 ppb	6.072 ppb	46.265 ppb	106.363 %
Concentration per Run 2	107.420 %	101.370 %	0.022 ppb	-7.813 ppb	0.593 ppb	0.581 ppb	-2.467 ppb	-6.625 ppb	105.890 %
Concentration per Run 3	107.598 %	103.861 %	0.020 ppb	-9.289 ppb	-0.209 ppb	-0.863 ppb	-0.511 ppb	0.051 ppb	104.307 %
Recovery Percentage 1			4.132 %	6.631 %	9.619 %	-4.702 %	1.031 %	13.231 %	
Concentration RSD	0.7 %	1.3 %	5.0 %	396.7 %	168.4 %	195.7 %	433.7 %	217.7 %	1.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	99.418 %	0.002 ppb	0.033 ppb	0.083 ppb	4.432 ppb	0.029 ppb	0.069 ppb	-0.045 ppb	0.032 ppb
Concentration per Run 1	100.948 %	0.034 ppb	0.132 ppb	0.212 ppb	9.189 ppb	0.087 ppb	0.099 ppb	0.006 ppb	0.108 ppb
Concentration per Run 2	97.075 %	-0.046 ppb	-0.020 ppb	0.026 ppb	1.442 ppb	0.000 ppb	0.070 ppb	-0.073 ppb	-0.015 ppb
Concentration per Run 3	100.231 %	0.016 ppb	-0.014 ppb	0.010 ppb	2.666 ppb	-0.002 ppb	0.038 ppb	-0.070 ppb	0.003 ppb
Recovery Percentage 1		0.031 %	3.276 %	8.265 %	8.864 %	5.710 %	3.446 %	-4.550 %	0.636 %
Concentration RSD	2.1 %	2,740.1 %	263.9 %	136.0 %	94.0 %	177.0 %	44.0 %	98.9 %	209.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	106.478 %	100.479 %	0.015 ppb	0.108 ppb	-0.006 ppb	0.247 ppb	103.575 %	101.597 %	0.011 ppb
Concentration per Run 1	105.164 %	102.794 %	0.090 ppb	0.020 ppb	0.002 ppb	0.220 ppb	104.067 %	103.167 %	0.024 ppb
Concentration per Run 2	107.992 %	98.755 %	-0.024 ppb	0.186 ppb	-0.011 ppb	0.234 ppb	103.982 %	99.676 %	0.007 ppb
Concentration per Run 3	106.278 %	99.888 %	-0.020 ppb	0.118 ppb	-0.010 ppb	0.287 ppb	102.677 %	101.947 %	0.003 ppb
Recovery Percentage 1			2.993 %	2.160 %	-1.274 %	12.351 %			2.848 %
Concentration RSD	1.3 %	2.1 %	431.7 %	77.2 %	112.3 %	14.3 %	0.8 %	1.7 %	98.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.008 ppb	108.656 %	99.298 %	0.065 ppb	0.032 ppb	104.067 %	98.263 %	104.901 %	97.107 %
Concentration per Run 1	0.019 ppb	107.689 %	100.856 %	0.071 ppb	0.054 ppb	102.882 %	99.923 %	103.777 %	98.990 %
Concentration per Run 2	0.002 ppb	110.014 %	98.507 %	0.048 ppb	0.020 ppb	105.309 %	97.594 %	104.589 %	95.655 %
Concentration per Run 3	0.002 ppb	108.264 %	98.530 %	0.076 ppb	0.020 ppb	104.012 %	97.272 %	106.337 %	96.677 %
Recovery Percentage 1				1.623 %	6.310 %				
Concentration RSD	121.7 %	1.1 %	1.4 %	23.2 %	61.6 %	1.2 %	1.5 %	1.2 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.317 ppb	0.056 ppb	103.269 %	100.045 %
Concentration per Run 1	0.259 ppb	0.146 ppb	104.145 %	101.266 %
Concentration per Run 2	0.340 ppb	0.010 ppb	102.261 %	98.753 %
Concentration per Run 3	0.351 ppb	0.012 ppb	103.402 %	100.115 %
Recovery Percentage 1	31.680 %	5.606 %		
Concentration RSD	16.0 %	138.5 %	0.9 %	1.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 51 User name: ALPHALAB\ICPMSRQ Comment: FB
 Analysis label: L2454036-09 6020SL Rack: 1
 Analysis started at: 9/26/2024 11:05:58 AM Vial: 30

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	109.123 %	99.917 %	0.015 ppb	18.637 ppb	1.994 ppb	2.183 ppb	10.443 ppb	35.402 ppb	109.124 %
Concentration per Run 1	109.831 %	100.374 %	0.013 ppb	17.985 ppb	1.796 ppb	3.023 ppb	11.789 ppb	32.529 ppb	110.457 %
Concentration per Run 2	108.408 %	100.374 %	0.015 ppb	20.449 ppb	2.009 ppb	1.330 ppb	11.854 ppb	31.772 ppb	109.856 %
Concentration per Run 3	109.129 %	99.004 %	0.016 ppb	17.476 ppb	2.178 ppb	2.197 ppb	7.686 ppb	41.904 ppb	107.058 %
Concentration RSD	0.7 %	0.8 %	10.8 %	8.5 %	9.6 %	38.8 %	22.9 %	15.9 %	1.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	101.927 %	-0.035 ppb	-0.016 ppb	0.037 ppb	1.729 ppb	0.011 ppb	-0.011 ppb	-0.014 ppb	0.264 ppb
Concentration per Run 1	100.971 %	-0.043 ppb	-0.022 ppb	0.034 ppb	1.240 ppb	0.010 ppb	-0.035 ppb	-0.049 ppb	0.300 ppb
Concentration per Run 2	102.810 %	-0.038 ppb	-0.013 ppb	0.030 ppb	2.032 ppb	0.007 ppb	-0.008 ppb	0.011 ppb	0.245 ppb
Concentration per Run 3	102.000 %	-0.024 ppb	-0.013 ppb	0.046 ppb	1.915 ppb	0.017 ppb	0.010 ppb	-0.005 ppb	0.246 ppb
Concentration RSD	0.9 %	28.2 %	31.7 %	22.8 %	24.7 %	43.7 %	202.2 %	217.5 %	11.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	106.484 %	99.971 %	0.039 ppb	0.025 ppb	0.051 ppb	0.063 ppb	104.421 %	100.920 %	0.000 ppb
Concentration per Run 1	107.984 %	100.909 %	0.012 ppb	-0.008 ppb	0.044 ppb	0.042 ppb	104.829 %	103.007 %	0.001 ppb
Concentration per Run 2	104.346 %	98.344 %	0.047 ppb	0.027 ppb	0.055 ppb	0.074 ppb	103.344 %	100.073 %	0.000 ppb
Concentration per Run 3	107.121 %	100.659 %	0.060 ppb	0.055 ppb	0.056 ppb	0.074 ppb	105.089 %	99.679 %	0.000 ppb
Concentration RSD	1.8 %	1.4 %	63.3 %	127.7 %	13.2 %	29.2 %	0.9 %	1.8 %	154.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	106.044 %	98.858 %	0.221 ppb	0.047 ppb	104.715 %	98.911 %	104.983 %	96.309 %
Concentration per Run 1	0.000 ppb	107.026 %	99.565 %	0.237 ppb	0.039 ppb	105.897 %	100.340 %	105.309 %	96.623 %
Concentration per Run 2	-0.001 ppb	106.946 %	99.141 %	0.207 ppb	0.045 ppb	104.141 %	97.700 %	103.556 %	96.353 %
Concentration per Run 3	0.001 ppb	104.159 %	97.868 %	0.219 ppb	0.055 ppb	104.107 %	98.694 %	106.084 %	95.952 %
Concentration RSD	302.0 %	1.5 %	0.9 %	6.7 %	17.2 %	1.0 %	1.3 %	1.2 %	0.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.093 ppb	0.016 ppb	103.227 %	98.916 %
Concentration per Run 1	0.043 ppb	0.015 ppb	101.944 %	99.710 %
Concentration per Run 2	0.110 ppb	0.015 ppb	104.126 %	97.155 %
Concentration per Run 3	0.125 ppb	0.017 ppb	103.612 %	99.882 %
Concentration RSD	47.3 %	5.3 %	1.1 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 52 User name: ALPHALAB\ICPMSRQ Comment: FB
 Analysis label: L2454036-10 6020SL Rack: 1
 Analysis started at: 9/26/2024 11:10:39 AM Vial: 31

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.466 %	99.792 %	0.016 ppb	28.189 ppb	4.110 ppb	1.724 ppb	5.466 ppb	33.291 ppb	107.082 %
Concentration per Run 1	108.670 %	96.015 %	0.016 ppb	31.162 ppb	7.798 ppb	2.198 ppb	0.002 ppb	32.915 ppb	109.016 %
Concentration per Run 2	106.961 %	101.494 %	0.011 ppb	25.752 ppb	3.001 ppb	2.170 ppb	4.708 ppb	34.923 ppb	105.178 %
Concentration per Run 3	106.768 %	101.868 %	0.020 ppb	27.653 ppb	1.533 ppb	0.803 ppb	11.688 ppb	32.034 ppb	107.052 %
Concentration RSD	1.0 %	3.3 %	29.2 %	9.7 %	79.7 %	46.3 %	107.6 %	4.4 %	1.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	101.919 %	-0.030 ppb	0.003 ppb	0.158 ppb	3.084 ppb	0.022 ppb	-0.002 ppb	0.036 ppb	2.162 ppb
Concentration per Run 1	104.521 %	-0.034 ppb	0.006 ppb	0.214 ppb	4.251 ppb	0.031 ppb	0.032 ppb	0.021 ppb	2.123 ppb
Concentration per Run 2	101.017 %	-0.038 ppb	0.010 ppb	0.142 ppb	2.757 ppb	0.018 ppb	-0.040 ppb	0.040 ppb	2.187 ppb
Concentration per Run 3	100.220 %	-0.018 ppb	-0.006 ppb	0.119 ppb	2.243 ppb	0.019 ppb	0.001 ppb	0.046 ppb	2.175 ppb
Concentration RSD	2.2 %	34.8 %	262.5 %	31.2 %	33.8 %	32.7 %	1,583.1 %	36.7 %	1.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	107.672 %	99.621 %	-0.008 ppb	0.059 ppb	0.140 ppb	0.065 ppb	104.784 %	101.443 %	0.009 ppb
Concentration per Run 1	108.932 %	98.356 %	-0.003 ppb	0.124 ppb	0.186 ppb	0.081 ppb	105.512 %	103.784 %	0.026 ppb
Concentration per Run 2	107.415 %	99.245 %	-0.013 ppb	0.025 ppb	0.123 ppb	0.059 ppb	105.033 %	101.490 %	0.000 ppb
Concentration per Run 3	106.670 %	101.261 %	-0.008 ppb	0.028 ppb	0.111 ppb	0.055 ppb	103.807 %	99.054 %	-0.001 ppb
Concentration RSD	1.1 %	1.5 %	58.2 %	95.2 %	28.9 %	21.5 %	0.8 %	2.3 %	177.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.010 ppb	106.921 %	97.670 %	0.488 ppb	0.117 ppb	102.715 %	96.998 %	103.386 %	94.836 %
Concentration per Run 1	0.023 ppb	105.567 %	99.477 %	0.515 ppb	0.145 ppb	103.641 %	97.376 %	102.653 %	97.022 %
Concentration per Run 2	0.007 ppb	106.506 %	95.772 %	0.506 ppb	0.108 ppb	103.781 %	96.317 %	103.632 %	94.101 %
Concentration per Run 3	0.000 ppb	108.691 %	97.760 %	0.442 ppb	0.096 ppb	100.723 %	97.301 %	103.874 %	93.386 %
Concentration RSD	112.7 %	1.5 %	1.9 %	8.2 %	22.0 %	1.7 %	0.6 %	0.6 %	2.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.062 ppb	0.030 ppb	100.940 %	97.365 %
Concentration per Run 1	0.043 ppb	0.046 ppb	103.644 %	99.078 %
Concentration per Run 2	0.064 ppb	0.022 ppb	98.883 %	96.494 %
Concentration per Run 3	0.078 ppb	0.021 ppb	100.294 %	96.522 %
Concentration RSD	28.9 %	47.1 %	2.4 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 53 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: L2454036-04 6020SL Rack 1
 Analysis started at: 9/26/2024 11:15:19 AM Vial 26

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	97.733 %	94.562 %	0.021 ppb	92,293.935 ppb	7,571.709 ppb	3.402 ppb	2,170.636 ppb	46,641.149 ppb	110.243 %
Concentration per Run 1	100.431 %	95.641 %	0.023 ppb	90,640.213 ppb	7,451.562 ppb	0.945 ppb	2,079.791 ppb	45,105.675 ppb	106.872 %
Concentration per Run 2	96.246 %	94.147 %	0.021 ppb	94,237.293 ppb	7,558.995 ppb	4.781 ppb	2,201.756 ppb	46,730.228 ppb	112.024 %
Concentration per Run 3	96.523 %	93.898 %	0.019 ppb	92,004.299 ppb	7,704.569 ppb	4.480 ppb	2,230.359 ppb	48,087.544 ppb	111.834 %
Concentration RSD	2.4 %	1.0 %	7.7 %	2.0 %	1.7 %	62.7 %	3.7 %	3.2 %	2.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.705 %	11.196 ppb	0.699 ppb	16.050 ppb	4.827 ppb	0.070 ppb	1.538 ppb	37.655 ppb	30.325 ppb
Concentration per Run 1	97.167 %	10.724 ppb	0.667 ppb	15.499 ppb	5.794 ppb	0.077 ppb	1.390 ppb	35.579 ppb	29.038 ppb
Concentration per Run 2	96.254 %	11.557 ppb	0.724 ppb	16.182 ppb	5.257 ppb	0.080 ppb	1.709 ppb	38.344 ppb	30.988 ppb
Concentration per Run 3	96.693 %	11.309 ppb	0.706 ppb	16.469 ppb	3.429 ppb	0.051 ppb	1.515 ppb	39.041 ppb	30.949 ppb
Concentration RSD	0.5 %	3.8 %	4.2 %	3.1 %	25.7 %	22.8 %	10.5 %	4.9 %	3.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.170 %	97.709 %	0.342 ppb	0.366 ppb	85.740 ppb	1.230 ppb	95.788 %	92.578 %	0.225 ppb
Concentration per Run 1	104.681 %	100.149 %	0.344 ppb	0.376 ppb	81.694 ppb	1.089 ppb	95.439 %	93.516 %	0.218 ppb
Concentration per Run 2	103.952 %	95.588 %	0.287 ppb	0.266 ppb	87.043 ppb	1.319 ppb	96.524 %	92.078 %	0.239 ppb
Concentration per Run 3	103.877 %	97.389 %	0.394 ppb	0.456 ppb	88.483 ppb	1.283 ppb	95.399 %	92.140 %	0.218 ppb
Concentration RSD	0.4 %	2.4 %	15.6 %	26.0 %	4.2 %	10.1 %	0.7 %	0.9 %	5.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.028 ppb	99.785 %	92.711 %	0.158 ppb	116.277 ppb	102.277 %	96.105 %	104.820 %	95.305 %
Concentration per Run 1	0.027 ppb	99.362 %	94.339 %	0.156 ppb	111.913 ppb	101.868 %	97.355 %	103.910 %	94.850 %
Concentration per Run 2	0.029 ppb	100.892 %	90.756 %	0.151 ppb	118.447 ppb	103.470 %	94.862 %	106.521 %	95.825 %
Concentration per Run 3	0.028 ppb	99.099 %	93.037 %	0.166 ppb	118.472 ppb	101.493 %	96.097 %	104.029 %	95.240 %
Concentration RSD	3.6 %	1.0 %	2.0 %	4.8 %	3.3 %	1.0 %	1.3 %	1.4 %	0.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.060 ppb	0.024 ppb	94.355 %	90.727 %
Concentration per Run 1	0.036 ppb	0.024 ppb	93.126 %	93.124 %
Concentration per Run 2	0.067 ppb	0.022 ppb	94.404 %	90.166 %
Concentration per Run 3	0.077 ppb	0.024 ppb	95.535 %	88.890 %
Concentration RSD	35.9 %	5.3 %	1.3 %	2.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 54 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-06 6020SL Rack: 1
 Analysis started at: 9/26/2024 11:19:59 AM Vial: 27

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	100.435 %	90.452 %	0.021 ppb	67,735.161 ppb	8,827.579 ppb	10.167 ppb	2,046.788 ppb	56,899.524 ppb	107.049 %
Concentration per Run 1	98.852 %	85.305 %	0.020 ppb	72,151.498 ppb	9,493.205 ppb	11.731 ppb	2,131.029 ppb	61,451.554 ppb	104.819 %
Concentration per Run 2	103.338 %	93.524 %	0.017 ppb	66,043.491 ppb	8,504.965 ppb	5.571 ppb	2,005.341 ppb	56,401.434 ppb	108.142 %
Concentration per Run 3	99.116 %	92.528 %	0.025 ppb	65,010.492 ppb	8,484.567 ppb	13.199 ppb	2,003.995 ppb	52,845.583 ppb	108.188 %
Concentration RSD	2.5 %	5.0 %	18.5 %	5.7 %	6.5 %	39.8 %	3.6 %	7.6 %	1.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	91.021 %	4.472 ppb	0.490 ppb	0.467 ppb	7.378 ppb	0.123 ppb	1.123 ppb	33.830 ppb	34.469 ppb
Concentration per Run 1	86.069 %	4.815 ppb	0.513 ppb	0.485 ppb	9.238 ppb	0.130 ppb	1.209 ppb	35.898 ppb	37.219 ppb
Concentration per Run 2	92.115 %	4.315 ppb	0.473 ppb	0.450 ppb	6.686 ppb	0.120 ppb	1.131 ppb	32.708 ppb	32.762 ppb
Concentration per Run 3	94.878 %	4.287 ppb	0.482 ppb	0.465 ppb	6.210 ppb	0.119 ppb	1.027 ppb	32.883 ppb	33.426 ppb
Concentration RSD	4.9 %	6.6 %	4.3 %	3.7 %	22.1 %	4.9 %	8.2 %	5.3 %	7.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.912 %	95.516 %	0.268 ppb	0.684 ppb	100.395 ppb	0.415 ppb	96.739 %	90.274 %	0.195 ppb
Concentration per Run 1	107.892 %	89.961 %	0.328 ppb	0.757 ppb	106.032 ppb	0.424 ppb	97.193 %	86.169 %	0.194 ppb
Concentration per Run 2	103.651 %	99.456 %	0.207 ppb	0.555 ppb	95.891 ppb	0.403 ppb	96.409 %	91.915 %	0.203 ppb
Concentration per Run 3	106.193 %	97.132 %	0.270 ppb	0.739 ppb	99.261 ppb	0.419 ppb	96.615 %	92.738 %	0.189 ppb
Concentration RSD	2.0 %	5.2 %	22.6 %	16.3 %	5.1 %	2.6 %	0.4 %	4.0 %	3.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.032 ppb	100.566 %	92.806 %	0.241 ppb	135.015 ppb	105.098 %	93.643 %	106.776 %	92.098 %
Concentration per Run 1	0.039 ppb	102.400 %	87.740 %	0.258 ppb	144.160 ppb	107.072 %	88.825 %	105.618 %	87.816 %
Concentration per Run 2	0.032 ppb	97.598 %	94.291 %	0.234 ppb	131.476 ppb	105.314 %	97.334 %	109.366 %	95.527 %
Concentration per Run 3	0.024 ppb	101.700 %	96.387 %	0.230 ppb	129.409 ppb	102.907 %	94.769 %	105.344 %	92.951 %
Concentration RSD	23.2 %	2.6 %	4.9 %	6.4 %	5.9 %	2.0 %	4.7 %	2.1 %	4.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.043 ppb	0.015 ppb	96.105 %	88.977 %
Concentration per Run 1	0.024 ppb	0.015 ppb	95.907 %	84.103 %
Concentration per Run 2	0.048 ppb	0.015 ppb	94.405 %	91.534 %
Concentration per Run 3	0.059 ppb	0.015 ppb	98.004 %	91.295 %
Concentration RSD	41.4 %	2.3 %	1.9 %	4.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 55 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-07 6020SL Rack: 1
 Analysis started at: 9/26/2024 11:24:39 AM Vial: 28

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	98.267 %	92.196 %	0.023 ppb	63,168.316 ppb	8,503.094 ppb	2.156 ppb	1,893.738 ppb	51,827.185 ppb	108.069 %
Concentration per Run 1	97.038 %	91.158 %	0.029 ppb	64,016.007 ppb	8,316.766 ppb	3.334 ppb	1,877.191 ppb	51,202.431 ppb	106.989 %
Concentration per Run 2	97.274 %	96.638 %	0.019 ppb	61,659.984 ppb	8,526.699 ppb	1.517 ppb	1,911.141 ppb	53,628.330 ppb	108.575 %
Concentration per Run 3	100.489 %	88.792 %	0.021 ppb	63,828.956 ppb	8,665.819 ppb	1.616 ppb	1,892.882 ppb	50,650.795 ppb	108.644 %
Concentration RSD	2.0 %	4.4 %	22.7 %	2.1 %	2.1 %	47.4 %	0.9 %	3.1 %	0.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	97.869 %	4.156 ppb	0.493 ppb	0.361 ppb	4.490 ppb	0.111 ppb	1.130 ppb	32.055 ppb	31.495 ppb
Concentration per Run 1	98.404 %	4.064 ppb	0.495 ppb	0.373 ppb	3.360 ppb	0.109 ppb	1.144 ppb	32.091 ppb	31.629 ppb
Concentration per Run 2	96.543 %	4.200 ppb	0.486 ppb	0.345 ppb	6.066 ppb	0.106 ppb	1.073 ppb	32.869 ppb	31.664 ppb
Concentration per Run 3	98.659 %	4.204 ppb	0.498 ppb	0.364 ppb	4.042 ppb	0.120 ppb	1.174 ppb	31.207 ppb	31.191 ppb
Concentration RSD	1.2 %	1.9 %	1.3 %	4.0 %	31.4 %	6.6 %	4.6 %	2.6 %	0.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.021 %	100.053 %	0.241 ppb	0.553 ppb	93.318 ppb	0.414 ppb	93.966 %	93.126 %	0.172 ppb
Concentration per Run 1	105.277 %	98.097 %	0.184 ppb	0.628 ppb	92.296 ppb	0.395 ppb	92.859 %	92.622 %	0.170 ppb
Concentration per Run 2	103.739 %	98.966 %	0.338 ppb	0.461 ppb	94.989 ppb	0.413 ppb	93.142 %	92.247 %	0.177 ppb
Concentration per Run 3	103.046 %	103.096 %	0.202 ppb	0.568 ppb	92.668 ppb	0.432 ppb	95.897 %	94.508 %	0.169 ppb
Concentration RSD	1.1 %	2.7 %	34.9 %	15.3 %	1.6 %	4.5 %	1.8 %	1.3 %	2.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.023 ppb	98.952 %	95.075 %	0.317 ppb	129.357 ppb	103.325 %	97.659 %	104.666 %	97.380 %
Concentration per Run 1	0.032 ppb	98.008 %	96.098 %	0.311 ppb	125.719 ppb	103.081 %	97.794 %	104.578 %	96.192 %
Concentration per Run 2	0.019 ppb	100.144 %	94.654 %	0.316 ppb	130.865 ppb	103.555 %	96.424 %	104.170 %	97.713 %
Concentration per Run 3	0.019 ppb	98.703 %	94.472 %	0.323 ppb	131.488 ppb	103.338 %	98.758 %	105.248 %	98.234 %
Concentration RSD	30.4 %	1.1 %	0.9 %	1.9 %	2.4 %	0.2 %	1.2 %	0.5 %	1.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.035 ppb	0.018 ppb	95.862 %	93.240 %
Concentration per Run 1	0.019 ppb	0.018 ppb	95.005 %	93.216 %
Concentration per Run 2	0.040 ppb	0.018 ppb	96.345 %	93.717 %
Concentration per Run 3	0.046 ppb	0.018 ppb	96.235 %	92.788 %
Concentration RSD	41.0 %	0.6 %	0.8 %	0.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 56 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-08 6020SL Rack: 1
 Analysis started at: 9/26/2024 11:29:19 AM Vial: 29

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	83.662 %	82.731 %	0.038 ppb	248,564.232 ppb	25,484.414 ppb	29.349 ppb	2,278.489 ppb	151,863.905 ppb	97.453 %
Concentration per Run 1	84.778 %	78.580 %	0.038 ppb	261,516.875 ppb	27,381.623 ppb	30.368 ppb	2,365.706 ppb	157,073.880 ppb	97.461 %
Concentration per Run 2	84.353 %	88.667 %	0.041 ppb	238,216.603 ppb	23,598.453 ppb	31.049 ppb	2,231.360 ppb	151,923.171 ppb	96.979 %
Concentration per Run 3	81.855 %	80.946 %	0.036 ppb	245,959.217 ppb	25,473.164 ppb	26.631 ppb	2,238.400 ppb	146,594.663 ppb	97.919 %
Concentration RSD	1.9 %	6.4 %	6.2 %	4.8 %	7.4 %	8.1 %	3.3 %	3.5 %	0.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.537 %	0.287 ppb	0.386 ppb	1,557.482 ppb	27.976 ppb	5.849 ppb	16.312 ppb	1.601 ppb	3.762 ppb
Concentration per Run 1	86.427 %	0.300 ppb	0.411 ppb	1,653.777 ppb	30.703 ppb	6.247 ppb	17.558 ppb	1.718 ppb	4.009 ppb
Concentration per Run 2	88.612 %	0.249 ppb	0.367 ppb	1,574.042 ppb	28.773 ppb	5.715 ppb	15.989 ppb	1.568 ppb	3.726 ppb
Concentration per Run 3	93.572 %	0.312 ppb	0.379 ppb	1,444.625 ppb	24.453 ppb	5.585 ppb	15.388 ppb	1.518 ppb	3.552 ppb
Concentration RSD	4.1 %	11.7 %	5.9 %	6.8 %	11.4 %	6.0 %	6.9 %	6.5 %	6.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	94.781 %	95.233 %	0.266 ppb	0.151 ppb	246.454 ppb	0.536 ppb	86.215 %	87.150 %	0.006 ppb
Concentration per Run 1	94.357 %	90.913 %	0.373 ppb	0.083 ppb	257.188 ppb	0.543 ppb	84.411 %	83.069 %	0.006 ppb
Concentration per Run 2	96.013 %	97.316 %	0.244 ppb	0.223 ppb	238.931 ppb	0.532 ppb	87.111 %	89.692 %	0.007 ppb
Concentration per Run 3	93.973 %	97.469 %	0.181 ppb	0.149 ppb	243.244 ppb	0.533 ppb	87.122 %	88.689 %	0.006 ppb
Concentration RSD	1.1 %	3.9 %	36.7 %	46.3 %	3.9 %	1.1 %	1.8 %	4.1 %	13.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.054 ppb	92.113 %	91.272 %	0.300 ppb	181.975 ppb	96.696 %	94.828 %	99.965 %	97.911 %
Concentration per Run 1	0.061 ppb	90.071 %	87.157 %	0.326 ppb	191.959 ppb	94.874 %	90.141 %	99.865 %	91.337 %
Concentration per Run 2	0.050 ppb	94.766 %	94.529 %	0.298 ppb	175.662 ppb	97.947 %	96.218 %	98.892 %	99.212 %
Concentration per Run 3	0.051 ppb	91.503 %	92.129 %	0.275 ppb	178.303 ppb	97.266 %	98.126 %	101.139 %	103.185 %
Concentration RSD	11.3 %	2.6 %	4.1 %	8.4 %	4.8 %	1.7 %	4.4 %	1.1 %	6.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.024 ppb	0.054 ppb	88.661 %	88.933 %
Concentration per Run 1	0.011 ppb	0.057 ppb	89.712 %	85.128 %
Concentration per Run 2	0.024 ppb	0.051 ppb	89.270 %	89.649 %
Concentration per Run 3	0.037 ppb	0.053 ppb	87.001 %	92.022 %
Concentration RSD	53.8 %	5.8 %	1.6 %	3.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 57 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: I2454075-02 6020TL Rack 1
 Analysis started at: 9/26/2024 11:33:59 AM Vial 32

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	72.814 %	79.244 %	0.010 ppb	437,728.750 ppb	63,299.132 ppb	29.059 ppb	51,929.973 ppb	187,270.533 ppb	87.898 %
Concentration per Run 1	73.194 %	79.950 %	0.010 ppb	426,411.311 ppb	58,891.057 ppb	24.611 ppb	49,799.282 ppb	176,662.368 ppb	89.648 %
Concentration per Run 2	72.907 %	80.573 %	0.010 ppb	436,214.830 ppb	65,242.290 ppb	31.741 ppb	52,856.714 ppb	192,853.786 ppb	86.859 %
Concentration per Run 3	72.339 %	77.210 %	0.009 ppb	450,560.108 ppb	65,764.050 ppb	30.824 ppb	53,133.922 ppb	192,295.445 ppb	87.187 %
Concentration RSD	0.6 %	2.3 %	4.9 %	2.8 %	6.0 %	13.3 %	3.6 %	4.9 %	1.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.683 %	0.201 ppb	0.347 ppb	784.447 ppb	164.232 ppb	1.742 ppb	10.775 ppb	0.716 ppb	3.956 ppb
Concentration per Run 1	91.283 %	0.190 ppb	0.341 ppb	762.138 ppb	156.285 ppb	1.659 ppb	10.653 ppb	0.659 ppb	3.936 ppb
Concentration per Run 2	89.155 %	0.110 ppb	0.384 ppb	788.569 ppb	162.843 ppb	1.790 ppb	10.564 ppb	0.736 ppb	3.900 ppb
Concentration per Run 3	88.612 %	0.302 ppb	0.315 ppb	802.634 ppb	173.568 ppb	1.778 ppb	11.108 ppb	0.753 ppb	4.033 ppb
Concentration RSD	1.6 %	47.9 %	10.0 %	2.6 %	5.3 %	4.1 %	2.7 %	6.9 %	1.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	82.169 %	92.982 %	0.442 ppb	0.308 ppb	610.532 ppb	7.364 ppb	76.017 %	85.633 %	0.002 ppb
Concentration per Run 1	81.513 %	94.237 %	0.481 ppb	0.267 ppb	589.162 ppb	6.733 ppb	76.856 %	88.049 %	0.003 ppb
Concentration per Run 2	83.686 %	92.021 %	0.334 ppb	0.347 ppb	612.626 ppb	7.518 ppb	77.069 %	84.989 %	0.002 ppb
Concentration per Run 3	81.308 %	92.689 %	0.512 ppb	0.310 ppb	629.810 ppb	7.839 ppb	74.127 %	83.860 %	0.002 ppb
Concentration RSD	1.6 %	1.2 %	21.6 %	13.1 %	3.3 %	7.7 %	2.2 %	2.5 %	23.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.025 ppb	79.947 %	91.621 %	0.179 ppb	222.665 ppb	86.235 %	95.869 %	89.743 %	100.123 %
Concentration per Run 1	0.026 ppb	79.905 %	92.188 %	0.169 ppb	218.248 ppb	86.310 %	95.436 %	90.158 %	99.722 %
Concentration per Run 2	0.024 ppb	80.154 %	91.847 %	0.182 ppb	223.709 ppb	87.247 %	96.131 %	92.310 %	100.512 %
Concentration per Run 3	0.025 ppb	79.782 %	90.828 %	0.188 ppb	226.038 ppb	85.150 %	96.040 %	86.762 %	100.136 %
Concentration RSD	5.9 %	0.2 %	0.8 %	5.3 %	1.8 %	1.2 %	0.4 %	3.1 %	0.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.020 ppb	0.055 ppb	81.922 %	90.137 %
Concentration per Run 1	0.007 ppb	0.054 ppb	82.303 %	91.078 %
Concentration per Run 2	0.023 ppb	0.055 ppb	82.190 %	89.496 %
Concentration per Run 3	0.029 ppb	0.057 ppb	81.271 %	89.838 %
Concentration RSD	56.4 %	2.4 %	0.7 %	0.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 58 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: I2454075-03 6020TL Rack 1
 Analysis started at: 9/26/2024 11:38:40 AM Vial 33

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	71.553 %	74.221 %	0.007 ppb	513,120.767 ppb	58,295.587 ppb	19.202 ppb	28,145.685 ppb	159,208.655 ppb	88.245 %
Concentration per Run 1	71.832 %	74.595 %	0.008 ppb	499,022.030 ppb	56,430.868 ppb	20.052 ppb	27,663.789 ppb	156,666.980 ppb	87.227 %
Concentration per Run 2	71.599 %	70.610 %	0.004 ppb	529,639.702 ppb	61,211.761 ppb	17.836 ppb	28,649.240 ppb	161,432.693 ppb	87.461 %
Concentration per Run 3	71.226 %	77.459 %	0.009 ppb	510,700.569 ppb	57,244.132 ppb	19.717 ppb	28,124.025 ppb	159,526.292 ppb	90.045 %
Concentration RSD	0.4 %	4.6 %	38.3 %	3.0 %	4.4 %	6.2 %	1.8 %	1.5 %	1.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	87.367 %	0.382 ppb	0.095 ppb	944.773 ppb	148.575 ppb	1.476 ppb	7.031 ppb	0.634 ppb	3.724 ppb
Concentration per Run 1	89.144 %	0.389 ppb	0.100 ppb	917.599 ppb	143.980 ppb	1.527 ppb	6.560 ppb	0.640 ppb	3.627 ppb
Concentration per Run 2	86.288 %	0.434 ppb	0.104 ppb	970.418 ppb	149.244 ppb	1.448 ppb	7.374 ppb	0.677 ppb	3.850 ppb
Concentration per Run 3	86.670 %	0.324 ppb	0.081 ppb	946.301 ppb	152.502 ppb	1.452 ppb	7.159 ppb	0.586 ppb	3.696 ppb
Concentration RSD	1.8 %	14.4 %	13.2 %	2.8 %	2.9 %	3.0 %	6.0 %	7.2 %	3.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	84.892 %	93.274 %	0.730 ppb	0.146 ppb	517,380 ppb	4.756 ppb	75.482 %	86.348 %	0.006 ppb
Concentration per Run 1	84.194 %	94.886 %	0.720 ppb	0.130 ppb	498.544 ppb	4.565 ppb	76.110 %	88.667 %	0.006 ppb
Concentration per Run 2	86.168 %	91.385 %	0.752 ppb	0.208 ppb	529.148 ppb	5.019 ppb	75.865 %	84.645 %	0.006 ppb
Concentration per Run 3	84.313 %	93.550 %	0.719 ppb	0.099 ppb	524.448 ppb	4.684 ppb	74.471 %	85.734 %	0.006 ppb
Concentration RSD	1.3 %	1.9 %	2.5 %	38.2 %	3.2 %	4.9 %	1.2 %	2.4 %	3.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.022 ppb	79.914 %	93.641 %	0.120 ppb	227.892 ppb	87.603 %	98.128 %	90.903 %	102.750 %
Concentration per Run 1	0.022 ppb	79.246 %	95.122 %	0.125 ppb	225.669 ppb	86.332 %	98.809 %	89.898 %	102.270 %
Concentration per Run 2	0.026 ppb	79.977 %	92.625 %	0.122 ppb	230.576 ppb	89.122 %	96.502 %	91.101 %	104.119 %
Concentration per Run 3	0.018 ppb	80.520 %	93.178 %	0.112 ppb	227.430 ppb	87.356 %	99.074 %	91.711 %	101.860 %
Concentration RSD	18.0 %	0.8 %	1.4 %	6.0 %	1.1 %	1.6 %	1.4 %	1.0 %	1.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.017 ppb	0.050 ppb	80.678 %	88.032 %
Concentration per Run 1	0.007 ppb	0.051 ppb	78.865 %	90.033 %
Concentration per Run 2	0.019 ppb	0.050 ppb	80.703 %	87.264 %
Concentration per Run 3	0.026 ppb	0.051 ppb	82.467 %	86.800 %
Concentration RSD	53.3 %	1.2 %	2.2 %	2.0 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 59 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-04 6020TL Rack: 1
 Analysis started at: 9/26/2024 11:43:22 AM Vial: 34

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	77.144 %	83.312 %	0.004 ppb	208,820.386 ppb	81,035.369 ppb	4.355 ppb	135,792.059 ppb	232,362.350 ppb	93.935 %
Concentration per Run 1	77.942 %	84.059 %	0.005 ppb	203,078.703 ppb	78,895.422 ppb	4.841 ppb	133,820.552 ppb	224,235.162 ppb	93.872 %
Concentration per Run 2	76.321 %	84.433 %	0.006 ppb	210,413.796 ppb	81,109.479 ppb	3.101 ppb	136,490.093 ppb	236,112.648 ppb	94.820 %
Concentration per Run 3	77.168 %	81.444 %	0.000 ppb	212,968.658 ppb	83,101.205 ppb	5.122 ppb	137,065.532 ppb	236,739.241 ppb	93.112 %
Concentration RSD	1.1 %	2.0 %	78.6 %	2.5 %	2.6 %	25.1 %	1.3 %	3.0 %	0.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	93.487 %	0.345 ppb	0.210 ppb	999.054 ppb	278.449 ppb	2.765 ppb	13.080 ppb	0.855 ppb	20.692 ppb
Concentration per Run 1	96.080 %	0.354 ppb	0.188 ppb	968.287 ppb	261.857 ppb	2.781 ppb	12.684 ppb	0.848 ppb	19.802 ppb
Concentration per Run 2	92.485 %	0.312 ppb	0.220 ppb	1,003.971 ppb	285.651 ppb	2.674 ppb	13.452 ppb	0.794 ppb	20.857 ppb
Concentration per Run 3	91.895 %	0.369 ppb	0.223 ppb	1,024.905 ppb	287.840 ppb	2.841 ppb	13.103 ppb	0.924 ppb	21.418 ppb
Concentration RSD	2.4 %	8.5 %	9.2 %	2.9 %	5.2 %	3.1 %	2.9 %	7.6 %	4.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	86.624 %	95.837 %	1.386 ppb	0.184 ppb	819.467 ppb	5.358 ppb	79.380 %	87.641 %	0.001 ppb
Concentration per Run 1	86.918 %	97.923 %	1.452 ppb	0.194 ppb	782.024 ppb	5.063 ppb	78.583 %	89.610 %	0.000 ppb
Concentration per Run 2	86.632 %	95.693 %	1.354 ppb	0.227 ppb	841.662 ppb	5.335 ppb	79.887 %	85.288 %	0.002 ppb
Concentration per Run 3	86.321 %	93.895 %	1.351 ppb	0.132 ppb	834.715 ppb	5.676 ppb	79.669 %	88.026 %	0.002 ppb
Concentration RSD	0.3 %	2.1 %	4.1 %	26.4 %	4.0 %	5.7 %	0.9 %	2.5 %	60.8 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.014 ppb	82.314 %	94.775 %	0.245 ppb	308.351 ppb	90.201 %	97.276 %	92.794 %	102.468 %
Concentration per Run 1	0.013 ppb	81.623 %	95.080 %	0.238 ppb	301.254 ppb	90.232 %	99.144 %	92.287 %	104.278 %
Concentration per Run 2	0.007 ppb	82.242 %	94.412 %	0.236 ppb	309.055 ppb	90.391 %	96.240 %	91.261 %	101.187 %
Concentration per Run 3	0.022 ppb	83.075 %	94.832 %	0.261 ppb	314.744 ppb	89.981 %	96.444 %	94.836 %	101.937 %
Concentration RSD	53.6 %	0.9 %	0.4 %	5.6 %	2.2 %	0.2 %	1.7 %	2.0 %	1.6 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.015 ppb	0.058 ppb	81.072 %	89.200 %
Concentration per Run 1	0.006 ppb	0.056 ppb	80.890 %	90.632 %
Concentration per Run 2	0.019 ppb	0.060 ppb	80.046 %	89.079 %
Concentration per Run 3	0.022 ppb	0.059 ppb	82.281 %	87.888 %
Concentration RSD	56.0 %	3.2 %	1.4 %	1.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 60 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-05 6020TL Rack: 1
 Analysis started at: 9/26/2024 11:48:04 AM Vial: 35

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	73.379 %	79.078 %	0.002 ppb	463,363.647 ppb	68,950.773 ppb	85.826 ppb	54,304.793 ppb	204,887.124 ppb	89.622 %
Concentration per Run 1	73.479 %	85.056 %	0.003 ppb	452,261.448 ppb	66,746.883 ppb	84.537 ppb	52,922.730 ppb	202,633.190 ppb	88.300 %
Concentration per Run 2	73.164 %	77.957 %	0.000 ppb	465,707.836 ppb	68,267.686 ppb	79.589 ppb	53,442.926 ppb	203,835.302 ppb	91.282 %
Concentration per Run 3	73.494 %	74.221 %	0.002 ppb	472,121.658 ppb	71,837.750 ppb	93.353 ppb	56,548.722 ppb	208,192.882 ppb	89.285 %
Concentration RSD	0.3 %	7.0 %	93.2 %	2.2 %	3.8 %	8.1 %	3.6 %	1.4 %	1.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	85.379 %	0.306 ppb	0.775 ppb	841.865 ppb	308.233 ppb	1.856 ppb	11.491 ppb	0.932 ppb	4.552 ppb
Concentration per Run 1	84.936 %	0.276 ppb	0.755 ppb	834.299 ppb	310.763 ppb	1.884 ppb	11.587 ppb	0.901 ppb	4.564 ppb
Concentration per Run 2	86.670 %	0.299 ppb	0.807 ppb	833.253 ppb	304.551 ppb	1.866 ppb	11.635 ppb	0.883 ppb	4.427 ppb
Concentration per Run 3	84.531 %	0.342 ppb	0.762 ppb	858.042 ppb	309.385 ppb	1.820 ppb	11.250 ppb	1.011 ppb	4.666 ppb
Concentration RSD	1.3 %	11.0 %	3.6 %	1.7 %	1.1 %	1.8 %	1.8 %	7.4 %	2.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	83.491 %	90.641 %	0.380 ppb	0.287 ppb	654.830 ppb	7.921 ppb	75.650 %	82.960 %	0.001 ppb
Concentration per Run 1	85.650 %	91.742 %	0.344 ppb	0.311 ppb	633.701 ppb	7.805 ppb	77.074 %	83.570 %	0.001 ppb
Concentration per Run 2	82.086 %	90.975 %	0.353 ppb	0.343 ppb	655.319 ppb	8.122 ppb	73.900 %	83.181 %	0.001 ppb
Concentration per Run 3	82.735 %	89.206 %	0.442 ppb	0.206 ppb	675.469 ppb	7.835 ppb	75.976 %	82.129 %	0.000 ppb
Concentration RSD	2.3 %	1.4 %	14.3 %	25.0 %	3.2 %	2.2 %	2.1 %	0.9 %	57.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.028 ppb	79.896 %	91.036 %	0.170 ppb	233.745 ppb	87.648 %	93.288 %	89.934 %	98.780 %
Concentration per Run 1	0.029 ppb	78.938 %	90.859 %	0.169 ppb	229.664 ppb	89.879 %	94.508 %	92.297 %	97.807 %
Concentration per Run 2	0.025 ppb	79.754 %	91.644 %	0.147 ppb	238.020 ppb	86.299 %	91.586 %	88.395 %	97.669 %
Concentration per Run 3	0.029 ppb	80.996 %	90.605 %	0.193 ppb	233.552 ppb	86.765 %	93.770 %	89.110 %	100.865 %
Concentration RSD	8.8 %	1.3 %	0.6 %	13.6 %	1.8 %	2.2 %	1.6 %	2.3 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.016 ppb	0.092 ppb	79.728 %	85.087 %
Concentration per Run 1	0.007 ppb	0.094 ppb	81.024 %	84.472 %
Concentration per Run 2	0.015 ppb	0.092 ppb	79.201 %	85.321 %
Concentration per Run 3	0.026 ppb	0.091 ppb	78.960 %	85.468 %
Concentration RSD	59.1 %	1.5 %	1.4 %	0.6 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index:	61	User name	ALPHALAB\ICPMSRQ	Comment	empty
Analysis label:	xCCV	Rack	0		
Analysis started at:	9/26/2024 11:52:46 AM	Vial	9		

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 62 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 11:55:01 AM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	100.483 %	92.860 %	55.605 ppb	6,160.611 ppb	6,279.330 ppb	63.478 ppb	6,173.255 ppb	6,051.141 ppb	100.906 %
Concentration per Run 1	100.657 %	97.011 %	56.677 ppb	5,778.555 ppb	5,775.398 ppb	53.567 ppb	5,887.695 ppb	5,798.141 ppb	96.028 %
Concentration per Run 2	100.673 %	89.165 %	54.842 ppb	6,421.398 ppb	6,550.444 ppb	69.256 ppb	6,261.441 ppb	5,849.013 ppb	104.111 %
Concentration per Run 3	100.118 %	92.403 %	55.297 ppb	6,281.879 ppb	6,512.149 ppb	67.611 ppb	6,370.630 ppb	6,506.270 ppb	102.579 %
Recovery Percentage 1			92.675 %	102.677 %	104.656 %	105.797 %	102.888 %	100.852 %	
Concentration RSD	0.3 %	4.2 %	1.7 %	5.5 %	7.0 %	13.6 %	4.1 %	6.5 %	4.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	107.870 %	56.614 ppb	54.451 ppb	60.615 ppb	5,924.349 ppb	58.350 ppb	58.287 ppb	57.837 ppb	59.473 ppb
Concentration per Run 1	111.355 %	53.600 ppb	52.374 ppb	58.012 ppb	5,825.662 ppb	54.532 ppb	57.237 ppb	56.431 ppb	57.504 ppb
Concentration per Run 2	107.203 %	57.897 ppb	54.309 ppb	61.487 ppb	5,915.453 ppb	58.952 ppb	57.431 ppb	57.423 ppb	59.910 ppb
Concentration per Run 3	105.053 %	58.347 ppb	56.670 ppb	62.346 ppb	6,031.933 ppb	61.567 ppb	60.193 ppb	59.656 ppb	61.006 ppb
Recovery Percentage 1		94.357 %	90.752 %	101.025 %	98.739 %	97.250 %	97.145 %	96.395 %	99.122 %
Concentration RSD	3.0 %	4.6 %	4.0 %	3.8 %	1.7 %	6.1 %	2.8 %	2.9 %	3.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.050 %	100.987 %	59.454 ppb	61.036 ppb	62.531 ppb	62.503 ppb	93.643 %	97.866 %	59.127 ppb
Concentration per Run 1	97.886 %	102.392 %	57.774 ppb	59.449 ppb	60.119 ppb	59.570 ppb	93.715 %	101.408 %	57.636 ppb
Concentration per Run 2	99.789 %	101.140 %	58.989 ppb	62.590 ppb	63.151 ppb	63.727 ppb	94.671 %	95.755 %	59.643 ppb
Concentration per Run 3	99.476 %	99.428 %	61.598 ppb	61.068 ppb	64.322 ppb	64.212 ppb	92.543 %	96.436 %	60.102 ppb
Recovery Percentage 1			99.089 %	101.726 %	104.218 %	104.172 %			98.545 %
Concentration RSD	1.0 %	1.5 %	3.3 %	2.6 %	3.5 %	4.1 %	1.1 %	3.2 %	2.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	58.608 ppb	96.114 %	103.953 %	60.233 ppb	61.090 ppb	96.493 %	100.843 %	98.375 %	101.934 %
Concentration per Run 1	57.497 ppb	94.766 %	106.266 %	58.685 ppb	60.044 ppb	97.145 %	103.590 %	97.494 %	103.778 %
Concentration per Run 2	59.290 ppb	98.162 %	103.733 %	60.380 ppb	61.381 ppb	96.756 %	97.923 %	100.252 %	100.029 %
Concentration per Run 3	59.036 ppb	95.414 %	101.861 %	61.634 ppb	61.846 ppb	95.578 %	101.018 %	97.380 %	101.994 %
Recovery Percentage 1	97.680 %			100.389 %	101.817 %				
Concentration RSD	1.7 %	1.9 %	2.1 %	2.5 %	1.5 %	0.8 %	2.8 %	1.7 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	57.898 ppb	57.409 ppb	94.005 %	97.735 %
Concentration per Run 1	53.640 ppb	55.188 ppb	93.813 %	100.461 %
Concentration per Run 2	62.305 ppb	59.406 ppb	94.884 %	95.073 %
Concentration per Run 3	57.749 ppb	57.634 ppb	93.319 %	97.670 %
Recovery Percentage 1	96.496 %	95.682 %		
Concentration RSD	7.5 %	3.7 %	0.9 %	2.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 63 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 11:59:45 AM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.733 %	92.611 %	0.010 ppb	20.271 ppb	0.337 ppb	-0.478 ppb	18.567 ppb	6.890 ppb	98.452 %
Concentration per Run 1	105.076 %	86.052 %	0.010 ppb	23.050 ppb	0.573 ppb	0.042 ppb	19.377 ppb	5.017 ppb	97.791 %
Concentration per Run 2	105.483 %	96.638 %	0.011 ppb	19.211 ppb	0.090 ppb	-0.436 ppb	18.899 ppb	4.245 ppb	99.613 %
Concentration per Run 3	100.640 %	95.143 %	0.010 ppb	18.551 ppb	0.349 ppb	-1.040 ppb	17.426 ppb	11.406 ppb	97.952 %
Recovery Percentage 1			2.055 %	20.271 %	0.482 %	-4.779 %	18.567 %	6.890 %	
Concentration RSD	2.6 %	6.2 %	2.3 %	12.0 %	71.7 %	113.5 %	5.5 %	57.0 %	1.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.433 %	0.002 ppb	-0.002 ppb	0.031 ppb	2.779 ppb	0.001 ppb	0.087 ppb	-0.067 ppb	0.002 ppb
Concentration per Run 1	85.583 %	-0.006 ppb	0.002 ppb	0.039 ppb	2.868 ppb	0.004 ppb	0.090 ppb	-0.082 ppb	0.010 ppb
Concentration per Run 2	90.184 %	0.015 ppb	-0.005 ppb	0.041 ppb	2.952 ppb	-0.002 ppb	0.132 ppb	-0.050 ppb	0.001 ppb
Concentration per Run 3	92.531 %	-0.002 ppb	-0.004 ppb	0.012 ppb	2.516 ppb	0.000 ppb	0.039 ppb	-0.068 ppb	-0.005 ppb
Recovery Percentage 1		0.043 %	-0.209 %	3.068 %	5.557 %	0.198 %	4.351 %	-6.652 %	0.035 %
Concentration RSD	4.0 %	518.2 %	188.9 %	52.6 %	8.3 %	287.7 %	53.2 %	23.5 %	425.2 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.045 %	95.412 %	0.022 ppb	0.090 ppb	-0.004 ppb	0.228 ppb	96.660 %	95.021 %	0.005 ppb
Concentration per Run 1	101.324 %	89.668 %	0.090 ppb	0.023 ppb	-0.005 ppb	0.211 ppb	97.094 %	89.076 %	0.004 ppb
Concentration per Run 2	98.559 %	99.677 %	0.016 ppb	0.087 ppb	0.004 ppb	0.212 ppb	97.774 %	96.311 %	0.005 ppb
Concentration per Run 3	100.251 %	96.891 %	-0.039 ppb	0.161 ppb	-0.010 ppb	0.261 ppb	95.112 %	99.676 %	0.005 ppb
Recovery Percentage 1			4.430 %	1.808 %	-0.751 %	11.404 %			1.129 %
Concentration RSD	1.4 %	5.4 %	292.5 %	76.5 %	193.1 %	12.5 %	1.4 %	5.7 %	8.9 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.002 ppb	99.234 %	96.147 %	0.052 ppb	0.021 ppb	96.527 %	93.403 %	97.068 %	93.226 %
Concentration per Run 1	0.000 ppb	99.119 %	88.798 %	0.055 ppb	0.024 ppb	96.013 %	88.012 %	96.092 %	87.224 %
Concentration per Run 2	0.002 ppb	99.493 %	97.855 %	0.047 ppb	0.026 ppb	94.910 %	94.926 %	97.886 %	95.085 %
Concentration per Run 3	0.003 ppb	99.089 %	101.787 %	0.054 ppb	0.015 ppb	98.657 %	97.272 %	97.225 %	97.370 %
Recovery Percentage 1				1.297 %	4.297 %				
Concentration RSD	70.7 %	0.2 %	6.9 %	7.9 %	27.1 %	2.0 %	5.2 %	0.9 %	5.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.280 ppb	0.007 ppb	97.046 %	91.364 %
Concentration per Run 1	0.197 ppb	0.005 ppb	97.817 %	85.912 %
Concentration per Run 2	0.312 ppb	0.009 ppb	96.983 %	93.172 %
Concentration per Run 3	0.330 ppb	0.006 ppb	96.338 %	95.008 %
Recovery Percentage 1	27.969 %	0.685 %		
Concentration RSD	25.8 %	25.2 %	0.8 %	5.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 64 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-02d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:05:29 PM Vial: 47

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.514 %	90.867 %	0.008 ppb	47,451.082 ppb	7,222.550 ppb	2.578 ppb	5,726.326 ppb	21,029.400 ppb	104.808 %
Concentration per Run 1	101.205 %	88.916 %	0.010 ppb	47,900.068 ppb	7,286.503 ppb	4.077 ppb	5,615.132 ppb	20,610.689 ppb	107.996 %
Concentration per Run 2	100.923 %	90.162 %	0.007 ppb	48,374.407 ppb	7,660.346 ppb	0.260 ppb	6,109.504 ppb	22,040.318 ppb	103.829 %
Concentration per Run 3	102.415 %	93.524 %	0.006 ppb	46,078.769 ppb	6,720.799 ppb	3.396 ppb	5,454.342 ppb	20,437.192 ppb	102.600 %
Concentration RSD	0.8 %	2.6 %	25.6 %	2.6 %	6.5 %	79.0 %	6.0 %	4.2 %	2.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	93.075 %	0.012 ppb	0.022 ppb	88.298 ppb	20.715 ppb	0.202 ppb	1.187 ppb	-0.021 ppb	0.664 ppb
Concentration per Run 1	95.907 %	0.001 ppb	0.010 ppb	86.857 ppb	18.594 ppb	0.239 ppb	1.340 ppb	-0.031 ppb	0.674 ppb
Concentration per Run 2	88.890 %	0.017 ppb	0.047 ppb	91.652 ppb	23.441 ppb	0.187 ppb	1.174 ppb	-0.043 ppb	0.683 ppb
Concentration per Run 3	94.427 %	0.017 ppb	0.009 ppb	86.385 ppb	20.110 ppb	0.180 ppb	1.047 ppb	0.010 ppb	0.636 ppb
Concentration RSD	4.0 %	79.0 %	100.0 %	3.3 %	12.0 %	16.0 %	12.3 %	132.8 %	3.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.662 %	94.813 %	0.062 ppb	0.033 ppb	61.494 ppb	0.812 ppb	91.523 %	89.735 %	0.001 ppb
Concentration per Run 1	100.465 %	93.829 %	0.041 ppb	0.020 ppb	61.543 ppb	0.821 ppb	92.603 %	89.225 %	0.002 ppb
Concentration per Run 2	101.120 %	95.127 %	0.085 ppb	0.026 ppb	61.856 ppb	0.811 ppb	90.083 %	87.128 %	0.001 ppb
Concentration per Run 3	100.401 %	95.482 %	0.062 ppb	0.054 ppb	61.084 ppb	0.804 ppb	91.882 %	92.851 %	0.001 ppb
Concentration RSD	0.4 %	0.9 %	35.2 %	53.8 %	0.6 %	1.1 %	1.4 %	3.2 %	40.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	94.345 %	92.185 %	0.039 ppb	23.102 ppb	96.400 %	91.402 %	96.272 %	89.475 %
Concentration per Run 1	0.003 ppb	93.024 %	90.792 %	0.040 ppb	22.728 ppb	96.330 %	90.057 %	95.335 %	89.105 %
Concentration per Run 2	0.006 ppb	92.827 %	89.285 %	0.039 ppb	24.238 ppb	95.392 %	89.181 %	97.886 %	85.754 %
Concentration per Run 3	-0.001 ppb	97.183 %	96.478 %	0.037 ppb	22.341 ppb	97.477 %	94.967 %	95.596 %	93.566 %
Concentration RSD	125.7 %	2.6 %	4.1 %	3.9 %	4.3 %	1.1 %	3.4 %	1.5 %	4.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.057 ppb	0.013 ppb	89.065 %	84.888 %
Concentration per Run 1	0.032 ppb	0.014 ppb	90.333 %	84.517 %
Concentration per Run 2	0.068 ppb	0.014 ppb	86.827 %	81.125 %
Concentration per Run 3	0.071 ppb	0.010 ppb	90.036 %	89.023 %
Concentration RSD	38.0 %	16.9 %	2.2 %	4.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 65 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-03d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:10:11 PM Vial: 48

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	98.460 %	92.237 %	0.006 ppb	54,720.363 ppb	6,437.624 ppb	1.825 ppb	3,155.924 ppb	17,195.950 ppb	103.624 %
Concentration per Run 1	97.980 %	86.426 %	0.007 ppb	56,518.661 ppb	6,564.951 ppb	3.080 ppb	3,142.484 ppb	17,086.508 ppb	101.512 %
Concentration per Run 2	100.595 %	92.154 %	0.006 ppb	54,207.880 ppb	6,472.622 ppb	1.433 ppb	3,202.213 ppb	17,696.257 ppb	105.571 %
Concentration per Run 3	96.806 %	98.132 %	0.007 ppb	53,434.546 ppb	6,275.299 ppb	0.962 ppb	3,123.075 ppb	16,805.086 ppb	103.787 %
Concentration RSD	2.0 %	6.3 %	11.1 %	2.9 %	2.3 %	60.9 %	1.3 %	2.6 %	2.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	91.972 %	0.071 ppb	0.010 ppb	108.180 ppb	18.370 ppb	0.168 ppb	0.933 ppb	-0.016 ppb	0.635 ppb
Concentration per Run 1	91.421 %	0.053 ppb	0.027 ppb	108.249 ppb	19.266 ppb	0.165 ppb	0.889 ppb	-0.023 ppb	0.595 ppb
Concentration per Run 2	90.415 %	0.102 ppb	0.002 ppb	109.644 ppb	19.684 ppb	0.175 ppb	0.995 ppb	0.011 ppb	0.665 ppb
Concentration per Run 3	94.080 %	0.059 ppb	0.002 ppb	106.646 ppb	16.161 ppb	0.164 ppb	0.915 ppb	-0.037 ppb	0.645 ppb
Concentration RSD	2.1 %	37.9 %	142.9 %	1.4 %	10.5 %	3.5 %	5.9 %	152.2 %	5.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.184 %	94.259 %	0.092 ppb	0.035 ppb	51.305 ppb	0.557 ppb	92.508 %	88.703 %	0.011 ppb
Concentration per Run 1	96.209 %	92.868 %	0.139 ppb	0.023 ppb	51.176 ppb	0.524 ppb	92.919 %	88.820 %	0.000 ppb
Concentration per Run 2	101.943 %	93.346 %	0.106 ppb	0.068 ppb	51.354 ppb	0.541 ppb	92.291 %	88.916 %	0.032 ppb
Concentration per Run 3	102.401 %	96.562 %	0.032 ppb	0.015 ppb	51.386 ppb	0.606 ppb	92.314 %	88.374 %	0.002 ppb
Concentration RSD	3.4 %	2.1 %	59.5 %	80.9 %	0.2 %	7.7 %	0.4 %	0.3 %	155.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.011 ppb	94.189 %	88.712 %	0.030 ppb	24.317 ppb	93.474 %	87.821 %	95.132 %	88.576 %
Concentration per Run 1	0.003 ppb	94.402 %	85.356 %	0.014 ppb	24.434 ppb	93.437 %	85.941 %	92.875 %	87.347 %
Concentration per Run 2	0.028 ppb	93.400 %	90.571 %	0.043 ppb	24.809 ppb	92.593 %	87.646 %	96.336 %	89.497 %
Concentration per Run 3	0.003 ppb	94.766 %	90.209 %	0.034 ppb	23.707 ppb	94.392 %	89.876 %	96.185 %	88.885 %
Concentration RSD	131.0 %	0.8 %	3.3 %	49.5 %	2.3 %	1.0 %	2.2 %	2.1 %	1.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.042 ppb	0.015 ppb	88.321 %	81.794 %
Concentration per Run 1	0.018 ppb	0.011 ppb	88.585 %	79.522 %
Concentration per Run 2	0.055 ppb	0.023 ppb	87.636 %	82.415 %
Concentration per Run 3	0.053 ppb	0.013 ppb	88.743 %	83.444 %
Concentration RSD	49.0 %	42.9 %	0.7 %	2.5 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 66 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-04d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:14:54 PM Vial: 49

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.116 %	101.702 %	0.003 ppb	22,282.978 ppb	9,005.409 ppb	0.145 ppb	16,366.184 ppb	25,167.078 ppb	106.709 %
Concentration per Run 1	104.613 %	97.260 %	0.004 ppb	22,213.415 ppb	8,879.773 ppb	0.349 ppb	15,598.283 ppb	24,298.472 ppb	107.380 %
Concentration per Run 2	102.358 %	101.619 %	0.004 ppb	22,386.119 ppb	9,109.666 ppb	0.080 ppb	16,649.536 ppb	25,346.059 ppb	102.450 %
Concentration per Run 3	105.377 %	106.227 %	0.001 ppb	22,249.400 ppb	9,026.788 ppb	0.007 ppb	16,850.732 ppb	25,856.702 ppb	110.296 %
Concentration RSD	1.5 %	4.4 %	55.0 %	0.4 %	1.3 %	123.8 %	4.1 %	3.2 %	3.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	94.366 %	0.072 ppb	0.003 ppb	112.078 ppb	31.435 ppb	0.295 ppb	1.554 ppb	-0.012 ppb	2.495 ppb
Concentration per Run 1	97.156 %	0.064 ppb	-0.012 ppb	106.917 ppb	27.753 ppb	0.288 ppb	1.449 ppb	-0.051 ppb	2.325 ppb
Concentration per Run 2	91.999 %	0.078 ppb	0.007 ppb	115.531 ppb	32.649 ppb	0.284 ppb	1.572 ppb	0.019 ppb	2.587 ppb
Concentration per Run 3	93.942 %	0.074 ppb	0.014 ppb	113.785 ppb	33.905 ppb	0.312 ppb	1.641 ppb	-0.003 ppb	2.571 ppb
Concentration RSD	2.8 %	10.0 %	454.6 %	4.1 %	10.3 %	5.2 %	6.2 %	304.6 %	5.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.353 %	96.862 %	0.179 ppb	0.069 ppb	79.975 ppb	0.611 ppb	92.165 %	91.382 %	0.000 ppb
Concentration per Run 1	98.617 %	99.438 %	0.206 ppb	0.091 ppb	76.650 ppb	0.591 ppb	92.163 %	92.153 %	0.001 ppb
Concentration per Run 2	101.570 %	94.124 %	0.152 ppb	0.061 ppb	81.517 ppb	0.603 ppb	91.290 %	91.039 %	0.001 ppb
Concentration per Run 3	103.871 %	97.026 %	0.179 ppb	0.053 ppb	81.757 ppb	0.639 ppb	93.042 %	90.954 %	-0.001 ppb
Concentration RSD	2.6 %	2.7 %	15.3 %	29.2 %	3.6 %	4.1 %	1.0 %	0.7 %	395.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	95.104 %	91.846 %	0.037 ppb	32.226 ppb	93.332 %	90.999 %	93.907 %	89.539 %
Concentration per Run 1	0.000 ppb	95.250 %	93.702 %	0.026 ppb	30.816 ppb	93.491 %	92.771 %	92.405 %	90.324 %
Concentration per Run 2	0.004 ppb	94.299 %	90.825 %	0.039 ppb	32.737 ppb	92.228 %	89.564 %	95.074 %	88.553 %
Concentration per Run 3	0.000 ppb	95.764 %	91.010 %	0.045 ppb	33.126 ppb	94.278 %	90.663 %	94.243 %	89.740 %
Concentration RSD	126.0 %	0.8 %	1.8 %	27.3 %	3.8 %	1.1 %	1.8 %	1.5 %	1.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.027 ppb	0.012 ppb	87.992 %	83.678 %
Concentration per Run 1	0.008 ppb	0.011 ppb	87.728 %	85.313 %
Concentration per Run 2	0.032 ppb	0.013 ppb	87.659 %	83.158 %
Concentration per Run 3	0.040 ppb	0.011 ppb	88.589 %	82.564 %
Concentration RSD	62.6 %	11.0 %	0.6 %	1.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 67 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: I2454075-05d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:19:34 PM Vial: 50

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	101.920 %	95.766 %	0.006 ppb	47,444.381 ppb	6,946.107 ppb	9.901 ppb	5,581.850 ppb	20,005.845 ppb	106.483 %
Concentration per Run 1	100.044 %	96.513 %	0.006 ppb	46,344.320 ppb	6,759.504 ppb	11.200 ppb	5,461.906 ppb	19,850.629 ppb	108.308 %
Concentration per Run 2	100.547 %	96.887 %	0.008 ppb	47,356.741 ppb	6,918.531 ppb	7.499 ppb	5,571.713 ppb	19,839.233 ppb	107.062 %
Concentration per Run 3	105.169 %	93.898 %	0.004 ppb	48,632.082 ppb	7,160.285 ppb	11.003 ppb	5,711.931 ppb	20,327.672 ppb	104.079 %
Concentration RSD	2.8 %	1.7 %	30.9 %	2.4 %	2.9 %	21.0 %	2.2 %	1.4 %	2.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.647 %	0.076 ppb	0.081 ppb	87.344 ppb	33.010 ppb	0.186 ppb	1.353 ppb	0.018 ppb	0.668 ppb
Concentration per Run 1	94.300 %	0.083 ppb	0.065 ppb	84.626 ppb	30.652 ppb	0.193 ppb	1.296 ppb	-0.013 ppb	0.669 ppb
Concentration per Run 2	92.277 %	0.098 ppb	0.092 ppb	89.393 ppb	33.968 ppb	0.170 ppb	1.445 ppb	0.071 ppb	0.665 ppb
Concentration per Run 3	91.364 %	0.046 ppb	0.086 ppb	88.013 ppb	34.411 ppb	0.194 ppb	1.317 ppb	-0.004 ppb	0.670 ppb
Concentration RSD	1.6 %	35.9 %	17.5 %	2.8 %	6.2 %	7.3 %	6.0 %	254.0 %	0.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.902 %	97.499 %	0.016 ppb	0.029 ppb	59.546 ppb	0.828 ppb	93.299 %	90.287 %	0.000 ppb
Concentration per Run 1	103.139 %	99.452 %	0.019 ppb	0.048 ppb	57.332 ppb	0.757 ppb	92.521 %	91.651 %	0.000 ppb
Concentration per Run 2	102.648 %	94.247 %	0.001 ppb	-0.017 ppb	61.115 ppb	0.887 ppb	94.813 %	89.036 %	-0.001 ppb
Concentration per Run 3	102.919 %	98.798 %	0.028 ppb	0.057 ppb	60.192 ppb	0.841 ppb	92.565 %	90.174 %	0.001 ppb
Concentration RSD	0.2 %	2.9 %	87.9 %	137.3 %	3.3 %	8.0 %	1.4 %	1.5 %	582.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	95.374 %	91.593 %	0.036 ppb	22.806 ppb	95.887 %	89.891 %	95.744 %	88.879 %
Concentration per Run 1	0.003 ppb	95.740 %	91.599 %	0.038 ppb	22.722 ppb	95.779 %	89.691 %	95.466 %	90.032 %
Concentration per Run 2	0.002 ppb	94.625 %	90.566 %	0.039 ppb	23.273 ppb	94.858 %	90.249 %	97.155 %	88.443 %
Concentration per Run 3	0.004 ppb	95.758 %	92.613 %	0.031 ppb	22.422 ppb	97.024 %	89.733 %	94.612 %	88.161 %
Concentration RSD	40.9 %	0.7 %	1.1 %	12.4 %	1.9 %	1.1 %	0.3 %	1.4 %	1.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.021 ppb	0.015 ppb	89.529 %	84.256 %
Concentration per Run 1	0.008 ppb	0.016 ppb	89.531 %	84.572 %
Concentration per Run 2	0.023 ppb	0.014 ppb	90.406 %	83.595 %
Concentration per Run 3	0.033 ppb	0.014 ppb	88.652 %	84.601 %
Concentration RSD	59.7 %	9.7 %	1.0 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 68 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454050-04 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:24:15 PM Vial: 46

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.070 %	92.362 %	0.012 ppb	6,743.729 ppb	11,890.527 ppb	44.916 ppb	3,178.209 ppb	29,323.420 ppb	109.129 %
Concentration per Run 1	106.622 %	89.539 %	0.012 ppb	6,825.004 ppb	12,126.746 ppb	40.436 ppb	3,132.318 ppb	28,389.892 ppb	106.473 %
Concentration per Run 2	106.605 %	94.520 %	0.010 ppb	6,633.499 ppb	11,837.063 ppb	44.785 ppb	3,184.201 ppb	29,333.237 ppb	109.241 %
Concentration per Run 3	107.983 %	93.026 %	0.013 ppb	6,772.684 ppb	11,707.773 ppb	49.528 ppb	3,218.106 ppb	30,247.131 ppb	111.673 %
Concentration RSD	0.7 %	2.8 %	12.9 %	1.5 %	1.8 %	10.1 %	1.4 %	3.2 %	2.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	90.801 %	0.420 ppb	0.446 ppb	6,199.520 ppb	6,093.016 ppb	9.508 ppb	4.516 ppb	0.701 ppb	1.852 ppb
Concentration per Run 1	92.832 %	0.402 ppb	0.439 ppb	6,173.085 ppb	6,250.184 ppb	9.803 ppb	4.658 ppb	0.780 ppb	1.938 ppb
Concentration per Run 2	91.560 %	0.325 ppb	0.471 ppb	6,109.095 ppb	5,772.271 ppb	9.430 ppb	4.396 ppb	0.638 ppb	1.843 ppb
Concentration per Run 3	88.011 %	0.532 ppb	0.429 ppb	6,316.379 ppb	6,256.592 ppb	9.293 ppb	4.496 ppb	0.685 ppb	1.773 ppb
Concentration RSD	2.8 %	24.9 %	4.9 %	1.7 %	4.6 %	2.8 %	2.9 %	10.3 %	4.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	106.737 %	95.786 %	1.255 ppb	0.145 ppb	197.841 ppb	0.171 ppb	98.532 %	90.400 %	0.020 ppb
Concentration per Run 1	108.124 %	93.147 %	1.325 ppb	0.164 ppb	199.472 ppb	0.178 ppb	98.237 %	88.218 %	0.016 ppb
Concentration per Run 2	105.127 %	96.438 %	1.241 ppb	0.051 ppb	193.148 ppb	0.161 ppb	100.037 %	93.559 %	0.022 ppb
Concentration per Run 3	106.959 %	97.774 %	1.198 ppb	0.220 ppb	200.904 ppb	0.174 ppb	97.320 %	89.424 %	0.022 ppb
Concentration RSD	1.4 %	2.5 %	5.1 %	59.2 %	2.1 %	5.1 %	1.4 %	3.1 %	17.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.096 ppb	101.194 %	91.474 %	0.008 ppb	73.745 ppb	102.448 %	91.224 %	102.322 %	90.469 %
Concentration per Run 1	0.087 ppb	101.957 %	90.951 %	0.003 ppb	73.425 ppb	101.107 %	91.027 %	99.911 %	90.674 %
Concentration per Run 2	0.108 ppb	100.423 %	93.103 %	0.008 ppb	73.183 ppb	103.014 %	92.655 %	102.318 %	91.910 %
Concentration per Run 3	0.091 ppb	101.201 %	90.368 %	0.012 ppb	74.628 ppb	103.221 %	89.991 %	104.736 %	88.823 %
Concentration RSD	11.8 %	0.8 %	1.6 %	59.6 %	1.0 %	1.1 %	1.5 %	2.4 %	1.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.026 ppb	0.111 ppb	98.460 %	87.833 %
Concentration per Run 1	0.013 ppb	0.110 ppb	97.635 %	88.943 %
Concentration per Run 2	0.030 ppb	0.112 ppb	100.719 %	87.619 %
Concentration per Run 3	0.034 ppb	0.111 ppb	97.027 %	86.936 %
Concentration RSD	44.2 %	0.8 %	2.0 %	1.2 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 69 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 12:28:57 PM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	105.450 %	94.188 %	58.274 ppb	6,598.906 ppb	6,202.520 ppb	64.448 ppb	6,008.494 ppb	5,977.947 ppb	105.847 %
Concentration per Run 1	106.382 %	87.422 %	58.736 ppb	7,106.724 ppb	6,799.830 ppb	64.664 ppb	6,505.527 ppb	6,417.828 ppb	105.122 %
Concentration per Run 2	104.124 %	95.641 %	59.244 ppb	6,527.149 ppb	6,136.998 ppb	68.634 ppb	5,970.740 ppb	5,865.947 ppb	103.872 %
Concentration per Run 3	105.844 %	99.502 %	56.842 ppb	6,162.846 ppb	5,670.731 ppb	60.048 ppb	5,549.216 ppb	5,650.066 ppb	108.546 %
Recovery Percentage 1			97.123 %	109.982 %	103.375 %	107.414 %	100.142 %	99.632 %	
Concentration RSD	1.1 %	6.6 %	2.2 %	7.2 %	9.1 %	6.7 %	8.0 %	6.6 %	2.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.007 %	63.239 ppb	60.455 ppb	63.396 ppb	6,614.041 ppb	64.342 ppb	64.582 ppb	64.495 ppb	63.892 ppb
Concentration per Run 1	88.080 %	66.929 ppb	63.861 ppb	64.344 ppb	6,992.064 ppb	68.983 ppb	68.302 ppb	69.150 ppb	67.335 ppb
Concentration per Run 2	92.323 %	62.877 ppb	60.487 ppb	58.039 ppb	6,524.482 ppb	62.723 ppb	64.010 ppb	63.836 ppb	62.998 ppb
Concentration per Run 3	95.618 %	59.912 ppb	57.018 ppb	67.806 ppb	6,325.578 ppb	61.319 ppb	61.435 ppb	60.499 ppb	61.343 ppb
Recovery Percentage 1		105.399 %	100.759 %	105.661 %	110.234 %	107.236 %	107.637 %	107.492 %	106.487 %
Concentration RSD	4.1 %	5.6 %	5.7 %	7.8 %	5.2 %	6.3 %	5.4 %	6.8 %	4.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.613 %	94.304 %	62.705 ppb	63.231 ppb	60.512 ppb	63.875 ppb	99.309 %	91.704 %	64.062 ppb
Concentration per Run 1	105.524 %	88.625 %	67.343 ppb	71.940 ppb	63.913 ppb	67.525 ppb	98.356 %	86.646 %	68.114 ppb
Concentration per Run 2	102.812 %	97.041 %	61.097 ppb	59.113 ppb	58.896 ppb	60.732 ppb	99.077 %	95.065 %	62.422 ppb
Concentration per Run 3	102.503 %	97.246 %	59.674 ppb	58.641 ppb	58.727 ppb	63.367 ppb	100.494 %	93.401 %	61.650 ppb
Recovery Percentage 1			104.508 %	105.385 %	100.853 %	106.458 %			106.770 %
Concentration RSD	1.6 %	5.2 %	6.5 %	11.9 %	4.9 %	5.4 %	1.1 %	4.9 %	5.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	63.763 ppb	100.956 %	91.480 %	65.418 ppb	64.869 ppb	101.137 %	90.002 %	99.916 %	88.875 %
Concentration per Run 1	68.494 ppb	100.459 %	85.545 %	69.505 ppb	69.287 ppb	101.122 %	83.055 %	98.205 %	83.928 %
Concentration per Run 2	61.971 ppb	100.130 %	92.386 %	64.686 ppb	62.010 ppb	98.682 %	93.955 %	99.959 %	89.793 %
Concentration per Run 3	60.824 ppb	102.280 %	96.508 %	62.063 ppb	63.308 ppb	103.605 %	92.995 %	101.585 %	92.903 %
Recovery Percentage 1	106.272 %			109.030 %	108.114 %				
Concentration RSD	6.5 %	1.1 %	6.1 %	5.8 %	6.0 %	2.4 %	6.7 %	1.7 %	5.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	64.653 ppb	62.571 ppb	94.390 %	85.956 %
Concentration per Run 1	66.465 ppb	66.887 ppb	94.114 %	80.889 %
Concentration per Run 2	60.726 ppb	60.120 ppb	93.651 %	88.274 %
Concentration per Run 3	66.766 ppb	60.704 ppb	95.404 %	88.705 %
Recovery Percentage 1	107.754 %	104.284 %		
Concentration RSD	5.3 %	6.0 %	1.0 %	5.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 70 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 12:33:42 PM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	110.350 %	95.973 %	0.009 ppb	8.384 ppb	0.293 ppb	-0.178 ppb	2.549 ppb	-0.535 ppb	106.224 %
Concentration per Run 1	109.990 %	89.913 %	0.011 ppb	11.932 ppb	0.400 ppb	0.996 ppb	6.191 ppb	0.943 ppb	103.223 %
Concentration per Run 2	105.166 %	98.007 %	0.007 ppb	5.871 ppb	0.455 ppb	-0.459 ppb	0.033 ppb	3.268 ppb	100.801 %
Concentration per Run 3	115.894 %	100.000 %	0.010 ppb	7.348 ppb	0.023 ppb	-1.070 ppb	1.424 ppb	-5.817 ppb	114.648 %
Recovery Percentage 1			1.888 %	8.384 %	0.418 %	-1.778 %	2.549 %	-0.535 %	
Concentration RSD	4.9 %	5.6 %	19.2 %	37.7 %	80.2 %	597.0 %	126.7 %	881.8 %	7.0 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.125 %	-0.042 ppb	-0.007 ppb	0.073 ppb	3.277 ppb	0.005 ppb	0.085 ppb	-0.080 ppb	-0.004 ppb
Concentration per Run 1	83.225 %	-0.016 ppb	0.003 ppb	0.084 ppb	3.216 ppb	0.002 ppb	0.130 ppb	-0.049 ppb	0.025 ppb
Concentration per Run 2	91.317 %	-0.086 ppb	-0.001 ppb	0.072 ppb	3.441 ppb	0.006 ppb	0.092 ppb	-0.083 ppb	-0.035 ppb
Concentration per Run 3	92.832 %	-0.024 ppb	-0.022 ppb	0.063 ppb	3.174 ppb	0.006 ppb	0.032 ppb	-0.109 ppb	-0.003 ppb
Recovery Percentage 1		-0.833 %	-0.672 %	7.308 %	6.554 %	0.941 %	4.229 %	-8.008 %	-0.085 %
Concentration RSD	5.8 %	91.9 %	196.3 %	14.1 %	4.4 %	51.5 %	58.6 %	37.8 %	710.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.530 %	94.569 %	0.008 ppb	0.078 ppb	-0.010 ppb	0.190 ppb	105.221 %	94.386 %	0.005 ppb
Concentration per Run 1	103.977 %	88.070 %	-0.024 ppb	0.061 ppb	-0.020 ppb	0.157 ppb	101.293 %	88.127 %	0.006 ppb
Concentration per Run 2	100.853 %	95.319 %	-0.011 ppb	0.026 ppb	-0.005 ppb	0.213 ppb	99.360 %	97.391 %	0.003 ppb
Concentration per Run 3	111.760 %	100.317 %	0.057 ppb	0.147 ppb	-0.005 ppb	0.200 ppb	115.009 %	97.640 %	0.005 ppb
Recovery Percentage 1			1.506 %	1.558 %	-1.944 %	9.513 %			1.137 %
Concentration RSD	5.3 %	6.5 %	581.6 %	80.2 %	89.8 %	15.3 %	8.1 %	5.7 %	25.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	105.732 %	90.830 %	0.043 ppb	0.023 ppb	102.018 %	89.449 %	100.932 %	88.647 %
Concentration per Run 1	0.004 ppb	102.947 %	83.587 %	0.040 ppb	0.026 ppb	99.521 %	82.013 %	97.706 %	80.967 %
Concentration per Run 2	0.005 ppb	101.020 %	93.081 %	0.035 ppb	0.017 ppb	97.377 %	92.459 %	96.515 %	90.279 %
Concentration per Run 3	-0.001 ppb	113.228 %	95.823 %	0.053 ppb	0.027 ppb	109.157 %	93.876 %	108.574 %	94.694 %
Recovery Percentage 1				1.075 %	4.607 %				
Concentration RSD	109.0 %	6.2 %	7.1 %	21.7 %	23.8 %	6.2 %	7.2 %	6.6 %	7.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.310 ppb	0.006 ppb	99.846 %	90.238 %
Concentration per Run 1	0.225 ppb	0.008 ppb	99.738 %	82.614 %
Concentration per Run 2	0.347 ppb	0.005 ppb	93.958 %	94.237 %
Concentration per Run 3	0.357 ppb	0.004 ppb	105.841 %	93.864 %
Recovery Percentage 1	30.966 %	0.579 %		
Concentration RSD	23.7 %	32.4 %	6.0 %	7.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 71 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: WG1975627-1 6020TL Rack 1
 Analysis started at: 9/26/2024 12:41:30 PM Vial 36

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.827 %	102.615 %	0.007 ppb	8.352 ppb	1.249 ppb	0.480 ppb	-0.451 ppb	11.463 ppb	104.487 %
Concentration per Run 1	108.539 %	101.494 %	0.008 ppb	7.860 ppb	0.066 ppb	0.541 ppb	-0.796 ppb	9.972 ppb	109.703 %
Concentration per Run 2	104.502 %	104.110 %	0.006 ppb	8.936 ppb	1.321 ppb	-1.108 ppb	5.173 ppb	24.485 ppb	105.268 %
Concentration per Run 3	101.440 %	102.242 %	0.008 ppb	8.261 ppb	2.360 ppb	2.008 ppb	-5.729 ppb	-0.068 ppb	98.489 %
Concentration RSD	3.4 %	1.3 %	21.3 %	6.5 %	92.0 %	324.6 %	1,211.0 %	107.7 %	5.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	96.797 %	-0.032 ppb	-0.021 ppb	0.111 ppb	1.510 ppb	0.002 ppb	-0.021 ppb	-0.037 ppb	0.448 ppb
Concentration per Run 1	99.665 %	-0.023 ppb	-0.017 ppb	0.122 ppb	2.068 ppb	0.002 ppb	0.002 ppb	-0.039 ppb	0.464 ppb
Concentration per Run 2	95.375 %	-0.040 ppb	-0.028 ppb	0.101 ppb	1.386 ppb	0.002 ppb	-0.019 ppb	-0.042 ppb	0.397 ppb
Concentration per Run 3	95.352 %	-0.035 ppb	-0.018 ppb	0.110 ppb	1.078 ppb	0.002 ppb	-0.046 ppb	-0.030 ppb	0.482 ppb
Concentration RSD	2.6 %	27.7 %	29.0 %	9.6 %	33.5 %	4.5 %	115.1 %	17.0 %	10.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.411 %	98.642 %	-0.008 ppb	0.038 ppb	0.019 ppb	0.032 ppb	97.244 %	97.509 %	0.001 ppb
Concentration per Run 1	105.379 %	100.604 %	0.029 ppb	-0.002 ppb	0.006 ppb	0.022 ppb	99.415 %	100.885 %	0.000 ppb
Concentration per Run 2	100.675 %	97.782 %	-0.038 ppb	0.088 ppb	0.024 ppb	0.031 ppb	99.848 %	94.503 %	0.002 ppb
Concentration per Run 3	95.181 %	97.538 %	-0.016 ppb	0.027 ppb	0.027 ppb	0.042 ppb	92.468 %	97.138 %	0.000 ppb
Concentration RSD	5.1 %	1.7 %	405.4 %	121.7 %	61.0 %	32.5 %	4.3 %	3.3 %	230.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	99.362 %	95.281 %	0.005 ppb	0.029 ppb	95.608 %	93.214 %	94.260 %	90.980 %
Concentration per Run 1	0.000 ppb	104.251 %	98.321 %	0.006 ppb	0.000 ppb	96.735 %	94.144 %	96.348 %	92.065 %
Concentration per Run 2	0.000 ppb	100.795 %	91.984 %	0.003 ppb	0.054 ppb	99.194 %	93.389 %	96.276 %	89.785 %
Concentration per Run 3	0.000 ppb	93.041 %	95.537 %	0.005 ppb	0.032 ppb	90.894 %	92.110 %	90.155 %	91.089 %
Concentration RSD	9.3 %	5.8 %	3.3 %	29.6 %	93.4 %	4.5 %	1.1 %	3.8 %	1.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.057 ppb	0.003 ppb	93.594 %	93.888 %
Concentration per Run 1	0.028 ppb	0.003 ppb	94.807 %	93.582 %
Concentration per Run 2	0.065 ppb	0.003 ppb	95.814 %	92.562 %
Concentration per Run 3	0.077 ppb	0.004 ppb	90.161 %	95.521 %
Concentration RSD	44.9 %	14.7 %	3.2 %	1.6 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 72 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975627-2d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:46:13 PM Vial: 37

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.631 %	100.166 %	4.986 ppb	1,061.855 ppb	1,072.956 ppb	192.037 ppb	1,135.271 ppb	1,115.598 ppb	105.191 %
Concentration per Run 1	106.513 %	99.875 %	5.024 ppb	1,042.779 ppb	1,096.525 ppb	191.170 ppb	1,136.878 ppb	1,037.100 ppb	108.207 %
Concentration per Run 2	106.262 %	100.249 %	4.915 ppb	1,071.357 ppb	1,066.606 ppb	191.452 ppb	1,150.765 ppb	1,151.917 ppb	104.533 %
Concentration per Run 3	107.116 %	100.374 %	5.019 ppb	1,071.428 ppb	1,055.736 ppb	193.490 ppb	1,118.170 ppb	1,157.777 ppb	102.834 %
Concentration RSD	0.4 %	0.3 %	1.2 %	1.6 %	2.0 %	0.7 %	1.4 %	6.1 %	2.6 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	93.194 %	49.987 ppb	19.648 ppb	55.510 ppb	111.478 ppb	55.879 ppb	53.288 ppb	27.072 ppb	53.713 ppb
Concentration per Run 1	92.913 %	49.471 ppb	19.396 ppb	55.799 ppb	113.785 ppb	55.787 ppb	53.518 ppb	26.744 ppb	54.210 ppb
Concentration per Run 2	92.866 %	49.890 ppb	19.389 ppb	55.484 ppb	112.003 ppb	56.461 ppb	53.645 ppb	27.774 ppb	53.996 ppb
Concentration per Run 3	93.803 %	50.599 ppb	20.157 ppb	55.246 ppb	108.644 ppb	55.389 ppb	52.701 ppb	26.700 ppb	52.934 ppb
Concentration RSD	0.6 %	1.1 %	2.2 %	0.5 %	2.3 %	1.0 %	1.0 %	2.2 %	1.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.872 %	94.027 %	12.216 ppb	11.586 ppb	91.824 ppb	100.189 ppb	97.399 %	92.637 %	5.327 ppb
Concentration per Run 1	104.143 %	93.722 %	11.898 ppb	12.199 ppb	91.462 ppb	103.078 ppb	97.011 %	91.219 %	5.355 ppb
Concentration per Run 2	101.331 %	92.639 %	12.445 ppb	10.981 ppb	91.902 ppb	99.027 ppb	99.383 %	93.536 %	5.234 ppb
Concentration per Run 3	100.141 %	95.719 %	12.306 ppb	11.579 ppb	92.107 ppb	98.461 ppb	95.805 %	93.154 %	5.391 ppb
Concentration RSD	2.0 %	1.7 %	2.3 %	5.3 %	0.4 %	2.5 %	1.9 %	1.3 %	1.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.597 ppb	100.961 %	91.095 %	50.762 ppb	213.794 ppb	94.626 %	88.109 %	95.484 %	85.735 %
Concentration per Run 1	5.654 ppb	101.755 %	91.362 %	50.155 ppb	216.579 ppb	95.064 %	87.086 %	94.263 %	85.430 %
Concentration per Run 2	5.530 ppb	101.143 %	91.492 %	50.992 ppb	215.586 ppb	94.348 %	87.539 %	98.288 %	85.800 %
Concentration per Run 3	5.608 ppb	99.986 %	90.432 %	51.139 ppb	209.218 ppb	94.467 %	89.701 %	93.900 %	85.975 %
Concentration RSD	1.1 %	0.9 %	0.6 %	1.0 %	1.9 %	0.4 %	1.6 %	2.6 %	0.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	11.952 ppb	52.723 ppb	92.206 %	88.072 %
Concentration per Run 1	12.051 ppb	53.518 ppb	92.062 %	86.976 %
Concentration per Run 2	11.712 ppb	52.620 ppb	93.038 %	88.625 %
Concentration per Run 3	12.092 ppb	52.030 ppb	91.518 %	88.617 %
Concentration RSD	1.7 %	1.4 %	0.8 %	1.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 73 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: L2409778-152 6020TL Rack 1
 Analysis started at: 9/26/2024 12:50:53 PM Vial 38

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.218 %	103.778 %	0.008 ppb	5,771.591 ppb	7,901.898 ppb	3.280 ppb	1,016.192 ppb	37,064.778 ppb	106.097 %
Concentration per Run 1	105.868 %	103.736 %	0.009 ppb	5,724.831 ppb	7,753.470 ppb	0.559 ppb	1,012.310 ppb	35,491.469 ppb	109.741 %
Concentration per Run 2	106.468 %	103.985 %	0.009 ppb	5,889.038 ppb	7,975.118 ppb	6.169 ppb	1,014.261 ppb	37,368.125 ppb	106.093 %
Concentration per Run 3	106.318 %	103.612 %	0.005 ppb	5,700.902 ppb	7,977.106 ppb	3.113 ppb	1,022.003 ppb	38,334.741 ppb	102.456 %
Concentration RSD	0.3 %	0.2 %	28.3 %	1.8 %	1.6 %	85.6 %	0.5 %	3.9 %	3.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.687 %	-0.043 ppb	0.265 ppb	162.478 ppb	4,142.444 ppb	0.038 ppb	0.328 ppb	0.212 ppb	0.412 ppb
Concentration per Run 1	96.531 %	-0.040 ppb	0.244 ppb	157.301 ppb	3,997.129 ppb	0.034 ppb	0.329 ppb	0.212 ppb	0.390 ppb
Concentration per Run 2	95.502 %	-0.050 ppb	0.317 ppb	163.721 ppb	4,149.282 ppb	0.043 ppb	0.331 ppb	0.224 ppb	0.443 ppb
Concentration per Run 3	95.028 %	-0.040 ppb	0.235 ppb	166.413 ppb	4,280.920 ppb	0.038 ppb	0.324 ppb	0.199 ppb	0.402 ppb
Concentration RSD	0.8 %	13.5 %	16.9 %	2.9 %	3.4 %	10.7 %	1.0 %	5.8 %	6.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.397 %	97.251 %	0.057 ppb	0.025 ppb	63.009 ppb	0.455 ppb	94.667 %	91.075 %	0.000 ppb
Concentration per Run 1	103.017 %	97.313 %	0.048 ppb	0.030 ppb	60.839 ppb	0.391 ppb	94.788 %	91.152 %	0.000 ppb
Concentration per Run 2	105.158 %	97.690 %	-0.010 ppb	0.019 ppb	63.697 ppb	0.483 ppb	95.553 %	90.741 %	-0.001 ppb
Concentration per Run 3	105.016 %	96.750 %	0.133 ppb	0.026 ppb	64.492 ppb	0.490 ppb	93.659 %	91.332 %	0.000 ppb
Concentration RSD	1.1 %	0.5 %	126.2 %	20.9 %	3.0 %	12.2 %	1.0 %	0.3 %	2,272.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	98.294 %	90.564 %	0.426 ppb	134.297 ppb	96.419 %	91.300 %	97.168 %	89.005 %
Concentration per Run 1	0.003 ppb	98.570 %	92.035 %	0.375 ppb	130.684 ppb	96.948 %	91.787 %	97.753 %	89.288 %
Concentration per Run 2	0.002 ppb	97.372 %	88.461 %	0.453 ppb	136.444 ppb	96.708 %	90.206 %	97.516 %	88.034 %
Concentration per Run 3	-0.001 ppb	98.940 %	91.196 %	0.450 ppb	135.763 ppb	95.600 %	91.906 %	96.236 %	89.694 %
Concentration RSD	143.5 %	0.8 %	2.1 %	10.4 %	2.3 %	0.7 %	1.0 %	0.8 %	1.0 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.040 ppb	0.013 ppb	91.845 %	87.854 %
Concentration per Run 1	0.022 ppb	0.011 ppb	92.645 %	88.903 %
Concentration per Run 2	0.046 ppb	0.014 ppb	92.527 %	87.304 %
Concentration per Run 3	0.052 ppb	0.012 ppb	90.363 %	87.356 %
Concentration RSD	39.5 %	11.4 %	1.4 %	1.0 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 74 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975627-3d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 12:55:33 PM Vial: 39

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.747 %	105.604 %	4.932 ppb	1,603.941 ppb	1,819.833 ppb	190.598 ppb	1,193.073 ppb	4,706.192 ppb	105.859 %
Concentration per Run 1	108.016 %	105.231 %	5.020 ppb	1,595.820 ppb	1,874.209 ppb	182.593 ppb	1,167.994 ppb	4,480.990 ppb	106.108 %
Concentration per Run 2	106.936 %	104.857 %	4.910 ppb	1,613.580 ppb	1,805.950 ppb	198.659 ppb	1,188.014 ppb	4,853.211 ppb	106.695 %
Concentration per Run 3	108.288 %	106.725 %	4.864 ppb	1,602.425 ppb	1,779.340 ppb	190.541 ppb	1,223.212 ppb	4,784.377 ppb	104.773 %
Concentration RSD	0.7 %	0.9 %	1.6 %	0.6 %	2.7 %	4.2 %	2.3 %	4.2 %	0.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.947 %	48.971 ppb	19.595 ppb	72.140 ppb	457.079 ppb	54.206 ppb	54.246 ppb	26.688 ppb	53.294 ppb
Concentration per Run 1	94.369 %	48.755 ppb	18.937 ppb	70.921 ppb	442.502 ppb	52.148 ppb	53.020 ppb	26.951 ppb	51.720 ppb
Concentration per Run 2	92.023 %	49.358 ppb	19.944 ppb	73.139 ppb	453.880 ppb	55.756 ppb	54.923 ppb	26.809 ppb	54.531 ppb
Concentration per Run 3	92.450 %	48.800 ppb	19.903 ppb	72.359 ppb	474.856 ppb	54.714 ppb	54.796 ppb	26.305 ppb	53.630 ppb
Concentration RSD	1.3 %	0.7 %	2.9 %	1.6 %	3.6 %	3.4 %	2.0 %	1.3 %	2.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	104.085 %	93.206 %	11.818 ppb	10.574 ppb	97.567 ppb	96.958 ppb	98.586 %	92.878 %	5.282 ppb
Concentration per Run 1	105.151 %	94.295 %	11.632 ppb	11.841 ppb	95.345 ppb	93.685 ppb	96.800 %	94.582 %	5.225 ppb
Concentration per Run 2	102.363 %	91.982 %	11.756 ppb	9.750 ppb	98.098 ppb	99.298 ppb	98.918 %	93.482 %	5.252 ppb
Concentration per Run 3	104.741 %	93.340 %	12.066 ppb	10.131 ppb	99.259 ppb	97.890 ppb	100.039 %	90.571 %	5.369 ppb
Concentration RSD	1.4 %	1.2 %	1.9 %	10.5 %	2.1 %	3.0 %	1.7 %	2.2 %	1.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.449 ppb	101.446 %	91.300 %	51.712 ppb	224.550 ppb	95.701 %	88.031 %	96.494 %	86.359 %
Concentration per Run 1	5.461 ppb	100.954 %	91.006 %	52.141 ppb	223.958 ppb	93.508 %	87.837 %	94.805 %	85.778 %
Concentration per Run 2	5.422 ppb	101.438 %	90.494 %	52.158 ppb	227.196 ppb	96.727 %	87.988 %	99.524 %	87.132 %
Concentration per Run 3	5.463 ppb	101.946 %	92.399 %	50.838 ppb	222.495 ppb	96.866 %	88.268 %	95.154 %	86.168 %
Concentration RSD	0.4 %	0.5 %	1.1 %	1.5 %	1.1 %	2.0 %	0.2 %	2.7 %	0.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	11.801 ppb	51.635 ppb	92.289 %	87.868 %
Concentration per Run 1	11.747 ppb	50.548 ppb	91.552 %	90.745 %
Concentration per Run 2	11.595 ppb	51.450 ppb	91.867 %	87.122 %
Concentration per Run 3	12.060 ppb	52.907 ppb	93.447 %	85.737 %
Concentration RSD	2.0 %	2.3 %	1.1 %	2.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 75 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: xWG1975627-4d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:00:13 PM Vial: 40

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.863 %	99.004 %	0.008 ppb	633.336 ppb	888.234 ppb	0.747 ppb	106.927 ppb	3,859.183 ppb	108.012 %
Concentration per Run 1	108.910 %	98.506 %	0.006 ppb	629.715 ppb	858.150 ppb	-0.807 ppb	106.348 ppb	3,549.099 ppb	106.981 %
Concentration per Run 2	107.431 %	99.875 %	0.009 ppb	633.229 ppb	917.004 ppb	1.251 ppb	110.247 ppb	4,069.166 ppb	105.759 %
Concentration per Run 3	107.247 %	98.630 %	0.008 ppb	637.064 ppb	889.546 ppb	1.796 ppb	104.187 ppb	3,959.283 ppb	111.297 %
Concentration RSD	0.8 %	0.8 %	17.5 %	0.6 %	3.3 %	183.9 %	2.9 %	7.1 %	2.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.109 %	-0.018 ppb	0.028 ppb	17.240 ppb	426.120 ppb	0.020 ppb	0.212 ppb	-0.041 ppb	0.471 ppb
Concentration per Run 1	97.433 %	-0.001 ppb	0.024 ppb	16.408 ppb	407.833 ppb	0.011 ppb	0.198 ppb	-0.049 ppb	0.383 ppb
Concentration per Run 2	92.624 %	-0.033 ppb	0.023 ppb	17.890 ppb	433.575 ppb	0.022 ppb	0.245 ppb	-0.023 ppb	0.533 ppb
Concentration per Run 3	95.271 %	-0.019 ppb	0.037 ppb	17.423 ppb	436.952 ppb	0.025 ppb	0.192 ppb	-0.052 ppb	0.497 ppb
Concentration RSD	2.5 %	89.6 %	28.9 %	4.4 %	3.7 %	37.7 %	13.8 %	37.7 %	16.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.408 %	95.614 %	0.071 ppb	0.058 ppb	6.387 ppb	0.454 ppb	99.259 %	95.010 %	0.002 ppb
Concentration per Run 1	100.790 %	99.725 %	0.128 ppb	0.084 ppb	6.114 ppb	0.405 ppb	100.197 %	96.699 %	0.002 ppb
Concentration per Run 2	100.628 %	92.984 %	0.066 ppb	0.066 ppb	6.470 ppb	0.429 ppb	98.370 %	95.050 %	0.002 ppb
Concentration per Run 3	102.806 %	94.134 %	0.018 ppb	0.024 ppb	6.577 ppb	0.529 ppb	99.210 %	93.282 %	0.001 ppb
Concentration RSD	1.2 %	3.8 %	78.3 %	53.1 %	3.8 %	14.5 %	0.9 %	1.8 %	42.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	98.482 %	92.122 %	0.124 ppb	14.115 ppb	95.741 %	89.480 %	94.946 %	85.207 %
Concentration per Run 1	0.003 ppb	99.535 %	91.978 %	0.111 ppb	14.191 ppb	96.636 %	88.893 %	94.643 %	85.886 %
Concentration per Run 2	0.006 ppb	97.184 %	91.056 %	0.122 ppb	14.109 ppb	96.697 %	87.787 %	95.002 %	85.169 %
Concentration per Run 3	0.001 ppb	98.728 %	93.331 %	0.141 ppb	14.043 ppb	93.890 %	91.760 %	95.193 %	84.565 %
Concentration RSD	69.2 %	1.2 %	1.2 %	12.2 %	0.5 %	1.7 %	2.3 %	0.3 %	0.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.055 ppb	0.025 ppb	93.197 %	87.551 %
Concentration per Run 1	0.032 ppb	0.024 ppb	93.954 %	88.386 %
Concentration per Run 2	0.065 ppb	0.027 ppb	93.627 %	86.768 %
Concentration per Run 3	0.066 ppb	0.023 ppb	92.010 %	87.498 %
Concentration RSD	35.4 %	7.4 %	1.1 %	0.9 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 76 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975627-5d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:04:54 PM Vial: 41

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.034 %	96.513 %	50.766 ppb	5,900.207 ppb	6,171.821 ppb	47.249 ppb	5,454.574 ppb	8,983.166 ppb	103.404 %
Concentration per Run 1	104.089 %	92.403 %	50.103 ppb	5,873.699 ppb	6,071.473 ppb	47.708 ppb	5,166.555 ppb	8,690.331 ppb	108.700 %
Concentration per Run 2	106.616 %	100.996 %	48.313 ppb	5,844.239 ppb	6,232.403 ppb	48.109 ppb	5,423.574 ppb	8,894.649 ppb	103.889 %
Concentration per Run 3	98.398 %	96.139 %	53.882 ppb	5,982.683 ppb	6,211.585 ppb	45.930 ppb	5,773.592 ppb	9,364.518 ppb	97.622 %
Concentration RSD	4.1 %	4.5 %	5.6 %	1.2 %	1.4 %	2.5 %	5.6 %	3.8 %	5.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.826 %	48.215 ppb	45.936 ppb	67.683 ppb	5,534.112 ppb	50.551 ppb	49.949 ppb	51.633 ppb	50.934 ppb
Concentration per Run 1	98.798 %	45.416 ppb	44.551 ppb	65.919 ppb	5,431.947 ppb	51.721 ppb	48.390 ppb	51.068 ppb	50.698 ppb
Concentration per Run 2	96.173 %	48.294 ppb	45.622 ppb	67.654 ppb	5,583.024 ppb	49.954 ppb	50.818 ppb	53.175 ppb	51.570 ppb
Concentration per Run 3	92.508 %	50.937 ppb	47.635 ppb	69.477 ppb	5,587.364 ppb	49.978 ppb	50.639 ppb	50.655 ppb	50.533 ppb
Concentration RSD	3.3 %	5.7 %	3.4 %	2.6 %	1.6 %	2.0 %	2.7 %	2.6 %	1.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.131 %	96.295 %	49.790 ppb	47.584 ppb	51.607 ppb	49.541 ppb	93.692 %	93.766 %	3.345 ppb
Concentration per Run 1	100.482 %	94.029 %	49.679 ppb	50.578 ppb	51.259 ppb	49.084 ppb	95.768 %	95.492 %	3.255 ppb
Concentration per Run 2	101.464 %	94.910 %	50.766 ppb	47.175 ppb	52.639 ppb	50.963 ppb	95.792 %	91.577 %	3.421 ppb
Concentration per Run 3	92.446 %	99.947 %	48.925 ppb	45.000 ppb	50.923 ppb	48.578 ppb	89.518 %	94.231 %	3.359 ppb
Concentration RSD	5.0 %	3.3 %	1.9 %	5.9 %	1.8 %	2.5 %	3.9 %	2.1 %	2.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	50.582 ppb	97.754 %	88.676 %	52.964 ppb	65.189 ppb	92.780 %	91.214 %	94.250 %	85.791 %
Concentration per Run 1	49.921 ppb	98.641 %	89.023 %	51.830 ppb	66.225 ppb	95.079 %	88.793 %	96.174 %	85.518 %
Concentration per Run 2	51.156 ppb	100.551 %	88.023 %	53.248 ppb	64.221 ppb	97.408 %	93.447 %	95.267 %	84.023 %
Concentration per Run 3	50.669 ppb	94.072 %	88.983 %	53.815 ppb	65.123 ppb	85.854 %	91.402 %	91.310 %	87.831 %
Concentration RSD	1.2 %	3.4 %	0.6 %	1.9 %	1.5 %	6.6 %	2.6 %	2.7 %	2.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	48.626 ppb	48.834 ppb	90.435 %	87.408 %
Concentration per Run 1	47.303 ppb	47.214 ppb	93.530 %	88.732 %
Concentration per Run 2	49.586 ppb	49.552 ppb	91.668 %	86.377 %
Concentration per Run 3	48.987 ppb	49.736 ppb	86.107 %	87.115 %
Concentration RSD	2.4 %	2.9 %	4.3 %	1.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 77 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975627-6d5 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:09:34 PM Vial: 42

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.819 %	102.864 %	0.015 ppb	1,206.443 ppb	1,664.258 ppb	1.355 ppb	211.298 ppb	7,135.249 ppb	107.864 %
Concentration per Run 1	107.321 %	96.762 %	0.015 ppb	1,233.284 ppb	1,699.869 ppb	2.055 ppb	211.029 ppb	7,027.096 ppb	108.514 %
Concentration per Run 2	106.342 %	103.736 %	0.017 ppb	1,209.013 ppb	1,644.853 ppb	2.028 ppb	210.167 ppb	7,188.950 ppb	110.196 %
Concentration per Run 3	106.795 %	108.095 %	0.014 ppb	1,177.033 ppb	1,648.053 ppb	-0.018 ppb	212.698 ppb	7,189.702 ppb	104.882 %
Concentration RSD	0.5 %	5.6 %	7.9 %	2.3 %	1.9 %	87.8 %	0.6 %	1.3 %	2.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.229 %	-0.050 ppb	0.032 ppb	33.636 ppb	849.474 ppb	0.013 ppb	0.139 ppb	0.002 ppb	0.477 ppb
Concentration per Run 1	98.046 %	-0.046 ppb	0.038 ppb	32.243 ppb	822.498 ppb	0.011 ppb	0.106 ppb	-0.004 ppb	0.431 ppb
Concentration per Run 2	93.213 %	-0.054 ppb	0.028 ppb	33.860 ppb	885.826 ppb	0.016 ppb	0.127 ppb	-0.010 ppb	0.450 ppb
Concentration per Run 3	94.427 %	-0.049 ppb	0.030 ppb	34.805 ppb	840.099 ppb	0.012 ppb	0.184 ppb	0.020 ppb	0.550 ppb
Concentration RSD	2.6 %	8.4 %	16.8 %	3.9 %	3.8 %	19.5 %	29.2 %	828.5 %	13.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	102.966 %	95.774 %	0.097 ppb	0.172 ppb	12.556 ppb	0.305 ppb	97.692 %	95.336 %	0.001 ppb
Concentration per Run 1	103.478 %	98.170 %	0.120 ppb	0.021 ppb	11.943 ppb	0.254 ppb	98.686 %	96.477 %	0.001 ppb
Concentration per Run 2	103.304 %	95.657 %	0.098 ppb	0.254 ppb	12.753 ppb	0.315 ppb	97.448 %	95.330 %	0.001 ppb
Concentration per Run 3	102.117 %	93.495 %	0.073 ppb	0.240 ppb	12.972 ppb	0.345 ppb	96.942 %	94.201 %	0.001 ppb
Concentration RSD	0.7 %	2.4 %	24.5 %	76.1 %	4.3 %	15.2 %	0.9 %	1.2 %	3.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	100.278 %	91.933 %	0.076 ppb	27.251 ppb	96.804 %	89.251 %	95.527 %	87.056 %
Concentration per Run 1	0.005 ppb	100.023 %	93.775 %	0.057 ppb	26.223 ppb	98.126 %	90.566 %	98.209 %	90.466 %
Concentration per Run 2	0.001 ppb	100.451 %	89.443 %	0.078 ppb	27.585 ppb	94.236 %	88.700 %	92.073 %	87.108 %
Concentration per Run 3	0.003 ppb	100.360 %	92.581 %	0.092 ppb	27.946 ppb	98.051 %	88.487 %	96.299 %	83.596 %
Concentration RSD	54.4 %	0.2 %	2.4 %	22.9 %	3.3 %	2.3 %	1.3 %	3.3 %	3.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.278 ppb	0.018 ppb	93.192 %	90.625 %
Concentration per Run 1	0.161 ppb	0.017 ppb	93.012 %	92.646 %
Concentration per Run 2	0.318 ppb	0.018 ppb	92.876 %	91.386 %
Concentration per Run 3	0.356 ppb	0.019 ppb	93.689 %	87.844 %
Concentration RSD	37.2 %	5.0 %	0.5 %	2.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 78 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454050-01 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:14:15 PM Vial: 43

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.695 %	102.781 %	0.015 ppb	6,629.946 ppb	4,906.226 ppb	1.241 ppb	1,033.295 ppb	13,915.203 ppb	109.511 %
Concentration per Run 1	106.843 %	108.219 %	0.017 ppb	6,362.297 ppb	4,807.440 ppb	1.418 ppb	1,039.520 ppb	13,900.823 ppb	111.218 %
Concentration per Run 2	106.398 %	96.887 %	0.014 ppb	6,980.863 ppb	4,973.329 ppb	1.071 ppb	1,032.793 ppb	14,088.983 ppb	107.265 %
Concentration per Run 3	106.845 %	103.238 %	0.013 ppb	6,546.679 ppb	4,937.908 ppb	1.233 ppb	1,027.572 ppb	13,755.802 ppb	110.048 %
Concentration RSD	0.2 %	5.5 %	14.3 %	4.8 %	1.8 %	14.0 %	0.6 %	1.2 %	1.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	90.493 %	0.099 ppb	0.856 ppb	0.413 ppb	20.147 ppb	0.268 ppb	0.443 ppb	0.567 ppb	1.816 ppb
Concentration per Run 1	91.514 %	0.116 ppb	0.913 ppb	0.392 ppb	19.278 ppb	0.258 ppb	0.384 ppb	0.521 ppb	1.809 ppb
Concentration per Run 2	89.294 %	0.043 ppb	0.806 ppb	0.411 ppb	22.768 ppb	0.281 ppb	0.512 ppb	0.662 ppb	1.901 ppb
Concentration per Run 3	90.670 %	0.138 ppb	0.850 ppb	0.436 ppb	18.393 ppb	0.265 ppb	0.435 ppb	0.517 ppb	1.740 ppb
Concentration RSD	1.2 %	50.0 %	6.3 %	5.4 %	11.5 %	4.6 %	14.5 %	14.6 %	4.4 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.482 %	94.812 %	0.084 ppb	0.093 ppb	70.741 ppb	0.162 ppb	97.755 %	90.816 %	0.003 ppb
Concentration per Run 1	104.766 %	92.605 %	0.083 ppb	0.067 ppb	71.015 ppb	0.091 ppb	98.327 %	89.273 %	0.003 ppb
Concentration per Run 2	103.777 %	96.670 %	0.170 ppb	0.196 ppb	68.489 ppb	0.182 ppb	97.155 %	91.458 %	0.005 ppb
Concentration per Run 3	101.902 %	95.159 %	-0.002 ppb	0.018 ppb	72.720 ppb	0.213 ppb	97.782 %	91.718 %	0.001 ppb
Concentration RSD	1.4 %	2.2 %	102.7 %	98.5 %	3.0 %	39.2 %	0.6 %	1.5 %	76.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.017 ppb	100.034 %	88.180 %	0.039 ppb	8.486 ppb	96.717 %	88.204 %	95.371 %	84.951 %
Concentration per Run 1	0.006 ppb	99.751 %	87.346 %	0.020 ppb	8.627 ppb	97.322 %	86.337 %	94.322 %	85.018 %
Concentration per Run 2	0.043 ppb	101.139 %	87.799 %	0.052 ppb	8.686 ppb	96.463 %	88.566 %	97.252 %	85.299 %
Concentration per Run 3	0.003 ppb	99.210 %	89.395 %	0.044 ppb	8.145 ppb	96.365 %	89.708 %	94.540 %	84.536 %
Concentration RSD	129.6 %	1.0 %	1.2 %	43.3 %	3.5 %	0.5 %	1.9 %	1.7 %	0.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.090 ppb	0.063 ppb	92.511 %	85.626 %
Concentration per Run 1	0.043 ppb	0.061 ppb	92.604 %	85.706 %
Concentration per Run 2	0.114 ppb	0.074 ppb	91.250 %	84.625 %
Concentration per Run 3	0.114 ppb	0.055 ppb	93.680 %	86.546 %
Concentration RSD	45.2 %	15.2 %	1.3 %	1.1 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 79 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454050-02 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:18:56 PM Vial: 44

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	102.280 %	92.694 %	0.034 ppb	80,824.734 ppb	4,673.569 ppb	17.174 ppb	2,900.880 ppb	17,429.885 ppb	104.266 %
Concentration per Run 1	98.648 %	93.151 %	0.035 ppb	78,975.952 ppb	4,863.719 ppb	17.636 ppb	2,864.530 ppb	17,382.455 ppb	105.844 %
Concentration per Run 2	104.433 %	92.652 %	0.034 ppb	80,631.856 ppb	4,517.162 ppb	16.793 ppb	2,870.949 ppb	17,321.522 ppb	102.820 %
Concentration per Run 3	103.759 %	92.279 %	0.031 ppb	82,866.393 ppb	4,639.826 ppb	17.093 ppb	2,967.161 ppb	17,585.676 ppb	104.134 %
Concentration RSD	3.1 %	0.5 %	5.8 %	2.4 %	3.8 %	2.5 %	2.0 %	0.8 %	1.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	90.138 %	0.111 ppb	0.355 ppb	40.228 ppb	17.147 ppb	0.279 ppb	2.414 ppb	1.908 ppb	10.182 ppb
Concentration per Run 1	89.259 %	0.088 ppb	0.383 ppb	39.731 ppb	17.406 ppb	0.268 ppb	2.557 ppb	1.886 ppb	10.058 ppb
Concentration per Run 2	91.745 %	0.095 ppb	0.348 ppb	40.369 ppb	16.084 ppb	0.288 ppb	2.393 ppb	1.999 ppb	10.416 ppb
Concentration per Run 3	89.410 %	0.150 ppb	0.334 ppb	40.585 ppb	17.951 ppb	0.281 ppb	2.291 ppb	1.839 ppb	10.073 ppb
Concentration RSD	1.5 %	30.8 %	7.1 %	1.1 %	5.6 %	3.7 %	5.6 %	4.3 %	2.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.984 %	93.998 %	0.017 ppb	0.468 ppb	81.962 ppb	0.091 ppb	93.658 %	87.496 %	0.026 ppb
Concentration per Run 1	100.404 %	93.547 %	0.019 ppb	0.582 ppb	81.276 ppb	0.088 ppb	93.273 %	86.345 %	0.030 ppb
Concentration per Run 2	102.033 %	91.400 %	0.047 ppb	0.341 ppb	82.336 ppb	0.100 ppb	94.828 %	88.328 %	0.025 ppb
Concentration per Run 3	103.516 %	97.048 %	-0.016 ppb	0.482 ppb	82.274 ppb	0.085 ppb	92.874 %	87.815 %	0.023 ppb
Concentration RSD	1.5 %	3.0 %	192.1 %	25.8 %	0.7 %	8.6 %	1.1 %	1.2 %	13.7 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.077 ppb	95.182 %	86.188 %	0.018 ppb	108.868 ppb	96.632 %	86.710 %	97.453 %	85.250 %
Concentration per Run 1	0.093 ppb	94.166 %	84.776 %	0.014 ppb	106.849 ppb	92.741 %	86.814 %	96.022 %	81.399 %
Concentration per Run 2	0.075 ppb	98.233 %	87.150 %	0.019 ppb	108.590 ppb	98.851 %	86.040 %	97.293 %	87.566 %
Concentration per Run 3	0.062 ppb	93.146 %	86.637 %	0.020 ppb	111.165 ppb	98.304 %	87.278 %	99.044 %	86.785 %
Concentration RSD	20.6 %	2.8 %	1.4 %	19.1 %	2.0 %	3.5 %	0.7 %	1.6 %	3.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.045 ppb	0.330 ppb	88.838 %	81.418 %
Concentration per Run 1	0.020 ppb	0.328 ppb	87.614 %	81.781 %
Concentration per Run 2	0.053 ppb	0.324 ppb	88.149 %	80.740 %
Concentration per Run 3	0.063 ppb	0.339 ppb	90.751 %	81.732 %
Concentration RSD	50.3 %	2.4 %	1.9 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 80 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454050-03 6020TL Rack: 1
 Analysis started at: 9/26/2024 1:23:38 PM Vial: 45

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	111.092 %	99.170 %	0.006 ppb	28.849 ppb	1.835 ppb	4.156 ppb	10.245 ppb	27.623 ppb	109.375 %
Concentration per Run 1	114.967 %	87.297 %	0.004 ppb	37.316 ppb	2.376 ppb	4.385 ppb	17.318 ppb	36.829 ppb	114.002 %
Concentration per Run 2	109.095 %	105.231 %	0.007 ppb	25.215 ppb	1.477 ppb	5.993 ppb	4.676 ppb	28.095 ppb	107.856 %
Concentration per Run 3	109.213 %	104.981 %	0.008 ppb	24.015 ppb	1.651 ppb	2.090 ppb	8.742 ppb	17.946 ppb	106.267 %
Concentration RSD	3.0 %	10.4 %	27.4 %	25.5 %	26.0 %	47.2 %	63.0 %	34.2 %	3.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	87.695 %	0.041 ppb	0.066 ppb	1.100 ppb	5.389 ppb	0.052 ppb	0.059 ppb	0.488 ppb	0.387 ppb
Concentration per Run 1	81.456 %	0.057 ppb	0.057 ppb	1.219 ppb	6.188 ppb	0.066 ppb	0.070 ppb	0.578 ppb	0.412 ppb
Concentration per Run 2	92.092 %	0.040 ppb	0.071 ppb	1.033 ppb	5.235 ppb	0.041 ppb	0.072 ppb	0.433 ppb	0.349 ppb
Concentration per Run 3	89.537 %	0.027 ppb	0.070 ppb	1.048 ppb	4.743 ppb	0.049 ppb	0.035 ppb	0.454 ppb	0.401 ppb
Concentration RSD	6.3 %	36.8 %	12.0 %	9.4 %	13.6 %	23.9 %	35.3 %	16.0 %	8.7 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	105.016 %	94.305 %	-0.008 ppb	0.033 ppb	0.111 ppb	0.054 ppb	100.365 %	92.422 %	0.002 ppb
Concentration per Run 1	111.886 %	86.614 %	0.052 ppb	0.015 ppb	0.122 ppb	0.057 ppb	105.519 %	85.815 %	0.002 ppb
Concentration per Run 2	101.449 %	98.795 %	-0.080 ppb	0.058 ppb	0.108 ppb	0.054 ppb	96.686 %	96.584 %	0.002 ppb
Concentration per Run 3	101.713 %	97.505 %	0.003 ppb	0.025 ppb	0.105 ppb	0.051 ppb	98.890 %	94.867 %	0.002 ppb
Concentration RSD	5.7 %	7.1 %	816.4 %	68.5 %	8.2 %	6.1 %	4.6 %	6.3 %	22.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	100.128 %	86.734 %	0.013 ppb	0.268 ppb	96.345 %	84.632 %	96.866 %	82.956 %
Concentration per Run 1	0.007 ppb	102.311 %	78.106 %	0.012 ppb	0.254 ppb	101.037 %	78.831 %	101.588 %	77.143 %
Concentration per Run 2	0.001 ppb	99.165 %	90.982 %	0.005 ppb	0.244 ppb	95.497 %	87.911 %	96.612 %	86.366 %
Concentration per Run 3	0.001 ppb	98.908 %	91.113 %	0.021 ppb	0.305 ppb	92.502 %	87.155 %	92.397 %	85.359 %
Concentration RSD	93.8 %	1.9 %	8.6 %	61.6 %	12.3 %	4.5 %	6.0 %	4.7 %	6.1 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.035 ppb	0.024 ppb	96.787 %	85.902 %
Concentration per Run 1	0.017 ppb	0.024 ppb	99.424 %	80.915 %
Concentration per Run 2	0.036 ppb	0.023 ppb	93.805 %	89.765 %
Concentration per Run 3	0.051 ppb	0.024 ppb	97.132 %	87.025 %
Concentration RSD	49.9 %	2.9 %	2.9 %	5.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 81 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 1:28:20 PM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.121 %	99.668 %	58.806 ppb	6,089.833 ppb	6,197.153 ppb	58.149 ppb	6,341.559 ppb	6,184.007 ppb	104.116 %
Concentration per Run 1	103.406 %	100.623 %	58.789 ppb	6,032.179 ppb	6,066.629 ppb	60.040 ppb	6,308.141 ppb	6,144.161 ppb	106.164 %
Concentration per Run 2	103.410 %	98.506 %	59.110 ppb	6,120.185 ppb	6,286.252 ppb	60.707 ppb	6,369.307 ppb	5,894.968 ppb	102.849 %
Concentration per Run 3	102.548 %	99.875 %	58.518 ppb	6,117.137 ppb	6,238.578 ppb	53.699 ppb	6,347.230 ppb	6,512.893 ppb	103.334 %
Recovery Percentage 1			98.010 %	101.497 %	103.286 %	96.914 %	105.693 %	103.067 %	
Concentration RSD	0.5 %	1.1 %	0.5 %	0.8 %	1.9 %	6.7 %	0.5 %	5.0 %	1.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	94.643 %	57.722 ppb	56.374 ppb	61.670 ppb	6,022.870 ppb	61.468 ppb	61.833 ppb	62.196 ppb	60.510 ppb
Concentration per Run 1	93.849 %	57.415 ppb	55.316 ppb	61.123 ppb	5,932.955 ppb	61.684 ppb	61.205 ppb	59.648 ppb	60.186 ppb
Concentration per Run 2	94.578 %	58.050 ppb	56.001 ppb	61.118 ppb	6,171.519 ppb	60.587 ppb	60.605 ppb	62.052 ppb	60.448 ppb
Concentration per Run 3	95.502 %	57.701 ppb	57.805 ppb	62.769 ppb	5,964.135 ppb	62.133 ppb	63.689 ppb	64.888 ppb	60.896 ppb
Recovery Percentage 1		96.204 %	93.957 %	102.783 %	100.381 %	102.447 %	103.055 %	103.660 %	100.850 %
Concentration RSD	0.9 %	0.6 %	2.3 %	1.5 %	2.2 %	1.3 %	2.6 %	4.2 %	0.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	97.514 %	93.419 %	60.561 ppb	57.352 ppb	55.443 ppb	61.104 ppb	94.051 %	91.320 %	61.758 ppb
Concentration per Run 1	98.104 %	92.462 %	60.154 ppb	57.581 ppb	54.015 ppb	59.980 ppb	95.325 %	92.646 %	61.784 ppb
Concentration per Run 2	98.262 %	94.310 %	60.545 ppb	56.325 ppb	56.053 ppb	60.370 ppb	93.283 %	89.415 %	62.570 ppb
Concentration per Run 3	96.177 %	93.485 %	60.983 ppb	58.150 ppb	56.261 ppb	62.963 ppb	93.544 %	91.897 %	60.920 ppb
Recovery Percentage 1			100.934 %	95.587 %	92.405 %	101.841 %			102.930 %
Concentration RSD	1.2 %	1.0 %	0.7 %	1.6 %	2.2 %	2.7 %	1.2 %	1.9 %	1.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	60.854 ppb	99.060 %	88.698 %	62.143 ppb	61.540 ppb	95.332 %	89.078 %	95.987 %	86.057 %
Concentration per Run 1	60.066 ppb	99.505 %	89.207 %	60.274 ppb	60.675 ppb	93.839 %	89.565 %	94.291 %	86.700 %
Concentration per Run 2	61.816 ppb	99.550 %	86.885 %	64.166 ppb	62.550 ppb	94.604 %	88.158 %	95.656 %	84.876 %
Concentration per Run 3	60.679 ppb	98.124 %	90.001 %	61.988 ppb	61.394 ppb	97.552 %	89.512 %	98.015 %	86.597 %
Recovery Percentage 1	101.423 %			103.572 %	102.566 %				
Concentration RSD	1.5 %	0.8 %	1.8 %	3.1 %	1.5 %	2.1 %	0.9 %	2.0 %	1.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	58.014 ppb	59.405 ppb	90.436 %	86.999 %
Concentration per Run 1	56.891 ppb	57.899 ppb	91.167 %	87.229 %
Concentration per Run 2	57.969 ppb	59.703 ppb	90.782 %	87.576 %
Concentration per Run 3	59.181 ppb	60.613 ppb	89.358 %	86.193 %
Recovery Percentage 1	96.690 %	99.008 %		
Concentration RSD	2.0 %	2.3 %	1.1 %	0.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 82 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 1:33:05 PM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	105.545 %	95.600 %	0.015 ppb	4.340 ppb	-0.311 ppb	-0.940 ppb	2.547 ppb	-0.415 ppb	101.139 %
Concentration per Run 1	104.720 %	83.810 %	0.021 ppb	9.558 ppb	-0.865 ppb	-1.575 ppb	2.901 ppb	1.144 ppb	100.613 %
Concentration per Run 2	102.366 %	99.626 %	0.012 ppb	3.330 ppb	-0.072 ppb	-0.457 ppb	-2.040 ppb	0.853 ppb	99.118 %
Concentration per Run 3	109.549 %	103.362 %	0.014 ppb	0.131 ppb	0.003 ppb	-0.789 ppb	6.781 ppb	-3.242 ppb	103.686 %
Recovery Percentage 1			3.071 %	4.340 %	-0.444 %	-9.403 %	2.547 %	-0.415 %	
Concentration RSD	3.5 %	10.9 %	30.4 %	110.5 %	154.7 %	61.1 %	173.6 %	591.2 %	2.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.059 %	-0.013 ppb	0.016 ppb	0.020 ppb	2.990 ppb	0.001 ppb	0.053 ppb	-0.096 ppb	-0.021 ppb
Concentration per Run 1	86.543 %	0.005 ppb	0.017 ppb	0.022 ppb	3.822 ppb	0.001 ppb	0.074 ppb	-0.095 ppb	-0.072 ppb
Concentration per Run 2	89.664 %	-0.021 ppb	0.018 ppb	0.032 ppb	2.343 ppb	0.003 ppb	0.022 ppb	-0.095 ppb	0.022 ppb
Concentration per Run 3	90.970 %	-0.022 ppb	0.011 ppb	0.005 ppb	2.806 ppb	-0.001 ppb	0.064 ppb	-0.097 ppb	-0.014 ppb
Recovery Percentage 1		-0.252 %	1.561 %	1.990 %	5.981 %		2.662 %	-9.571 %	-0.428 %
Concentration RSD	2.6 %	119.7 %	23.8 %	67.1 %	25.3 %	164.0 %	51.7 %	0.9 %	221.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.627 %	91.752 %	0.028 ppb	0.129 ppb	-0.005 ppb	0.227 ppb	100.159 %	92.175 %	0.005 ppb
Concentration per Run 1	100.534 %	86.936 %	0.040 ppb	0.106 ppb	-0.012 ppb	0.209 ppb	101.054 %	86.936 %	0.005 ppb
Concentration per Run 2	100.881 %	93.056 %	0.078 ppb	0.160 ppb	-0.015 ppb	0.231 ppb	98.606 %	93.977 %	0.005 ppb
Concentration per Run 3	103.465 %	95.264 %	-0.034 ppb	0.120 ppb	0.011 ppb	0.241 ppb	100.817 %	95.612 %	0.004 ppb
Recovery Percentage 1			5.532 %	2.575 %	-1.097 %	11.337 %			1.170 %
Concentration RSD	1.6 %	4.7 %	205.9 %	21.8 %	256.0 %	7.3 %	1.3 %	5.0 %	15.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.003 ppb	101.947 %	89.010 %	0.052 ppb	0.023 ppb	95.799 %	86.943 %	96.579 %	86.054 %
Concentration per Run 1	0.003 ppb	104.769 %	84.343 %	0.042 ppb	0.008 ppb	98.163 %	82.408 %	95.306 %	81.471 %
Concentration per Run 2	0.001 ppb	97.608 %	90.564 %	0.045 ppb	0.012 ppb	93.026 %	88.476 %	94.632 %	89.817 %
Concentration per Run 3	0.005 ppb	103.463 %	92.123 %	0.069 ppb	0.050 ppb	96.208 %	89.946 %	99.798 %	86.875 %
Recovery Percentage 1				1.301 %	4.651 %				
Concentration RSD	52.9 %	3.7 %	4.6 %	28.0 %	99.0 %	2.7 %	4.6 %	2.9 %	4.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.313 ppb	0.007 ppb	94.592 %	88.042 %
Concentration per Run 1	0.206 ppb	0.005 ppb	94.101 %	84.620 %
Concentration per Run 2	0.359 ppb	0.009 ppb	93.838 %	89.116 %
Concentration per Run 3	0.373 ppb	0.005 ppb	95.837 %	90.388 %
Recovery Percentage 1	31.261 %	0.665 %		
Concentration RSD	29.6 %	34.4 %	1.1 %	3.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 83 User name ALPHALAB\ICPMSRQ Comment <Comment>
 Analysis label: WG1975931-1 6020TL Rack 1
 Analysis started at: 9/26/2024 1:41:04 PM Vial 51

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.183 %	102.989 %	0.011 ppb	1.674 ppb	1.277 ppb	0.564 ppb	5.036 ppb	13.069 ppb	101.276 %
Concentration per Run 1	107.607 %	99.253 %	0.011 ppb	4.031 ppb	2.389 ppb	-0.104 ppb	11.142 ppb	16.589 ppb	98.838 %
Concentration per Run 2	107.691 %	105.978 %	0.009 ppb	0.630 ppb	1.454 ppb	0.026 ppb	4.912 ppb	0.239 ppb	102.715 %
Concentration per Run 3	106.250 %	103.736 %	0.012 ppb	0.361 ppb	-0.011 ppb	1.770 ppb	-0.945 ppb	22.380 ppb	102.276 %
Concentration RSD	0.8 %	3.3 %	14.9 %	122.2 %	94.7 %	185.6 %	120.0 %	87.9 %	2.1 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.961 %	-0.029 ppb	-0.009 ppb	0.051 ppb	1.180 ppb	0.002 ppb	0.040 ppb	0.005 ppb	0.330 ppb
Concentration per Run 1	85.225 %	0.012 ppb	0.001 ppb	0.050 ppb	1.544 ppb	0.001 ppb	0.083 ppb	0.032 ppb	0.404 ppb
Concentration per Run 2	92.624 %	-0.054 ppb	-0.031 ppb	0.052 ppb	1.507 ppb	0.002 ppb	0.012 ppb	-0.019 ppb	0.293 ppb
Concentration per Run 3	92.034 %	-0.044 ppb	0.003 ppb	0.050 ppb	0.490 ppb	0.004 ppb	0.024 ppb	0.003 ppb	0.294 ppb
Concentration RSD	4.6 %	123.0 %	215.9 %	2.5 %	50.7 %	71.5 %	96.1 %	478.6 %	19.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.865 %	92.947 %	0.003 ppb	0.070 ppb	0.004 ppb	0.046 ppb	99.563 %	94.308 %	0.001 ppb
Concentration per Run 1	100.821 %	86.925 %	-0.033 ppb	0.024 ppb	0.010 ppb	0.042 ppb	99.569 %	89.067 %	0.001 ppb
Concentration per Run 2	100.606 %	93.248 %	0.023 ppb	0.057 ppb	0.017 ppb	0.038 ppb	99.560 %	96.839 %	0.001 ppb
Concentration per Run 3	101.167 %	98.668 %	0.019 ppb	0.128 ppb	-0.014 ppb	0.057 ppb	99.559 %	97.018 %	0.000 ppb
Concentration RSD	0.3 %	6.3 %	977.1 %	76.5 %	376.9 %	21.5 %	0.0 %	4.8 %	131.4 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.000 ppb	99.159 %	91.005 %	0.014 ppb	0.020 ppb	96.511 %	88.880 %	98.733 %	86.979 %
Concentration per Run 1	-0.001 ppb	98.424 %	85.385 %	0.014 ppb	0.037 ppb	97.283 %	83.879 %	100.015 %	81.373 %
Concentration per Run 2	0.001 ppb	99.043 %	92.444 %	0.016 ppb	0.017 ppb	95.773 %	90.450 %	99.094 %	88.680 %
Concentration per Run 3	0.000 ppb	100.010 %	95.188 %	0.010 ppb	0.006 ppb	96.476 %	92.312 %	97.091 %	90.884 %
Concentration RSD	275.7 %	0.8 %	5.6 %	22.1 %	78.4 %	0.8 %	5.0 %	1.5 %	5.7 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.059 ppb	0.007 ppb	94.886 %	88.389 %
Concentration per Run 1	0.032 ppb	0.007 ppb	94.720 %	82.223 %
Concentration per Run 2	0.069 ppb	0.008 ppb	95.366 %	92.901 %
Concentration per Run 3	0.076 ppb	0.005 ppb	94.573 %	90.043 %
Concentration RSD	40.1 %	22.2 %	0.4 %	6.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 84 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975627-11 6020TL Rack: 2
 Analysis started at: 9/26/2024 1:49:33 PM Vial: 7

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.124 %	105.023 %	0.012 ppb	5,826.494 ppb	8,096.715 ppb	1.671 ppb	1,033.325 ppb	36,973.529 ppb	108.963 %
Concentration per Run 1	105.954 %	109.714 %	0.010 ppb	5,702.048 ppb	7,853.059 ppb	1.751 ppb	1,023.198 ppb	36,111.973 ppb	111.761 %
Concentration per Run 2	104.508 %	104.359 %	0.013 ppb	5,771.593 ppb	8,123.547 ppb	2.395 ppb	1,019.913 ppb	36,559.333 ppb	108.003 %
Concentration per Run 3	107.910 %	100.996 %	0.012 ppb	6,005.842 ppb	8,313.539 ppb	0.868 ppb	1,056.864 ppb	38,249.280 ppb	107.123 %
Concentration RSD	1.6 %	4.2 %	12.5 %	2.7 %	2.9 %	45.9 %	2.0 %	3.0 %	2.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	99.476 %	-0.041 ppb	0.258 ppb	165.330 ppb	4,186.991 ppb	0.037 ppb	0.354 ppb	0.245 ppb	0.330 ppb
Concentration per Run 1	100.786 %	-0.042 ppb	0.268 ppb	163.137 ppb	4,208.680 ppb	0.033 ppb	0.309 ppb	0.261 ppb	0.260 ppb
Concentration per Run 2	100.567 %	-0.057 ppb	0.254 ppb	164.822 ppb	4,197.885 ppb	0.049 ppb	0.359 ppb	0.242 ppb	0.354 ppb
Concentration per Run 3	97.075 %	-0.025 ppb	0.252 ppb	168.031 ppb	4,154.407 ppb	0.029 ppb	0.393 ppb	0.233 ppb	0.374 ppb
Concentration RSD	2.1 %	38.2 %	3.5 %	1.5 %	0.7 %	29.1 %	11.9 %	5.9 %	18.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.735 %	96.369 %	-0.019 ppb	0.055 ppb	64.879 ppb	0.058 ppb	96.644 %	92.091 %	0.000 ppb
Concentration per Run 1	103.861 %	95.915 %	-0.048 ppb	0.024 ppb	64.665 ppb	0.042 ppb	96.217 %	91.598 %	0.000 ppb
Concentration per Run 2	102.980 %	98.465 %	0.014 ppb	0.090 ppb	65.309 ppb	0.075 ppb	96.024 %	90.684 %	0.000 ppb
Concentration per Run 3	104.364 %	94.727 %	-0.021 ppb	0.052 ppb	64.663 ppb	0.056 ppb	97.692 %	93.990 %	-0.001 ppb
Concentration RSD	0.7 %	2.0 %	167.2 %	60.1 %	0.6 %	28.6 %	0.9 %	1.9 %	292.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	98.675 %	91.718 %	0.018 ppb	137.420 ppb	97.763 %	92.462 %	97.645 %	89.983 %
Concentration per Run 1	0.001 ppb	98.512 %	91.377 %	0.014 ppb	137.018 ppb	98.125 %	92.229 %	98.467 %	89.655 %
Concentration per Run 2	0.000 ppb	98.684 %	90.996 %	0.017 ppb	138.136 ppb	97.921 %	91.728 %	96.032 %	88.553 %
Concentration per Run 3	0.003 ppb	98.828 %	92.780 %	0.023 ppb	137.106 ppb	97.244 %	93.430 %	98.436 %	91.741 %
Concentration RSD	70.8 %	0.2 %	1.0 %	27.3 %	0.5 %	0.5 %	0.9 %	1.4 %	1.8 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.037 ppb	0.013 ppb	92.443 %	88.573 %
Concentration per Run 1	0.016 ppb	0.013 ppb	92.979 %	88.946 %
Concentration per Run 2	0.043 ppb	0.015 ppb	92.638 %	88.274 %
Concentration per Run 3	0.051 ppb	0.012 ppb	91.713 %	88.500 %
Concentration RSD	49.9 %	11.5 %	0.7 %	0.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 85 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCV Rack: 0
 Analysis started at: 9/26/2024 1:54:14 PM Vial: 9

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	105.205 %	91.988 %	58.769 ppb	6,550.623 ppb	6,516.196 ppb	60.959 ppb	6,534.309 ppb	6,539.578 ppb	105.920 %
Concentration per Run 1	105.781 %	91.656 %	59.281 ppb	6,632.297 ppb	6,649.899 ppb	55.666 ppb	6,546.047 ppb	6,705.945 ppb	104.685 %
Concentration per Run 2	104.314 %	91.905 %	58.744 ppb	6,548.961 ppb	6,601.920 ppb	67.193 ppb	6,675.494 ppb	6,516.013 ppb	108.940 %
Concentration per Run 3	105.519 %	92.403 %	58.281 ppb	6,470.610 ppb	6,296.767 ppb	60.018 ppb	6,381.385 ppb	6,396.776 ppb	104.134 %
Recovery Percentage 1			97.948 %	109.177 %	108.603 %	101.598 %	108.905 %	108.993 %	
Concentration RSD	0.7 %	0.4 %	0.9 %	1.2 %	2.9 %	9.5 %	2.3 %	2.4 %	2.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.905 %	60.864 ppb	58.787 ppb	64.342 ppb	6,420.506 ppb	63.010 ppb	63.887 ppb	65.433 ppb	63.011 ppb
Concentration per Run 1	91.040 %	62.415 ppb	59.392 ppb	65.604 ppb	6,593.165 ppb	66.332 ppb	63.300 ppb	66.300 ppb	65.527 ppb
Concentration per Run 2	91.699 %	60.956 ppb	59.400 ppb	64.634 ppb	6,474.839 ppb	61.647 ppb	64.861 ppb	64.415 ppb	61.303 ppb
Concentration per Run 3	95.976 %	59.222 ppb	57.569 ppb	62.788 ppb	6,193.515 ppb	61.051 ppb	63.498 ppb	65.583 ppb	62.203 ppb
Recovery Percentage 1		101.440 %	97.978 %	107.237 %	107.008 %	105.017 %	106.478 %	109.054 %	105.018 %
Concentration RSD	2.9 %	2.6 %	1.8 %	2.2 %	3.2 %	4.6 %	1.3 %	1.5 %	3.5 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.650 %	89.844 %	63.360 ppb	60.599 ppb	57.836 ppb	62.604 ppb	94.157 %	90.472 %	63.673 ppb
Concentration per Run 1	100.626 %	86.548 %	64.410 ppb	62.130 ppb	59.485 ppb	65.151 ppb	93.887 %	88.183 %	65.951 ppb
Concentration per Run 2	99.419 %	91.996 %	61.991 ppb	61.101 ppb	56.453 ppb	62.350 ppb	93.718 %	90.976 %	62.403 ppb
Concentration per Run 3	98.906 %	90.989 %	63.678 ppb	58.565 ppb	57.569 ppb	60.309 ppb	94.866 %	92.256 %	62.665 ppb
Recovery Percentage 1			105.600 %	100.998 %	96.393 %	104.339 %			106.121 %
Concentration RSD	0.9 %	3.2 %	2.0 %	3.0 %	2.7 %	3.9 %	0.7 %	2.3 %	3.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	62.521 ppb	98.172 %	88.932 %	63.293 ppb	62.062 ppb	95.744 %	87.747 %	95.881 %	84.606 %
Concentration per Run 1	64.481 ppb	97.838 %	86.293 %	65.695 ppb	62.720 ppb	97.732 %	86.492 %	97.464 %	81.840 %
Concentration per Run 2	62.148 ppb	99.798 %	89.929 %	62.774 ppb	62.746 ppb	94.786 %	86.678 %	94.178 %	85.292 %
Concentration per Run 3	60.934 ppb	96.879 %	90.572 %	61.410 ppb	60.720 ppb	94.715 %	90.070 %	96.002 %	86.685 %
Recovery Percentage 1	104.202 %			105.489 %	103.437 %				
Concentration RSD	2.9 %	1.5 %	2.6 %	3.5 %	1.9 %	1.8 %	2.3 %	1.7 %	2.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	61.000 ppb	61.759 ppb	91.521 %	84.326 %
Concentration per Run 1	62.421 ppb	63.347 ppb	92.172 %	82.383 %
Concentration per Run 2	60.178 ppb	61.214 ppb	91.186 %	84.557 %
Concentration per Run 3	60.400 ppb	60.716 ppb	91.206 %	86.039 %
Recovery Percentage 1	101.666 %	102.931 %		
Concentration RSD	2.0 %	2.3 %	0.6 %	2.2 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 86 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: CCB Rack: 0
 Analysis started at: 9/26/2024 1:59:00 PM Vial: 10

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.794 %	101.785 %	0.024 ppb	-1.340 ppb	0.308 ppb	-0.715 ppb	1.572 ppb	3.981 ppb	103.334 %
Concentration per Run 1	107.454 %	103.985 %	0.022 ppb	-1.461 ppb	0.297 ppb	-1.952 ppb	3.988 ppb	-3.002 ppb	102.561 %
Concentration per Run 2	106.030 %	105.230 %	0.033 ppb	-1.830 ppb	0.312 ppb	0.278 ppb	0.413 ppb	18.068 ppb	104.965 %
Concentration per Run 3	106.898 %	96.139 %	0.019 ppb	-0.730 ppb	0.316 ppb	-0.472 ppb	0.316 ppb	-3.124 ppb	102.475 %
Recovery Percentage 1			4.866 %	-1.340 %	0.441 %	-7.154 %	1.572 %	3.981 %	
Concentration RSD	0.7 %	4.8 %	30.2 %	41.8 %	3.3 %	158.6 %	133.1 %	306.5 %	1.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	95.953 %	-0.062 ppb	-0.013 ppb	0.021 ppb	2.826 ppb	0.002 ppb	0.090 ppb	-0.097 ppb	-0.022 ppb
Concentration per Run 1	98.277 %	-0.066 ppb	-0.044 ppb	0.017 ppb	1.442 ppb	0.003 ppb	0.074 ppb	-0.095 ppb	-0.024 ppb
Concentration per Run 2	95.422 %	-0.070 ppb	0.010 ppb	0.017 ppb	3.765 ppb	0.003 ppb	0.109 ppb	-0.125 ppb	-0.045 ppb
Concentration per Run 3	94.161 %	-0.049 ppb	-0.006 ppb	0.028 ppb	3.271 ppb	0.000 ppb	0.086 ppb	-0.071 ppb	0.003 ppb
Recovery Percentage 1		-1.239 %	-1.321 %	2.069 %	5.652 %	0.426 %	4.483 %	-9.702 %	-0.444 %
Concentration RSD	2.2 %	17.8 %	208.2 %	29.4 %	43.3 %	69.1 %	20.1 %	28.3 %	106.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.107 %	94.967 %	0.021 ppb	0.171 ppb	-0.020 ppb	0.206 ppb	99.161 %	95.479 %	0.004 ppb
Concentration per Run 1	100.868 %	97.077 %	-0.026 ppb	0.155 ppb	-0.028 ppb	0.162 ppb	99.903 %	98.283 %	0.003 ppb
Concentration per Run 2	101.560 %	93.783 %	0.087 ppb	0.198 ppb	-0.026 ppb	0.239 ppb	99.856 %	94.760 %	0.005 ppb
Concentration per Run 3	100.892 %	94.040 %	0.001 ppb	0.159 ppb	-0.005 ppb	0.216 ppb	97.723 %	93.394 %	0.004 ppb
Recovery Percentage 1			4.160 %	3.413 %	-3.905 %	10.284 %			1.022 %
Concentration RSD	0.4 %	1.9 %	284.1 %	13.8 %	66.5 %	19.0 %	1.3 %	2.6 %	21.5 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.001 ppb	99.671 %	91.755 %	0.050 ppb	0.017 ppb	93.062 %	91.443 %	94.972 %	87.480 %
Concentration per Run 1	0.000 ppb	100.462 %	92.111 %	0.042 ppb	0.017 ppb	95.923 %	92.836 %	94.153 %	88.953 %
Concentration per Run 2	0.003 ppb	99.179 %	92.782 %	0.049 ppb	0.006 ppb	92.360 %	89.779 %	95.574 %	86.458 %
Concentration per Run 3	0.001 ppb	99.373 %	90.372 %	0.060 ppb	0.028 ppb	90.904 %	91.714 %	95.188 %	87.027 %
Recovery Percentage 1				1.255 %	3.412 %				
Concentration RSD	72.5 %	0.7 %	1.4 %	18.0 %	63.6 %	2.8 %	1.7 %	0.8 %	1.5 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.286 ppb	0.007 ppb	94.736 %	90.229 %
Concentration per Run 1	0.164 ppb	0.007 ppb	94.337 %	91.560 %
Concentration per Run 2	0.338 ppb	0.007 ppb	96.414 %	89.431 %
Concentration per Run 3	0.356 ppb	0.007 ppb	93.456 %	89.697 %
Recovery Percentage 1	28.596 %	0.673 %		
Concentration RSD	37.0 %	1.4 %	1.6 %	1.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 87 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975931-2d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:06:07 PM Vial: 52

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.576 %	98.464 %	5.104 ppb	1,136.445 ppb	1,114.847 ppb	208.828 ppb	1,162.582 ppb	1,111.815 ppb	104.032 %
Concentration per Run 1	108.075 %	96.638 %	5.081 ppb	1,157.338 ppb	1,113.877 ppb	210.654 ppb	1,159.671 ppb	1,053.873 ppb	103.407 %
Concentration per Run 2	106.388 %	98.755 %	5.106 ppb	1,149.999 ppb	1,105.173 ppb	220.951 ppb	1,178.523 ppb	1,177.096 ppb	104.836 %
Concentration per Run 3	105.264 %	100.000 %	5.124 ppb	1,101.997 ppb	1,125.490 ppb	194.879 ppb	1,149.553 ppb	1,104.477 ppb	103.852 %
Concentration RSD	1.3 %	1.7 %	0.4 %	2.6 %	0.9 %	6.3 %	1.3 %	5.6 %	0.7 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.192 %	52.601 ppb	20.694 ppb	56.960 ppb	115.947 ppb	55.653 ppb	56.092 ppb	28.952 ppb	54.568 ppb
Concentration per Run 1	92.219 %	53.485 ppb	20.919 ppb	58.143 ppb	116.954 ppb	57.171 ppb	58.123 ppb	30.221 ppb	56.620 ppb
Concentration per Run 2	92.288 %	53.143 ppb	20.853 ppb	56.078 ppb	117.010 ppb	54.917 ppb	55.193 ppb	28.225 ppb	53.159 ppb
Concentration per Run 3	92.069 %	51.174 ppb	20.309 ppb	56.660 ppb	113.876 ppb	54.870 ppb	54.959 ppb	28.410 ppb	53.927 ppb
Concentration RSD	0.1 %	2.4 %	1.6 %	1.9 %	1.5 %	2.4 %	3.1 %	3.8 %	3.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.273 %	93.762 %	12.846 ppb	12.327 ppb	95.551 ppb	104.778 ppb	98.577 %	93.595 %	5.350 ppb
Concentration per Run 1	102.029 %	91.543 %	13.044 ppb	12.286 ppb	96.327 ppb	104.509 ppb	99.957 %	91.129 %	5.526 ppb
Concentration per Run 2	102.884 %	95.211 %	12.576 ppb	12.223 ppb	93.870 ppb	102.134 ppb	96.097 %	95.053 %	5.196 ppb
Concentration per Run 3	104.907 %	94.532 %	12.916 ppb	12.473 ppb	96.457 ppb	107.692 ppb	99.676 %	94.602 %	5.328 ppb
Concentration RSD	1.4 %	2.1 %	1.9 %	1.1 %	1.5 %	2.7 %	2.2 %	2.3 %	3.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.593 ppb	101.374 %	91.503 %	51.203 ppb	215.023 ppb	95.698 %	89.871 %	95.673 %	86.456 %
Concentration per Run 1	5.737 ppb	102.283 %	88.538 %	52.357 ppb	219.800 ppb	95.716 %	88.733 %	96.944 %	85.209 %
Concentration per Run 2	5.481 ppb	101.652 %	94.643 %	50.511 ppb	211.930 ppb	97.329 %	90.595 %	94.975 %	87.043 %
Concentration per Run 3	5.562 ppb	100.187 %	91.326 %	50.741 ppb	213.339 ppb	94.047 %	90.285 %	95.099 %	87.115 %
Concentration RSD	2.3 %	1.1 %	3.3 %	2.0 %	2.0 %	1.7 %	1.1 %	1.2 %	1.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	12.842 ppb	56.062 ppb	91.868 %	87.356 %
Concentration per Run 1	13.336 ppb	58.977 ppb	91.934 %	84.676 %
Concentration per Run 2	12.371 ppb	54.451 ppb	91.536 %	89.342 %
Concentration per Run 3	12.821 ppb	54.758 ppb	92.135 %	88.048 %
Concentration RSD	3.8 %	4.5 %	0.3 %	2.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 88 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-05 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:10:48 PM Vial: 53

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	98.482 %	95.683 %	0.071 ppb	75,552.296 ppb	27,131.604 ppb	246.595 ppb	1,634.102 ppb	106,101.777 ppb	106.706 %
Concentration per Run 1	99.681 %	99.253 %	0.072 ppb	74,314.539 ppb	26,064.708 ppb	248.854 ppb	1,596.337 ppb	107,560.362 ppb	108.529 %
Concentration per Run 2	97.575 %	94.147 %	0.069 ppb	75,928.512 ppb	27,751.641 ppb	242.923 ppb	1,633.756 ppb	103,340.005 ppb	104.693 %
Concentration per Run 3	98.190 %	93.649 %	0.073 ppb	76,413.837 ppb	27,578.463 ppb	248.009 ppb	1,672.215 ppb	107,404.963 ppb	106.897 %
Concentration RSD	1.1 %	3.2 %	2.7 %	1.5 %	3.4 %	1.3 %	2.3 %	2.3 %	1.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	89.772 %	1.732 ppb	1.410 ppb	28.169 ppb	269.777 ppb	0.340 ppb	1.668 ppb	7.557 ppb	9.778 ppb
Concentration per Run 1	88.670 %	1.755 ppb	1.505 ppb	27.945 ppb	252.428 ppb	0.389 ppb	1.555 ppb	7.347 ppb	9.798 ppb
Concentration per Run 2	90.924 %	1.814 ppb	1.378 ppb	27.909 ppb	271.835 ppb	0.330 ppb	1.723 ppb	7.407 ppb	9.739 ppb
Concentration per Run 3	89.722 %	1.629 ppb	1.348 ppb	28.654 ppb	285.068 ppb	0.301 ppb	1.727 ppb	7.917 ppb	9.797 ppb
Concentration RSD	1.3 %	5.5 %	5.9 %	1.5 %	6.1 %	13.2 %	5.9 %	4.1 %	0.3 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.445 %	93.094 %	0.689 ppb	0.574 ppb	336.502 ppb	0.556 ppb	87.633 %	85.859 %	0.038 ppb
Concentration per Run 1	102.055 %	94.244 %	0.625 ppb	0.583 ppb	328.843 ppb	0.565 ppb	87.852 %	85.772 %	0.034 ppb
Concentration per Run 2	101.499 %	93.154 %	0.797 ppb	0.546 ppb	335.914 ppb	0.543 ppb	87.773 %	86.257 %	0.040 ppb
Concentration per Run 3	100.781 %	91.883 %	0.644 ppb	0.594 ppb	344.750 ppb	0.559 ppb	87.275 %	85.547 %	0.040 ppb
Concentration RSD	0.6 %	1.3 %	13.6 %	4.3 %	2.4 %	2.0 %	0.4 %	0.4 %	9.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.021 ppb	92.861 %	83.812 %	0.735 ppb	277.025 ppb	93.498 %	87.065 %	93.577 %	82.919 %
Concentration per Run 1	0.019 ppb	93.005 %	83.319 %	0.742 ppb	272.419 ppb	90.709 %	86.621 %	92.890 %	83.141 %
Concentration per Run 2	0.020 ppb	94.191 %	83.179 %	0.710 ppb	282.479 ppb	93.719 %	86.390 %	93.576 %	82.572 %
Concentration per Run 3	0.024 ppb	91.387 %	84.937 %	0.755 ppb	276.176 ppb	96.066 %	88.183 %	94.265 %	83.046 %
Concentration RSD	10.8 %	1.5 %	1.2 %	3.1 %	1.8 %	2.9 %	1.1 %	0.7 %	0.4 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.059 ppb	1.051 ppb	84.665 %	80.782 %
Concentration per Run 1	0.034 ppb	1.029 ppb	83.459 %	80.240 %
Concentration per Run 2	0.064 ppb	1.065 ppb	85.180 %	81.500 %
Concentration per Run 3	0.078 ppb	1.060 ppb	85.355 %	80.607 %
Concentration RSD	38.7 %	1.9 %	1.2 %	0.8 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 89 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975931-3d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:15:29 PM Vial: 54

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	107.300 %	95.766 %	5.209 ppb	9,809.897 ppb	4,339.383 ppb	235.856 ppb	1,423.345 ppb	13,352.156 ppb	104.312 %
Concentration per Run 1	108.181 %	89.664 %	5.201 ppb	10,748.898 ppb	4,711.345 ppb	261.457 ppb	1,526.594 ppb	13,945.240 ppb	108.074 %
Concentration per Run 2	107.420 %	100.249 %	5.184 ppb	9,392.647 ppb	4,151.373 ppb	218.688 ppb	1,373.578 ppb	13,181.045 ppb	103.730 %
Concentration per Run 3	106.299 %	97.385 %	5.242 ppb	9,288.147 ppb	4,155.432 ppb	227.424 ppb	1,369.863 ppb	12,930.182 ppb	101.132 %
Concentration RSD	0.9 %	5.7 %	0.6 %	8.3 %	7.4 %	9.6 %	6.3 %	4.0 %	3.4 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	87.136 %	54.288 ppb	20.944 ppb	62.685 ppb	149.530 ppb	57.495 ppb	57.712 ppb	29.418 ppb	57.954 ppb
Concentration per Run 1	82.508 %	56.084 ppb	21.918 ppb	66.202 ppb	155.579 ppb	60.788 ppb	61.646 ppb	30.913 ppb	61.050 ppb
Concentration per Run 2	89.075 %	51.984 ppb	20.559 ppb	60.669 ppb	149.712 ppb	55.946 ppb	57.862 ppb	28.882 ppb	56.332 ppb
Concentration per Run 3	89.826 %	54.795 ppb	20.355 ppb	61.185 ppb	143.300 ppb	55.750 ppb	53.627 ppb	28.457 ppb	56.481 ppb
Concentration RSD	4.6 %	3.9 %	4.1 %	4.9 %	4.1 %	5.0 %	7.0 %	4.5 %	4.6 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	101.161 %	91.778 %	13.806 ppb	12.955 ppb	136.838 ppb	112.322 ppb	97.218 %	88.278 %	5.607 ppb
Concentration per Run 1	104.064 %	86.760 %	14.744 ppb	14.041 ppb	143.354 ppb	115.794 ppb	94.749 %	86.722 %	5.838 ppb
Concentration per Run 2	98.901 %	94.285 %	13.302 ppb	12.422 ppb	132.234 ppb	110.892 ppb	98.810 %	87.533 %	5.519 ppb
Concentration per Run 3	100.518 %	94.288 %	13.371 ppb	12.403 ppb	134.927 ppb	110.280 ppb	98.095 %	90.579 %	5.463 ppb
Concentration RSD	2.6 %	4.7 %	5.9 %	7.3 %	4.2 %	2.7 %	2.2 %	2.3 %	3.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.803 ppb	99.259 %	88.749 %	52.448 ppb	251.529 ppb	95.900 %	86.592 %	95.693 %	83.577 %
Concentration per Run 1	6.318 ppb	97.752 %	82.600 %	56.035 ppb	268.774 ppb	96.727 %	81.119 %	98.701 %	79.446 %
Concentration per Run 2	5.488 ppb	98.533 %	91.784 %	50.691 ppb	244.275 ppb	95.265 %	88.746 %	94.208 %	85.318 %
Concentration per Run 3	5.602 ppb	101.493 %	91.863 %	50.616 ppb	241.539 ppb	95.707 %	89.911 %	94.171 %	85.968 %
Concentration RSD	7.7 %	2.0 %	6.0 %	5.9 %	6.0 %	0.8 %	5.5 %	2.7 %	4.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	13.440 ppb	57.874 ppb	89.930 %	82.545 %
Concentration per Run 1	14.199 ppb	61.549 ppb	89.453 %	77.986 %
Concentration per Run 2	13.157 ppb	57.274 ppb	90.473 %	83.023 %
Concentration per Run 3	12.964 ppb	54.799 ppb	89.863 %	86.627 %
Concentration RSD	4.9 %	5.9 %	0.6 %	5.3 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 90 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975931-4d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:20:10 PM Vial: 55

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	106.578 %	96.388 %	5.376 ppb	9,246.707 ppb	4,155.601 ppb	231.572 ppb	1,367.785 ppb	12,143.366 ppb	103.494 %
Concentration per Run 1	107.442 %	98.755 %	5.418 ppb	8,969.785 ppb	3,973.057 ppb	225.538 ppb	1,364.204 ppb	12,664.948 ppb	102.955 %
Concentration per Run 2	106.762 %	94.770 %	5.369 ppb	9,376.840 ppb	4,211.720 ppb	243.205 ppb	1,375.412 ppb	11,917.206 ppb	104.447 %
Concentration per Run 3	105.531 %	95.641 %	5.340 ppb	9,393.496 ppb	4,282.024 ppb	225.973 ppb	1,363.741 ppb	11,847.945 ppb	103.079 %
Concentration RSD	0.9 %	2.2 %	0.7 %	2.6 %	3.9 %	4.4 %	0.5 %	3.7 %	0.8 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	92.057 %	52.004 ppb	20.063 ppb	58.884 ppb	142.570 ppb	55.436 ppb	52.317 ppb	28.155 ppb	55.263 ppb
Concentration per Run 1	91.676 %	52.520 ppb	19.754 ppb	58.084 ppb	142.784 ppb	54.278 ppb	52.367 ppb	28.355 ppb	54.513 ppb
Concentration per Run 2	92.300 %	50.728 ppb	19.888 ppb	58.917 ppb	141.130 ppb	56.279 ppb	50.381 ppb	27.413 ppb	54.838 ppb
Concentration per Run 3	92.196 %	52.763 ppb	20.546 ppb	59.651 ppb	143.797 ppb	55.752 ppb	54.203 ppb	28.698 ppb	56.439 ppb
Concentration RSD	0.4 %	2.1 %	2.1 %	1.3 %	0.9 %	1.9 %	3.7 %	2.4 %	1.9 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	99.403 %	95.102 %	13.070 ppb	12.868 ppb	130.200 ppb	106.680 ppb	95.442 %	91.593 %	5.472 ppb
Concentration per Run 1	99.199 %	94.634 %	13.194 ppb	12.298 ppb	127.327 ppb	106.230 ppb	94.773 %	92.175 %	5.267 ppb
Concentration per Run 2	100.123 %	96.178 %	12.790 ppb	13.787 ppb	130.809 ppb	107.487 ppb	96.142 %	91.196 %	5.593 ppb
Concentration per Run 3	98.886 %	94.495 %	13.227 ppb	12.520 ppb	132.465 ppb	106.325 ppb	95.410 %	91.409 %	5.556 ppb
Concentration RSD	0.6 %	1.0 %	1.9 %	6.2 %	2.0 %	0.7 %	0.7 %	0.6 %	3.3 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	5.604 ppb	97.778 %	90.860 %	51.660 ppb	245.861 ppb	93.605 %	87.897 %	93.048 %	84.607 %
Concentration per Run 1	5.505 ppb	97.673 %	91.349 %	50.349 ppb	242.701 ppb	93.917 %	87.609 %	92.321 %	88.848 %
Concentration per Run 2	5.830 ppb	98.393 %	88.573 %	53.386 ppb	246.615 ppb	93.039 %	87.685 %	92.890 %	82.349 %
Concentration per Run 3	5.477 ppb	97.268 %	92.658 %	51.245 ppb	248.265 ppb	93.857 %	88.396 %	93.931 %	82.626 %
Concentration RSD	3.5 %	0.6 %	2.3 %	3.0 %	1.2 %	0.5 %	0.5 %	0.9 %	4.3 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	13.117 ppb	56.670 ppb	89.099 %	85.564 %
Concentration per Run 1	12.873 ppb	55.473 ppb	89.644 %	86.175 %
Concentration per Run 2	13.162 ppb	56.628 ppb	89.795 %	85.074 %
Concentration per Run 3	13.317 ppb	57.908 ppb	87.859 %	85.444 %
Concentration RSD	1.7 %	2.1 %	1.2 %	0.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 91 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975931-5d10 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:24:51 PM Vial: 56

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	103.087 %	93.981 %	50.549 ppb	13,478.293 ppb	8,310.836 ppb	80.998 ppb	5,791.435 ppb	17,348.146 ppb	100.591 %
Concentration per Run 1	103.706 %	93.524 %	50.583 ppb	14,001.349 ppb	8,444.374 ppb	83.557 ppb	6,016.005 ppb	18,058.691 ppb	102.015 %
Concentration per Run 2	104.175 %	99.502 %	49.917 ppb	12,853.680 ppb	8,090.810 ppb	82.385 ppb	5,801.856 ppb	17,033.942 ppb	98.096 %
Concentration per Run 3	101.380 %	88.916 %	51.148 ppb	13,579.851 ppb	8,397.323 ppb	77.050 ppb	5,556.445 ppb	16,951.805 ppb	101.662 %
Concentration RSD	1.5 %	5.6 %	1.2 %	4.3 %	2.3 %	4.3 %	4.0 %	3.6 %	2.2 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	88.130 %	53.862 ppb	51.845 ppb	58.310 ppb	5,433.830 ppb	55.990 ppb	54.014 ppb	54.346 ppb	55.558 ppb
Concentration per Run 1	84.901 %	57.342 ppb	54.476 ppb	62.211 ppb	5,855.692 ppb	59.970 ppb	59.492 ppb	58.106 ppb	59.637 ppb
Concentration per Run 2	88.173 %	52.931 ppb	51.390 ppb	57.534 ppb	5,358.101 ppb	54.564 ppb	53.280 ppb	53.181 ppb	54.881 ppb
Concentration per Run 3	91.317 %	51.312 ppb	49.669 ppb	55.185 ppb	5,087.696 ppb	53.436 ppb	49.270 ppb	51.752 ppb	52.155 ppb
Concentration RSD	3.6 %	5.8 %	4.7 %	6.1 %	7.2 %	6.2 %	9.5 %	6.1 %	6.8 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.674 %	90.838 %	53.300 ppb	51.191 ppb	84.695 ppb	56.037 ppb	93.903 %	86.985 %	3.976 ppb
Concentration per Run 1	100.914 %	84.674 %	56.304 ppb	53.910 ppb	89.163 ppb	60.829 ppb	91.927 %	82.692 %	4.287 ppb
Concentration per Run 2	100.535 %	91.118 %	53.284 ppb	50.302 ppb	83.621 ppb	53.939 ppb	96.472 %	88.161 %	3.901 ppb
Concentration per Run 3	100.572 %	96.723 %	50.312 ppb	49.362 ppb	81.301 ppb	53.343 ppb	93.308 %	90.102 %	3.741 ppb
Concentration RSD	0.2 %	6.6 %	5.6 %	4.7 %	4.8 %	7.4 %	2.5 %	4.4 %	7.1 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	54.194 ppb	99.007 %	85.522 %	56.175 ppb	83.881 ppb	96.930 %	84.812 %	97.066 %	83.045 %
Concentration per Run 1	57.203 ppb	98.492 %	80.512 %	59.031 ppb	89.387 ppb	96.730 %	79.713 %	95.093 %	78.760 %
Concentration per Run 2	52.734 ppb	100.220 %	87.539 %	54.668 ppb	80.175 ppb	95.288 %	87.019 %	97.827 %	84.401 %
Concentration per Run 3	52.646 ppb	98.309 %	88.516 %	54.825 ppb	82.082 ppb	98.774 %	87.703 %	98.278 %	85.973 %
Concentration RSD	4.8 %	1.1 %	5.1 %	4.4 %	5.8 %	1.8 %	5.2 %	1.8 %	4.6 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	52.754 ppb	52.833 ppb	91.408 %	82.833 %
Concentration per Run 1	55.885 ppb	55.541 ppb	89.270 %	78.564 %
Concentration per Run 2	52.093 ppb	51.919 ppb	91.947 %	84.142 %
Concentration per Run 3	50.283 ppb	51.038 ppb	93.007 %	85.795 %
Concentration RSD	5.4 %	4.5 %	2.1 %	4.6 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 92 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: WG1975931-6d5 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:29:32 PM Vial: 57

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	104.059 %	96.721 %	0.032 ppb	16,072.576 ppb	5,998.552 ppb	48.196 ppb	364.879 ppb	23,037.618 ppb	104.503 %
Concentration per Run 1	105.006 %	94.894 %	0.039 ppb	16,823.366 ppb	6,205.594 ppb	52.987 ppb	372.306 ppb	25,014.215 ppb	106.319 %
Concentration per Run 2	104.525 %	100.125 %	0.028 ppb	15,806.620 ppb	5,875.576 ppb	42.457 ppb	372.733 ppb	22,924.467 ppb	107.369 %
Concentration per Run 3	102.648 %	95.143 %	0.030 ppb	15,587.743 ppb	5,914.486 ppb	49.142 ppb	349.598 ppb	21,174.173 ppb	99.820 %
Concentration RSD	1.2 %	3.1 %	17.3 %	4.1 %	3.0 %	11.1 %	3.6 %	8.3 %	3.9 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	87.456 %	0.354 ppb	0.313 ppb	6.145 ppb	63.604 ppb	0.082 ppb	0.403 ppb	1.607 ppb	2.314 ppb
Concentration per Run 1	83.387 %	0.415 ppb	0.319 ppb	6.527 ppb	70.281 ppb	0.093 ppb	0.391 ppb	1.661 ppb	2.587 ppb
Concentration per Run 2	86.496 %	0.316 ppb	0.317 ppb	6.153 ppb	59.216 ppb	0.088 ppb	0.485 ppb	1.663 ppb	2.179 ppb
Concentration per Run 3	92.485 %	0.329 ppb	0.304 ppb	5.754 ppb	61.314 ppb	0.065 ppb	0.334 ppb	1.497 ppb	2.176 ppb
Concentration RSD	5.3 %	15.2 %	2.5 %	6.3 %	9.2 %	18.2 %	18.9 %	5.9 %	10.2 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	103.330 %	90.234 %	0.221 ppb	0.242 ppb	72.968 ppb	0.374 ppb	95.059 %	88.410 %	0.009 ppb
Concentration per Run 1	103.260 %	85.470 %	0.368 ppb	0.256 ppb	77.902 ppb	0.370 ppb	97.125 %	83.788 %	0.009 ppb
Concentration per Run 2	104.289 %	91.022 %	0.176 ppb	0.337 ppb	70.603 ppb	0.363 ppb	97.023 %	89.733 %	0.010 ppb
Concentration per Run 3	102.439 %	94.211 %	0.120 ppb	0.133 ppb	70.400 ppb	0.390 ppb	91.030 %	91.709 %	0.010 ppb
Concentration RSD	0.9 %	4.9 %	58.7 %	42.6 %	5.9 %	3.7 %	3.7 %	4.7 %	4.0 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.005 ppb	99.162 %	86.052 %	0.368 ppb	58.147 ppb	95.937 %	87.066 %	96.026 %	85.157 %
Concentration per Run 1	0.008 ppb	99.666 %	81.270 %	0.317 ppb	61.357 ppb	94.950 %	83.188 %	95.737 %	79.426 %
Concentration per Run 2	0.003 ppb	99.342 %	87.503 %	0.379 ppb	55.840 ppb	96.760 %	87.747 %	96.672 %	87.423 %
Concentration per Run 3	0.004 ppb	98.479 %	89.381 %	0.408 ppb	57.243 ppb	96.101 %	90.264 %	95.669 %	88.622 %
Concentration RSD	56.7 %	0.6 %	4.9 %	12.7 %	4.9 %	1.0 %	4.1 %	0.6 %	5.9 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.286 ppb	0.251 ppb	89.709 %	82.743 %
Concentration per Run 1	0.184 ppb	0.276 ppb	90.262 %	79.226 %
Concentration per Run 2	0.336 ppb	0.245 ppb	91.622 %	82.495 %
Concentration per Run 3	0.338 ppb	0.232 ppb	87.243 %	86.510 %
Concentration RSD	30.8 %	9.1 %	2.5 %	4.4 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 93 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
 Analysis label: L2454036-01 6020TL Rack: 1
 Analysis started at: 9/26/2024 2:34:14 PM Vial: 58

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	99.506 %	96.056 %	0.046 ppb	57,842.535 ppb	8,564.368 ppb	364.290 ppb	1,660.713 ppb	48,677.730 ppb	104.924 %
Concentration per Run 1	101.233 %	92.154 %	0.050 ppb	59,498.662 ppb	8,645.372 ppb	375.954 ppb	1,684.087 ppb	47,150.137 ppb	107.616 %
Concentration per Run 2	99.103 %	95.268 %	0.045 ppb	57,360.910 ppb	8,511.708 ppb	350.211 ppb	1,613.816 ppb	48,084.972 ppb	104.211 %
Concentration per Run 3	98.182 %	100.747 %	0.043 ppb	56,668.034 ppb	8,536.024 ppb	366.704 ppb	1,684.237 ppb	50,798.081 ppb	102.945 %
Concentration RSD	1.6 %	4.5 %	7.5 %	2.6 %	0.8 %	3.6 %	2.4 %	3.9 %	2.3 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	91.687 %	1.547 ppb	2.859 ppb	56.936 ppb	501.169 ppb	0.460 ppb	2.742 ppb	24.412 ppb	40.161 ppb
Concentration per Run 1	92.554 %	1.493 ppb	2.822 ppb	55.734 ppb	501.145 ppb	0.397 ppb	2.689 ppb	23.977 ppb	39.980 ppb
Concentration per Run 2	92.878 %	1.598 ppb	2.699 ppb	55.408 ppb	478.867 ppb	0.472 ppb	2.594 ppb	23.273 ppb	38.617 ppb
Concentration per Run 3	89.629 %	1.550 ppb	3.058 ppb	59.667 ppb	523.496 ppb	0.511 ppb	2.944 ppb	25.985 ppb	41.887 ppb
Concentration RSD	2.0 %	3.4 %	6.4 %	4.2 %	4.5 %	12.6 %	6.6 %	5.8 %	4.1 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	100.125 %	93.541 %	0.517 ppb	0.939 ppb	89.921 ppb	0.395 ppb	91.462 %	87.618 %	0.112 ppb
Concentration per Run 1	100.496 %	91.637 %	0.560 ppb	0.918 ppb	89.032 ppb	0.342 ppb	90.910 %	88.824 %	0.111 ppb
Concentration per Run 2	98.459 %	97.418 %	0.371 ppb	0.914 ppb	88.848 ppb	0.366 ppb	91.970 %	86.417 %	0.109 ppb
Concentration per Run 3	101.420 %	91.568 %	0.621 ppb	0.986 ppb	91.882 ppb	0.476 ppb	91.507 %	87.615 %	0.114 ppb
Concentration RSD	1.5 %	3.6 %	25.1 %	4.3 %	1.9 %	18.1 %	0.6 %	1.4 %	2.6 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.333 ppb	93.793 %	85.995 %	0.322 ppb	120.623 ppb	95.753 %	87.349 %	98.270 %	85.824 %
Concentration per Run 1	0.271 ppb	91.692 %	86.136 %	0.287 ppb	119.996 ppb	94.668 %	86.710 %	97.687 %	85.992 %
Concentration per Run 2	0.293 ppb	93.008 %	86.105 %	0.276 ppb	121.006 ppb	95.296 %	87.669 %	97.036 %	84.370 %
Concentration per Run 3	0.436 ppb	96.679 %	85.745 %	0.402 ppb	120.867 ppb	97.294 %	87.669 %	100.086 %	87.109 %
Concentration RSD	26.7 %	2.8 %	0.3 %	21.7 %	0.5 %	1.4 %	0.6 %	1.6 %	1.6 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.104 ppb	3.083 ppb	89.216 %	83.890 %
Concentration per Run 1	0.053 ppb	3.012 ppb	88.098 %	85.427 %
Concentration per Run 2	0.105 ppb	3.095 ppb	87.801 %	82.713 %
Concentration per Run 3	0.155 ppb	3.141 ppb	91.748 %	83.530 %
Concentration RSD	48.9 %	2.1 %	2.5 %	1.7 %

Alpha ICPMSRQ Data with SRD

9/26/2024 2:44:13 PM



Analysis index: 94 User name: ALPHALAB\ICPMSRQ Comment: <Comment>
Analysis label: L2454036-02 6020TL Rack: 1
Analysis started at: 9/26/2024 2:38:56 PM Vial: 59

Category	6Li (STD_DEF)	6Li (KED_DEF)	9Be (STD_DEF)	23Na (KED_DEF)	24Mg (KED_DEF)	27Al (KED_DEF)	39K (KED_DEF)	44Ca (KED_DEF)	45Sc (STD_DEF)
Concentration average	93.333 %	89.082 %	0.051 ppb	70,029.504 ppb	10,045.614 ppb	611.735 ppb	1,448.501 ppb	68,536.913 ppb	99.985 %
Concentration per Run 1	95.411 %	90.660 %	0.049 ppb	69,163.695 ppb	10,022.460 ppb	604.811 ppb	1,479.259 ppb	68,881.613 ppb	101.311 %
Concentration per Run 2	89.391 %	90.162 %	0.055 ppb	69,203.166 ppb	10,150.845 ppb	603.088 ppb	1,455.479 ppb	70,081.988 ppb	97.091 %
Concentration per Run 3	95.198 %	86.426 %	0.048 ppb	71,721.650 ppb	9,963.537 ppb	627.305 ppb	1,410.765 ppb	66,647.138 ppb	101.552 %
Concentration RSD	3.7 %	2.6 %	7.5 %	2.1 %	1.0 %	2.2 %	2.4 %	2.5 %	2.5 %

Category	45Sc (KED_DEF)	51V (KED_DEF)	52Cr (KED_DEF)	55Mn (KED_DEF)	57Fe (KED_DEF)	59Co (KED_DEF)	60Ni (KED_DEF)	65Cu (KED_DEF)	66Zn (KED_DEF)
Concentration average	90.346 %	2.298 ppb	11.433 ppb	847.507 ppb	620.524 ppb	0.483 ppb	2.883 ppb	40.033 ppb	64.592 ppb
Concentration per Run 1	89.826 %	2.085 ppb	11.359 ppb	843.214 ppb	622.464 ppb	0.476 ppb	3.097 ppb	39.544 ppb	65.187 ppb
Concentration per Run 2	90.046 %	2.469 ppb	11.404 ppb	851.562 ppb	616.553 ppb	0.498 ppb	2.889 ppb	39.611 ppb	64.693 ppb
Concentration per Run 3	91.167 %	2.342 ppb	11.535 ppb	847.745 ppb	622.555 ppb	0.474 ppb	2.663 ppb	40.943 ppb	63.897 ppb
Concentration RSD	0.8 %	8.5 %	0.8 %	0.5 %	0.6 %	2.8 %	7.5 %	2.0 %	1.0 %

Category	74Ge (STD_DEF)	74Ge (KED_DEF)	75As (KED_DEF)	78Se (KED_DEF)	88Sr (KED_DEF)	95Mo (KED_DEF)	103Rh (STD_DEF)	103Rh (KED_DEF)	107Ag (KED_DEF)
Concentration average	98.232 %	92.486 %	0.518 ppb	0.553 ppb	93.503 ppb	0.564 ppb	88.071 %	87.884 %	0.023 ppb
Concentration per Run 1	99.606 %	91.138 %	0.485 ppb	0.590 ppb	92.781 ppb	0.570 ppb	91.799 %	87.094 %	0.021 ppb
Concentration per Run 2	95.792 %	93.111 %	0.496 ppb	0.596 ppb	94.420 ppb	0.553 ppb	82.618 %	87.654 %	0.023 ppb
Concentration per Run 3	99.298 %	93.209 %	0.574 ppb	0.474 ppb	93.308 ppb	0.571 ppb	89.796 %	88.905 %	0.025 ppb
Concentration RSD	2.2 %	1.3 %	9.4 %	12.5 %	0.9 %	1.8 %	5.5 %	1.1 %	8.2 %

Category	111Cd (KED_DEF)	115In (STD_DEF)	115In (KED_DEF)	123Sb (KED_DEF)	137Ba (KED_DEF)	159Tb (STD_DEF)	159Tb (KED_DEF)	175Lu (STD_DEF)	175Lu (KED_DEF)
Concentration average	0.675 ppb	92.623 %	87.481 %	0.380 ppb	146.353 ppb	92.921 %	88.991 %	94.300 %	87.607 %
Concentration per Run 1	0.682 ppb	95.207 %	86.256 %	0.374 ppb	144.899 ppb	92.226 %	88.844 %	96.819 %	86.619 %
Concentration per Run 2	0.687 ppb	88.053 %	87.736 %	0.379 ppb	144.898 ppb	88.485 %	88.819 %	88.124 %	86.362 %
Concentration per Run 3	0.656 ppb	94.609 %	88.450 %	0.388 ppb	149.261 ppb	98.053 %	89.310 %	97.958 %	89.840 %
Concentration RSD	2.4 %	4.3 %	1.3 %	1.9 %	1.7 %	5.2 %	0.3 %	5.7 %	2.2 %

Category	205Tl (KED_DEF)	208Pb (KED_DEF)	209Bi (STD_DEF)	209Bi (KED_DEF)
Concentration average	0.060 ppb	3.194 ppb	86.645 %	85.291 %
Concentration per Run 1	0.037 ppb	3.193 ppb	88.046 %	85.233 %
Concentration per Run 2	0.067 ppb	3.253 ppb	83.233 %	84.647 %
Concentration per Run 3	0.076 ppb	3.137 ppb	88.655 %	85.991 %
Concentration RSD	34.5 %	1.8 %	3.4 %	0.8 %

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		n	NIST Traceability	
		Mean	Recovery ⁵		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



A Waters Company

Reference Material

▪ 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

Page 1 of 3 Lot: D105-540

16341 Table Mountain Pkwy • Golden, CO 80403 • T: 800.372.0122 • 303.431.8454 • www.eraqc.com

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number	Recovery
	mg/kg	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


Page 3 of 3 Lot: D105-540

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number ⁶	Recovery
	mg/kg	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 (%)** = $[(\% \text{ recovery ERA certified reference material}) / (\% \text{ recovery NIST SRM})] * 100$

The traceability data shown were compiled by analyzing this ERA certified reference material and/or its 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

Brian Miller

Matthew Seebeck





A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D113-540
Certificate Issue Date: March 23, 2021
Expiration Date: October 13, 2024
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	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8630	12.0	4420 - 12800	4370 - 12900
Antimony	256	129	16.8	0.742 - 257	25.6 - 323
Arsenic	91.6	84.5	15.1	70.0 - 99.0	59.2 - 110
Barium	259	249	9.94	206 - 292	187 - 311
Beryllium	175	163	3.89	135 - 191	122 - 204
Boron	95.7	76.7	12.8	55.7 - 97.7	48.0 - 107
Cadmium	107	99.0	11.5	82.2 - 116	74.2 - 124
Calcium	5190	4760	11.8	3890 - 5640	3460 - 6070
Chromium	129	122	14.6	101 - 144	85.7 - 159
Cobalt	63.6	61.7	11.5	51.9 - 71.6	46.3 - 77.2
Copper	62.3	61.5	12.3	51.9 - 71.0	46.1 - 76.8
Iron	15000	14500	15.7	8860 - 20100	5190 - 23800
Lead	122	123	13.9	103 - 144	88.3 - 158
Lithium	6.42	7.30	18.7	5.13 - 9.48	3.20 - 11.4
Magnesium	2570	2360	8.87	1810 - 2920	1480 - 3250
Manganese	470	456	13.4	375 - 538	350 - 563
Mercury	22.1	18.9	14.5	13.0 - 24.8	11.3 - 26.4
Molybdenum	80.1	72.8	11.0	58.7 - 87.0	50.5 - 95.2
Nickel	143	135	14.2	112 - 158	94.7 - 176
Potassium	2420	2090	8.21	1480 - 2700	1240 - 2940
Selenium	128	121	11.7	96.9 - 146	80.4 - 162
Silver	45.4	44.1	6.69	35.5 - 52.8	30.7 - 57.6
Sodium	161	136	9.34	97.4 - 174	48.1 - 223
Strontium	82.2	82.3	8.42	67.4 - 97.1	58.6 - 106

Page 1 of 4 Lot: D113-540

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

Certified Reference Material

▪ 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
Thallium	154	144	7.54	117 - 171	101 - 187
Tin	89.7	79.8	14.0	62.2 - 97.4	43.5 - 116
Titanium	705	546	10.3	123 - 969	118 - 974
Uranium	29.5	30.9	3.38	23.9 - 37.9	21.3 - 40.5
Vanadium	196	186	14.2	148 - 224	138 - 235
Zinc	307	295	10.4	240 - 351	207 - 384

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:

Instrument ID: iCAP RQ

Index:	Label:	Rack	Vial	Main Runs:	Survey Runs:	Start Time:
1	Rinse	0	1	3	1	9/26/2024 6:46:53 AM
2	CAL LOT #M24-1045	0	1	3	1	9/26/2024 6:51:33 AM
3	Blank NTB ICPMSRQ	4	49	3	1	9/26/2024 6:56:13 AM
4	0.2/20 Cal	0	2	3	1	9/26/2024 7:00:57 AM
5	1/100 Cal	0	3	3	1	9/26/2024 7:05:37 AM
6	10/10000 Cal	0	4	3	1	9/26/2024 7:10:18 AM
7	60/6000 Cal	0	5	3	1	9/26/2024 7:15:00 AM
8	120/120000 Cal	0	6	3	1	9/26/2024 7:19:42 AM
9	Sr 200ppb	4	55	3	1	9/26/2024 7:30:19 AM
10	ICV	0	7	3	1	9/26/2024 7:35:04 AM
11	ICB	0	10	3	1	9/26/2024 7:39:47 AM
12	ICSA	4	53	3	1	9/26/2024 7:44:57 AM
13	LDR Check	4	1	3	1	9/26/2024 7:49:41 AM
14	Rinse	0	1	3	1	9/26/2024 7:54:24 AM
15	CCV	0	9	3	1	9/26/2024 7:59:03 AM
16	CCB	0	10	3	1	9/26/2024 8:03:48 AM
17	WG1973761-1d2 A2-6020T	1	1	3	1	9/26/2024 8:09:51 AM
18	WG1973761-2d10 A2-6020T	1	2	3	1	9/26/2024 8:15:46 AM
19	WG1973761-3d10 A2-6020T	1	3	3	1	9/26/2024 8:20:26 AM
20	L2452574-02d2 A2-6020T	1	4	3	1	9/26/2024 8:25:06 AM
21	L2453966-01d2 A2-6020T	1	5	3	1	9/26/2024 8:29:47 AM
22	L2450748-02 A2-6020T	1	6	3	1	9/26/2024 8:34:28 AM
23	xl2450862-01 6020TL	1	7	3	1	9/26/2024 8:39:09 AM
24	L2453945-01 2008TL	1	8	3	1	9/26/2024 8:43:51 AM
25	L2454072-01 2008TL	1	9	3	1	9/26/2024 8:48:32 AM
26	l2450862-01 6020TL	1	7	3	1	9/26/2024 8:53:14 AM
27	CCV	0	9	3	1	9/26/2024 8:57:56 AM
28	CCB	0	10	3	1	9/26/2024 9:02:40 AM
29	L2453858-01 2008SL	1	10	3	1	9/26/2024 9:08:25 AM
30	WG1974915-5d10 2008SL	1	11	3	1	9/26/2024 9:13:08 AM
31	WG1974915-6d10 2008SL	1	12	3	1	9/26/2024 9:17:50 AM
32	L2453858-02 2008SL	1	13	3	1	9/26/2024 9:22:34 AM
33	L2453858-03 2008SL	1	14	3	1	9/26/2024 9:27:13 AM
34	L2453858-04 2008SL	1	15	3	1	9/26/2024 9:36:32 AM
35	CCV	0	9	3	1	9/26/2024 9:42:04 AM
36	CCB	0	10	3	1	9/26/2024 9:46:49 AM
37	WG1975067-1 6020SL	1	16	3	1	9/26/2024 9:52:24 AM
38	WG1975067-2d10 6020SL	1	17	3	1	9/26/2024 9:57:04 AM
39	L2454036-05 6020SL	1	18	3	1	9/26/2024 10:01:45 AM
40	WG1975067-3d10 6020SL	1	19	3	1	9/26/2024 10:06:25 AM
41	WG1975067-4d10 6020SL	1	20	3	1	9/26/2024 10:11:06 AM
42	WG1975067-5d10 6020SL	1	21	3	1	9/26/2024 10:15:47 AM
43	WG1975067-6d5 6020SL	1	22	3	1	9/26/2024 10:20:28 AM
44	L2454036-01 6020SL	1	23	3	1	9/26/2024 10:25:10 AM
45	L2454036-02 6020SL	1	24	3	1	9/26/2024 10:29:52 AM
46	L2454036-03 6020SL	1	25	3	1	9/26/2024 10:34:35 AM
47	CCV	0	9	3	1	9/26/2024 10:39:14 AM
48	CCB	0	10	3	1	9/26/2024 10:43:59 AM
49	CCV	0	9	3	1	9/26/2024 10:56:16 AM
50	CCB	0	10	3	1	9/26/2024 11:01:00 AM
51	L2454036-09 6020SL	1	30	3	1	9/26/2024 11:05:58 AM

Alpha ICPMSRQ Seq

9/26/2024 2:44:53 PM



Index:	Label:	Rack	Vial	Main Runs:	Survey Runs:	Start Time:
52	L2454036-10 6020SL	1	31	3	1	9/26/2024 11:10:39 AM
53	L2454036-04 6020SL	1	26	3	1	9/26/2024 11:15:19 AM
54	L2454036-06 6020SL	1	27	3	1	9/26/2024 11:19:59 AM
55	L2454036-07 6020SL	1	28	3	1	9/26/2024 11:24:39 AM
56	L2454036-08 6020SL	1	29	3	1	9/26/2024 11:29:19 AM
57	I2454075-02 6020TL	1	32	3	1	9/26/2024 11:33:59 AM
58	I2454075-03 6020TL	1	33	3	1	9/26/2024 11:38:40 AM
59	I2454075-04 6020TL	1	34	3	1	9/26/2024 11:43:22 AM
60	I2454075-05 6020TL	1	35	3	1	9/26/2024 11:48:04 AM
61	xCCV	0	9	3	1	9/26/2024 11:52:46 AM
62	CCV	0	9	3	1	9/26/2024 11:55:01 AM
63	CCB	0	10	3	1	9/26/2024 11:59:45 AM
64	I2454075-02d10 6020TL	1	47	3	1	9/26/2024 12:05:29 PM
65	I2454075-03d10 6020TL	1	48	3	1	9/26/2024 12:10:11 PM
66	I2454075-04d10 6020TL	1	49	3	1	9/26/2024 12:14:54 PM
67	I2454075-05d10 6020TL	1	50	3	1	9/26/2024 12:19:34 PM
68	L2454050-04 6020TL	1	46	3	1	9/26/2024 12:24:15 PM
69	CCV	0	9	3	1	9/26/2024 12:28:57 PM
70	CCB	0	10	3	1	9/26/2024 12:33:42 PM
71	WG1975627-1 6020TL	1	36	3	1	9/26/2024 12:41:30 PM
72	WG1975627-2d10 6020TL	1	37	3	1	9/26/2024 12:46:13 PM
73	L2409778-152 6020TL	1	38	3	1	9/26/2024 12:50:53 PM
74	WG1975627-3d10 6020TL	1	39	3	1	9/26/2024 12:55:33 PM
75	xWG1975627-4d10 6020TL	1	40	3	1	9/26/2024 1:00:13 PM
76	WG1975627-5d10 6020TL	1	41	3	1	9/26/2024 1:04:54 PM
77	WG1975627-6d5 6020TL	1	42	3	1	9/26/2024 1:09:34 PM
78	L2454050-01 6020TL	1	43	3	1	9/26/2024 1:14:15 PM
79	L2454050-02 6020TL	1	44	3	1	9/26/2024 1:18:56 PM
80	L2454050-03 6020TL	1	45	3	1	9/26/2024 1:23:38 PM
81	CCV	0	9	3	1	9/26/2024 1:28:20 PM
82	CCB	0	10	3	1	9/26/2024 1:33:05 PM
83	WG1975931-1 6020TL	1	51	3	1	9/26/2024 1:41:04 PM
84	WG1975627-11 6020TL	2	7	3	1	9/26/2024 1:49:33 PM
85	CCV	0	9	3	1	9/26/2024 1:54:14 PM
86	CCB	0	10	3	1	9/26/2024 1:59:00 PM
87	WG1975931-2d10 6020TL	1	52	3	1	9/26/2024 2:06:07 PM
88	L2454036-05 6020TL	1	53	3	1	9/26/2024 2:10:48 PM
89	WG1975931-3d10 6020TL	1	54	3	1	9/26/2024 2:15:29 PM
90	WG1975931-4d10 6020TL	1	55	3	1	9/26/2024 2:20:10 PM
91	WG1975931-5d10 6020TL	1	56	3	1	9/26/2024 2:24:51 PM
92	WG1975931-6d5 6020TL	1	57	3	1	9/26/2024 2:29:32 PM
93	L2454036-01 6020TL	1	58	3	1	9/26/2024 2:34:14 PM
94	L2454036-02 6020TL	1	59	3	1	9/26/2024 2:38:56 PM
95	L2454036-03 6020TL	1	60	3	1	
96	L2454036-04 6020TL	2	1	3	1	
97	CCV	0	9	3	1	
98	CCB	0	10	3	1	
99	L2454036-06 6020TL	2	2	3	1	
100	L2454036-07 6020TL	2	3	3	1	
101	L2454036-08 6020TL	2	4	3	1	
102	L2454036-09 6020TL	2	5	3	1	
103	L2454036-10 6020TL	2	6	3	1	
104	Unknown	2	8	3	1	
105	Unknown	2	9	3	1	
106	Unknown	2	10	3	1	
107	Unknown	2	11	3	1	

Alpha ICPMSRQ Seq

9/26/2024 2:44:53 PM



Index:	Label:	Rack	Vial	Main Runs:	Survey Runs:	Start Time:
108	Unknown	2	12	3	1	
109	Unknown	2	13	3	1	
110	Unknown	2	14	3	1	
111	Unknown	2	15	3	1	
112	Unknown	2	16	3	1	
113	Unknown	2	17	3	1	
114	Unknown	2	18	3	1	
115	Unknown	2	19	3	1	
116	Unknown	2	20	3	1	
117	CCV	0	9	3	1	
118	CCB	0	10	3	1	



METALS ELN REPORT

Workgroup: WG1975627

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 3005A	1:1 HNO3	tHN0324382 01155JDH	1:1 HCl	tHCL243421 0713CME	METALS	METSPIKE2	IPS,FPS,MIX	METPSMS	IPS,FPS,MIX	140, 326

Additional Reagent/Std

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2453613-01 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-02	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-03 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-04 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-05 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-06 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-07 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-08 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-09 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-10 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2453613-11 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-01 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-02 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2454050-03 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	



METALS ELN REPORT

Workgroup: WG1975627

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2454050-04 SAMP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 1 BLANK	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	eln: JDH
WG1975627- 2 LCS	09/24/24 14:02	Ethan Moeller	50	<2	.5	09/24/24 14:02	10	94.1	09/24/24 17:02	50	IPS243315040 5CLH
WG1975627- 3 MS	09/24/24 14:02	Ethan Moeller	50	<2	.5	09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 4 DUP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 5 PS	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 6 SERDIL	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 7 MS	09/24/24 14:02	Ethan Moeller	50	<2	.5	09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 8 DUP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 9 PS	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
L2409778- 152 WATER	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	
WG1975627- 10 SERDIL	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	FM2438201045 AJT
WG1975627- 11 DUP	09/24/24 14:02	Ethan Moeller	50	<2		09/24/24 14:02	10	94.1	09/24/24 17:02	50	

METALS ELN REPORT

Workgroup: WG1975627

Reagent	Actual Volume	Units
1:1 Hydrochloric Acid (H	.5	ml
1:1 Nitric Acid (HNO3)	1	ml

Inorganic Data (Mercury Analysis)

Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 12:46
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: JWN
Lab File ID	: WG1976486.pdf	Instrument ID	: NIC3
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U



Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 12:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: JWN
Lab File ID	: WG1976486.pdf	Instrument ID	: NIC3
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U



Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 12:59
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: JWN
Lab File ID	: WG1976486.pdf	Instrument ID	: NIC3
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U



Form 1

METALS

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 13:02
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: JWN
Lab File ID	: WG1976486.pdf	Instrument ID	: NIC3
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U



Form 1

METALS

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1975633-1
Client ID : WG1975633-1BLANK
Sample Location :
Sample Matrix : WATER
Analytical Method : 1,7470A
Lab File ID : WG1976486.pdf
Sample Amount : 25ml
Digestion Method : EPA 7470A

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : NA
Date Received : NA
Date Analyzed : 09/26/24 11:42
Dilution Factor : 1
Analyst : JWN
Instrument ID : NIC3
%Solids : N/A
Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U



Form 2A

Initial and Continuing Calibration Verification

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : NIC3

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Initial Calibration			Continuing Calibration(s)							
	Lab ID	Date Analyzed		Lab ID	Date Analyzed						
	R1880493-1	09/26/24 07:08		R1880493-3	09/26/24 08:45		R1880493-5	09/26/24 10:21		R1880493-7	09/26/24 12:01
	True	Found	%R	True	Found	%R	Found	%R	Found	%R	
Mercury	0.00300	0.0031	104	0.0050	0.00500	100	0.00500	101	0.00510	102	

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : NIC3

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Units : mg/l

Parameter	Lab ID : Date Analyzed :	Initial Calibration			Continuing Calibration(s)						
		True	Found	%R	R1880493-9			R1880493-11			
					True	Found	%R	Found	%R	Found	%R
Mercury					0.0050	0.00510	102	0.00510	101		

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 : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : NIC3

Lab Number : L2454050
 Project Number : 2232.0006Y005

	Initial Calibration		Continuing Calibration				Preparation	
	Blank		Blank(s)				Blank	
Lab ID :	R1880493-2		R1880493-4	R1880493-6	R1880493-8		WG1975633-1	
Date Analyzed :	09/26/24 07:12		09/26/24 08:48	09/26/24 10:25	09/26/24 12:05		09/26/24 11:42	
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Mercury	0.0000915	U	0.0000915	U	0.0000915	U	0.00009	U



Form 3 Blanks

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Instrument ID : NIC3

Lab Number : L2454050
 Project Number : 2232.0006Y005

Parameter	Initial Calibration Blank		Continuing Calibration Blank(s)				Preparation Blank	
	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q
Lab ID :			R1880493-10		R1880493-12			
Date Analyzed :			09/26/24 12:52		09/26/24 13:32			
Mercury			0.0000915 U		0.0000915 U			

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453613-02
 Matrix Spike : WG1975633-3
 Matrix Spike Dup : WG1975633-4

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/26/24 11:52
 MSD Analysis Date : 09/26/24 11:55

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, Total	ND	0.005	0.00436	87	0.005	0.00489	98	11	75-125	20



Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975633-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/26/24 11:45
 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, Total	0.00100	0.000940	94.					80-120	20



Form 12

Preparation Log

Client : Roux Env. Eng. & Geology, DPC Lab Number : L2454050
Project Name : CORAM MATERIALS Project Number : 2232.0006Y005
Matrix : WATER Prep Method : EPA 7470A

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2454050-01	09/24/24 14:44	-	25
L2454050-02	09/24/24 14:44	-	25
L2454050-03	09/24/24 14:44	-	25
L2454050-04	09/24/24 14:44	-	25
WG1975633-1	09/24/24 14:44	-	25
WG1975633-2	09/24/24 14:44	-	25
WG1975633-3	09/24/24 14:44	-	25
WG1975633-4	09/24/24 14:44	-	25

Form 13

Analysis Run Log

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Instrument ID : NIC3
Start Date : 09/26/24 07:08

Lab Number : L2454050
Project Number : 2232.0006Y005
Analysis Method : 1,7470A
End Date : 09/26/24 13:32

[illegible]



Date Created: 03/19/18
Created By: Jason Hebert
File: PM4631-1
Page: 1

MERCURY by 7470A, 245.1 (WATER)

[illegible]

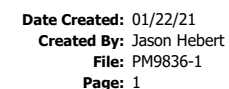
Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



8 Walkup Drive, Westborough, Massachusetts 01581 • 508-898-9220 • www.alphalab.com

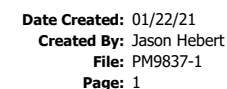
Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA



[illegible]

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



[illegible]

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



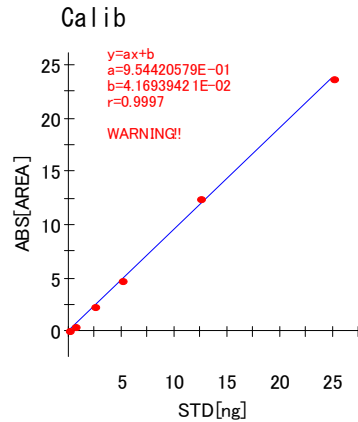
Title :
Date : 09/26/2024
Name :

Method

STD
HONH3CI : 0.0mL
(1+1) H2SO4 : 0.0mL
10w/v% SnCl2 : 0.3mL

SMP
HONH3CI : 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	0.0445	0.0029	-	09/26/2024 06:27	JWN,NIC3
2	0.200	2.500	2.500	2.500	0.500	0.4868	0.4664	6.7	09/26/2024 06:30	JWN,NIC3
3	1.000	2.500	2.500	2.500	2.500	2.3165	2.3834	4.7	09/26/2024 06:34	JWN,NIC3
4	2.000	2.500	2.500	2.500	5.000	4.7003	4.8811	2.4	09/26/2024 06:37	JWN,NIC3
5	5.000	2.500	2.500	2.500	12.500	12.4111	12.9601	3.7	09/26/2024 06:40	JWN,NIC3
6	10.000	2.500	2.500	2.500	25.000	23.7171	24.8061	0.8	09/26/2024 06:57	JWN,NIC3

SMP

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
1	XICV	2.500	2.500	2.500	6.5698	6.8399	2.736	-	09/26/2024 07:00	JWN,NIC3
2	XICB	2.500	2.500	2.500	0.0585	0.0176	0.007	-	09/26/2024 07:03	JWN,NIC3
3	ICV	2.500	2.500	2.500	7.5037	7.8184	3.127	-	09/26/2024 07:08	JWN,NIC3
4	ICB	2.500	2.500	2.500	0.0548	0.0137	0.005	-	09/26/2024 07:12	JWN,NIC3
5	0.2PPB	2.500	2.500	2.500	0.5219	0.5031	0.201	-	09/26/2024 07:16	JWN,NIC3
6	WG1976277-1 WG1976277	2.500	2.500	2.500	0.0587	0.0178	0.007	-	09/26/2024 08:10	JWN,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
7	WG1976277-2 WG1976277	2.500	2.500	2.500	2.1619	2.2215	0.889	-	09/26/2024 08:13	JWN,NIC3
8	L2454653-01 WG1976277	2.500	2.500	2.500	0.0892	0.0498	0.020	-	09/26/2024 08:16	JWN,NIC3
9	WG1976277-3 WG1976277	2.500	2.500	2.500	11.1227	11.6102	4.644	-	09/26/2024 08:20	JWN,NIC3
10	WG1976277-4 WG1976277	2.500	2.500	2.500	0.1155	0.0773	0.031	-	09/26/2024 08:23	JWN,NIC3
11	L2453692-10 WG1975263	2.500	2.500	2.500	0.0933	0.0541	0.022	-	09/26/2024 08:26	JWN,NIC3
12	L2453795-01 WG1975263	2.500	2.500	2.500	0.0935	0.0543	0.022	-	09/26/2024 08:30	JWN,NIC3
13	L2453915-02 WG1975263	2.500	2.500	2.500	0.0880	0.0485	0.019	-	09/26/2024 08:33	JWN,NIC3
14	Check STD(5ug/L)	2.500	2.500	2.500	11.9982	12.5275	5.011	100.2	09/26/2024 08:45	JWN,NIC3
15	Check Blank	2.500	2.500	2.500	0.0543	0.0132	0.005	-	09/26/2024 08:48	JWN,NIC3
16	WG1975760-1 WG1975760	2.500	2.500	2.500	0.0499	0.0086	0.003	-	09/26/2024 09:15	JWN,NIC3
17	WG1975760-2 WG1975760	2.500	2.500	2.500	2.2760	2.3410	0.936	-	09/26/2024 09:18	JWN,NIC3
18	L2454054-37 WG1975760	2.500	2.500	2.500	0.0608	0.0200	0.008	-	09/26/2024 09:21	JWN,NIC3
19	WG1975760-3 WG1975760	2.500	2.500	2.500	11.3452	11.8433	4.737	-	09/26/2024 09:25	JWN,NIC3
20	WG1975760-4 WG1975760	2.500	2.500	2.500	0.0647	0.0241	0.010	-	09/26/2024 09:28	JWN,NIC3
21	WG1976243-1 WG1976243	2.500	2.500	2.500	0.0640	0.0234	0.009	-	09/26/2024 10:05	JWN,NIC3
22	WG1976243-2 WG1976243	2.500	2.500	2.500	2.1016	2.1583	0.863	-	09/26/2024 10:08	JWN,NIC3
23	L2454087-01 WG1976243	2.500	2.500	2.500	3.7325	3.8671	1.547	-	09/26/2024 10:11	JWN,NIC3
24	WG1976243-3 WG1976243	2.500	2.500	2.500	15.0134	15.6867	6.275	-	09/26/2024 10:15	JWN,NIC3
25	WG1976243-4 WG1976243	2.500	2.500	2.500	3.5069	3.6307	1.452	-	09/26/2024 10:18	JWN,NIC3
26	Check STD(5ug/L)	2.500	2.500	2.500	12.0617	12.5940	5.038	100.8	09/26/2024 10:21	JWN,NIC3
27	Check Blank	2.500	2.500	2.500	0.0540	0.0129	0.005	-	09/26/2024 10:25	JWN,NIC3
28	L2454014-03 WG1976243	2.500	2.500	2.500	0.0616	0.0209	0.008	-	09/26/2024 10:29	JWN,NIC3
29	L2454278-01 WG1976243	2.500	2.500	2.500	0.2171	0.1838	0.074	-	09/26/2024 10:32	JWN,NIC3
30	L2454289-12 WG1976243	2.500	2.500	2.500	0.0587	0.0178	0.007	-	09/26/2024 10:35	JWN,NIC3
31	L2454406-01 WG1976243	2.500	2.500	2.500	0.0687	0.0283	0.011	-	09/26/2024 10:39	JWN,NIC3
32	WG1975633-1 WG1975633	2.500	2.500	2.500	0.0968	0.0577	0.023	-	09/26/2024 11:42	JWN,NIC3
33	WG1975633-2 WG1975633	2.500	2.500	2.500	2.2876	2.3532	0.941	-	09/26/2024 11:45	JWN,NIC3
34	L2453613-02 WG1975633	2.500	2.500	2.500	0.1252	0.0875	0.035	-	09/26/2024 11:48	JWN,NIC3
35	WG1975633-3 WG1975633	2.500	2.500	2.500	10.4563	10.9120	4.365	-	09/26/2024 11:52	JWN,NIC3
36	WG1975633-4 WG1975633	2.500	2.500	2.500	11.7171	12.2330	4.893	-	09/26/2024 11:55	JWN,NIC3
37	L2453613-01 WG1975633	2.500	2.500	2.500	0.1115	0.0731	0.029	-	09/26/2024 11:58	JWN,NIC3
38	Check STD(5ug/L)	2.500	2.500	2.500	12.2452	12.7863	5.115	102.3	09/26/2024 12:01	JWN,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
39	Check Blank	2.500	2.500	2.500	0.0492	0.0079	0.003	-	09/26/2024 12:05	JWN,NIC3
40	L2453613-03 WG1975633	2.500	2.500	2.500	0.1266	0.0890	0.036	-	09/26/2024 12:16	JWN,NIC3
41	L2453613-04 WG1975633	2.500	2.500	2.500	0.1585	0.1224	0.049	-	09/26/2024 12:19	JWN,NIC3
42	L2453613-05 WG1975633	2.500	2.500	2.500	0.1785	0.1433	0.057	-	09/26/2024 12:22	JWN,NIC3
43	L2453613-06 WG1975633	2.500	2.500	2.500	0.2416	0.2095	0.084	-	09/26/2024 12:26	JWN,NIC3
44	L2453613-07 WG1975633	2.500	2.500	2.500	0.2283	0.1955	0.078	-	09/26/2024 12:29	JWN,NIC3
45	L2453613-08 WG1975633	2.500	2.500	2.500	0.2941	0.2645	0.106	-	09/26/2024 12:32	JWN,NIC3
46	L2453613-09 WG1975633	2.500	2.500	2.500	0.3110	0.2822	0.113	-	09/26/2024 12:36	JWN,NIC3
47	L2453613-10 WG1975633	2.500	2.500	2.500	0.3893	0.3642	0.146	-	09/26/2024 12:39	JWN,NIC3
48	L2453613-11 WG1975633	2.500	2.500	2.500	0.4420	0.4194	0.168	-	09/26/2024 12:42	JWN,NIC3
49	L2454050-01 WG1975633	2.500	2.500	2.500	0.2159	0.1825	0.073	-	09/26/2024 12:46	JWN,NIC3
50	Check STD(5ug/L)	2.500	2.500	2.500	12.2531	12.7946	5.118	102.4	09/26/2024 12:49	JWN,NIC3
51	Check Blank	2.500	2.500	2.500	0.0483	0.0069	0.003	-	09/26/2024 12:52	JWN,NIC3
52	L2454050-02 WG1975633	2.500	2.500	2.500	0.1007	0.0618	0.025	-	09/26/2024 12:55	JWN,NIC3
53	L2454050-03 WG1975633	2.500	2.500	2.500	0.1146	0.0764	0.031	-	09/26/2024 12:59	JWN,NIC3
54	L2454050-04 WG1975633	2.500	2.500	2.500	0.1352	0.0980	0.039	-	09/26/2024 13:02	JWN,NIC3
55	WG1976221-1 WG1976221	2.500	2.500	2.500	0.0719	0.0316	0.013	-	09/26/2024 13:05	JWN,NIC3
56	WG1976221-2 WG1976221	2.500	2.500	2.500	2.3315	2.3992	0.960	-	09/26/2024 13:09	JWN,NIC3
57	L2454059-02 WG1976221	2.500	2.500	2.500	0.2100	0.1763	0.071	-	09/26/2024 13:12	JWN,NIC3
58	WG1976221-3 WG1976221	2.500	2.500	2.500	11.3212	11.8182	4.727	-	09/26/2024 13:15	JWN,NIC3
59	WG1976221-4 WG1976221	2.500	2.500	2.500	0.0479	0.0065	0.003	-	09/26/2024 13:19	JWN,NIC3
60	L2454059-01 WG1976221	2.500	2.500	2.500	0.0459	0.0044	0.002	-	09/26/2024 13:22	JWN,NIC3
61	L2454352-01 WG1976221	2.500	2.500	2.500	0.0603	0.0195	0.008	-	09/26/2024 13:25	JWN,NIC3
62	Check STD(5ug/L)	2.500	2.500	2.500	12.0926	12.6264	5.051	101.0	09/26/2024 13:28	JWN,NIC3
63	Check Blank	2.500	2.500	2.500	0.0502	0.0089	0.004	-	09/26/2024 13:32	JWN,NIC3
64	WG1976164-1 WG1976164	2.500	2.500	2.500	0.0298	-0.0125	-0.005	-	09/26/2024 13:35	JWN,NIC3
65	WG1976164-2 WG1976164	2.500	2.500	2.500	2.3022	2.3685	0.947	-	09/26/2024 13:38	JWN,NIC3
66	L2454092-01 WG1976164	2.500	2.500	2.500	0.0395	-0.0023	-0.001	-	09/26/2024 13:42	JWN,NIC3
67	WG1976164-3 WG1976164	2.500	2.500	2.500	10.9251	11.4032	4.561	-	09/26/2024 13:45	JWN,NIC3
68	WG1976164-4 WG1976164	2.500	2.500	2.500	11.0746	11.5598	4.624	-	09/26/2024 13:48	JWN,NIC3
69	L2454092-02 WG1976164	2.500	2.500	2.500	0.0353	-0.0067	-0.003	-	09/26/2024 13:52	JWN,NIC3
70	L2454092-03 WG1976164	2.500	2.500	2.500	0.0344	-0.0076	-0.003	-	09/26/2024 13:55	JWN,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
71	L2454092-05 WG1976164	2.500	2.500	2.500	0.0299	-0.0124	-0.005	-	09/26/2024 13:58	JWN,NIC3
72	WG1975973-1 WG1975973	2.500	2.500	2.500	0.0375	-0.0044	-0.002	-	09/26/2024 14:07	JWN,NIC3
73	WG1975973-2 WG1975973	2.500	2.500	2.500	2.3263	2.3937	0.957	-	09/26/2024 14:10	JWN,NIC3
74	Check STD(5ug/L)	2.500	2.500	2.500	12.0659	12.5984	5.039	100.8	09/26/2024 14:13	JWN,NIC3
75	Check Blank	2.500	2.500	2.500	0.0507	0.0094	0.004	-	09/26/2024 14:17	JWN,NIC3
76	I2453652-01 WG1975973	2.500	2.500	2.500	1.2257	1.2405	0.496	-	09/26/2024 14:20	JWN,NIC3
77	WG1975973-3 WG1975973	2.500	2.500	2.500	12.6756	13.2373	5.295	-	09/26/2024 14:23	JWN,NIC3
78	WG1975973-4 WG1975973	2.500	2.500	2.500	1.2231	1.2378	0.495	-	09/26/2024 14:27	JWN,NIC3
79	I2454059-01 WG1975973	2.500	2.500	2.500	0.0454	0.0039	0.002	-	09/26/2024 14:30	JWN,NIC3
80	I2454059-02 WG1975973	2.500	2.500	2.500	0.0454	0.0039	0.002	-	09/26/2024 14:33	JWN,NIC3
81	I2454081-01 WG1975973	2.500	2.500	2.500	0.0551	0.0140	0.006	-	09/26/2024 14:37	JWN,NIC3
82	I2454081-02 WG1975973	2.500	2.500	2.500	0.0579	0.0170	0.007	-	09/26/2024 14:40	JWN,NIC3
83	wg1976678-1 wg1976678	2.500	2.500	2.500	0.1107	0.0723	0.029	-	09/26/2024 15:05	JWN,NIC3
84	wg1976678-2 wg1976678	2.500	2.500	2.500	2.7710	2.8596	1.144	-	09/26/2024 15:09	JWN,NIC3
85	L2454653-03 wg1976678	2.500	2.500	2.500	0.1270	0.0894	0.036	-	09/26/2024 15:12	JWN,NIC3
86	Check STD(5ug/L)	2.500	2.500	2.500	11.4902	11.9952	4.798	96.0	09/26/2024 15:15	JWN,NIC3
87	Check Blank	2.500	2.500	2.500	0.0523	0.0111	0.004	-	09/26/2024 15:19	JWN,NIC3
88	wg1976678-3 wg1976678	2.500	2.500	2.500	10.9477	11.4268	4.571	-	09/26/2024 15:22	JWN,NIC3
89	wg1976678-4 wg1976678	2.500	2.500	2.500	0.1838	0.1489	0.060	-	09/26/2024 15:25	JWN,NIC3
90	wg1976695-1 wg1976695	2.500	2.500	2.500	0.0683	0.0279	0.011	-	09/26/2024 15:29	JWN,NIC3
91	wg1976695-2 wg1976695	2.500	2.500	2.500	2.3505	2.4191	0.968	-	09/26/2024 15:32	JWN,NIC3
92	L2454994-01 wg1976695	2.500	2.500	2.500	0.0455	0.0040	0.002	-	09/26/2024 15:35	JWN,NIC3
93	wg1976695-3 wg1976695	2.500	2.500	2.500	11.3919	11.8922	4.757	-	09/26/2024 15:38	JWN,NIC3
94	wg1976695-4 wg1976695	2.500	2.500	2.500	0.0450	0.0035	0.001	-	09/26/2024 15:42	JWN,NIC3
95	Check STD(5ug/L)	2.500	2.500	2.500	11.7287	12.2451	4.898	98.0	09/26/2024 15:46	JWN,NIC3
96	Check Blank	2.500	2.500	2.500	0.0544	0.0133	0.005	-	09/26/2024 15:49	JWN,NIC3
97	WG1976280-1 WG1976280	2.500	2.500	2.500	0.0469	0.0055	0.002	-	09/26/2024 15:56	DJR,NIC3
98	WG1976280-2 WG1976280	2.500	2.500	2.500	2.1459	2.2047	0.882	-	09/26/2024 16:00	DJR,NIC3
99	L2454653-02 WG1976280	2.500	2.500	2.500	0.3072	0.2782	0.111	-	09/26/2024 16:03	DJR,NIC3
100	WG1976280-3 WG1976280	2.500	2.500	2.500	10.9778	11.4584	4.583	-	09/26/2024 16:06	DJR,NIC3
101	WG1976280-4 WG1976280	2.500	2.500	2.500	0.8390	0.8354	0.334	-	09/26/2024 16:10	DJR,NIC3
102	xWG1976280-4 WG1976280	2.500	2.500	2.500	0.8427	0.8393	0.336	-	09/26/2024 16:14	DJR,NIC3

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
103	Check STD(5ug/L)	2.500	2.500	2.500	11.7095	12.2250	4.890	97.8	09/26/2024 16:17	DJR,NIC3
104	Check Blank	2.500	2.500	2.500	0.0490	0.0077	0.003	-	09/26/2024 16:20	DJR,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		n	NIST Traceability	
		Mean	Recovery ⁵		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



A Waters Company

Reference Material

▪ 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

Page 1 of 3 Lot: D105-540

16341 Table Mountain Pkwy • Golden, CO 80403 • T: 800.372.0122 • 303.431.8454 • www.eraqc.com

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number	Recovery
	mg/kg	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


Page 3 of 3 Lot: D105-540

▪ 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		n	NIST Traceability	
		Mean	Recovery ⁵		SRM Number ⁶	Recovery
	mg/kg	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 NELAP proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAP 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 (%)** = $[(\% \text{ recovery ERA certified reference material})/(\% \text{ recovery NIST SRM})]*100$

The traceability data shown were compiled by analyzing this ERA certified reference material and/or its 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

Brian Miller

Matthew Seebeck





A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D113-540
Certificate Issue Date: March 23, 2021
Expiration Date: October 13, 2024
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	Uncertainty ²	QC Performance Acceptance Limits ³	PT Performance Acceptance Limits ⁴
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8630	12.0	4420 - 12800	4370 - 12900
Antimony	256	129	16.8	0.742 - 257	25.6 - 323
Arsenic	91.6	84.5	15.1	70.0 - 99.0	59.2 - 110
Barium	259	249	9.94	206 - 292	187 - 311
Beryllium	175	163	3.89	135 - 191	122 - 204
Boron	95.7	76.7	12.8	55.7 - 97.7	48.0 - 107
Cadmium	107	99.0	11.5	82.2 - 116	74.2 - 124
Calcium	5190	4760	11.8	3890 - 5640	3460 - 6070
Chromium	129	122	14.6	101 - 144	85.7 - 159
Cobalt	63.6	61.7	11.5	51.9 - 71.6	46.3 - 77.2
Copper	62.3	61.5	12.3	51.9 - 71.0	46.1 - 76.8
Iron	15000	14500	15.7	8860 - 20100	5190 - 23800
Lead	122	123	13.9	103 - 144	88.3 - 158
Lithium	6.42	7.30	18.7	5.13 - 9.48	3.20 - 11.4
Magnesium	2570	2360	8.87	1810 - 2920	1480 - 3250
Manganese	470	456	13.4	375 - 538	350 - 563
Mercury	22.1	18.9	14.5	13.0 - 24.8	11.3 - 26.4
Molybdenum	80.1	72.8	11.0	58.7 - 87.0	50.5 - 95.2
Nickel	143	135	14.2	112 - 158	94.7 - 176
Potassium	2420	2090	8.21	1480 - 2700	1240 - 2940
Selenium	128	121	11.7	96.9 - 146	80.4 - 162
Silver	45.4	44.1	6.69	35.5 - 52.8	30.7 - 57.6
Sodium	161	136	9.34	97.4 - 174	48.1 - 223
Strontium	82.2	82.3	8.42	67.4 - 97.1	58.6 - 106

Page 1 of 4 Lot: D113-540

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

Certified Reference Material

▪ 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
Thallium	154	144	7.54	117 - 171	101 - 187
Tin	89.7	79.8	14.0	62.2 - 97.4	43.5 - 116
Titanium	705	546	10.3	123 - 969	118 - 974
Uranium	29.5	30.9	3.38	23.9 - 37.9	21.3 - 40.5
Vanadium	196	186	14.2	148 - 224	138 - 235
Zinc	307	295	10.4	240 - 351	207 - 384



Calculation of 7470A Mercury

Calculate Mercury concentration from the daily calibration curve.
The curve is generated utilizing a straight-line equation defined as:

$$A = k_1 + k_2C$$

Where:

A = Average peak height of the sample/standard integrations

C = Sample/Standard Concentration, $\mu\text{g/L}$

k_1 = y-intercept

k_2 = 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:

$$A = k_1 + k_2C$$

Where:

A = Average peak height of the sample/standard integrations

C = Sample/Standard Concentration, $\mu\text{g/L}$

k_1 = y-intercept

k_2 = 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 (W_t), the final volume of the digestate (FV), and the percent total solids (%TS).

$$\text{Result, mg/kg, wet} = ((\text{result, mg/L}) \times (FV)) / W_t$$

$$\text{Result, mg/kg, dry wt} = (\text{Result, mg/kg wet}) / (\%TS)$$

No.	Sample No. NAME	CURVE: WG1975877
1	1 STD	
2	2 STD	
3	3 STD	
4	4 STD	
5	5 STD	
6	6 STD	
1	7 XICV	
2	8 XICB	
3	7 ICV	
4	8 ICB	
5	9 0.2PPB	
6	10 WG1976277-1 WG1976277	
7	11 WG1976277-2 WG1976277	
8	12 L2454653-01 WG1976277	
9	13 WG1976277-3 WG1976277	
10	14 WG1976277-4 WG1976277	
11	15 L2453692-10 WG1975263	
12	16 L2453795-01 WG1975263	
13	17 L2453915-02 WG1975263	
14	19 Check STD(5ug/L)	
15	20 Check Blank	
16	21 WG1975760-1 WG1975760	
17	22 WG1975760-2 WG1975760	
18	23 L2454054-37 WG1975760	
19	24 WG1975760-3 WG1975760	
20	25 WG1975760-4 WG1975760	
21	26 WG1976243-1 WG1976243	
22	27 WG1976243-2 WG1976243	
23	28 L2454087-01 WG1976243	
24	29 WG1976243-3 WG1976243	
25	30 WG1976243-4 WG1976243	
26	31 Check STD(5ug/L)	
27	32 Check Blank	
28	33 L2454014-03 WG1976243	
29	34 L2454278-01 WG1976243	
30	35 L2454289-12 WG1976243	
31	36 L2454406-01 WG1976243	
32	37 WG1975633-1 WG1975633	
33	38 WG1975633-2 WG1975633	
34	39 L2453613-02 WG1975633	
35	40 WG1975633-3 WG1975633	
36	41 WG1975633-4 WG1975633	
37	42 L2453613-01 WG1975633	

38	43 Check STD(5ug/L)
39	44 Check Blank
40	45 L2453613-03 WG1975633
41	46 L2453613-04 WG1975633
42	47 L2453613-05 WG1975633
43	48 L2453613-06 WG1975633
44	49 L2453613-07 WG1975633
45	50 L2453613-08 WG1975633
46	51 L2453613-09 WG1975633
47	52 L2453613-10 WG1975633
48	53 L2453613-11 WG1975633
49	54 L2454050-01 WG1975633
50	55 Check STD(5ug/L)
51	56 Check Blank
52	57 L2454050-02 WG1975633
53	58 L2454050-03 WG1975633
54	59 L2454050-04 WG1975633
55	60 WG1976221-1 WG1976221
56	61 WG1976221-2 WG1976221
57	62 L2454059-02 WG1976221
58	63 WG1976221-3 WG1976221
59	64 WG1976221-4 WG1976221
60	65 L2454059-01 WG1976221
61	66 L2454352-01 WG1976221
62	67 Check STD(5ug/L)
63	68 Check Blank
64	69 WG1976164-1 WG1976164
65	70 WG1976164-2 WG1976164
66	71 L2454092-01 WG1976164
67	72 WG1976164-3 WG1976164
68	73 WG1976164-4 WG1976164
69	74 L2454092-02 WG1976164
70	75 L2454092-03 WG1976164
71	76 L2454092-05 WG1976164
72	77 WG1975973-1 WG1975973
73	78 WG1975973-2 WG1975973
74	79 Check STD(5ug/L)
75	80 Check Blank
76	1 L2453652-01 WG1975973
77	2 WG1975973-3 WG1975973
78	3 WG1975973-4 WG1975973
79	4 L2454059-01 WG1975973
80	5 L2454059-02 WG1975973
81	6 L2454081-01 WG1975973

82	7	L2454081-02	WG1975973
83	8	wg1976678-1	wg1976678
84	9	wg1976678-2	wg1976678
85	10	L2454653-03	wg1976678
86	11	Check STD(5ug/L)	
87	12	Check Blank	
88	13	wg1976678-3	wg1976678
89	14	wg1976678-4	wg1976678
90	15	wg1976695-1	wg1976695
91	16	wg1976695-2	wg1976695
92	17	L2454994-01	wg1976695
93	18	wg1976695-3	wg1976695
94	19	wg1976695-4	wg1976695
95	23	Check STD(5ug/L)	
96	24	Check Blank	
97	25	WG1976280-1	WG1976280
98	26	WG1976280-2	WG1976280
99	27	L2454653-02	WG1976280
100	28	WG1976280-3	WG1976280
101	29	WG1976280-4	WG1976280
102	30	xWG1976280-4	WG1976280
103	35	Check STD(5ug/L)	
104	36	Check Blank	



METALS ELN REPORT

Workgroup: WG1975633

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	24011095	H2SO4	24001335	METALS	METSPIKE	HG2438170807AJTV1	METSPIKE	HG24381708320, 34807AJTV1	
Additional Reagent/Std		K2O8S2		PS2438191125AJT						
		KMnO4		PP2439240820AJT						
		NaCl-NH2OH.HCl		HH2438191515MJR						
				ICV2436051025CME						

Sample/Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2453613-01 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-02 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-03 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-04 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-05 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-06 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-07 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-08 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-09 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-10 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2453613-11 WATER	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2454050-01 SAMP	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	



METALS ELN REPORT

Workgroup: WG1975633

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperatur e (C)	Stop Date/Time	Final Vol	Comments
L2454050-02 SAMP	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2454050-03 SAMP	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
L2454050-04 SAMP	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	
WG1975633-1 BLANK	09/24/24 14:44	Ethan Moeller	25		09/24/24 14:44	5	95	09/24/24 16:44	25	eln: MGM
WG1975633-2 LCS	09/24/24 14:44	Ethan Moeller	25	.25	09/24/24 14:44	5	95	09/24/24 16:44	25	FM2438201045 AJT
WG1975633-3 MS	09/24/24 14:44	Ethan Moeller	25	1.25	09/24/24 14:44	5	95	09/24/24 16:44	25	IPS243315040 5CLH
WG1975633-4 MSD	09/24/24 14:44	Ethan Moeller	25	1.25	09/24/24 14:44	5	95	09/24/24 16:44	25	

Reagent	Actual Volume	Units
Sulfuric Acid (H2SO4)	1.25	ml
Nitric Acid (HNO3)	.625	ml
Potassium Permanganal	3.75	ml
Potassium Persulfate (K:	2	ml
NaCl-Hydroxylamine Hy	1.5	ml

Wet Chemistry

Color Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 21:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2120B	Analyst	: AAS
Lab File ID	: wg1974453.csv	Instrument ID	:
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	A.P.C.U.			Qualifier
		Results	RL	MDL	
COLOR	Color, Apparent	ND	5.0	5.0	U

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 21:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2120B	Analyst	: AAS
Lab File ID	: wg1974453.csv	Instrument ID	:
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	A.P.C.U.			Qualifier
		Results	RL	MDL	
COLOR	Color, Apparent	ND	5.0	5.0	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 21:08
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 121,2120B	Analyst	: AAS
Lab File ID	: wg1974453.csv	Instrument ID	:
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	A.P.C.U.			Qualifier
		Results	RL	MDL	
COLOR	Color, Apparent	ND	5.0	5.0	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 21:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2120B	Analyst	: AAS
Lab File ID	: wg1974453.csv	Instrument ID	:
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	A.P.C.U.			Qualifier
		Results	RL	MDL	
COLOR	Color, Apparent	14	5.0	5.0	

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1974453-1	Date Collected	: 09/19/24 12:47
Client ID	: MW-7DUP	Date Received	: 09/19/24
Sample Location	:	Date Analyzed	: 09/20/24 21:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2120B	Analyst	: aas
Lab File ID	: wg1974453.csv	Instrument ID	:
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	A.P.C.U.			Qualifier
		Results	RL	MDL	
COLOR	Color, Apparent	15.	5.0	5.0	



Sample Raw Data

Last Change 01/03/11
File color.xlt

Product: COLOR-A-2120
Analyte: Color, Apparent
Analysis Date: #####
Technician: aas
Work group: wg1974453
RL: 5 A.P.C.U.

Sample Volume(mL): 50.0

Quality Control

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-7	Matrix	: WATER
Lab Sample ID	: L2454050-04	Analysis Date	: 09/20/24 21:08
Dup Sample ID	: WG1974453-1	DUP Analysis Date	: 09/20/24 21:08

Parameter	Sample Concentration (A.P.C.U.)	Duplicate Concentration (A.P.C.U.)	RPD Limit
Color, Apparent	14	15	7 Q

Sample Preparation

Page 403 of 839

Total Kjeldahl Nitrogen Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:48
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,351.1	Analyst	: AT
Lab File ID	: NH320240924-C	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:52
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,351.1	Analyst	: AT
Lab File ID	: NH320240924-C	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.190	0.300	0.066	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:53
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 4,351.1	Analyst	: AT
Lab File ID	: NH320240924-C	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:53
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,351.1	Analyst	: AT
Lab File ID	: NH320240924-C	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.197	0.300	0.066	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975410-1	Date Collected	: NA
Client ID	: WG1975410-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 09/24/24 16:39
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,351.1	Analyst	: AT
Lab File ID	: NH320240924-C	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.109	0.300	0.022	J



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1975410-3
Client ID : WG1975410-3 DUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 4,351.1
Lab File ID : NH320240924-C
Sample Amount :
Digestion Method :

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : 09/18/24 09:05
Date Received : 09/18/24
Date Analyzed : 09/24/24 16:47
Dilution Factor : 1
Analyst : AT
Instrument ID : LACHAT
%Solids : N/A
Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.243	0.300	0.066	J



Sample Raw Data

Original Run Filename: OM_9-24-2024_02-09-37PM.OMN Created: 9/24/2024 2:09:37 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_02-09-37PM.OMN Last Modified: 9/24/2024 3:06:28 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

A

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight
STD 1	1	S1	10.00000			
STD 2	1	S2	8.00000			
STD 3	1	S3	4.00000			
STD 4	1	S4	2.00000			
STD 5	1	S5	1.00000			
STD 6	1	S6	0.40000			
STD 7	1	S7	0.20000			
STD 8	1	S8	0.10000			
STD 9	1	S9	0.05000			
STD 10	1	S10	0.00000			
CCV 0.4000	1	S6	0.38400	96%		
Known Conc:			100.00000			
Calibration:			Table/Fig. : 1			
CCV 4.0000	1	S3	4.06105	102%		
Known Conc:			100.00000			
CCB	1	S10	0.02617			
Known Conc:			100.00000			
HI ICV 8.0	1	1	7.90381			97%
LO ICV 1.0	1	2	1.02970			103%
ICB	1	3	0.00359			
WG1974611-1	1	4	-0.00728		1.50	91%
WG1974611-2	1	5	18.17242		7.50	94%
LCS LO	1	6	1.87629		1.50	
L2453309-02	1	7	16.68735		3.00	
L2453404-02	1	8	0.24426		1.50	
L2453404-05	1	9	0.32843		3.00	
L2453404-08	1	10	-0.00377		1.50	97%
CCV 0.4000	1	S6	0.38707			
Known Conc:			100.00000			
CCV 4.0000	1	S3	4.11676			103%
Known Conc:			100.00000			
CCB	1	S10	0.03157			
Known Conc:			100.00000			
L2453404-11	1	11	0.50303		3.00	
L2453404-14	1	12	0.30369		3.00	
L2453404-17	1	13	0.37756		1.50	
L2453404-20	1	14	0.19113		1.50	
L2453404-23	1	15	0.07368		1.50	
L2453404-26	1	16	0.05432		1.50	3.0
L2453422-02	1	17	0.02399		3.00	
L2453422-04	1	18	0.00412		1.50	
L2453422-06	1	19	-0.01161		1.50	
L2453422-08	1	20	0.00595		1.50	
CCV 0.4000	1	S6	0.37872	95%		
Known Conc:			100.00000			
CCV 4.0000	1	S3	4.11441	103%		
Known Conc:			100.00000			
CCB	1	S10	0.02524			
Known Conc:			100.00000			
L2453422-10	1	21	0.00176		1.50	
L2453422-12	1	22	-0.00738		1.50	
L2453422-14	1	23	-0.00325		1.50	
L2453422-16	1	24	0.00977		1.50	
L2453422-18	1	25	0.33543		1.50	
L2453422-20	1	26	0.15775		1.50	
WG1974611-4	1	27	4.36508		1.50	105%
WG1974611-3	1	28	0.30755		1.50	64% (45+19)
CCV 0.4000	1	S6	0.38747	97%		
Known Conc:			100.00000			

CCV 4.0000	1	S3	4.12521	103%	
		Known Conc:	100.00000		
CCB	1	S10	0.02592		
		Known Conc:	100.00000		

Channel 2 (Ammonia High) - Current View

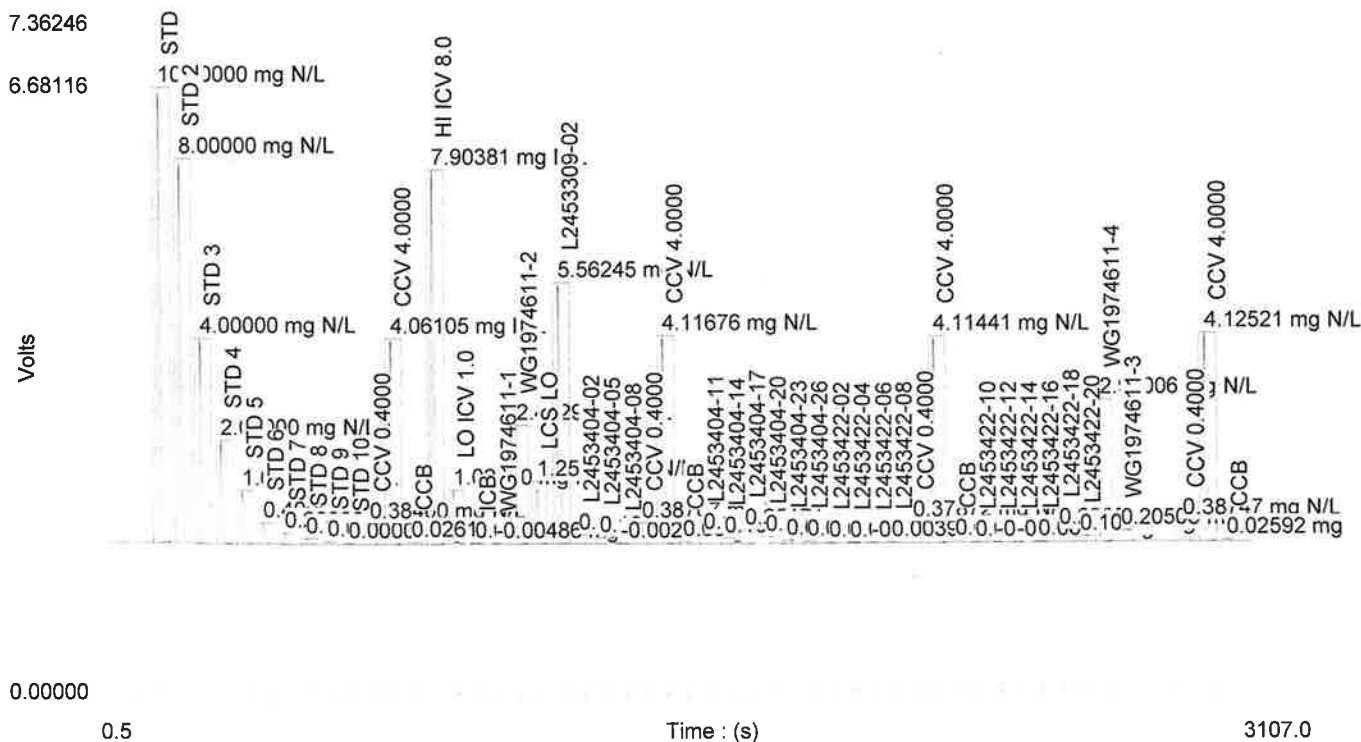
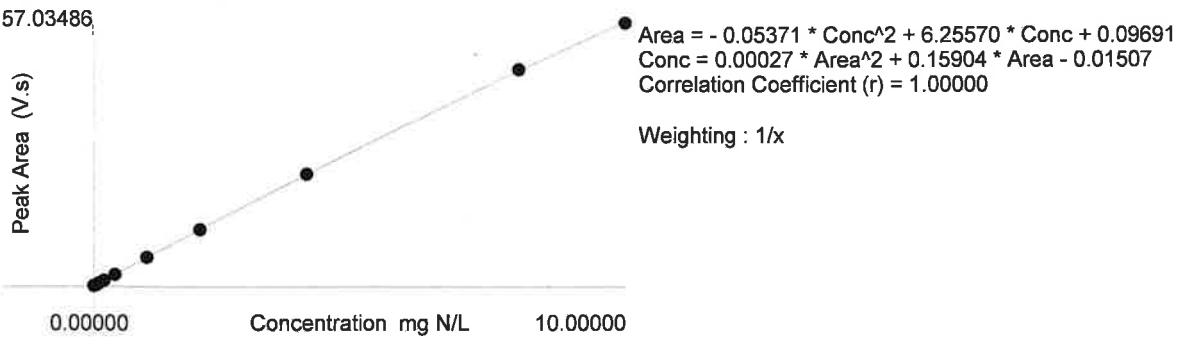


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)

57.03486,



Original Run Filename: OM_9-24-2024_03-11-50PM.OMN Created: 9/24/2024 3:11:50 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_03-11-50PM.OMN Last Modified: 9/24/2024 3:40:38 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight
CCV 0.4000	1	S6	0.38663	93%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.12086	103%		
		Known Conc:	100.00000			
Calibration: Table/Fig. : 1						
CCB	1	S10	0.03216			
		Known Conc:	100.00000			
WG1974987-1 T	1	1	0.01657			93%
WG1974987-2 T	1	2	37.13968		15.00	100%
LCS LO	1	3	4.22557		3.00	
L2452439-01 T	1	4	11.97604		3.00	
L2452439-03 T	1	5	2.23687		3.00	
L2452659-01 T	1	6	36.69828		3.00	
L2452659-02 T	1	7	2.34757		3.00	
L2452661-01 T	1	8	36.40069		3.00	
L2452661-02 T	1	9	6.77500		3.00	
L2452954-02 T	1	10	1.88810		3.00	
CCV 0.4000	1	S6	0.42722	107%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.13375	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.04255			
		Known Conc:	100.00000			
L2453069-01 T	1	11	0.40548		3.00	
L2453069-02 T	1	12	0.52610		3.00	
L2453069-03 T	1	13	0.40668		3.00	
L2453116-01 T	1	14	0.81322		3.00	
L2453562-01 T	1	15	1.23704		3.00	
L2453588-01 T	1	16	0.60520		3.00	
L2453851-01 T	1	17	41.57824		3.00	
L2453851-02 T	1	18	25.54790		3.00	
WG1974987-4 T	1	19	15.15484		3.00	115%
WG1974987-3 T	1	20	6.94501		3.00	107%
CCV 0.4000	1	S6	0.50051			
		Known Conc:	100.00000			

Seized - OK

9.85992

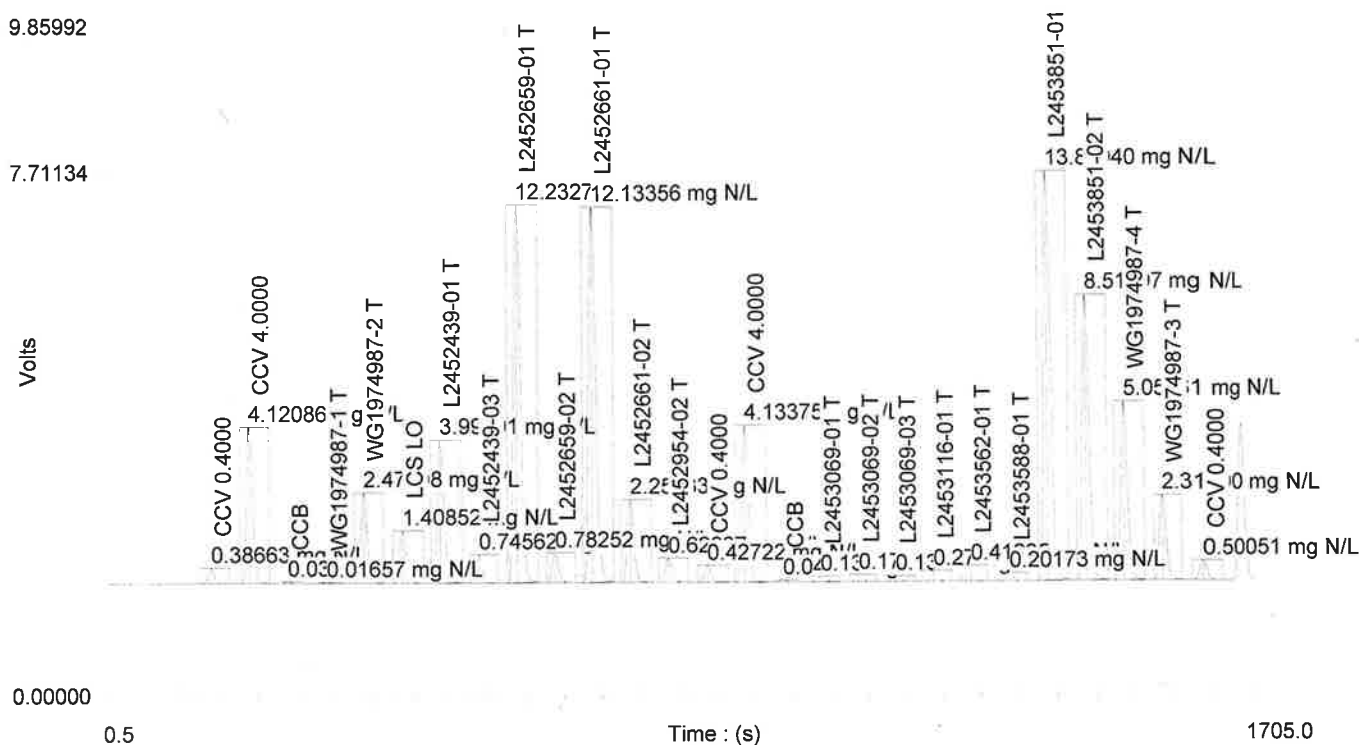
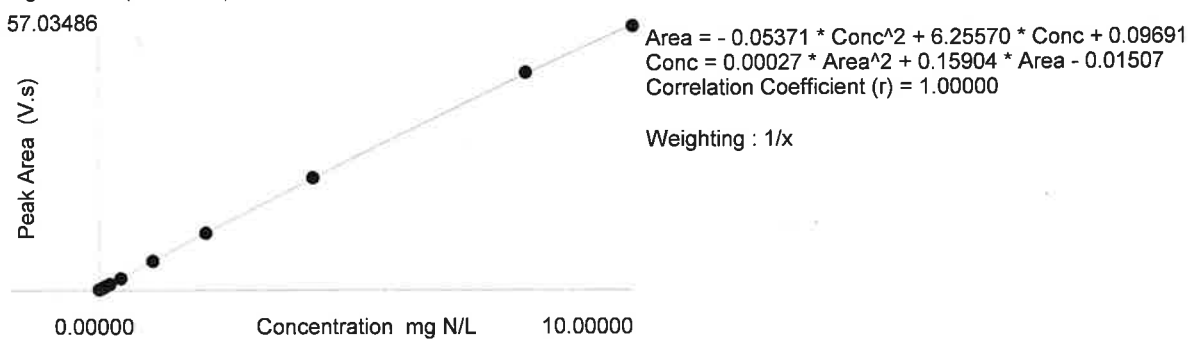


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-24-2024_03-42-30PM.OMN Created: 9/24/2024 3:42:30 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_03-42-30PM.OMN Last Modified: 9/24/2024 3:58:43 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.39879	100%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.13242	103%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S10	0.04389			
		Known Conc:	100.00000			
L2452659-01 T; 10X	1	21	33.87167		30.00	
L2452659-02 T	1	22	1.55619		3.00	
L2452661-01 T; 10X	1	23	34.27209		30.00	
L2452661-02 T	1	24	5.92113		3.00	
L2453851-02 T	1	25	24.72663		3.00	
L2453851-01 T; 10X	1	26	47.97457		30.00	
CCV 0.4000	1	S6	0.41698	104%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.12390	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.04613			
		Known Conc:	100.00000			

B2

Channel 2 (Ammonia High) - Current View

7.38293

5.77411

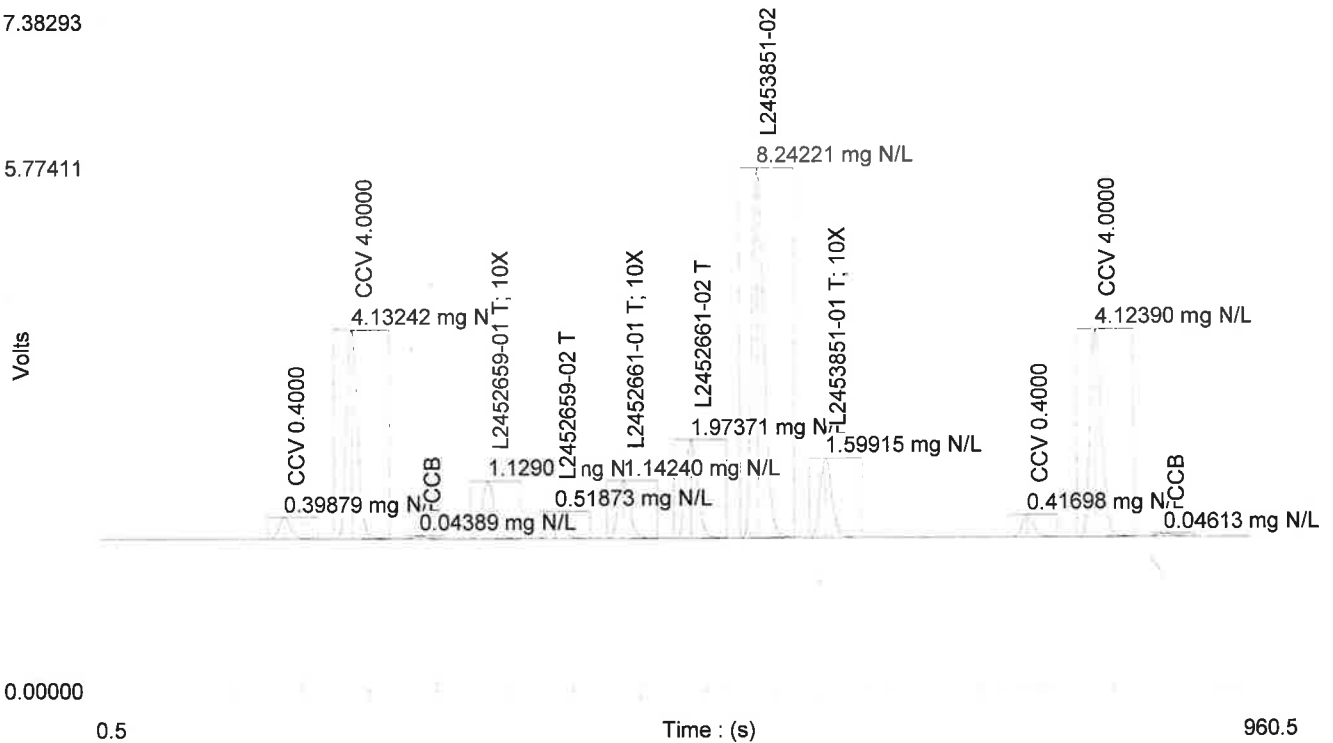
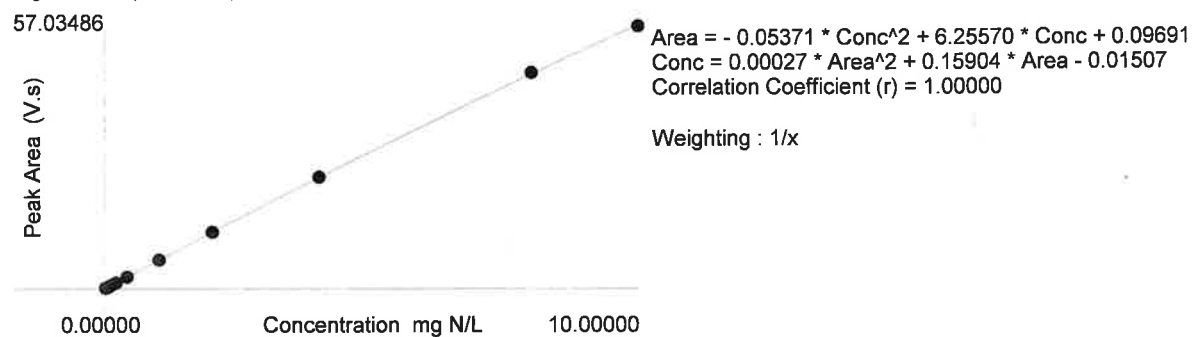


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-24-2024_04-34-54PM.OMN Created: 9/24/2024 4:34:54 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_04-34-54PM.OMN Last Modified: 9/24/2024 5:02:27 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run



Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.40347	101%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCV 4.0000	1	S3	4.14306	104%		
		Known Conc:	100.00000			
CCB	1	S10	0.01157	/		
		Known Conc:	100.00000			
WG1975410-1 T; BLK 9/24	1	1	0.03622			95%
WG1975410-2 T; HI LCS; 5X	1	2	37.92855		15.00	97%
LO LCS T	1	3	3.85769		3.00	
L2453342-10 T	1	4	0.21887		3.00	
L2453400-01 T	1	5	0.13447		3.00	
L2453400-02 T	1	6	0.14047		3.00	
L2453720-02 T	1	7	0.03683	/	3.00	83%
WG1975410-4 T; 53720.2 MS	1	8	6.66251		3.00	
WG1975410-3 T; 53720.2 DUP	1	9	0.24279	/	3.00	NG
L2454050-01 T	1	10	0.04661		3.00	
CCV 0.4000	1	S6	0.40045	100%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.12804	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.01118	/		
		Known Conc:	100.00000			
L2454050-02 T	1	11	0.18983		3.00	
L2454050-03 T	1	12	0.04514		3.00	
L2454050-04 T	1	13	0.19692		3.00	
L2454059-01 T	1	14	0.02664		3.00	
L2454059-02 T	1	15	0.08425		3.00	
CCV 0.4000	1	S6	0.39734	99%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.11552	101%		
		Known Conc:	100.00000			
CCB	1	S10	0.01054	/		
		Known Conc:	100.00000			

Channel 2 (Ammonia High) - Current View

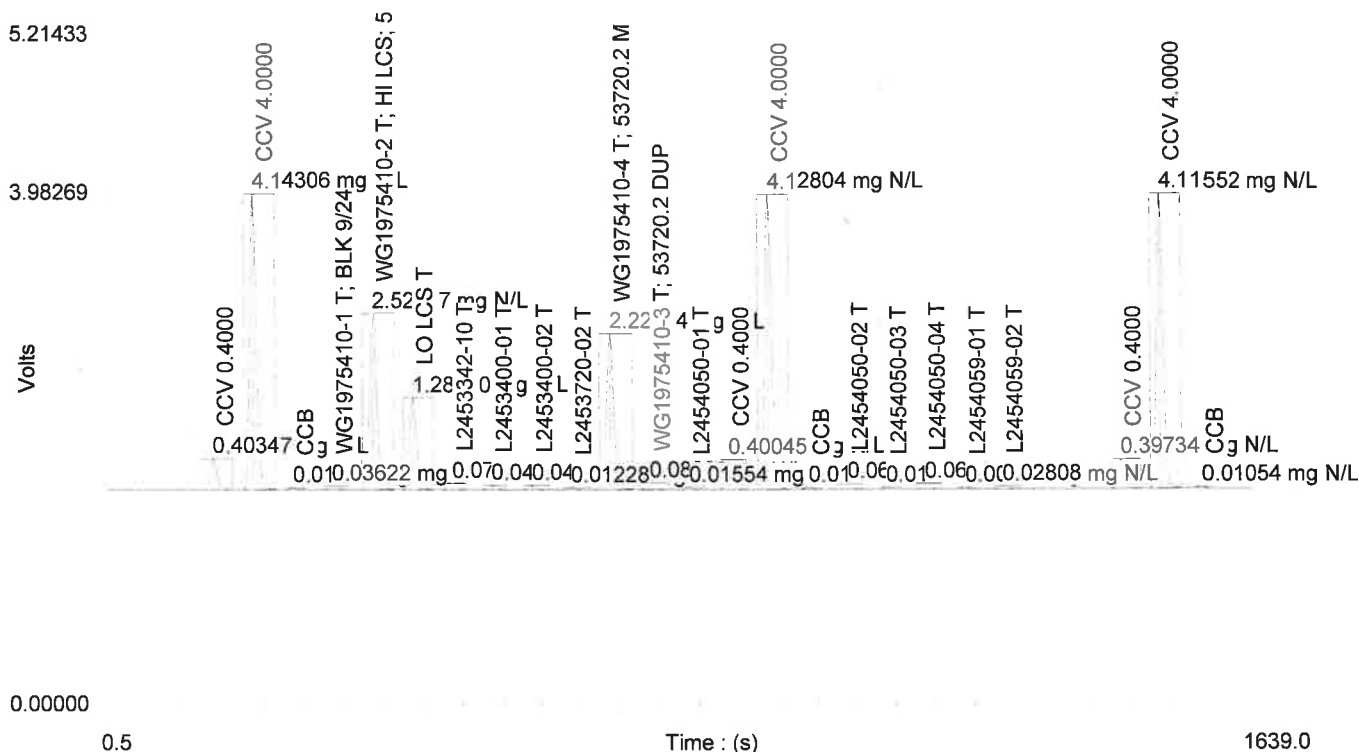
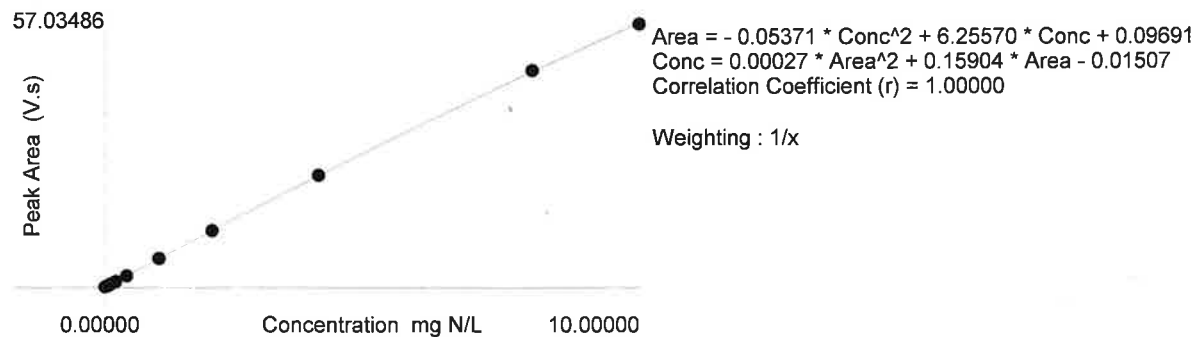


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-24-2024_05-03-39PM.OMN Created: 9/24/2024 5:03:39 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_05-03-39PM.OMN Last Modified: 9/24/2024 5:44:24 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight
CCV 0.4000	1	S6	0.39694	99%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig.: 1	103%		
CCV 4.0000	1	S3	4.10480			
		Known Conc:	100.00000			
CCB	1	S10	0.01564			
		Known Conc:	100.00000			
WG1974880-1; BLK 9/23	1	1	0.00101		1.50	95%
WG1974880-2; HI LCS; 5X	1	2	18.94386		7.50	95%
LO LCS	1	3	1.91604		1.50	w/dilution
L2452663-01	1	4	899.24542		30.00	
L2452825-01	1	5	19.70197		3.00	
L2452439-01	1	6	6.16501		3.00	
L2452439-03	1	7	0.41863		1.50	
L2452762-07	1	8	0.08491		1.50	
L2452762-10	1	9	0.05042		1.50	
L2452762-13	1	10	0.09997		1.50	
CCV 0.4000	1	S6	0.41315	103%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.13014	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.02807			
		Known Conc:	100.00000			
L2452762-16	1	11	0.02017		1.50	
L2452762-19	1	12	0.02341		1.50	
L2452762-22	1	13	0.01972		1.50	
L2452951-01	1	14	0.06498		1.50	
L2452951-02	1	15	0.02900		1.50	
L2452951-03	1	16	0.01543		1.50	
L2452951-04	1	17	0.05530		1.50	
L2452951-05	1	18	0.03787		1.50	
L2452951-07	1	19	0.02368		1.50	
L2452951-08	1	20	0.01178		1.50	
CCV 0.4000	1	S6	0.40168	101%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.10472	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.02003			
		Known Conc:	100.00000			
L2452951-09	1	21	0.02348		1.50	107%
WG1974880-4; 52951.9 MS	1	22	4.28094		1.50	pc (at 7.50)
WG1974880-3; 52951.9 DUP	1	23	0.16819		1.50	
L2451318-01	1	24	0.02776		1.50	
L2451318-02	1	25	-0.00516		1.50	
L2452825-01	1	26	17.28792		3.00	
L2452663-01; 50X	1	27	2697.14331		1500.00	
CCV 0.4000	1	S6	0.41839	105%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.12936	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.02275			
		Known Conc:	100.00000			



	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Area = $-0.05371 \cdot \text{Conc}^2 + 6.25570 \cdot \text{Conc} + 0.09691$
Conc = $0.00027 \cdot \text{Area}^2 + 0.15904 \cdot \text{Area} - 0.01507$
Correlation Coefficient (r) = 1.00000
Weighting : $1/x$

Original Run Filename: OM_9-24-2024_05-45-28PM.OMN Created: 9/24/2024 5:45:28 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_05-45-28PM.OMN Last Modified: 9/24/2024 6:23:24 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight
CCV 0.4000	1	S6	0.40296	101%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCV 4.0000	1	S3	4.09160	102%		
		Known Conc:	100.00000			
CCB	1	S10	0.02330			
		Known Conc:	100.00000			
WG1974931-1; BLK 9/23	1	1	0.00839		1.50	
WG1974931-2; HI LCS; 5X	1	2	20.41417		7.50	102%
LO LCS	1	3	2.02684		1.50	101%
L2453072-01	1	4	3.12408		7.50	
L2453072-02	1	5	1.54750		7.50	
L2453072-03	1	6	0.93141		7.50	
L2453702-04 53072.4	1	7	6.38925		7.50	
L2453118-01	1	8	0.47920		1.50	
L2453285-01	1	9	0.03705		1.50	
L2453285-02	1	10	0.01939		1.50	
CCV 0.4000	1	S6	0.39762	100%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.12069	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.01922			
		Known Conc:	100.00000			
L2453285-03	1	11	0.18870		1.50	
L2453285-04	1	12	0.18328		1.50	
L2453198-02	1	13	19.26028		7.50	
L2453198-03	1	14	7.45834		1.50	
L2453123-02	1	15	0.25753		1.50	
L2452994-01	1	16	0.27551		1.50	
L2452994-02	1	17	0.76078		1.50	
L2452967-01	1	18	0.04190		1.50	111% vcl (Trey)
WG1974931-4; 52967.1 MS	1	19	4.44293		1.50	
WG1974931-3; 52967.1 DUP	1	20	0.13240		1.50	
CCV 0.4000	1	S6	0.41075	103%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.10704	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.02107			
		Known Conc:	100.00000			
L2452967-02	1	21	4.71979		1.50	
L2452967-03	1	22	5.86877		1.50	
L2452967-05	1	23	2.46901		1.50	
L2452967-06	1	24	1.87792		1.50	
CCV 0.4000	1	S6	0.41341	103%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.11104	103%		
		Known Conc:	100.00000			
CCB	1	S10	0.01431			
		Known Conc:	100.00000			

E

Channel 2 (Ammonia High) - Current View

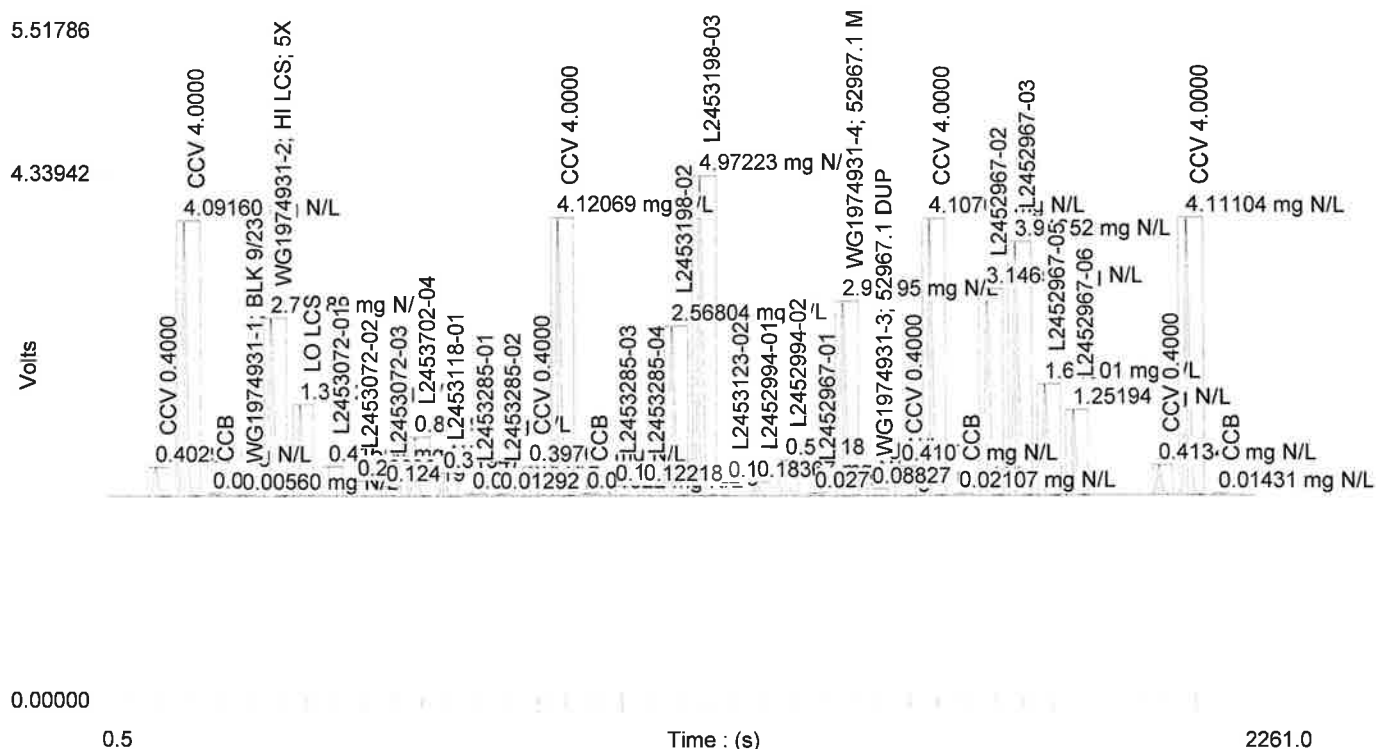
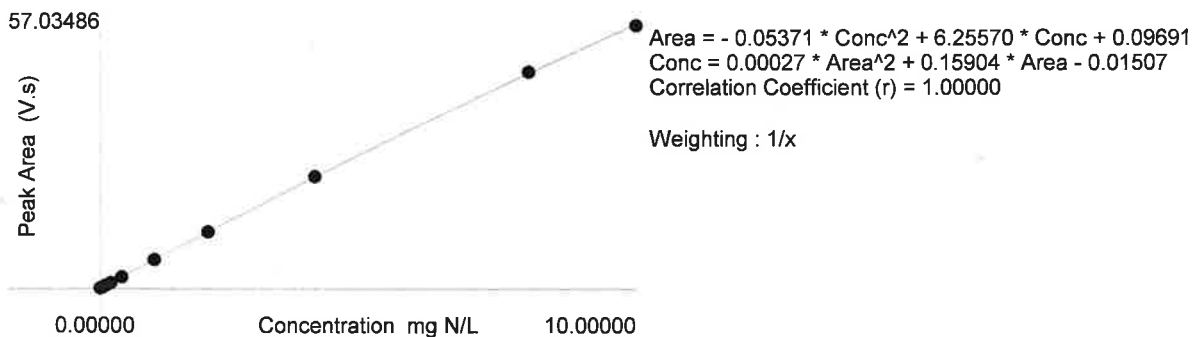


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-24-2024_06-24-02PM.OMN Created: 9/24/2024 6:24:02 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_06-24-02PM.OMN Last Modified: 9/24/2024 6:39:35 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.39950	100%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.09336	100%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S10	0.01695			
		Known Conc:	100.00000			
WG1974926-1; BLK 9/23	1	1	0.00930		1.50	
WG1974926-2; HI LCS; 5X	1	2	19.33228		7.50	
LO LCS	1	3	1.87766		1.50	
L2453120-01	1	4	71.38956		7.50	
L2453120-02	1	5	0.84460		1.50	
L2453130-01	1	6	0.15430		1.50	
L2453130-02	1	7	0.16386		1.50	
L2453273-01	1	8	22.55355		1.50	
L2453273-02	1	9	22.64332		1.50	
L2453069-01	1	10	0.50604		1.50	
CCV 0.4000	1	S6	0.44360			
		Known Conc:	100.00000			

reinject - OK

Channel 2 (Ammonia High) - Current View

9.75312

7.91895

Volts

0.00000

0.5

Time : (s)

911.0

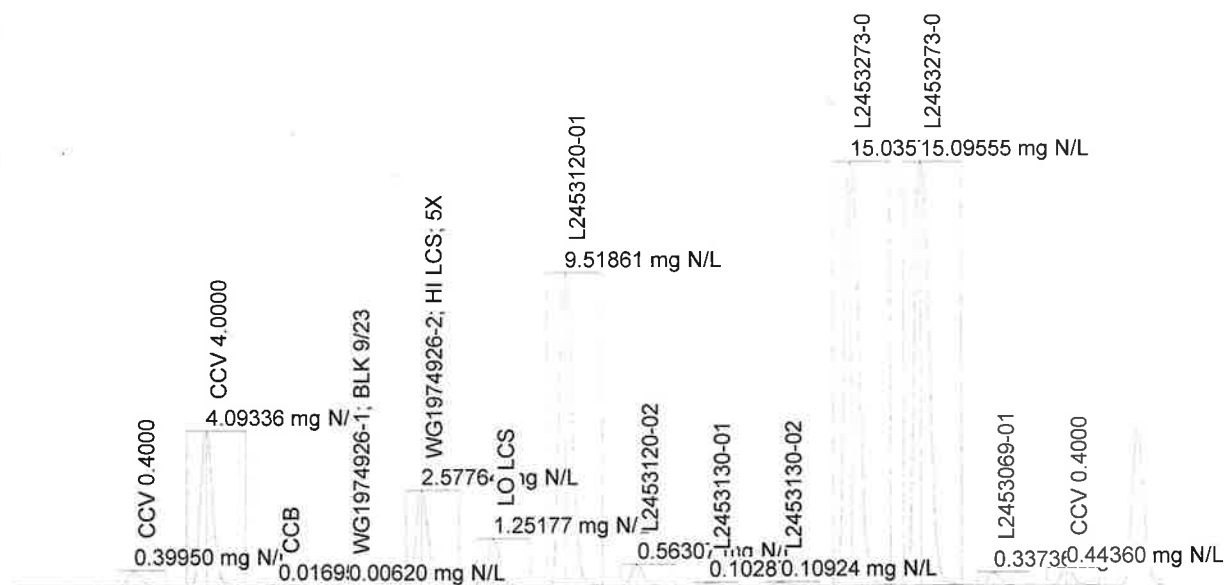
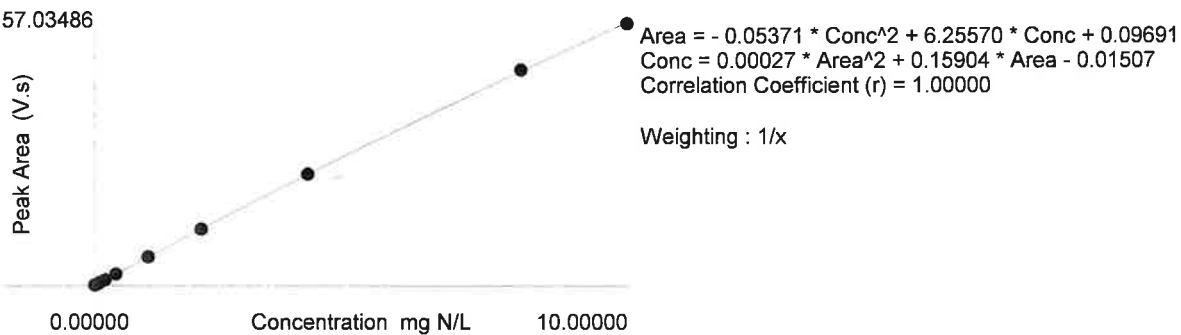


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)

57.03486



Original Run Filename: OM_9-24-2024_06-41-33PM.OMN Created: 9/24/2024 6:41:33 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_06-41-33PM.OMN Last Modified: 9/24/2024 7:11:54 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.40825	102%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.08416	102%		
		Known Conc:	100.00000			
CCB	1	S10	0.02265	/		
		Known Conc:	100.00000			
L2453069-02	1	11	0.03058		1.50	
L2453069-03	1	12	0.01625		1.50	
L2452951-10	1	13	0.04882	/	1.50	
Calibration: Table/Fig. : 1						
WG1974926-4; 52951.10 MS	1	14	4.25540		1.50	107%
WG1974926-3; 52951.10 DUP	1	15	0.16758	/	1.50	NC (25.00%)
L2452951-11	1	16	0.05612		1.50	
L2452951-12	1	17	0.05529		1.50	
L2452951-13	1	18	0.04072		1.50	
L2452951-14	1	19	0.04665		1.50	
L2452951-15	1	20	0.06207		1.50	
CCV 0.4000	1	S6	0.40544	101%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.07187	102%		
		Known Conc:	100.00000			
CCB	1	S10	0.01885	/		
		Known Conc:	100.00000			
L2452951-16	1	21	0.02111		1.50	
L2452951-18	1	22	0.02894		1.50	
L2452951-20	1	23	0.16122		1.50	
L2452951-22	1	24	0.04567		1.50	
L2452951-23	1	25	0.01348		1.50	
L2453273-01; 10X	1	26	25.17026		15.00	
L2453273-02; 10X	1	27	24.45352		15.00	
L2453069-01	1	28	0.07970		1.50	
CCV 0.4000	1	S6	0.40443	101%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.05406	102%		
		Known Conc:	100.00000			
CCB	1	S10	0.02106	/		
		Known Conc:	100.00000			

F2

Channel 2 (Ammonia High) - Current View

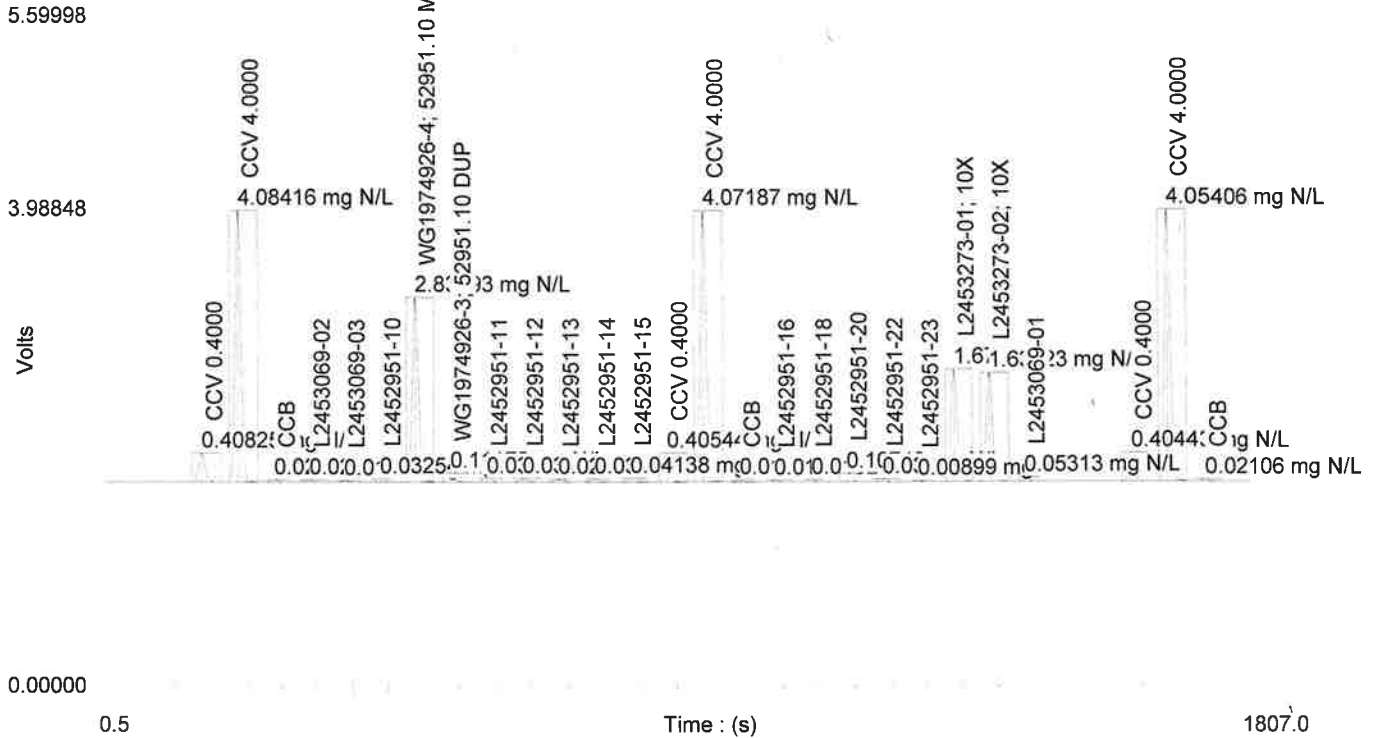
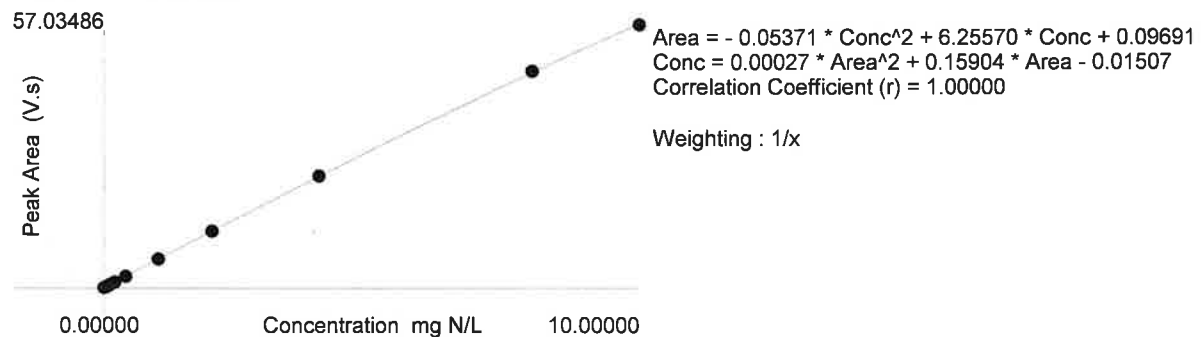


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-24-2024_07-12-32PM.OMN Created: 9/24/2024 7:12:32 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_07-12-32PM.OMN Last Modified: 9/24/2024 7:43:51 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

G

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.40012	100%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.02657	101%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S10	0.02068			
		Known Conc:	100.00000			
WG1974990-1 T; BLK 9/23	1	1	0.00481			
WG1974990-2 T; HI LCS; 5X	1	2	38.93412		15.00	97%
LO LCS T	1	3	4.30572		3.00	108%
L2453131-01 T	1	4	27.89323		3.00	
L2453131-02 T	1	5	7.06766		3.00	
L2453123-02 T	1	6	1.50666		3.00	
L2453274-01 T	1	7	0.38847		3.00	
WG1974990-4 T; 53274.1 MS	1	8	8.75431		3.00	105%
WG1974990-3 T; 53274.1 DUP	1	9	0.69545		3.00	57% (C5 x PL)
L2453274-02 T	1	10	0.35977		3.00	
CCV 0.4000	1	S6	0.40950	103%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.00307	100%		
		Known Conc:	100.00000			
CCB	1	S10	0.02318			
		Known Conc:	100.00000			
L2453274-03 T	1	11	0.35934		3.00	
L2453274-04 T	1	12	0.30229		3.00	
L2453274-05 T	1	13	0.58463		3.00	
L2453274-06 T	1	14	0.24626		3.00	
L2453274-07 T	1	15	0.19364		3.00	
L2453274-08 T	1	16	0.13591		3.00	
L2453279-01 T	1	17	0.28698		3.00	
L2453279-02 T	1	18	0.05338		3.00	
L2453279-03 T	1	19	2.89454		3.00	
L2453279-04 T	1	20	1.04419		3.00	
CCV 0.4000	1	S6	0.40364	101%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	4.00001	100%		
		Known Conc:	100.00000			
CCB	1	S10	0.01998			
		Known Conc:	100.00000			

Channel 2 (Ammonia High) - Current View

7.92629

6.19907

Volts

0.00000

0.5

Time : (s)

1865.5

Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)

57.03486

Peak Area (V.s)

0.00000

Concentration mg N/L

10.00000

Area = - 0.05371 * Conc^2 + 6.25570 * Conc + 0.09691
 Conc = 0.00027 * Area^2 + 0.15904 * Area - 0.01507
 Correlation Coefficient (r) = 1.00000

Weighting : 1/x

Original Run Filename: OM_9-24-2024_08-21-13PM.OMN Created: 9/24/2024 8:21:13 PM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-24-2024_08-21-13PM.OMN Last Modified: 9/24/2024 8:59:09 PM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight
			Ammonia (mg N/L)			
CCV 0.4000	1	S6	0.38445	96%		
		Known Conc:	100.00000			
CCV 4.0000	1	S3	3.91557	98%		
		Known Conc:	100.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S10	0.01951			
		Known Conc:	100.00000			
WG1974994-1 T; BLK 9/23	1	1	0.01439			
WG1974994-2 T; HI LCS; 5X	1	2	38.65418		15.00	97%
LO LCS T	1	3	4.12006		3.00	103%
L2453134-01 T	1	4	54.40591		3.00	up to date
L2453134-02 T	1	5	8.18690		3.00	
L2453170-01 T	1	6	43.39964		3.00	
L2453118-01 T	1	7	4.18830		3.00	
L2453285-01 T	1	8	2.03259		3.00	
L2453285-02 T	1	9	1.45161		3.00	
L2453285-03 T	1	10	0.68758		3.00	
CCV 0.4000	1	S6	0.41324	103%		
		Known Conc:	100.00000	99%		
CCV 4.0000	1	S3	3.96176			
		Known Conc:	100.00000			
CCB	1	S10	0.03083			
		Known Conc:	100.00000			
L2453285-04 T	1	11	0.84950		3.00	
L2453290-01 T	1	12	4.69295		3.00	
L2453290-02 T	1	13	0.29413		3.00	
L2453290-03 T	1	14	0.32899		3.00	
L2453290-04 T	1	15	0.59957		3.00	
L2453293-01 T	1	16	0.30738		3.00	
WG1974994-4 T; 53293.1 MS	1	17	8.62890		3.00	104%
WG1974994-3 T; 53293.1 DUP	1	18	0.59784		3.00	64% (26-24)
L2453293-02 T	1	19	0.17907		3.00	
L2453293-03 T	1	20	0.13291		3.00	
CCV 0.4000	1	S6	0.40742	102%		
		Known Conc:	100.00000	99%		
CCV 4.0000	1	S3	3.95537			
		Known Conc:	100.00000			
CCB	1	S10	0.02495			
		Known Conc:	100.00000			
L2453134-01 T; 10X	1	21	76.49265		30.00	
L2453134-02 T	1	22	7.07148		3.00	
L2453170-01 T; 10X	1	23	52.41485		30.00	
L2453118-01 T	1	24	3.24589		3.00	
CCV 0.4000	1	S6	0.41158	103%		
		Known Conc:	100.00000	99%		
CCV 4.0000	1	S3	3.95401			
		Known Conc:	100.00000			
CCB	1	S10	0.02732			
		Known Conc:	100.00000			

H

Channel 2 (Ammonia High) - Current View

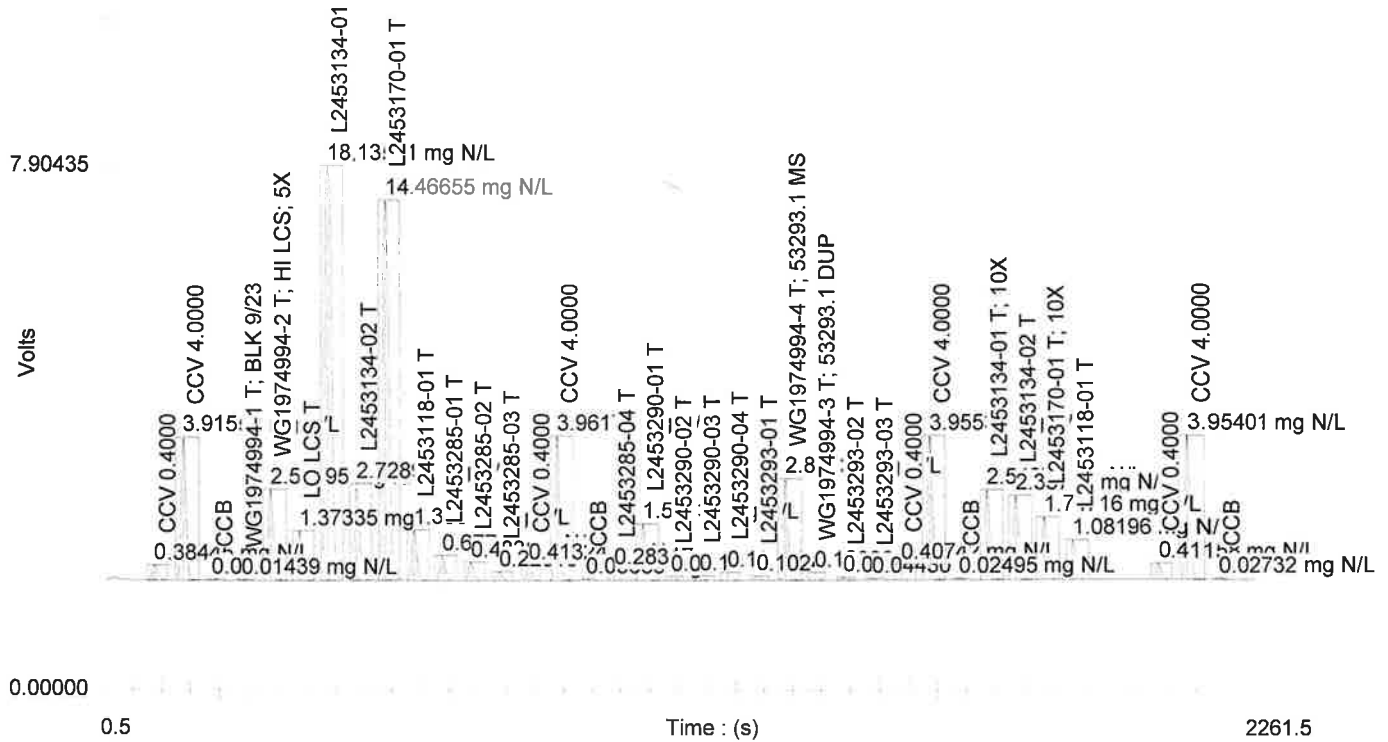
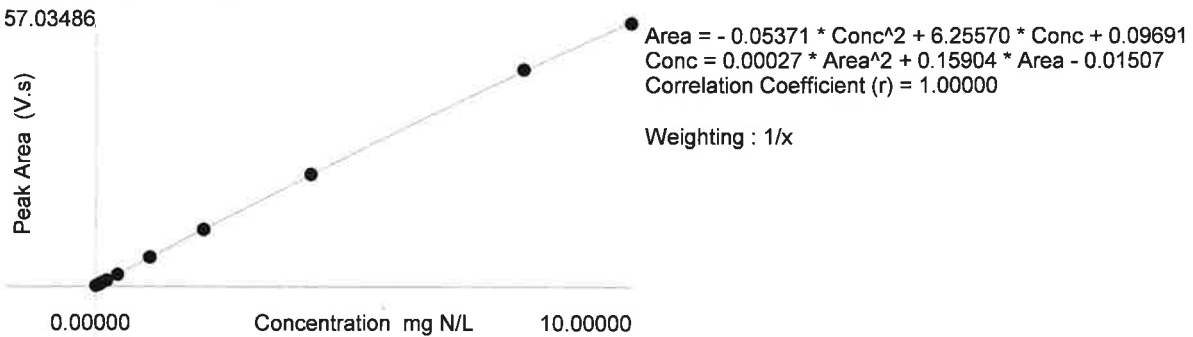


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	57.03486	5.00999	0.0	0.4	9.94361	9/24/2024	2:16:14 PM
2	8.00000	1	46.98870	4.23039	0.0	-0.6	8.06060	9/24/2024	2:17:11 PM
3	4.00000	1	24.32747	2.25921	0.0	-0.3	4.01544	9/24/2024	2:18:08 PM
4	2.00000	1	12.35860	1.14107	0.0	0.3	1.99209	9/24/2024	2:19:05 PM
5	1.00000	1	6.33612	0.58405	0.0	-0.6	1.00356	9/24/2024	2:20:03 PM
6	0.40000	1	2.53347	0.23108	0.0	2.2	0.38960	9/24/2024	2:21:01 PM
7	0.20000	1	1.32409	0.12094	0.0	1.6	0.19599	9/24/2024	2:21:59 PM
8	0.10000	1	0.73844	0.06227	0.0	-2.3	0.10252	9/24/2024	2:22:57 PM
9	0.05000	1	0.36655	0.03237	0.0	10.5	0.04327	9/24/2024	2:23:55 PM
10	0.00000	1	0.14190	0.01240			0.00751	9/24/2024	2:24:51 PM

Figure : 1 (Ammonia)



Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453720-02
 Matrix Spike : WG1975410-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/24/24 16:46
 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			
Nitrogen, Total Kjeldahl	ND	8	6.66	83					77-111	24



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/24/24 16:45
Dup Sample ID	: WG1975410-3	DUP Analysis Date	: 09/24/24 16:47

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Total Kjeldahl	ND	0.243J	NC	24

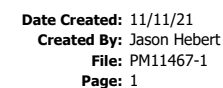
Form 7

Laboratory Control Sample

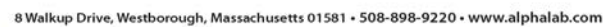
Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975410-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/24/24 16:40
 LCSD Analysis Date :

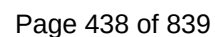
Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Nitrogen, Total Kjeldahl	40.0	37.9	95.					78-122	24

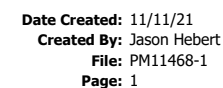
[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

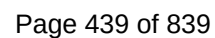


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Nitrogen in TKN

Aqueous samples:

Compute sample TKN –N concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

If the sample has a concentration of less than 2ppm, calculate results by using the low curve generated on Channel 1.

If the sample concentration is greater than 2ppm, calculate the results by using the high curve generated on Channel 2.

To Compute the final results for aqueous samples, multiply the direct reading by the dilution factor based on the initial preparation volume.
(also done using software)

$$\text{TKN-N mg/L} = \text{mg/L direct reading} \times \text{dilution factor}$$

Sequence Logs

Project No. _____

Initial Book No. _____

TITLE NH₃ 9/24/24

Age No.

A (02-07-91M)

91212 100:51

T₁ B (03-11-90M)

RF 91232 13:25

HICV 8-6

L₁ TW 1-0

TUB

W01974611-1 Bu
-2: 10L₁ H₁

53309-2 (2x)

53404-2

5 (2x)

8

11 (2x)

14 (2x)

17

20

23

26

53422-2 (2x)

4

6

8

10

12

14

14 (2x)

18

20

20M

20M

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

W01974987-1 T. Bu
-2 T: 10L₁ H₁

52439-1 T

52659-1 T

52659-1 T (10x) (10M)

52659-1 T

52661-1 T (10x) (10M)

52661-1 T

52954-2 T

53069-1 T

53069-1 T

53116-1 T

53562-1 T

53588-1 T

53851-1 T (10x) (10M)

53851-1 T

52661-2 M

52661-2 M

52661-2 M

63-42-70M

Z

Date: 9/24/24

Sodium Phenolate: 8/30/24 R-4065

Sodium Hypochlorate: 8/30/24 R-3769

Sodium Nitroprusside: 8/30/24 R-3769

Boric Acid Soln.: 8/30/24 R-4019

ICV 1.0: 9/11/24 W-3476

ICV 8.0: 9/11/24 W-3476

Cal. Std: 8/30/24 W-3392

See Front Page for Instructions:

io Page No. _____

ed & Understood by me,

Date

Invented by:

Date

TITLE _____

From Page No. _____

Tray C (04-34-541 m)
 RP 9124 e 7:38

to → (05-03-37 pm)
 by 9/23/04 @ 01:44

1 W 1975410-1 T, Zu
 2 -2 T: W

3 60 W
 4 53342-10 T

5 53400-1 T

6 2 T

7 5370-2 T

8 720-2 W

9 2 Dup

10 54050-1 T

11 2 T

12 2 T

13 4 T

14 54059-1 T

15 2 T

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

Project No. _____

dential

Book No. _____

TITLE _____

NH₃ 9/24/24 (4) C-9.

Page No. _____

Exp. E (05-45-28 pm)
 Prop 9/24/24 @ 1235

- 1 WU 974931-1; Blu 9/23
- 2 WU 974931-2; Hi us 5x
- 3 WU
- 4 53072.1 (50)
- 5 .2 (50)
- 6 .3 (50)
- 7 .4 (50)
- 8 53118.1
- 9 53285.1
- 10 .2
- 11 .3
- 12 .4
- 13 53198.2 (50)
- 14 .3
- 15 53123.2
- 16 52994.1
- 17 .2
- 18 52967.1
- 19 WU 974931-4; 52967.1 m)
- 20 WU 974931-3; 52967.1 20
- 21 52967.2
- 22 .3
- 23 .5
- 24 .6
- 25

Exp. F (06-24-02 pm)
 Prop 9/23/24 @ 1230

- 1 WU 974926-1; Blu 9/23
- 2 WU 974926-2; Hi us 5x
- 3 WU
- 4 53120.1 (50)
- 5 .2
- 6 53130.1
- 7 .2
- 8 53273.1 -10+
- 9 .2 -10+
- 10 53069.1
- 11 .2
- 12 .3
- 13 52951.10
- 14 WU 974926-4; 52951.10 m)
- 15 WU 974926-3; 52951.10 20
- 16 52951.11
- 17 .12
- 18 .13
- 19 .14
- 20 .15
- 21 .16
- 22 .18
- 23 .20
- 24 .22
- 25 .23

→ 06-41-33 pm

Issued & Understood by me,

Date

Invented by:

To Page No. _____

Date

Recorded by:

TITLE _____

From Page No. _____

Fig. G (07-12-32 PM)
 1/8 9/23/24 @ 1330

1 Wtly 1974990-1 T. Blk 9/23
 2 Wtly 1974990-2 T. Hi w 5x
 3 W w 5 T
 4 53131.1 T
 5 .2 T
 6 53123.2 T
 7 53274.1 T
 8 Wtly 1974990-4 T. 53274.1 ms
 9 Wtly 1974990-3 T. 53274.1 ms
 10 53274.2 T
 11 .3 T
 12 .4 T
 13 .5 T
 14 .6 T
 15 .7 T
 16 .8 T
 17 53274.1 T
 18 .2 T
 19 .3 T
 20 .4 T

Fig. H (08-21-13 PM)
 1/8 9/23/24 @ 1340

1 Wtly 1974994-1 T. Blk 9/23
 2 Wtly 1974994-2 T. Hi w 5x
 3 W w 5 T
 4 53134.1 T -10x
 5 .2 T
 6 53170.1 T -10x
 7 53118.1 T
 8 53285.1 T
 9 .2 T
 10 .3 T
 11 .4 T
 12 53290.1 T
 13 .2 T
 14 .3 T
 15 .4 T
 16 53293.1 T
 17 Wtly 1974994-4 T. 53293.1 ms
 18 Wtly 1974994-3 T. 53293.1 ms
 19 53293.2 T
 20 .3 T

Witnessed & Understood by me,

Date

Invented by:

To Page N

Date

Recorded by:

Sample Preparation



From Page No. _____

Sample	Volume 50 ml	Dilution 1x	Final Volume 150 ml
Blank			
Low			
High			
53342-1a			
53400-1			
-2			
53720-2 PA			
-2 DWP			
-2 MS			
54050-1			
-2			
-3			
-4			
54059-1			
-2			

Same standards
and reagents
as pg. #99
Nitrate checked.

09/24/24 @ 07:38 AJC

Distilled by SAD 09 24 24 @ 15:05

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by: _____

Date _____

Ammonia Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 10:48
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,350.1	Analyst	: KEP
Lab File ID	: NH320240926-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	ND	0.075	0.024	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 10:49
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,350.1	Analyst	: KEP
Lab File ID	: NH320240926-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	0.042	0.075	0.024	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 10:50
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 44,350.1	Analyst	: KEP
Lab File ID	: NH320240926-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	ND	0.075	0.024	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/26/24 10:51
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,350.1	Analyst	: KEP
Lab File ID	: NH320240926-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	0.099	0.075	0.024	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1976410-1
Client ID : WG1976410-1BLANK
Sample Location :
Sample Matrix : WATER
Analytical Method : 44,350.1
Lab File ID : NH320240926-A
Sample Amount :
Digestion Method :

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : NA
Date Received : NA
Date Analyzed : 09/26/24 10:21
Dilution Factor : 1
Analyst : KEP
Instrument ID : LACHAT
%Solids : N/A
Date Digested : 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	ND	0.075	0.024	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1976410-3	Date Collected	: 09/17/24 11:00
Client ID	: WG1976410-3 DUP	Date Received	: 09/17/24
Sample Location	:	Date Analyzed	: 09/26/24 10:43
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,350.1	Analyst	: KEP
Lab File ID	: NH320240926-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	0.149	0.075	0.024	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1976410-5
Client ID : WG1976410-5 DUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 44,350.1
Lab File ID : NH320240926-A
Sample Amount :
Digestion Method :

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : 09/17/24 10:10
Date Received : 09/17/24
Date Analyzed : 09/26/24 10:26
Dilution Factor : 2
Analyst : KEP
Instrument ID : LACHAT
%Solids : N/A
Date Digested : 09/26/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7664-41-7	Nitrogen, Ammonia	0.125	0.150	0.048	J



Sample Raw Data

Original Run Filename: OM_9-26-2024_10-00-48AM.OMN Created: 9/26/2024 10:00:48 AM

Original Run Author's Signature: [A1WETCHEMINSTRUMENT]

Current Run Filename: OM_9-26-2024_10-00-48AM.OMN Last Modified: 9/26/2024 11:01:45 AM

Current Run Author's Signature: [A1WETCHEMINSTRUMENT]

Description: Default New Run

Sample	Rep.	Cup No.	Channel 2	ADF	MDF	Weight	TRAY A
			Ammonia (mg N/L)				
STD 1	1	S1	10.00000				
STD 2	1	S2	8.00000				
STD 3	1	S3	4.00000				
STD 4	1	S4	2.00000				
STD 5	1	S5	1.00000				
STD 6	1	S6	0.40000				
STD 7	1	S7	0.20000				
STD 8	1	S8	0.10000				
STD 9	1	S9	0.05000				
STD 10	1	S10	0.00000				
CCV 0.4000	1	S6	0.39330				98%
Known Conc:			100.00000				
Calibration:			Table/Fig. : 1				
CCV 4.0000	1	S3	3.92728				98%
Known Conc:			100.00000				
CCB	1	S10	0.01861				
Known Conc:			100.00000				
HI ICV 8.0	1	1	8.18254				102%
LO ICV 1.0	1	2	1.03278				103%
ICB	1	3	0.01214				
WG1976410-1	1	4	0.02309		1.50		
WG1976410-2	1	5	18.67862		7.50		93%
LCS LO	1	6	1.93718		1.50		97%
L2453131-01	1	7	24.13017		3.00		
L2453131-02	1	8	5.22671		1.50		
L2453252-01	1	9	0.48287		3.00		RERUN
WG1976410-5	1	10	0.12546		3.00		
CCV 0.4000	1	S6	0.40561				101%
Known Conc:			100.00000				
CCV 4.0000	1	S3	3.97533				99%
Known Conc:			100.00000				
CCB	1	S10	0.02366				
Known Conc:			100.00000				
WG1976410-6	1	11	8.96960		3.00		112%
L2453252-02	1	12	3.54221		1.50		
L2453252-03	1	13	0.35642		3.00		
L2453252-04	1	14	0.03675		1.50		
L2453252-05	1	15	0.01726		1.50		
L2453252-06	1	16	0.05357		1.50		
L2453252-07	1	17	0.04872		1.50		
L2453252-08	1	18	0.00332		1.50		
L2453399-01	1	19	0.01841		1.50		
L2453399-02	1	20	0.02532		1.50		
CCV 0.4000	1	S6	0.39379				98%
Known Conc:			100.00000				
CCV 4.0000	1	S3	3.98979				100%
Known Conc:			100.00000				
CCB	1	S10	0.01777				
Known Conc:			100.00000				
WG1976410-4	1	21	4.32508		1.50		108%
WG1976410-3	1	22	0.14922		1.50		RPD=NC
L2453399-03	1	23	0.02789		1.50		
L2453399-04	1	24	1.27391		1.50		
L2453399-05	1	25	0.98170		1.50		
L2453400-01	1	26	0.02931		1.50		
L2454050-01	1	27	0.00779		1.50		
L2454050-02	1	28	0.04197		1.50		
L2454050-03	1	29	-2.62978e-5		1.50		
L2454050-04	1	30	0.09916		1.50		

CCV 0.4000	1	S6	0.40080			100%
Known Conc:			100.00000			
CCV 4.0000	1	S3	3.98930			100%
Known Conc:			100.00000			
CCB	1	S10	0.02127			
Known Conc:			100.00000			
L2453252-01	1	9	0.06133	3.00		99%
CCV 0.4000	1	S6	0.39760			
Known Conc:			100.00000			
CCV 4.0000	1	S3	3.98290			100%
Known Conc:			100.00000			
CCB	1	S10	0.02017			
Known Conc:			100.00000			

Channel 2 (Ammonia High) - Current View

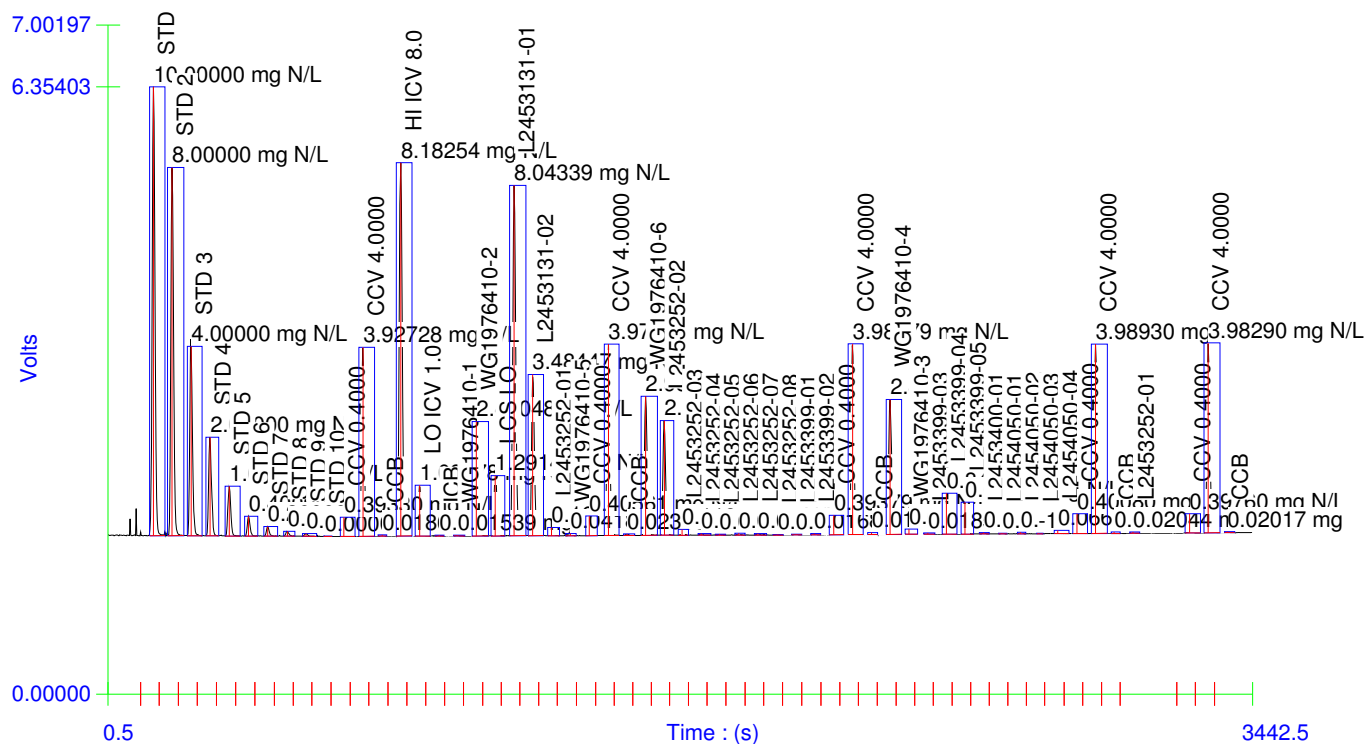
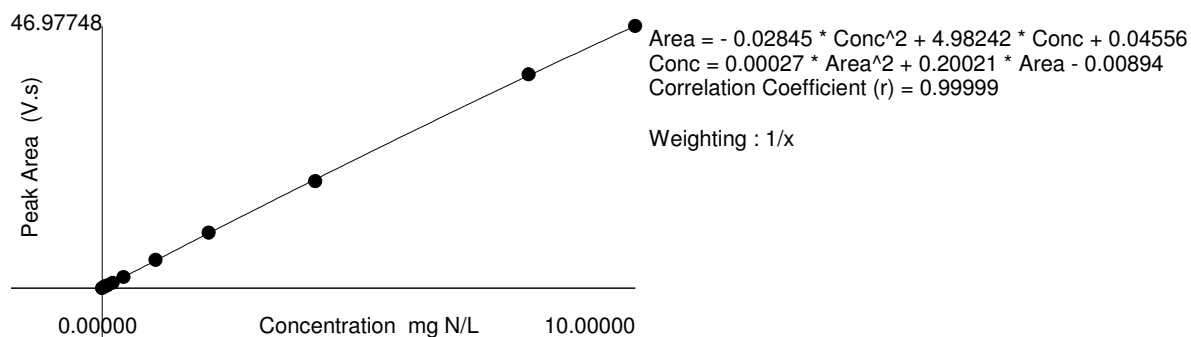


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	46.97748	4.69752	0.0	0.1	9.98544	9/26/2024	10:05:54 AM
2	8.00000	1	38.27469	3.85316	0.0	-0.5	8.04502	9/26/2024	10:06:50 AM
3	4.00000	1	19.18818	1.98340	0.0	1.7	3.93098	9/26/2024	10:07:48 AM
4	2.00000	1	9.98656	1.03448	0.0	-0.9	2.01708	9/26/2024	10:08:45 AM
5	1.00000	1	5.10071	0.52061	0.0	-2.0	1.01921	9/26/2024	10:09:43 AM
6	0.40000	1	2.03281	0.20724	0.0	0.1	0.39915	9/26/2024	10:10:41 AM
7	0.20000	1	1.01097	0.10177	0.0	2.9	0.19374	9/26/2024	10:11:38 AM
8	0.10000	1	0.53919	0.05163	0.0	0.8	0.09909	9/26/2024	10:12:38 AM
9	0.05000	1	0.32750	0.02688	0.0	-11.2	0.05666	9/26/2024	10:13:34 AM
10	0.00000	1	0.01835	0.00301			-0.00527	9/26/2024	10:14:31 AM

Figure : 1 (Ammonia)



Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453399-02
 Matrix Spike : WG1976410-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/26/24 10:42
 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			
Nitrogen, Ammonia	0.025J	4	4.32	108					90-110	20



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453252-01
 Matrix Spike : WG1976410-6
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/26/24 10:30
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Nitrogen, Ammonia	0.061J	8	8.97	112 Q					90-110	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/26/24 10:39
Dup Sample ID	: WG1976410-3	DUP Analysis Date	: 09/26/24 10:43

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Ammonia	0.025J	0.149	NC	20

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/26/24 10:55
Dup Sample ID	: WG1976410-5	DUP Analysis Date	: 09/26/24 10:26

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Ammonia	0.061J	0.125J	NC	20

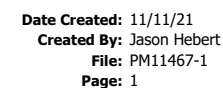
Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1976410-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/26/24 10:22
 LCSD Analysis Date :

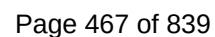
Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Nitrogen, Ammonia	20.0	18.7	94.					90-110	20

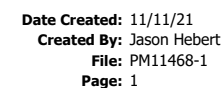
[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

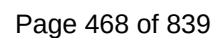


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Nitrogen in Ammonia

Aqueous samples:

Compute sample NH_3 -N concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

If the sample has a concentration of less than 2ppm, calculate results by using the low curve generated on Channel 1.

If the sample concentration is greater than 2ppm, calculate the results by using the high curve generated on Channel 2.

To Compute the final results for aqueous samples, multiply the direct reading by the dilution factor based on the initial preparation volume. (also done using software)

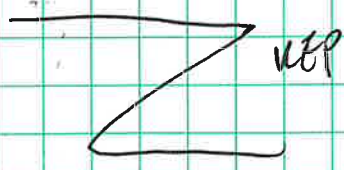
$$\text{NH}_3\text{-N mg/L} = \text{mg/L direct reading} \times \text{dilution factor}$$

Sequence Logs

From Page No. _____

Tray A (10-00-48AM)
prep 9/26/24 @ 1:03

- 1 Hi ICV 8.0
- 2 hi ICV 1.0
- 3 JLB
- 4 W61976410 -1; Blk
- 5 -2; US Hi; 5x
- 6 LUS Lo
- 7 5313101 (2x)
- 8 02
- 9 5325201 (2x) remn
- 10 01 Dup (2x)
- 11 01 MS (2x)
- 12 02
- 13 03 (2x)
- 14 04
- 15 05
- 16 06
- 17 07
- 18 08
- 19 5339901
- 20 02
- 21 02 MS
- 22 02 Dup
- 23 03
- 24 04
- 25 05
- 26 5340001
- 27 5405001
- 28 02
- 29 03
- 30 04

 KEP

Tray B
prep 9/25/24 @ 21:13, @ 21:24

- 1 W61976302-1; Blk
- 2 (6301)-2; US Hi; 5x
- 3 LUS Lo
- 4 5340002
- 5 02 MS
- 6 02 Dup
- 7 03
- 8 04
- 9 5335605
- 10 05 Dup
- 11 05 MS
- 12 5347102
- 13 5347301
- 14 5349804
- 15 05
- 16 06
- 17 07
- 18 5349901
- 19 02
- 20 03
- 21 5360001
- 22 02
- 23 03
- 24 5353301 (2x)
- 25 02
- 26 5353401 (5x)
- 27 5355001

Date: 9/26/24
Sodium Phenolate: 8130/24 R-4065
Sodium Hypochlorate: 8130/24 stopshop
Sodium Nitroprusside: 8130/24 R-3969
Boric Acid Soln.: 8130/24 R-4019
ICV 1.0: 9/11/24 wc-3476
ICV 8.0:
Cal. Std: 8130/24 wc-3392
See Front Page for Instructions:

To Page No. _____

Witnessed & Understood by me,

Date

Ir

Date

Recorded by:

Sample Preparation

TITLE _____

Book No. _____

Confidential

From Page No. _____

Sample	Volume /ccml	Dilution	Int. pH ~2	Adj. pH ~9.5	Final Vol. /50ml
Blank		1x			
Low		↓			
High					
53331-1		2x(50ml/100) Mx.			
-2		1x			
53252-1 PA		2x(50ml/100) Mx.			
-1 DUP		↓			
-1 MS					
-2		1x			
-3		2x(50ml/100) Mx.			
-4		1x			
-5					
-6					
-7					
-8					
53399-1					
-2 PA					
-2 DUP					
-2 MS					
-3					
-4					
-5					
53400-1					
54050-1					
-2					
-3					
-4					

Same standards
and reagents as
pg. # 60

09/26/24 @ 01:03 AJC

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by: _____

Date _____

Recorded by: _____

Nitrate and Nitrite Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:24
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,353.2	Analyst	: KAF
Lab File ID	: NO3240920-C1	Instrument ID	: FIA1
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	1.3	0.10	0.023	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:25
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,353.2	Analyst	: KAF
Lab File ID	: NO3240920-C1	Instrument ID	: FIA1
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	5.3	0.10	0.023	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:26
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 44,353.2	Analyst	: KAF
Lab File ID	: NO3240920-C1	Instrument ID	: FIA1
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	ND	0.10	0.023	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:27
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,353.2	Analyst	: KAF
Lab File ID	: NO3240920-C1	Instrument ID	: FIA1
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	0.42	0.10	0.023	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1974029-1
 Client ID : WG1974029-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,353.2
 Lab File ID : NO3240920-A1
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/20/24 02:46
 Dilution Factor : 1
 Analyst : KAF
 Instrument ID : FIA1
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	ND	0.10	0.023	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1974029-3
 Client ID : WG1974029-3 DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,353.2
 Lab File ID : NO3240920-A1
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : 09/18/24 06:45
 Date Received : 09/19/24
 Date Analyzed : 09/20/24 03:25
 Dilution Factor : 1
 Analyst : KAF
 Instrument ID : FIA1
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	ND	0.10	0.02	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1974029-5
Client ID : WG1974029-5 DUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 44,353.2
Lab File ID : NO3240920-B1
Sample Amount :
Digestion Method :

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : 09/19/24 10:00
Date Received : 09/19/24
Date Analyzed : 09/20/24 05:03
Dilution Factor : 5
Analyst : KAF
Instrument ID : FIA1
%Solids : N/A
Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14797-55-8	Nitrogen, Nitrate	11.	0.50	0.11	



Sample Raw Data

Graphical report generated by FIAsoft v3.1.10

Report generated on 2024-09-20 04:01:10

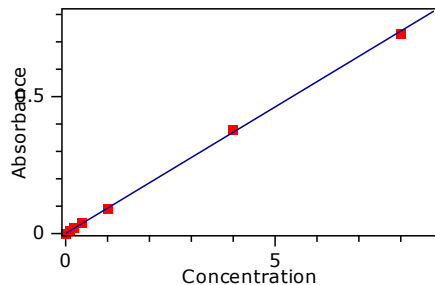
Data file (.dat): C:\FIALab\Autosave Data\2024-09-20-040044.dat

Dataset Notes:

Analyst	

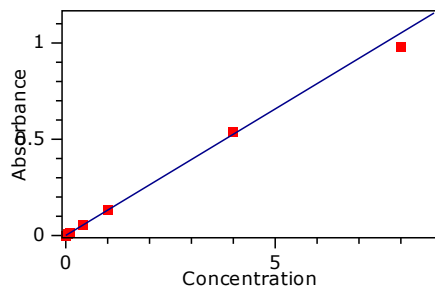
Dataset Notes Table Location: C:\FIALab\FIALab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00062
 B: 0.09234
 R^2 : 0.99978
 RSE(%): 2.13019
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
2	NOx 8.0ppm	0.73020	8.00000	7.90070	1.24	2024-09-20T02:09:37
3	NOx 4.0ppm	0.37640	4.00000	4.06960	1.74	2024-09-20T02:10:46
4	NOx 1.0ppm	0.09070	1.00000	0.97550	2.45	2024-09-20T02:11:54
5	NOx 0.4ppm	0.03860	0.40000	0.41080	2.70	2024-09-20T02:13:01
6	NOx 0.2ppm	0.01910	0.20000	0.20020	0.11	2024-09-20T02:14:12
7	NOx 0.1ppm	0.00980	0.10000	0.09950	0.50	2024-09-20T02:15:22
8	NOx 0.0ppm	0.00010	0.00000	-0.00550	NA	2024-09-20T02:16:34



Channel: 2-NO2
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00048
 B: 0.13140
 R^2 : 0.99790
 RSE(%): 4.60505
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
9	Nitrite 8.0ppm	0.98180	8.00000	7.46800	6.65	2024-09-20T02:17:31
10	Nitrite 4.0ppm	0.54000	4.00000	4.10560	2.64	2024-09-20T02:18:41
11	Nitrite 1.0ppm	0.13210	1.00000	1.00190	0.19	2024-09-20T02:19:48
12	Nitrite 0.4ppm	0.05560	0.40000	0.41920	4.81	2024-09-20T02:20:57
13	Nitrite 0.1ppm	0.01400	0.10000	0.10260	2.63	2024-09-20T02:22:07
14	Nitrite 0.05ppm	0.00690	0.05000	0.04910	1.88	2024-09-20T02:23:17
15	Nitrite 0.0ppm	0.00010	0.00000	-0.00300	NA	2024-09-20T02:24:43

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0006	1	1	1	-0.0004		2024-09-20T02:08:22
NOx 8.0ppm	2	Standard	8	0.7302	1	1	1	7.9007		2024-09-20T02:09:37
NOx 4.0ppm	3	Standard	4	0.3764	1	1	1	4.0696		2024-09-20T02:10:46
NOx 1.0ppm	4	Standard	1	0.0907	1	1	1	0.9755		2024-09-20T02:11:54
NOx 0.4ppm	5	Standard	0.4	0.0386	1	1	1	0.4108		2024-09-20T02:13:01
NOx 0.2ppm	6	Standard	0.2	0.0191	1	1	1	0.2002		2024-09-20T02:14:12
NOx 0.1ppm	7	Standard	0.1	0.0098	1	1	1	0.0995		2024-09-20T02:15:22
NOx 0.0ppm	8	Standard	0	0.0001	1	1	1	-0.0055		2024-09-20T02:16:34
Nitrite 8.0ppm	9	Standard	?	0.7165	1	1	1	7.7527		2024-09-20T02:17:43
Nitrite 4.0ppm	10	Standard	?	0.3838	1	1	1	4.1491		2024-09-20T02:18:52
Nitrite 1.0ppm	11	Standard	?	0.0918	1	1	1	0.9877		2024-09-20T02:20:01
Nitrite 0.4ppm	12	Standard	?	0.0392	1	1	1	0.4175		2024-09-20T02:21:09
Nitrite 0.1ppm	13	Standard	?	0.0096	1	1	1	0.0977		2024-09-20T02:22:19
Nitrite 0.05ppm	14	Standard	?	0.0047	1	1	1	0.0445		2024-09-20T02:23:29
Nitrite 0.0ppm	15	Standard	?	0.0001	1	1	1	-0.0054		2024-09-20T02:24:40
CCV NO3	16	QC	1	0.0930	1	1	1	0.9999		2024-09-20T02:25:46
CCV NO2	17	QC	?	0.0934	1	1	1	1.0048		2024-09-20T02:26:52
CCB	18	QC	0	-0.0001	1	1	1	-0.0079		2024-09-20T02:27:38
ICV NO3 5.0	19	QC	5	0.4601	1	1	1	4.9753		2024-09-20T02:29:11
ICV NO2 5.0	20	QC	?	0.4679	1	1	1	5.0600		2024-09-20T02:30:19
ICV NO3 0.5	21	QC	0.5	0.0436	1	1	1	0.4655		2024-09-20T02:31:27
ICV NO2 0.5	22	QC	?	0.0469	1	1	1	0.5014		2024-09-20T02:32:35
ICB	23	QC	0	0.0000	1	1	1	-0.0067		2024-09-20T02:33:19
BLANK NO3	24	Unknown	?	0.0001	1	1	1	-0.0058		2024-09-20T02:34:48
LCS NO3	25	Unknown	?	0.4650	1	1	1	5.0286		2024-09-20T02:35:57
BLANK NO2	26	Unknown	?	-0.0003	1	1	1	-0.0095		2024-09-20T02:36:37
LCS NO2	27	Unknown	?	0.4697	1	1	1	5.0800		2024-09-20T02:38:10
CCV NO3	28	QC	1	0.0893	1	1	1	0.9601		2024-09-20T02:39:16
CCV NO2	29	QC	?	0.0940	1	1	1	1.0107		2024-09-20T02:40:21
CCB	30	QC	0	-0.0001	1	1	1	-0.0073		2024-09-20T02:41:09
WG1974027-1	31	Unknown	?	0.0000	1	1	1	-0.0062		2024-09-20T02:42:39
WG1974027-2	32	Unknown	?	0.4675	1	1	1	5.0561		2024-09-20T02:43:48

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
WG1974028-1	33	Unknown	?	-0.0003	1	1	1	-0.0095		2024-09-20T02:44:27
WG1974028-2	34	Unknown	?	0.4694	1	1	1	5.0764		2024-09-20T02:45:58
WG1974029-1	35	Unknown	?	-0.0002	1	1	1	-0.0091		2024-09-20T02:46:39
WG1974029-2	36	Unknown	?	0.4630	1	1	1	5.0071		2024-09-20T02:48:11
WG1974030-1	37	Unknown	?	-0.0002	1	1	1	-0.0092		2024-09-20T02:48:53
WG1974030-2	38	Unknown	?	0.4626	1	1	1	5.0034		2024-09-20T02:50:26
WG1974033-1	39	Unknown	?	-0.0002	1	1	1	-0.0087		2024-09-20T02:51:07
WG1974033-2	40	Unknown	?	0.4626	1	1	1	5.0030		2024-09-20T02:52:39
CCV NO3	41	QC	1	0.0897	1	1	1	0.9650		2024-09-20T02:53:45
CCV NO2	42	QC	?	0.0938	1	1	1	1.0086		2024-09-20T02:54:51
CCB	43	QC	0	0.0000	1	1	1	-0.0069		2024-09-20T02:55:36
L2453511-01	44	Unknown	?	0.0017	1	1	1	0.0122		2024-09-20T02:57:10
WG1974028-3	45	Unknown	?	0.0011	1	1	1	0.0048		2024-09-20T02:58:16
WG1974028-4	46	Unknown	?	0.3812	1	1	1	4.1218		2024-09-20T02:59:22
L2453511-02	47	Unknown	?	1.3007	1	1	1	14.0788	OVR	2024-09-20T03:00:33
L2453512-01	48	Unknown	?	-0.0020	1	1	1	-0.0279		2024-09-20T03:01:06
L2453512-02	49	Unknown	?	0.0897	1	1	1	0.9648		2024-09-20T03:02:39
L2453511-02; 2 UP TO 10	50	Unknown	?	0.5428	5	1	1	29.3566		2024-09-20T03:03:46
L2453956-01	51	Unknown	?	-0.0004	1	1	1	-0.0112		2024-09-20T03:04:24
L2453956-02	52	Unknown	?	0.0966	1	1	1	1.0392		2024-09-20T03:05:58
L2453956-03	53	Unknown	?	0.0018	1	1	1	0.0131		2024-09-20T03:07:03
CCV NO3	54	QC	1	0.0945	1	1	1	1.0164		2024-09-20T03:08:07
CCV NO2	55	QC	?	0.0944	1	1	1	1.0152		2024-09-20T03:09:13
CCB	56	QC	0	-0.0001	1	1	1	-0.0075		2024-09-20T03:09:59
L2453512-01	57	Unknown	?	0.0010	1	1	1	0.0043		2024-09-20T03:11:34
L2454068-02	58	Unknown	?	0.0017	1	1	1	0.0117		2024-09-20T03:12:40
L2454068-04	59	Unknown	?	0.0041	1	1	1	0.0382		2024-09-20T03:13:46
L2454068-05	60	Unknown	?	0.0162	1	1	1	0.1686		2024-09-20T03:14:54
L2454068-06	61	Unknown	?	0.0012	1	1	1	0.0062		2024-09-20T03:16:01
WG1974033-3	62	Unknown	?	0.0006	1	1	1	0.0000		2024-09-20T03:17:08
WG1974033-4	63	Unknown	?	0.3720	1	1	1	4.0213		2024-09-20T03:18:14
L2454068-09	64	Unknown	?	-0.0002	1	1	1	-0.0090		2024-09-20T03:18:52
L2453772-	65	Unknown	?	1.2993	1	1	1	14.0639	OVR	2024-09-

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
01										20T03:20:35
L2453825-01	66	Unknown	?	-0.0036	1	1	1	-0.0460		2024-09-20T03:21:03
CCV NO3	67	QC	1	0.0932	1	1	1	1.0031		2024-09-20T03:22:35
CCV NO2	68	QC	?	0.0944	1	1	1	1.0153		2024-09-20T03:23:41
CCB	69	QC	0	0.0000	1	1	1	-0.0067		2024-09-20T03:24:53
WG1974029-3	70	Unknown	?	0.0019	1	1	1	0.0140		2024-09-20T03:26:02
WG1974029-4	71	Unknown	?	0.3707	1	1	1	4.0082		2024-09-20T03:27:08
WG1974027-3	72	Unknown	?	-0.0002	1	1	1	-0.0092		2024-09-20T03:27:46
WG1974027-4	73	Unknown	?	0.3836	1	1	1	4.1476		2024-09-20T03:29:19
L2453825-02	74	Unknown	?	0.0144	1	1	1	0.1495		2024-09-20T03:30:24
L2453926-01	75	Unknown	?	0.8863	1	1	1	9.5914	OVR	2024-09-20T03:31:28
WG1974029-5	76	Unknown	?	0.8759	1	1	1	9.4791	OVR	2024-09-20T03:32:32
WG1974029-6	77	Unknown	?	1.0888	1	1	1	11.7847	OVR	2024-09-20T03:33:37
WG1974027-5	78	Unknown	?	0.8680	1	1	1	9.3931	OVR	2024-09-20T03:34:45
WG1974027-6	79	Unknown	?	1.0953	1	1	1	11.8548	OVR	2024-09-20T03:35:52
CCV NO3	80	QC	1	0.0840	1	1	1	0.9031		2024-09-20T03:36:57
CCV NO2	81	QC	?	0.0932	1	1	1	1.0029		2024-09-20T03:38:04
CCB	82	QC	0	0.0000	1	1	1	-0.0071		2024-09-20T03:38:52
L2453927-01	83	Unknown	?	0.6392	1	1	1	6.9156		2024-09-20T03:40:24
L2453934-01	84	Unknown	?	0.0508	1	1	1	0.5436		2024-09-20T03:41:32
L2453934-04	85	Unknown	?	0.0003	1	1	1	-0.0031		2024-09-20T03:42:40
L2453970-02	86	Unknown	?	1.0034	1	1	1	10.8592	OVR	2024-09-20T03:43:45
L2453971-01	87	Unknown	?	0.3467	1	1	1	3.7479		2024-09-20T03:44:51
L2453972-01	88	Unknown	?	0.0223	1	1	1	0.2352		2024-09-20T03:45:56
L2453972-02	89	Unknown	?	0.0245	1	1	1	0.2583		2024-09-20T03:47:02
L2453976-01	90	Unknown	?	0.0009	1	1	1	0.0034		2024-09-20T03:48:08
L2453977-01	91	Unknown	?	0.0939	1	1	1	1.0104		2024-09-20T03:49:12
L2453978-02	92	Unknown	?	1.2982	1	1	1	14.0521	OVR	2024-09-20T03:50:23
CCV NO3	93	QC	1	0.0680	1	1	1	0.7296	QCR	2024-09-20T03:51:21
CCV NO2	94	QC	?	0.0939	1	1	1	1.0103		2024-09-20T03:52:27
CCB	95	QC	0	0.0000	1	1	1	-0.0065		2024-09-20T03:53:14
L2453980-01	96	Unknown	?	0.0644	1	1	1	0.6903		2024-09-20T03:54:46
L2453711-01	97	Unknown	?	0.5924	1	1	1	6.4090		2024-09-20T03:55:53

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
WG1974030-3	98	Unknown	?	0.5848	1	1	1	6.3258		2024-09-20T03:56:59
WG1974030-4	99	Unknown	?	0.8842	1	1	1	9.5686	OVR	2024-09-20T03:58:06
L2453711-02	100	Unknown	?	0.5196	1	1	1	5.6205		2024-09-20T03:59:12
WG1974030-5	101	Unknown	?	0.5226	1	1	1	5.6522		2024-09-20T04:00:19

Channel: 2-NO2

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	-0.0030		2024-09-20T02:09:06
NOx 8.0ppm	2	Standard	?	0.0001	1	1	1	-0.0027		2024-09-20T02:09:27
NOx 4.0ppm	3	Standard	?	0.0001	1	1	1	-0.0030		2024-09-20T02:10:51
NOx 1.0ppm	4	Standard	?	0.0001	1	1	1	-0.0031		2024-09-20T02:11:40
NOx 0.4ppm	5	Standard	?	0.0001	1	1	1	-0.0032		2024-09-20T02:12:49
NOx 0.2ppm	6	Standard	?	0.0001	1	1	1	-0.0028		2024-09-20T02:14:06
NOx 0.1ppm	7	Standard	?	0.0001	1	1	1	-0.0031		2024-09-20T02:15:14
NOx 0.0ppm	8	Standard	?	0.0001	1	1	1	-0.0032		2024-09-20T02:16:22
Nitrite 8.0ppm	9	Standard	8	0.9818	1	1	1	7.4680		2024-09-20T02:17:31
Nitrite 4.0ppm	10	Standard	4	0.5400	1	1	1	4.1056		2024-09-20T02:18:41
Nitrite 1.0ppm	11	Standard	1	0.1321	1	1	1	1.0019		2024-09-20T02:19:48
Nitrite 0.4ppm	12	Standard	0.4	0.0556	1	1	1	0.4192		2024-09-20T02:20:57
Nitrite 0.1ppm	13	Standard	0.1	0.0140	1	1	1	0.1026		2024-09-20T02:22:07
Nitrite 0.05ppm	14	Standard	0.05	0.0069	1	1	1	0.0491		2024-09-20T02:23:17
Nitrite 0.0ppm	15	Standard	0	0.0001	1	1	1	-0.0030		2024-09-20T02:24:43
CCV NO3	16	QC	?	0.0001	1	1	1	-0.0028		2024-09-20T02:25:36
CCV NO2	17	QC	1	0.1342	1	1	1	1.0172		2024-09-20T02:26:40
CCB	18	QC	0	0.0002	1	1	1	-0.0025		2024-09-20T02:27:55
ICV NO3 5.0	19	QC	?	0.0001	1	1	1	-0.0031		2024-09-20T02:29:03
ICV NO2 5.0	20	QC	5	0.6470	1	1	1	4.9200		2024-09-20T02:30:07
ICV NO3 0.5	21	QC	?	0.0001	1	1	1	-0.0026		2024-09-20T02:31:16
ICV NO2 0.5	22	QC	0.5	0.0671	1	1	1	0.5071		2024-09-20T02:32:23
ICB	23	QC	0	0.0001	1	1	1	-0.0032		2024-09-20T02:33:43
BLANK NO3	24	Unknown	?	0.0001	1	1	1	-0.0031		2024-09-20T02:34:43
LCS NO3	25	Unknown	?	0.0001	1	1	1	-0.0030		2024-09-20T02:36:03
BLANK NO2	26	Unknown	?	0.0001	1	1	1	-0.0033		2024-09-20T02:37:12
LCS NO2	27	Unknown	?	0.6511	1	1	1	4.9513		2024-09-

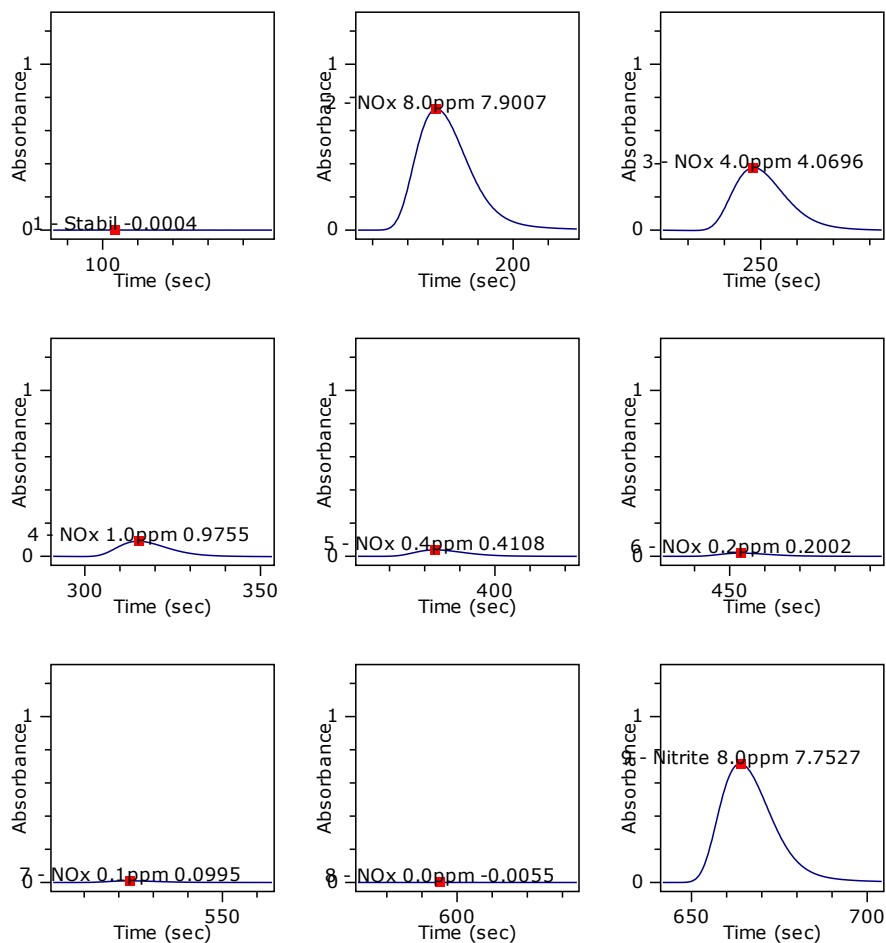
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
										20T02:37:57
CCV NO3	28	QC	?	0.0002	1	1	1	-0.0018		2024-09-20T02:39:03
CCV NO2	29	QC	1	0.1323	1	1	1	1.0028		2024-09-20T02:40:08
CCB	30	QC	0	0.0001	1	1	1	-0.0028		2024-09-20T02:41:24
WG1974027-1	31	Unknown	?	0.0001	1	1	1	-0.0031		2024-09-20T02:42:29
WG1974027-2	32	Unknown	?	0.6527	1	1	1	4.9638		2024-09-20T02:43:35
WG1974028-1	33	Unknown	?	0.0002	1	1	1	-0.0021		2024-09-20T02:44:41
WG1974028-2	34	Unknown	?	0.6541	1	1	1	4.9738		2024-09-20T02:45:46
WG1974029-1	35	Unknown	?	0.0002	1	1	1	-0.0020		2024-09-20T02:46:53
WG1974029-2	36	Unknown	?	0.0001	1	1	1	-0.0029		2024-09-20T02:48:03
WG1974030-1	37	Unknown	?	0.0001	1	1	1	-0.0031		2024-09-20T02:49:15
WG1974030-2	38	Unknown	?	0.0001	1	1	1	-0.0029		2024-09-20T02:50:18
WG1974033-1	39	Unknown	?	0.0001	1	1	1	-0.0031		2024-09-20T02:51:34
WG1974033-2	40	Unknown	?	0.0001	1	1	1	-0.0029		2024-09-20T02:52:26
CCV NO3	41	QC	?	0.0001	1	1	1	-0.0029		2024-09-20T02:53:36
CCV NO2	42	QC	1	0.1330	1	1	1	1.0082		2024-09-20T02:54:38
CCB	43	QC	0	0.0002	1	1	1	-0.0025		2024-09-20T02:56:01
L2453511-01	44	Unknown	?	0.0018	1	1	1	0.0100		2024-09-20T02:56:55
WG1974028-3	45	Unknown	?	0.0011	1	1	1	0.0046		2024-09-20T02:58:02
WG1974028-4	46	Unknown	?	0.5283	1	1	1	4.0167		2024-09-20T02:59:08
L2453511-02	47	Unknown	?	0.0415	1	1	1	0.3122		2024-09-20T03:00:14
L2453512-01	48	Unknown	?	0.0009	1	1	1	0.0030		2024-09-20T03:01:21
L2453512-02	49	Unknown	?	0.0394	1	1	1	0.2959		2024-09-20T03:02:24
L2453511-02; 2 UP TO 10	50	Unknown	?	0.0081	5	1	1	0.2903		2024-09-20T03:03:33
L2453956-01	51	Unknown	?	0.0008	1	1	1	0.0025		2024-09-20T03:04:38
L2453956-02	52	Unknown	?	0.0007	1	1	1	0.0018		2024-09-20T03:05:43
L2453956-03	53	Unknown	?	0.0007	1	1	1	0.0017		2024-09-20T03:06:47
CCV NO3	54	QC	?	0.0001	1	1	1	-0.0030		2024-09-20T03:07:53
CCV NO2	55	QC	1	0.1328	1	1	1	1.0068		2024-09-20T03:08:59
CCB	56	QC	0	0.0001	1	1	1	-0.0030		2024-09-20T03:10:11
L2453512-01	57	Unknown	?	0.0009	1	1	1	0.0034		2024-09-20T03:11:18
L2454068-02	58	Unknown	?	0.0007	1	1	1	0.0014		2024-09-20T03:12:25
L2454068-04	59	Unknown	?	0.0040	1	1	1	0.0269		2024-09-20T03:13:31

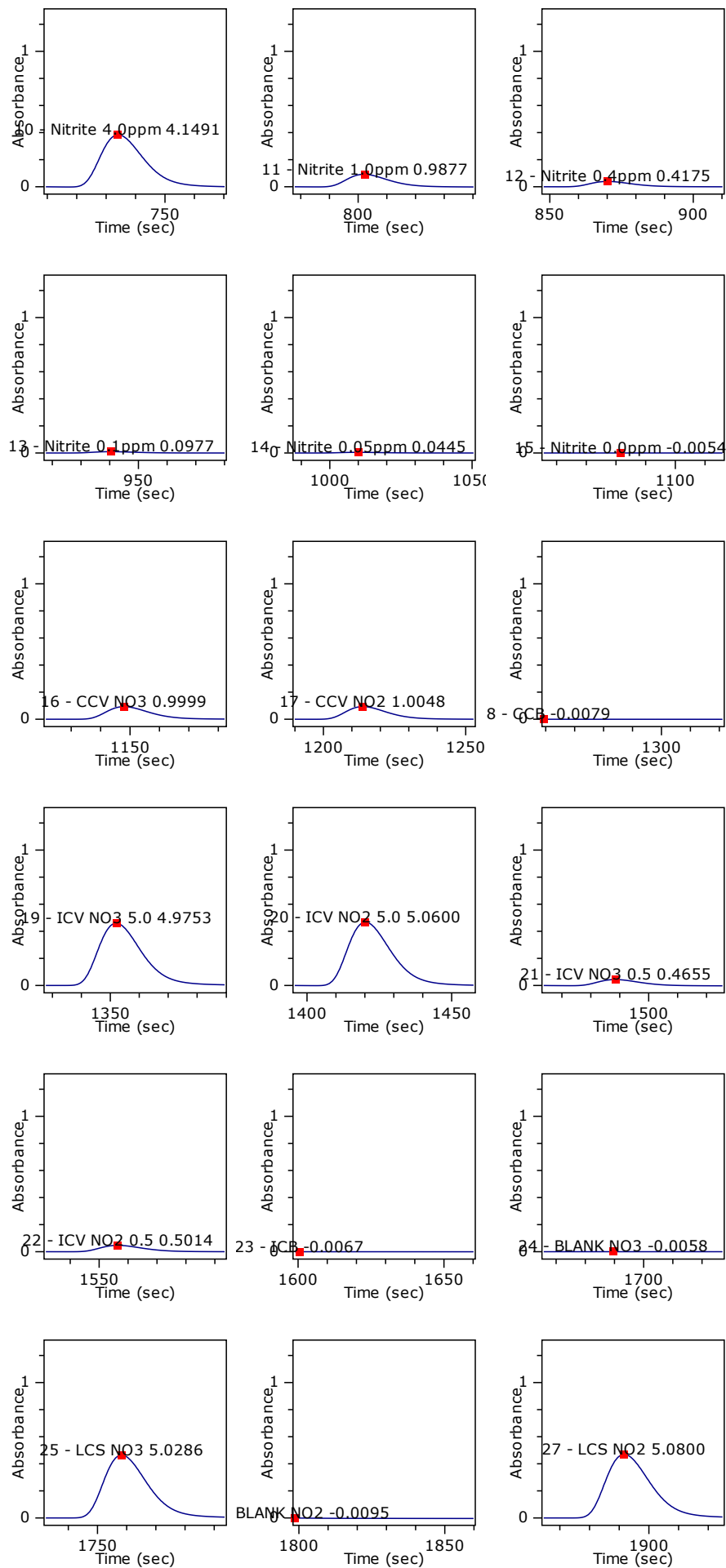
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2454068-05	60	Unknown	?	0.0009	1	1	1	0.0029		2024-09-20T03:14:38
L2454068-06	61	Unknown	?	0.0008	1	1	1	0.0024		2024-09-20T03:15:45
WG1974033-3	62	Unknown	?	0.0000	1	1	1	-0.0034		2024-09-20T03:16:48
WG1974033-4	63	Unknown	?	0.0026	1	1	1	0.0161		2024-09-20T03:17:58
L2454068-09	64	Unknown	?	0.0006	1	1	1	0.0013		2024-09-20T03:19:06
L2453772-01	65	Unknown	?	0.0537	1	1	1	0.4048		2024-09-20T03:20:11
L2453825-01	66	Unknown	?	0.0014	1	1	1	0.0074		2024-09-20T03:21:17
CCV NO3	67	QC	?	0.0001	1	1	1	-0.0030		2024-09-20T03:22:22
CCV NO2	68	QC	1	0.1329	1	1	1	1.0079		2024-09-20T03:23:28
CCB	69	QC	0	0.0001	1	1	1	-0.0029		2024-09-20T03:24:44
WG1974029-3	70	Unknown	?	0.0020	1	1	1	0.0113		2024-09-20T03:25:48
WG1974029-4	71	Unknown	?	0.0016	1	1	1	0.0088		2024-09-20T03:26:56
WG1974027-3	72	Unknown	?	0.0016	1	1	1	0.0087		2024-09-20T03:28:00
WG1974027-4	73	Unknown	?	0.5409	1	1	1	4.1128		2024-09-20T03:29:05
L2453825-02	74	Unknown	?	0.0041	1	1	1	0.0279		2024-09-20T03:30:10
L2453926-01	75	Unknown	?	0.0152	1	1	1	0.1119		2024-09-20T03:31:14
WG1974029-5	76	Unknown	?	0.0145	1	1	1	0.1063		2024-09-20T03:32:18
WG1974029-6	77	Unknown	?	0.0178	1	1	1	0.1319		2024-09-20T03:33:26
WG1974027-5	78	Unknown	?	0.0145	1	1	1	0.1069		2024-09-20T03:34:33
WG1974027-6	79	Unknown	?	0.5636	1	1	1	4.2856		2024-09-20T03:35:39
CCV NO3	80	QC	?	0.0002	1	1	1	-0.0022		2024-09-20T03:36:45
CCV NO2	81	QC	1	0.1334	1	1	1	1.0119		2024-09-20T03:37:51
CCB	82	QC	0	0.0001	1	1	1	-0.0028		2024-09-20T03:39:05
L2453927-01	83	Unknown	?	0.0371	1	1	1	0.2789		2024-09-20T03:40:11
L2453934-01	84	Unknown	?	0.0326	1	1	1	0.2441		2024-09-20T03:41:20
L2453934-04	85	Unknown	?	0.0007	1	1	1	0.0019		2024-09-20T03:42:25
L2453970-02	86	Unknown	?	0.0309	1	1	1	0.2313		2024-09-20T03:43:32
L2453971-01	87	Unknown	?	0.0921	1	1	1	0.6973		2024-09-20T03:44:38
L2453972-01	88	Unknown	?	0.0025	1	1	1	0.0156		2024-09-20T03:45:44
L2453972-02	89	Unknown	?	0.0021	1	1	1	0.0125		2024-09-20T03:46:49
L2453976-01	90	Unknown	?	0.0011	1	1	1	0.0048		2024-09-20T03:47:54
L2453977-01	91	Unknown	?	0.0120	1	1	1	0.0877		2024-09-20T03:48:58
L2453978-02	92	Unknown	?	0.0033	1	1	1	0.0216		2024-09-20T03:50:03

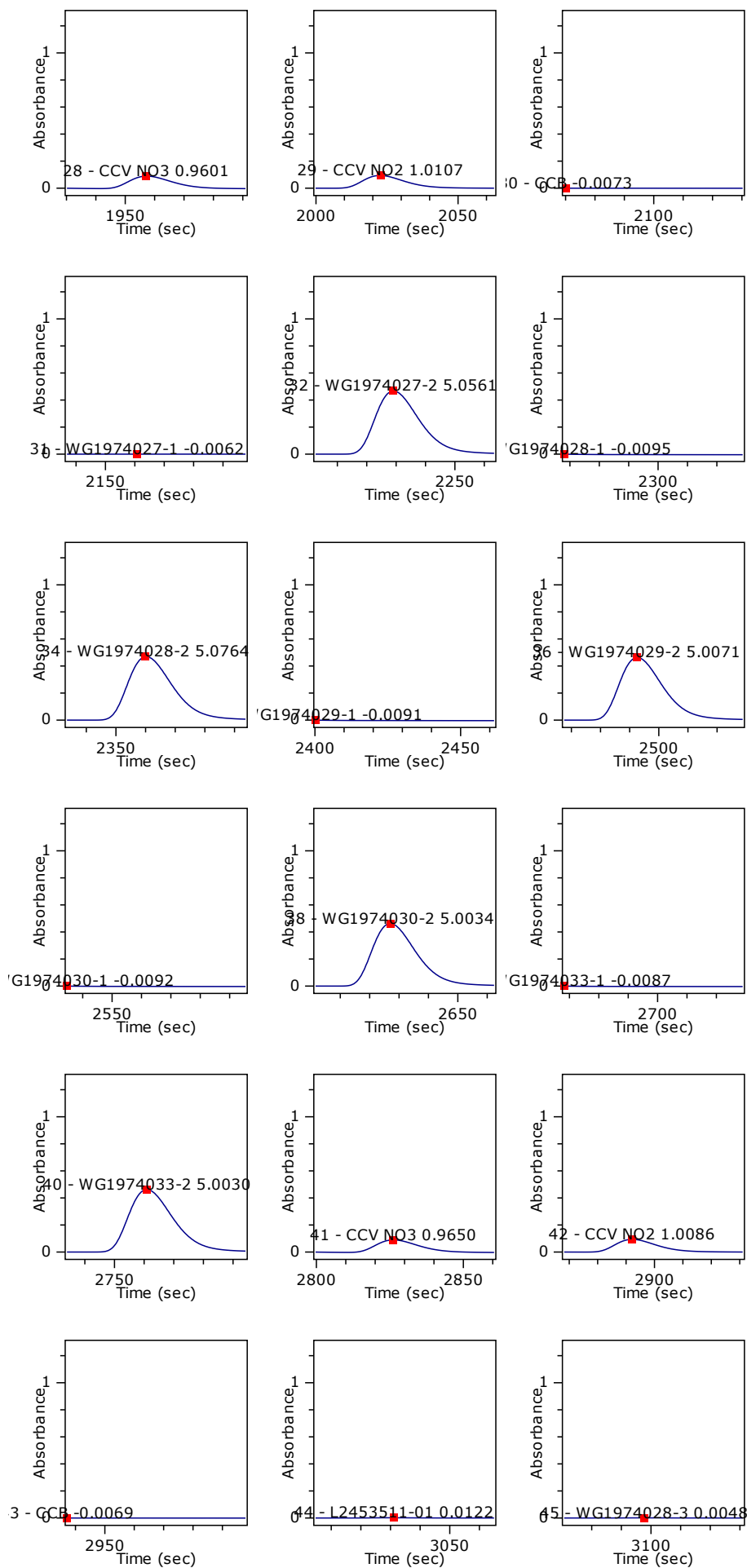
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
CCV NO3	93	QC	?	0.0001	1	1	1	-0.0028		2024-09-20T03:51:09
CCV NO2	94	QC	1	0.1321	1	1	1	1.0013		2024-09-20T03:52:14
CCB	95	QC	0	0.0001	1	1	1	-0.0029		2024-09-20T03:53:27
L2453980-01	96	Unknown	?	0.0095	1	1	1	0.0685		2024-09-20T03:54:33
L2453711-01	97	Unknown	?	0.0001	1	1	1	-0.0029		2024-09-20T03:55:38
WG1974030-3	98	Unknown	?	0.0001	1	1	1	-0.0027		2024-09-20T03:56:47
WG1974030-4	99	Unknown	?	0.0032	1	1	1	0.0205		2024-09-20T03:57:54
L2453711-02	100	Unknown	?	0.0001	1	1	1	-0.0031		2024-09-20T03:58:58
WG1974030-5	101	Unknown	?	0.0001	1	1	1	-0.0032		2024-09-20T04:00:06

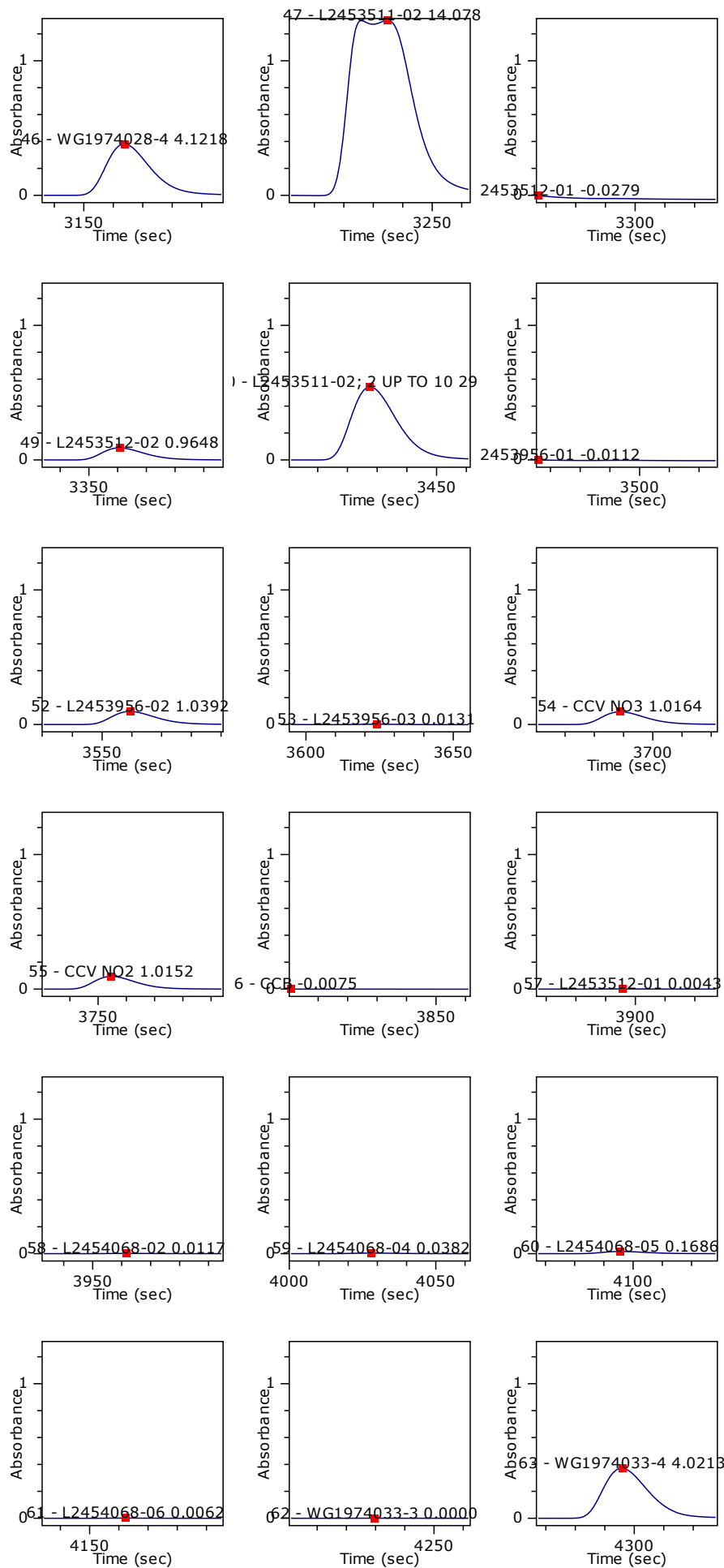
Peaks:

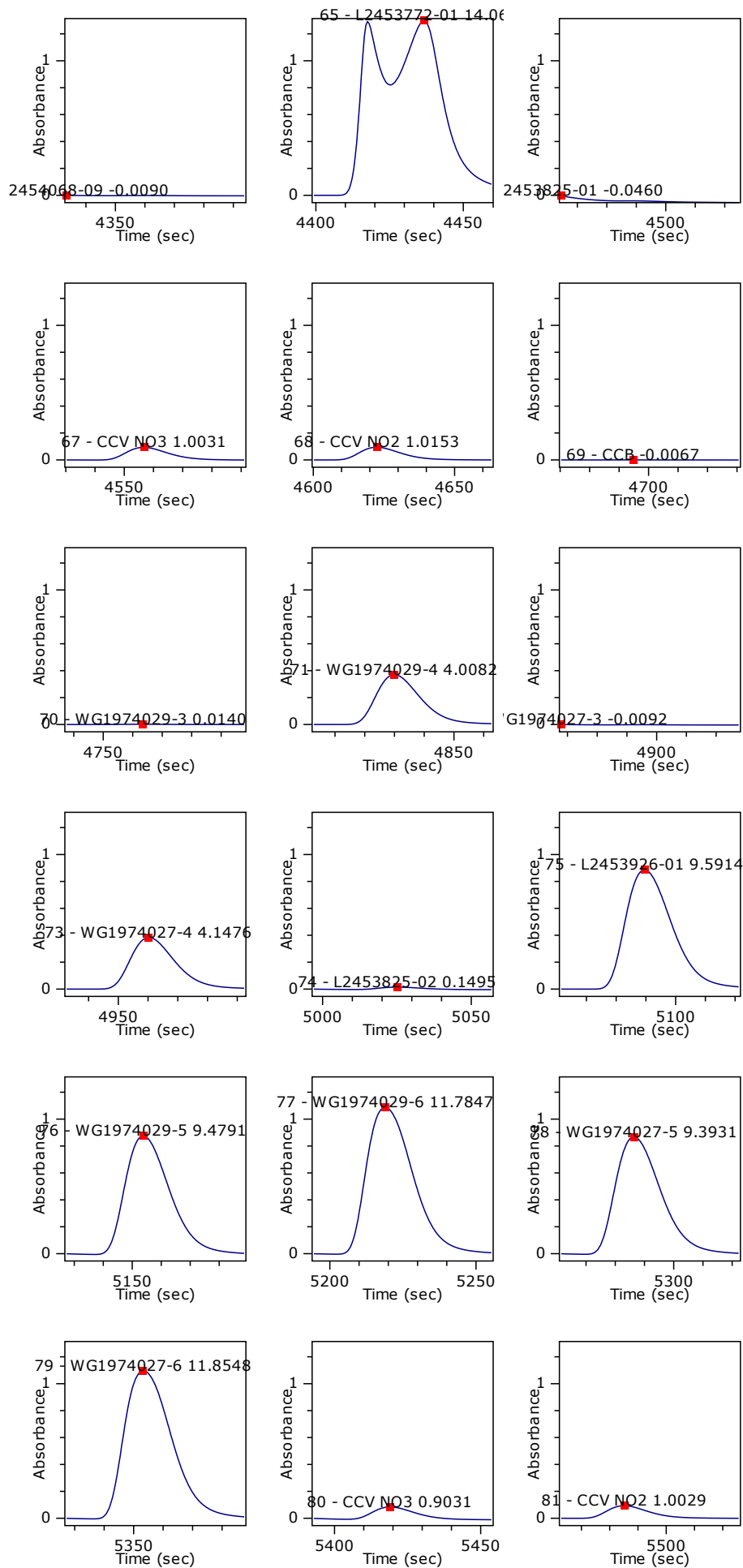
Channel: 1-NOx

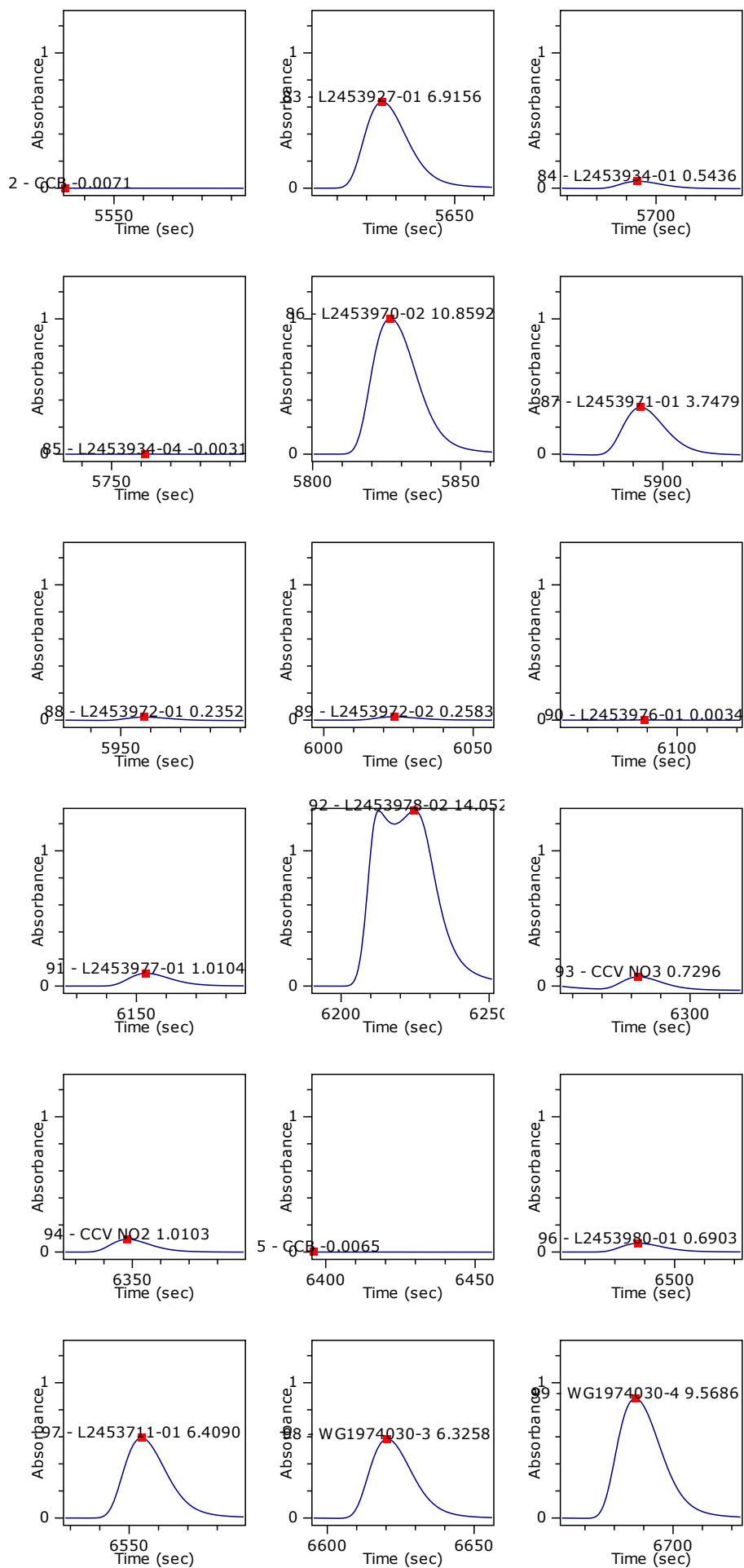


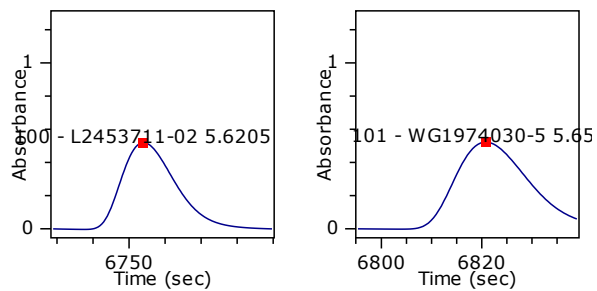




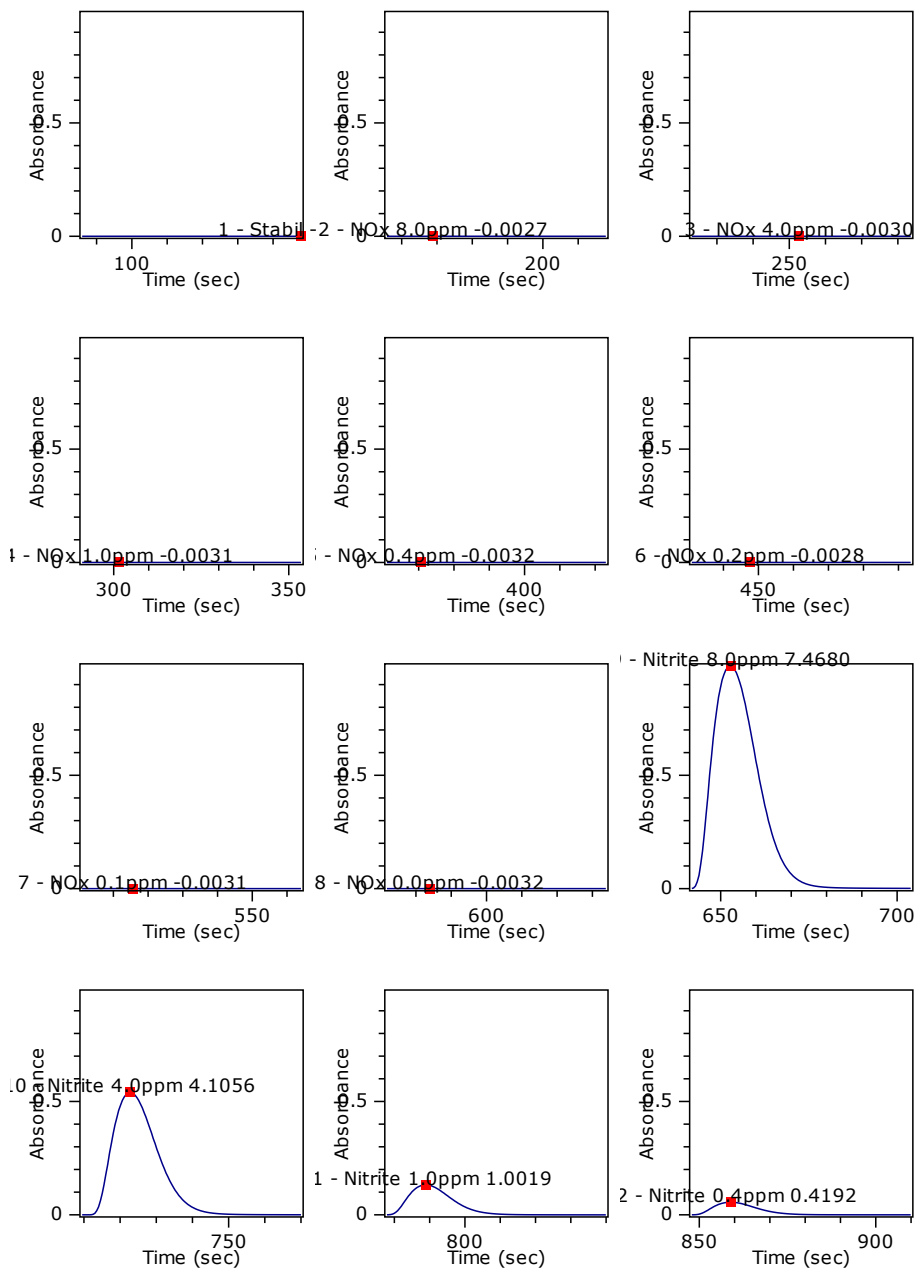


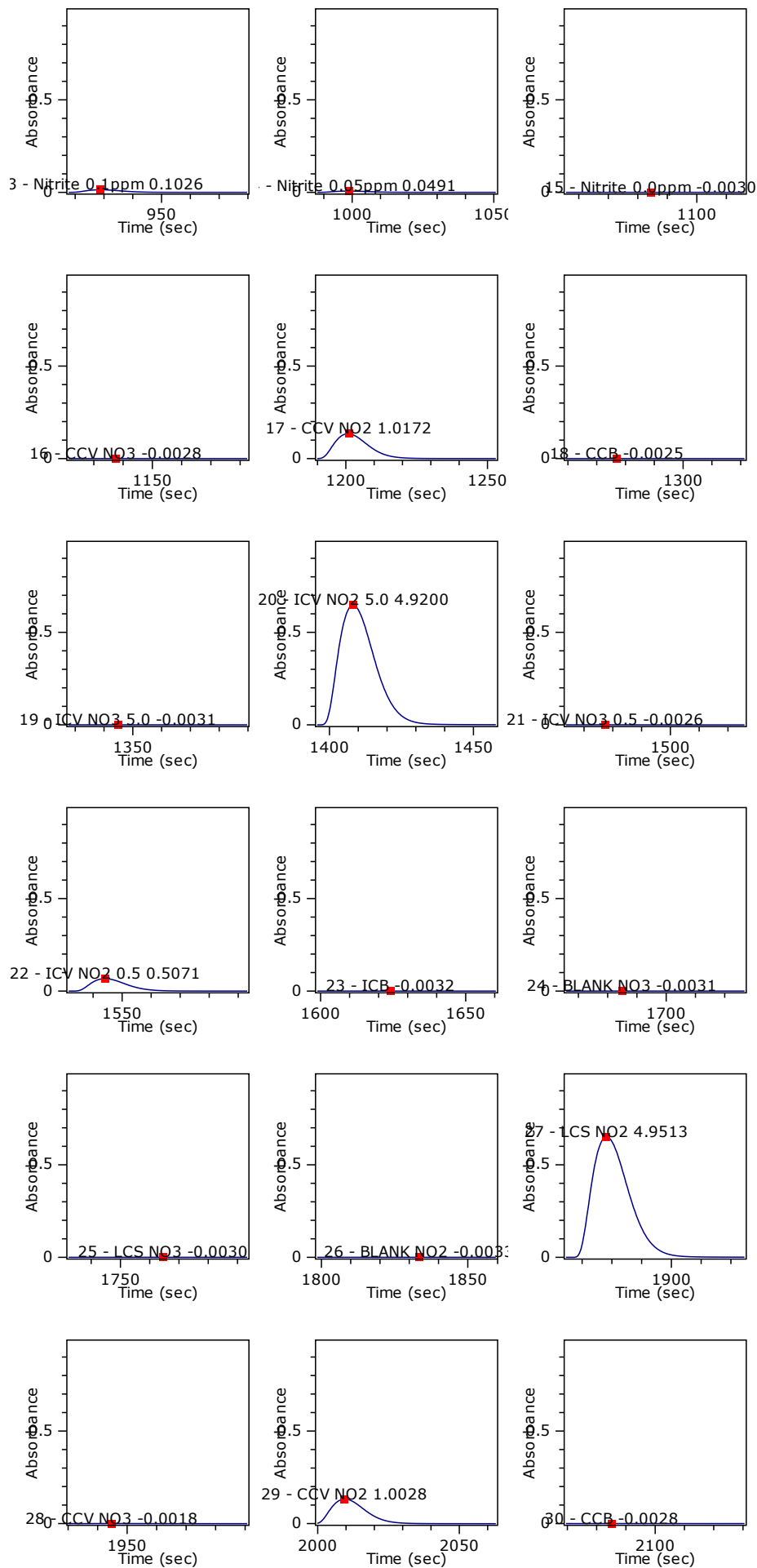


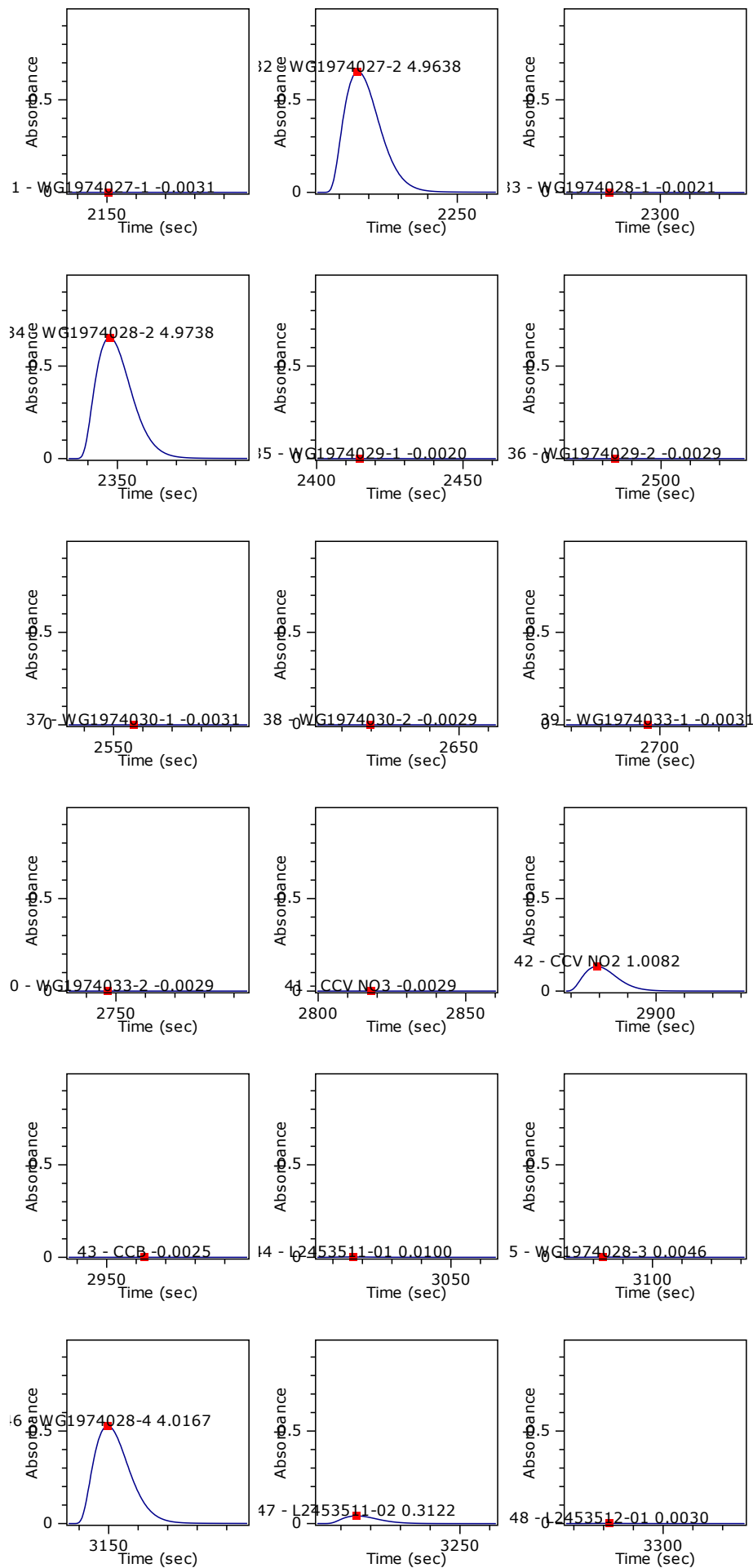


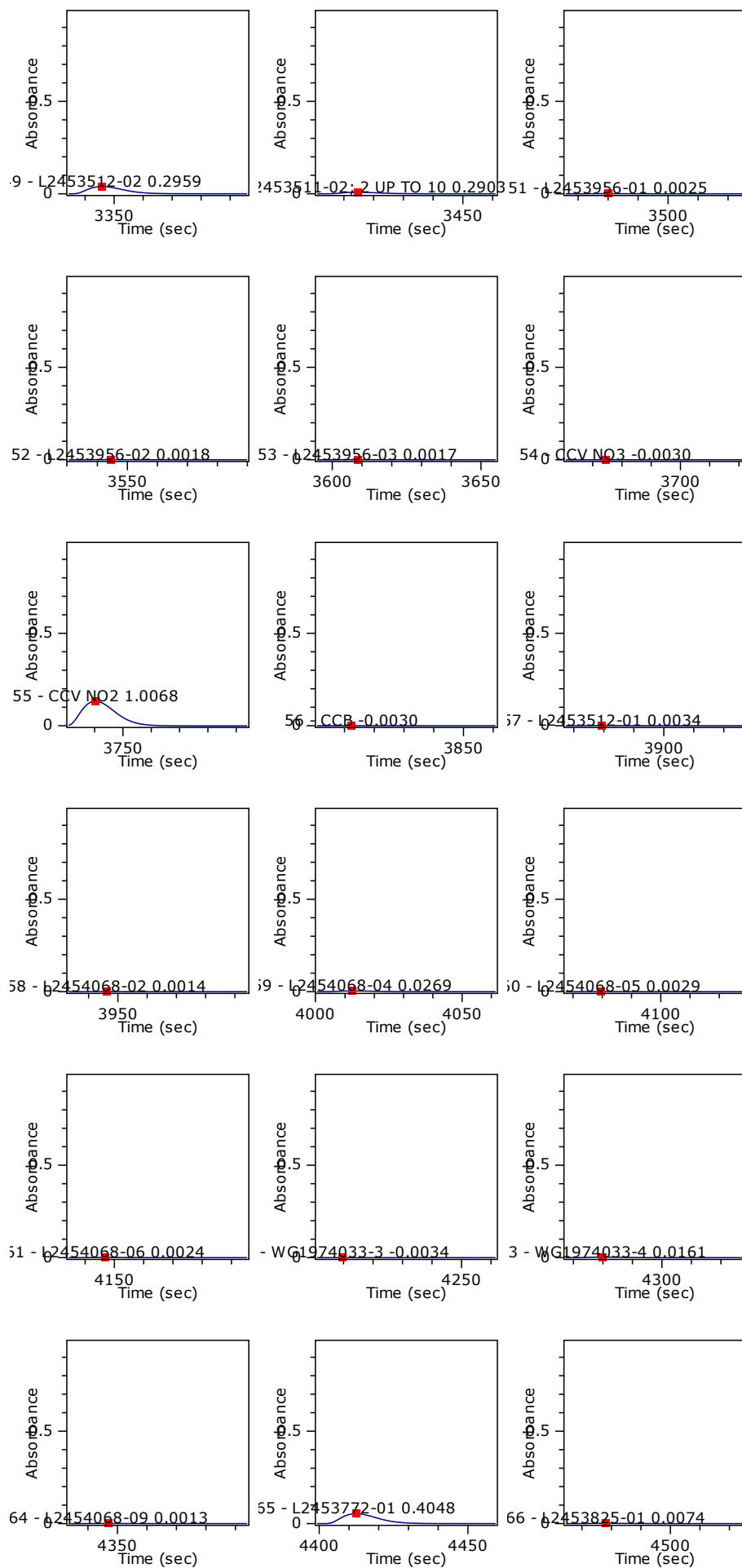


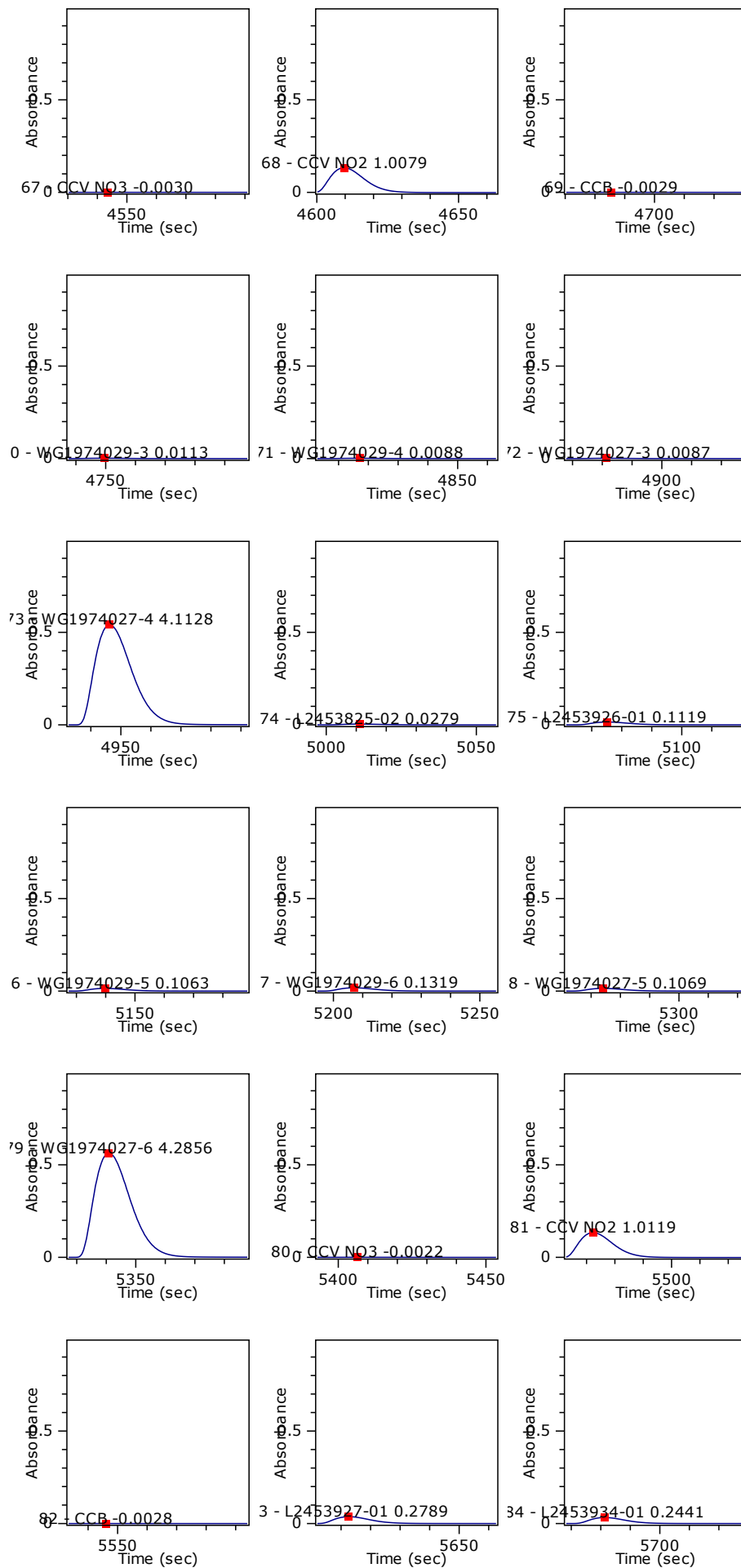
Channel: 2-NO2

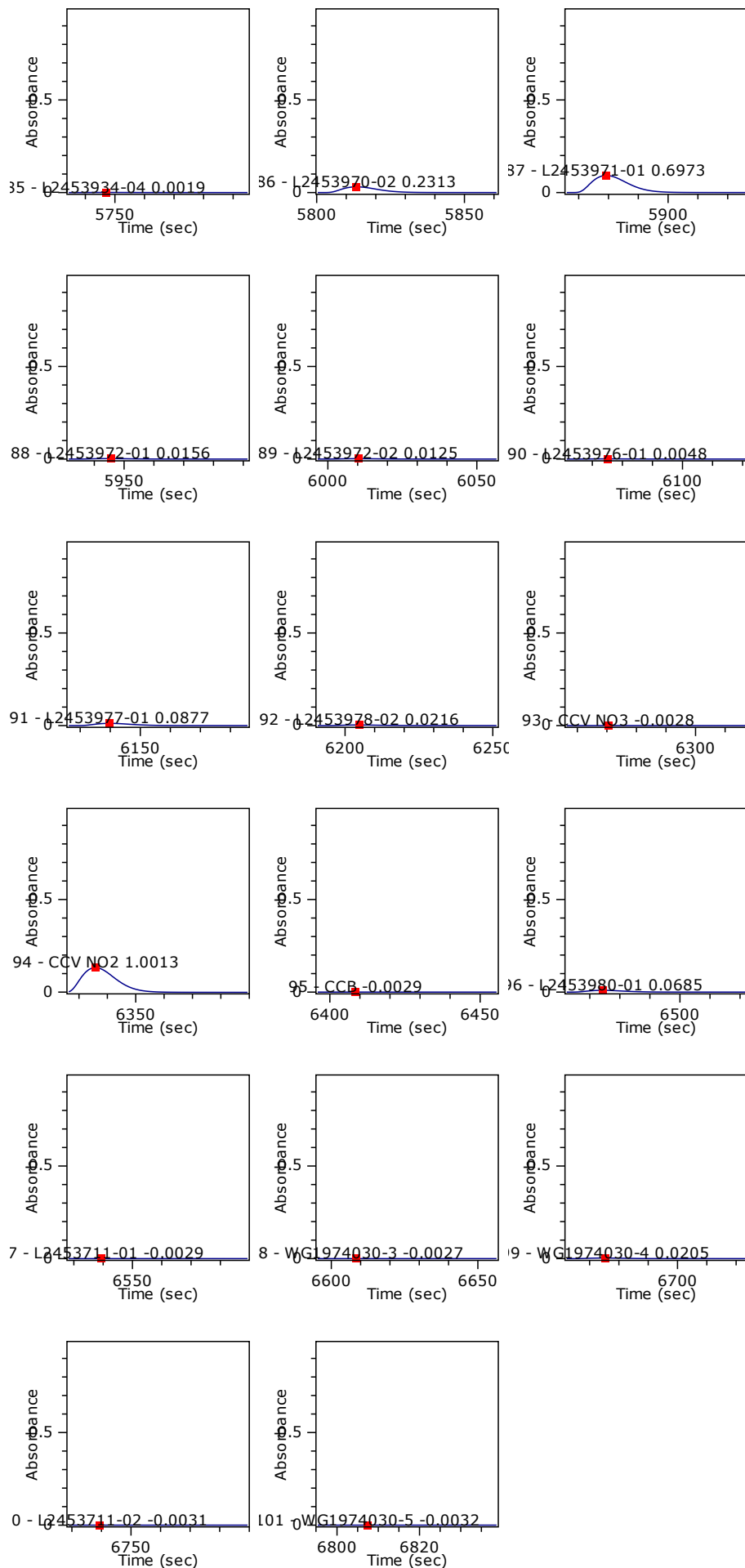












Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

FIAsoft FIAsoft v3.1.10

FIAlyzer Settings

FIAlab1 Serial Number: FIA31428

FIAlab2 Serial Number: FIA31429

Pump: Connected on COM8

Spectrometer Settings

Spectrometer1

Spectrometer Type: tec5

Integration Time: 34.6

Bandwidth: 2

Data Acq Rate: 2

Use Full Spectrum: False

|--- Low: 500nm

|--- High: 650nm

Reduce to Boxcar: True

Spectrometer2

Spectrometer Type: tec5

Integration Time: 3

Bandwidth: 2

Data Acq Rate: 2
Use Full Spectrum: False
 |--- Low: 500nm
 |--- High: 650nm
Reduce to Boxcar: True

Start Time

2024-09-20T02:06:39

Method

' Method Script for NOx-NO2

Autosave Data C:\FIALab\Autosave Data\DateTime
FIALab Injection Valve Sample Load
Message Cadmium Column on for NOx
FIALab Peristaltic Pump Clockwise(%) 55

Autosampler Wash
Delay (sec) 2
Next Sample
Delay (sec) 35 'StartDelay2 - Controls initial sample introduction.

FIALab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 2
Autosampler Position (#) Rinse
FIALab2 Injection Valve Sample Inject
Delay (sec) 15 'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up
Delay (sec) 5 'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

Analyte New Sample
Delay (sec) 1
Next Sample
Autosampler Probe Force Down

Spectrometer Reference Scan
Spectrometer Absorbance Scanning

Delay (sec) 3 ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

FIALab Injection Valve Sample Load

Delay (sec) 35 ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

FIALab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 5
Autosampler Position (#) Rinse
FIALab2 Injection Valve Sample Inject

Delay (sec) 10 ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

Autosampler Probe Up

Delay (sec) 3 ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.

Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIALab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIALab\autoreport\NOxNO2\DateTime
Message Run is Complete

Method File Location: C:\FIALab\FIALab User Files\Methods\Method_NOx+NO2.fia

Graphical report generated by FIAsoft v3.1.10

Report generated on 2024-09-20 08:06:44

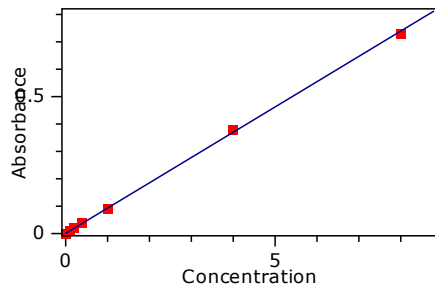
Data file (.dat): C:\FIALab\Autosave Data\2024-09-20-080622.dat

Dataset Notes:

Analyst	

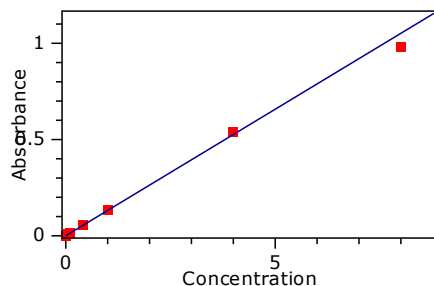
Dataset Notes Table Location: C:\FIALab\FIALab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00062
 B: 0.09234
 R^2 : 0.99978
 RSE(%): 2.13019
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	NOx 8.0ppm	0.73020	8.00000	7.90070	1.24	N/A
10002	NOx 4.0ppm	0.37640	4.00000	4.06960	1.74	N/A
10003	NOx 1.0ppm	0.09070	1.00000	0.97550	2.45	N/A
10004	NOx 0.4ppm	0.03860	0.40000	0.41080	2.70	N/A
10005	NOx 0.2ppm	0.01910	0.20000	0.20020	0.11	N/A
10006	NOx 0.1ppm	0.00980	0.10000	0.09950	0.50	N/A
10007	NOx 0.0ppm	0.00010	0.00000	-0.00550	NA	N/A



Channel: 2-NO2
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00048
 B: 0.13140
 R^2 : 0.99790
 RSE(%): 4.60505
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	Nitrite 8.0ppm	0.98180	8.00000	7.46800	6.65	N/A
10002	Nitrite 4.0ppm	0.54000	4.00000	4.10560	2.64	N/A
10003	Nitrite 1.0ppm	0.13210	1.00000	1.00190	0.19	N/A
10004	Nitrite 0.4ppm	0.05560	0.40000	0.41920	4.81	N/A
10005	Nitrite 0.1ppm	0.01400	0.10000	0.10260	2.63	N/A
10006	Nitrite 0.05ppm	0.00690	0.05000	0.04910	1.88	N/A
10007	Nitrite 0.0ppm	0.00010	0.00000	-0.00300	NA	N/A

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0010	1	1	1	0.0040		2024-09-20T04:10:05
CCV NO3	2	QC	1	0.0936	1	1	1	1.0067		2024-09-20T04:11:16
CCV NO2	3	QC	?	0.0941	1	1	1	1.0127		2024-09-20T04:12:22
CCB	4	QC	0	0.0000	1	1	1	-0.0069		2024-09-20T04:13:08

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2453927-01	5	Unknown	?	0.6322	1	1	1	6.8393		2024-09-20T04:14:40
L2453934-01	6	Unknown	?	0.0513	1	1	1	0.5485		2024-09-20T04:15:46
L2453934-04	7	Unknown	?	0.0004	1	1	1	-0.0019		2024-09-20T04:16:51
L2453970-02; 2 UP TO 10	8	Unknown	?	0.2305	5	1	1	12.4455		2024-09-20T04:18:00
L2453971-01	9	Unknown	?	0.3528	1	1	1	3.8135		2024-09-20T04:19:08
L2453972-01	10	Unknown	?	0.0243	1	1	1	0.2560		2024-09-20T04:20:13
L2453972-02	11	Unknown	?	0.0258	1	1	1	0.2732		2024-09-20T04:21:19
L2453976-01	12	Unknown	?	0.0010	1	1	1	0.0040		2024-09-20T04:22:23
L2453977-01	13	Unknown	?	0.0938	1	1	1	1.0089		2024-09-20T04:23:29
L2453978-02; 2 UP TO 10	14	Unknown	?	0.6473	5	1	1	35.0150		2024-09-20T04:24:36
CCV NO3	15	QC	1	0.0890	1	1	1	0.9569		2024-09-20T04:25:43
CCV NO2	16	QC	?	0.0939	1	1	1	1.0106		2024-09-20T04:26:48
CCB	17	QC	0	0.0000	1	1	1	-0.0067		2024-09-20T04:27:35
L2453980-01	18	Unknown	?	0.0644	1	1	1	0.6909		2024-09-20T04:29:06
L2453711-01	19	Unknown	?	0.5894	1	1	1	6.3763		2024-09-20T04:30:11
WG1974030-3	20	Unknown	?	0.5838	1	1	1	6.3158		2024-09-20T04:31:17
WG1974030-4; 2 UP TO 10	21	Unknown	?	0.1941	5	1	1	10.4767		2024-09-20T04:32:25
L2453711-02	22	Unknown	?	0.5202	1	1	1	5.6270		2024-09-20T04:33:33
WG1974030-5	23	Unknown	?	0.5188	1	1	1	5.6110		2024-09-20T04:34:40
WG1974030-6	24	Unknown	?	0.8164	1	1	1	8.8338	OVR	2024-09-20T04:35:46
L2453711-03	25	Unknown	?	0.6740	1	1	1	7.2921		2024-09-20T04:36:52
L2453711-04	26	Unknown	?	-0.0003	1	1	1	-0.0100		2024-09-20T04:37:32
L2453711-05	27	Unknown	?	0.5506	1	1	1	5.9559		2024-09-20T04:39:04
CCV NO3	28	QC	1	0.0889	1	1	1	0.9559		2024-09-20T04:40:09
CCV NO2	29	QC	?	0.0941	1	1	1	1.0125		2024-09-20T04:41:15
CCB	30	QC	0	0.0000	1	1	1	-0.0072		2024-09-20T04:42:03
L2453711-06	31	Unknown	?	0.0907	1	1	1	0.9758		2024-09-20T04:43:35
L2453711-07	32	Unknown	?	0.0061	1	1	1	0.0590		2024-09-20T04:44:40
L2453711-08	33	Unknown	?	1.0388	1	1	1	11.2430	OVR	2024-09-20T04:45:46
L2453711-09	34	Unknown	?	0.1550	1	1	1	1.6721		2024-09-20T04:46:50
L2453711-10	35	Unknown	?	0.0616	1	1	1	0.6604		2024-09-20T04:47:55
L2453711-11	36	Unknown	?	0.0001	1	1	1	-0.0052		2024-09-20T04:49:00

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2453825-01	37	Unknown	?	0.0018	1	1	1	0.0124		2024-09-20T04:50:04
L2454000-01	38	Unknown	?	0.0002	1	1	1	-0.0049		2024-09-20T04:51:08
WG1974048-3	39	Unknown	?	0.0002	1	1	1	-0.0043		2024-09-20T04:52:14
WG1974048-4	40	Unknown	?	0.3635	1	1	1	3.9296		2024-09-20T04:53:23
CCV NO3	41	QC	1	0.0908	1	1	1	0.9767		2024-09-20T04:54:29
CCV NO2	42	QC	?	0.0934	1	1	1	1.0052		2024-09-20T04:55:35
CCB	43	QC	0	0.0000	1	1	1	-0.0067		2024-09-20T04:56:23
L2454001-01	44	Unknown	?	0.1508	1	1	1	1.6260		2024-09-20T04:57:55
L2454001-03	45	Unknown	?	0.0323	1	1	1	0.3434		2024-09-20T04:59:04
L2454002-01	46	Unknown	?	0.2639	1	1	1	2.8510		2024-09-20T05:00:10
L2453772-01; 2 UP TO 10	47	Unknown	?	1.0409	5	1	1	56.3291	OVR	2024-09-20T05:01:18
L2453926-01; 2 UP TO 10	48	Unknown	?	0.1947	5	1	1	10.5110		2024-09-20T05:02:27
WG1974029-5; 2 UP TO 10	49	Unknown	?	0.1974	5	1	1	10.6538		2024-09-20T05:03:36
WG1974029-6; 2 UP TO 10	50	Unknown	?	0.2662	5	1	1	14.3827		2024-09-20T05:04:44
L2453711-03	51	Unknown	?	0.6806	1	1	1	7.3635		2024-09-20T05:05:52
WG1974030-6; 2 UP TO 10	52	Unknown	?	0.1724	5	1	1	9.3023		2024-09-20T05:06:59
L2453711-08; 2 UP TO 10	53	Unknown	?	0.2406	5	1	1	12.9921		2024-09-20T05:08:08
CCV NO3	54	QC	1	0.0910	1	1	1	0.9789		2024-09-20T05:09:15
CCV NO2	55	QC	?	0.0933	1	1	1	1.0036		2024-09-20T05:10:20
CCB	56	QC	0	0.0000	1	1	1	-0.0072		2024-09-20T05:11:08
L2453711-09	57	Unknown	?	0.1621	1	1	1	1.7488		2024-09-20T05:12:40
CCV NO3	58	QC	1	0.0906	1	1	1	0.9743		2024-09-20T05:13:46
CCV NO2	59	QC	?	0.0900	1	1	1	0.9679		2024-09-20T05:14:52
CCB	60	QC	0	0.0000	1	1	1	-0.0071		2024-09-20T05:15:37

Channel: 2-NO2

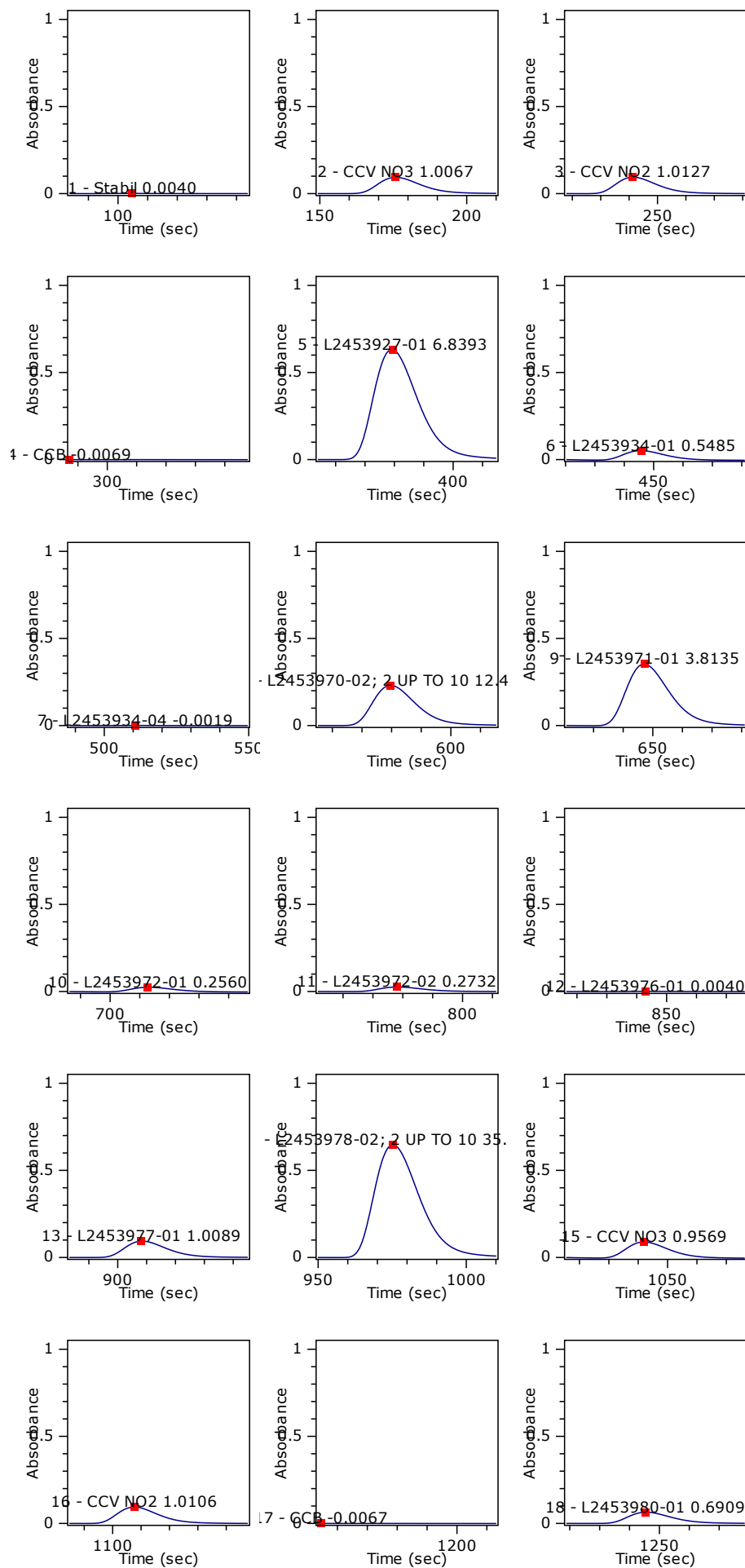
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	-0.0028		2024-09-20T04:09:49
CCV NO3	2	QC	?	0.0001	1	1	1	-0.0029		2024-09-20T04:11:03
CCV NO2	3	QC	1	0.1341	1	1	1	1.0165		2024-09-20T04:12:09
CCB	4	QC	0	0.0001	1	1	1	-0.0028		2024-09-20T04:13:20

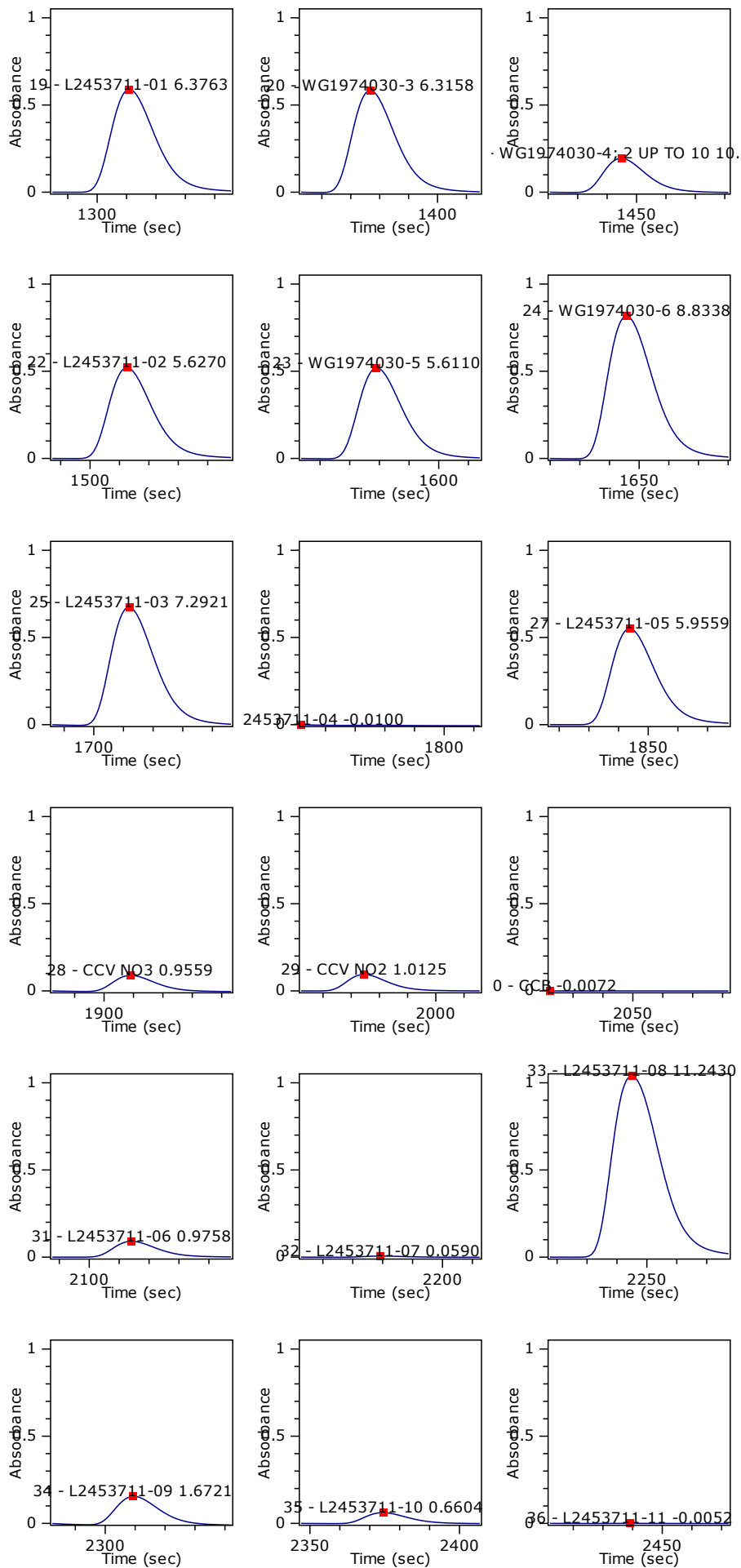
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2453927-01	5	Unknown	?	0.0367	1	1	1	0.2759		2024-09-20T04:14:27
L2453934-01	6	Unknown	?	0.0326	1	1	1	0.2445		2024-09-20T04:15:34
L2453934-04	7	Unknown	?	0.0008	1	1	1	0.0020		2024-09-20T04:16:41
L2453970-02; 2 UP TO 10	8	Unknown	?	0.0062	5	1	1	0.2177		2024-09-20T04:17:49
L2453971-01	9	Unknown	?	0.0912	1	1	1	0.6903		2024-09-20T04:18:54
L2453972-01	10	Unknown	?	0.0038	1	1	1	0.0250		2024-09-20T04:20:00
L2453972-02	11	Unknown	?	0.0030	1	1	1	0.0191		2024-09-20T04:21:05
L2453976-01	12	Unknown	?	0.0011	1	1	1	0.0046		2024-09-20T04:22:11
L2453977-01	13	Unknown	?	0.0120	1	1	1	0.0874		2024-09-20T04:23:15
L2453978-02; 2 UP TO 10	14	Unknown	?	0.0007	5	1	1	0.0089		2024-09-20T04:24:24
CCV NO3	15	QC	?	0.0001	1	1	1	-0.0029		2024-09-20T04:25:29
CCV NO2	16	QC	1	0.1348	1	1	1	1.0225		2024-09-20T04:26:35
CCB	17	QC	0	0.0001	1	1	1	-0.0030		2024-09-20T04:27:49
L2453980-01	18	Unknown	?	0.0094	1	1	1	0.0682		2024-09-20T04:28:52
L2453711-01	19	Unknown	?	0.0001	1	1	1	-0.0029		2024-09-20T04:29:58
WG1974030-3	20	Unknown	?	0.0001	1	1	1	-0.0027		2024-09-20T04:31:04
WG1974030-4; 2 UP TO 10	21	Unknown	?	0.0006	5	1	1	0.0063		2024-09-20T04:32:15
L2453711-02	22	Unknown	?	0.0001	1	1	1	-0.0032		2024-09-20T04:33:19
WG1974030-5	23	Unknown	?	0.0000	1	1	1	-0.0033		2024-09-20T04:34:31
WG1974030-6	24	Unknown	?	0.0002	1	1	1	-0.0022		2024-09-20T04:35:32
L2453711-03	25	Unknown	?	0.0011	1	1	1	0.0048		2024-09-20T04:36:40
L2453711-04	26	Unknown	?	0.0007	1	1	1	0.0019		2024-09-20T04:37:45
L2453711-05	27	Unknown	?	0.0008	1	1	1	0.0021		2024-09-20T04:38:51
CCV NO3	28	QC	?	0.0001	1	1	1	-0.0028		2024-09-20T04:39:58
CCV NO2	29	QC	1	0.1341	1	1	1	1.0168		2024-09-20T04:41:02
CCB	30	QC	0	0.0001	1	1	1	-0.0028		2024-09-20T04:42:18
L2453711-06	31	Unknown	?	0.0007	1	1	1	0.0018		2024-09-20T04:43:22
L2453711-07	32	Unknown	?	0.0007	1	1	1	0.0015		2024-09-20T04:44:27
L2453711-08	33	Unknown	?	0.0007	1	1	1	0.0016		2024-09-20T04:45:31
L2453711-09	34	Unknown	?	0.0007	1	1	1	0.0017		2024-09-20T04:46:36
L2453711-10	35	Unknown	?	0.0007	1	1	1	0.0013		2024-09-20T04:47:41
L2453711-11	36	Unknown	?	0.0007	1	1	1	0.0014		2024-09-20T04:48:45

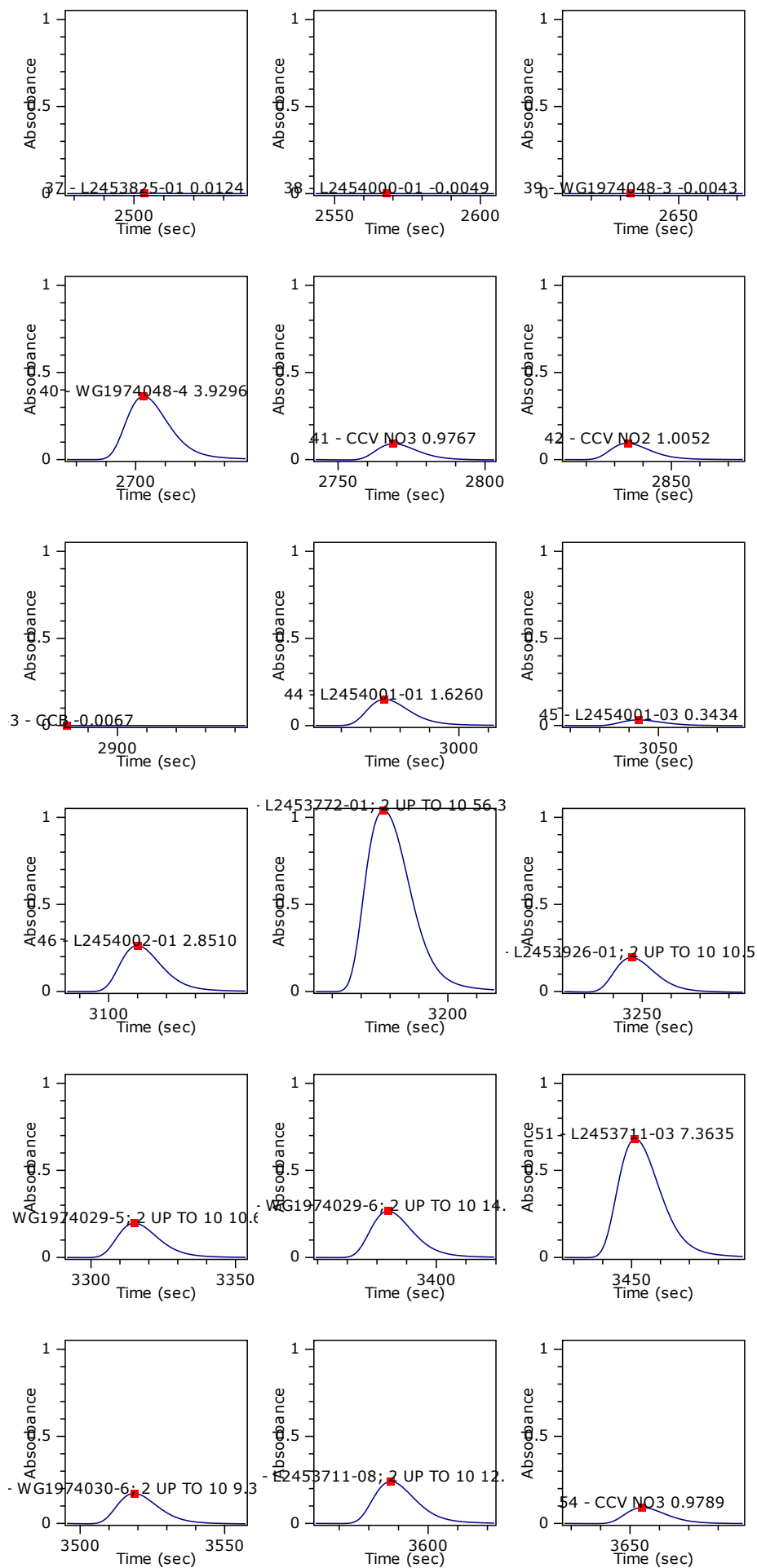
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2453825-01	37	Unknown	?	0.0015	1	1	1	0.0075		2024-09-20T04:49:51
L2454000-01	38	Unknown	?	0.0000	1	1	1	-0.0033		2024-09-20T04:50:54
WG1974048-3	39	Unknown	?	0.0000	1	1	1	-0.0035		2024-09-20T04:51:52
WG1974048-4	40	Unknown	?	0.0001	1	1	1	-0.0027		2024-09-20T04:53:13
CCV NO3	41	QC	?	0.0001	1	1	1	-0.0027		2024-09-20T04:54:18
CCV NO2	42	QC	1	0.1344	1	1	1	1.0190		2024-09-20T04:55:22
CCB	43	QC	0	0.0001	1	1	1	-0.0030		2024-09-20T04:56:36
L2454001-01	44	Unknown	?	0.0043	1	1	1	0.0287		2024-09-20T04:57:43
L2454001-03	45	Unknown	?	0.0010	1	1	1	0.0042		2024-09-20T04:58:52
L2454002-01	46	Unknown	?	0.0008	1	1	1	0.0021		2024-09-20T04:59:57
L2453772-01; 2 UP TO 10	47	Unknown	?	0.0106	5	1	1	0.3868		2024-09-20T05:01:06
L2453926-01; 2 UP TO 10	48	Unknown	?	0.0031	5	1	1	0.0982		2024-09-20T05:02:16
WG1974029-5; 2 UP TO 10	49	Unknown	?	0.0029	5	1	1	0.0926		2024-09-20T05:03:24
WG1974029-6; 2 UP TO 10	50	Unknown	?	0.0036	5	1	1	0.1174		2024-09-20T05:04:32
L2453711-03	51	Unknown	?	0.0011	1	1	1	0.0050		2024-09-20T05:05:39
WG1974030-6; 2 UP TO 10	52	Unknown	?	0.0001	5	1	1	-0.0142		2024-09-20T05:06:45
L2453711-08; 2 UP TO 10	53	Unknown	?	0.0002	5	1	1	-0.0119		2024-09-20T05:07:53
CCV NO3	54	QC	?	0.0001	1	1	1	-0.0030		2024-09-20T05:08:59
CCV NO2	55	QC	1	0.1341	1	1	1	1.0170		2024-09-20T05:10:08
CCB	56	QC	0	0.0001	1	1	1	-0.0029		2024-09-20T05:11:21
L2453711-09	57	Unknown	?	0.0007	1	1	1	0.0018		2024-09-20T05:12:26
CCV NO3	58	QC	?	0.0001	1	1	1	-0.0027		2024-09-20T05:13:34
CCV NO2	59	QC	1	0.1334	1	1	1	1.0112		2024-09-20T05:14:40
CCB	60	QC	0	0.0001	1	1	1	-0.0029		2024-09-20T05:15:52

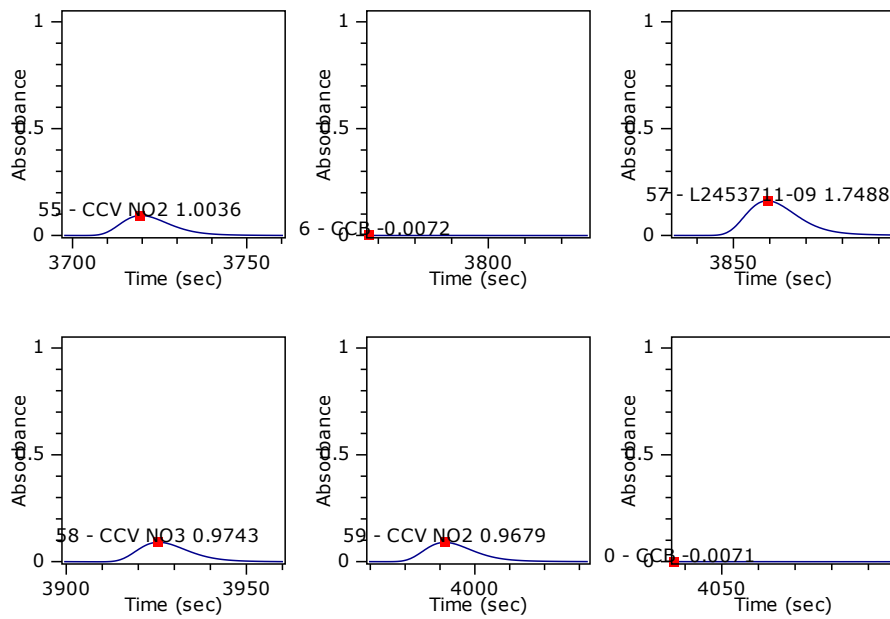
Peaks:

Channel: 1-NOx

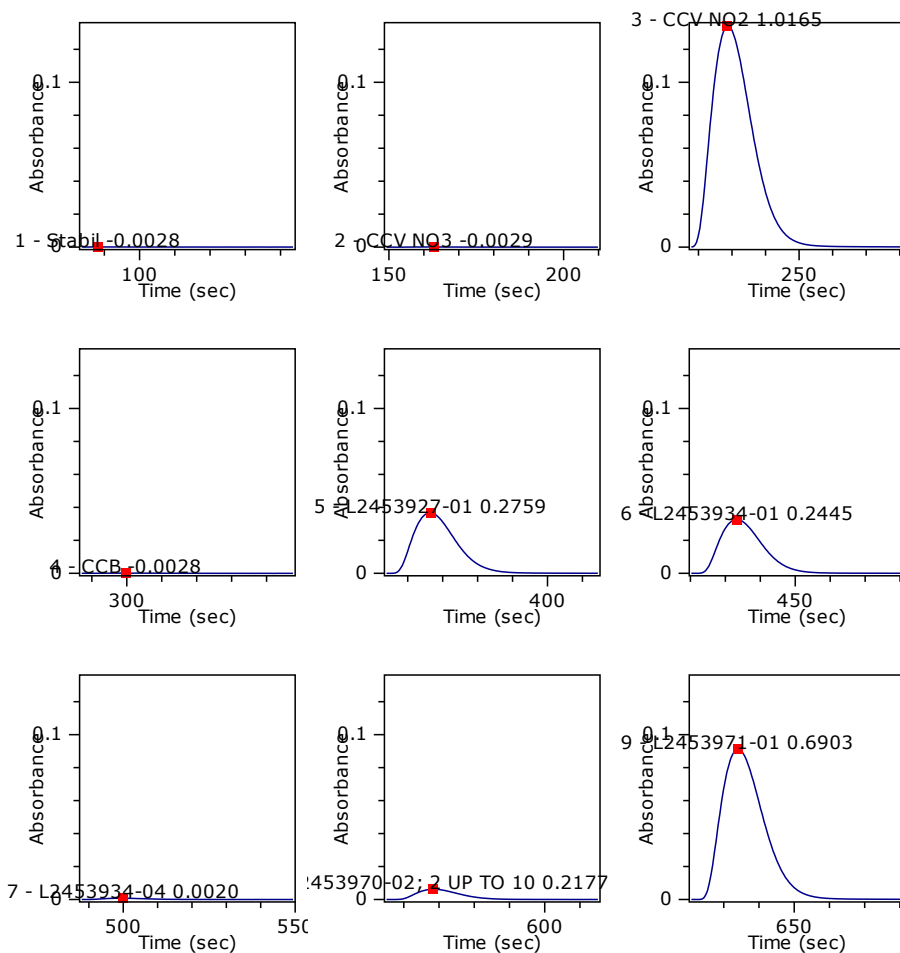


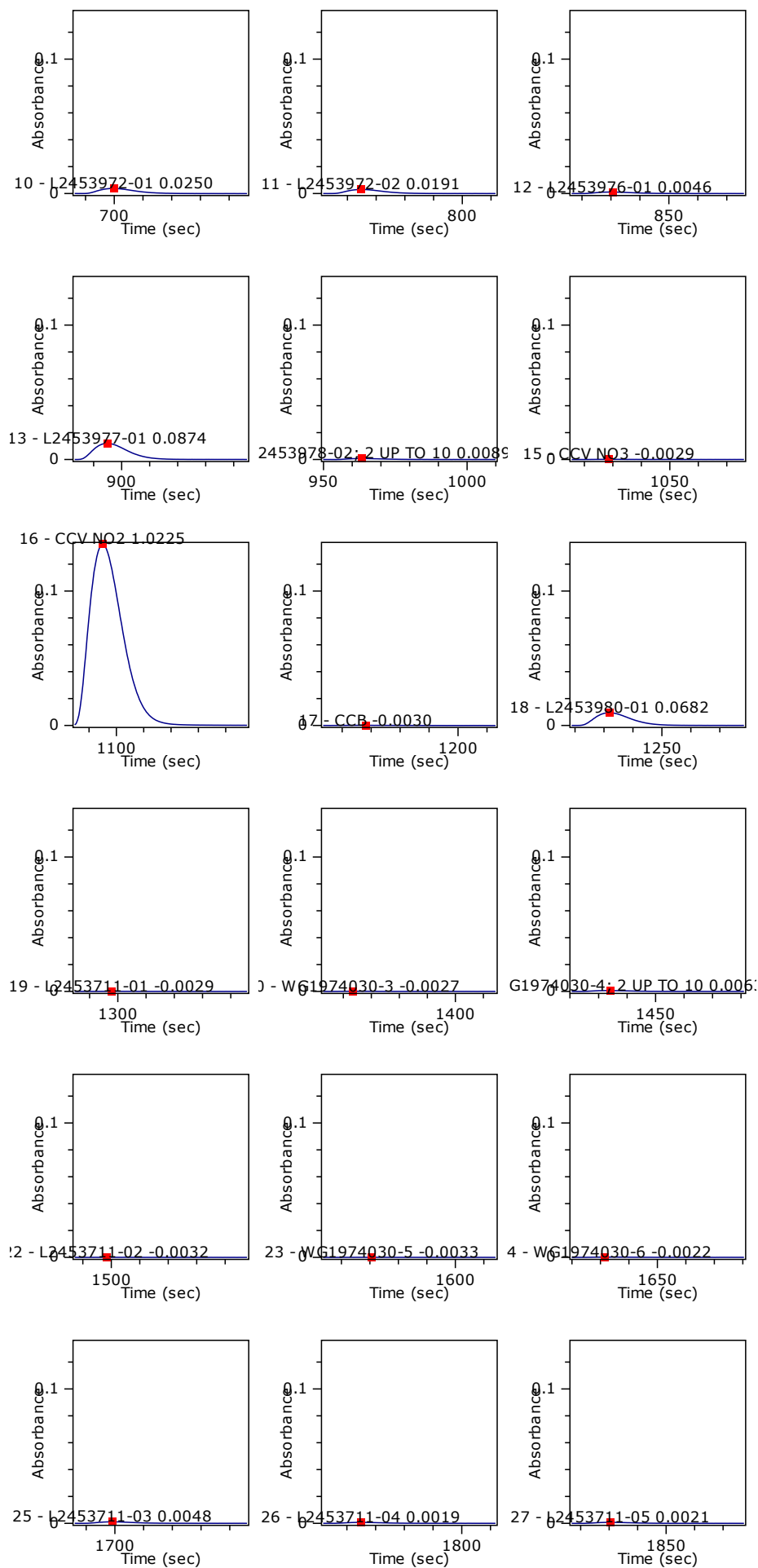


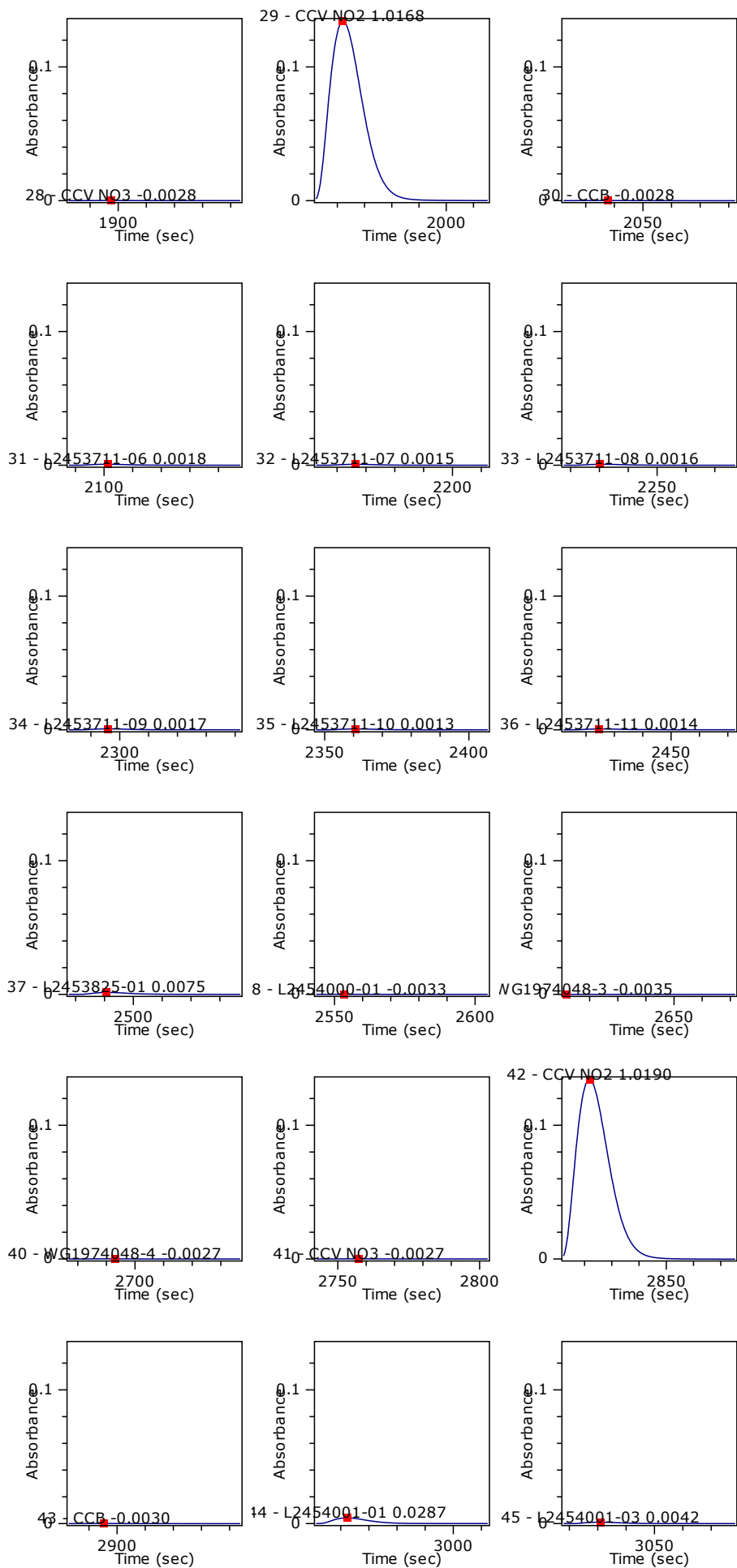


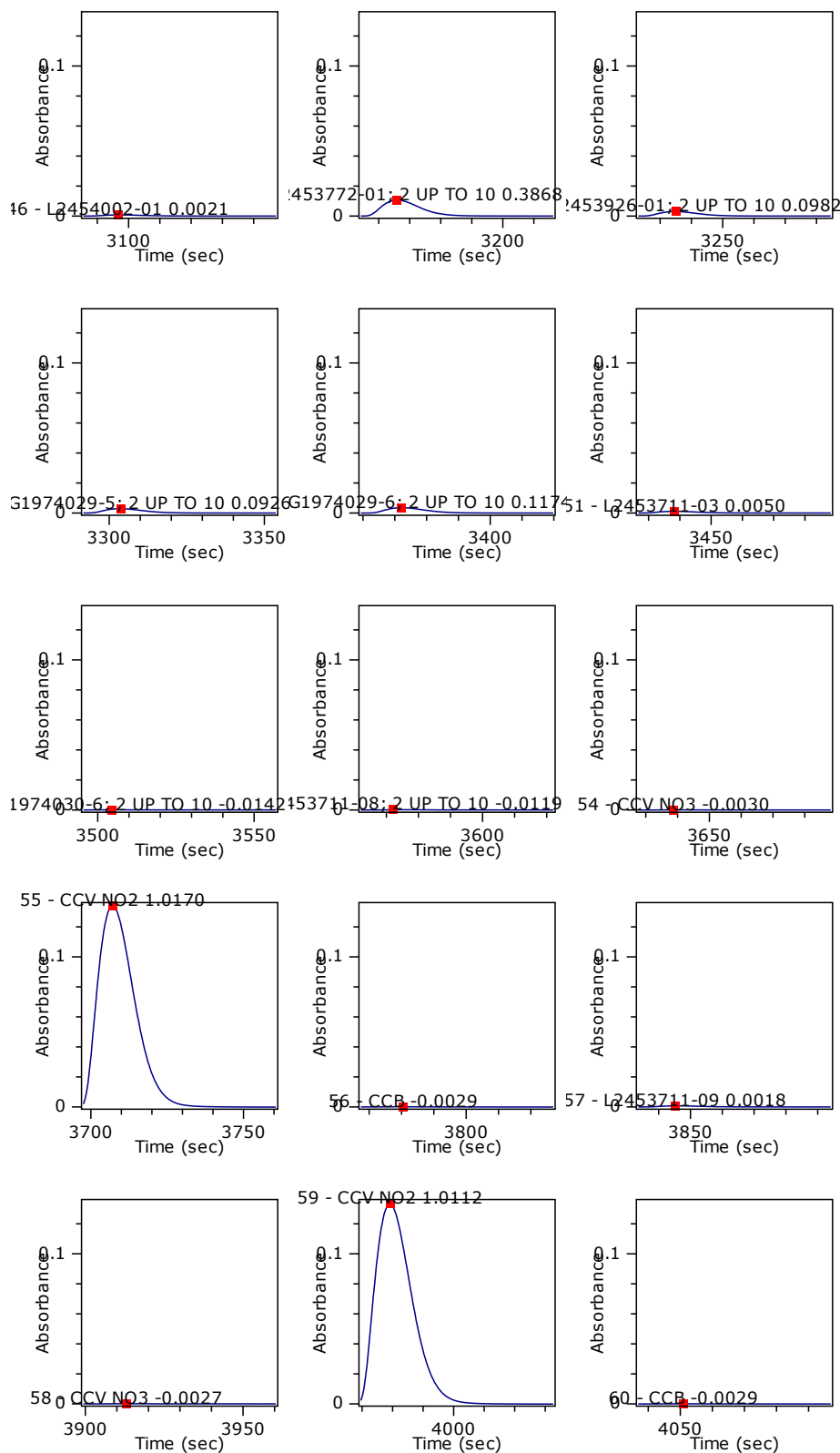


Channel: 2-NO2









Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0

Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

FIAsoft FIAsoft v3.1.10

FIAlyzer Settings

FIAlab1 Serial Number: FIA31428
FIAlab2 Serial Number: FIA31429
Pump: Connected on COM8

Spectrometer Settings
Spectrometer1

Spectrometer Type: tec5
Integration Time: 34.6
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
 |--- Low: 500nm
 |--- High: 650nm
Reduce to Boxcar: True

Spectrometer2

Spectrometer Type: tec5
Integration Time: 3
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
 |--- Low: 500nm
 |--- High: 650nm
Reduce to Boxcar: True

Start Time

2024-09-20T04:08:21

Method

' Method Script for NOx-NO2

Autosave Data C:\FIALab\Autosave Data\DateTime
FIALab Injection Valve Sample Load
Message Cadmium Column on for NOx
FIALab Peristaltic Pump Clockwise(%) 55

Autosampler Wash
Delay (sec) 2
Next Sample
Delay (sec) 35 'StartDelay2 - Controls initial sample introduction.

FIALab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 2
Autosampler Position (#) Rinse
FIALab2 Injection Valve Sample Inject
Delay (sec) 15 'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up
Delay (sec) 5 'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

Analyte New Sample
Delay (sec) 1
Next Sample
Autosampler Probe Force Down

Spectrometer Reference Scan
Spectrometer Absorbance Scanning

Delay (sec) 3 ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

FIALab Injection Valve Sample Load

Delay (sec) 35 ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

FIALab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 5
Autosampler Position (#) Rinse
FIALab2 Injection Valve Sample Inject

Delay (sec) 10 ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

Autosampler Probe Up

Delay (sec) 3 ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.

Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIALab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIALab\autoreport\NOxNO2\DateTime
Message Run is Complete

Method File Location: C:\FIALab\FIALab User Files\Methods\Method_NOx+NO2.fia

Graphical report generated by FIAsoft v3.1.10

Report generated on 2024-09-20 09:24:13

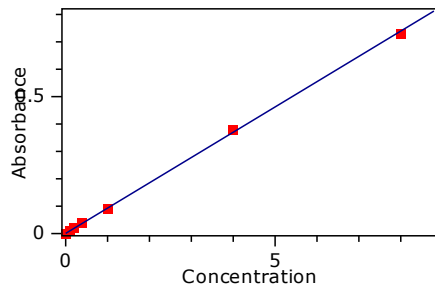
Data file (.dat): C:\FIALab\Autosave Data\2024-09-20-092343.dat

Dataset Notes:

Analyst	

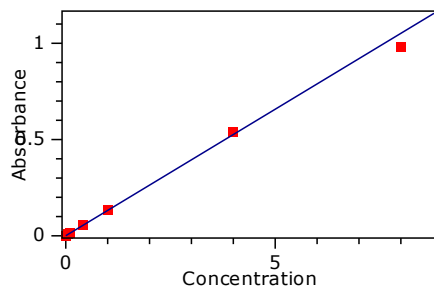
Dataset Notes Table Location: C:\FIALab\FIALab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00062
 B: 0.09234
 R^2 : 0.99978
 RSE(%): 2.13019
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	NOx 8.0ppm	0.73020	8.00000	7.90070	1.24	N/A
10002	NOx 4.0ppm	0.37640	4.00000	4.06960	1.74	N/A
10003	NOx 1.0ppm	0.09070	1.00000	0.97550	2.45	N/A
10004	NOx 0.4ppm	0.03860	0.40000	0.41080	2.70	N/A
10005	NOx 0.2ppm	0.01910	0.20000	0.20020	0.11	N/A
10006	NOx 0.1ppm	0.00980	0.10000	0.09950	0.50	N/A
10007	NOx 0.0ppm	0.00010	0.00000	-0.00550	NA	N/A



Channel: 2-NO2
 Fit_Order: 1
 Weighting: 1/response
 Standard relation
 Coefficients:
 A: 0.00048
 B: 0.13140
 R^2 : 0.99790
 RSE(%): 4.60505
 % Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	Nitrite 8.0ppm	0.98180	8.00000	7.46800	6.65	N/A
10002	Nitrite 4.0ppm	0.54000	4.00000	4.10560	2.64	N/A
10003	Nitrite 1.0ppm	0.13210	1.00000	1.00190	0.19	N/A
10004	Nitrite 0.4ppm	0.05560	0.40000	0.41920	4.81	N/A
10005	Nitrite 0.1ppm	0.01400	0.10000	0.10260	2.63	N/A
10006	Nitrite 0.05ppm	0.00690	0.05000	0.04910	1.88	N/A
10007	Nitrite 0.0ppm	0.00010	0.00000	-0.00300	NA	N/A

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0002	1	1	1	-0.0042		2024-09-20T08:15:10
CCV NO3	2	QC	1	0.0933	1	1	1	1.0036		2024-09-20T08:16:22
CCV NO2	3	QC	?	0.0937	1	1	1	1.0076		2024-09-20T08:17:28
CCB	4	QC	0	0.0000	1	1	1	-0.0070		2024-09-20T08:18:14

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2453926-01; 2 UP TO 10	5	Unknown	?	0.1952	5	1	1	10.5356		2024-09-20T08:19:47
WG1974120-1	6	Unknown	?	-0.0001	1	1	1	-0.0076		2024-09-20T08:20:29
WG1974120-2	7	Unknown	?	0.4657	1	1	1	5.0363		2024-09-20T08:22:01
L2453081-08	8	Unknown	?	0.1375	1	1	1	1.4823		2024-09-20T08:23:07
L2454050-01	9	Unknown	?	0.1251	1	1	1	1.3481		2024-09-20T08:24:13
L2454050-02	10	Unknown	?	0.4873	1	1	1	5.2702		2024-09-20T08:25:18
L2454050-03	11	Unknown	?	-0.0004	1	1	1	-0.0106		2024-09-20T08:25:56
L2454050-04	12	Unknown	?	0.0397	1	1	1	0.4232		2024-09-20T08:27:29
L2454036-01	13	Unknown	?	0.3535	1	1	1	3.8213		2024-09-20T08:28:34
L2454036-02	14	Unknown	?	0.1153	1	1	1	1.2420		2024-09-20T08:29:40
CCV NO3	15	QC	1	0.0923	1	1	1	0.9933		2024-09-20T08:30:45
CCV NO2	16	QC	?	0.0933	1	1	1	1.0042		2024-09-20T08:31:50
CCB	17	QC	0	0.0000	1	1	1	-0.0070		2024-09-20T08:32:37
L2454036-03	18	Unknown	?	0.2307	1	1	1	2.4915		2024-09-20T08:34:09
L2454036-04	19	Unknown	?	0.1130	1	1	1	1.2165		2024-09-20T08:35:16
L2454036-05	20	Unknown	?	0.2112	1	1	1	2.2810		2024-09-20T08:36:23
WG1974120-3	21	Unknown	?	0.2103	1	1	1	2.2708		2024-09-20T08:37:30
WG1974120-4	22	Unknown	?	0.5163	1	1	1	5.5844		2024-09-20T08:38:37
L2454036-06	23	Unknown	?	0.3016	1	1	1	3.2590		2024-09-20T08:39:44
L2454036-07	24	Unknown	?	0.3006	1	1	1	3.2486		2024-09-20T08:40:50
L2454036-08	25	Unknown	?	0.1260	1	1	1	1.3574		2024-09-20T08:41:56
L2454036-09	26	Unknown	?	0.0009	1	1	1	0.0030		2024-09-20T08:43:02
L2454036-10	27	Unknown	?	0.0009	1	1	1	0.0030		2024-09-20T08:44:08
CCV NO3	28	QC	1	0.0926	1	1	1	0.9965		2024-09-20T08:45:13
CCV NO2	29	QC	?	0.0932	1	1	1	1.0030		2024-09-20T08:46:19
CCB	30	QC	0	0.0000	1	1	1	-0.0064		2024-09-20T08:47:28
L2453772-01; 1 UP TO 10	31	Unknown	?	0.5884	10	1	1	63.6517		2024-09-20T08:48:41
CCV NO3	32	QC	1	0.0897	1	1	1	0.9645		2024-09-20T08:49:49
CCV NO2	33	QC	?	0.0931	1	1	1	1.0013		2024-09-20T08:50:54
CCB	34	QC	0	0.0000	1	1	1	-0.0070		2024-09-20T08:51:39

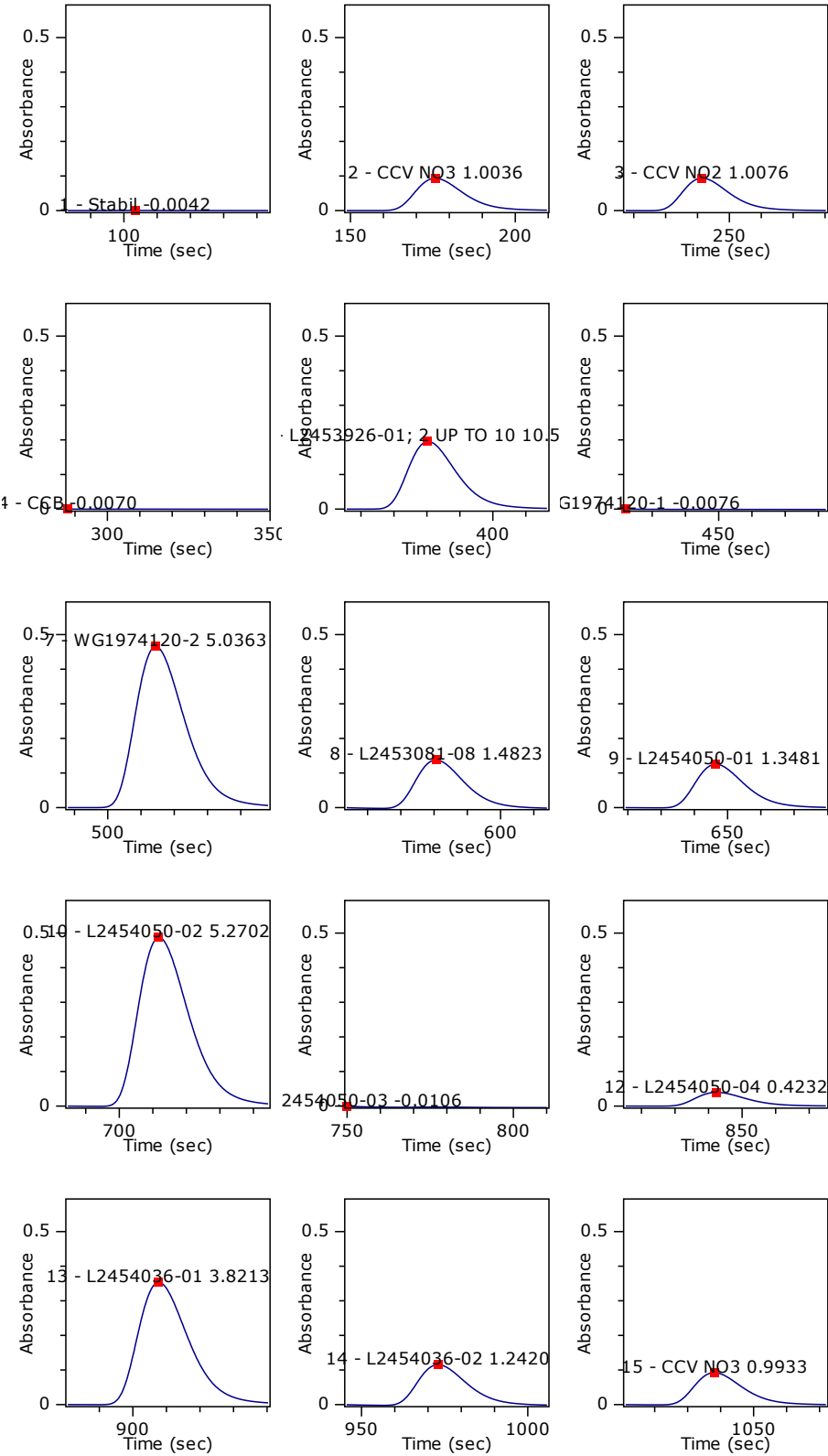
Channel: 2-NO2

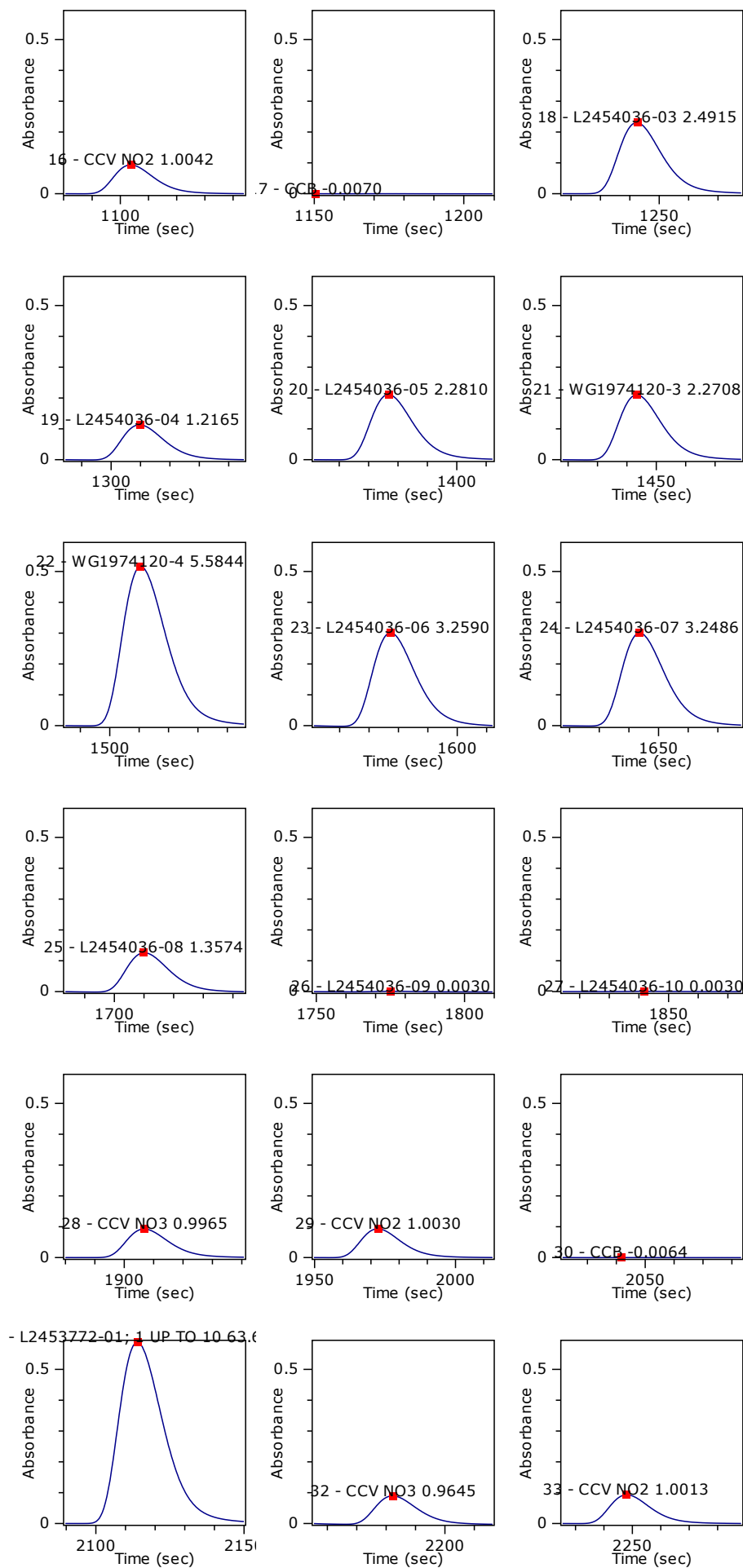
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	-0.0026		2024-09-20T08:14:57
CCV NO3	2	QC	?	0.0001	1	1	1	-0.0027		2024-09-20T08:16:08
CCV NO2	3	QC	1	0.1343	1	1	1	1.0180		2024-09-20T08:17:15
CCB	4	QC	0	0.0001	1	1	1	-0.0026		2024-09-20T08:18:31
L2453926-01; 2 UP TO 10	5	Unknown	?	0.0031	5	1	1	0.0980		2024-09-20T08:19:35
WG1974120-1	6	Unknown	?	0.0000	1	1	1	-0.0034		2024-09-20T08:21:06
WG1974120-2	7	Unknown	?	0.0001	1	1	1	-0.0033		2024-09-20T08:21:55
L2453081-08	8	Unknown	?	0.2015	1	1	1	1.5298		2024-09-20T08:22:54
L2454050-01	9	Unknown	?	0.0007	1	1	1	0.0020		2024-09-20T08:24:00
L2454050-02	10	Unknown	?	0.0007	1	1	1	0.0020		2024-09-20T08:25:05
L2454050-03	11	Unknown	?	0.0006	1	1	1	0.0010		2024-09-20T08:26:09
L2454050-04	12	Unknown	?	0.0025	1	1	1	0.0151		2024-09-20T08:27:15
L2454036-01	13	Unknown	?	0.0013	1	1	1	0.0063		2024-09-20T08:28:20
L2454036-02	14	Unknown	?	0.0033	1	1	1	0.0212		2024-09-20T08:29:26
CCV NO3	15	QC	?	0.0001	1	1	1	-0.0028		2024-09-20T08:30:34
CCV NO2	16	QC	1	0.1351	1	1	1	1.0246		2024-09-20T08:31:38
CCB	17	QC	0	0.0002	1	1	1	-0.0022		2024-09-20T08:32:49
L2454036-03	18	Unknown	?	0.0008	1	1	1	0.0021		2024-09-20T08:33:55
L2454036-04	19	Unknown	?	0.0014	1	1	1	0.0070		2024-09-20T08:35:03
L2454036-05	20	Unknown	?	0.0012	1	1	1	0.0056		2024-09-20T08:36:11
WG1974120-3	21	Unknown	?	0.0012	1	1	1	0.0055		2024-09-20T08:37:18
WG1974120-4	22	Unknown	?	0.0013	1	1	1	0.0059		2024-09-20T08:38:24
L2454036-06	23	Unknown	?	0.0007	1	1	1	0.0020		2024-09-20T08:39:31
L2454036-07	24	Unknown	?	0.0007	1	1	1	0.0018		2024-09-20T08:40:38
L2454036-08	25	Unknown	?	0.0118	1	1	1	0.0860		2024-09-20T08:41:43
L2454036-09	26	Unknown	?	0.0008	1	1	1	0.0021		2024-09-20T08:42:49
L2454036-10	27	Unknown	?	0.0007	1	1	1	0.0018		2024-09-20T08:43:55
CCV NO3	28	QC	?	0.0001	1	1	1	-0.0028		2024-09-20T08:45:02
CCV NO2	29	QC	1	0.1342	1	1	1	1.0174		2024-09-20T08:46:06
CCB	30	QC	0	0.0001	1	1	1	-0.0029		2024-09-20T08:47:21
L2453772-01; 1 UP TO 10	31	Unknown	?	0.0055	10	1	1	0.3784		2024-09-20T08:48:28
CCV NO3	32	QC	?	0.0001	1	1	1	-0.0027		2024-09-20T08:49:37

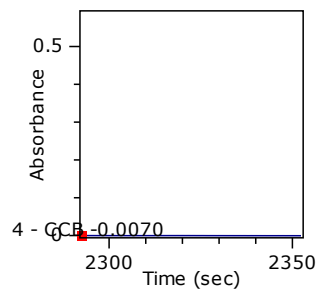
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
CCV NO2	33	QC	1	0.1334	1	1	1	1.0113		2024-09-20T08:50:42
CCB	34	QC	0	0.0001	1	1	1	-0.0027		2024-09-20T08:51:55

Peaks:

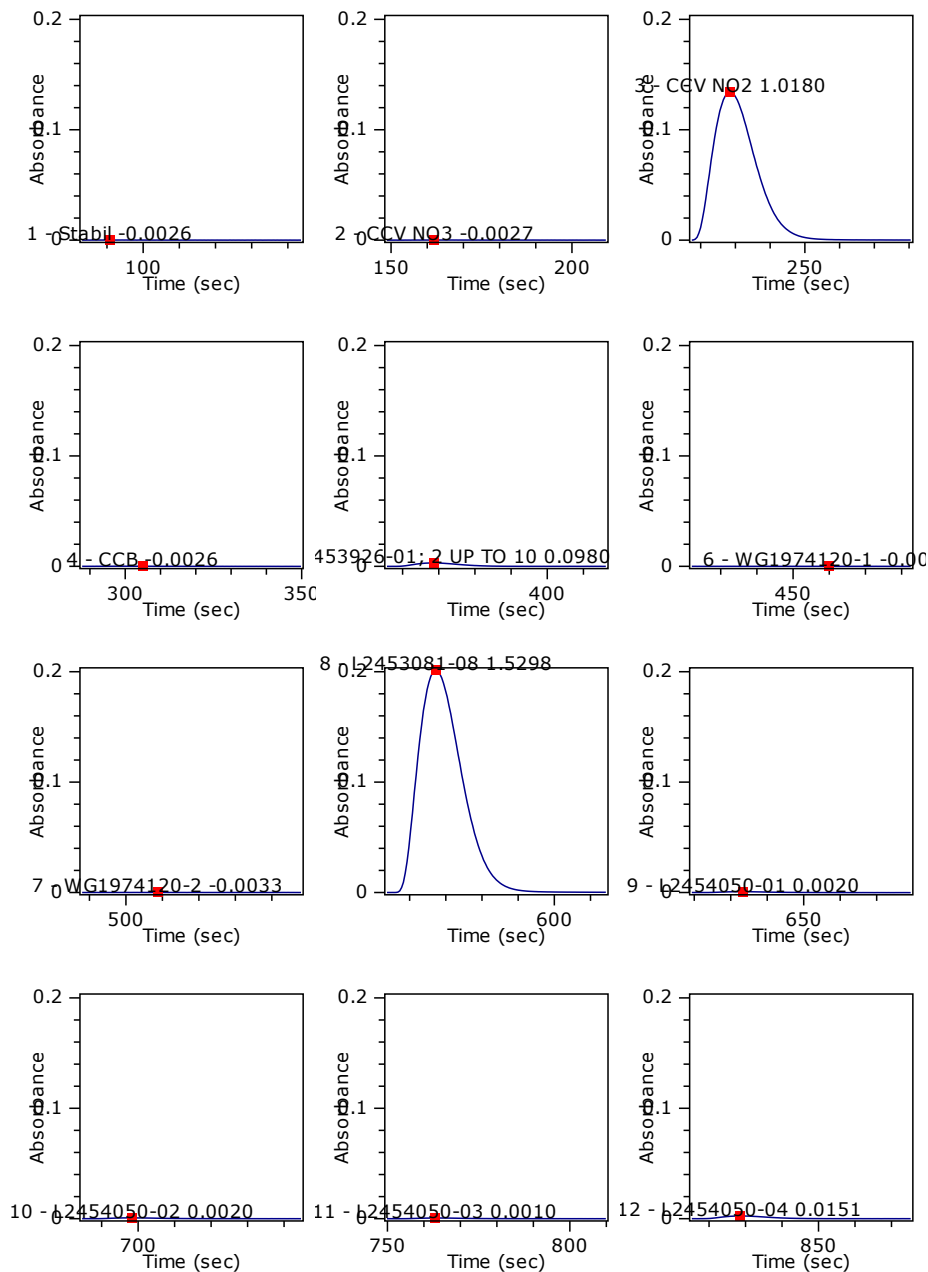
Channel: 1-NOx

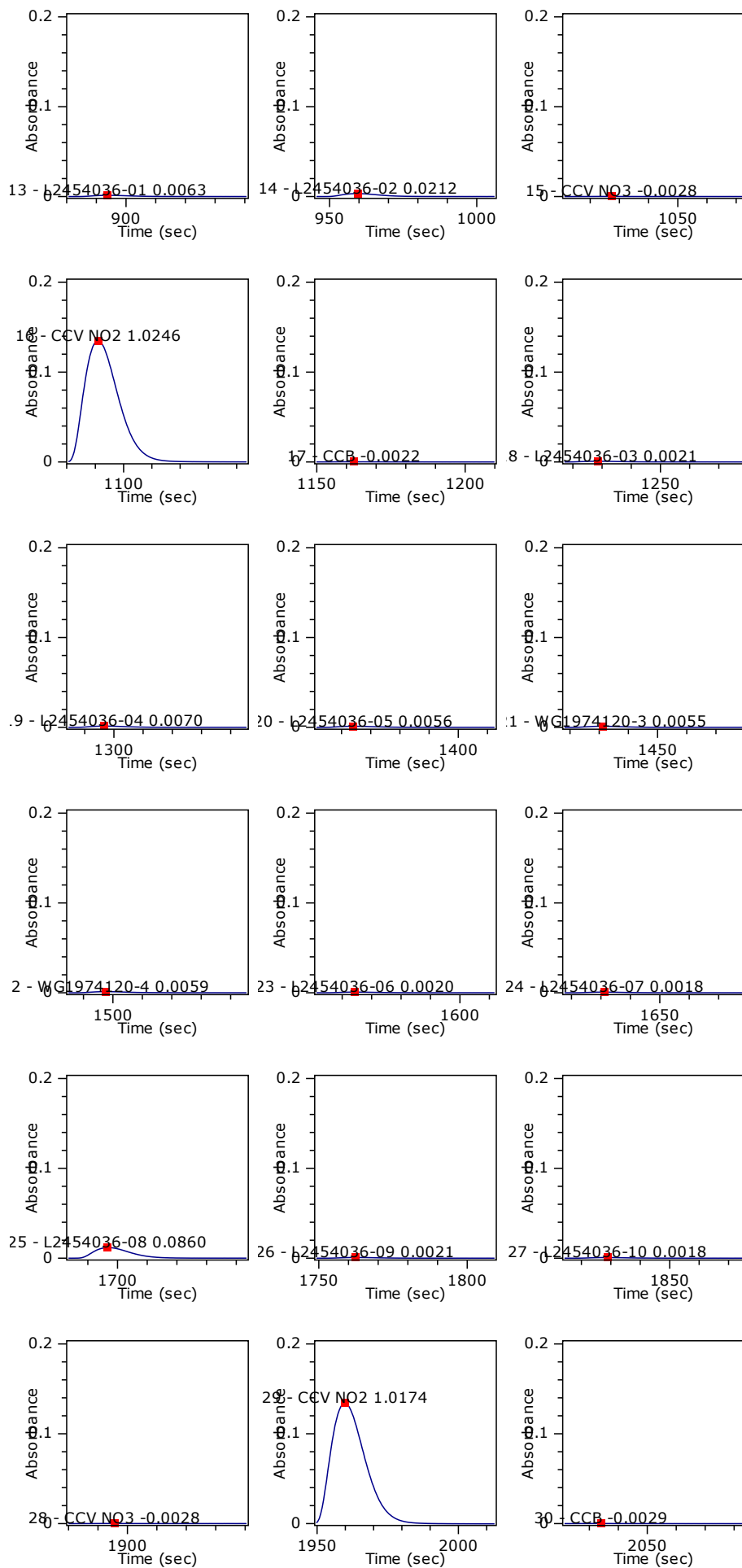


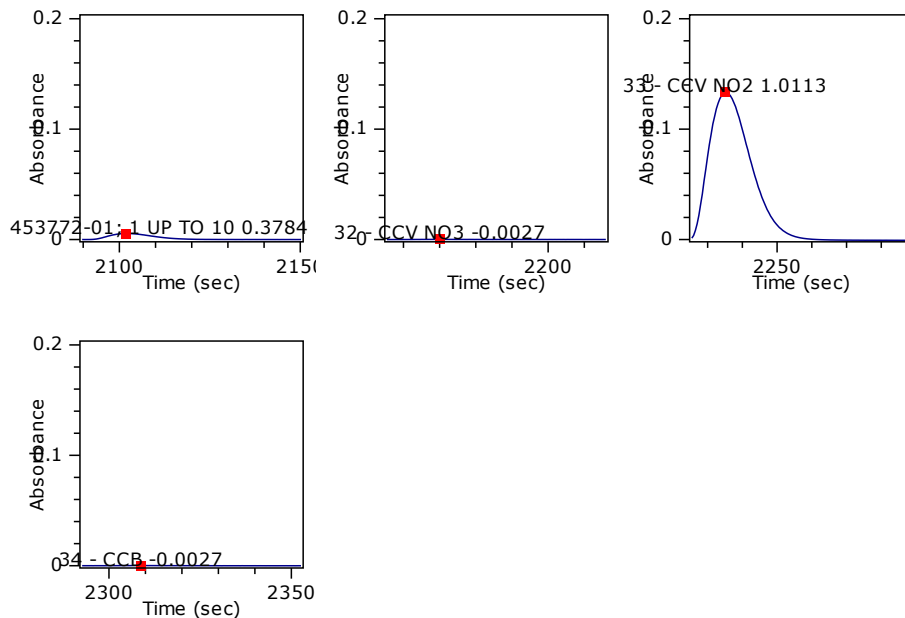




Channel: 2-NO2







Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

FIAsoft FIAsoft v3.1.10

FIAlyzer Settings

FIAlab1 Serial Number: FIA31428

FIAlab2 Serial Number: FIA31429

Pump: Connected on COM8

Spectrometer Settings

Spectrometer1

Spectrometer Type: tec5

Integration Time: 34.6

Bandwidth: 2

Data Acq Rate: 2

Use Full Spectrum: False

|--- Low: 500nm

|--- High: 650nm

Reduce to Boxcar: True

Spectrometer2

Spectrometer Type: tec5

Integration Time: 3

Bandwidth: 2

Data Acq Rate: 2

Use Full Spectrum: False

|--- Low: 500nm

|--- High: 650nm

Reduce to Boxcar: True

Start Time

2024-09-20T08:13:27

Method

' Method Script for NOx-NO2

Autosave Data C:\FIAlab\Autosave Data\DateTime

FIAlab Injection Valve Sample Load

Message Cadmium Column on for NOx

FIAlab Peristaltic Pump Clockwise(%) 55

Autosampler Wash

Delay (sec) 2

Next Sample

Delay (sec) 35 'StartDelay2 - Controls initial sample introduction.

FIAlab1 Injection Valve Sample Inject

Autosampler Probe Up

Delay (sec) 2

Autosampler Position (#) Rinse

FIAlab2 Injection Valve Sample Inject

Delay (sec) 15 'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up

Delay (sec) 5 'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

Analyte New Sample

Delay (sec) 1

Next Sample

Autosampler Probe Force Down

Spectrometer Reference Scan

Spectrometer Absorbance Scanning

Delay (sec) 3 ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

FIAlab Injection Valve Sample Load

Delay (sec) 35 ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

FIALab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 5
Autosampler Position (#) Rinse
FIALab2 Injection Valve Sample Inject

Delay (sec) 10 ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

Autosampler Probe Up

Delay (sec) 3 ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.

Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIALab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIALab\autoreport\NOxNO2\DateTime
Message Run is Complete

Method File Location: C:\FIALab\FIALab User Files\Methods\Method_NOx+NO2.fia

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453825-01
 Matrix Spike : WG1974029-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER

MS Analysis Date : 09/20/24 03:26
 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			
Nitrogen, Nitrate	ND	4	4.0	100					83-113	6



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453926-01
 Matrix Spike : WG1974029-6
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER

MS Analysis Date : 09/20/24 05:04
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Nitrogen, Nitrate	10.	4	14.	100					83-113	6



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/20/24 04:49
Dup Sample ID	: WG1974029-3	DUP Analysis Date	: 09/20/24 03:25

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Nitrate	ND	ND	NC	6

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/20/24 08:19
Dup Sample ID	: WG1974029-5	DUP Analysis Date	: 09/20/24 05:03

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Nitrate	10	11.	10 Q	6

Form 7

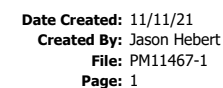
Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1974029-2
 Dup Sample ID :

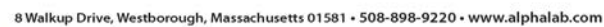
Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/20/24 02:48
 LCSD Analysis Date :

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			
Nitrogen, Nitrate	5.00	5.00	100.					90-110	6

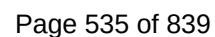


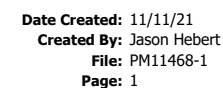
[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

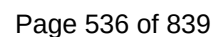


[illegible]

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.



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Nitrogen, Nitrate

Aqueous Samples:

Compute sample N in NO₃ concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

Calculate results by using reading on Channel 1 (NO₃+NO₂) and Channel 2 (NO₂)

$$\text{NO}_3 \text{ mg/L} = (\text{NO}_3 + \text{NO}_2) \text{ mg/L} - (\text{NO}_2) \text{ mg/L}$$

To compute final results for aqueous samples, multiply the direct reading by the dilution factor (also done using software)

$$(\text{NO}_3)\text{-N mg/L} = \text{mg/L direct reading} \times \text{dilution factor}$$

Calculations of Nitrogen, Nitrite

Aqueous Samples:

Compute sample N in NO₂ concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

Calculate results by using reading on Channel 2 (NO₂)

To compute final results for aqueous samples, multiply the direct reading by the dilution factor (also done using software)

$$(\text{NO}_2)\text{-N mg/L} = \text{mg/L direct reading} \times \text{dilution factor}$$



Sequence Logs

Date:
092024

Initials:
KAF

Syringe Lot:
Filter Lot:

Syringe Lot: 20230620
Filter Lot: 18048470A

Injection #

Rack #

Sample ID:

Comments:

19	RA1	ICV NO3 5
20	RA2	ICV NO2 5
21	RA3	ICV NO3 0.5
22	RA4	ICV NO2 0.5
23	RA5	ICB
X	RA6	5X DILUTER CHECK
24	RA7	BLANK NO3
25	RA8	LCS NO3
26	RA9	BLANK NO2
27	RA10	LCS NO2
31	RA11	WG1974027-1; NO2
32	RA12	WG1974027-2; NO2
33	RA13	WG1974028-1; NO2
34	RA14	WG1974028-2; NO2
35	RA15	WG1974029-1; NO3
36	RA16	WG1974029-2; NO3
37	RA17	WG1974030-1; NO3
38	RA18	WG1974030-2; NO3
39	RA19	WG1974033-1; NO3/048
40	RA20	WG1974033-2; NO3/048
44	RA21	L2453511-01
45	RA22	WG1974028-3; NO2
46	RA23	WG1974028-4; NO2
47	RA24	L2453511-02
48; 57	RA25	L2453512-01
49	RA26	L2453512-02
51	RA27	L2453956-01
52	RA28	L2453956-02
53	RA29	L2453956-03
58	RA30	L2454068-02
59	RA31	L2454068-04
60	RA32	L2454068-05
61	RA33	L2454068-06
62	RA34	WG1974033-3; NO3
63	RA35	WG1974033-4; NO3
64	RA36	L2454068-09
65	RA37	L2453772-01
66; 37	RA38	L2453825-01
70	RA39	WG1974029-3; NO3
71	RA40	WG1974029-4; NO3
72	RA41	WG1974027-3; NO2
73	RA42	WG1974027-4; NO2
74	RA43	L2453825-02

Buffer: NO3NO2_091924_BUFFER
Color: NO3NO2_091824_COLOR
NO3 MS: NO3_082924_200PPM_CAL
NO2 MS: NO2_082724_200PPM_CAL
ICV NO3 5: NO3_091824_5PPM_ICV
ICV NO2 5: NO2_091224_5PPM_ICV
ICV NO3 0.5: NO3_092024_0.5PPM_ICV
ICV NO2 0.5: NO2_092024_0.5PPM_ICV

OOH

DW

GOING OOH

FIELD BLANK

Injection #	Rack #	Sample ID:	Comments:
75	RA44	L2453926-01	
76	RA45	WG1974029-5; NO3	
77	RA46	WG1974029-6; NO3	
78	RA47	WG1974027-5; NO2	
79	RA48	WG1974027-6; NO2	
83; 5	RA49	L2453927-01	
84; 6	RA50	L2453934-01	
85; 7	RA51	L2453934-04	
86	RA52	L2453970-02	
87; 9	RA53	L2453971-01	
88; 10	RA54	L2453972-01	
89; 11	RA55	L2453972-02	
90; 12	RA56	L2453976-01	
91; 13	RA57	L2453977-01	
92	RA58	L2453978-02	
18	RA59	L2453980-01	
19	RA60	L2453711-01	
20	RA61	WG1974030-3; NO3	
	RA62	WG1974030-4; NO3	
22	RA63	L2453711-02	
23	RA64	WG1974030-5; NO3	
24	RA65	WG1974030-6; NO3	
25; 51	RA66	L2453711-03	
26	RA67	L2453711-04	
27	RA68	L2453711-05	
31	RA69	L2453711-06	
32	RA70	L2453711-07	
33	RA71	L2453711-08	
34; 57	RA72	L2453711-09	
35	RA73	L2453711-10	
36	RA74	L2453711-11	
38	RA75	L2454000-01	
39	RA76	WG1974048-3; NO3	
40	RA77	WG1974048-4; NO3	
44	RA78	L2454001-01	
45	RA79	L2454001-03	
46	RA80	L2454002-01	
6	RA81	WG1974120-1; NO3	
7	RA82	WG1974120-2; NO3	
8	RA83	L2453081-08G	
9	RA84	L2454050-01I	
10	RA85	L2454050-02I	
11	RA86	L2454050-03I	
12	RA87	L2454050-04I	
13	RA88	L2454036-01	

Injection #	Rack #	Sample ID:	Comments:
14	RA89	L2454036-02	
18	RA90	L2454036-03	
19	RB1	L2454036-04	
20	RB2	L2454036-05	
21	RB3	WG1974120-3; NO3	
22	RB4	WG1974120-4; NO3	
23	RB5	L2454036-06	
24	RB6	L2454036-07	
25	RB7	L2454036-08	
26	RB8	L2454036-09	
27	RB9	L2454036-10	
50	RD1	L2453511-02	
47	RD2	L2453772-01	
48; 5	RD3	L2453926-01	
49	RD4	WG1974029-5	
50	RD5	WG1974029-6	
8	RD6	L2453970-02	
14	RD7	L2453978-02	
21	RD8	WG1974030-4	
52	RD9	WG1974030-6	
53	RD10	L2453711-08	
31	RD11	L2453772-01	

Chemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 12:37
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,410.4	Analyst	: MRW
Lab File ID	: WG1975481.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 12:29
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,410.4	Analyst	: MRW
Lab File ID	: WG1975480.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 12:29
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 44,410.4	Analyst	: MRW
Lab File ID	: WG1975480.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 12:30
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,410.4	Analyst	: MRW
Lab File ID	: WG1975480.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975480-1
 Client ID : WG1975480-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,410.4
 Lab File ID : WG1975480.csv
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/24/24 12:27
 Dilution Factor : 1
 Analyst : MRW
 Instrument ID : GENSYS10VI
 %Solids : N/A
 Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Lab ID : WG1975480-3
Client ID : MW-4SDUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 44,410.4
Lab File ID : WG1975480.csv
Sample Amount :
Digestion Method :

Lab Number : L2454050
Project Number : 2232.0006Y005
Date Collected : 09/19/24 10:25
Date Received : 09/19/24
Date Analyzed : 09/24/24 12:29
Dilution Factor : 1
Analyst : MRW
Instrument ID : GENSYS10VI
%Solids : N/A
Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975481-1
 Client ID : WG1975481-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,410.4
 Lab File ID : WG1975481.csv
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/24/24 12:32
 Dilution Factor : 1
 Analyst : MRW
 Instrument ID : GENSY10VI
 %Solids : N/A
 Date Digested : 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	ND	10	2.7	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975481-3	Date Collected	: 09/18/24 10:30
Client ID	: WG1975481-3 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/24/24 12:33
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,410.4	Analyst	: MRW
Lab File ID	: WG1975481.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/24/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
COD	Chemical Oxygen Demand	11.	10	2.7	



Sample Raw Data

ALPHA ANALYTICAL
WET CHEMISTRY DEPARTMENT
CHEMICAL OXYGEN DEMAND

Last Change 3/17/16 JPL

File COD-LOW.xlt

SOP No.: 07-16

Product: COD-410-LOW

Curve Calibration Date : 7/23/2024

Analysis: COD-Low

Curve Identifier: 072324 (env exp LOW tubes only sř spec 3

Method: EPA 410.4

Analyte: Chemical Oxygen Demand,

Instrument: GENSYS10vis

Prep Date/Time: 9/24/24 9:45 9/24/24 11:45

Wavelength: 620 nm (High)

Technician: MRW

Spike Volume(ml): 0.1

Work group: WG1975480

Spike Concentration(mg/l): 1000

RDL: 10 mg/l

COD Reactor Temp (*C): 150

COD Reactor ID: E

Mean signal			Calibration Curve		Reagents/Media Information	
Standard	(pk area)	Dilution	Volume: 2.0 mls		Material	Lot No.
ppm	abs					
0	0.000	1.0	Slope	y-intercept	High LCS/ICV: COD-091824-50W	
5	0.004	1.0	0.000434	0.001220	Low LCS: COD-091824-20W	
10	0.006	1.0			CCV: COD-091824-50W	
20	0.010	1.0			MS: COD-091824-1000C	
50	0.023	1.0	Correlation Coefficient		COD Tubes: R-4172	
100	0.045	1.0	0.999567			
125	0.055	1.0				

Sample					FINAL				
Time	Date	Sample number	Volume (ml)	Range (Hi or Low)	Absorbance	RESULT (mg/l)	Dilution Factor	RESULT (mg/l)	Recovery %
12:27	9/24/2024	ICB	2	Low	0.000	-2.8	1	0.00	101
12:27	9/24/2024	20 ppm	2	Low	0.010	20.3	1	20.26	
12:27	9/24/2024	ICV	2	Low	0.025	54.8	1	54.82	
12:28	9/24/2024	L2453081-01	2	Low	0.003	4.1	1	4.14	110
12:28	9/24/2024	L2453081-02	2	Low	0.002	1.8	1	1.84	
12:28	9/24/2024	L2453081-03	2	Low	0.034	75.5	1	75.55	
12:28	9/24/2024	L2453081-04	2	Low	0.015	31.8	1	31.78	
12:29	9/24/2024	L2454050-02	2	Low	0.001	-0.5	1	0.00	
12:29	9/24/2024	L2454050-03	2	Low	0.000	-2.8	1	0.00	
12:30	9/24/2024	L2454050-04	2	Low	0.000	-2.8	1	0.00	
12:30	9/24/2024	L2454113-01	2	Low	0.003	4.1	1	4.14	
12:30	9/24/2024	CCV	2	Low	0.025	54.8	1	54.82	
12:30	9/24/2024	CCB	2	Low	0.000	-2.8	1	0.00	
12:31	9/24/2024	L2454113-02	2	Low	0.006	11.0	1	11.05	
12:31	9/24/2024	L2454113-03	2	Low	0.006	11.0	1	11.05	
12:31	9/24/2024	CCV	2	Low	0.022	47.9	1	47.91	
12:32	9/24/2024	CCB	2	Low	0.000	-2.8	1	0.00	
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
12:27	9/24/2024	WG1975480-1	2	Low	0.000	-2.8	1	0.00	L2454050-02
12:29	9/24/2024	WG1975480-3	2	Low	0.000	-2.8	1	0.00	
		Sample number	sample volume	Sample Result mg/l	Absorbance	Dilution Factor	spike conc. mg/l	Spike Result mg/l	Recovery %
12:29	9/24/2024	WG1975480-4	2.1	0.000	0.023	1	47.6	50	105
12:27	9/24/2024	WG1975480-2	2	0.025			50	55	110

COMMENTS & OBSERVATIONS	SAMPLE RESULTS
	ICB
	20 ppm
	ICV
	L2453081-01
	L2453081-02
	L2453081-03
	L2453081-04
	L2454050-02
	L2454050-03
	L2454050-04
	L2454113-01
	CCV
	CCB
	L2454113-02
	L2454113-03
	CCV
	CCB
	0
	0
	0
	0
	0
	0
	0
	0
BLANK	WG1975480-1
DUP	WG1975480-3

L2454050-02	WG1975480-4
LCS	WG1975480-2

ALPHA ANALYTICAL
WET CHEMISTRY DEPARTMENT
CHEMICAL OXYGEN DEMAND

Last Change 3/17/16 JPL

File COD-LOW.xlt

SOP No.: 07-16

Product: COD-410-LOW

Curve Calibration Date : 7/23/2024

Analysis: COD-Low

Curve Identifier: 072324 (env exp LOW tubes only sř spec 3

Method: EPA 410.4

Analyte: Chemical Oxygen Demand,

Instrument: GENSYS10vis

Prep Date/Time: 9/24/24 9:45 9/24/24 11:45

Wavelength: 620 nm (High)

Technician: MRW

Spike Volume(ml): 0.1

Work group: WG1975481

Spike Concentration(mg/l): 1000

RDL: 10 mg/l

COD Reactor Temp (*C): 150

COD Reactor ID: E

Mean signal			Calibration Curve		Reagents/Media Information	
Standard	(pk area)	Dilution	Volume: 2.0 mls		Material	Lot No.
ppm	abs					
0	0.000	1.0	Slope	y-intercept		
5	0.004	1.0	0.000434	0.001220	High LCS/ICV:	COD-091824-50W
10	0.006	1.0			Low LCS:	COD-091824-20W
20	0.010	1.0			CCV:	COD-091824-50W
50	0.023	1.0	Correlation Coefficient		MS:	COD-091824-1000C
100	0.045	1.0	0.999567		COD Tubes:	R-4172
125	0.055	1.0				

Sample					FINAL				
Time	Date	Sample number	Volume (ml)	Range (Hi or Low)	Absorbance	RESULT (mg/l)	Dilution Factor	RESULT (mg/l)	Recovery %
12:32	9/24/2024	ICB	2	Low	0.000	-2.8	1	0.00	101
12:33	9/24/2024	20 ppm	2	Low	0.010	20.3	1	20.26	
12:33	9/24/2024	ICV	2	Low	0.022	47.9	1	47.91	96
12:33	9/24/2024	L2453711-03	2	Low	0.003	4.1	1	4.14	
12:34	9/24/2024	L2453711-04	2	Low	0.010	20.3	1	20.26	
12:34	9/24/2024	L2453711-05	2	Low	0.000	-2.8	1	0.00	
12:35	9/24/2024	L2453711-06	2	Low	0.000	-2.8	1	0.00	
12:35	9/24/2024	L2453711-07	2	Low	0.000	-2.8	1	0.00	
12:35	9/24/2024	L2453711-08	2	Low	0.001	-0.5	1	0.00	
12:36	9/24/2024	L2453711-09	2	Low	0.002	1.8	1	1.84	
12:36	9/24/2024	L2453711-10	2	Low	0.000	-2.8	1	0.00	
12:36	9/24/2024	CCV	2	Low	0.024	52.5	1	52.51	
12:36	9/24/2024	CCB	2	Low	0.000	-2.8	1	0.00	
12:36	9/24/2024	L2453711-11	2	Low	0.000	-2.8	1	0.00	
12:37	9/24/2024	L2454050-01	2	Low	0.000	-2.8	1	0.00	
12:37	9/24/2024	CCV	2	Low	0.022	47.9	1	47.91	
12:37	9/24/2024	CCB	2	Low	0.000	-2.8	1	0.00	
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
			2	Low			1		
12:32	9/24/2024	WG1975481-1	2	Low	0.000	-2.8	1	0.00	
12:33	9/24/2024	WG1975481-3	2	Low	0.006	11.0	1	11.05	L2453711-03
		Sample number	sample volume	Sample Result mg/l	Absorbance	Dilution Factor	spike conc. mg/l	Spike Result mg/l	Recovery %
12:33	9/24/2024	WG1975481-4	2.1	0.000	0.025	1	47.6	55	115
12:33	9/24/2024	WG1975481-2	2	0.022			50	48	96

COMMENTS & OBSERVATIONS	SAMPLE RESULTS
	ICB
	20 ppm
	ICV
	L2453711-03
	L2453711-04
	L2453711-05
	L2453711-06
	L2453711-07
	L2453711-08
	L2453711-09
	L2453711-10
	CCV
	CCB
	L2453711-11
	L2454050-01
	CCV
	CCB
	0
	0
	0
	0
	0
	0
	0
	0
BLANK	WG1975481-1
DUP	WG1975481-3

L2453711-03	WG1975481-4
LCS	WG1975481-2

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : MW-4S
 Lab Sample ID : L2454050-02
 Matrix Spike : WG1975480-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/24/24 12:29
 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			
Chemical Oxygen Demand	ND	47.6	50.	105					90-110	20

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453711-03
 Matrix Spike : WG1975481-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/24/24 12:33
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Chemical Oxygen Demand	4.1J	47.6	55.	116 Q					90-110	20

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4S	Matrix	: WATER
Lab Sample ID	: L2454050-02	Analysis Date	: 09/24/24 12:29
Dup Sample ID	: WG1975480-3	DUP Analysis Date	: 09/24/24 12:29

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Chemical Oxygen Demand	ND	ND	NC	20

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/24/24 12:33
Dup Sample ID	: WG1975481-3	DUP Analysis Date	: 09/24/24 12:33

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Chemical Oxygen Demand	4.1J	11.	NC	20

Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975480-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/24/24 12:27
 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			
Chemical Oxygen Demand	50.0	55.0	110.					90-110	20

Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975481-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/24/24 12:33
 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			
Chemical Oxygen Demand	50.0	48.0	96.					90-110	20



Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

[illegible]

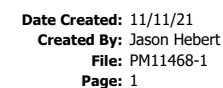
Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



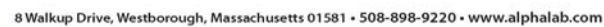
8 Walkup Drive, Westborough, Massachusetts 01581 • 508-898-9220 • www.alphalab.com

Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

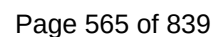


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of COD

Aqueous samples:

Calculate the concentration value of the sample directly from the standard curve.

$$\text{COD, mg O}_2/\text{L} = \frac{\text{absorbance} - \text{y-intercept}}{\text{slope}} \times \text{Dilution factor}$$

Biochemical Oxygen Demand / Carbonaceous Biochemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1974353-1	Date Collected	: NA
Client ID	: WG1974353-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1974353-3	Date Collected	: 09/19/24 09:11
Client ID	: MW-4DDUP	Date Received	: 09/19/24
Sample Location	:	Date Analyzed	: 09/25/24 11:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5210B	Analyst	: JRG
Lab File ID	: WG1974353_rawdata.pdf	Instrument ID	: BOD11
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	BOD, 5 day	ND	2.0	NA	U



Sample Raw Data

SEAL-BOD Final Report

Initial Operator: _____
Start Date: _____
Finish Date: 9/25/2024

Identification	PreDil	Vol	SeedCorr	DateTimeStartDO	DateTimeEndDO	StartDO	EndDO	O2_Deple	ResultBOD	FinalResultBOD	Operator
Dilution Blank 1	1	0	0	9/20/2024 03:38:53 PM	9/25/2024 11:17:58 AM	8.554	8.394	0.16	0.16	0.2	JNT
Dilution Blank 2	1	0	0	9/20/2024 03:38:53 PM	9/25/2024 11:17:58 AM	8.6	8.188	0.412	0.412	0	JNT
Dilution Blank 3	1	0	0	9/20/2024 03:41:03 PM	9/25/2024 11:19:01 AM	8.559	8.253	0.306	0.306	0	JNT
SEED	1	0	0	9/20/2024 03:41:03 PM	9/25/2024 11:19:02 AM	8.53	6.354	2.176	43.52	58.9	JNT
SEED	1	0	0	9/20/2024 03:42:58 PM	9/25/2024 11:20:26 AM	8.492	5.801	2.691	44.85		JNT
SEED	1	0	0	9/20/2024 03:42:58 PM	9/25/2024 11:20:26 AM	8.549	2.375	6.174	88.2		JNT
LCS	1	6	0.8	9/20/2024 03:44:39 PM	9/25/2024 11:21:51 AM	8.585	3.528	5.057	212.85	217.5	JNT
LCS	1	6	0.8	9/20/2024 03:44:39 PM	9/25/2024 11:21:51 AM	8.634	3.211	5.423	231.15		JNT
LCS	1	6	0.8	9/20/2024 03:46:03 PM	9/25/2024 11:23:04 AM	8.579	3.609	4.97	208.5		JNT
Method Blank	1	30	0	9/20/2024 03:46:03 PM	9/25/2024 11:23:05 AM	8.592	7.206	1.386	1.386	1.3	JNT
Method Blank	1	60	0	9/20/2024 03:47:30 PM	9/25/2024 11:24:33 AM	8.431	7.176	1.255	1.255		JNT
Method Blank	1	150	0	9/20/2024 03:47:30 PM	9/25/2024 11:24:33 AM	8.212	6.958	1.254	1.254		JNT
I2453785-01	1	3	0.8	9/20/2024 03:49:14 PM	9/25/2024 11:25:41 AM	8.558	6.771	1.787	98.7		JRG
I2453785-01	1	10	0.8	9/20/2024 03:49:14 PM	9/25/2024 11:25:41 AM	8.541	5.636	2.905	63.15	56.6	JRG
I2453785-01	1	30	0.8	9/20/2024 03:50:53 PM	9/25/2024 11:27:21 AM	8.106	2.294	5.812	50.12		JRG
I2453785-01	1	75	0.8	9/20/2024 03:50:53 PM	9/25/2024 11:27:21 AM	7.159	0.484	6.675	23.5		JRG
I2453785-02	1	3	0.8	9/20/2024 03:52:52 PM	9/25/2024 11:29:02 AM	8.545	6.612	1.933	113.3		JRG
I2453785-02	1	10	0.8	9/20/2024 03:52:52 PM	9/25/2024 11:29:02 AM	8.511	5.792	2.719	57.57	48.4	JRG
I2453785-02	1	30	0.8	9/20/2024 03:54:32 PM	9/25/2024 11:30:33 AM	8.062	3.339	4.723	39.23		JRG
I2453785-02	1	75	0.8	9/20/2024 03:54:32 PM	9/25/2024 11:30:33 AM	7.086	0.527	6.559	23.036		JRG
I2453787-01	1	30	0.8	9/20/2024 03:56:31 PM	9/25/2024 11:32:11 AM	8.592	7.104	1.488	6.88	0	JRG
I2453787-01	1	60	0.8	9/20/2024 03:56:31 PM	9/25/2024 11:32:11 AM	8.715	7.402	1.313	2.565		JRG
I2453787-01	1	150	0.8	9/20/2024 03:58:37 PM	9/25/2024 11:32:59 AM	8.886	7.477	1.409	1.218		JRG
I2453791-01	1	2	0.8	9/20/2024 03:58:37 PM	9/25/2024 11:32:59 AM	8.613	6.75	1.863	159.45		JRG
I2453791-01	1	5	0.8	9/20/2024 04:00:33 PM	9/25/2024 11:33:56 AM	8.553	7.137	1.416	36.96		JRG
I2453791-01	1	10	0.8	9/20/2024 04:00:33 PM	9/25/2024 11:33:56 AM	8.626	7.066	1.56	22.8		JRG
I2453791-01	1	25	0.8	9/20/2024 04:02:24 PM	9/25/2024 11:34:50 AM	8.597	6.498	2.099	15.588	14.3	JRG

SEAL-BOD Final Report

Initial Operator: _____
Start Date: _____
Finish Date: 9/25/2024

Identification	PreDil	Vol	SeedCorr	DateTimeStartDO	DateTimeEndDO	StartDO	EndDO	O2_Deple	ResultBOD	FinalResultBOD	Operator
I2453791-01	1	50	0.8	9/20/2024 04:02:24 PM	9/25/2024 11:34:50 AM	8.701	5.631	3.07	13.62		JRG
I2453791-01	1	75	0.8	9/20/2024 04:04:22 PM	9/25/2024 11:36:12 AM	8.684	4.481	4.203	13.612		JRG
I2453934-01	1	6	0.8	9/20/2024 04:04:22 PM	9/25/2024 11:36:12 AM	8.632	7.047	1.585	39.25		JRG
I2453934-01	1	20	0.8	9/20/2024 04:06:05 PM	9/25/2024 11:37:25 AM	8.456	6.659	1.797	14.955		JRG
I2453934-01	1	60	0.8	9/20/2024 04:06:05 PM	9/25/2024 11:37:25 AM	8.067	4.782	3.285	12.425	12.4	JRG
I2453934-01	1	150	0.8	9/20/2024 04:07:56 PM	9/25/2024 11:39:05 AM	6.941	0.824	6.117	10.634		JRG
I2453934-04	1	20	0.8	9/20/2024 04:07:56 PM	9/25/2024 11:39:05 AM	8.54	7.024	1.516	10.74		JRG
I2453934-04	1	60	0.8	9/20/2024 04:09:41 PM	9/25/2024 11:40:45 AM	7.927	5.593	2.334	7.67	7.3	JRG
I2453934-04	1	150	0.8	9/20/2024 04:09:41 PM	9/25/2024 11:40:45 AM	6.401	2.098	4.303	7.006		JRG
I2453958-01	1	20	0.8	9/20/2024 04:11:43 PM	9/25/2024 11:42:04 AM	8.623	7.191	1.432	9.48		JRG
I2453958-01	1	60	0.8	9/20/2024 04:11:43 PM	9/25/2024 11:42:04 AM	8.887	6.995	1.892	5.46		JRG
I2453958-01	1	150	0.8	9/20/2024 04:13:54 PM	9/25/2024 11:42:56 AM	9.358	6.584	2.774	3.948	3.9	JRG
I2453978-01	1	1.5	0.8	9/20/2024 04:13:54 PM	9/25/2024 11:42:56 AM	8.632	6.938	1.694	178.8		JRG
I2453978-01	1	5	0.8	9/20/2024 04:15:42 PM	9/25/2024 11:44:05 AM	8.547	5.776	2.771	118.26	117.6	JRG
I2453978-01	1	10	0.8	9/20/2024 04:15:42 PM	9/25/2024 11:44:05 AM	8.491	3.794	4.697	116.91		JRG
I2453978-01	1	30	0.8	9/20/2024 04:17:28 PM	9/25/2024 11:45:46 AM	8.055	0.765	7.29	64.9		JRG
I2453978-02	1	6	0.8	9/20/2024 04:17:28 PM	9/25/2024 11:45:46 AM	8.597	7.319	1.278	23.9		JRG
I2453978-02	1	20	0.8	9/20/2024 04:19:22 PM	9/25/2024 11:47:27 AM	8.54	7.083	1.457	9.855		JRG
I2453978-02	1	60	0.8	9/20/2024 04:19:22 PM	9/25/2024 11:47:27 AM	8.545	6.648	1.897	5.485		JRG
I2453978-02	1	150	0.8	9/20/2024 04:21:05 PM	9/25/2024 11:48:30 AM	8.302	5.907	2.395	3.19	3.2	JRG
I2453982-01	1	1.5	0.8	9/20/2024 04:21:06 PM	9/25/2024 11:48:30 AM	8.594	6.495	2.099	259.8	221.9	JRG
I2453982-01	1	5	0.8	9/20/2024 04:22:49 PM	9/25/2024 11:50:01 AM	8.511	4.269	4.242	206.52		JRG
I2453982-01	1	10	0.8	9/20/2024 04:22:50 PM	9/25/2024 11:50:02 AM	8.482	1.041	7.441	199.23		JRG
I2453982-01	1	30	0.8	9/20/2024 04:24:33 PM	9/25/2024 11:51:41 AM	8.042	0.706	7.336	65.36		JRG
I2453982-02	1	30	0.8	9/20/2024 04:24:33 PM	9/25/2024 11:51:41 AM	8.732	7.077	1.655	8.55	0	JRG
I2453982-02	1	60	0.8	9/20/2024 04:26:37 PM	9/25/2024 11:53:01 AM	8.894	6.93	1.964	5.82		JRG
I2453982-02	1	150	0.8	9/20/2024 04:26:37 PM	9/25/2024 11:53:01 AM	9.582	7.673	1.909	2.218		JRG

SEAL-BOD Final Report

Initial Operator: _____
Start Date: _____
Finish Date: 9/25/2024

Identification	PreDil	Vol	SeedCorr	DateTimeStartDO	DateTimeEndDO	StartDO	EndDO	O2_Deple	ResultBOD	FinalResultBOD	Operator
I2454031-01	1	6	0.8	9/20/2024 04:28:25 PM	9/25/2024 11:54:01 AM	8.527	7.049	1.478	33.9		JRG
I2454031-01	1	20	0.8	9/20/2024 04:28:25 PM	9/25/2024 11:54:01 AM	8.392	5.967	2.425	24.375	21.6	JRG
I2454031-01	1	60	0.8	9/20/2024 04:30:23 PM	9/25/2024 11:55:39 AM	7.354	2.802	4.552	18.76		JRG
I2454031-01	1	150	0.8	9/20/2024 04:30:23 PM	9/25/2024 11:55:40 AM	5.1	0.5	4.6	7.6		JRG
I2454032-01	1	6	0.8	9/20/2024 04:32:27 PM	9/25/2024 11:57:20 AM	8.537	7.063	1.474	33.7		JRG
I2454032-01	1	20	0.8	9/20/2024 04:32:27 PM	9/25/2024 11:57:20 AM	8.53	6.477	2.053	18.795	15.8	JRG
I2454032-01	1	60	0.8	9/20/2024 04:34:48 PM	9/25/2024 11:58:57 AM	8.285	4.918	3.367	12.835		JRG
I2454032-01	1	150	0.8	9/20/2024 04:34:48 PM	9/25/2024 11:58:57 AM	7.776	0.593	7.183	12.766		JRG
I2454034-01	1	20	0.8	9/20/2024 04:36:48 PM	9/25/2024 12:00:37 PM	8.48	6.846	1.634	12.51		JRG
I2454034-01	1	60	0.8	9/20/2024 04:36:49 PM	9/25/2024 12:00:38 PM	8.131	9.053	-0.922	-8.61		JRG
I2454034-01	1	150	0.8	9/20/2024 04:38:36 PM	9/25/2024 12:02:18 PM	7.049	1.704	5.345	9.09	9.1	JRG
I2454038-01	8	1.5	0.8	9/20/2024 04:38:36 PM	9/25/2024 12:02:18 PM	8.604	6.802	1.802	1603.2		JRG
I2454038-01	8	5	0.8	9/20/2024 04:40:36 PM	9/25/2024 12:03:40 PM	8.551	4.172	4.379	1717.92	1717.9	JRG
I2454038-01	8	10	0.8	9/20/2024 04:40:36 PM	9/25/2024 12:03:40 PM	8.636	0.745	7.891	1701.84		JRG
I2454038-01	8	30	0.8	9/20/2024 04:42:17 PM	9/25/2024 12:05:17 PM	8.512	0.648	7.864	565.12		JRG
I2454050-01	1	30	0.8	9/20/2024 04:42:17 PM	9/25/2024 12:05:17 PM	8.655	7.444	1.211	4.11	0	JRG
I2454050-01	1	60	0.8	9/20/2024 04:43:52 PM	9/25/2024 12:06:58 PM	8.636	7.383	1.253	2.265		JRG
I2454050-01	1	150	0.8	9/20/2024 04:43:52 PM	9/25/2024 12:06:58 PM	8.83	7.744	1.086	0.572		JRG
WG1974353-3	1	30	0.8	9/20/2024 04:45:31 PM	9/25/2024 12:07:49 PM	8.597	7.514	1.083	2.83	0	JRG
WG1974353-3	1	60	0.8	9/20/2024 04:45:31 PM	9/25/2024 12:07:49 PM	8.711	7.847	0.864	0.32		JRG
WG1974353-3	1	150	0.8	9/20/2024 04:47:19 PM	9/25/2024 12:08:40 PM	8.779	7.779	1	0.4		JRG
WG1974353-4	1	3	0.8	9/20/2024 04:47:19 PM	9/25/2024 12:08:40 PM	8.644	6.837	1.807	100.7		JRG
WG1974353-4	1	6	0.8	9/20/2024 04:49:07 PM	9/25/2024 12:09:56 PM	8.572	5.658	2.914	105.7	92.1	JRG
WG1974353-4	1	15	0.8	9/20/2024 04:49:07 PM	9/25/2024 12:09:56 PM	8.627	3.907	4.72	78.4		JRG
WG1974353-4	1	30	0.8	9/20/2024 04:50:59 PM	9/25/2024 12:11:37 PM	8.593	0.846	7.747	69.47		JRG
I2454050-02	1	30	0.8	9/20/2024 04:50:59 PM	9/25/2024 12:11:37 PM	8.679	7.588	1.091	2.91	0	JRG
I2454050-02	1	60	0.8	9/20/2024 04:52:51 PM	9/25/2024 12:13:17 PM	8.721	7.643	1.078	1.39		JRG

SEAL-BOD Final Report

Initial Operator: _____
Start Date: _____
Finish Date: 9/25/2024

Identification	PreDil	Vol	SeedCorr	DateTimeStartDO	DateTimeEndDO	StartDO	EndDO	O2_Deple	ResultBOD	FinalResultBOD	Operator
I2454050-02	1	150	0.8	9/20/2024 04:52:51 PM	9/25/2024 12:13:17 PM	9.124	8.138	0.986	0.372		JRG
I2454050-03	1	30	0.8	9/20/2024 04:54:48 PM	9/25/2024 12:13:56 PM	8.625	7.561	1.064	2.64	0	JRG
I2454050-03	1	60	0.8	9/20/2024 04:54:48 PM	9/25/2024 12:13:56 PM	8.815	7.971	0.844	0.22		JRG
I2454050-03	1	150	0.8	9/20/2024 04:56:54 PM	9/25/2024 12:14:47 PM	9.183	7.99	1.193	0.786		JRG
I2454050-04	1	30	0.8	9/20/2024 04:56:54 PM	9/25/2024 12:14:47 PM	8.682	7.713	0.969	1.69	0	JRG
I2454050-04	1	60	0.8	9/20/2024 05:03:32 PM	9/25/2024 12:15:29 PM	8.606	7.723	0.883	0.415		JRG
I2454050-04	1	150	0.8	9/20/2024 05:03:32 PM	9/25/2024 12:15:29 PM	8.761	7.726	1.035	0.47		JRG
I2453941-01	20	1.5	0.8	9/20/2024 05:05:19 PM	9/25/2024 12:16:30 PM	8.555	6.88	1.675	3500		JRG
I2453941-01	20	5	0.8	9/20/2024 05:05:19 PM	9/25/2024 12:16:30 PM	8.619	5.794	2.825	2430	2160.6	JRG
I2453941-01	20	10	0.8	9/20/2024 05:07:08 PM	9/25/2024 12:17:58 PM	8.533	4.581	3.952	1891.2		JRG
I2453941-01	20	30	0.8	9/20/2024 05:07:08 PM	9/25/2024 12:17:58 PM	8.57	0.513	8.057	1451.4		JRG

Quality Control

Form 5a Matrix Spike

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01		
Matrix Spike	: WG1974353-4	MS Analysis Date	: 09/25/24 11:15
Matrix Spike Dup	:	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			
BOD, 5 day	ND	100	92	92					50-145	35

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01	Analysis Date	: 09/25/24 11:15
Dup Sample ID	: WG1974353-3	DUP Analysis Date	: 09/25/24 11:15

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
BOD, 5 day	ND	ND	NC	35

Form 7

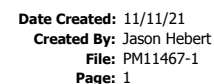
Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1974353-2
 Dup Sample ID :

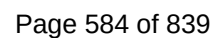
Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/25/24 11:15
 LCSD Analysis Date :

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			
BOD, 5 day	198.	220.	110.					85-115	35



[illegible]

Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of BOD

The BOD Analyst Software will calculate the BOD results. However, the following is an explanation of the manual calculation should it be necessary:

$$\text{BOD}_5, \text{ mg O}_2/\text{L} = \frac{[(D_1 - D_2) - f]}{P}$$

Where:

- D_1 = DO of diluted sample immediately after preparation, mg/L,
- D_2 = DO of diluted sample after 5-day incubation at 20°C, mg/L,
- P = decimal volumetric fraction of sample used,
- F = Average DO depletion for 2mL of seed.

Sample Preparation

Day and Date Fri 9/20/24
Product BOD

Sample ID	Pre Dil X	pH	Cl	Cod Abs	Cod Result	Bod Settings	comments
2453785-01		7	—	.078	176	3:10,30,75	
-02		↓	↓	.046	103	↓	
787-01		↓	↓	.004	8	30,60,150	
791-01		↓	↓	.027	60	15,10,25,50,75	
934-01		↓	↓	.016 ⁰²¹	35 60	6,20,60,150	
-04		↓	↓	.012 ⁰¹⁶	26 35	20,60,150	
958-01		↓	↓	.012	26	↓	
978-01		↓	↓	.171	388	15,5,10,30	
-02		↓	↓	.028	62	6,20,60,150	
982-01		↓	↓	.177	401	15,5,10,30	
-02		↓	↓	.008	17	30,60,150	
54031-01		↓	↓	.030	67	6,20,60,150	
032-01		↓	↓	.026	58	↓	
034-01		↓	↓	.015	33	20,60,150	
038-01	8	5→7	↓	.164	371	15,5,10,30	
056-01		7	↓	0	0	30,60,150	Dup 1SP100
-02		↓	↓	.001	1	↓	
-03		↓	↓	.003	5	↓	
-04		↓	↓	.005	10	↓	
B 53941-01	20	5→7	↓	.174	395	15,5,10,30	

e/Time/Initials IN: 9/20 17:13 JRG Polyseed Lot#: BOD240920SE2 Exp: 9/20
 ubator ID: 5.3 Nutrient Solution Lot#: BOD240920US1 Exp: 9/23
 e/Time/Initials OUT: 9/25/24 11:15 WAF Matrix Spike Lot #: BOD240920ST1
WG1974353 + 4356 (PPB) LCS Lot #: WC-3471
 ents: D: 90 De-Cl/ Sodium Sulfite Solution Lot#: —
 ification Inhibitor Lot #: — Exp: —

WG1974353



WG1974356



Total Organic Carbon Analysis

Results

Form 1
WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 12:27
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	0.310	0.500	0.097	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 12:53
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	0.649	0.500	0.097	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:20
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	0.292	0.500	0.097	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:42
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	1.21	0.500	0.097	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975849-1	Date Collected	: NA
Client ID	: WG1975849-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 09/25/24 03:12
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	ND	0.500	0.097	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975849-3	Date Collected	: 09/18/24 10:05
Client ID	: WG1975849-3 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/25/24 15:44
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	1.32	0.500	0.097	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975849-5	Date Collected	: 09/18/24 12:00
Client ID	: WG1975849-5 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/25/24 16:28
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,5310C	Analyst	: DEW
Lab File ID	: WG1975849	Instrument ID	: TOCVWS5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-44-0	Total Organic Carbon	1.90	0.500	0.097	



Instr. Information

System
Instrument OptionsTOCVws
TOC/ASI/

Cal. Curve

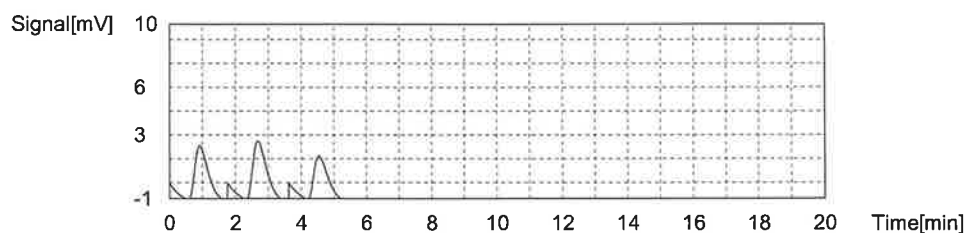
Sample Name: 09122024 TOC5 CURVE
Sample ID:
Cal. Curve: 09122024 TOC5 CURVE.2024_09_12_02_26_55.cal
Status: Completed

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.542	2500uL	1	*****		9/12/2024 2:37:14 AM
2	11.30	2500uL	1	*****		9/12/2024 2:42:15 AM
3	8.511	2500uL	1	*****		9/12/2024 2:46:40 AM

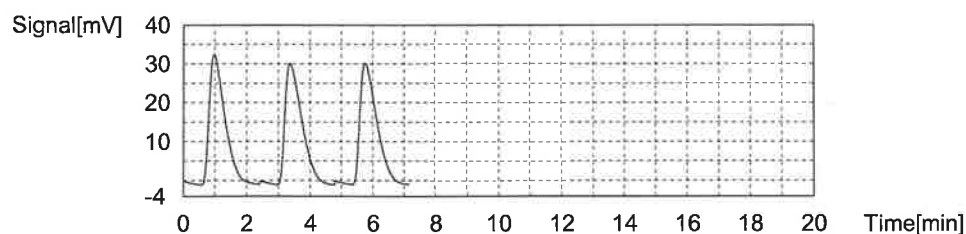
Acid Add. 3.000%
Sp. Time 180.0sec
Mean Area 9.784



Conc: 0.5000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	117.3	2500uL	1	*****		9/12/2024 2:57:38 AM
2	117.4	2500uL	1	*****		9/12/2024 3:02:07 AM
3	117.3	2500uL	1	*****		9/12/2024 3:06:34 AM

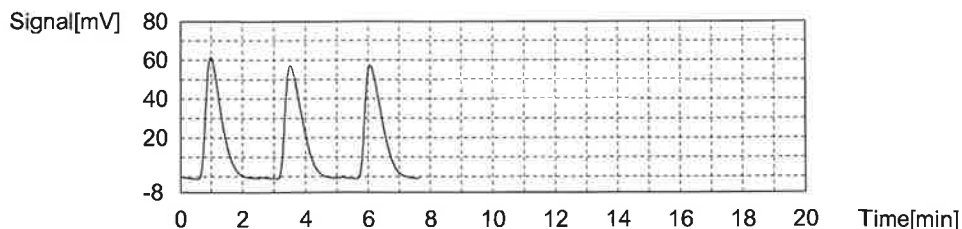
Acid Add. 3.000%
Sp. Time 180.0sec
Mean Area 117.3



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	223.2	2500uL	1	*****		9/12/2024 3:17:40 AM
2	223.1	2500uL	1	*****		9/12/2024 3:22:21 AM
3	223.7	2500uL	1	*****		9/12/2024 3:27:02 AM

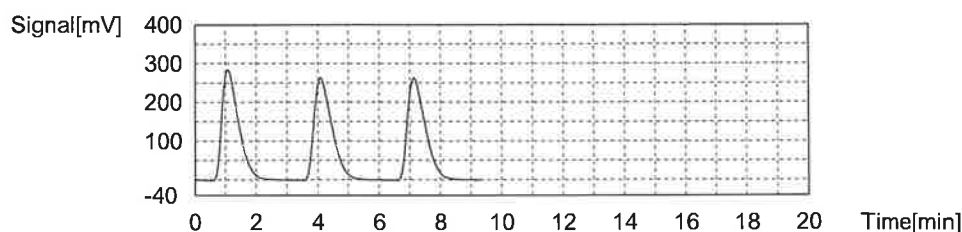
Acid Add. 3.000%
Sp. Time 180.0sec
Mean Area 223.3



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1100	2500uL	1	*****		9/12/2024 3:38:34 AM
2	1100	2500uL	1	*****		9/12/2024 3:43:49 AM
3	1108	2500uL	1	*****		9/12/2024 3:49:13 AM

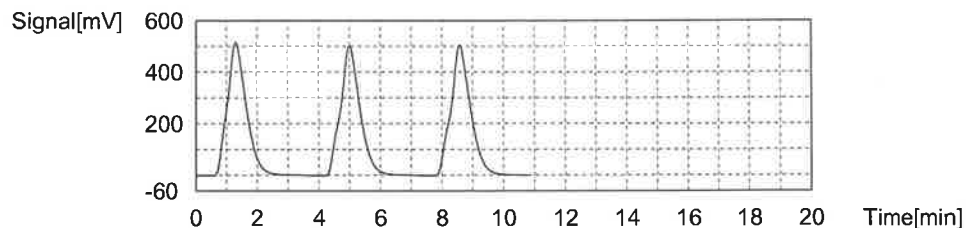
Acid Add. 3.000%
Sp. Time 180.0sec
Mean Area 1103



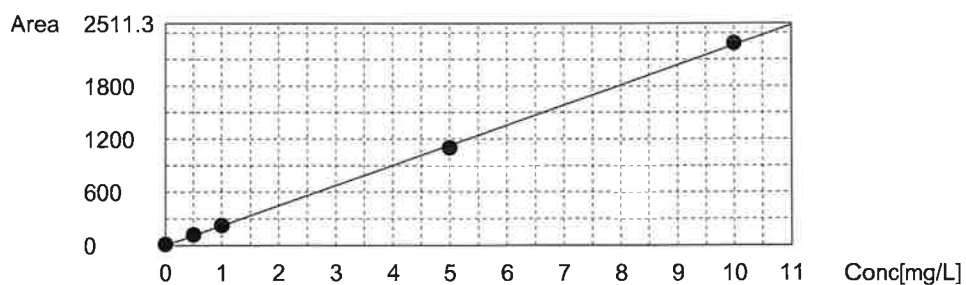
Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2280	2500uL	1	*****		9/12/2024 4:01:24 AM
2	2282	2500uL	1	*****		9/12/2024 4:07:05 AM
3	2287	2500uL	1	*****		9/12/2024 4:12:49 AM

Acid Add. 3.000%
Sp. Time 180.0sec
Mean Area 2283



Slope: 227.0
Intercept -1.764
 r^2 0.9996
 r 0.9998
Zero Shift No



conc.
0
0.5
1.0
5.0
10.0

A
9.784
117.3
223.3
1103
2283

A-y/m
0.525
0.99
4.87
10.07

105
99
97
101

✓
Done

Sample Raw Data

Instr.Information

System
Instrument OptionsTOCVws
TOC/ASI/

Sample

Sample Name: DI
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

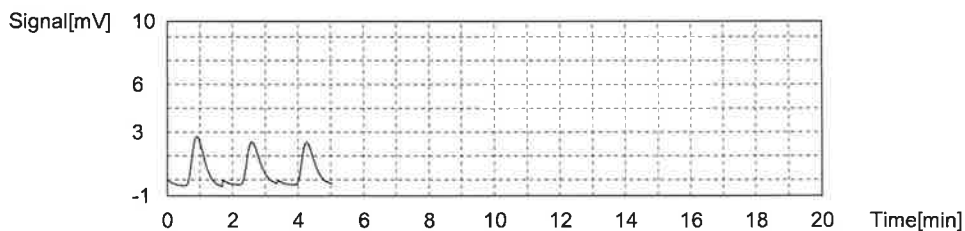
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.04173mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.311	0.04439mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:44:23 AM
2	7.547	0.04102mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:49:06 AM
3	7.265	0.03978mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:53:28 AM

Mean Area 7.708
Mean Conc. 0.04173mg/L



Sample

Sample Name: IC CK STD
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

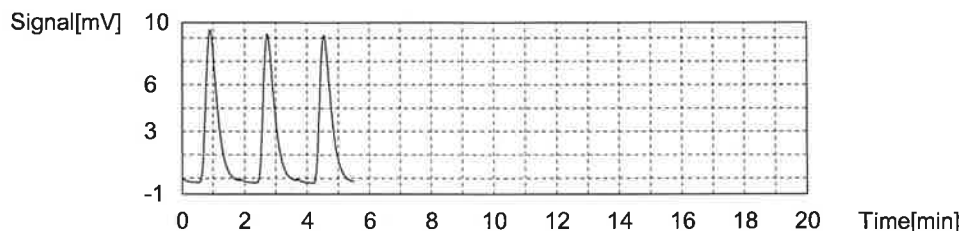
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1168mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.31	0.1193mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:03:52 AM
2	24.50	0.1157mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:08:33 AM
3	24.42	0.1154mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:13:16 AM

Mean Area 24.74
Mean Conc. 0.1168mg/L



Sample

Sample Name: ICV
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

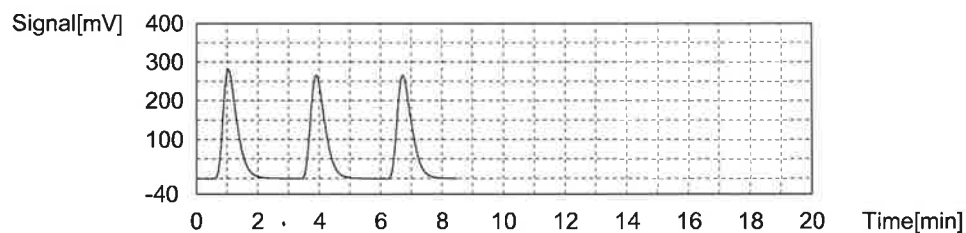
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.014mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	910.8	4.021mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:24:40 AM
2	901.5	3.980mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:29:36 AM
3	915.6	4.042mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:34:32 AM

Mean Area 909.3
Mean Conc. 4.014mg/L



Sample

Sample Name: ICB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

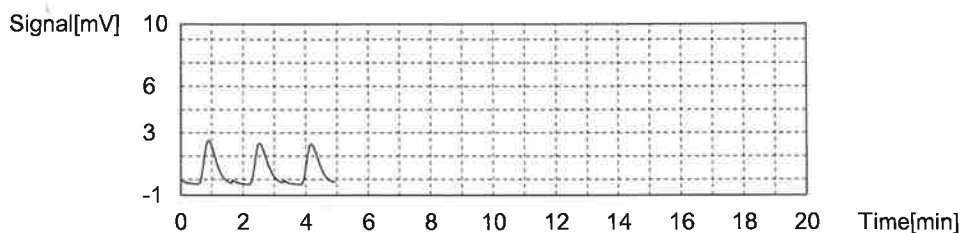
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.03950mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.411	0.04042mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:44:44 AM
2	7.147	0.03926mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:49:12 AM
3	7.049	0.03883mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:53:30 AM

Mean Area 7.202
Mean Conc. 0.03950mg/L



Sample

Sample Name: MB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

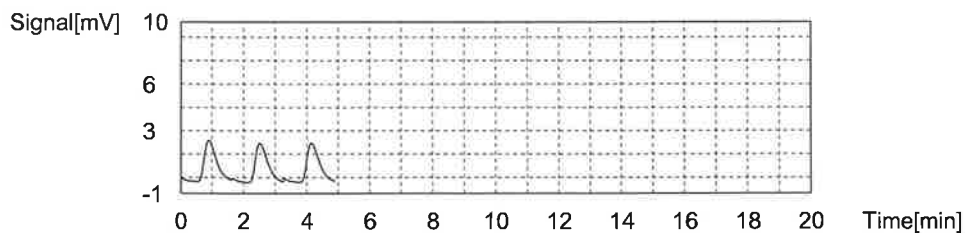
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.03775mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.877	0.03807mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:03:41 AM
2	6.717	0.03737mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:08:08 AM
3	6.822	0.03783mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:12:26 AM

Mean Area 6.805
Mean Conc. 0.03775mg/L



Sample

Sample Name: LCS
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

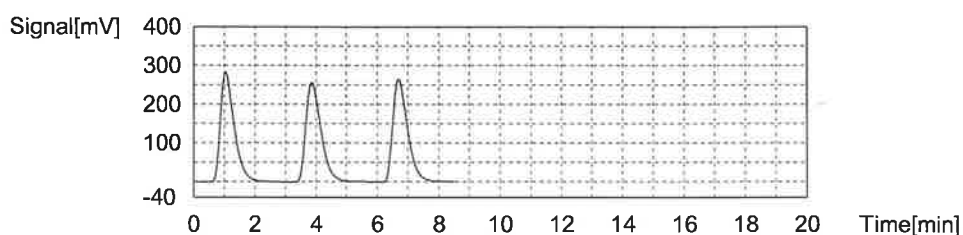
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.038mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.6	4.024mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:23:46 AM
2	916.3	4.045mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:29:36 AM
3	916.5	4.046mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:34:35 AM

Mean Area 914.8
Mean Conc. 4.038mg/L



Sample

Sample Name: L2453639-01
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

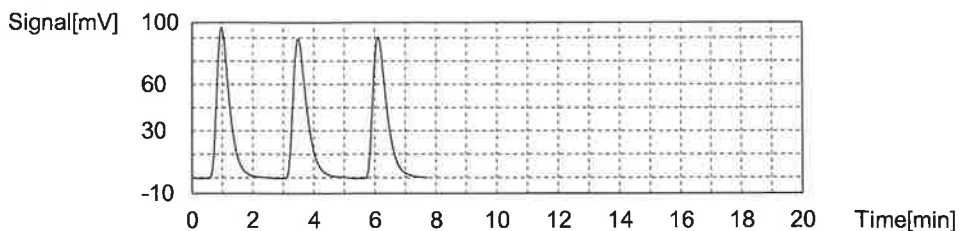
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.298mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	291.1	1.290mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:17:35 AM
2	292.2	1.295mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:23:10 AM
3	295.4	1.309mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:27:56 AM

Mean Area 292.9
Mean Conc. 1.298mg/L



Sample

Sample Name: L2453639-02
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status Completed
Chk. Result

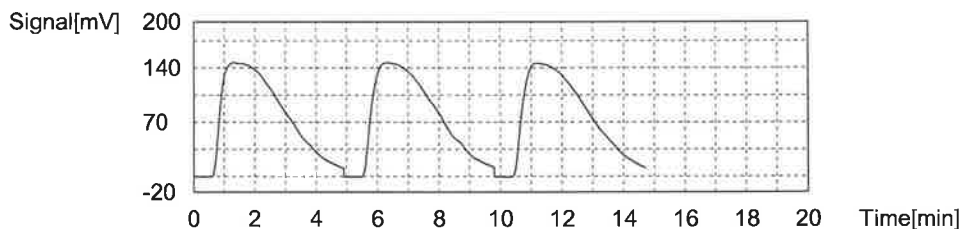
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:8.972mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2037	8.983mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:41:24 AM
2	2039	8.992mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:49:33 AM
3	2028	8.943mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:57:34 AM

Mean Area 2035
Mean Conc. 8.972mg/L



Sample

Sample Name: L2453639-04
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status Completed
Chk. Result

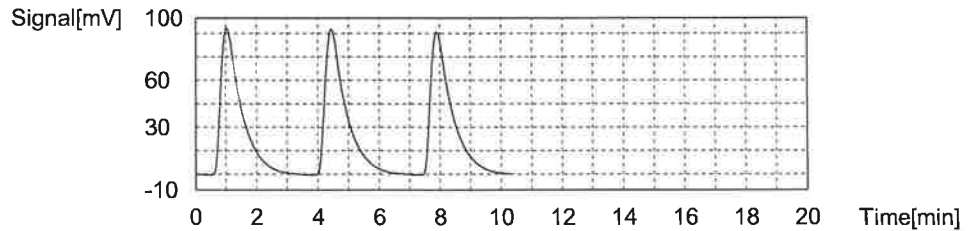
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.959mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	437.8	1.937mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:09:31 AM
2	445.2	1.969mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:15:05 AM
3	445.6	1.971mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:20:39 AM

Mean Area 442.9
Mean Conc. 1.959mg/L



Sample

Sample Name: L2453894-01
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status Completed
Chk. Result

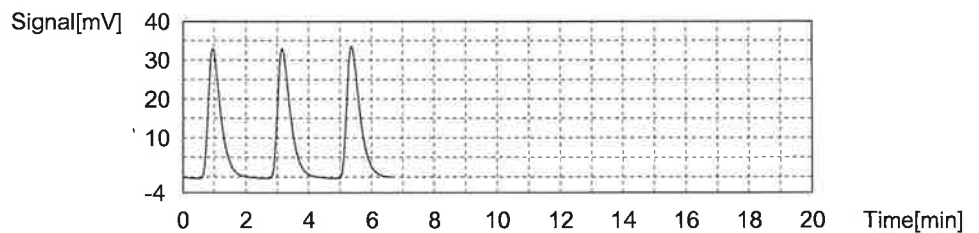
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.4372mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	94.59	0.4245mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:31:25 AM
2	97.29	0.4364mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:35:43 AM
3	100.5	0.4506mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:40:01 AM

Mean Area 97.46
Mean Conc. 0.4372mg/L



Sample

Sample Name: L2453894-02
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.9479mg/L

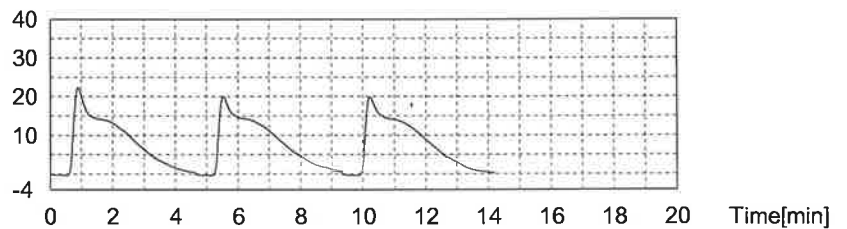
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	214.0	0.9506mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:53:13 AM
2	211.0	0.9374mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:00:02 AM
3	215.1	0.9555mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:07:06 AM

Mean Area 213.4
Mean Conc. 0.9479mg/L

Signal[mV]



Sample

Sample Name: L2453894-03
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

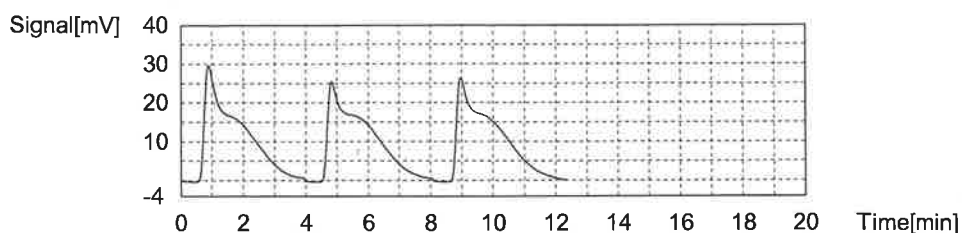
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.9784mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	218.2	0.9691mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:19:36 AM
2	218.8	0.9718mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:26:38 AM
3	223.9	0.9943mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:33:02 AM

Mean Area 220.3
Mean Conc. 0.9784mg/L



Sample

Sample Name: L2453894-04
Sample ID: X RPD
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result:

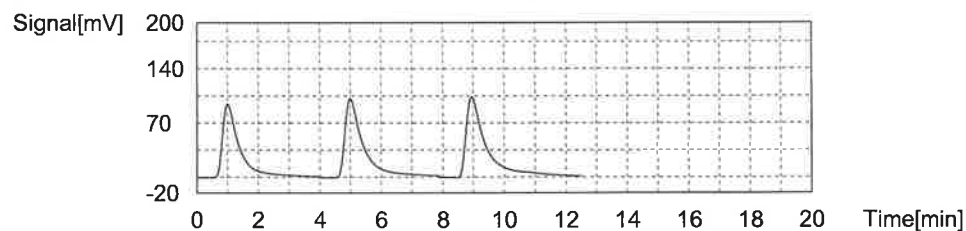
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.894mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	370.2	1.639mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:45:34 AM
2	427.9	1.893mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:51:37 AM
3	486.5	2.151mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:58:35 AM

Mean Area 428.2
Mean Conc. 1.894mg/L



Sample

Sample Name: L2453894-05
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result:

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.614mg/L

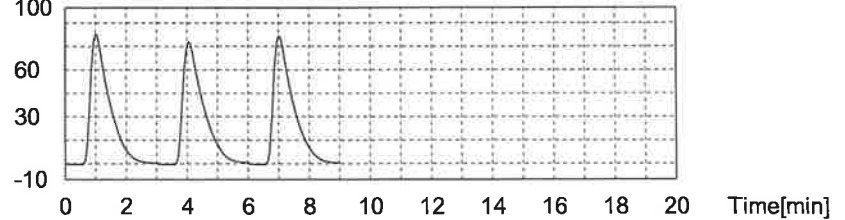
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	361.6	1.601mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:10:10 AM
2	366.2	1.621mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:15:17 AM
3	365.8	1.619mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:20:26 AM

Mean Area 364.5
Mean Conc. 1.614mg/L

Signal[mV] 100



Sample

Sample Name: CCV
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.971mg/L

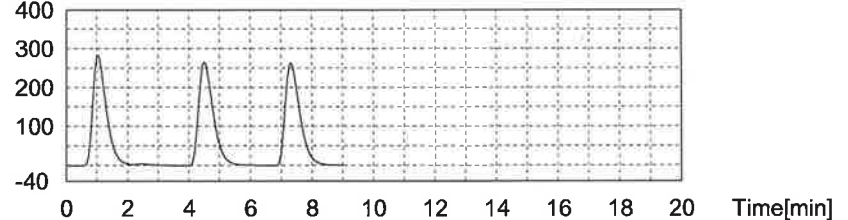
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	898.4	3.966mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:38:33 AM
2	902.0	3.982mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:43:28 AM
3	898.4	3.966mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:48:20 AM

Mean Area 899.6
Mean Conc. 3.971mg/L

Signal[mV] 400



Sample

Sample Name: CCB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.06922mg/L

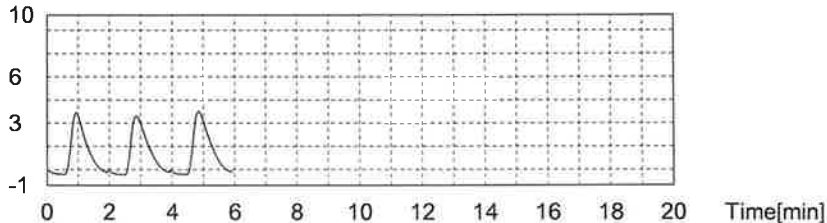
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.10	0.06549mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 8:58:49 AM
2	13.83	0.06870mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:03:37 AM
3	14.91	0.07346mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:07:57 AM

Mean Area 13.95
Mean Conc. 0.06922mg/L

Signal[mV]



Sample

Sample Name: L2453894-06
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

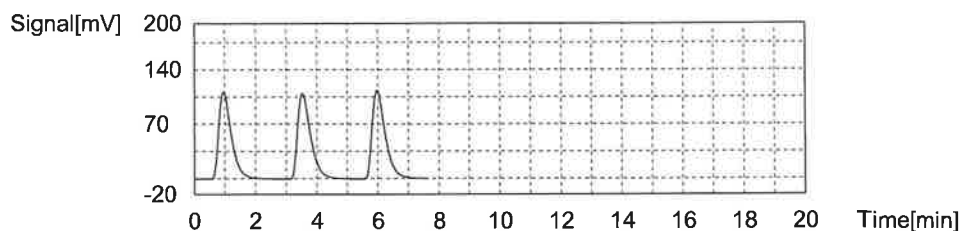
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.501mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	328.9	1.457mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:19:05 AM
2	335.8	1.487mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:23:38 AM
3	352.2	1.560mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:28:23 AM

Mean Area 339.0
Mean Conc. 1.501mg/L



Sample

Sample Name: L2453894-07
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status Completed
Chk. Result

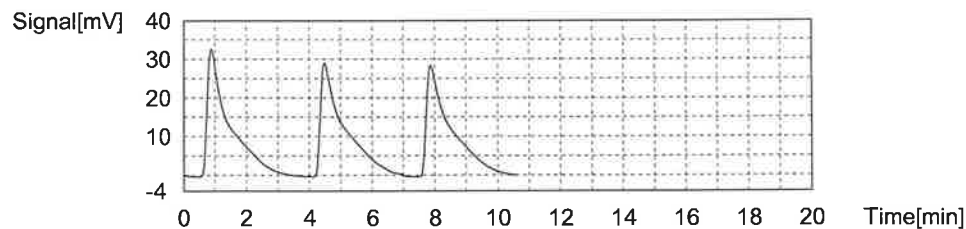
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.7057mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.2	0.7312mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:40:33 AM
2	153.6	0.6845mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:46:01 AM
3	157.4	0.7013mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 9:51:53 AM

Mean Area 158.4
Mean Conc. 0.7057mg/L



Sample

Sample Name: L2453894-08
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status Completed
Chk. Result

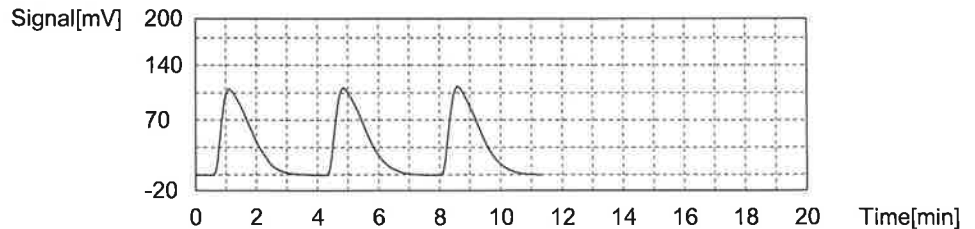
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.335mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	740.5	3.270mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:04:10 AM
2	758.1	3.348mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:10:00 AM
3	767.2	3.388mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:15:59 AM

Mean Area 755.3
Mean Conc. 3.335mg/L



Sample

Sample Name: L2453894-09
Sample ID: X
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

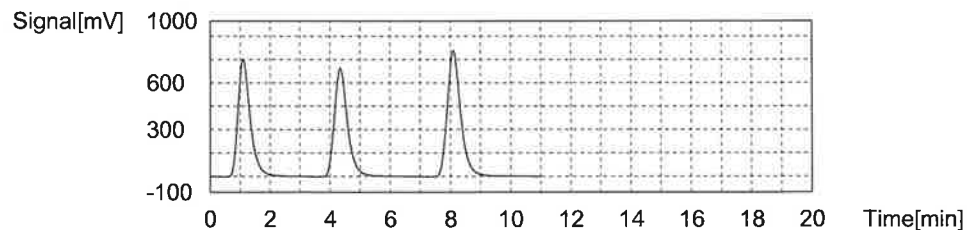
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:10.23mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2196	9.683mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:27:44 AM
2	2175	9.591mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:34:58 AM
3	2589	11.41mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:41:23 AM

Mean Area 2320
Mean Conc. 10.23mg/L



Sample

Sample Name: L2453894-10
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.7480mg/L

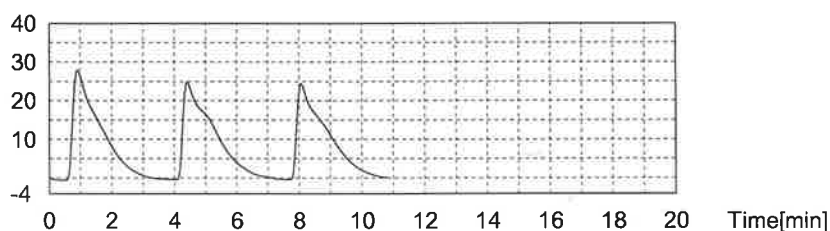
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	172.0	0.7656mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:53:28 AM
2	169.0	0.7524mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 10:59:13 AM
3	163.0	0.7259mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:04:56 AM

Mean Area 168.0
Mean Conc. 0.7480mg/L

Signal[mV]



Sample

Sample Name: L2453894-11 FB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

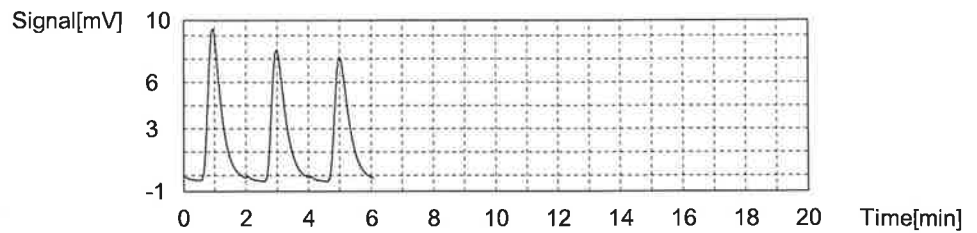
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1248mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.53	0.1335mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:15:32 AM
2	26.10	0.1228mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:19:49 AM
3	25.08	0.1183mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:24:07 AM

Mean Area 26.57
Mean Conc. 0.1248mg/L



Sample

Sample Name: L2453906-01
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

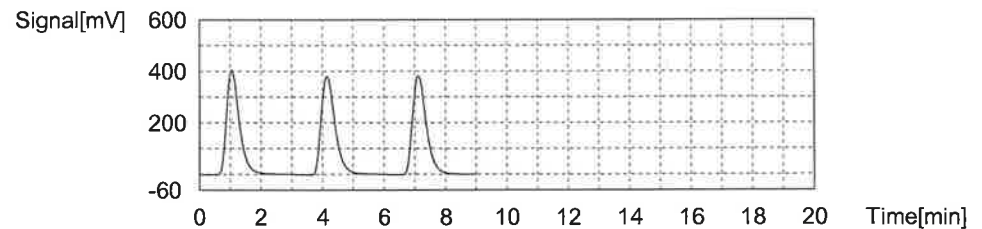
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:5.392mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1212	5.348mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:35:45 AM
2	1227	5.414mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:40:55 AM
3	1227	5.414mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:46:11 AM

Mean Area 1222
Mean Conc. 5.392mg/L



Sample

Sample Name: L2453916-01
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.964mg/L

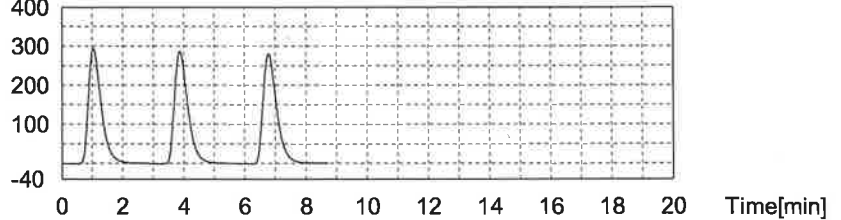
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	890.2	3.930mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 11:57:34 AM
2	901.1	3.978mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:02:34 PM
3	902.8	3.985mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:07:42 PM

Mean Area 898.0
Mean Conc. 3.964mg/L

Signal[mV] 400



Sample

Sample Name: L2454050-01
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.3105mg/L

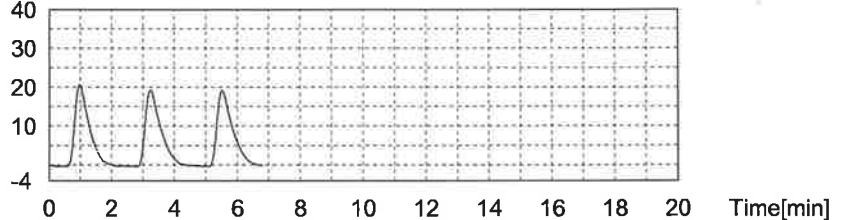
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	68.72	0.3105mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:18:31 PM
2	68.94	0.3115mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:22:54 PM
3	68.46	0.3094mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:27:16 PM

Mean Area 68.71
Mean Conc. 0.3105mg/L

Signal[mV] 40



Sample

Sample Name: L2454050-02
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.6488mg/L

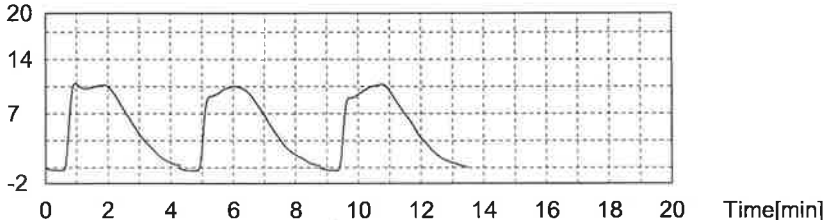
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	141.6	0.6317mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:40:07 PM
2	144.8	0.6458mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:46:52 PM
3	150.1	0.6691mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 12:53:42 PM

Mean Area 145.5
Mean Conc. 0.6488mg/L

Signal[mV] 20



Sample

Sample Name: CCV
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

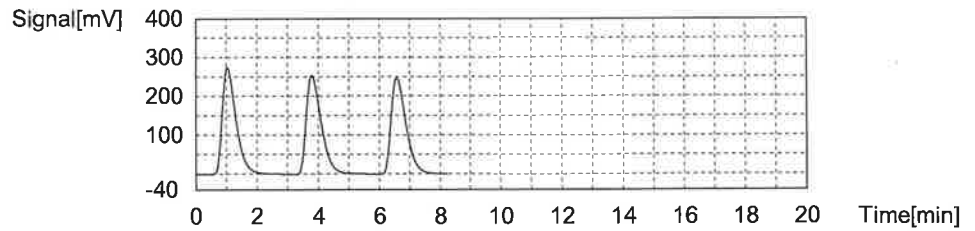
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.878mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	877.0	3.872mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:10:54 PM
2	878.9	3.880mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:15:51 PM
3	879.0	3.881mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:20:41 PM

Mean Area 878.3
Mean Conc. 3.878mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

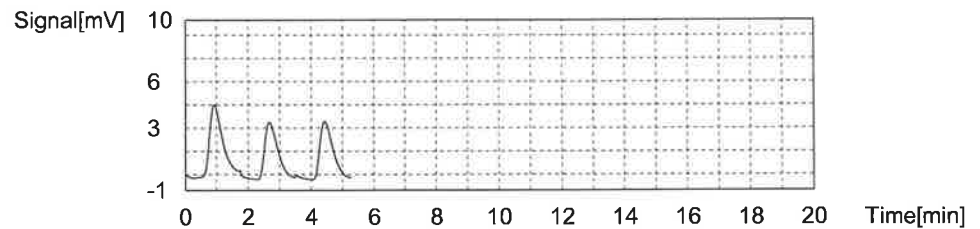
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.05790mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.59	0.06324mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:31:01 PM
2	10.58	0.05439mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:35:25 PM
3	10.96	0.05606mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:39:47 PM

Mean Area 11.38
Mean Conc. 0.05790mg/L



Sample

Sample Name: L2453894-09; 2X
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

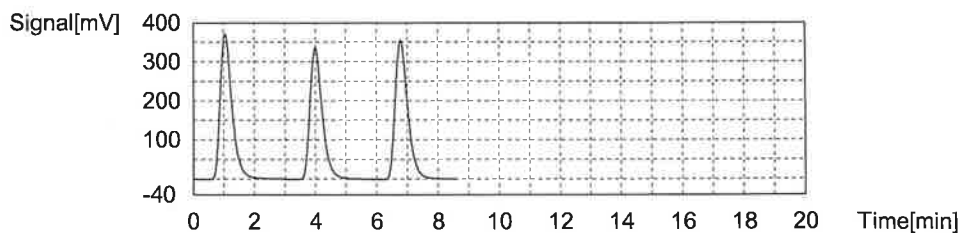
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.476mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1028	4.537mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:51:17 PM
2	973.4	4.297mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 1:56:24 PM
3	1041	4.594mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:01:26 PM

Mean Area 1014
Mean Conc. 4.476mg/L



Sample

Sample Name: L2454050-03 EB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

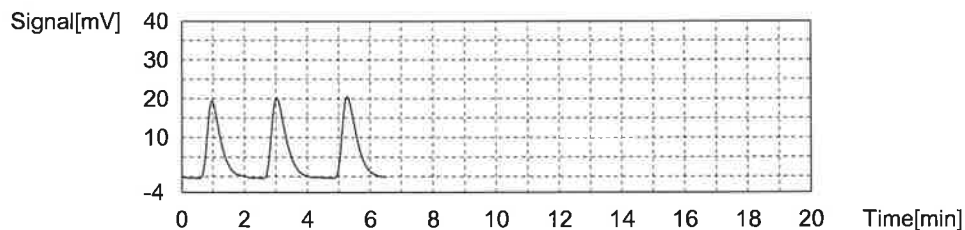
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2925mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	58.01	0.2634mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:12:03 PM
2	67.69	0.3060mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:16:34 PM
3	68.20	0.3083mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:20:54 PM

Mean Area 64.63
Mean Conc. 0.2925mg/L



Sample

Sample Name: L2454050-04
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

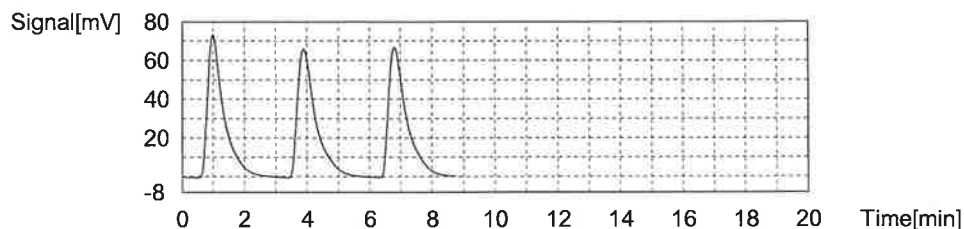
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.213mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	272.5	1.208mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:32:21 PM
2	273.2	1.211mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:37:25 PM
3	275.1	1.220mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:42:28 PM

Mean Area 273.6
Mean Conc. 1.213mg/L



Sample

Sample Name: L2453894-04; 2X
Sample ID: X
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

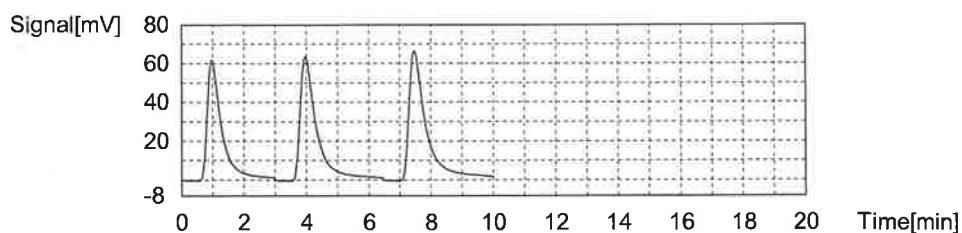
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.027mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	202.8	0.9013mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:54:02 PM
2	234.8	1.042mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 2:59:49 PM
3	256.4	1.137mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:05:34 PM

Mean Area 231.3
Mean Conc. 1.027mg/L



Sample

Sample Name: L2453639-01 DUP
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

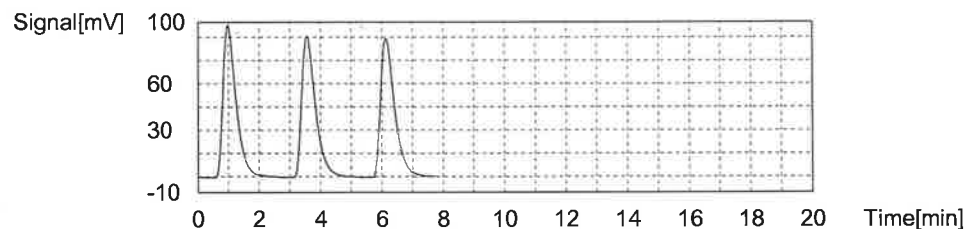
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.318mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	301.5	1.336mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:34:55 PM
2	293.8	1.302mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:39:35 PM
3	297.0	1.316mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:44:19 PM

Mean Area 297.4
Mean Conc. 1.318mg/L



Sample

Sample Name: L2453639-01 SPK 4X
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

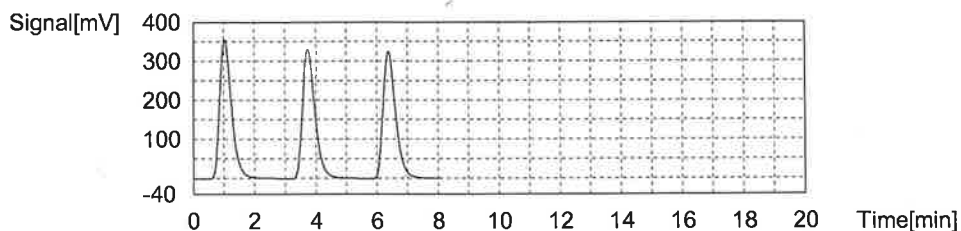
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.241mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	972.1	4.291mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 3:55:35 PM
2	951.4	4.200mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:00:20 PM
3	958.6	4.231mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:05:13 PM

Mean Area 960.7
Mean Conc. 4.241mg/L



Sample

Sample Name: L2453639-04 DUP
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

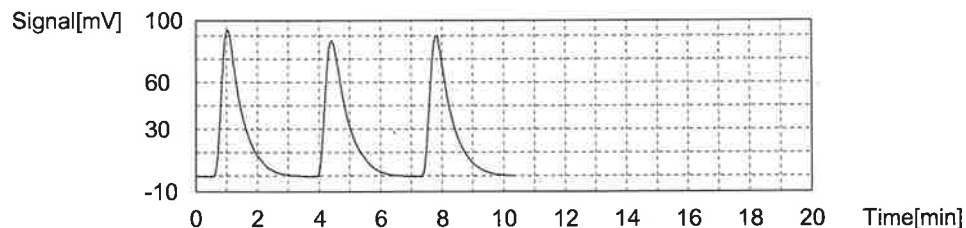
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.896mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	423.6	1.874mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:17:09 PM
2	427.8	1.893mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:22:41 PM
3	434.2	1.921mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:28:24 PM

Mean Area 428.5
Mean Conc. 1.896mg/L



Sample

Sample Name: L2453639-04 SPK 4X
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

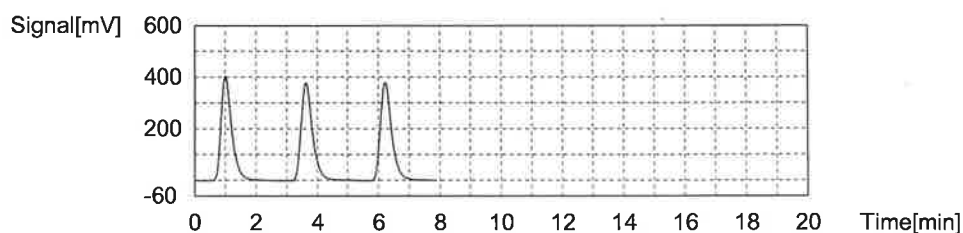
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.461mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1008	4.449mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:39:34 PM
2	1013	4.471mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:45:09 PM
3	1011	4.462mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 4:50:05 PM

Mean Area 1011
Mean Conc. 4.461mg/L



Sample

Sample Name: L2453894-04; 4X
Sample ID: X
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

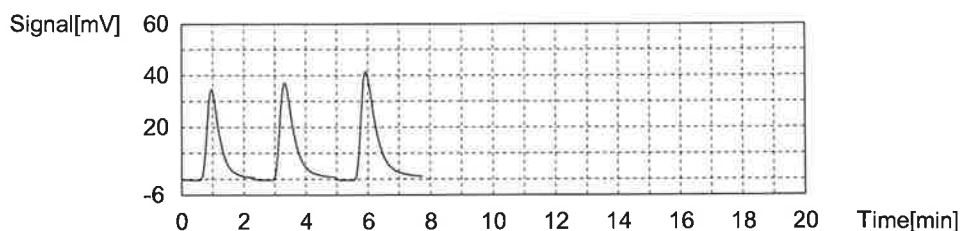
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.5544mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.0	0.4572mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:01:00 PM
2	124.1	0.5545mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:05:50 PM
3	146.1	0.6515mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:10:43 PM

Mean Area 124.1
Mean Conc. 0.5544mg/L



Sample

Sample Name: L2453894-04; 4X
Sample ID: X
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

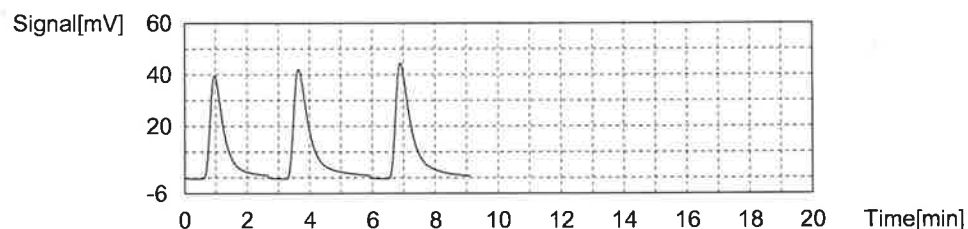
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.6587mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	126.2	0.5638mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:36:29 PM
2	155.6	0.6933mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:41:55 PM
3	161.4	0.7189mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 5:47:15 PM

Mean Area 147.7
Mean Conc. 0.6587mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

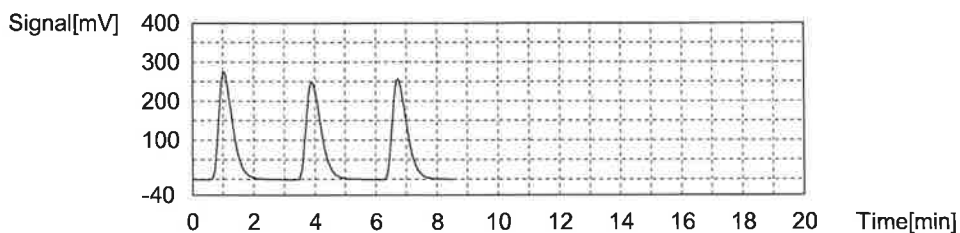
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.893mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	887.0	3.916mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:19:33 PM
2	875.7	3.866mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:24:30 PM
3	882.5	3.896mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:29:26 PM

Mean Area 881.7
Mean Conc. 3.893mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

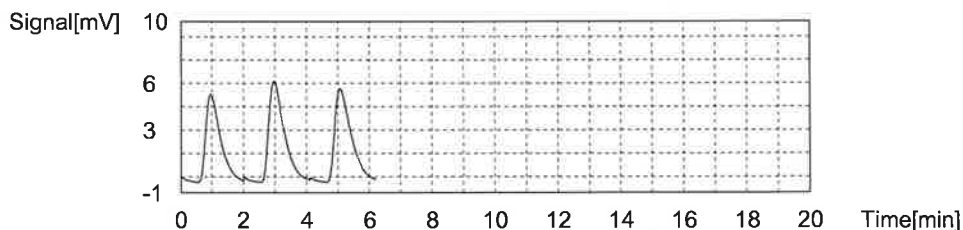
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.09963mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.61	0.08977mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:40:01 PM
2	22.33	0.1062mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:44:25 PM
3	21.61	0.1030mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:48:43 PM

Mean Area 20.85
Mean Conc. 0.09963mg/L



Sample

Sample Name: L2453894-04; 10X
Sample ID: ND MAT
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2927mg/L

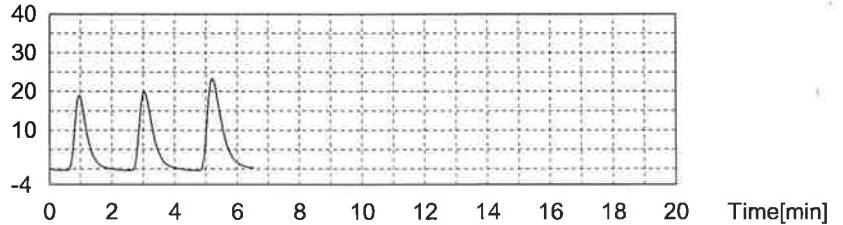
1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.35	0.2428mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 6:59:21 PM
2	62.18	0.2817mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:03:46 PM
3	78.50	0.3536mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:08:12 PM

Mean Area 64.68
Mean Conc. 0.2927mg/L

Signal[mV]



Sample

Sample Name: CCV
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

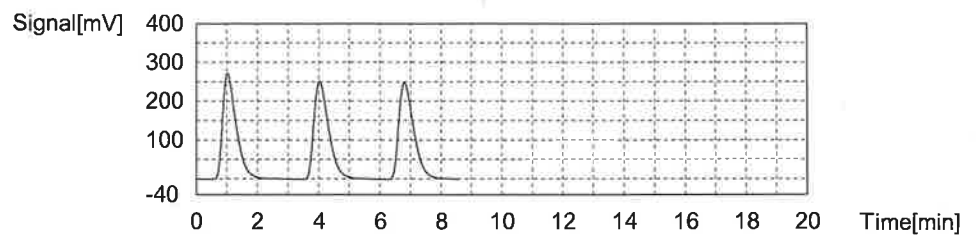
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.845mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	870.0	3.841mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:19:45 PM
2	870.4	3.843mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:24:40 PM
3	872.1	3.850mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:29:51 PM

Mean Area 870.8
Mean Conc. 3.845mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC5 METHOD 3 REPS.met
Status: Completed
Chk. Result

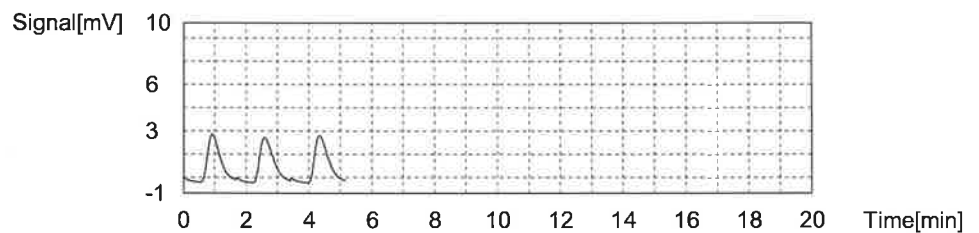
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.04608mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.433	0.04493mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:40:06 PM
2	8.716	0.04617mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:44:39 PM
3	8.934	0.04713mg/L	2500uL	1		09122024 TOC5 CURVE.2024_09_12	9/25/2024 7:48:56 PM

Mean Area 8.694
Mean Conc. 0.04608mg/L



Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453639-01
 Matrix Spike : WG1975849-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/25/24 16:05
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Total Organic Carbon	1.30	16	17.0	98					85-115	15



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453639-04
 Matrix Spike : WG1975849-6
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/25/24 16:50
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Total Organic Carbon	1.96	16	17.8	99					85-115	15

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/25/24 05:27
Dup Sample ID	: WG1975849-3	DUP Analysis Date	: 09/25/24 15:44

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Total Organic Carbon	1.30	1.32	2	15

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/25/24 06:20
Dup Sample ID	: WG1975849-5	DUP Analysis Date	: 09/25/24 16:28

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Total Organic Carbon	1.96	1.90	3	15

Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975849-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/25/24 03:34
 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			
Total Organic Carbon	4.00	4.04	101.					90-110	15



Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

[illegible]

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.



8 Walkup Drive, Westborough, Massachusetts 01581 • 508-898-9220 • www.alphalab.com

Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of TOC

Aqueous samples:

The TOC Talk Software calculates the area of the peaks produced by the analyzer, compares them to the peak area of the calibration standard stored in its memory, and calculates a mean TOC value from two injections in mg/L.

If the sample was manually diluted prior to analysis, the calculated mean must be manually multiplied by the dilution factor. The Reported Detection Limit is also multiplied by the same dilution factor.

$$\text{Result, mg/L} = \frac{\text{area} - \text{y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$



Sequence Logs

DATE: Wed 092524		CURVE ID: TOC5 091224		WORKING STDS ID:	
ANALYST: JONW		STOCK STDS ID:		4 PPM ICV: TW 092524-ICV	
		2000 PPM CURVE SLN: TW-071924-C		4 PPM LCS: TW-092524-LCS	
		2000 PPM ICV/LCS/SPK SLN: TW-071924-W		4 PPM SPK: TW-071924-W	
		400 PPM IC CK STD SLN: TW-091224-		10 PPM IC CK STD: TW-092524-ICV	

POSITION	SAMPLE	DIL X	PH	COMMENTS	POSITION	SAMPLE	DIL X	PH	COMMENTS
1	DC				27	CV			-
2	DCALGVD			-	28	CV			-
3	CV			-	29	94-9	2		-
4	CV			-	30	50-326	1		-
5	CV			-	31	4	1		-
6	CV			-	32	94-9	2		X
7	53639.1	1	2	-	33	39-1 00	1		
8	2	1	2	-	34	1500	4		
9	4	1	2	-	35	400	1		
10	53894.1	1	2	-	36	4500	4		
11	2	1	2	-	37	94-4	4		
12	3	1	2	-	38	↓	4		
13	4	1	2	X 100	39	CV			
14	5	1	2	-	40	CV			
15	CV			-	41	57894.4	10		NA met.
16	CV				42	CV			
17	53894.6	1	2	-	43	CV			
18	7	1	2	-	44	CV			
19	8	1	2	-	45				
20	9	1	2	X	46				
21	10	1	2	-	47				
22	11 m	1	2	-	48				
23	53906.1	1	2	-	49				
24	53916.1	1	2	-	50				
25	54050.1	1	2	-	51				
26	2	1	2	-	52				

Total Dissolved Solids Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: WATER	Dilution Factor	: 1.3
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	61.	13	4.0	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: WATER	Dilution Factor	: 1.3
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	220	13	4.0	

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	ND	10	3.1	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: WATER	Dilution Factor	: 1.3
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	110	13	4.0	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975858-1
 Client ID : WG1975858-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 121,2540C
 Lab File ID : WG1975858.pdf
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/25/24 03:27
 Dilution Factor : 1
 Analyst : DEW
 Instrument ID : BALANCE#22
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	ND	10	3.1	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975858-3	Date Collected	: 09/18/24 10:05
Client ID	: WG1975858-3 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: WATER	Dilution Factor	: 1.3
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	210	13	4.0	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975858-4	Date Collected	: 09/18/24 10:35
Client ID	: WG1975858-4 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/25/24 03:27
Sample Matrix	: WATER	Dilution Factor	: 1.3
Analytical Method	: 121,2540C	Analyst	: DEW
Lab File ID	: WG1975858.pdf	Instrument ID	: BALANCE#22
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Solids, Total Dissolved	660	13	4.0	



Sample Raw Data

Wet Chemistry Gravimetric ELN

Printed: SEP-26-24 12:25:18

WorkGroup	WG1975858		Temp In (C)	180	Temp In (C)	180	Temp In (C)	180	Temp In (C)	180	Temp In (C)	180	Temp In (C)	180	
Title	Solids, Total Dissolved		Temp Out (C)	180	Temp Out (C)	180	Temp Out (C)	180	Temp Out (C)	180	Temp Out (C)	180	Temp Out (C)	180	
Method	SM2540C		Time In	26-SEP-24 01:25	Time In	26-SEP-24 07:34	Time In	26-SEP-24 07:47	Time In	26-SEP-24 09:34	Time In	26-SEP-24 11:45	Time In	26-SEP-24 11:45	
Instrument	BALANCE#22		Time Out	26-SEP-24 04:28	Time Out	26-SEP-24 07:42	Time Out	26-SEP-24 09:22	Time Out	26-SEP-24 11:45	Time Out	26-SEP-24 11:45	Time Out	26-SEP-24 11:45	
			Evaporation	Temp In (C)	Time In							LCS Lot #	TrueValue	Units	
				90	25-SEP-24 11:39							082724D	500	mg/l	
Sample #	Analysis Date	Analyst	Cup ID	Filter Lot	Tare Weight (gm)	Sample Volume (ml)	Net Weight (1) (gm)	Net Weight (2) (gm)	Net Weight (3) (gm)	Net Weight (4) (gm)	Net Weight (5) (gm)	Result mg/L	Dil	Comment	
L2453081-06	25-SEP-24 03:27	DEB WHELAN	RA	77340422	112.4803	80	112.7948	112.7945				3927.50	1.3		
L2453081-07	25-SEP-24 03:27	DEB WHELAN	BQ	77340422	147.4159	80	147.4778	147.4798	147.4799			773.75	1.3		
L2453389-02	25-SEP-24 03:27	DEB WHELAN	SW	77340422	130.1404	80	130.4058	130.4061				3317.50	1.3		
L2453389-03	25-SEP-24 03:27	DEB WHELAN	MB	77340422	142.4833	80	142.8397	142.8396				4453.75	1.3		
L2453389-04	25-SEP-24 03:27	DEB WHELAN	RB	77340422	137.8453	80	137.8948	137.8951				618.75	1.3		
L2453389-05	25-SEP-24 03:27	DEB WHELAN	LC	77340422	143.2097	80	143.261	143.2619	143.2622			641.25	1.3		
L2453389-06	25-SEP-24 03:27	DEB WHELAN	AD	77340422	128.8462	80	129.1143	129.1146				3351.25	1.3		
L2453389-08	25-SEP-24 03:27	DEB WHELAN	BH	77340422	132.6358	80	132.7968	132.7969				2012.50	1.3		
L2453639-01	25-SEP-24 03:27	DEB WHELAN	PW	77340422	134.8162	80	134.8363	134.8364				251.25	1.3	T5	
L2453639-02	25-SEP-24 03:27	DEB WHELAN	ER	77340422	133.0697	80	133.1248	133.1245				685.00	1.3		
L2453639-04	25-SEP-24 03:27	DEB WHELAN	LN	77340422	147.2976	80	147.3225	147.3224				310.00	1.3		
L2453954-02	25-SEP-24 03:27	DEB WHELAN	RG	77340422	137.1451	100	137.166	137.1661				209.00	1	EFF	
L2454050-01	25-SEP-24 03:27	DEB WHELAN	RM	77340422	135.004	80	135.0093	135.0089				61.25	1.3		
L2454050-02	25-SEP-24 03:27	DEB WHELAN	XM	77340422	128.397	80	128.4146	128.4144				217.50	1.3		
L2454050-03	25-SEP-24 03:27	DEB WHELAN	SQ	77340422	139.1392	100	139.1386	139.1387				-6.00	1	EB	
L2454050-04	25-SEP-24 03:27	DEB WHELAN	RF	77340422	123.4291	80	123.4376	123.4379				106.25	1.3		
L2454059-01	25-SEP-24 03:27	DEB WHELAN	XE	77340422	139.0291	80	139.0518	139.0518				283.75	1.3		
L2454059-02	25-SEP-24 03:27	DEB WHELAN	FD	77340422	150.9708	80	150.975	150.9769	150.9792			52.50	1.3		
L2454081-01	25-SEP-24 03:27	DEB WHELAN	OW	77340422	144.0249	80	144.1189	144.1185				1170.00	1.3	EFF	
L2454081-02	25-SEP-24 03:27	DEB WHELAN	XY	77340422	136.4121	80	136.5106	136.5102				1226.25	1.3	INF	
WG1975858-1	25-SEP-24 03:27	DEB WHELAN	EU	77340422	63.7406	100	63.7408	63.7404				-2.00	1	T4	
WG1975858-2	25-SEP-24 03:27	DEB WHELAN	FD	77340422	66.0871	50	66.1102	66.1105				462.00	2		
WG1975858-3	25-SEP-24 03:27	DEB WHELAN	PS	77340422	135.375	80	135.3921	135.3936	135.3932			213.75	1.3		
WG1975858-4	25-SEP-24 03:27	DEB WHELAN	OG	77340422	138.4311	80	138.4912	138.4936	138.4839			660.00	1.3		

Quality Control

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/25/24 03:27
Dup Sample ID	: WG1975858-3	DUP Analysis Date	: 09/25/24 03:27

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Solids, Total Dissolved	250	210	17 Q	10



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/25/24 03:27
Dup Sample ID	: WG1975858-4	DUP Analysis Date	: 09/25/24 03:27

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Solids, Total Dissolved	680	660	3	10

Form 7

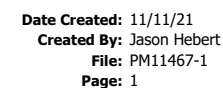
Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975858-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/25/24 03:27
 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			
Solids, Total Dissolved	500.	460.	92.					80-120	10

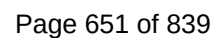


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of TDS

$$\text{mgTDS/L} = \frac{(A - B) \times 1000}{\text{Sample volume, (L)}}$$

Where:

A = Final weight (weight of dish + dried residue, g)

B = Initial weight (weight of clean dish, g)

Alkalinity Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 10:15
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2320B	Analyst	: MKT
Lab File ID	: 240924_csv.csv	Instrument ID	: TITR5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg CaCO ₃ /L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	27.8	2.00	NA	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 10:22
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2320B	Analyst	: MKT
Lab File ID	: 240924_csv.csv	Instrument ID	: TITR5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg CaCO3/L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	18.9	2.00	NA	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 10:24
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 121,2320B	Analyst	: MKT
Lab File ID	: 240924_csv.csv	Instrument ID	: TITR5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg CaCO ₃ /L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 10:26
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2320B	Analyst	: MKT
Lab File ID	: 240924_csv.csv	Instrument ID	: TITR5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg CaCO ₃ /L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	122.	2.00	NA	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975412-1
 Client ID : WG1975412-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 121,2320B
 Lab File ID : 240924_csv.csv
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/24/24 07:52
 Dilution Factor : 1
 Analyst : MKT
 Instrument ID : TITR5
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg CaCO ₃ /L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1975412-3	Date Collected	: 09/19/24 09:11
Client ID	: MW-4DDUP	Date Received	: 09/19/24
Sample Location	:	Date Analyzed	: 09/24/24 10:17
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 121,2320B	Analyst	: MKT
Lab File ID	: 240924_csv.csv	Instrument ID	: TITR5
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg CaCO ₃ /L			Qualifier
		Results	RL	MDL	
471-34-1	Alkalinity, Total	27.0	2.00	NA	



Sample Raw Data

Results Editor



Result Overview

Sample start t	Zero poin	Unit of Ze	Data mar	Slope 1 (C	Unit of Slo	Data mar	Sensor ty	List of sta	Standard	Comment	Temperat
	7.186	pH		-56.14	mV/pH						

Results Editor



Result Overview

Sample ID1	Potentia	Unit of P	Data ma	Sample start	Volume	Unit of V	Density	Unit of D	Cor	Uni	Tempera	Unit of T	Commer
--	7.05	pH		9/24/2024 7	0	mL	1.0	g/mL	1.0		25.0	°C	

Titration report



Method

Method ID	Alk Total (2)	Release state	Released
Name	EP/EP	Modified by	SystemInternal
Modified on	10/14/2023 11:44:43 AM		

Summary

Samples

	Sample ID	Name	Result	State
1	Rinse,MKT	Sample size	50 mL	
		Potential R4	7.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.935 mL	OK
		Consumption 4.2 R3	0.940 mL	OK
		Content R5	18.700 mg/L	OK
		ALK LOW R6	18.600 mg/L	OK
2	Rinse,MKT	Sample size	50 mL	
		Potential R4	5.52 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.055 mL	OK
		Consumption 4.2 R3	0.059 mL	OK
		Content R5	1.100 mg/L	OK
		ALK LOW R6	1.020 mg/L	OK
3	WG1975412-1	Sample size	50 mL	
		Potential R4	5.20 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.034 mL	OK
		Consumption 4.2 R3	0.040 mL	OK
		Content R5	0.680 mg/L	OK
		ALK LOW R6	0.560 mg/L	OK
4	WG1975412-2	Sample size	50 mL	
		Potential R4	10.87 pH	OK
		Consumption 8.3 R1	4.891 mL	OK
		Consumption 4.5 R2	5.270 mL	OK
		Consumption 4.2 R3	5.277 mL	OK
		Content R5	105.400 mg/L	OK
		ALK LOW R6	105.260 mg/L	OK
5	I2453894-01	Sample size	50 mL	
		Potential R4	5.61 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.746 mL	OK
		Consumption 4.2 R3	3.767 mL	OK
		Content R5	74.920 mg/L	OK
		ALK LOW R6	74.500 mg/L	OK
6	I2453894-02	Sample size	50 mL	

Titration report

LabX

		Potential R4	5.90 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.525 mL	OK
		Consumption 4.2 R3	8.628 mL	OK
		Content R5	170.500 mg/L	OK
		ALK LOW R6	168.440 mg/L	OK
7	I2453894-03	Sample size	50 mL	
		Potential R4	6.16 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.915 mL	OK
		Consumption 4.2 R3	13.018 mL	OK
		Content R5	258.300 mg/L	OK
		ALK LOW R6	256.240 mg/L	OK
8	I2453894-04	Sample size	50 mL	
		Potential R4	7.91 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.248 mL	OK
		Consumption 4.2 R3	6.264 mL	OK
		Content R5	124.960 mg/L	OK
		ALK LOW R6	124.640 mg/L	OK
9	I2453894-05	Sample size	50 mL	
		Potential R4	6.18 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.658 mL	OK
		Consumption 4.2 R3	8.738 mL	OK
		Content R5	173.160 mg/L	OK
		ALK LOW R6	171.560 mg/L	OK
10	I2453894-06	Sample size	50 mL	
		Potential R4	6.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	18.769 mL	OK
		Consumption 4.2 R3	18.969 mL	OK
		Content R5	375.380 mg/L	OK
		ALK LOW R6	371.380 mg/L	OK
11	I2453894-07	Sample size	50 mL	
		Potential R4	6.42 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	14.890 mL	OK
		Consumption 4.2 R3	15.045 mL	OK
		Content R5	297.800 mg/L	OK
		ALK LOW R6	294.700 mg/L	OK
12	I2453894-08	Sample size	50 mL	
		Potential R4	6.46 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.443 mL	OK
		Consumption 4.2 R3	14.194 mL	OK
		Content R5	248.860 mg/L	OK

Titration report

LabX

13	I2453894-09	ALK LOW R6	213.840 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.92 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.225 mL	OK
		Consumption 4.2 R3	3.239 mL	OK
		Content R5	64.500 mg/L	OK
14	I2453894-10	ALK LOW R6	64.220 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.48 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	15.214 mL	OK
		Consumption 4.2 R3	15.358 mL	OK
		Content R5	304.280 mg/L	OK
15	I2453894-11	ALK LOW R6	301.400 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.35 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.093 mL	OK
		Consumption 4.2 R3	0.100 mL	OK
		Content R5	1.860 mg/L	OK
16	I2453894-11 CONF	ALK LOW R6	1.720 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.15 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.072 mL	OK
		Consumption 4.2 R3	0.080 mL	OK
		Content R5	1.440 mg/L	OK
17	I2454050-01	ALK LOW R6	1.280 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.44 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.391 mL	OK
		Consumption 4.2 R3	1.411 mL	OK
		Content R5	27.820 mg/L	OK
18	WG1975412-3	ALK LOW R6	27.420 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.50 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.351 mL	OK
		Consumption 4.2 R3	1.367 mL	OK
		Content R5	27.020 mg/L	OK
19	WG1975412-4	ALK LOW R6	26.700 mg/L	OK
		Sample size	50 mL	
		Potential R4	9.30 pH	OK
		Consumption 8.3 R1	2.153 mL	OK
		Consumption 4.5 R2	6.329 mL	OK

Titration report



		Consumption 4.2 R3	6.333 mL	OK
		Content R5	126.580 mg/L	OK
		ALK LOW R6	126.500 mg/L	OK
20	I2454050-02	Sample size	50 mL	
		Potential R4	5.37 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.959 mL	OK
		Consumption 4.2 R3	0.975 mL	OK
		Content R5	19.180 mg/L	OK
		ALK LOW R6	18.860 mg/L	OK
21	I2454050-03	Sample size	50 mL	
		Potential R4	5.49 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.090 mL	OK
		Consumption 4.2 R3	0.094 mL	OK
		Content R5	1.800 mg/L	OK
		ALK LOW R6	1.720 mg/L	OK
22	I2454050-03 CONF	Sample size	50 mL	
		Potential R4	5.24 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.070 mL	OK
		Consumption 4.2 R3	0.075 mL	OK
		Content R5	1.400 mg/L	OK
		ALK LOW R6	1.300 mg/L	OK
23	I2454050-04	Sample size	50 mL	
		Potential R4	5.71 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.121 mL	OK
		Consumption 4.2 R3	6.228 mL	OK
		Content R5	122.420 mg/L	OK
		ALK LOW R6	120.280 mg/L	OK
24	I2454051-01	Sample size	50 mL	
		Potential R4	6.37 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	18.185 mL	OK
		Consumption 4.2 R3	18.385 mL	OK
		Content R5	363.700 mg/L	OK
		ALK LOW R6	359.700 mg/L	OK
25	I2454051-02	Sample size	50 mL	
		Potential R4	6.31 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
26	I2454051-03	Sample size	50 mL	
		Potential R4	6.81 pH	OK

Titration report

LabX

		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.411 mL	OK
		Consumption 4.2 R3	12.549 mL	OK
		Content R5	248.220 mg/L	OK
		ALK LOW R6	245.460 mg/L	OK
27	I2454051-04	Sample size	50 mL	
		Potential R4	6.36 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.129 mL	OK
		Consumption 4.2 R3	8.219 mL	OK
		Content R5	162.580 mg/L	OK
		ALK LOW R6	160.780 mg/L	OK
28	I2454051-05	Sample size	50 mL	
		Potential R4	7.47 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	15.364 mL	OK
		Consumption 4.2 R3	15.529 mL	OK
		Content R5	307.280 mg/L	OK
		ALK LOW R6	303.980 mg/L	OK
29	I2454051-02 2x+10	Sample size	50 mL	
		Potential R4	5.51 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.920 mL	OK
		Consumption 4.2 R3	3.019 mL	OK
		Content R5	58.400 mg/L	OK
		ALK LOW R6	56.420 mg/L	OK
30	xLCS	Sample size	50 mL	
		Potential R4	10.86 pH	OK
		Consumption 8.3 R1	4.941 mL	OK
		Consumption 4.5 R2	5.232 mL	OK
		Consumption 4.2 R3	5.240 mL	OK
		Content R5	104.640 mg/L	OK
		ALK LOW R6	104.480 mg/L	OK
31	WG1975570-3	Sample size	50 mL	
		Potential R4	5.38 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.045 mL	OK
		Consumption 4.2 R3	0.049 mL	OK
		Content R5	0.900 mg/L	OK
		ALK LOW R6	0.820 mg/L	OK
32	I2454059-01	Sample size	50 mL	
		Potential R4	5.21 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.943 mL	OK
		Consumption 4.2 R3	0.981 mL	OK
		Content R5	18.860 mg/L	OK
		ALK LOW R6	18.100 mg/L	OK

Titration report

LabX

33	I2454059-02	Sample size	50 mL	
		Potential R4	5.44 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.212 mL	OK
		Consumption 4.2 R3	1.235 mL	OK
		Content R5	24.240 mg/L	OK
		ALK LOW R6	23.780 mg/L	OK
34	I2454352-01	Sample size	50 mL	
		Potential R4	5.44 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.452 mL	OK
		Consumption 4.2 R3	1.501 mL	OK
		Content R5	29.040 mg/L	OK
		ALK LOW R6	28.060 mg/L	OK
35	WG1975570-4	Sample size	50 mL	
		Potential R4	5.40 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.093 mL	OK
		Consumption 4.2 R3	1.134 mL	OK
		Content R5	21.860 mg/L	OK
		ALK LOW R6	21.040 mg/L	OK
36	I2453880-01	Sample size	50 mL	
		Potential R4	5.56 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.916 mL	OK
		Consumption 4.2 R3	1.936 mL	OK
		Content R5	38.320 mg/L	OK
		ALK LOW R6	37.920 mg/L	OK
37	WG1975567-3	Sample size	50 mL	
		Potential R4	5.58 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.907 mL	OK
		Consumption 4.2 R3	1.932 mL	OK
		Content R5	38.140 mg/L	OK
		ALK LOW R6	37.640 mg/L	OK
38	WG1975567-4	Sample size	50 mL	
		Potential R4	9.98 pH	OK
		Consumption 8.3 R1	4.153 mL	OK
		Consumption 4.5 R2	7.357 mL	OK
		Consumption 4.2 R3	7.362 mL	OK
		Content R5	147.140 mg/L	OK
		ALK LOW R6	147.040 mg/L	OK
39	I2453880-02	Sample size	50 mL	
		Potential R4	5.55 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.935 mL	OK
		Consumption 4.2 R3	1.964 mL	OK

Titration report

LabX

40	I2453880-03	Content R5	38.700 mg/L	OK
		ALK LOW R6	38.120 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.58 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.189 mL	OK
		Consumption 4.2 R3	3.221 mL	OK
41	I2453908-01	Content R5	63.780 mg/L	OK
		ALK LOW R6	63.140 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.62 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.261 mL	OK
		Consumption 4.2 R3	2.303 mL	OK
42	Xdup	Content R5	45.220 mg/L	OK
		ALK LOW R6	44.380 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.59 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.260 mL	OK
		Consumption 4.2 R3	2.296 mL	OK
43	I2453913-01	Content R5	45.200 mg/L	OK
		ALK LOW R6	44.480 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.69 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.968 mL	OK
		Consumption 4.2 R3	2.995 mL	OK
44	I2453926-01	Content R5	59.360 mg/L	OK
		ALK LOW R6	58.820 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.77 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.315 mL	OK
		Consumption 4.2 R3	6.371 mL	OK
45	I2454068-01	Content R5	126.300 mg/L	OK
		ALK LOW R6	125.180 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.19 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.422 mL	OK
		Consumption 4.2 R3	0.485 mL	OK
46	I2454068-03	Content R5	8.440 mg/L	OK
		ALK LOW R6	7.180 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.60 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK

Titration report

LabX

		Consumption 4.5 R2	2.239 mL	OK
		Consumption 4.2 R3	2.322 mL	OK
		Content R5	44.780 mg/L	OK
		ALK LOW R6	43.120 mg/L	OK
47	I2454068-07	Sample size	50 mL	
		Potential R4	5.32 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.891 mL	OK
		Consumption 4.2 R3	2.030 mL	OK
		Content R5	37.820 mg/L	OK
		ALK LOW R6	35.040 mg/L	OK
48	I2454068-08	Sample size	50 mL	
		Potential R4	5.74 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	5.842 mL	OK
		Consumption 4.2 R3	5.986 mL	OK
		Content R5	116.840 mg/L	OK
		ALK LOW R6	113.960 mg/L	OK
49	I2454202-01 2x	Sample size	50 mL	
		Potential R4	7.78 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
50	I2454324-01	Sample size	50 mL	
		Potential R4	5.55 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.351 mL	OK
		Consumption 4.2 R3	6.461 mL	OK
		Content R5	127.020 mg/L	OK
		ALK LOW R6	124.820 mg/L	OK
51	I2454324-02	Sample size	50 mL	
		Potential R4	5.81 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	10.690 mL	OK
		Consumption 4.2 R3	10.826 mL	OK
		Content R5	213.800 mg/L	OK
		ALK LOW R6	211.080 mg/L	OK
52	I2454324-03	Sample size	50 mL	
		Potential R4	5.85 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	11.682 mL	OK
		Consumption 4.2 R3	11.845 mL	OK
		Content R5	233.640 mg/L	OK
		ALK LOW R6	230.380 mg/L	OK
53	I2454324-04	Sample size	50 mL	

Titration report

LabX

		Potential R4	5.58 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.450 mL	OK
		Consumption 4.2 R3	3.527 mL	OK
		Content R5	69.000 mg/L	OK
		ALK LOW R6	67.460 mg/L	OK
54	I2454324-05	Sample size	50 mL	
		Potential R4	5.80 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	5.260 mL	OK
		Consumption 4.2 R3	5.357 mL	OK
		Content R5	105.200 mg/L	OK
		ALK LOW R6	103.260 mg/L	OK
55	I2454324-06	Sample size	50 mL	
		Potential R4	5.80 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.486 mL	OK
		Consumption 4.2 R3	3.516 mL	OK
		Content R5	69.720 mg/L	OK
		ALK LOW R6	69.120 mg/L	OK
56	I2454324-07	Sample size	50 mL	
		Potential R4	5.82 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	4.871 mL	OK
		Consumption 4.2 R3	4.930 mL	OK
		Content R5	97.420 mg/L	OK
		ALK LOW R6	96.240 mg/L	OK
57	I2454202-01 2x+25	Sample size	50 mL	
		Potential R4	4.69 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.678 mL	OK
		Consumption 4.2 R3	10.560 mL	OK
		Content R5	33.560 mg/L	OK
		ALK LOW R6	-144.080 mg/L	OK
58	WG1975567-2	Sample size	50 mL	
		Potential R4	10.84 pH	OK
		Consumption 8.3 R1	4.868 mL	OK
		Consumption 4.5 R2	5.225 mL	OK
		Consumption 4.2 R3	5.231 mL	OK
		Content R5	104.500 mg/L	OK
		ALK LOW R6	104.380 mg/L	OK
59	WG1975567-1	Sample size	50 mL	
		Potential R4	5.26 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.050 mL	OK
		Consumption 4.2 R3	0.056 mL	OK
		Content R5	1.000 mg/L	OK

Titration report

LabX

60	I2453990-01	ALK LOW R6	0.880 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.20 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
61	I2453990-02	ALK LOW R6	NaN mg/L	Not OK
		Sample size	50 mL	
		Potential R4	4.67 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.766 mL	OK
		Consumption 4.2 R3	1.564 mL	OK
		Content R5	15.320 mg/L	OK
62	I2453990-03	ALK LOW R6	-0.640 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.94 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	14.258 mL	OK
		Consumption 4.2 R3	14.719 mL	OK
		Content R5	285.160 mg/L	OK
63	I2453990-04	ALK LOW R6	275.940 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.25 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
64	I2453990-05	ALK LOW R6	NaN mg/L	Not OK
		Sample size	50 mL	
		Potential R4	6.00 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	11.813 mL	OK
		Consumption 4.2 R3	12.200 mL	OK
		Content R5	236.260 mg/L	OK
65	I2453990-06	ALK LOW R6	228.520 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.48 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.661 mL	OK
		Consumption 4.2 R3	3.760 mL	OK
		Content R5	73.220 mg/L	OK
66	I2453990-07	ALK LOW R6	71.240 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.90 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	14.398 mL	OK

Titration report

LabX

67	I2453990-08	Consumption 4.2 R3	14.868 mL	OK
		Content R5	287.960 mg/L	OK
		ALK LOW R6	278.560 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.20 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.499 mL	OK
		Consumption 4.2 R3	1.652 mL	OK
		Content R5	29.980 mg/L	OK
		ALK LOW R6	26.920 mg/L	OK
68	I2453990-09	Sample size	50 mL	
		Potential R4	4.44 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	0.696 mL	OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
		Sample size	50 mL	
		Potential R4	5.92 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
69	I2454036-01	Consumption 4.5 R2	6.099 mL	OK
		Consumption 4.2 R3	6.155 mL	OK
		Content R5	121.980 mg/L	OK
		ALK LOW R6	120.860 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.99 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.692 mL	OK
		Consumption 4.2 R3	8.787 mL	OK
		Content R5	173.840 mg/L	OK
70	I2454036-02	ALK LOW R6	171.940 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.07 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.150 mL	OK
		Consumption 4.2 R3	9.246 mL	OK
		Content R5	183.000 mg/L	OK
		ALK LOW R6	181.080 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.97 pH	OK
71	I2454036-03	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.811 mL	OK
		Consumption 4.2 R3	6.879 mL	OK
		Content R5	136.220 mg/L	OK
		ALK LOW R6	134.860 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.16 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.811 mL	OK
		Consumption 4.2 R3	6.879 mL	OK
72	I2454036-04	Content R5	136.220 mg/L	OK
		ALK LOW R6	134.860 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.16 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.811 mL	OK
		Consumption 4.2 R3	6.879 mL	OK
		Content R5	136.220 mg/L	OK
		ALK LOW R6	134.860 mg/L	OK
		Sample size	50 mL	
73	I2454036-05	Potential R4	6.16 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.811 mL	OK
		Consumption 4.2 R3	6.879 mL	OK
		Content R5	136.220 mg/L	OK
		ALK LOW R6	134.860 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.16 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.811 mL	OK

Titration report

LabX

74	WG1975624-3	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.594 mL	OK
		Consumption 4.2 R3	9.688 mL	OK
		Content R5	191.880 mg/L	OK
		ALK LOW R6	190.000 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.22 pH	OK
75	WG1975624-4	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.585 mL	OK
		Consumption 4.2 R3	9.676 mL	OK
		Content R5	191.700 mg/L	OK
		ALK LOW R6	189.880 mg/L	OK
		Sample size	50 mL	
		Potential R4	7.68 pH	OK
76	I2454036-06	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.922 mL	OK
		Consumption 4.2 R3	15.134 mL	OK
		Content R5	178.440 mg/L	OK
		ALK LOW R6	54.200 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.94 pH	OK
77	I2454036-07	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.829 mL	OK
		Consumption 4.2 R3	6.899 mL	OK
		Content R5	136.580 mg/L	OK
		ALK LOW R6	135.180 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.95 pH	OK
78	I2454036-08	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.814 mL	OK
		Consumption 4.2 R3	6.881 mL	OK
		Content R5	136.280 mg/L	OK
		ALK LOW R6	134.940 mg/L	OK
		Sample size	50 mL	
		Potential R4	6.25 pH	OK
79	I2454036-09	Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	13.873 mL	OK
		Consumption 4.2 R3	14.026 mL	OK
		Content R5	277.460 mg/L	OK
		ALK LOW R6	274.400 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.73 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.188 mL	OK
		Consumption 4.2 R3	0.195 mL	OK
		Content R5	3.760 mg/L	OK
		ALK LOW R6	3.620 mg/L	OK

Titration report

LabX

80	I2454036-09 CONF	Sample size	50 mL	
		Potential R4	5.33 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.171 mL	OK
		Consumption 4.2 R3	0.173 mL	OK
		Content R5	3.420 mg/L	OK
		ALK LOW R6	3.380 mg/L	OK
81	I2454036-10	Sample size	50 mL	
		Potential R4	5.28 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.092 mL	OK
		Consumption 4.2 R3	0.096 mL	OK
		Content R5	1.840 mg/L	OK
		ALK LOW R6	1.760 mg/L	OK
82	I2454036-10 CONF	Sample size	50 mL	
		Potential R4	5.17 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.130 mL	OK
		Consumption 4.2 R3	0.133 mL	OK
		Content R5	2.600 mg/L	OK
		ALK LOW R6	2.540 mg/L	OK
83	I2454218-01	Sample size	50 mL	
		Potential R4	5.82 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.707 mL	OK
		Consumption 4.2 R3	8.885 mL	OK
		Content R5	174.140 mg/L	OK
		ALK LOW R6	170.580 mg/L	OK
84	L2453990-01 5x	Sample size	50 mL	
		Potential R4	5.97 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	4.324 mL	OK
		Consumption 4.2 R3	4.372 mL	OK
		Content R5	86.480 mg/L	OK
		ALK LOW R6	85.520 mg/L	OK
85	L2453990-04 5x	Sample size	50 mL	
		Potential R4	6.10 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	4.673 mL	OK
		Consumption 4.2 R3	4.773 mL	OK
		Content R5	93.460 mg/L	OK
		ALK LOW R6	91.460 mg/L	OK
86	L2453990-09	Sample size	50 mL	
		Potential R4	4.56 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.301 mL	OK
		Consumption 4.2 R3	1.108 mL	OK

Titration report

LabX

87	CCV	Content R5	6.020 mg/L	OK
		ALK LOW R6	-10.120 mg/L	OK
		Sample size	50 mL	
		Potential R4	10.77 pH	OK
		Consumption 8.3 R1	4.964 mL	OK
		Consumption 4.5 R2	5.348 mL	OK
		Consumption 4.2 R3	5.349 mL	OK
88	CCB	Content R5	106.960 mg/L	OK
		ALK LOW R6	106.940 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.09 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.059 mL	OK
		Consumption 4.2 R3	0.069 mL	OK
89	CCV	Content R5	1.180 mg/L	OK
		ALK LOW R6	0.980 mg/L	OK
		Sample size	50 mL	
		Potential R4	10.78 pH	OK
		Consumption 8.3 R1	4.916 mL	OK
		Consumption 4.5 R2	5.283 mL	OK
		Consumption 4.2 R3	5.289 mL	OK
90	CCB	Content R5	105.660 mg/L	OK
		ALK LOW R6	105.540 mg/L	OK
		Sample size	50 mL	
		Potential R4	5.76 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.105 mL	OK
		Consumption 4.2 R3	0.106 mL	OK
		Content R5	2.100 mg/L	OK
		ALK LOW R6	2.080 mg/L	OK

Statistics

R1

Mean	NaN mL	Minimum	2.153 mL
Maximum	4.964 mL	Rel. standard deviation	NaN %
Standard deviation	NaN mL	Samples excluded	0
Total samples	90		

R2

Mean	NaN mL	Minimum	0.034 mL
Maximum	18.769 mL	Rel. standard deviation	NaN %
Standard deviation	NaN mL	Samples excluded	0
Total samples	90		

R3

Titration report



Mean	NaN mL	Minimum	0.040 mL
Maximum	18.969 mL	Rel. standard deviation	NaN %
Standard deviation	NaN mL	Samples excluded	0
Total samples	90		

R4

Mean	6.19 pH	Minimum	4.44 pH
Maximum	10.87 pH	Rel. standard deviation	22.791 %
Standard deviation	1.41 pH	Samples excluded	0
Total samples	90		

R5

Mean	NaN mg/L	Minimum	0.680 mg/L
Maximum	375.380 mg/L	Rel. standard deviation	NaN %
Standard deviation	NaN mg/L	Samples excluded	0
Total samples	90		

R6

Mean	NaN mg/L	Minimum	-144.080 mg/L
Maximum	371.380 mg/L	Rel. standard deviation	NaN %
Standard deviation	NaN mg/L	Samples excluded	0
Total samples	90		

Used Instruments

Name	T7 Excellence Titrator	Serial number	C329519495

Responsible User

Time	Login name	Full name
9/24/2024 7:49:59 AM	SystemInternal	System internal account

(17) Data compression on instrument occurred

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC	Lab Number : L2454050
Project Name : CORAM MATERIALS	Project Number : 2232.0006Y005
Client Sample ID : MW-4D	Matrix : WATER
Lab Sample ID : L2454050-01	
Matrix Spike : WG1975412-4	MS Analysis Date : 09/24/24 10:18
Matrix Spike Dup :	MSD Analysis Date :

Parameter	Sample Conc. (mg CaCO3/L)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg CaCO3/L)	Spike Conc. (mg CaCO3/L)		Spike Added (mg CaCO3/L)	Spike Conc. (mg CaCO3/L)				
Alkalinity, Total	27.8	100	126.	99					86-116	10

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01	Analysis Date	: 09/24/24 10:15
Dup Sample ID	: WG1975412-3	DUP Analysis Date	: 09/24/24 10:17

Parameter	Sample Concentration (mg CaCO ₃ /L)	Duplicate Concentration (mg CaCO ₃ /L)	RPD	RPD Limit
Alkalinity, Total	27.8	27.0	3	10

Form 7

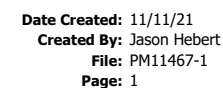
Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975412-2
 Dup Sample ID :

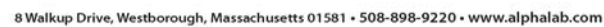
Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/24/24 07:54
 LCSD Analysis Date :

Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg CaCO ₃ /L)	Found (mg CaCO ₃ /L)	%R	True (mg CaCO ₃ /L)	Found (mg CaCO ₃ /L)	%R			
Alkalinity, Total	100.	105.	105.					90-110	10

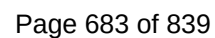


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Alkalinity

$$\text{Alkalinity, mg CaCO}_3/\text{L} = \frac{A \times N \times 50,000}{\text{mL Sample}}$$

Where:

A = mL of the standard acid titrated

N = normality of the standard acid

Results are calculated using Mettler Toledo software.

Standard sample size is 50mL, 0.02N Sulfuric acid for titration

Sequence Logs

CAL	240924	LCS 7.0	7.05 INT:	MKT
pH 4	3295	Titrant:	4193	
pH 7	3386	LCS:	3257	
pH 10	3298	MS:	3255	
LCS	3409			

1 Rinse,MKT	42 Xdup	83 I2454218-01
2 Rinse,MKT	43 I2453913-01	84 I2453990-01 5x
3 WG1975412-1	44 I2453926-01	85 I2453990-04 5x
4 WG1975412-2	45 I2454068-01	86 I2453990-09
5 I2453894-01	46 I2454068-03	87 CCV
6 I2453894-02	47 I2454068-07	88 CCB
7 I2453894-03	48 I2454068-08	89 CCV
8 I2453894-04	49 I2454202-01 2x	90 CCB
9 I2453894-05	50 I2454324-01	91
10 I2453894-06	51 I2454324-02	92
11 I2453894-07	52 I2454324-03	93
12 I2453894-08	53 I2454324-04	94
13 I2453894-09	54 I2454324-05	95
14 I2453894-10	55 I2454324-06	96
15 I2453894-11	56 I2454324-07	97
16 I2453894-11 CONF	57 I2454202-01 2x+25	98
17 I2454050-01	58 WG1975567-2	99
18 WG1975412-3	59 WG1975567-1	100
19 WG1975412-4	60 I2453990-01	101
20 I2454050-02	61 I2453990-02	102
21 I2454050-03	62 I2453990-03	103
22 I2454050-03 CONF	63 I2453990-04	104
23 I2454050-04	64 I2453990-05	105
24 I2454051-01	65 I2453990-06	106
25 I2454051-02	66 I2453990-07	107
26 I2454051-03	67 I2453990-08	108
27 I2454051-04	68 I2453990-09	109
28 I2454051-05	69 I2454036-01	110
29 I2454051-02 2x+10	70 I2454036-02	111
30 xLCS	71 I2454036-03	112
31 WG1975570-3	72 I2454036-04	113
32 I2454059-01	73 I2454036-05	114
33 I2454059-02	74 WG1975624-3	
34 I2454352-01	75 WG1975624-4	2X = 25 mL
35 WG1975570-4	76 I2454036-06	5X = 10 mL
36 I2453880-01	77 I2454036-07	10X = 5 mL
37 WG1975567-3	78 I2454036-08	
38 WG1975567-4	79 I2454036-09	
39 I2453880-02	80 I2454036-09 CONF	
40 I2453880-03	81 I2454036-10	
41 I2453908-01	82 I2454036-10 CONF	

Cyanide Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 15:28
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN092524-C	Instrument ID	: LACHAT6
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	ND	0.005	0.001	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 15:33
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN092524-C	Instrument ID	: LACHAT6
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	ND	0.005	0.001	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 15:34
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN092524-C	Instrument ID	: LACHAT6
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	ND	0.005	0.001	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 15:35
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN092524-C	Instrument ID	: LACHAT6
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	0.003	0.005	0.001	J



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1976059-1
 Client ID : WG1976059-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,9010C/9012B
 Lab File ID : TCN092524-C
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/25/24 15:08
 Dilution Factor : 1
 Analyst : JER
 Instrument ID : LACHAT6
 %Solids : N/A
 Date Digested : 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	ND	0.005	0.001	U



Sample Raw Data

Original Run Filename: OM_9-25-2024_11-31-18AM.OMN Created: 9/25/2024 11:31:18 AM

Original Run Author's Signature: [wetchem16]

Current Run Filename: OM_9-25-2024_11-31-18AM.OMN Last Modified: 9/25/2024 12:18:20 PM

Current Run Author's Signature: [wetchem16]

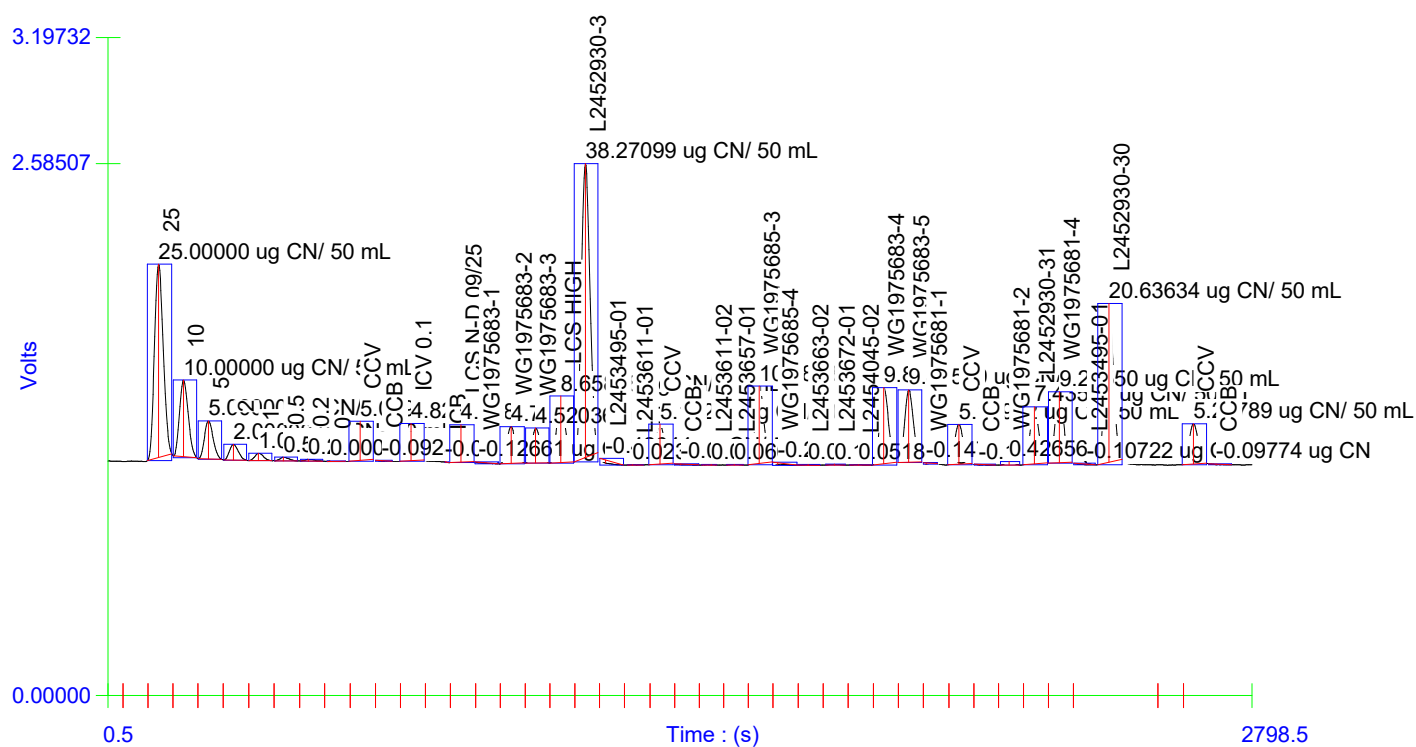
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide (ug CN/ 50 mL)	ADF	MDF	Weight
25	1	S1	25.00000			
10	1	S2	10.00000			
5	1	S3	5.00000			
2	1	S4	2.00000			
1	1	S5	1.00000			
0.5	1	S6	0.50000			
0.2	1	S7	0.20000			
0	1	S8	0.00000			
CCV	1	S3	5.05960			
Known Conc:			0.10000			
Calibration:			Table/Fig. : 1			
CCB	1	S8	-0.09256			
Known Conc:			0.00000			
ICV 0.1	1	1	0.09651			50.00000 g
ICB	1	2	-0.00015			50.00000 g
LCS N-D 09/25	1	3	0.09697			50.00000 g
WG1975683-1	1	4	-0.00253			50.00000 g
WG1975683-2	1	5	0.09476			50.00000 g 95%
WG1975683-3	1	6	0.09041			50.00000 g 90%
LCS HIGH	1	7	0.17317			50.00000 g 87%
X L2452930-30	1	8	0.76542			50.00000 g
X L2453495-01	1	9	-0.00853			50.00000 g
L2453611-01	1	10	0.00047			50.00000 g
CCV	1	S3	5.16259			
Known Conc:			0.10000			
CCB	1	S8	-0.08348			
Known Conc:			0.00000			
L2453611-02	1	11	0.00093			50.00000 g
L2453657-01	1	12	0.00133			50.00000 g
WG1975685-3	1	13	0.20179			50.00000 g 101%
WG1975685-4	1	14	-0.00461			50.00000 g RPD=NC
L2453663-02	1	15	0.00197			50.00000 g
L2453672-01	1	16	0.00266			50.00000 g
L2454045-02	1	17	0.00104			50.00000 g
WG1975683-4	1	18	0.19771			50.00000 g 99%
WG1975683-5	1	19	0.18851			50.00000 g 94%
WG1975681-1	1	20	-0.00590			25.00000 g
CCV	1	S3	5.15972			
Known Conc:			0.10000			
CCB	1	S8	-0.10386			
Known Conc:			0.00000			
WG1975681-2	1	21	0.01706			25.00000 g
L2452930-31	1	22	0.29744			25.00000 g
WG1975681-4	1	23	0.36822			25.00000 g
L2453495-01	1	9	-0.00214			50.00000 g
L2452930-30	1	8	0.82545	2.00		50.00000 g
CCV	1	S3	5.22789			
Known Conc:			0.10000			
CCB	1	S8	-0.09774			
Known Conc:			0.00000			

ACN

WG1975685
WG1975684L2452930-31
L2452930-32

Channel 1 (Cyanide) - Current View



Original Run Filename: OM_9-25-2024_12-27-24PM.OMN Created: 9/25/2024 12:27:24 PM

Original Run Author's Signature: [wetchem16]

Current Run Filename: OM_9-25-2024_12-27-24PM.OMN Last Modified: 9/25/2024 1:32:39 PM

Current Run Author's Signature: [wetchem16]

Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide (ug CN/ 50 mL)	ADF	MDF	Weight
CCV	1	S3	5.15045			
Known Conc:			0.10000			
Calibration: Table/Fig. : 1						
CCB	1	S8	-0.07876			
Known Conc:			0.00000			
WG1975777-1	1	1	0.00020			50.00000 g
WG1975777-2	1	2	0.09132			50.00000 g
WG1975777-3	1	3	0.09559			50.00000 g
LCS HIGH	1	4	0.18183			50.00000 g
L2453084-01	1	5	-0.00296			50.00000 g
L2453084-02	1	6	0.00169			50.00000 g
L2453084-03	1	7	0.00102			50.00000 g
L2453084-04	1	8	0.00921			50.00000 g
L2453084-05	1	9	0.00114			50.00000 g
L2453084-06	1	10	0.00345			50.00000 g
CCV	1	S3	5.24314			
Known Conc:			0.10000			
CCB	1	S8	-0.07533			
Known Conc:			0.00000			
L2453084-07	1	11	0.00174			50.00000 g
L2453084-08	1	12	0.00101			50.00000 g
L2453084-09	1	13	0.00223			50.00000 g
L2453084-10	1	14	-0.00139			50.00000 g
L2453084-11	1	15	0.00059			50.00000 g
L2453084-12	1	16	-0.00128			50.00000 g
L2453084-13	1	17	0.00073			50.00000 g
L2453084-15	1	18	0.00019			50.00000 g
L2453084-16	1	19	0.00200			50.00000 g
WG1975774-1	1	20	-0.07618			1.07220 g
CCV	1	S3	5.37672			
Known Conc:			0.10000			
CCB	1	S8	-0.07106			
Known Conc:			0.00000			
WG1975774-2	1	21	72.11665		2.00	0.58830 g
WG1975774-3	1	22	71.71417		2.00	0.59290 g
LCS HIGH	1	23	8.57450			1.06900 g
L2453440-01	1	24	-0.14866			1.02320 g
L2453615-04	1	25	-0.09372			1.06140 g
WG1975774-4	1	26	7.02336			1.04350 g
WG1975774-5	1	27	7.87697			1.00200 g
L2453615-05	1	28	0.00224			1.08120 g
WG1975774-6	1	29	9.55346			1.06490 g
WG1975774-7	1	30	4.06496			1.09360 g
CCV	1	S3	5.26419			
Known Conc:			0.10000			
CCB	1	S8	-0.05707			
Known Conc:			0.00000			
L2453725-01	1	31	0.07478			1.09310 g
L2453725-02	1	32	0.11065			1.03820 g
L2453725-03	1	33	0.05057			1.08010 g
L2453725-04	1	34	0.05178			1.08490 g
L2453863-13	1	35	0.03634			1.06580 g
L2453863-14	1	36	0.10603			1.07740 g
L2453863-15	1	37	0.17590			1.04960 g
L2454014-01	1	38	0.03611			1.09380 g
L2454014-02	1	39	0.11752			1.09720 g
L2454080-01	1	40	0.20121			1.04960 g
CCV	1	S3	5.35459			
Known Conc:			0.10000			

91%
96%
91%

LCS TV=76mg/Kg

95%
94%
86%
70%
79%
96%
41%

CCB	1	S8	-0.06270			
Known Conc:			0.00000			
L2454080-02	1	41	0.14981			1.05640 g
L2454080-03	1	42	0.07702			1.00400 g
L2454097-02	1	43	0.05660			1.08750 g
L2454097-04	1	44	0.03578			1.09270 g
L2454548-01	1	45	0.21727			1.02830 g
L2454548-02	1	46	0.14635			1.08960 g
L2454548-03	1	47	0.13414			1.02900 g
CCV	1	S3	5.25963			
Known Conc:			0.10000			
CCB	1	S8	0.03532			
Known Conc:			0.00000			

Channel 1 (Cyanide) - Current View

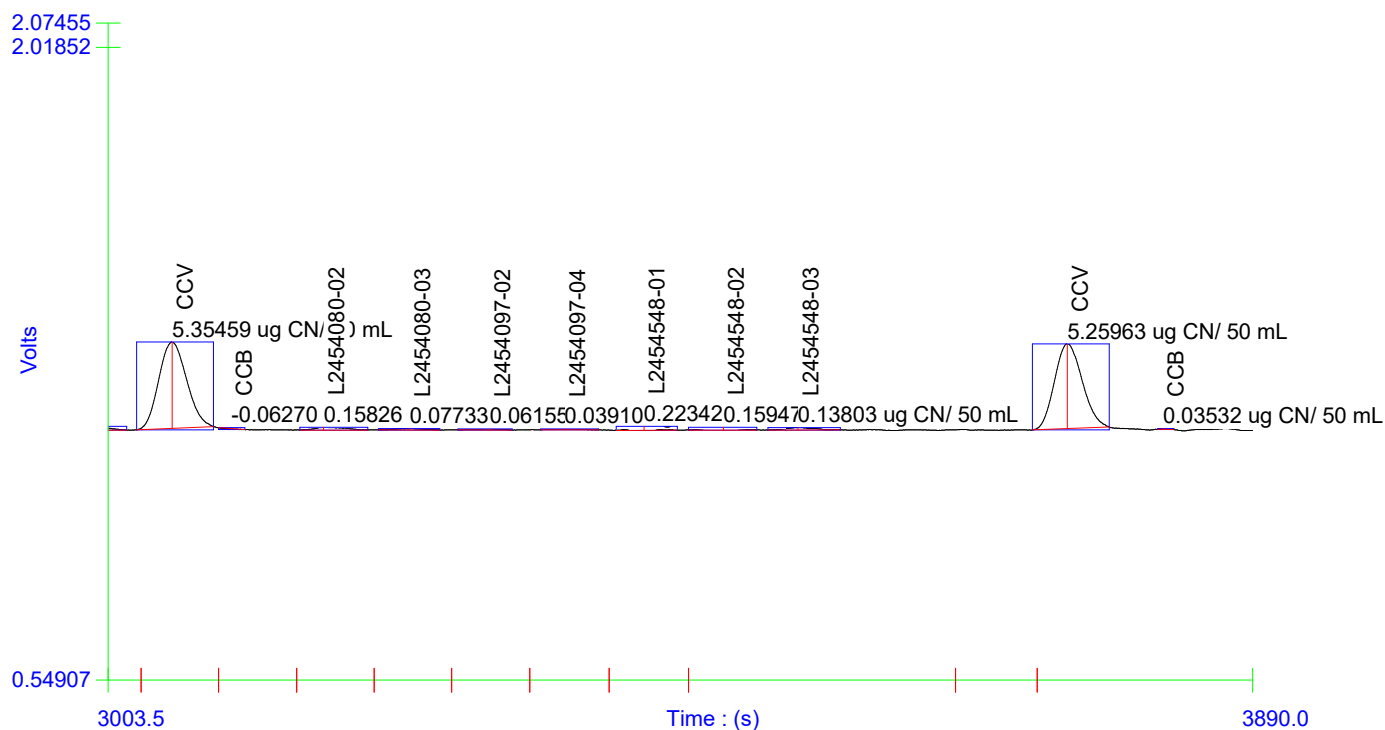


Table : 1 (Cyanide)

	Known Conc. (ug CN/ 50 mL)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (ug CN/ 50 mL)	Detection Date	Detection Time
1	25.00000	1	23.39435	0.93919	0.0	-0.6	25.14892	9/25/2024	11:32:14 AM
2	10.00000	1	9.08853	0.37255	0.0	0.3	9.96358	9/25/2024	11:33:15 AM
3	5.00000	1	4.49319	0.18443	0.0	1.5	4.92210	9/25/2024	11:34:16 AM
4	2.00000	1	1.88188	0.07717	0.0	-2.4	2.04765	9/25/2024	11:35:17 AM
5	1.00000	1	0.87288	0.03586	0.0	5.8	0.94054	9/25/2024	11:36:19 AM
6	0.50000	1	0.43968	0.01826	0.0	6.0	0.46892	9/25/2024	11:37:21 AM
7	0.20000	1	0.20535	0.00807	0.0	1.9	0.19592	9/25/2024	11:38:24 AM
8	0.00000	1	0.04503	0.00174			0.02629	9/25/2024	11:39:27 AM

Peak Height (V)

Concentration ug CN/ 50 mL

Height = 0.03730 * Conc + 0.00077
Conc = 26.79889 * Height - 0.02042
Correlation Coefficient (r) = 0.99998
Weighting : 1/x

Concentration (ug CN/ 50 mL)	Peak Height (V)
0.00000	0.00000
0.00000	0.00000
0.00000	0.00000
0.00000	0.00000
0.00000	0.00000

Original Run Filename: OM_9-25-2024_02-39-24PM.OMN Created: 9/25/2024 2:39:24 PM

Original Run Author's Signature: [wetchem16]

Current Run Filename: OM_9-25-2024_02-39-24PM.OMN Last Modified: 9/25/2024 3:50:46 PM

Current Run Author's Signature: [wetchem16]

Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide (ug CN/ 50 mL)	ADF	MDF	Weight
CCV	1	S3	5.11892			
Known Conc:			0.10000			
CCB	1	S8	-0.10117			
Known Conc:			0.00000			
WG1976057-1	1	1	-0.00085			50.00000 g
WG1976057-2	1	2	0.08166			50.00000 g
WG1976057-3	-2	3	0.09005			50.00000 g
LCS HIGH	1	4	0.19297			50.00000 g
L2454087-01	1	5	-0.00223			50.00000 g
Calibration: Table/Fig. : 1						
WG1976057-4	1	6	0.18942			50.00000 g
WG1976057-5	1	7	0.19151			50.00000 g
L2453016-05	1	8	-0.00396			50.00000 g
WG1976063-3	1	9	0.18359			50.00000 g
WG1976063-4	1	10	-0.00359			50.00000 g
CCV	1	S3	4.99510			
Known Conc:			0.10000			
CCB	1	S8	-0.10109			
Known Conc:			0.00000			
L2453881-01	1	11	0.00090			50.00000 g
L2453908-01	1	12	0.00136			50.00000 g
L2453913-01	1	13	0.00069			50.00000 g
L2454072-01	1	14	0.00077			50.00000 g
L2454081-01	1	15	0.00178			50.00000 g
L2454081-02	1	16	0.00216			50.00000 g
L2454154-02	1	17	0.00071			50.00000 g
L2454244-01	1	18	0.04082			50.00000 g
L2454246-01	1	19	0.00309			50.00000 g
L2454248-01	1	20	0.00316			5.00000 g
CCV	1	S3	5.04796			
Known Conc:			0.10000			
CCB	1	S8	-0.10657			
Known Conc:			0.00000			
L2454315-02	1	21	0.00263			50.00000 g
L2454320-01	1	22	0.00087			50.00000 g
WG1976059-1	1	23	0.00042			50.00000 g
WG1976059-2	1	24	0.09331			50.00000 g
WG1976059-3	1	25	0.09273			50.00000 g
LCS HIGH	1	26	0.19405			50.00000 g
L2453894-01	1	27	-0.00172			50.00000 g
WG1976059-6	1	28	0.20369			50.00000 g
WG1976059-7	1	29	0.19042			50.00000 g
L2453894-02	1	30	-0.00212			50.00000 g
CCV	1	S3	5.17805			
Known Conc:			0.10000			
CCB	1	S8	-0.04153			
Known Conc:			0.00000			
L2453894-03	1	31	0.00056			50.00000 g
L2453894-04	1	32	0.00014			50.00000 g
L2453894-05	1	33	0.00071			50.00000 g
L2453894-06	1	34	-0.00104			50.00000 g
L2453894-07	1	35	0.00060			50.00000 g
L2453894-08	1	36	-0.00105			50.00000 g
L2453894-09	1	37	0.00069			50.00000 g
L2453894-10	1	38	0.00074			50.00000 g
L2453894-11	1	39	0.00060			50.00000 g
L2454050-01	1	40	0.00105			50.00000 g
CCV	1	S3	5.28688			
Known Conc:			0.10000			

CCB	1	S8	-0.07663			
Known Conc:			0.00000			
WG1976059-4	1	41	0.20660		50.00000 g	103%
WG1976059-5	1	42	0.20266		50.00000 g	101%
L2454050-02	1	43	-0.00337		50.00000 g	
L2454050-03	1	44	0.00087		50.00000 g	
L2454050-04	1	45	0.00370		50.00000 g	
L2454324-01	1	46	0.00090		50.00000 g	
L2454324-02	1	47	0.00139		50.00000 g	
L2454324-03	1	48	0.00192		50.00000 g	
L2454324-04	1	49	0.14338		50.00000 g	
L2454324-05	1	50	0.00441		50.00000 g	
CCV	1	S3	5.31556			
Known Conc:			0.10000			
CCB	1	S8	-0.08913			
Known Conc:			0.00000			
WG1976057-2	1	2	0.08479		50.00000 g	85%
CCV	1	S3	5.33346			
Known Conc:			0.10000			
CCB	1	S8	-0.04863			
Known Conc:			0.00000			

Channel 1 (Cyanide) - Current View

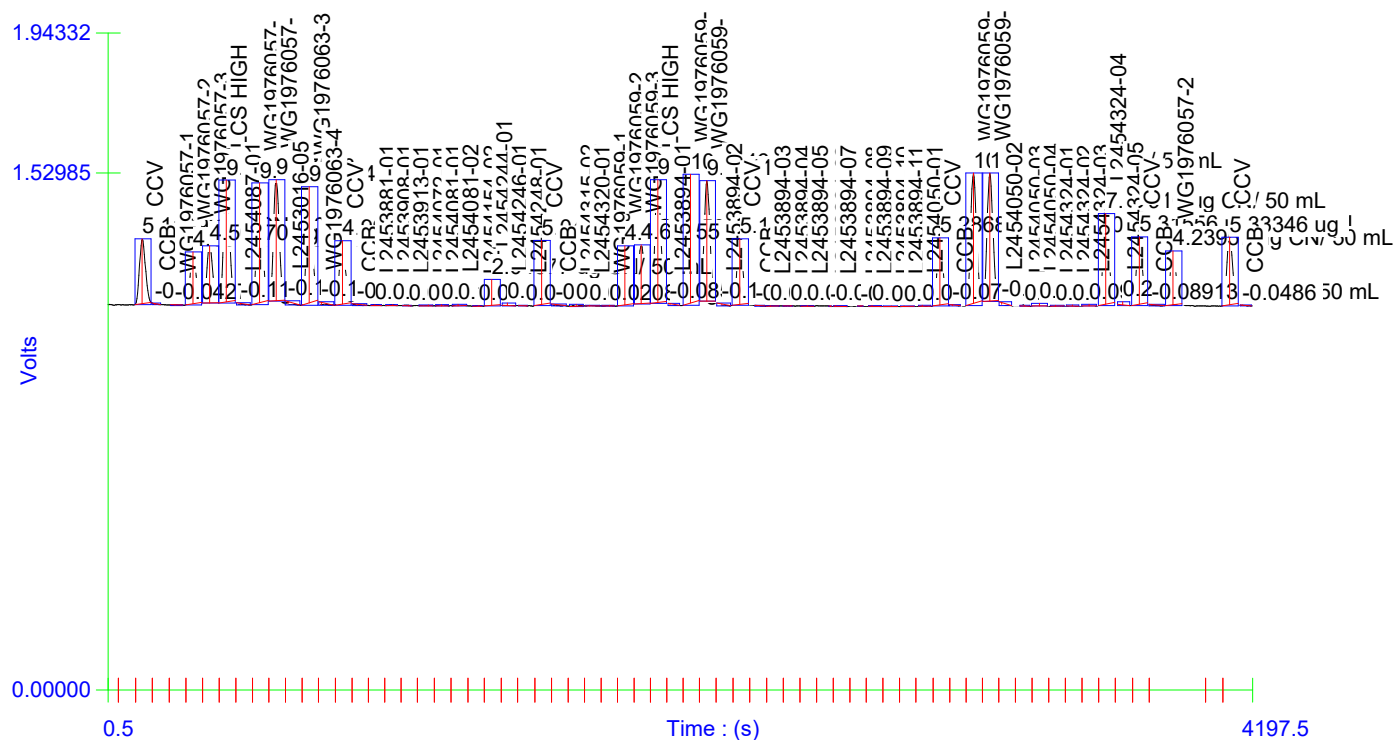
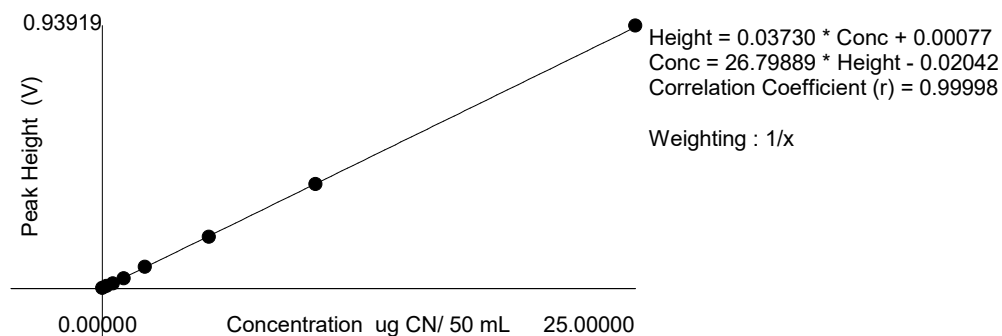


Table : 1 (Cyanide)

	Known Conc. (ug CN/ 50 mL)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (ug CN/ 50 mL)	Detection Date	Detection Time
1	25.00000	1	23.39435	0.93919	0.0	-0.6	25.14892	9/25/2024	11:32:14 AM
2	10.00000	1	9.08853	0.37255	0.0	0.3	9.96358	9/25/2024	11:33:15 AM
3	5.00000	1	4.49319	0.18443	0.0	1.5	4.92210	9/25/2024	11:34:16 AM
4	2.00000	1	1.88188	0.07717	0.0	-2.4	2.04765	9/25/2024	11:35:17 AM
5	1.00000	1	0.87288	0.03586	0.0	5.8	0.94054	9/25/2024	11:36:19 AM
6	0.50000	1	0.43968	0.01826	0.0	6.0	0.46892	9/25/2024	11:37:21 AM
7	0.20000	1	0.20535	0.00807	0.0	1.9	0.19592	9/25/2024	11:38:24 AM
8	0.00000	1	0.04503	0.00174			0.02629	9/25/2024	11:39:27 AM

Figure : 1 (Cyanide)



Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC	Lab Number : L2454050
Project Name : CORAM MATERIALS	Project Number : 2232.0006Y005
Client Sample ID : MW-4D	Matrix : WATER
Lab Sample ID : L2454050-01	
Matrix Spike : WG1976059-4	MS Analysis Date : 09/25/24 15:31
Matrix Spike Dup : WG1976059-5	MSD Analysis Date : 09/25/24 15:32

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			
Cyanide, Total	ND	0.2	0.206	103	0.2	0.203	102	1	80-120	20

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
Project Name : CORAM MATERIALS
Client Sample ID : NA
Lab Sample ID : L2453894-01
Matrix Spike : WG1976059-6
Matrix Spike Dup : WG1976059-7

Lab Number : L2454050
Project Number : 2232.0006Y005
Matrix : WATER
MS Analysis Date : 09/25/24 15:13
MSD Analysis Date : 09/25/24 15:14

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			
Cyanide, Total	ND	0.2	0.204	102	0.2	0.190	95	8	80-120	20



Form 7

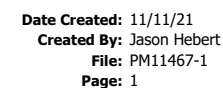
Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1976059-2
 Dup Sample ID : WG1976059-3

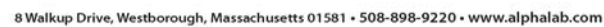
Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/25/24 15:09
 LCSD Analysis Date : 09/25/24 15:10

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			
Cyanide, Total	0.100	0.0930	93.	0.100	0.092	93.	0	85-115	20

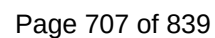


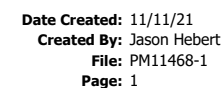
[illegible]

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

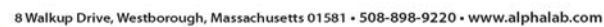


Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA



[illegible]

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





Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

[illegible]

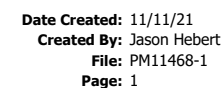
Please Note that the RL Information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.



8 Walkup Drive, Westborough, Massachusetts 01581 • 508-898-9220 • www.alphalab.com

Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

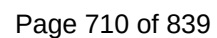


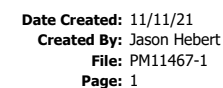
[illegible]

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

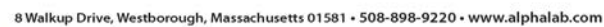


Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

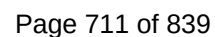


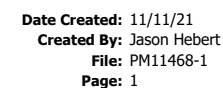
[illegible]

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.



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

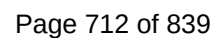


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Total Cyanide

Aqueous Samples

The instrument will calculate the concentration ($\mu\text{g}/50\text{mL}$).

$$\text{Result, mg/L} = C_s \times (1\text{mg}/1000\mu\text{g}) \times (1000\text{mL}/1\text{L}) \times (\text{DF})$$

Where:

C_s = Concentration of sample ($\mu\text{g}/50\text{mL}$)

DF = Dilution Factor

Soil or Solid Samples

Soil samples are calculated as follows:

$$\text{Result, mg/Kg} = \frac{C_s \times (1\text{mg}/1000\mu\text{g}) \times (1000\text{g}/1\text{Kg}) \times (\text{DF})}{A}$$

Where:

C_s = Concentration of sample ($\mu\text{g}/50\text{mL}$)

DF = Dilution Factor

$$A = \frac{\text{Sample weight (grams)}}{\text{Final Volume (50mL)}}$$

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:

%solids = Percent Solids, as a decimal value





Calculations of Free Cyanide

Aqueous Samples:

Calculate the concentration value of the sample (in ug/L) directly from the standard curve in spectrophotometric sample:

$$\text{ugFCN/L} = \frac{\text{absorbance} - \text{y-intercept}}{\text{slope}} \times \text{Dilution}$$

$$\frac{\mu\text{g}}{\text{L}} \text{ free CN}^- \text{ in aqueous sample} =$$

$$\frac{1.3 \text{ mL (center chamber solution volume)}}{3.0 \text{ mL (outer chamber solution volume)}} \times \frac{\mu\text{g}}{\text{L}} \text{ free CN}^- \text{ in spectrophotometric sample}$$

Soil Samples:

$$\frac{\mu\text{g}}{\text{g}} \text{ free CN}^- \text{ in solid sample} = \frac{\mu\text{g}}{\text{L}} \text{ free CN}^- \text{ in extract sample} \times \frac{\text{Final extract solution volume (L)}}{\text{Sample mass (g)}}$$

To calculate final result for soil samples based on dry weight, multiply final result on 100 and divide on %TS (in %)

$$\text{FCN mg/kg (dry weight)} = \text{FCN mg/kg} \times 100 / \text{TS (\%)}$$

Sequence Logs

TITLE TCN 09 25 24 JER

Book No. _____

Confidential

From Page No. TRAY A

- 1 ICU 0.1
- 2 ICB
- 3 CCSN-009125
- 4 W61975683-1 Blank
- 5 (5685)-2 CCS
- 6 (5684)-3 CCSO
- 7 CSHi
- 8 52930-30 (-32; -31)
- 9 53495-01
- 10 53611-01
- 11 -02
- 12 53657-01
- 13 -01ms
- 14 -010up
- 15 53663-02
- 16 53672-01
- 17 54045-02
- 18 -02ms
- 19 -00msD
- 20 W61975681-1 Blank ACW
- 21 -2 CCS
- 22 52930-31
- 23 -31 Dup
- TRAY B
- 1 W61975777-1 Blank
- 2 -2 CCS
- 3 -3 CCSO
- 4 CSHi
- 5 53084-01
- 6 -02
- 7 -03
- 8 -04
- 9 -05
- 10 -06
- 11 -07
- 12 -08
- 13 -09

- 14 53084-10
- 15 -11
- 16 -12
- 17 -13
- 18 -15
- 19 -16
- 20 W61975774-1 Blank
- 21 -2 CCS
- 22 -3 CCSO
- 23 CSHi
- 24 53490-01
- 25 53615-04
- 26 -04ms
- 27 -04msD
- 28 -05
- 29 -05ms
- 30 -05msD
- 31 53725-01
- 32 -02
- 33 -03
- 34 -04
- 35 53863-13
- 36 -14
- 37 -15
- 38 54014-01
- 39 -02
- 40 54080-01
- 41 -02
- 42 -03
- 43 54097-02
- 44 -04
- 45 54548-01
- 46 -02
- 47 -03
- 48

2509 2531

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by: _____

Date _____

Recorded by: _____

98 Project No. _____

Confidential Book No. _____

TITLE TCN 09 25 24 JER

From Page No. 12441

1 WH 1926057-1 Blank
 2 (6063)-2 LCS
 3 -3 LCSD
 4 LCSTH
 5 54081-01
 6 -01ms
 7 -01msd
 8 53016-05
 9 -05ms
 10 -05Dup
 11 53881-01
 12 53908-01
 13 53913-01
 14 54072-01
 15 54081-01
 16 -02
 17 54154-02
 18 54244-01
 19 54246-01
 20 54248-01
 21 54315-02
 22 54320-01
 23 WH 1926059-1 Blank
 24 -2 LCS
 25 -3 LCSD
 26 LCSTH
 27 53894-01
 28 -01ms
 29 -01msd
 30 -02
 31 -03
 32 -04
 33 -05
 34 -06
 35 -07
 36 -08
 37 -09

38 53894-10
 39 -11
 40 54050-01
 41 -01ms
 42 -01msd
 43 -02
 44 -03
 45 -04
 46 54324-01
 47 -02
 48 -03
 49 -04
 50 -05

JER 09 25 24

Witnessed & Understood by me,

Date

Invented by:

Recorded by:

Pyridine-Barbituric: TCN- 09 23 24

Acetate Buffer: TCN- 09 16 24

Chloramine-T: TCN- 09 25 24

Sodium Hydroxide: TCN- 09 14 24

Sample Preparation

Facility: Westborough, MA
Department: Wet Chemistry
Title: Cyanide Aqueous Midi Distillation Log

Revision: 4
Published Date: 7/7/2017 10:43:49 AM
Page 89 of 101

WG1976057 WG1976059 WG1976063

Block ID: 214

Sulfamic Acid, 0.4N	Sulfuric Acid, 50%	MgCl2, 2.5M	NaOH, 1N	LCS, 10ppm	MS, 10ppm
Lot#: TCN-09 20 24	Lot#: TCN-09 17 24	Lot#: TCN-09 15 24	Lot#: TCN-09 25 24	Lot#: TCN-09 25 24	Lot#: TCN-09 25 24

Tube ID	Sample	Date	Analyst	Vol. (mL)	pH	pH	Cl2	Cl2	S-2	S-2	Spike Vol (mL)	Sulfamic Acid (mL)	H2SO4 (mL)	MgCl2 (mL)	NaOH (mL)	Final Vol (mL)	Comment
						Adjusted	Check	treated	Check	treated							
1	BLANK	9-25-24	SRM	50	-		-		-		-	5	5	2	5	50	START 11:40
2	LCS				-		-		-		0.5						STOP 13:30
3	LCSD				-		-		-		0.5						
4	LCS High				-		-		-		1						
5	5306-05				>12		-		-		-						
6	-05 MS				>12		-		-		1						
7	-05 DUP				>12		-		-		-						
8	53861-01				>12		-		-		-						
9	53908-01				>12		-		-		-						
10	53913-01				>12		-		-		-						
11	54072-01				>12		-		-		-						
12	54081-01				>12		-		-		-						
13	-02				>12		-		-		-						
14	54154-02				>12		-		-		-						
15	54244-01				>12		-		-		-						
16	54246-01			↓	>12		-		-		-						
17	54248-01			5	5.5	✓	-		-		-						10 x dilution; pH < 12
18	54315-02			50	>12		-		-		-						
19	54320-01			↓	>12		-		-		-						
20	54087-01	↓	↓	↓	>12		-		-		-	↓	↓	↓	↓	↓	

Block ID: 3*6

Sulfamic Acid, 0.4N	Sulfuric Acid, 50%	MgCl2, 2.5M	NaOH, 1N	LCS, 10ppm	MS, 10ppm
Lot#: TCN-09 26 24	Lot#: TCN-09 19 24	Lot#: TCN-09 15 24	Lot#: TCN-09 25 24	Lot#: TCN-09 25 24	Lot#: TCN-09 25 24

Tube ID	Sample	Date	Analyst	Vol. (mL)	pH	Cl2		S-2		Spike Vol (mL)	Sulfamic Acid (mL)	H2SO4 (mL)	MgCl2 (mL)	NaOH (mL)	Final Vol (mL)	Comment
						Adjusted	Check	Check	treated							
1	54087-01MS	9-25-24	SRM	50	>12	-	-	-	-	1	5	5	2	5	50	
2	-01MSD				>12	-	-	-	-	1						
3	53894-01				>12	-	-	-	-	-						
4	-01MS				>12	-	-	-	-	1						
5	-01MSD				>12	-	-	-	-	1						
6	-02				>12	-	-	-	-	-						
7	-03				>12	-	-	-	-	-						
8	-04				>12	-	-	-	-	-						
9	-05				>12	-	-	-	-	-						
10	-06				>12	-	-	-	-	-						
11	-07				>12	-	-	-	-	-						
12	-08				>12	-	-	-	-	-						
13	-09				>12	-	-	-	-	-						
14	-10				>12	-	-	-	-	-						
15	-11				>12	-	-	-	-	-						
16	54050-01				>12	-	-	-	-	-						
17	-01MS				>12	-	-	-	-	1						
18	-01MSD				>12	-	-	-	-	1						
19	-02	↓	↓	↓	>12	-	-	-	-	-	↓	↓	↓	↓	↓	
20	-03	↓	↓	↓	>12	-	-	-	-	-	↓	↓	↓	↓	↓	

Block ID: 1

Sulfamic Acid, 0.4N

Sulfuric Acid, 50%

MgCl2, 2.5M

NaOH, 1N

LCS, 10ppm

MS, 10ppm

Lot#: TCN-09 20 24

Lot#: TCN-09 17 24

Lot#: TCN-09 15 24

Lot#: TCN-09 25 24

Lot#: TCN-09 25 24

Lot#: TCN-09 25 24

Tube ID	Sample	Date	Analyst	Vol. (mL)	pH	pH		Cl2		S-2		Spike Vol (mL)	Sulfamic Acid (mL)	H2SO4 (mL)	MgCl2 (mL)	NaOH (mL)	Final Vol (mL)	Comment
						Adjusted	Check	Check	treated	Check	treated							
1	54050-04	9-25-24	SRM	50	7.2		-		-				5	5	2	5	50	
2	54324-01				7.2		-		-									
3	-02				7.2		-		-									
4	-03				7.2		-		-									
5	-04				7.2		-		-									
6	-05				7.2		-		-									
7	BLANK				-		-		-									
8	LCS				-		-		-		0.5							
9	LCSD				-		-		-		0.5							
10	LCS High				-		-		-		1							
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		

SRM 09 25 24

Hexavalent Chromium Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:56
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:57
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/20/24 08:57
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1974176-1	Date Collected	: NA
Client ID	: WG1974176-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 09/20/24 08:54
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1974176-3	Date Collected	: 09/19/24 09:11
Client ID	: MW-4DDUP	Date Received	: 09/19/24
Sample Location	:	Date Analyzed	: 09/20/24 08:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7196A	Analyst	: JBB
Lab File ID	: WG1974176.csv	Instrument ID	: GENSYS 10S
Sample Amount	: 50	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/20/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.010	0.003	U

Sample Raw Data

Last Change 3/4/13 gff
File HEXCR-L.xlt

Save to LIMS

CHOOSE METHOD

HENCR-7196	TCLP-HENCR
HENCR-3500	HEXCR
HENCR-7196-PPB	
HENCR-3500-PPB	
SPLP-HEXCR	

[illegible]

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : MW-4S
 Lab Sample ID : L2454050-02
 Matrix Spike : WG1974176-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/20/24 08:56
 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			
Chromium, Hexavalent	ND	0.1	0.100	100					85-115	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01	Analysis Date	: 09/20/24 08:55
Dup Sample ID	: WG1974176-3	DUP Analysis Date	: 09/20/24 08:55

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Chromium, Hexavalent	ND	ND	NC	20

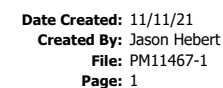
Form 7

Laboratory Control Sample

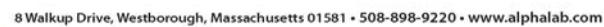
Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1974176-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/20/24 08:54
 LCSD Analysis Date :

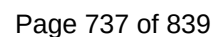
Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Chromium, Hexavalent	0.200	0.196	98.					85-115	20

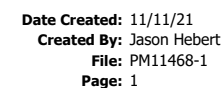
[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

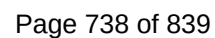


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Hexavalent Chromium

Aqueous samples:

$$\text{mg Cr}^{+6}/\text{L} = \left(\frac{\text{absorbance} - \text{y-intercept}}{\text{slope}} \times \text{dilution} \right)$$

Solid samples:

$$\text{mg Cr}^{+6}/\text{Kg} = \left(\frac{\text{absorbance} - \text{y-intercept}}{\text{slope}} \right) \times \left(\frac{\text{dilution} \times 0.1\text{L (final volume)}}{\text{weight (Kg) of sample}} \right)$$



Total Phenol Analysis

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:50
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: KEP/J
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	0.010	0.030	0.006	J



Form 1
WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:53
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: KEP/J
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	ND	0.030	0.006	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:54
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: KEP/J
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	ND	0.030	0.006	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/25/24 14:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: KEP/J
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	0.007	0.030	0.006	J



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1976012-1	Date Collected	: NA
Client ID	: WG1976012-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 09/25/24 14:30
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: KEP/J
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	ND	0.030	0.006	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1976012-3	Date Collected	: 09/18/24 09:15
Client ID	: WG1976012-3 DUP	Date Received	: 09/18/24
Sample Location	:	Date Analyzed	: 09/25/24 14:36
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: kep/jbb
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	ND	0.030	0.01	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: WG1976012-5	Date Collected	: 09/19/24 09:11
Client ID	: MW-4DDUP	Date Received	: 09/19/24
Sample Location	:	Date Analyzed	: 09/25/24 14:51
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 4,420.1	Analyst	: kep/jbb
Lab File ID	: PHENOL09252024-WG1976012A	Instrument ID	: SEAL2
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 09/25/24

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Phenolics, Total	ND	0.030	0.01	U



Sample Raw Data

AQ400Tray Report



Software version : 2.4.5
Report requested by : jbsoumai
Date \ Time : 25-Sep-2024 15:57:47
Tray number : 3
Tray name : 24.09.25 WG1976011;012

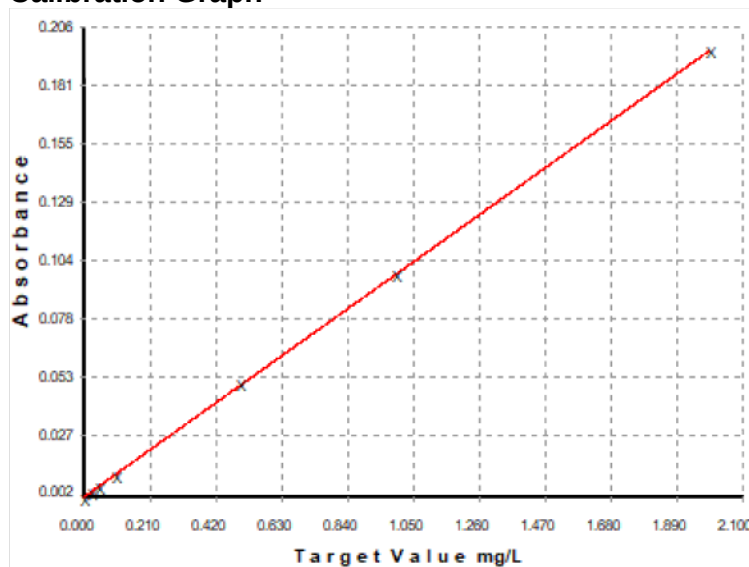
Phenolics

Calibration Chart

Type	Absorbance	Calc mg/L	Target mg/L	% Error
S1	0.0017	-0.006	0.000	
S90	0.0048	0.026	0.027	-3.63
S91	0.0069	0.048	0.049	-2.65
S92	0.0122	0.102	0.102	0.02
S93	0.0522	0.513	0.502	2.23
S94	0.0994	1.000	1.000	-0.00
S95	0.1963	1.997	2.000	-0.14
S0	0.0017	-0.007	0.000	

Polynomial Order : 1
Correlation Coefficient : 1.0000
Carryover(%) : -0.0
Calibration equation: $y = bx + a$
y =: Concentration mg/L
x =: Measured absorbance
a =: -2.355595E-02
b =: 1.029276E+01
Date & Time : 25-Sep-2024 14:22:59

Calibration Graph



Reagents

Reagent Name	Batch Number	Operator	Expiry Date
4-Aminoantipyrine			
Buffered Potassium Ferricyanide			

Test Results

Cup	Type	ID	Result	Units	Raw Data	Auto Dil.	Man Dil.	User	Time & Date
	S1	Standard 1	0.002		0.001689			JBB	25-Sep-2024 14:16:26
	S90	Standard 90	0.005		0.004785			JBB	25-Sep-2024 14:17:23
	S91	Standard 91	0.007		0.006912			JBB	25-Sep-2024 14:18:19
	S92	Standard 92	0.012		0.012222			JBB	25-Sep-2024 14:19:15
	S93	Standard 93	0.052		0.052172			JBB	25-Sep-2024 14:20:10
	S94	Standard 94	0.099		0.099439			JBB	25-Sep-2024 14:21:06
	S95	Standard 95	0.196		0.196333			JBB	25-Sep-2024 14:22:03
	S0	Standard 0	0.002		0.001656			JBB	25-Sep-2024 14:22:59
2	ICV	ICV	0.402	mg/L	0.041308			JBB	25-Sep-2024 14:23:55
3	ICB	ICB	-0.006	mg/L	0.001697			JBB	25-Sep-2024 14:24:50
4	U1	WG1976011-1	0.024	mg/L	0.004612			JBB	25-Sep-2024 14:25:46
5	U2	WG1976011-2	0.444	mg/L	0.045462			JBB	25-Sep-2024 14:26:43
6	U3	L2453701-01	0.038	mg/L	0.005979			JBB	25-Sep-2024 15:25:31
6	U3	L2453701-01	0.038	mg/L	0.005978			JBB	25-Sep-2024 14:27:39
7	U4	WG1976011-3	0.005AVF	mg/L	0.002743			JBB	25-Sep-2024 15:26:25
7	U4	WG1976011-3	0.039	mg/L	0.006121			JBB	25-Sep-2024 14:28:35
8	U5	WG1976011-4	0.400	mg/L	0.041189			JBB	25-Sep-2024 15:27:20
8	U5	WG1976011-4	0.454	mg/L	0.046420			JBB	25-Sep-2024 14:29:30
9	U6	WG1976012-1	0.004	mg/L	0.002755		x0.9090	JBB	25-Sep-2024 14:30:26

10	U7	WG1976012-2	0.388	mg/L	0.043785	x0.9090	JBB	25-Sep-2024 14:31:23
11	U8	L2451387-02	0.013	mg/L	0.003719	x0.9090	JBB	25-Sep-2024 14:32:19
12	U9	L2451387-03	0.012	mg/L	0.003568	x0.9090	JBB	25-Sep-2024 15:28:16
12	U9	L2451387-03	0.030	mg/L	0.005451	x0.9090	JBB	25-Sep-2024 14:33:15
13	U10	L2453711-01	0.007	mg/L	0.003076	x0.9090	JBB	25-Sep-2024 14:34:11
	CCV	CCV	0.508	mg/L	0.051619		JBB	25-Sep-2024 14:35:06
	CCB	CCB	-0.006	mg/L	0.001698		JBB	25-Sep-2024 14:36:03
14	U11	WG1976012-3	0.005	mg/L	0.002794	x0.9090	JBB	25-Sep-2024 14:36:59
15	U12	WG1976012-4	0.355	mg/L	0.040270	x0.9090	JBB	25-Sep-2024 14:37:55
16	U13	L2453711-02	0.002	mg/L	0.002494	x0.9090	JBB	25-Sep-2024 14:38:50
17	U14	L2453711-03	0.006	mg/L	0.002960	x0.9090	JBB	25-Sep-2024 14:39:47
18	U15	L2453711-04	0.010	mg/L	0.003343	x0.9090	JBB	25-Sep-2024 14:40:43
19	U16	L2453711-05	0.024	mg/L	0.004841	x0.9090	JBB	25-Sep-2024 14:41:39
20	U17	clean	0.046	mg/L	0.007187	x0.9090	JBB	25-Sep-2024 14:42:35
21	U18	L2453711-06	0.005	mg/L	0.002817	x0.9090	JBB	25-Sep-2024 14:43:30
22	U19	L2453711-07	0.012	mg/L	0.003581	x0.9090	JBB	25-Sep-2024 14:44:27
23	U20	L2453711-08	0.008	mg/L	0.003189	x0.9090	JBB	25-Sep-2024 14:45:23
	CCV	CCV	0.491	mg/L	0.049991		JBB	25-Sep-2024 14:46:19
	CCB	CCB	-0.006	mg/L	0.001701		JBB	25-Sep-2024 14:47:14
24	U21	L2453711-09	0.017	mg/L	0.004096	x0.9090	JBB	25-Sep-2024 14:48:10
25	U22	L2453711-10	0.010	mg/L	0.003390	x0.9090	JBB	25-Sep-2024 14:49:07
26	U23	L2453711-11	0.007	mg/L	0.002998	x0.9090	JBB	25-Sep-2024 14:50:03
27	U24	L2454050-01	0.010	mg/L	0.003337	x0.9090	JBB	25-Sep-2024 14:50:34
28	U25	WG1976012-5	-0.001	mg/L	0.002224	x0.9090	JBB	25-Sep-2024 14:51:28
29	U26	WG1976012-6	0.365	mg/L	0.041318	x0.9090	JBB	25-Sep-2024 14:52:24
30	U27	L2454050-02	-0.001	mg/L	0.002150	x0.9090	JBB	25-Sep-2024 14:53:20
31	U28	L2454050-03	0.001	mg/L	0.002420	x0.9090	JBB	25-Sep-2024 14:54:15
32	U29	L2454050-04	0.007	mg/L	0.003048	x0.9090	JBB	25-Sep-2024 14:55:12
33	U30	L2454449-01	0.040	mg/L	0.006611	x0.9090	JBB	25-Sep-2024 15:29:13
33	U30	L2454449-01	0.033	mg/L	0.005816	x0.9090	JBB	25-Sep-2024 14:56:08
	CCV	CCV	0.497	mg/L	0.050546		JBB	25-Sep-2024 15:30:08
	CCV	CCV	0.495	mg/L	0.050337		JBB	25-Sep-2024 14:57:04
	CCB	CCB	-0.003	mg/L	0.001979		JBB	25-Sep-2024 15:31:04
	CCB	CCB	-0.004	mg/L	0.001916		JBB	25-Sep-2024 14:57:59
	CCV	CCV	0.492	mg/L	0.050098		JBB	25-Sep-2024 15:24:03
	CCB	CCB	-0.006	mg/L	0.001701		JBB	25-Sep-2024 15:24:59
	CCV	CCV	0.498	mg/L	0.050683		JBB	25-Sep-2024 15:32:00
	CCB	CCB	-0.003	mg/L	0.002033		JBB	25-Sep-2024 15:32:56

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453711-01
 Matrix Spike : WG1976012-4
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/25/24 14:37
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Phenolics, Total	0.007J	0.4	0.36	89					70-130	20



Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : MW-4D
 Lab Sample ID : L2454050-01
 Matrix Spike : WG1976012-6
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/25/24 14:52
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Phenolics, Total	0.010J	0.4	0.36	91					70-130	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/25/24 14:34
Dup Sample ID	: WG1976012-3	DUP Analysis Date	: 09/25/24 14:36

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Phenolics, Total	0.007J	ND	NC	20

Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: MW-4D	Matrix	: WATER
Lab Sample ID	: L2454050-01	Analysis Date	: 09/25/24 14:50
Dup Sample ID	: WG1976012-5	DUP Analysis Date	: 09/25/24 14:51

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Phenolics, Total	0.010J	ND	NC	20

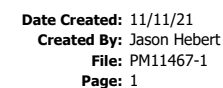
Form 7

Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1976012-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/25/24 14:31
 LCSD Analysis Date :

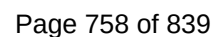
Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (mg/l)	Found (mg/l)	%R	True (mg/l)	Found (mg/l)	%R			
Phenolics, Total	0.400	0.390	97.					70-130	20

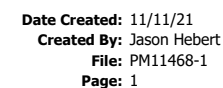
[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA

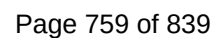


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of TPhenol

Aqueous samples:

Calculate the concentration value of the sample directly from the standard curve.

$$\text{Mg Phenolics/L} = \frac{\text{absorbance} - \text{y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$



Wet Chemistry
By
IC Methods

Results

Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-01	Date Collected	: 09/19/24 09:11
Client ID	: MW-4D	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,300.0	Analyst	: CVN,
Lab File ID	: WG1975718-5720-5811	Instrument ID	: IC3
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
24959-67-9	Bromide	0.044	0.050	0.013	J
16887-00-6	Chloride	16.2	0.500	0.083	
14808-79-8	Sulfate	12.0	1.00	0.454	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:20
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,300.0	Analyst	: CVN,
Lab File ID	: WG1975718-5720-5811	Instrument ID	: IC3
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
24959-67-9	Bromide	0.044	0.050	0.013	J
14808-79-8	Sulfate	10.9	1.00	0.454	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-02	Date Collected	: 09/19/24 10:25
Client ID	: MW-4S	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:32
Sample Matrix	: WATER	Dilution Factor	: 10
Analytical Method	: 44,300.0	Analyst	: CVN,
Lab File ID	: WG1975718-5720-5811	Instrument ID	: IC3
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
16887-00-6	Chloride	139.	5.00	0.839	



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-03	Date Collected	: 09/19/24 14:00
Client ID	: EQUIPMENT BLANK	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:44
Sample Matrix	: Equipment Blank	Dilution Factor	: 1
Analytical Method	: 44,300.0	Analyst	: CVN,
Lab File ID	: WG1975718-5720-5811	Instrument ID	: IC3
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
24959-67-9	Bromide	ND	0.050	0.013	U
16887-00-6	Chloride	0.223	0.500	0.083	J
14808-79-8	Sulfate	ND	1.00	0.454	U



Form 1

WETCHEM

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Lab ID	: L2454050-04	Date Collected	: 09/19/24 12:47
Client ID	: MW-7	Date Received	: 09/19/24
Sample Location	: 416 MILLER PLACE-YAPHANK ROAD	Date Analyzed	: 09/24/24 16:57
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 44,300.0	Analyst	: CVN,
Lab File ID	: WG1975718-5720-5811	Instrument ID	: IC3
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	:

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
24959-67-9	Bromide	0.049	0.050	0.013	J
16887-00-6	Chloride	11.0	0.500	0.083	
14808-79-8	Sulfate	7.84	1.00	0.454	



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975720-1
 Client ID : WG1975720-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,300.0
 Lab File ID : WG1975720
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 09/24/24 11:30
 Dilution Factor : 1
 Analyst : CVN,
 Instrument ID : IC3
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
24959-67-9	Bromide	ND	0.050	0.013	U
16887-00-6	Chloride	0.214	0.500	0.083	J
14808-79-8	Sulfate	ND	1.00	0.454	U



Form 1

WETCHEM

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Lab ID : WG1975720-4
 Client ID : WG1975720-4 DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,300.0
 Lab File ID : WG1975718-5720-5811
 Sample Amount :
 Digestion Method :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Date Collected : 09/19/24 09:45
 Date Received : 09/19/24
 Date Analyzed : 09/24/24 17:57
 Dilution Factor : 1
 Analyst : CVN,
 Instrument ID : IC3
 %Solids : N/A
 Date Digested :

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
14808-79-8	Sulfate	2.69	1.00	0.454	
16887-00-6	Chloride	5.45	0.500	0.084	
24959-67-9	Bromide	0.040	0.050	0.013	J

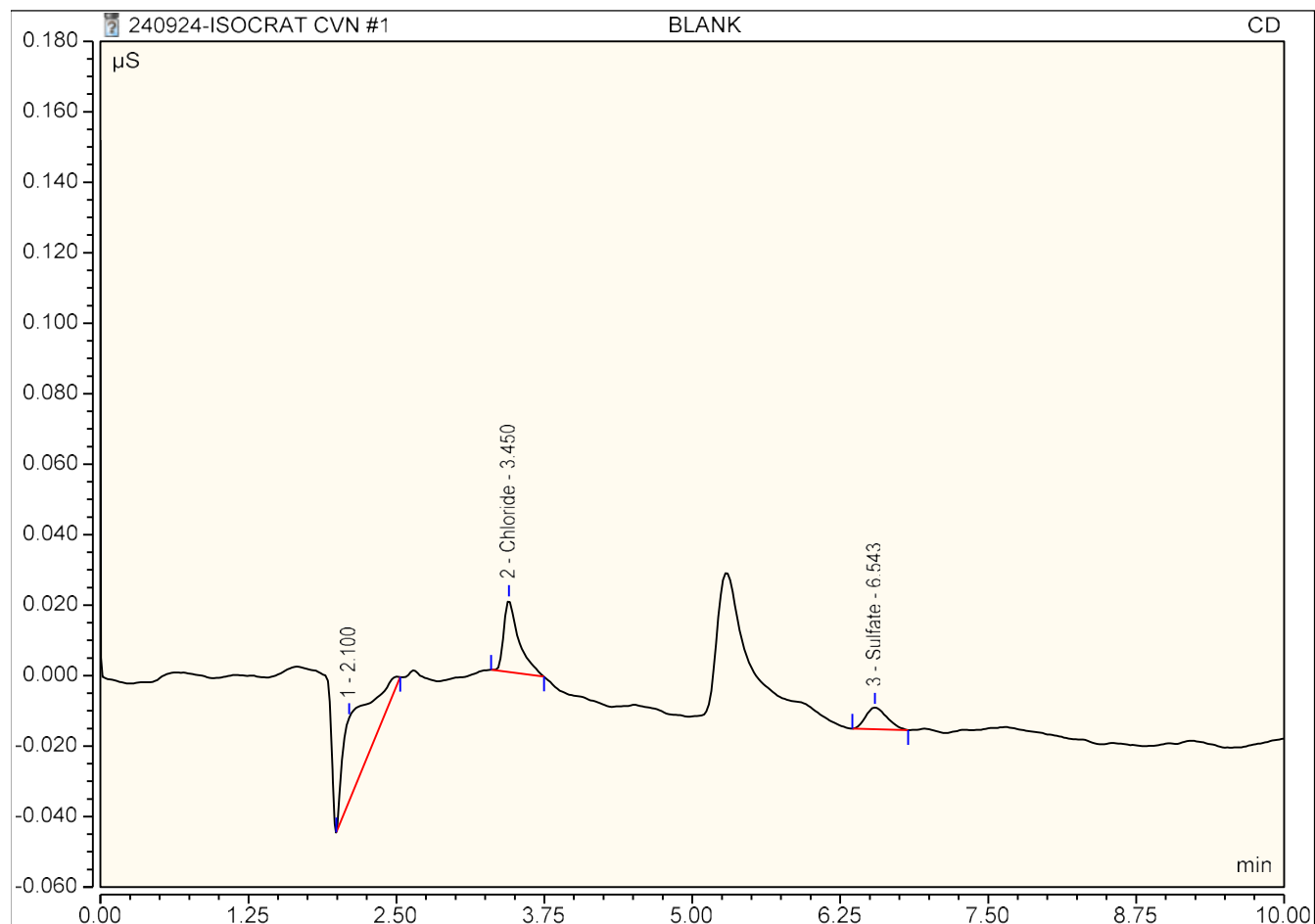


Sample Raw Data

Peak Integration Report

Sample Name:	BLANK	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 16:08	Run Time:	10.00

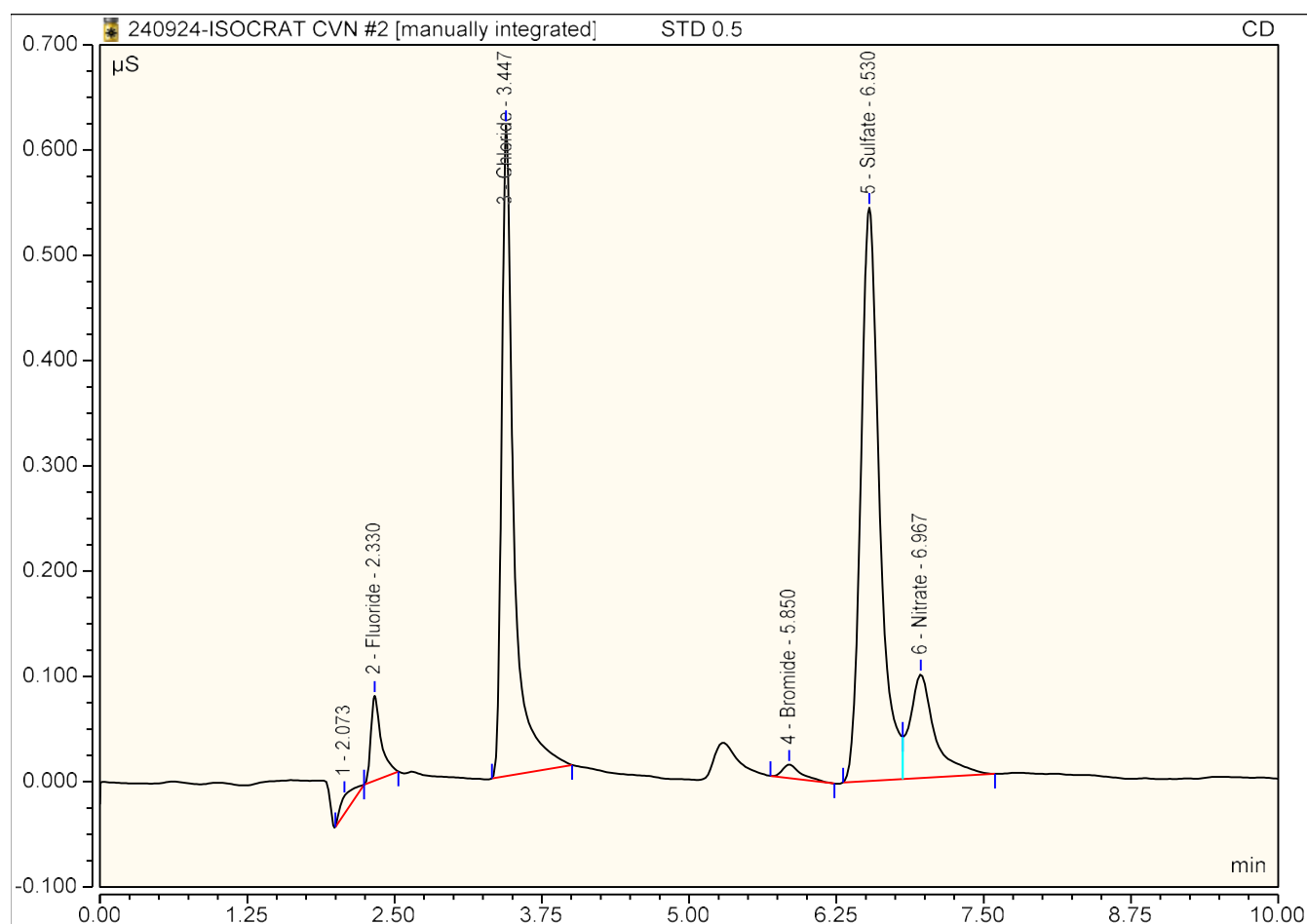
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	3.45	Chloride	BMB	0.003	0.020	0.2129
3	6.54	Sulfate	BMB	0.001	0.006	0.2810
TOTAL:				0.00	0.03	0.49



Peak Integration Report

Sample Name:	STD 0.5	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 16:20	Run Time:	10.00

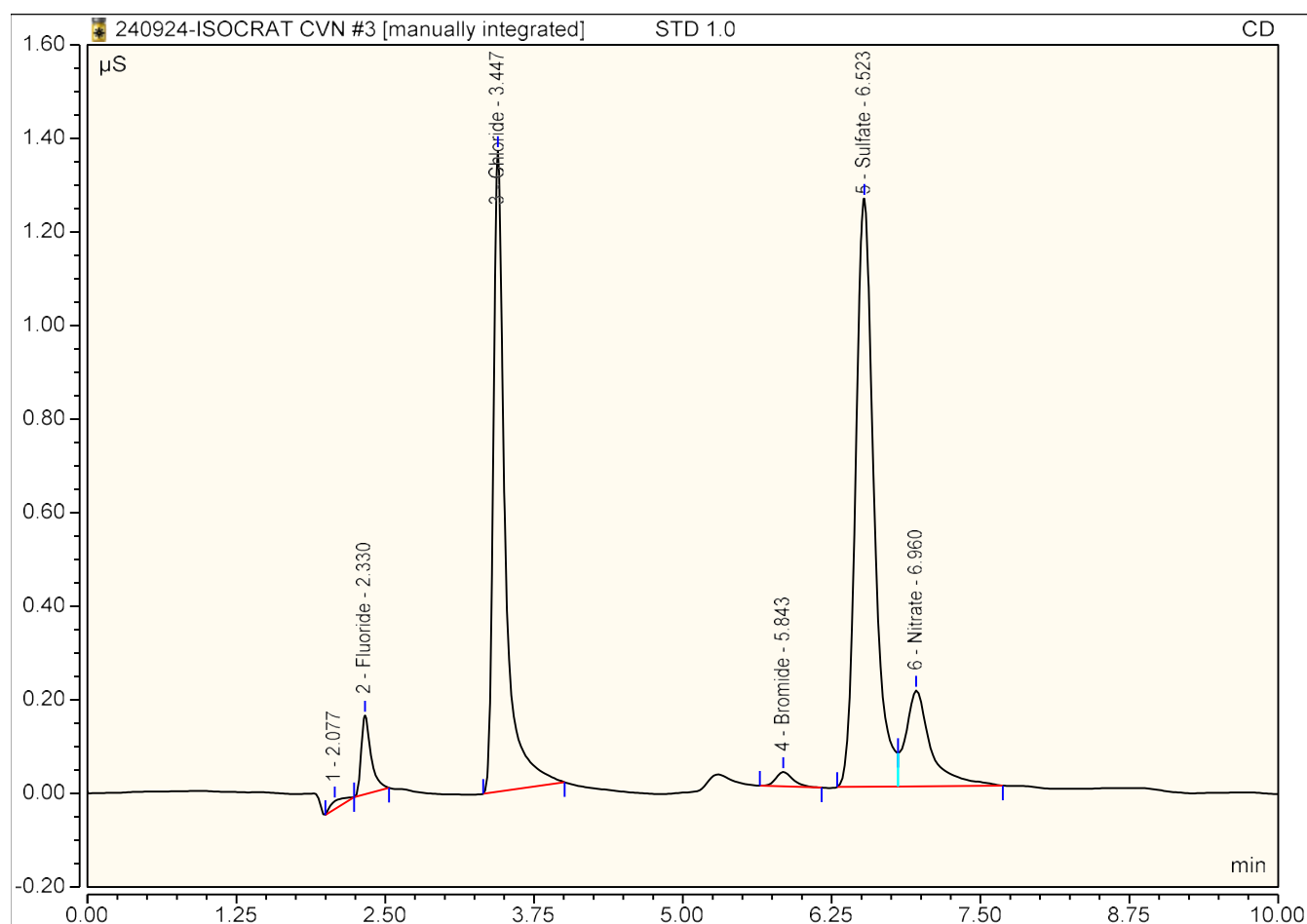
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.33	Fluoride	BMB	0.008	0.081	0.0592
3	3.45	Chloride	BMB*	0.074	0.618	0.3873
4	5.85	Bromide	BMB	0.002	0.013	0.0525
5	6.53	Sulfate	BM *	0.100	0.545	0.6237
6	6.97	Nitrate	MB*	0.024	0.098	0.0442
TOTAL:				0.21	1.35	1.17



Peak Integration Report

Sample Name:	STD 1.0	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 16:33	Run Time:	10.00

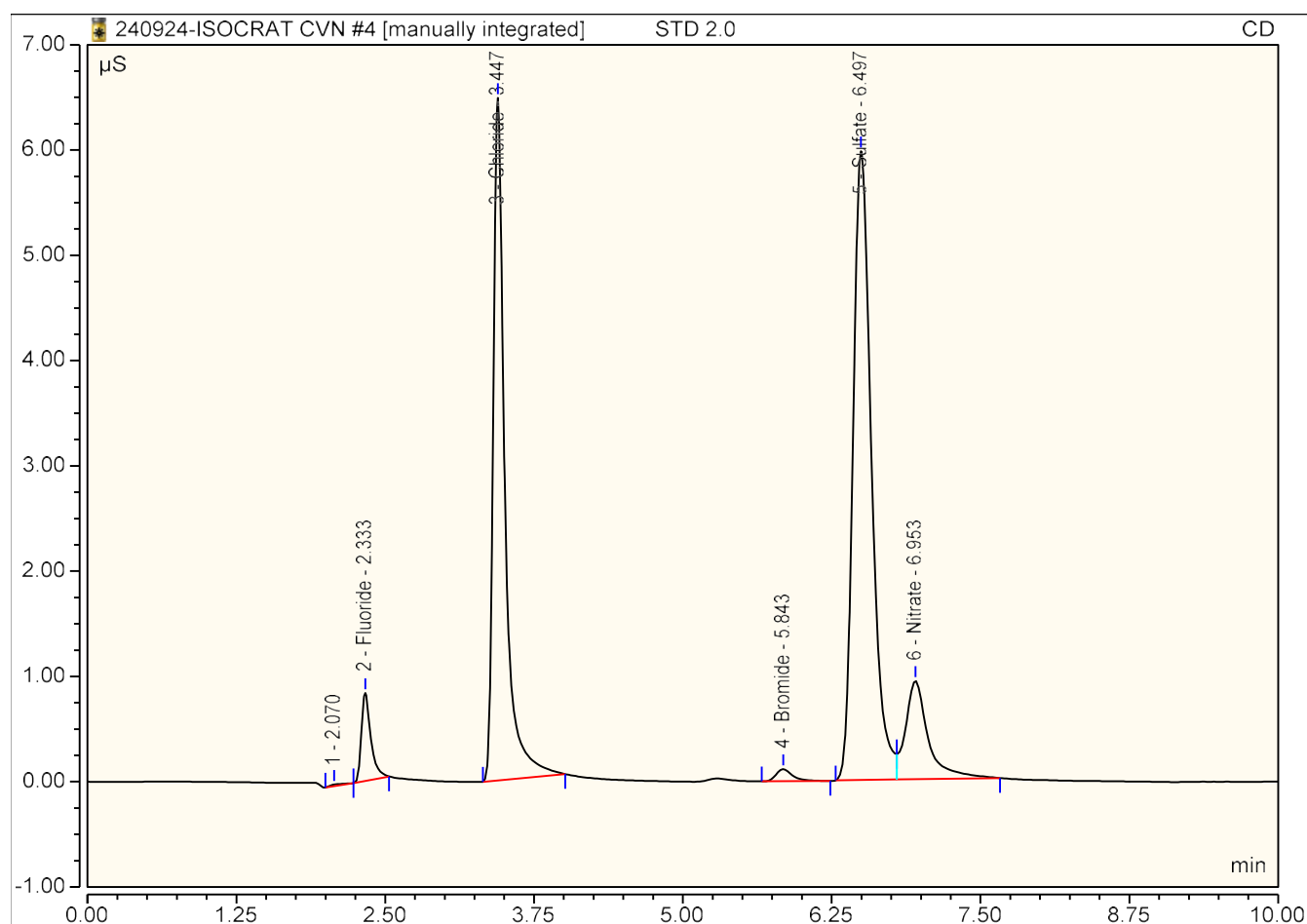
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.33	Fluoride	BMB	0.016	0.169	0.0738
3	3.45	Chloride	BMB*	0.159	1.370	0.5947
4	5.84	Bromide	BMB	0.005	0.031	0.0753
5	6.52	Sulfate	BM *	0.223	1.257	1.0491
6	6.96	Nitrate	MB*	0.050	0.205	0.0646
TOTAL:				0.45	3.03	1.86



Peak Integration Report

Sample Name:	STD 2.0	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 16:45	Run Time:	10.00

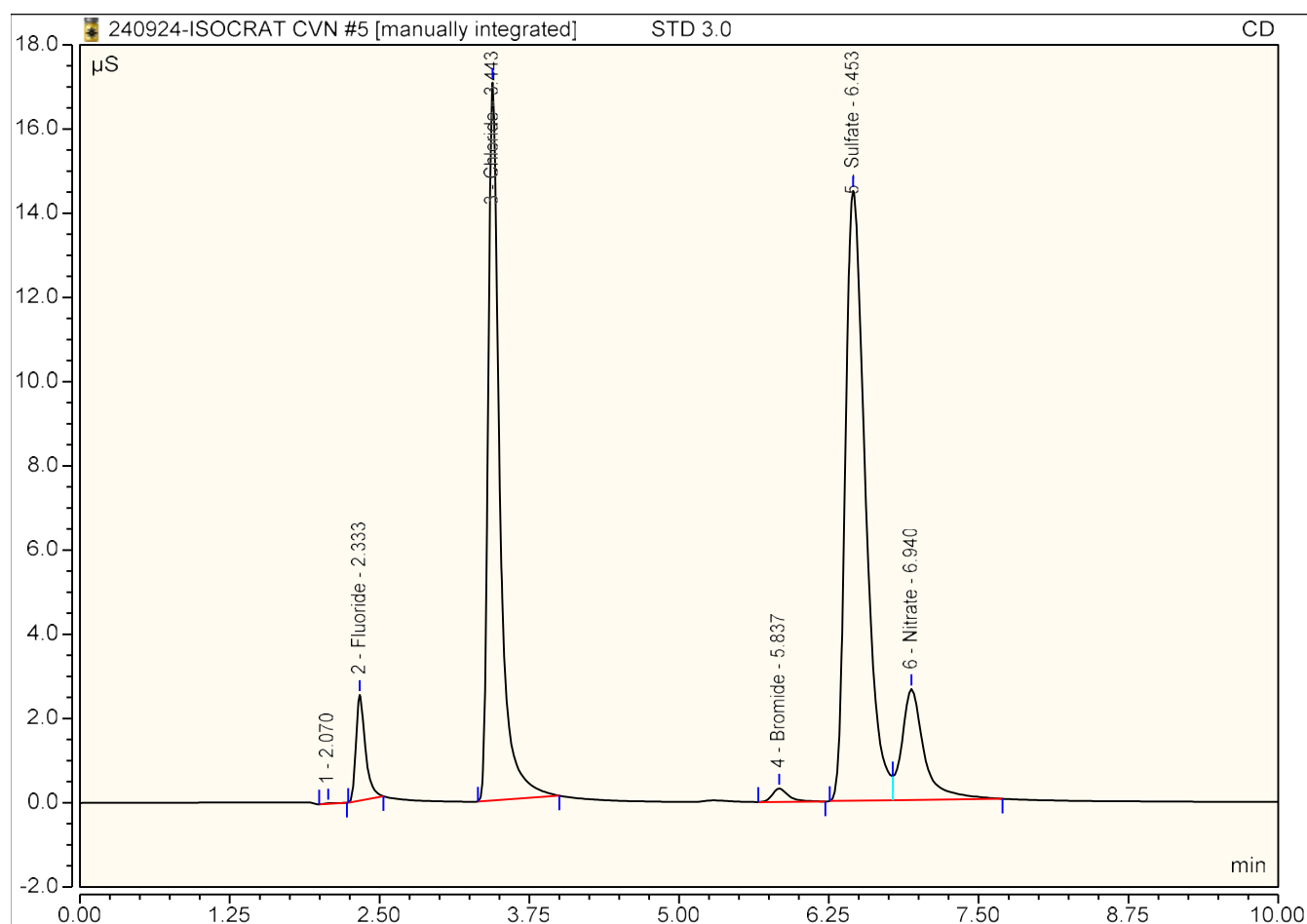
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.33	Fluoride	BMB	0.077	0.836	0.1840
3	3.45	Chloride	BMB*	0.734	6.483	1.9971
4	5.84	Bromide	BMB	0.019	0.116	0.1890
5	6.50	Sulfate	BM *	1.064	5.973	3.9561
6	6.95	Nitrate	MB*	0.206	0.936	0.1868
TOTAL:				2.10	14.34	6.51



Peak Integration Report

Sample Name:	STD 3.0	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 16:57	Run Time:	10.00

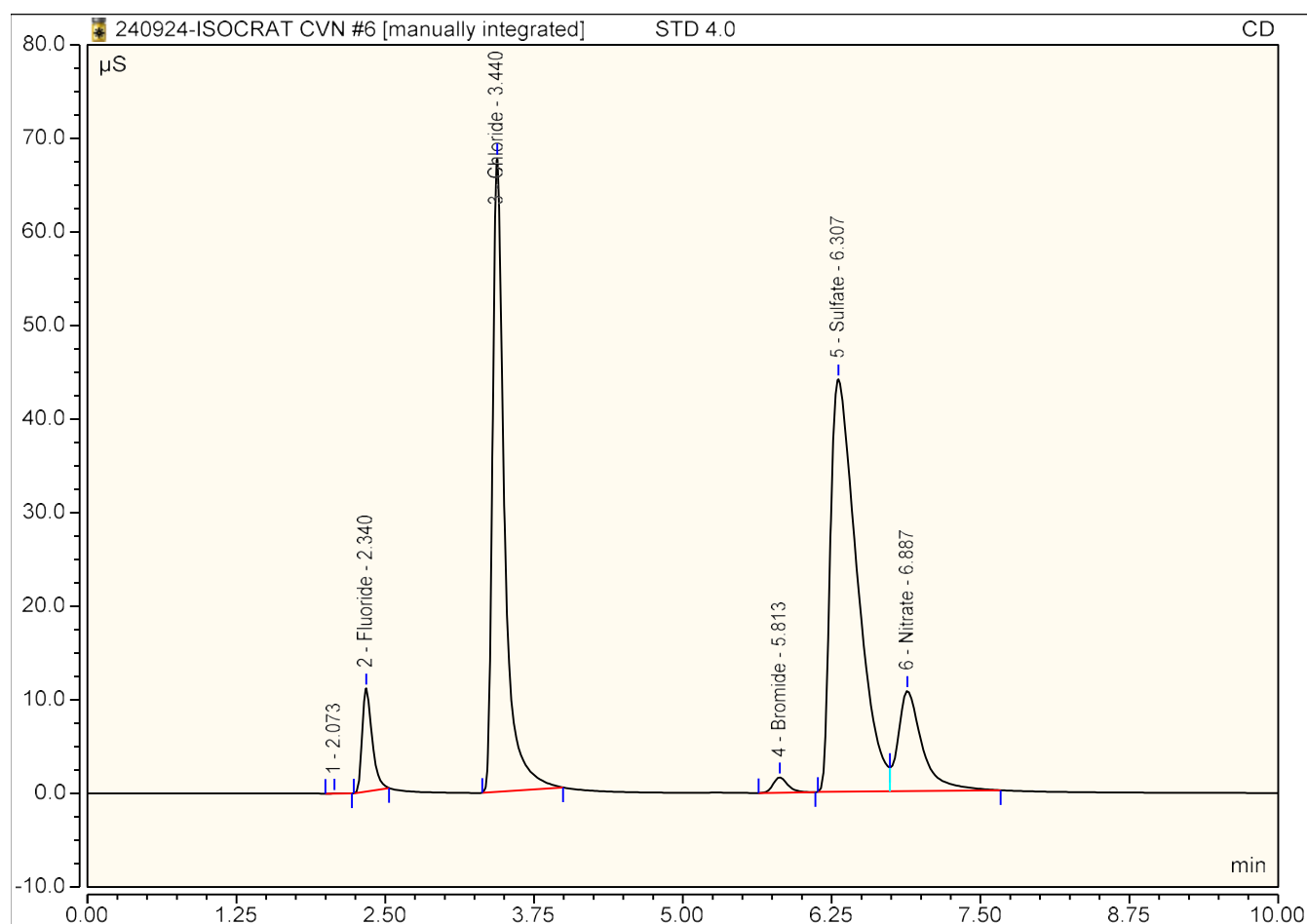
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.33	Fluoride	BMB	0.228	2.511	0.4607
3	3.44	Chloride	BMB*	1.937	17.049	4.9336
4	5.84	Bromide	BMB	0.050	0.317	0.4440
5	6.45	Sulfate	BM *	2.793	14.483	9.9320
6	6.94	Nitrate	MB*	0.570	2.634	0.4717
TOTAL:				5.58	36.99	16.24



Peak Integration Report

Sample Name:	STD 4.0	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 17:09	Run Time:	10.00

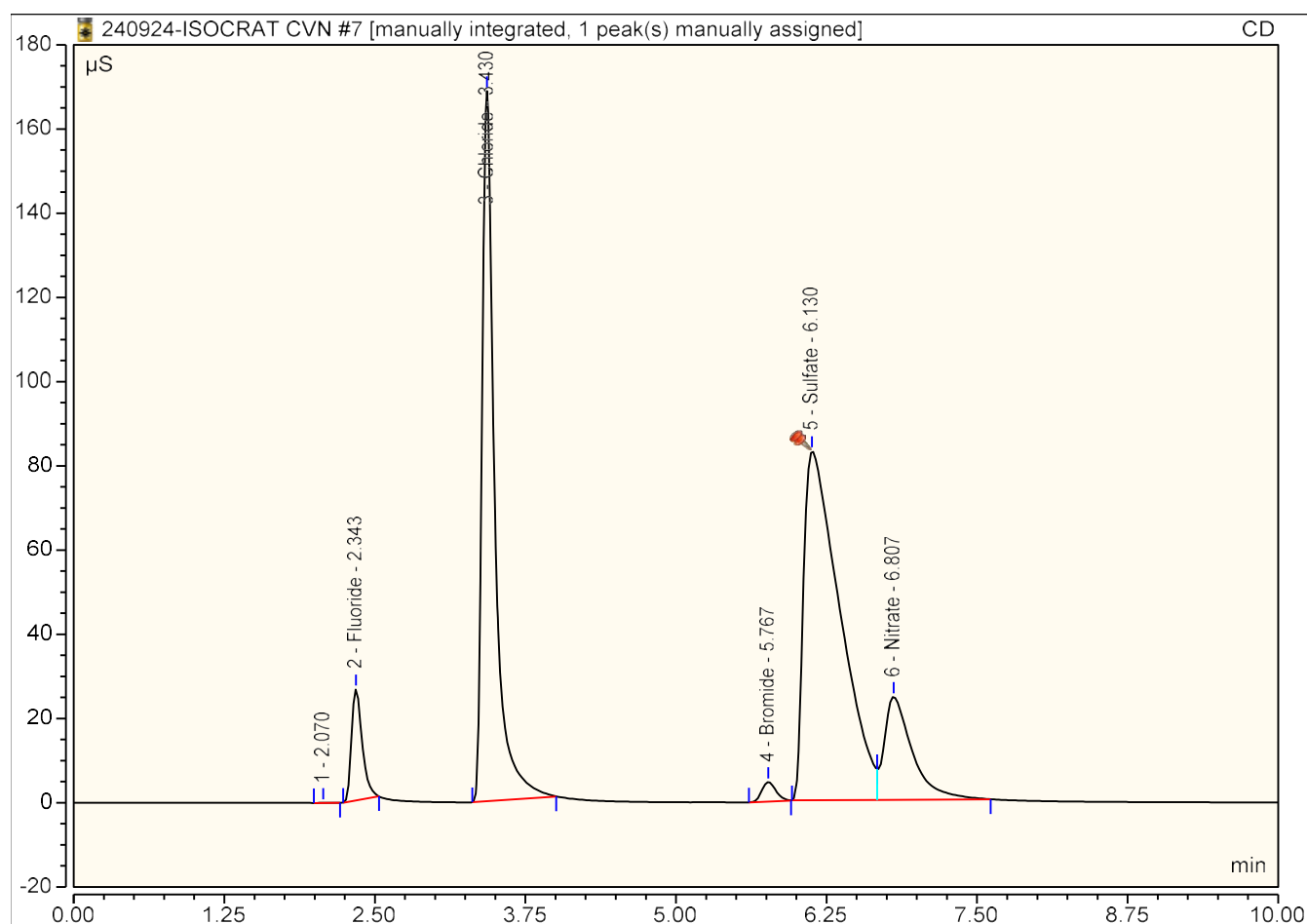
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.34	Fluoride	BMB	1.066	11.023	1.9885
3	3.44	Chloride	BMB*	7.993	67.701	19.7203
4	5.81	Bromide	BMB	0.239	1.650	2.0141
5	6.31	Sulfate	BM *	11.456	44.080	39.8861
6	6.89	Nitrate	MB*	2.529	10.726	2.0078
TOTAL:				23.28	135.18	65.62



Peak Integration Report

Sample Name:	STD 5.0	Inj. Vol.:	25.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 17:21	Run Time:	10.00

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.34	Fluoride	BMB	2.722	26.414	5.0087
3	3.43	Chloride	BMB*	20.443	168.608	50.1170
4	5.77	Bromide	BMB	0.629	4.639	5.2575
5	6.13	Sulfate	BM *^	28.857	82.915	100.0530
6	6.81	Nitrate	MB*	6.605	24.427	5.2021
TOTAL:				59.26	307.00	165.64

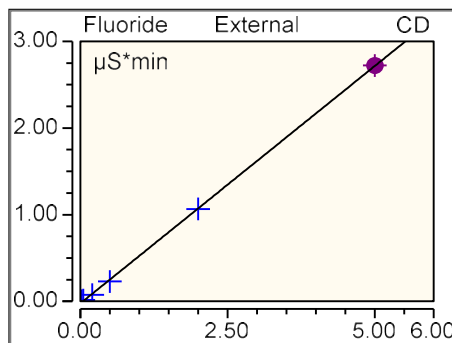


Calibration Batch Report

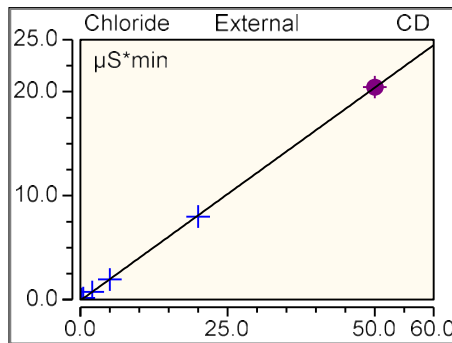
Sequence:	240924-ISOCRAT CVN	Injection Volume:	25.00
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	05-Sep-2024 / 17:21	Run Time:	10

Calibration Summary							
Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Fluoride	Area	in, WithOffset	6.000	-0.024	0.548	0.000	99.9805
Chloride	Area	in, WithOffset	6.000	-0.084	0.410	0.000	99.9935
Bromide	Area	in, WithOffset	5.000	-0.004	0.120	0.000	99.8241
Sulfate	Area	in, WithOffset	6.000	-0.080	0.289	0.000	99.9995
Nitrate	Area	in, WithOffset	5.000	-0.032	1.276	0.000	99.9412
AVERAGE:				-0.0449	0.5287	0.0000	99.9478

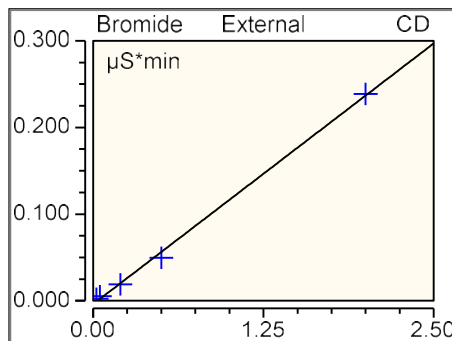
Injection Name	Ret.Time min	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
	CD	CD	CD	CD
STD 0.5	Fluoride 2.330	Fluoride 0.0081	Fluoride 0.081	Fluoride 0.059
STD 1.0	2.330	0.0161	0.169	0.074
STD 2.0	2.333	0.0765	0.836	0.184
STD 3.0	2.333	0.2282	2.511	0.461
STD 4.0	2.340	1.0658	11.023	1.989
STD 5.0	2.343	2.7217	26.414	5.009
Average	2.335			
Rel. Std. Dev.	0.235 %			



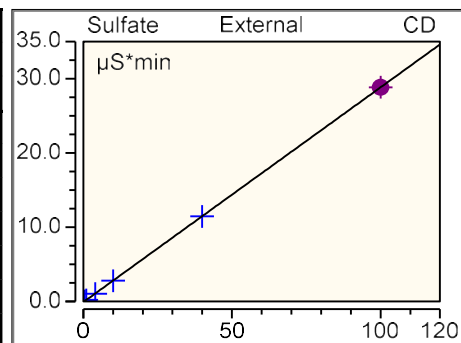
Injection Name	Ret.Time min	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
	CD	CD	CD	CD
STD 0.5	Chloride 3.447	Chloride 0.0744	Chloride 0.618	Chloride 0.387
STD 1.0	3.447	0.1594	1.370	0.595
STD 2.0	3.447	0.7338	6.483	1.997
STD 3.0	3.443	1.9365	17.049	4.934
STD 4.0	3.440	7.9930	67.701	19.720
STD 5.0	3.430	20.4430	168.608	50.117
Average	3.442			
Rel. Std. Dev.	0.190 %			



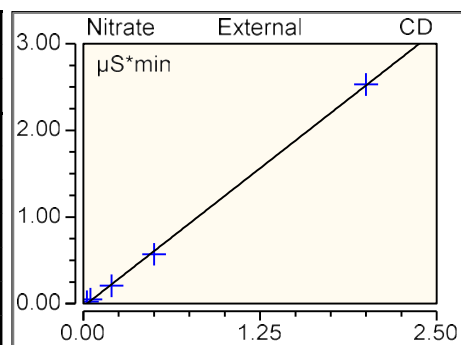
Injection Name	Ret.Time min	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
	CD	CD	CD	CD
STD 0.5	Bromide 5.850	Bromide 0.0024	Bromide 0.013	Bromide 0.053
STD 1.0	5.843	0.0051	0.031	0.075
STD 2.0	5.843	0.0188	0.116	0.189
STD 3.0	5.837	0.0495	0.317	0.444
STD 4.0	5.813	0.2386	1.650	2.014
STD 5.0	5.767	0.6291	4.639	5.257
Average	5.826			
Rel. Std. Dev.	0.541 %			



Injection Name	Ret. Time min CD	Area $\mu\text{S} \cdot \text{min}$ CD	Height μS CD	Amount CD
STD 0.5	Sulfate 6.530	Sulfate 0.1004	Sulfate 0.545	Sulfate 0.624
STD 1.0	6.523	0.2234	1.257	1.049
STD 2.0	6.497	1.0642	5.973	3.956
STD 3.0	6.453	2.7926	14.483	9.932
STD 4.0	6.307	11.4558	44.080	39.886
STD 5.0	6.130	28.8572	82.915	100.053
Average	6.407			
Rel. Std. Dev.	2.474 %			



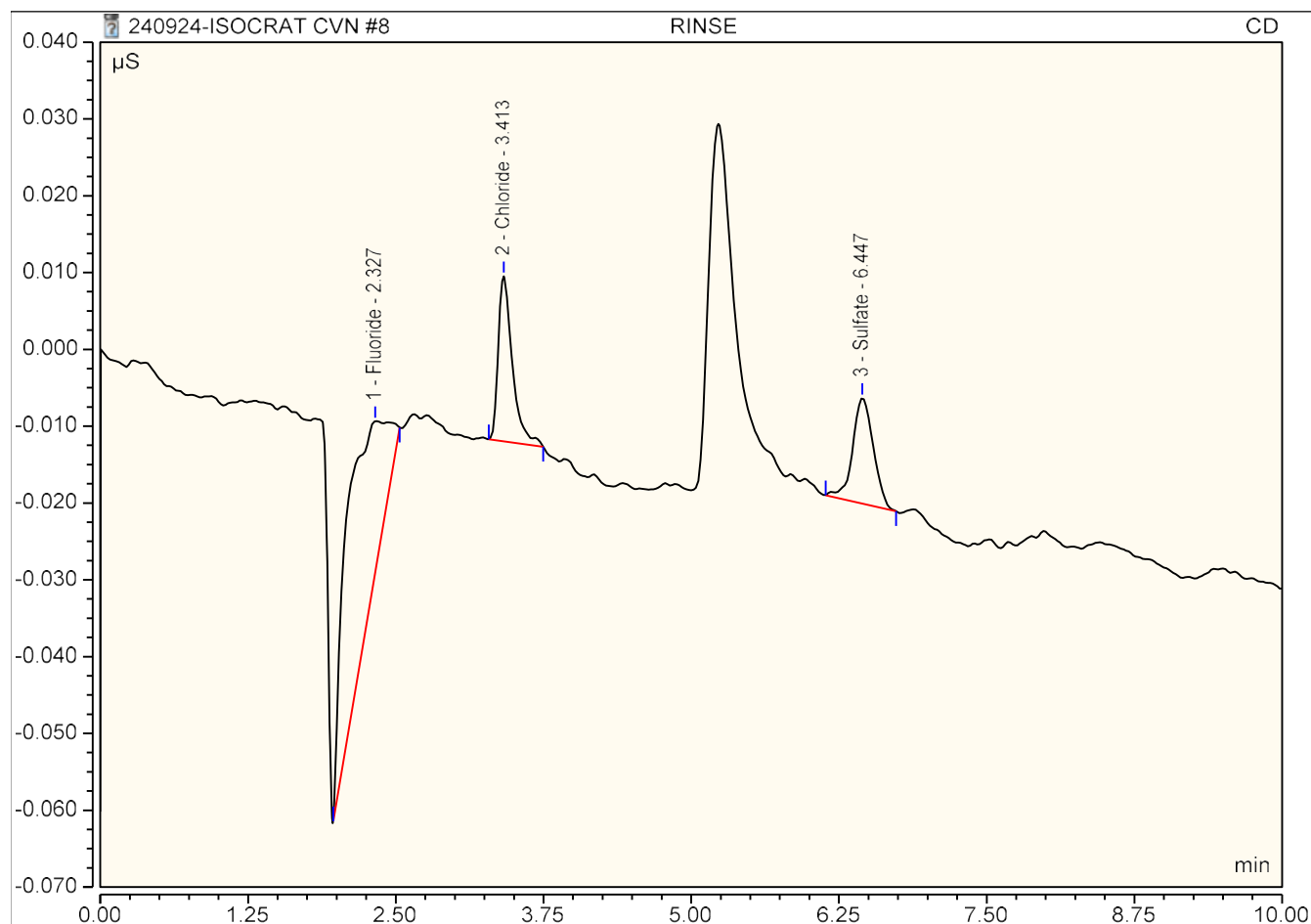
Injection Name	Ret. Time min CD	Area $\mu\text{S} \cdot \text{min}$ CD	Height μS CD	Amount CD
STD 0.5	Nitrate 6.967	Nitrate 0.0242	Nitrate 0.098	Nitrate 0.044
STD 1.0	6.960	0.0502	0.205	0.065
STD 2.0	6.953	0.2061	0.936	0.187
STD 3.0	6.940	0.5696	2.634	0.472
STD 4.0	6.887	2.5293	10.726	2.008
STD 5.0	6.807	6.6045	24.427	5.202
Average	6.919			
Rel. Std. Dev.	0.896 %			



Peak Integration Report

Sample Name:	RINSE	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 10:30	Run Time:	10.00

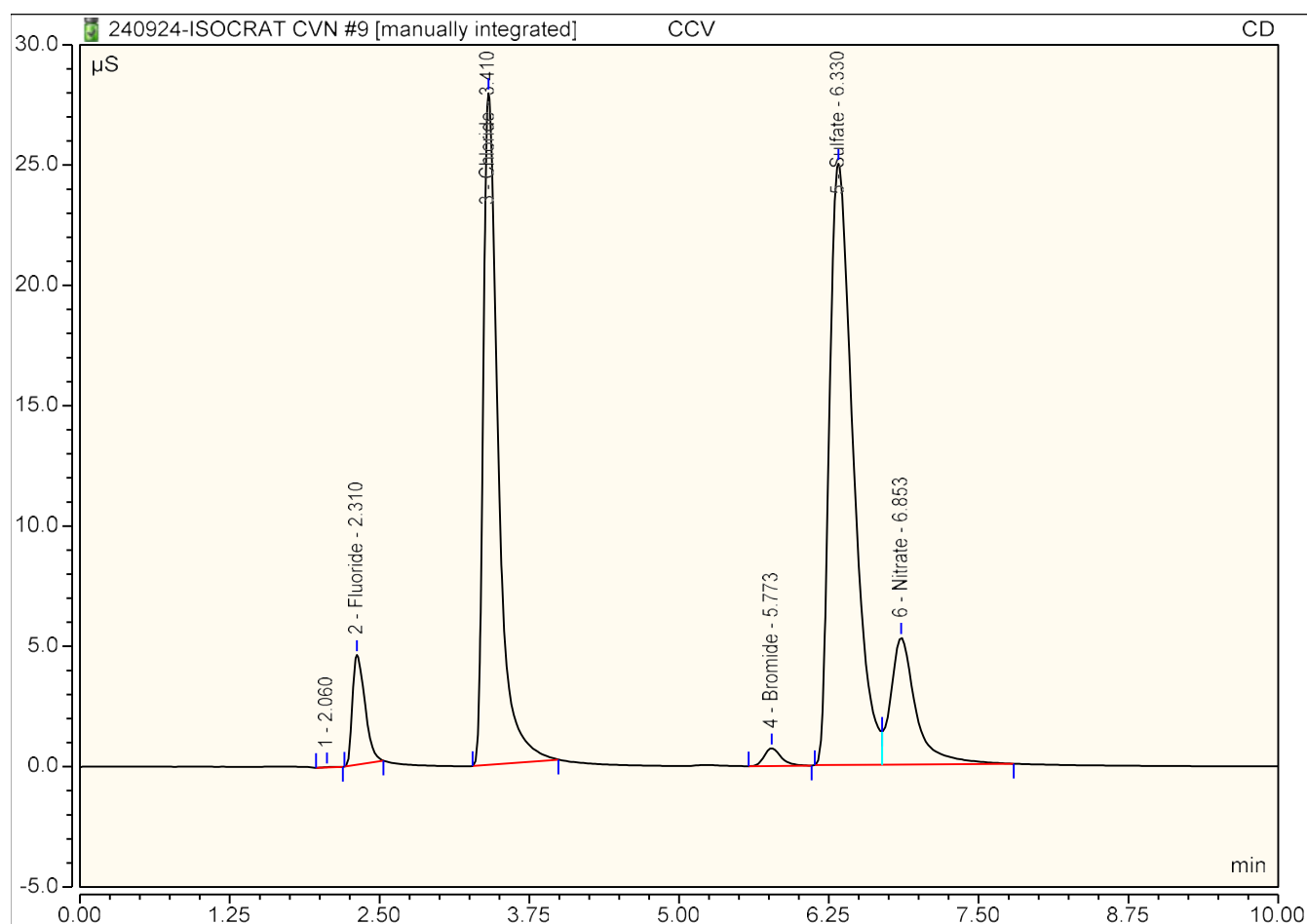
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.33	Fluoride	BMB	0.010	0.020	0.0634
2	3.41	Chloride	BMB	0.003	0.021	0.2129
3	6.45	Sulfate	BMB	0.003	0.014	0.2862
TOTAL:				0.02	0.05	0.56



Peak Integration Report

Sample Name:	CCV	Inj. Vol.:	25.00
Injection Type:	Check Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 10:42	Run Time:	10.00

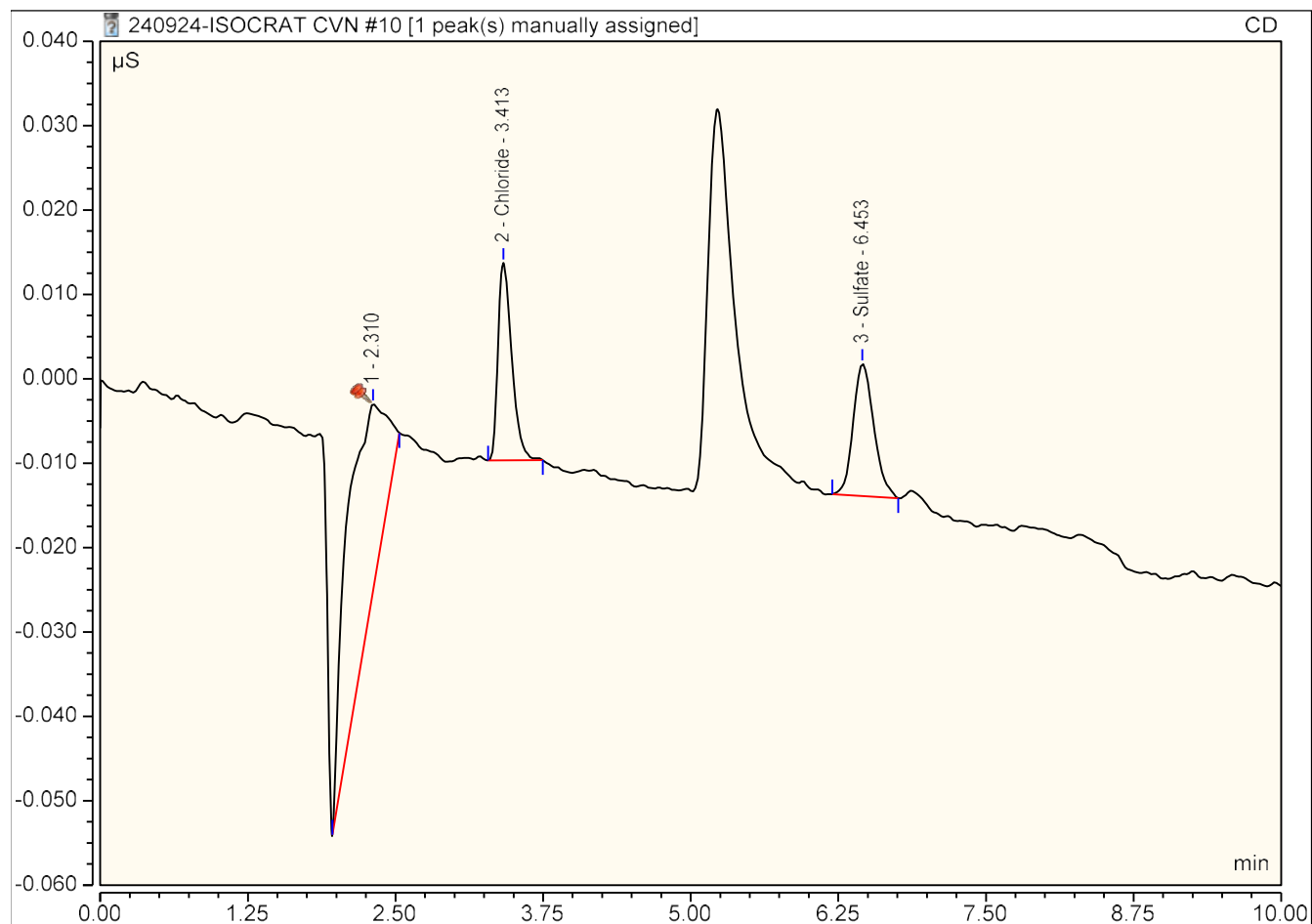
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.550	4.564	1.0482
3	3.41	Chloride	BMB*	4.068	27.915	10.1373
4	5.77	Bromide	BMB	0.121	0.736	1.0347
5	6.33	Sulfate	BM *	5.736	24.986	20.1100
6	6.85	Nitrate	MB*	1.291	5.272	1.0373
TOTAL:				11.77	63.47	33.37



Peak Integration Report

Sample Name:	CCB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 10:54	Run Time:	10.00

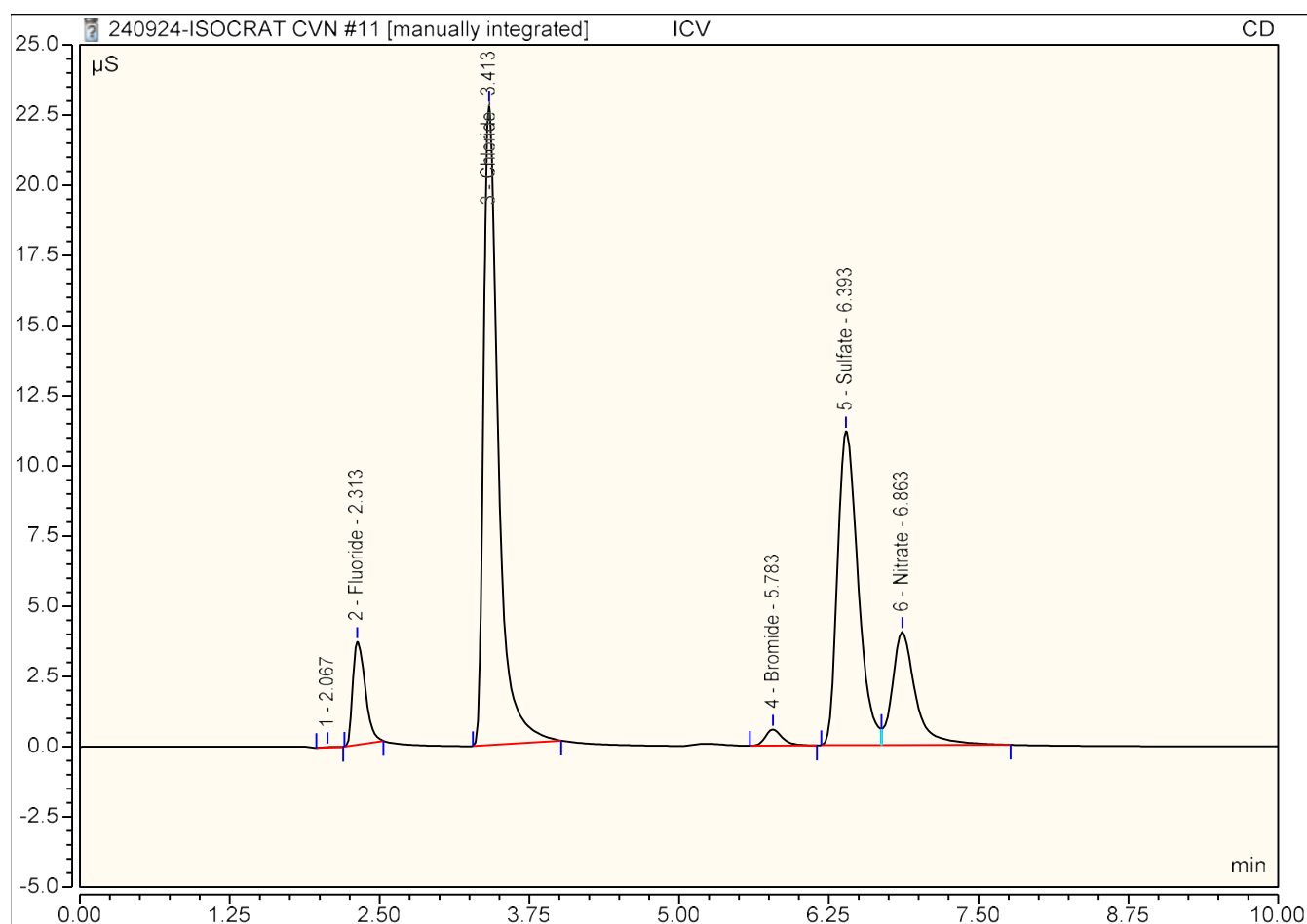
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	3.41	Chloride	BMB	0.003	0.023	0.2133
3	6.45	Sulfate	BMB	0.003	0.016	0.2875
TOTAL:				0.01	0.04	0.50



Peak Integration Report

Sample Name:	ICV	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 11:06	Run Time:	10.00

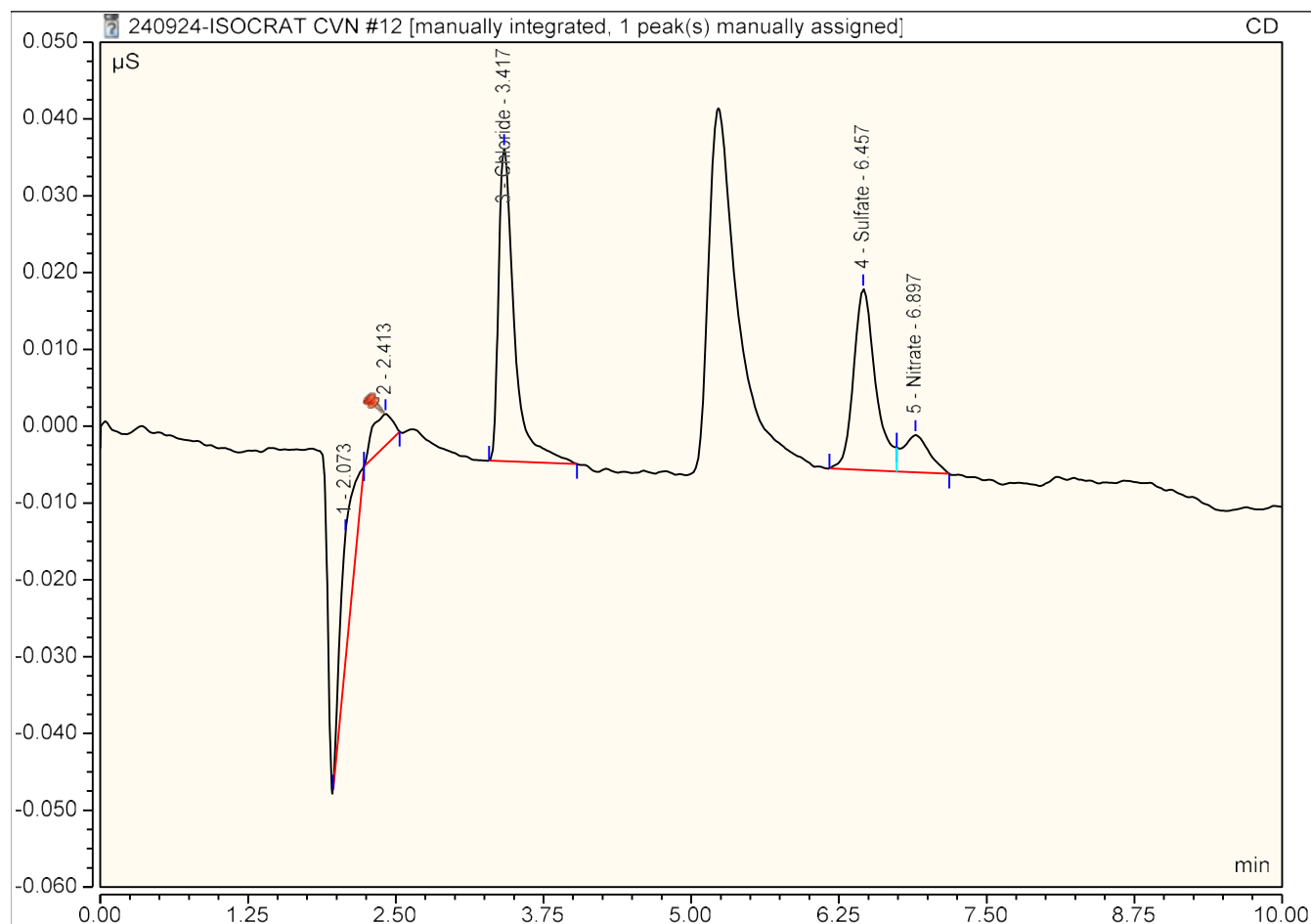
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.440	3.666	0.8479
3	3.41	Chloride	BMB*	3.279	22.782	8.2124
4	5.78	Bromide	BMB	0.096	0.576	0.8283
5	6.39	Sulfate	BM *	2.226	11.174	7.9716
6	6.86	Nitrate	MB*	0.903	4.029	0.7330
TOTAL:				6.94	42.23	18.59



Peak Integration Report

Sample Name:	ICB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 11:18	Run Time:	10.00

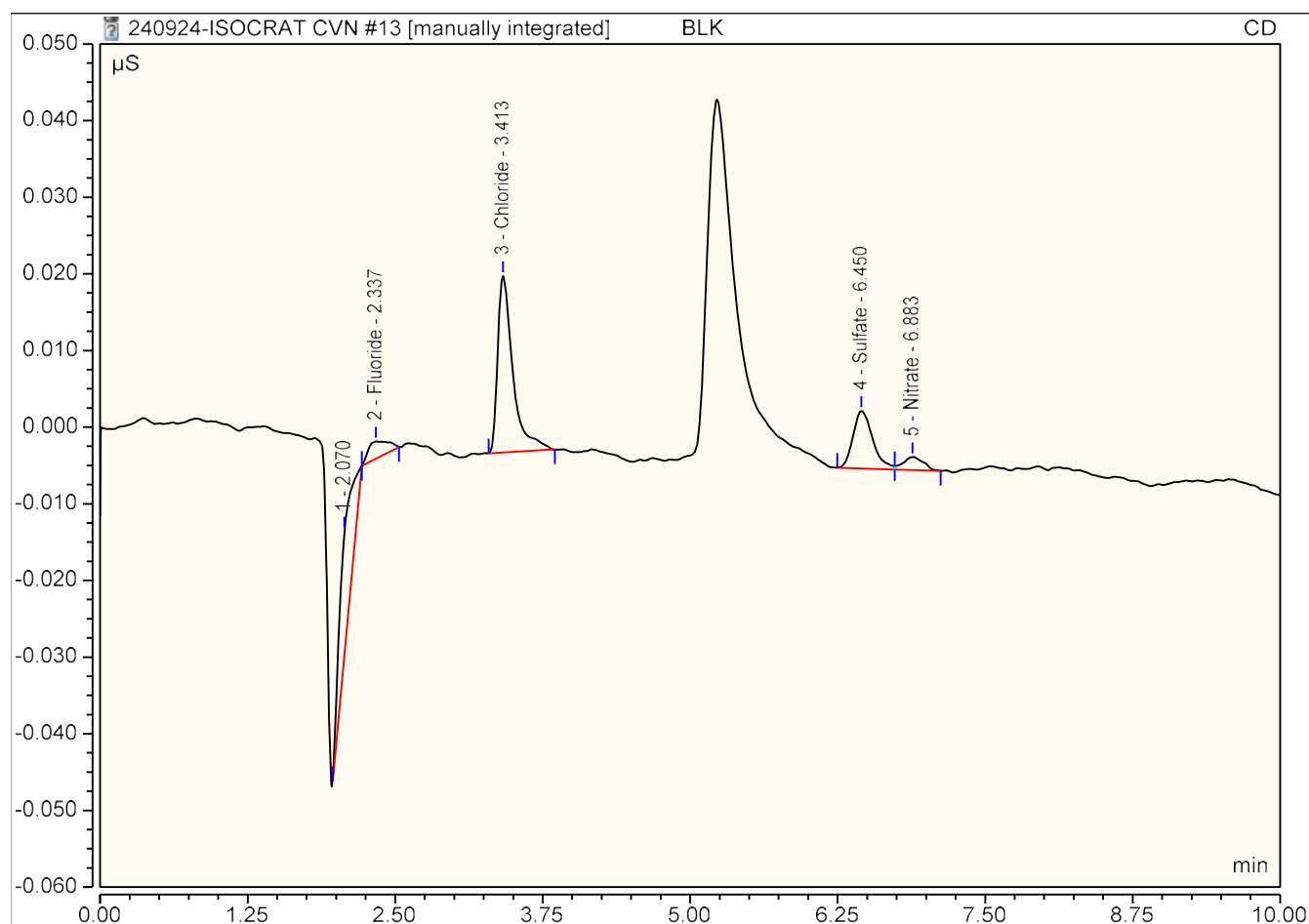
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.42	Chloride	BMB*	0.006	0.041	0.2209
4	6.46	Sulfate	BM *	0.005	0.024	0.2942
5	6.90	Nitrate	MB*	0.001	0.005	0.0262
TOTAL:				0.01	0.07	0.54



Peak Integration Report

Sample Name:	BLK	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 11:30	Run Time:	10.00

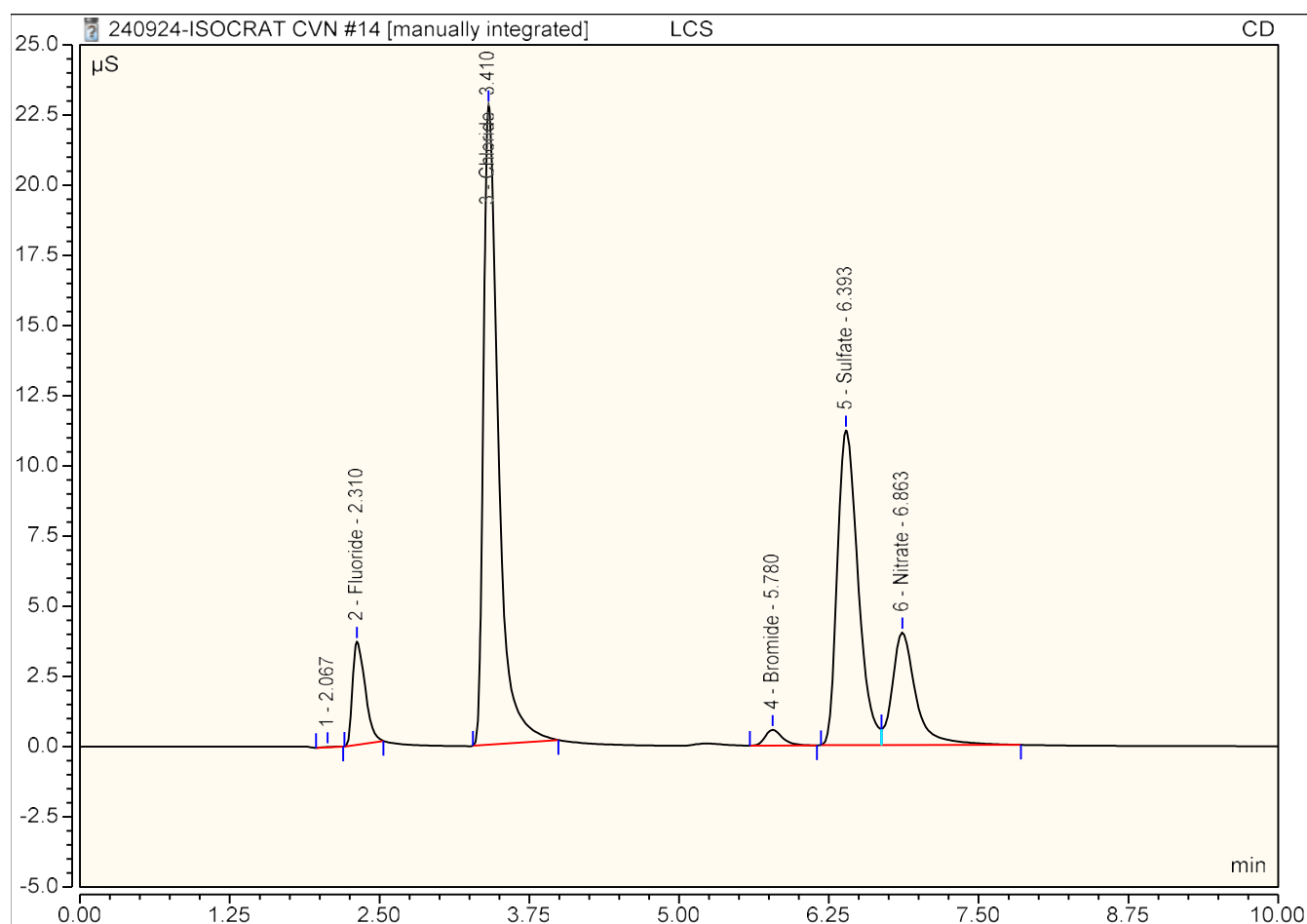
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.34	Fluoride	BMB	0.000	0.002	0.0453
3	3.41	Chloride	BMB*	0.003	0.023	0.2140
4	6.45	Sulfate	BM *	0.001	0.008	0.2815
5	6.88	Nitrate	MB*	0.000	0.002	0.0255
TOTAL:				0.01	0.03	0.57



Peak Integration Report

Sample Name:	LCS	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 11:42	Run Time:	10.00

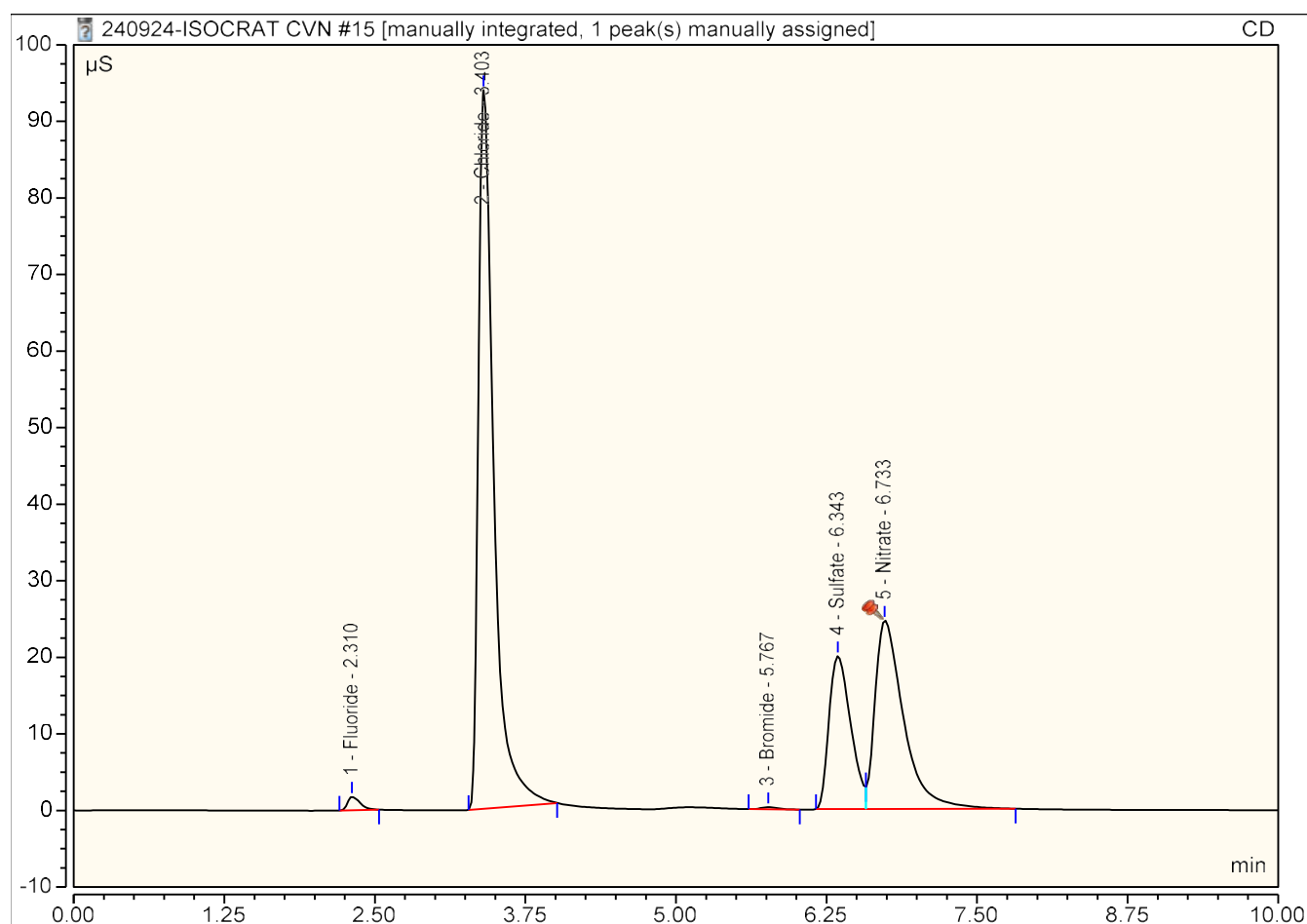
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.443	3.674	0.8525
3	3.41	Chloride	BMB*	3.291	22.789	8.2394
4	5.78	Bromide	BMB	0.095	0.567	0.8223
5	6.39	Sulfate	BM *	2.245	11.213	8.0393
6	6.86	Nitrate	MB*	0.912	4.014	0.7398
TOTAL:				6.99	42.26	18.69



Peak Integration Report

Sample Name:	L2453711-05 MS	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 11:54	Run Time:	10.00

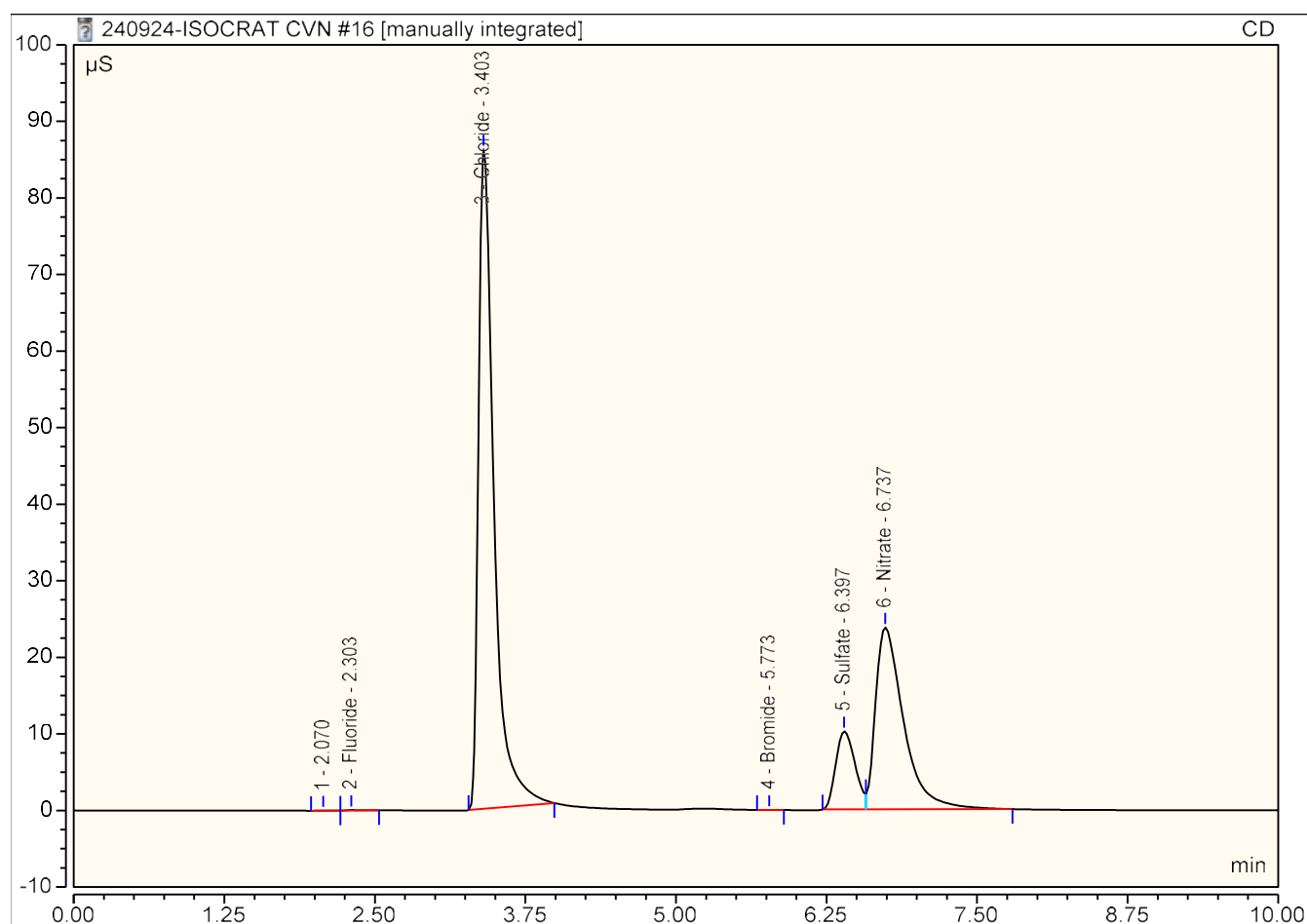
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.31	Fluoride	BMB	0.209	1.764	0.4263
2	3.40	Chloride	BMB*	13.978	93.870	34.3326
3	5.77	Bromide	BMB	0.043	0.274	0.3899
4	6.34	Sulfate	BM *	4.159	19.961	14.6552
5	6.73	Nitrate	MB*^	6.754	24.595	5.3189
TOTAL:				25.14	140.46	55.12



Peak Integration Report

Sample Name:	L2453711-05 DUP	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 12:07	Run Time:	10.00

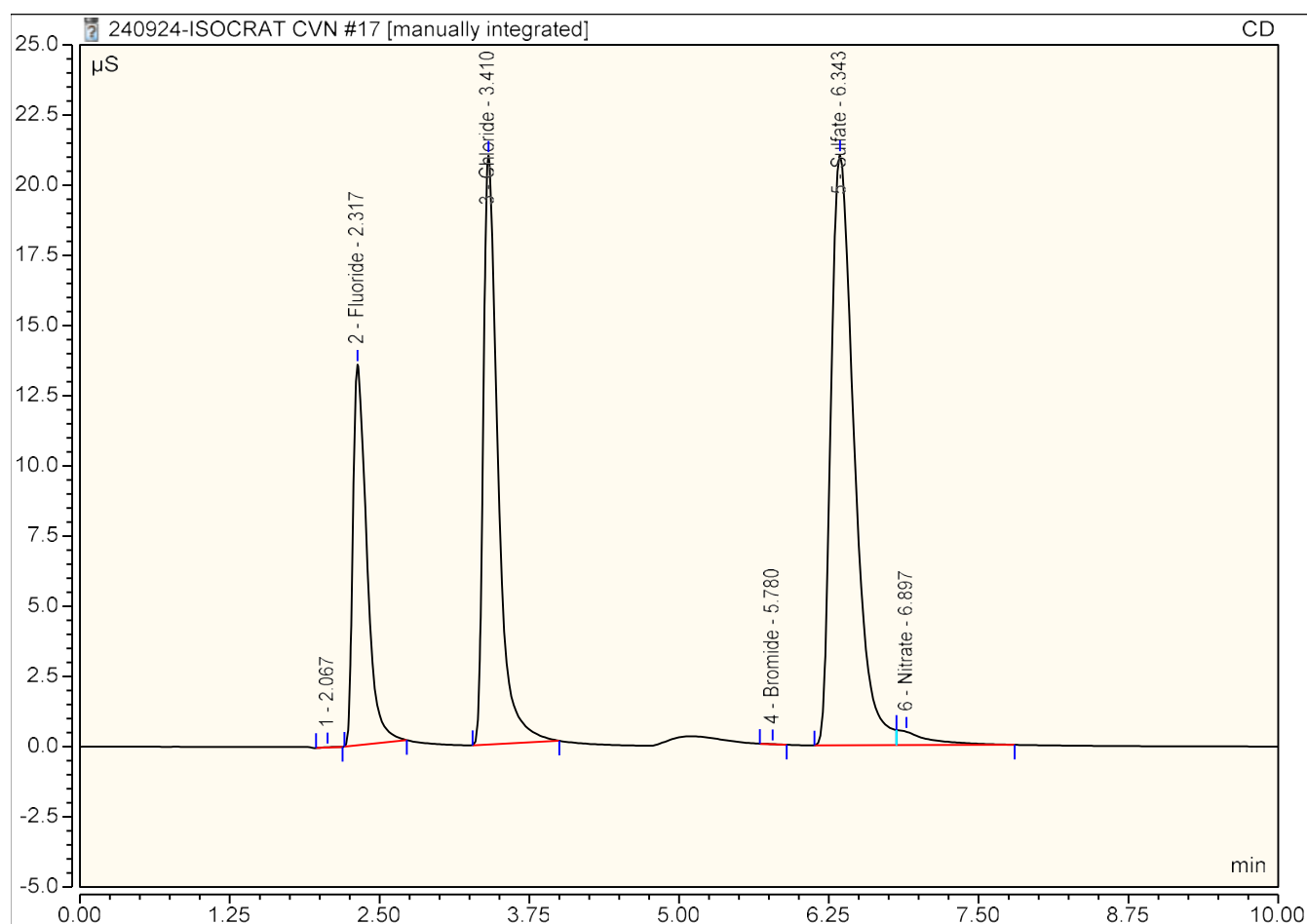
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.007	0.053	0.0572
3	3.40	Chloride	BMB*	12.843	86.123	31.5610
4	5.77	Bromide	BMB	0.000	0.004	0.0364
5	6.40	Sulfate	BM *	1.904	10.190	6.8590
6	6.74	Nitrate	MB*	6.423	23.739	5.0597
TOTAL:				21.18	120.11	43.57



Peak Integration Report

Sample Name:	L2453894-01 BR CL SO4	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 12:19	Run Time:	10.00

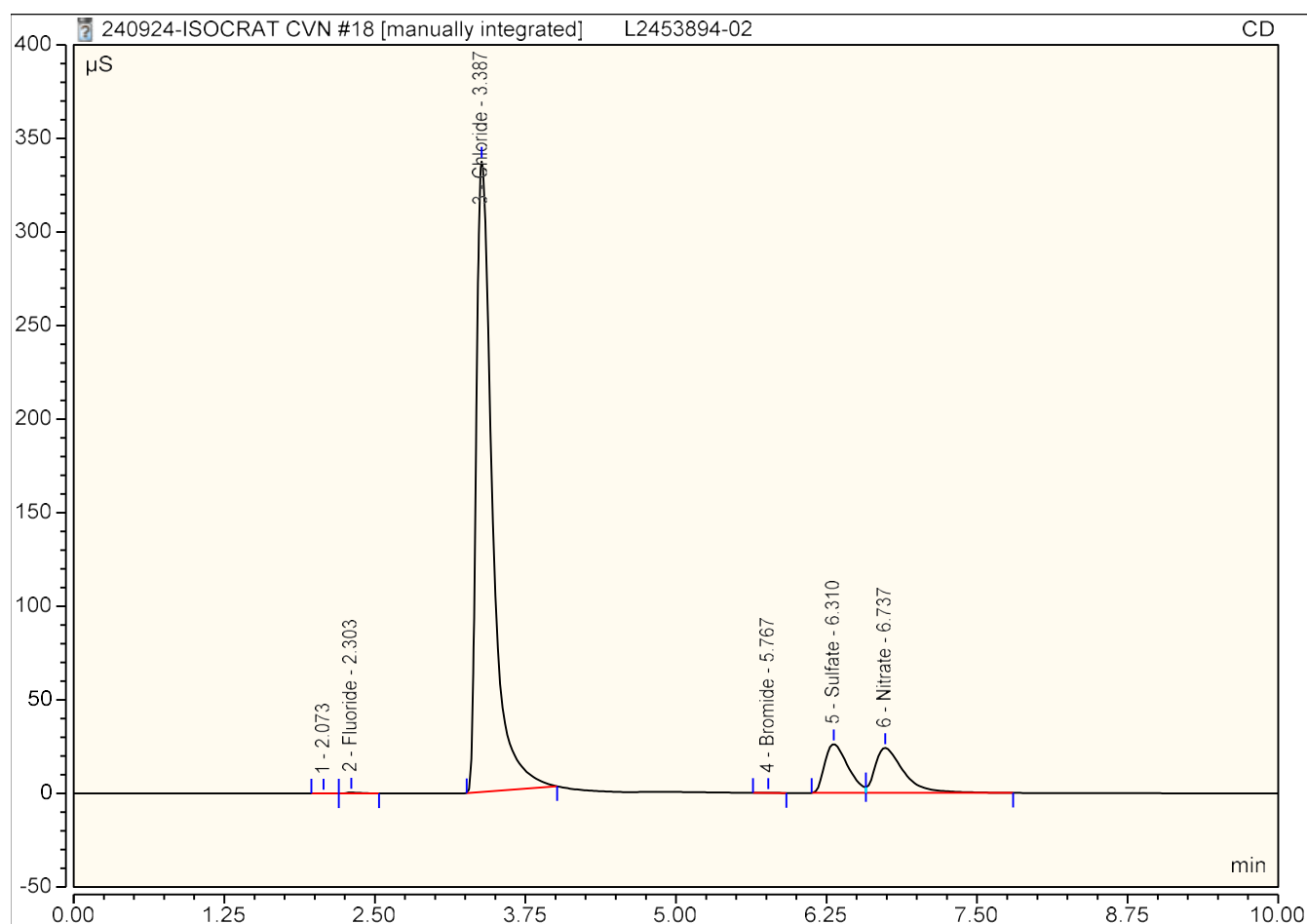
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.32	Fluoride	BMB*	1.818	13.553	3.3610
3	3.41	Chloride	BMB*	2.987	20.970	7.4986
4	5.78	Bromide	BMB	0.001	0.005	0.0375
5	6.34	Sulfate	BM *	4.723	21.026	16.6050
6	6.90	Nitrate	MB*	0.152	0.476	0.1445
TOTAL:				9.68	56.03	27.65



Peak Integration Report

Sample Name:	L2453894-02	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 12:31	Run Time:	10.00

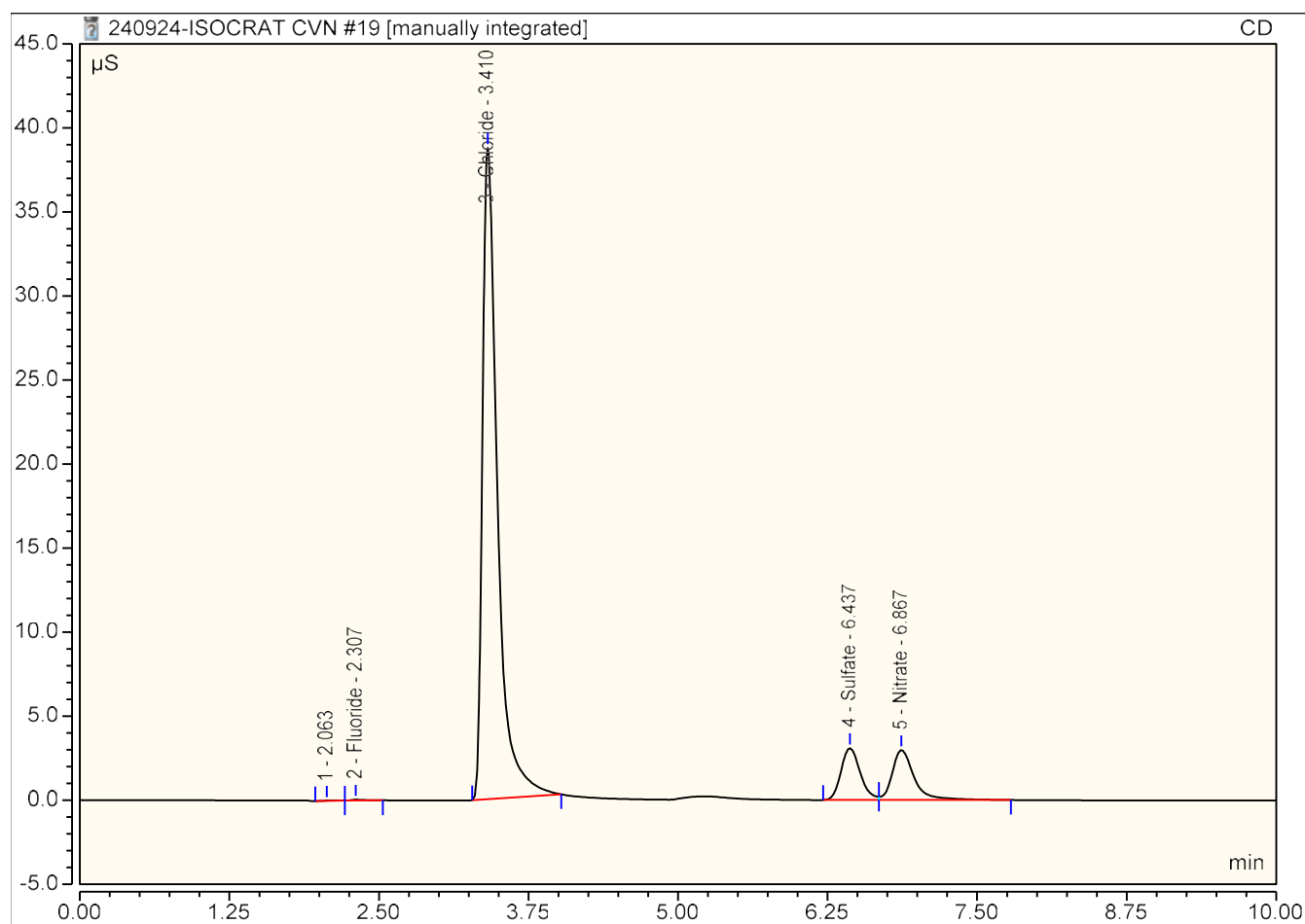
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.060	0.494	0.1532
3	3.39	Chloride	BMB*	52.529	336.859	128.4545
4	5.77	Bromide	BMB	0.002	0.014	0.0472
5	6.31	Sulfate	BM *	5.803	26.069	20.3402
6	6.74	Nitrate	MB*	6.619	24.108	5.2132
TOTAL:				65.01	387.54	154.21



Peak Integration Report

Sample Name:	L2453894-02; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 12:43	Run Time:	10.00

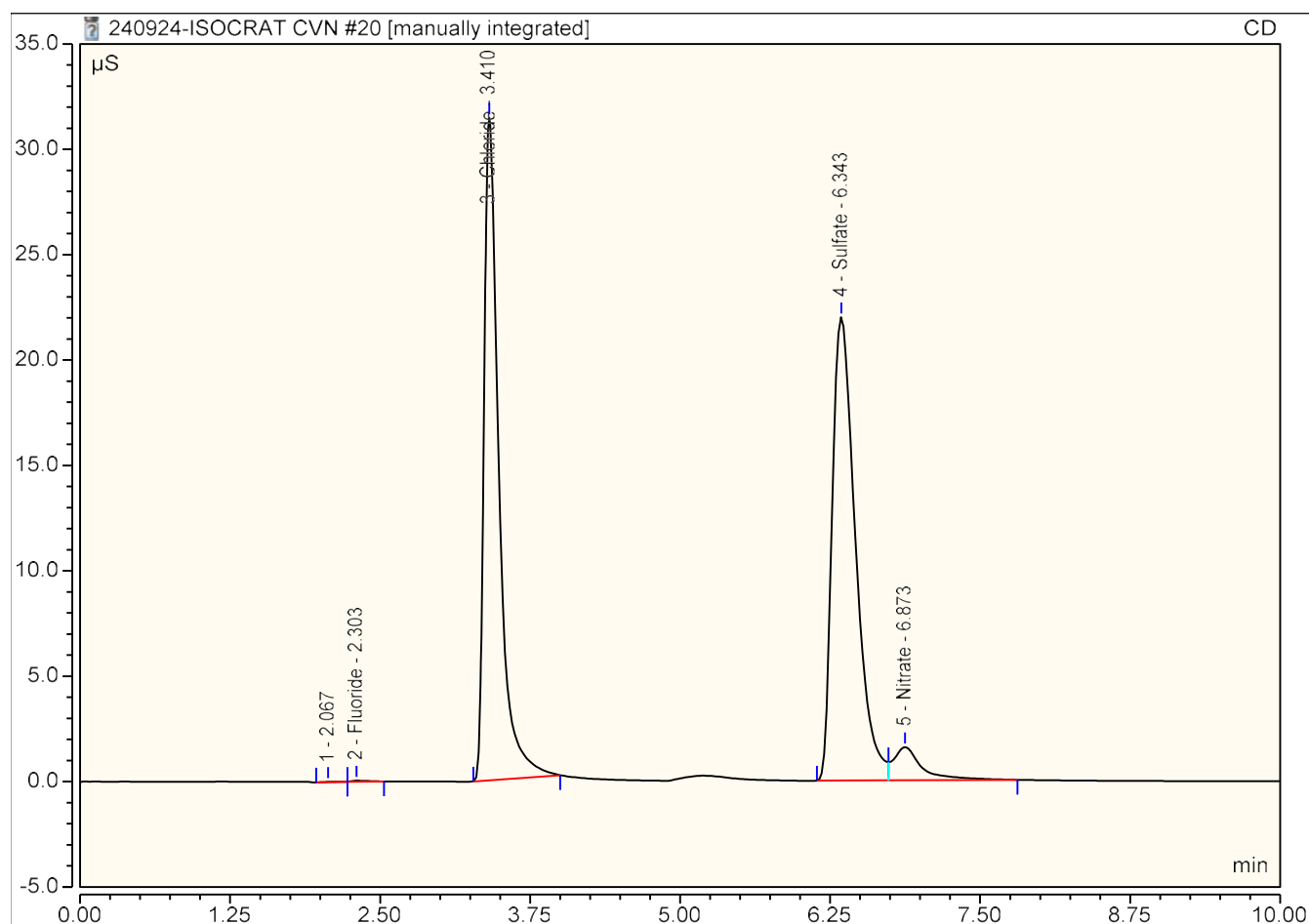
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.006	0.048	0.5617
3	3.41	Chloride	BMB*	5.630	38.752	139.5066
4	6.44	Sulfate	BM *	0.573	3.093	22.5646
5	6.87	Nitrate	MB*	0.631	2.976	5.1995
TOTAL:				6.84	44.87	167.83



Peak Integration Report

Sample Name:	L2453894-03; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 12:55	Run Time:	10.00

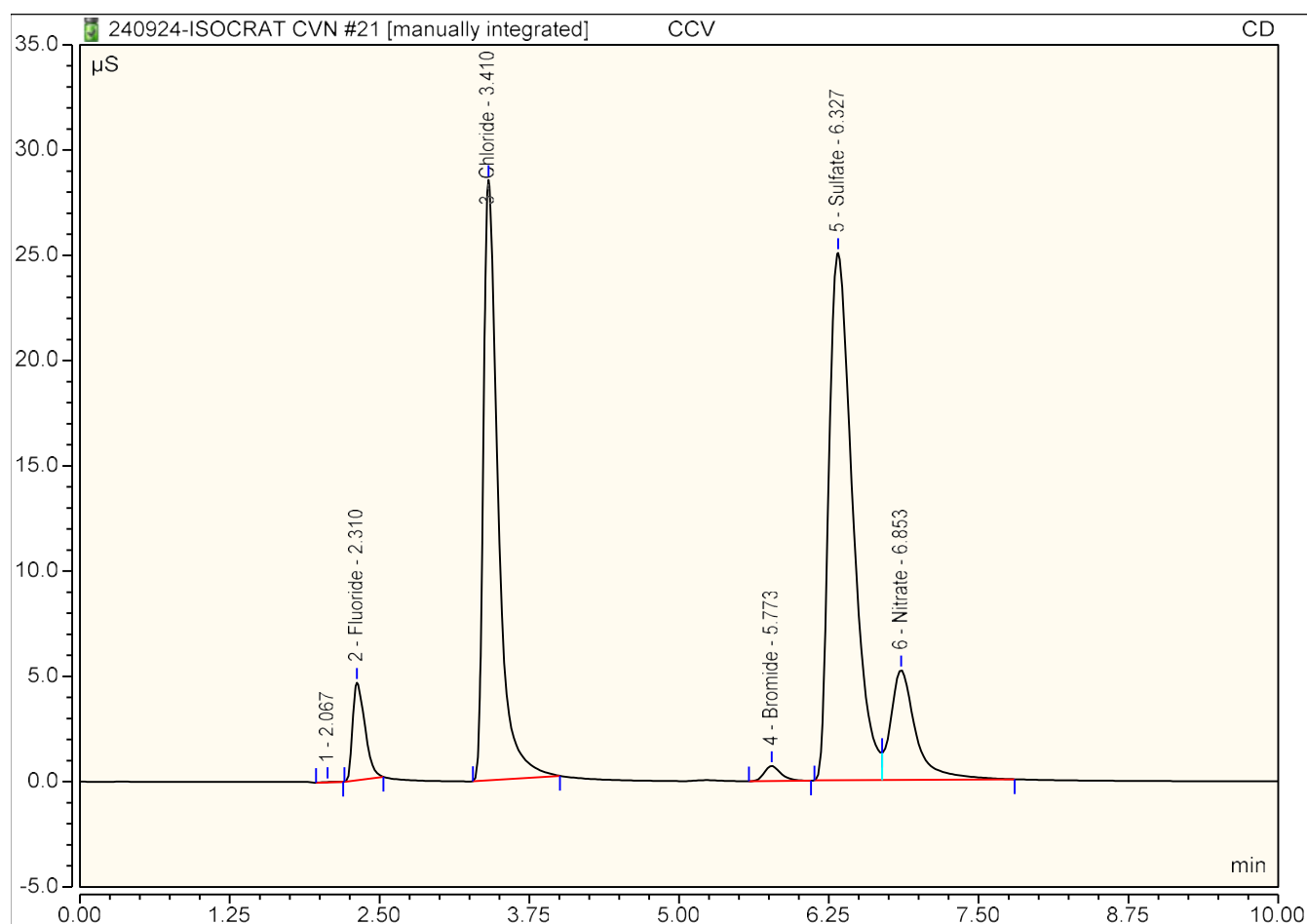
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.007	0.050	0.5798
3	3.41	Chloride	BMB*	4.498	31.427	111.8826
4	6.34	Sulfate	BM *	4.943	21.978	173.6685
5	6.87	Nitrate	MB*	0.429	1.572	3.6172
TOTAL:				9.88	55.03	289.75



Peak Integration Report

Sample Name:	CCV	Inj. Vol.:	25.00
Injection Type:	Check Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 13:07	Run Time:	10.00

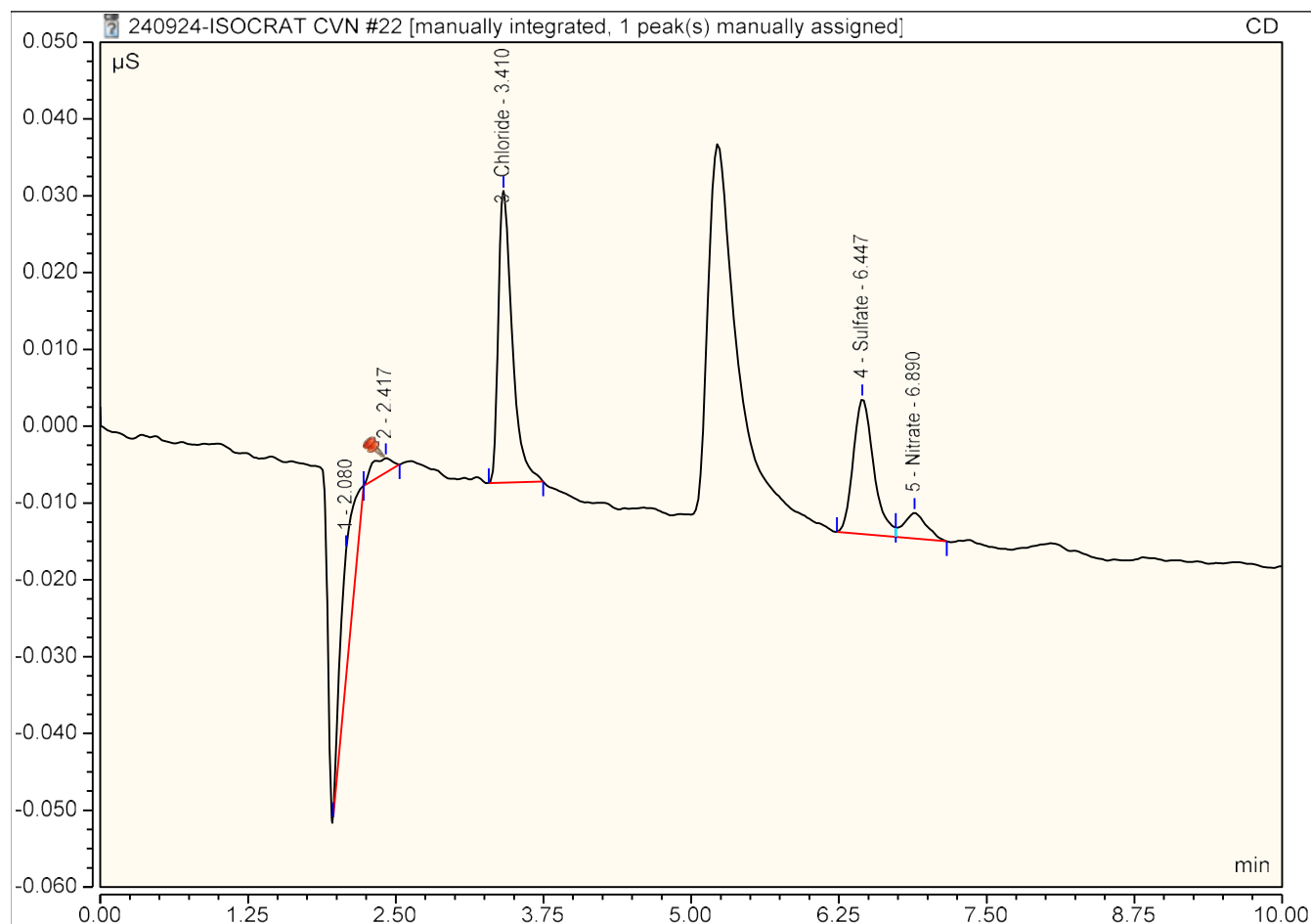
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.548	4.636	1.0446
3	3.41	Chloride	BMB*	4.076	28.503	10.1559
4	5.77	Bromide	BMB	0.117	0.717	1.0029
5	6.33	Sulfate	BM *	5.746	25.047	20.1452
6	6.85	Nitrate	MB*	1.270	5.212	1.0208
TOTAL:				11.76	64.11	33.37



Peak Integration Report

Sample Name:	CCB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 13:19	Run Time:	10.00

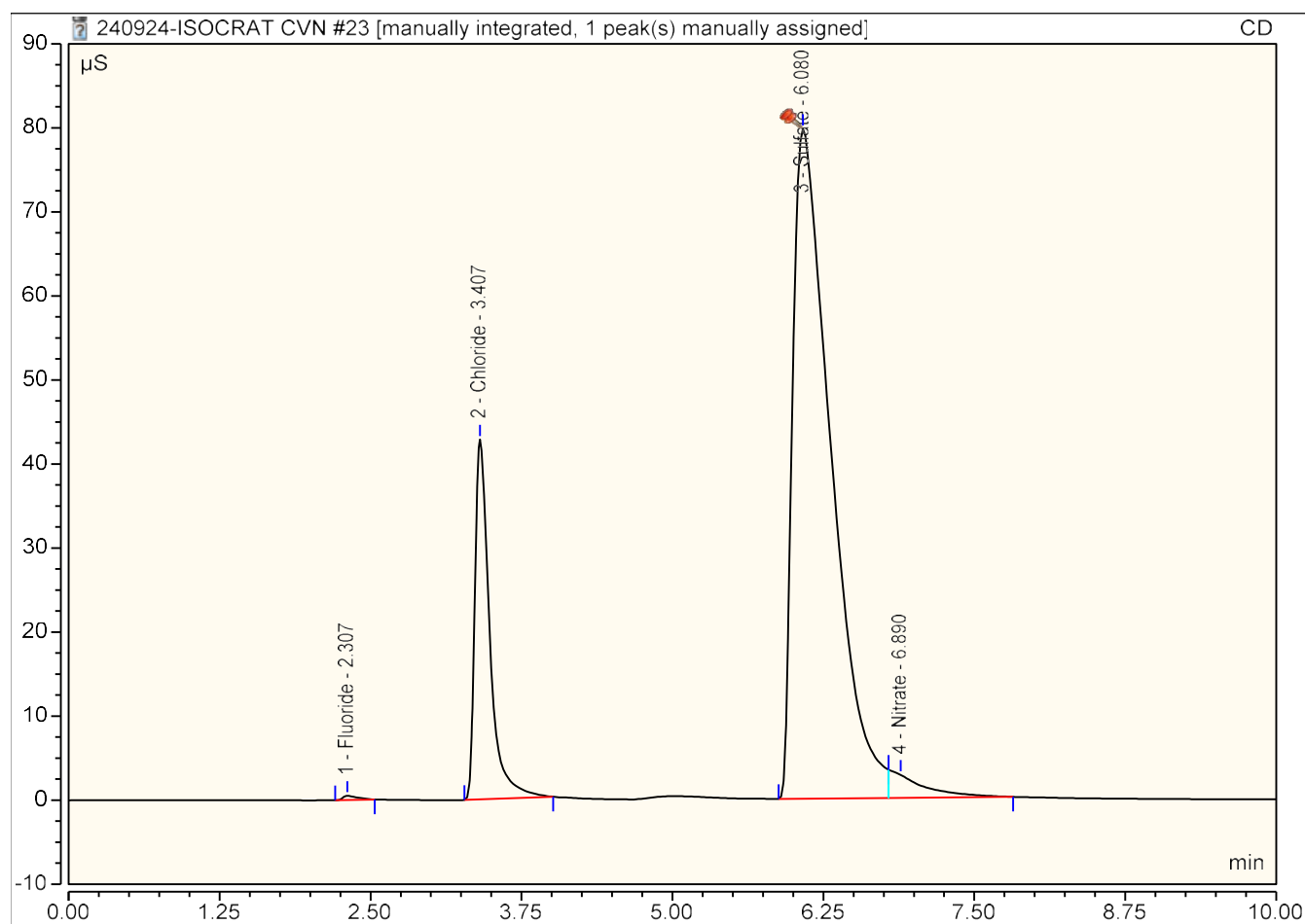
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB	0.005	0.038	0.2183
4	6.45	Sulfate	BM *	0.004	0.018	0.2887
5	6.89	Nitrate	MB*	0.001	0.003	0.0258
TOTAL:				0.01	0.06	0.53



Peak Integration Report

Sample Name:	L2453894-04	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 13:31	Run Time:	10.00

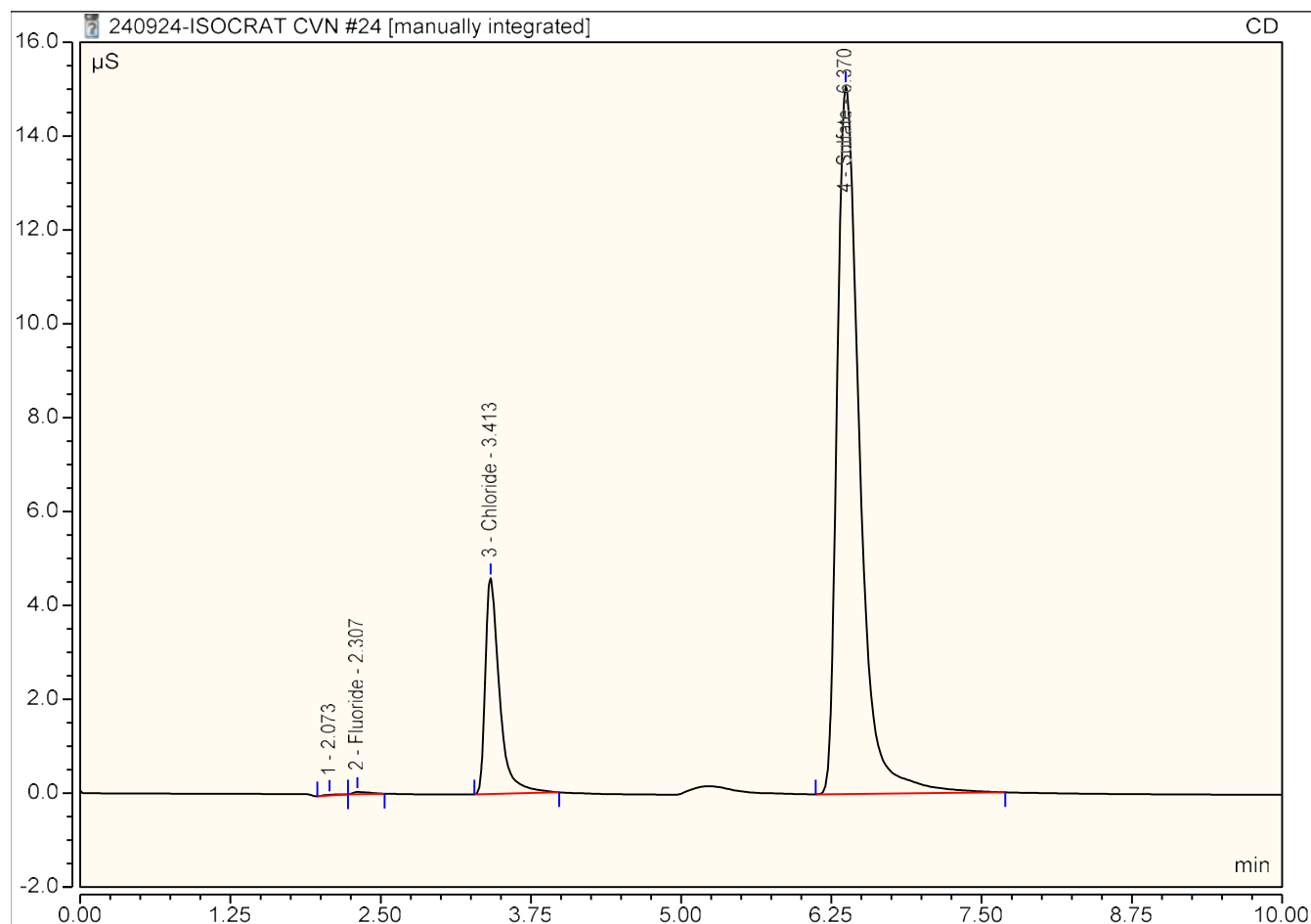
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.31	Fluoride	BMB	0.072	0.510	0.1749
2	3.41	Chloride	BMB*	6.124	42.810	15.1571
3	6.08	Sulfate	BM ^*	29.133	79.685	101.0062
4	6.89	Nitrate	MB*	1.003	2.738	0.8111
TOTAL:				36.33	125.74	117.15



Peak Integration Report

Sample Name:	L2453894-04; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 13:43	Run Time:	10.00

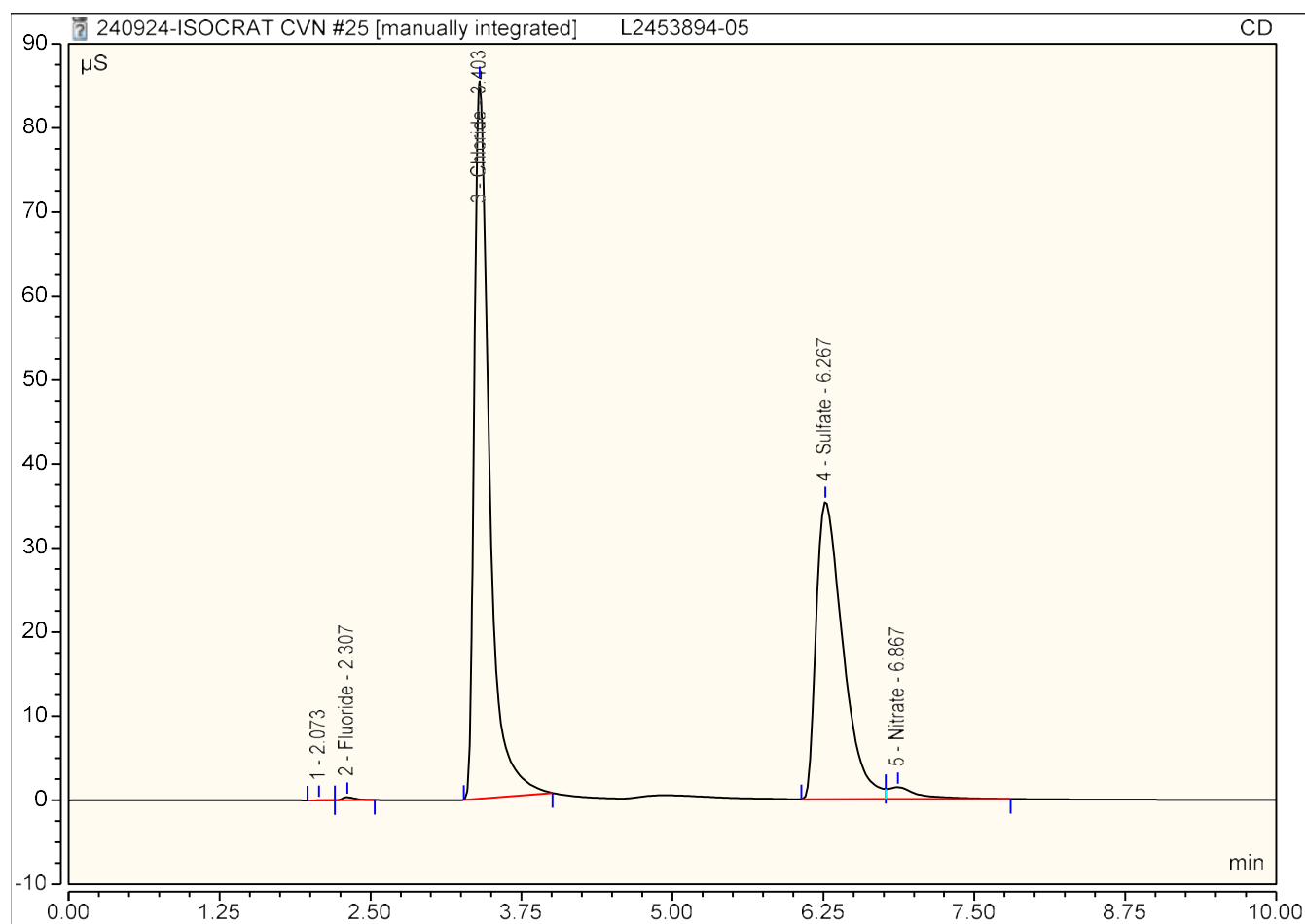
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.008	0.050	0.5820
3	3.41	Chloride	BMB*	0.630	4.599	17.4446
4	6.37	Sulfate	BMB	3.283	15.081	116.2798
TOTAL:				3.92	19.73	134.31



Peak Integration Report

Sample Name:	L2453894-05	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 13:55	Run Time:	10.00

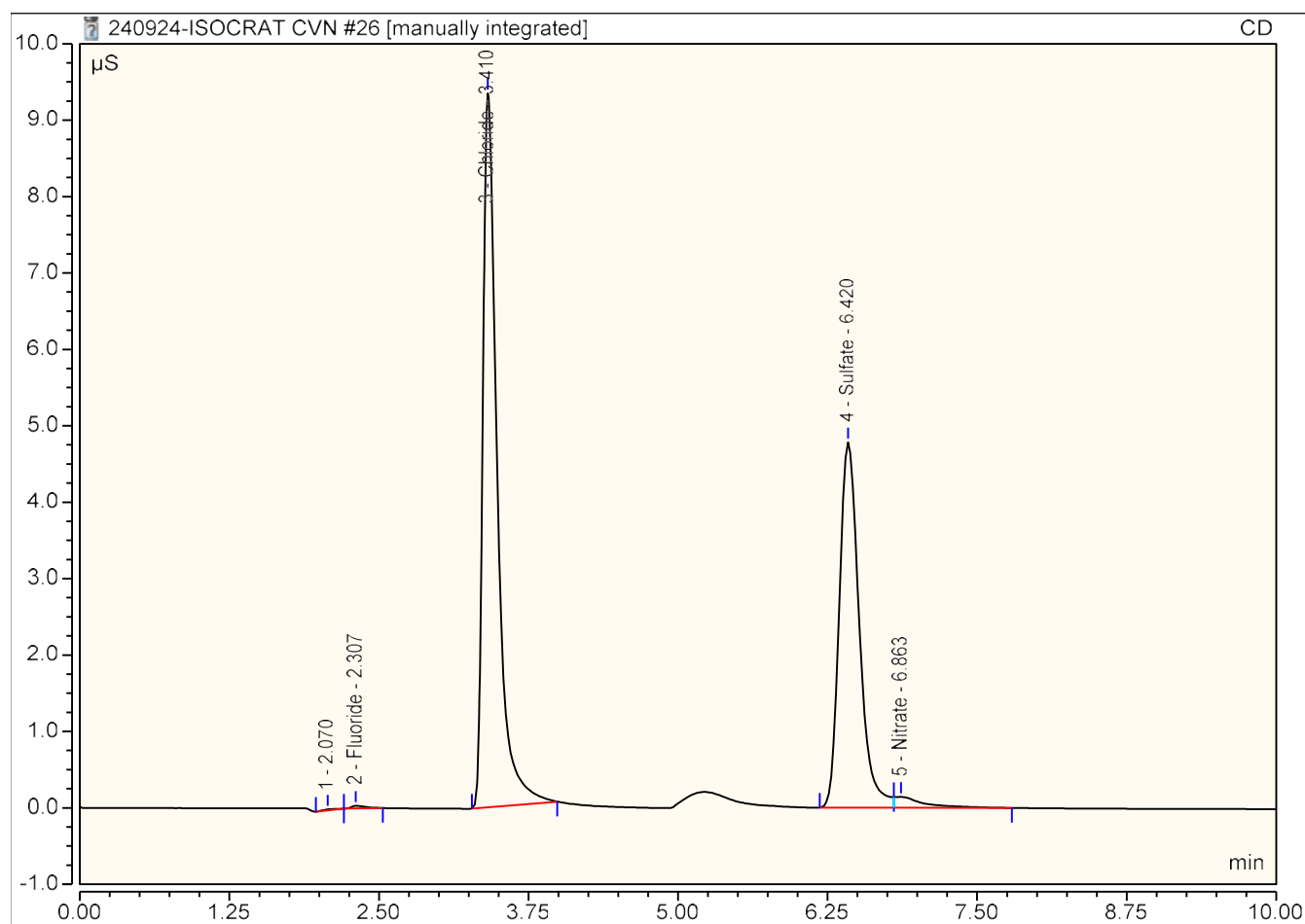
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.042	0.353	0.1212
3	3.40	Chloride	BMB*	12.457	85.354	30.6181
4	6.27	Sulfate	BM *	9.089	35.427	31.7030
5	6.87	Nitrate	MB*	0.420	1.408	0.3542
TOTAL:				22.01	122.54	62.80



Peak Integration Report

Sample Name:	XL2453894-05; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 14:07	Run Time:	10.00

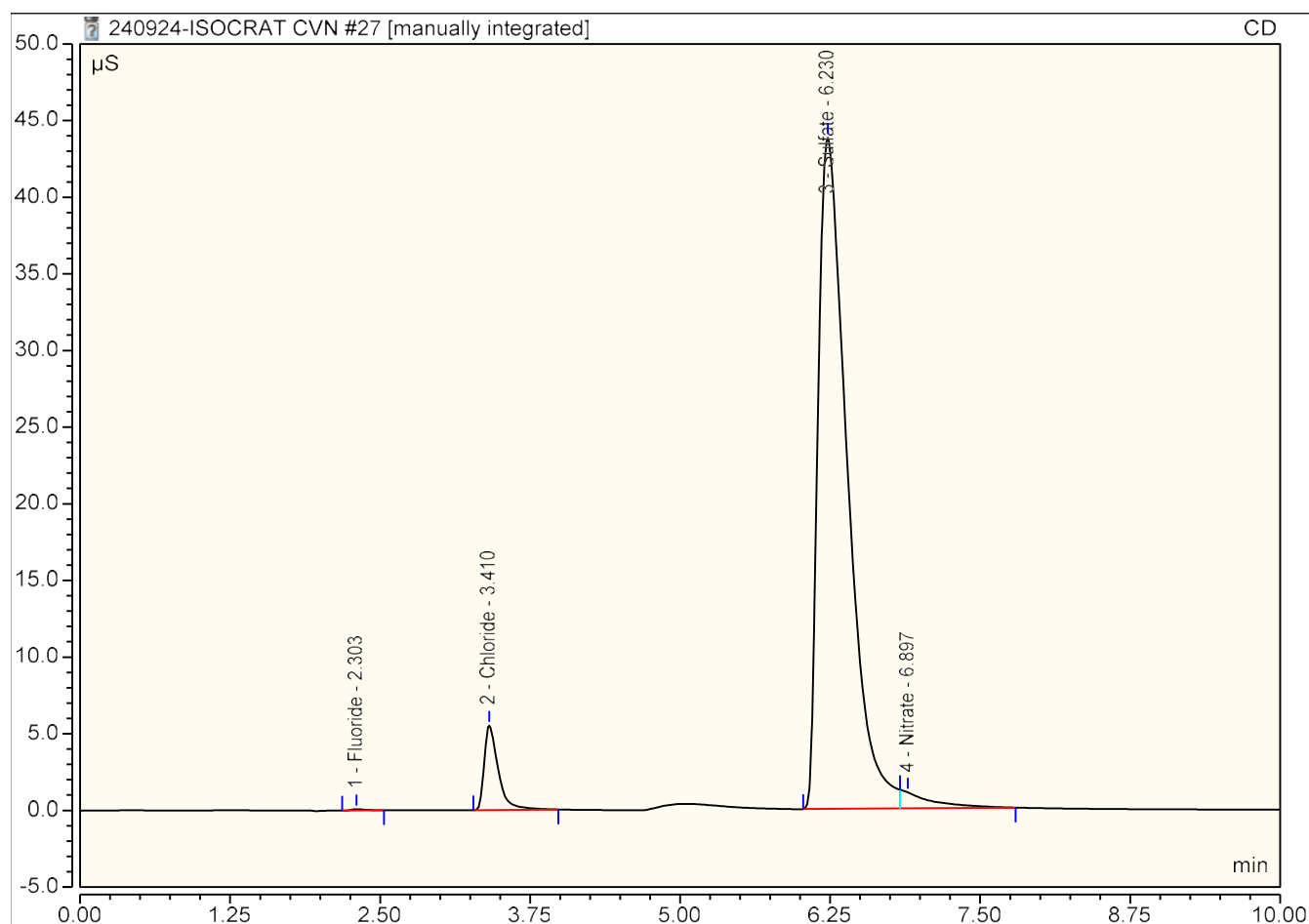
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.005	0.035	0.5327
3	3.41	Chloride	BMB*	1.296	9.345	33.7076
4	6.42	Sulfate	BM *	0.923	4.781	34.6946
5	6.86	Nitrate	MB*	0.041	0.142	0.5720
TOTAL:				2.27	14.30	69.51



Peak Integration Report

Sample Name:	L2453894-06; 4X SOR BR	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	4.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 14:19	Run Time:	10.00

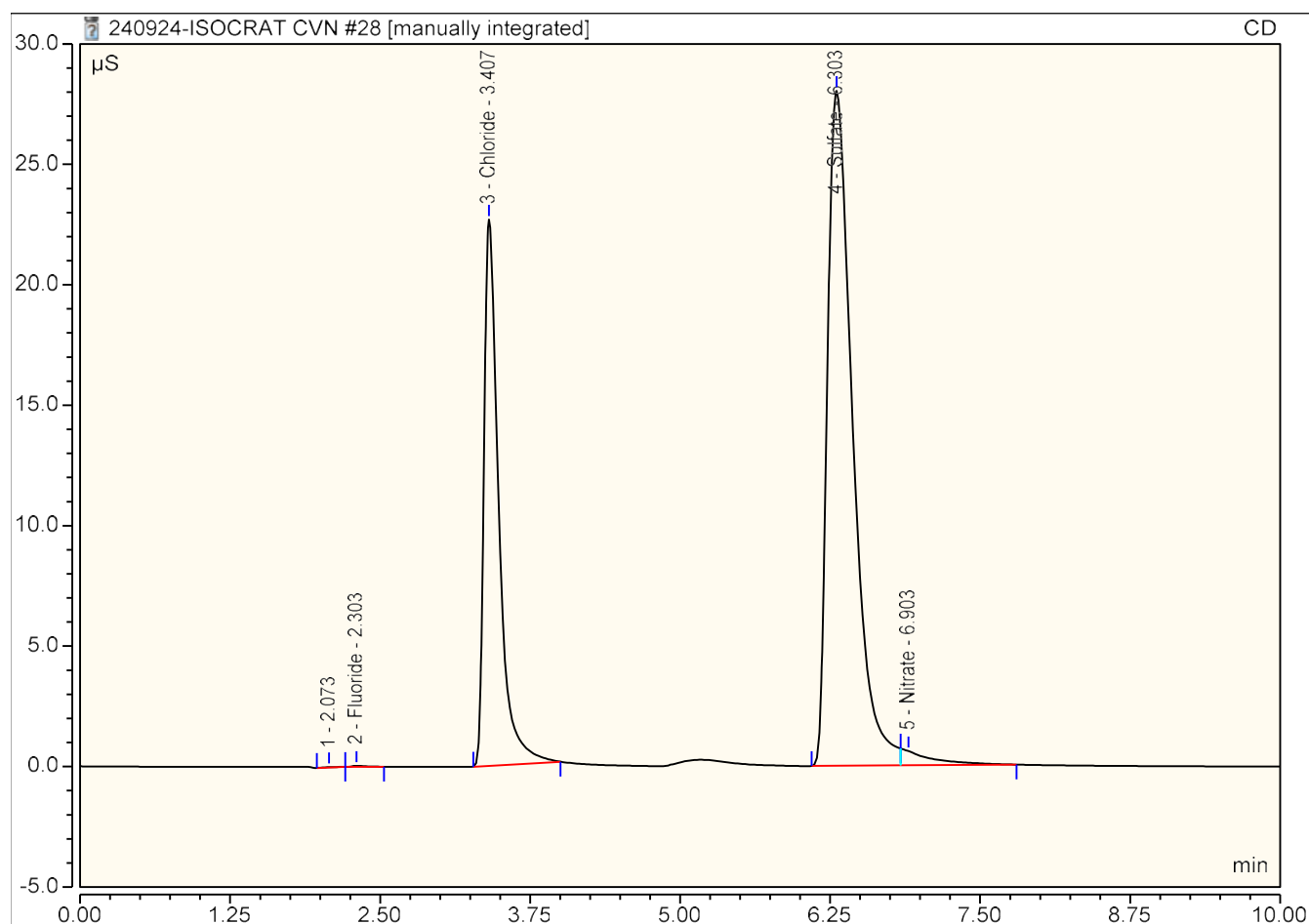
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.30	Fluoride	BMB	0.010	0.079	0.2504
2	3.41	Chloride	BMB*	0.751	5.517	8.1528
3	6.23	Sulfate	BM *	12.338	43.784	171.7500
4	6.90	Nitrate	MB*	0.330	1.043	1.1345
TOTAL:				13.43	50.42	181.29



Peak Integration Report

Sample Name:	L2453894-07; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 14:32	Run Time:	10.00

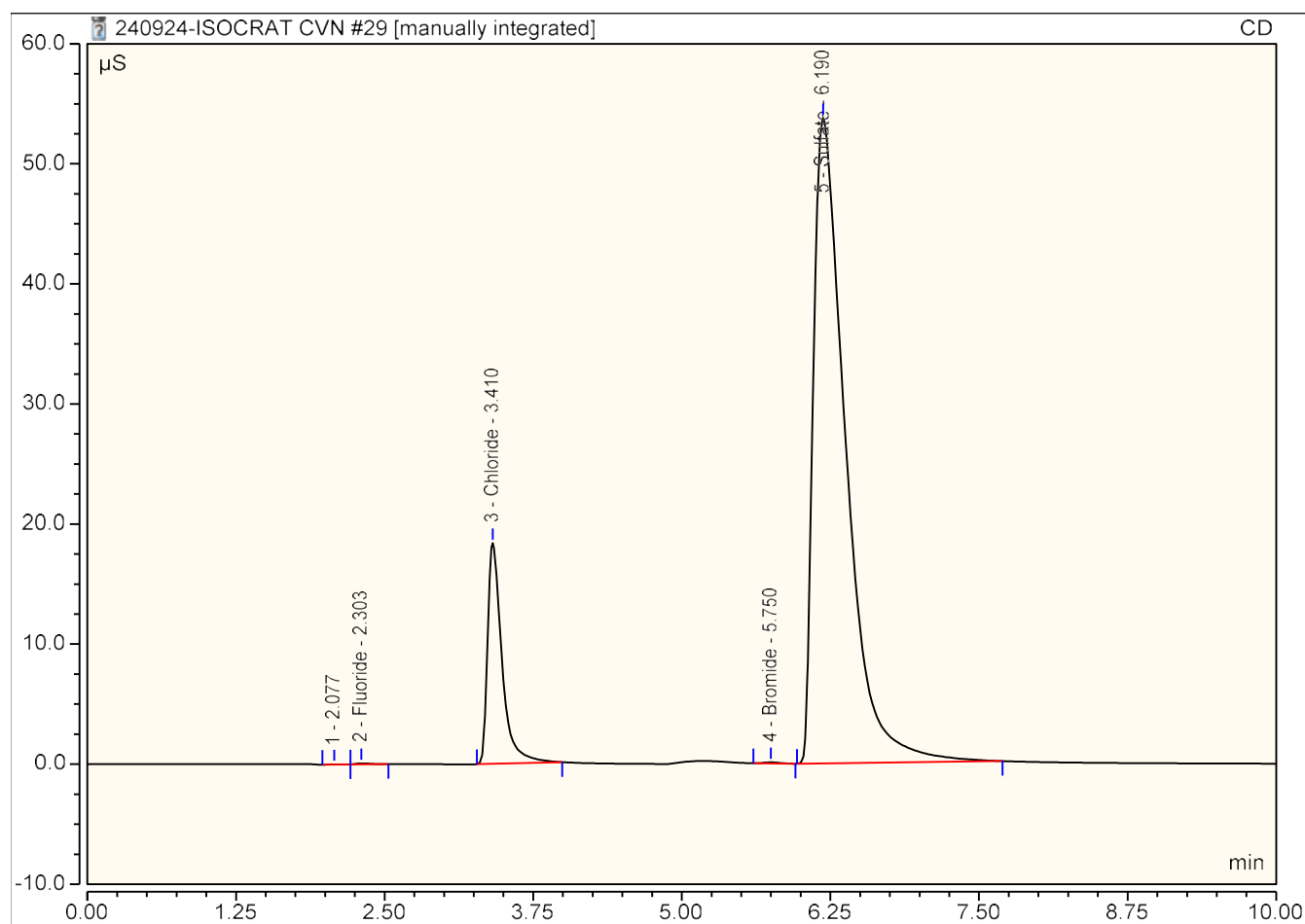
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.006	0.046	0.5545
3	3.41	Chloride	BMB*	3.234	22.674	81.0122
4	6.30	Sulfate	BM *	6.815	28.016	238.3915
5	6.90	Nitrate	MB*	0.188	0.588	1.7289
TOTAL:				10.24	51.32	321.69



Peak Integration Report

Sample Name:	L2453894-08; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 14:44	Run Time:	10.00

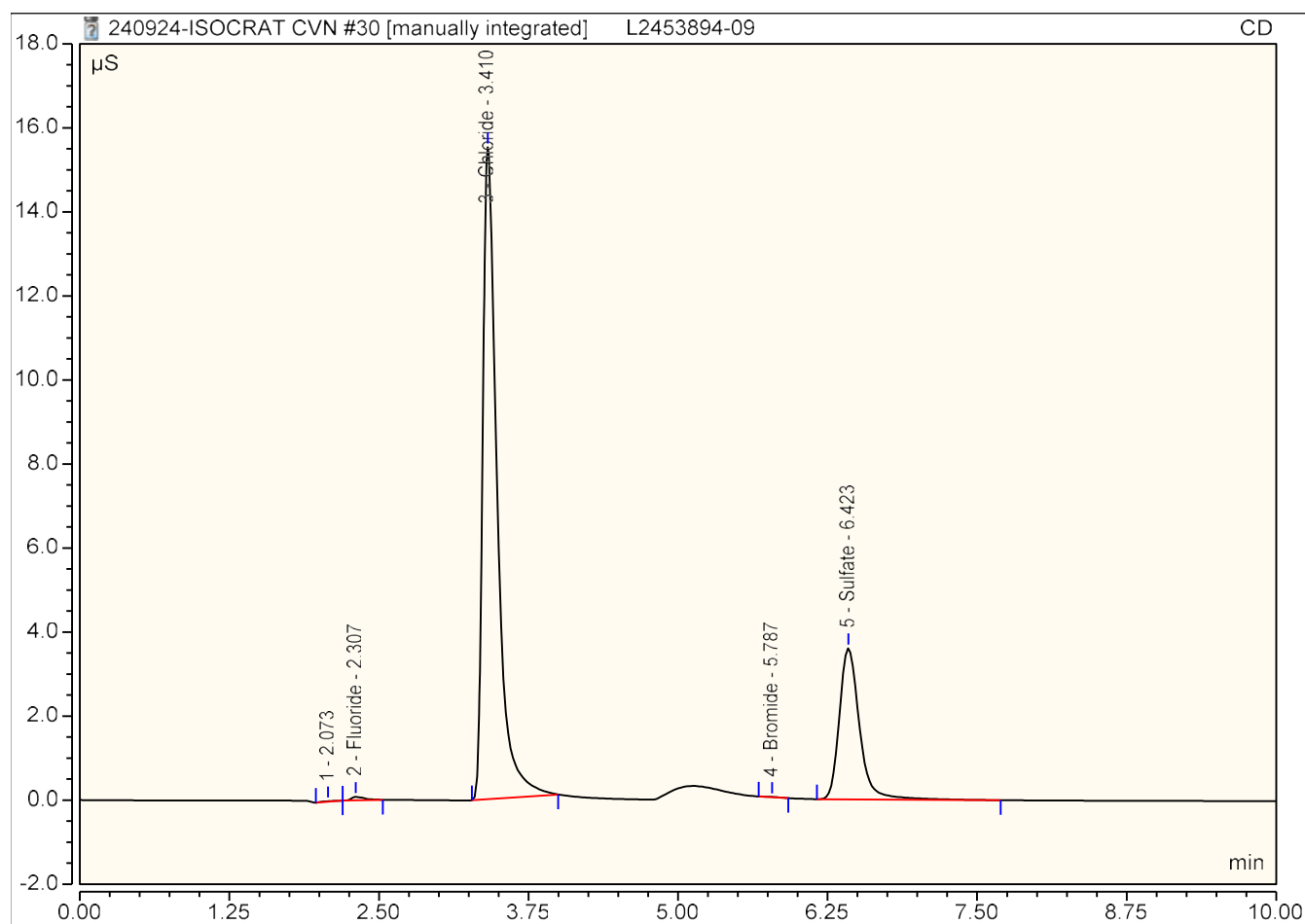
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.010	0.076	0.6199
3	3.41	Chloride	BMB*	2.583	18.372	65.1201
4	5.75	Bromide	BMB	0.013	0.087	1.4067
5	6.19	Sulfate	BMB	16.926	53.727	587.9902
TOTAL:				19.53	72.26	655.14



Peak Integration Report

Sample Name:	L2453894-09	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 14:56	Run Time:	10.00

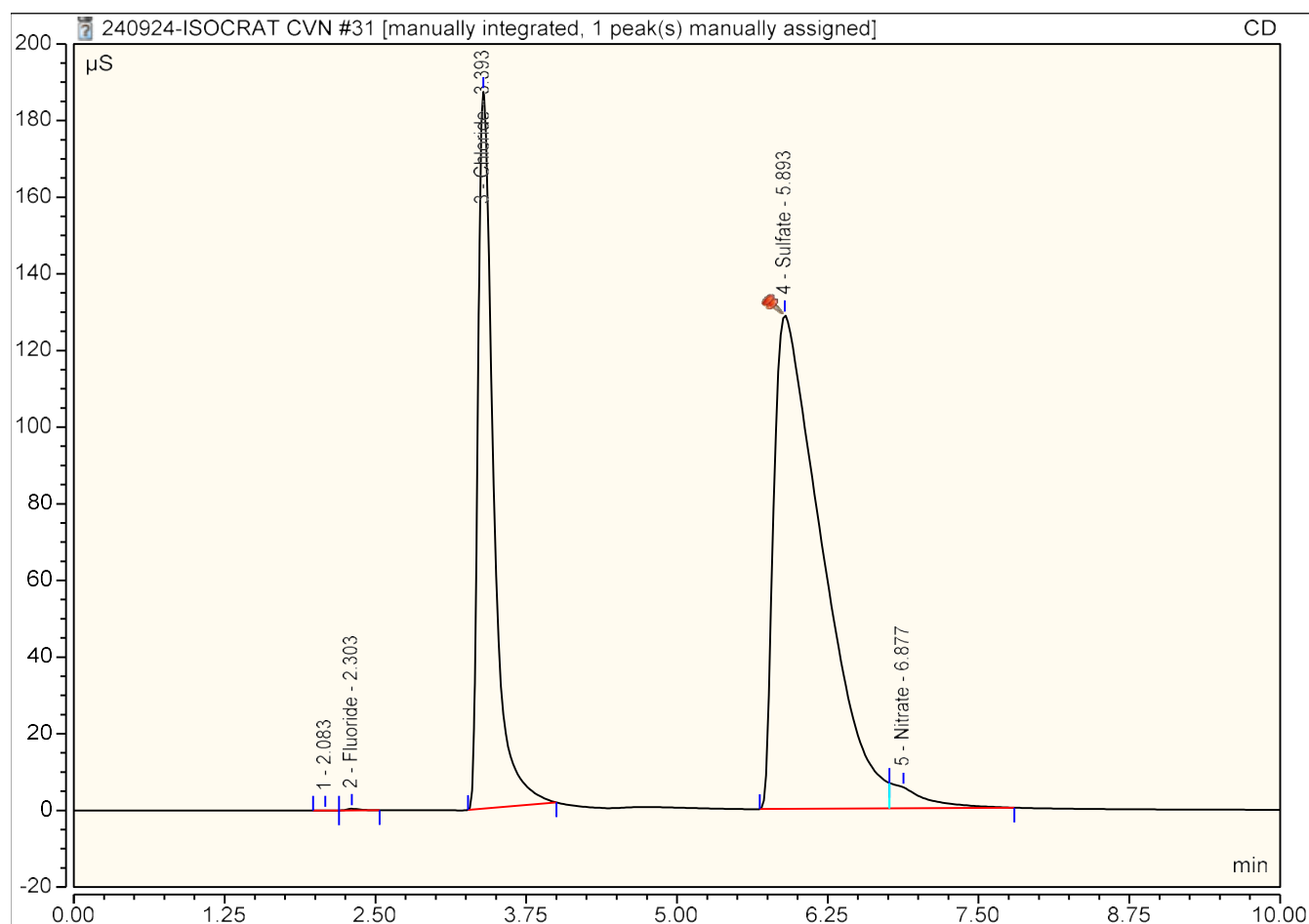
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.011	0.085	0.0639
3	3.41	Chloride	BMB*	2.162	15.514	5.4846
4	5.79	Bromide	BMB	0.001	0.008	0.0404
5	6.42	Sulfate	BMB	0.703	3.597	2.7073
TOTAL:				2.88	19.20	8.30



Peak Integration Report

Sample Name:	XL2453894-10	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 15:08	Run Time:	10.00

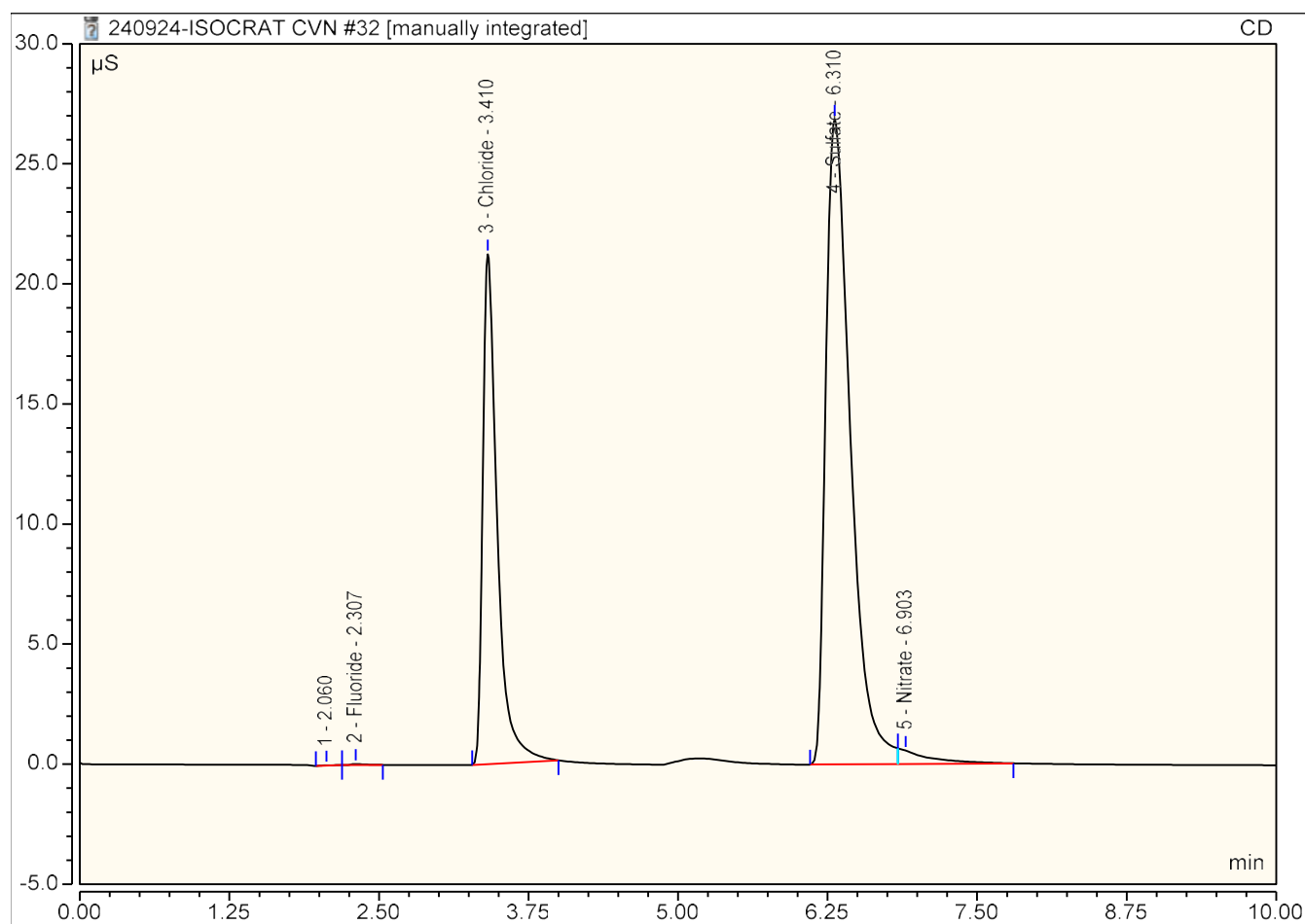
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.050	0.413	0.1355
3	3.39	Chloride	BMB*	28.119	187.090	68.8590
4	5.89	Sulfate	BM *^	59.756	128.846	206.8884
5	6.88	Nitrate	MB*	1.996	5.475	1.5898
TOTAL:				89.92	321.82	277.47



Peak Integration Report

Sample Name:	L2453894-10; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 15:20	Run Time:	10.00

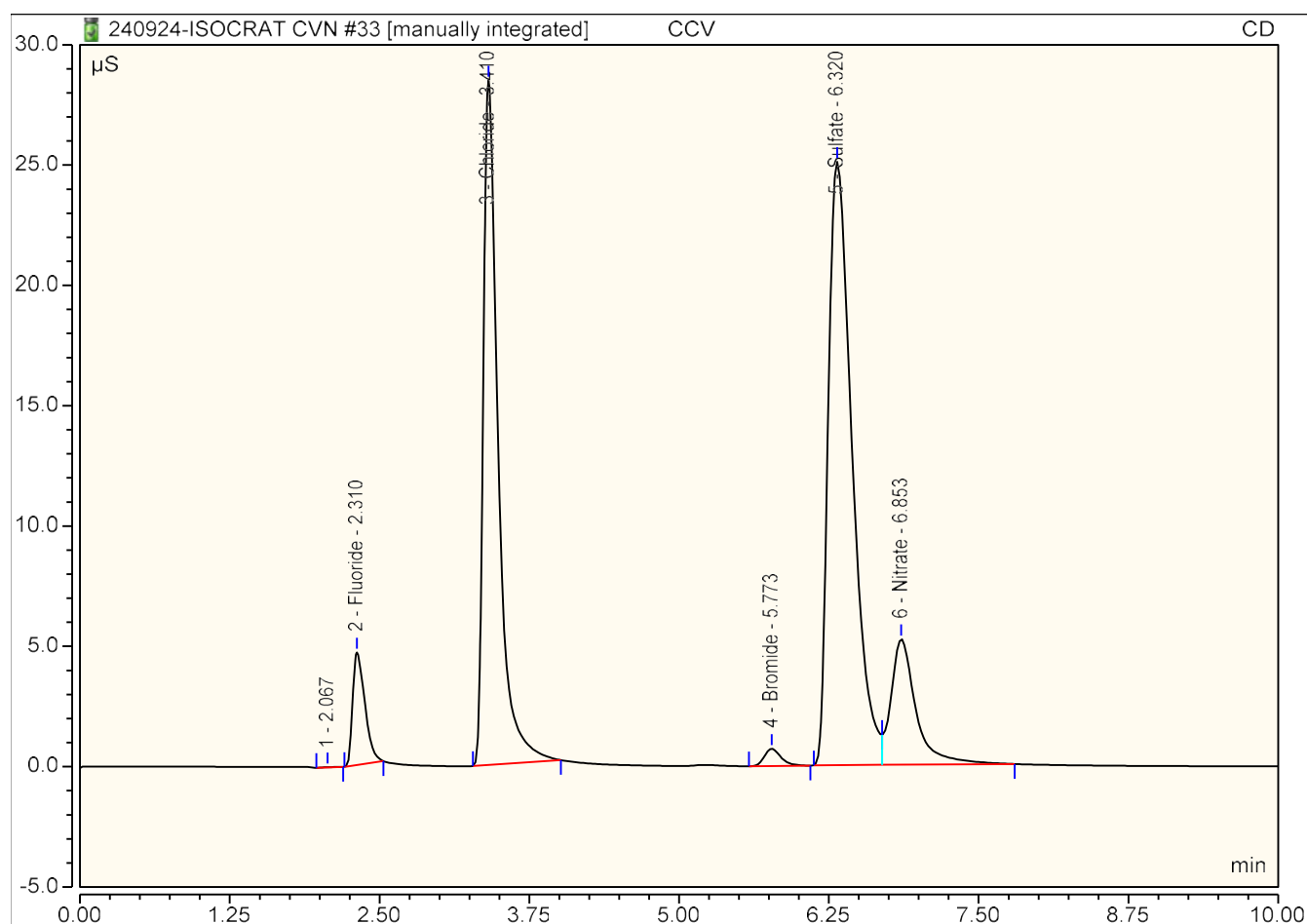
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.006	0.045	0.5553
3	3.41	Chloride	BMB*	2.991	21.235	75.0930
4	6.31	Sulfate	BM *	6.417	26.854	224.6557
5	6.90	Nitrate	MB*	0.178	0.557	1.6441
TOTAL:				9.59	48.69	301.95



Peak Integration Report

Sample Name:	CCV	Inj. Vol.:	25.00
Injection Type:	Check Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 15:32	Run Time:	10.00

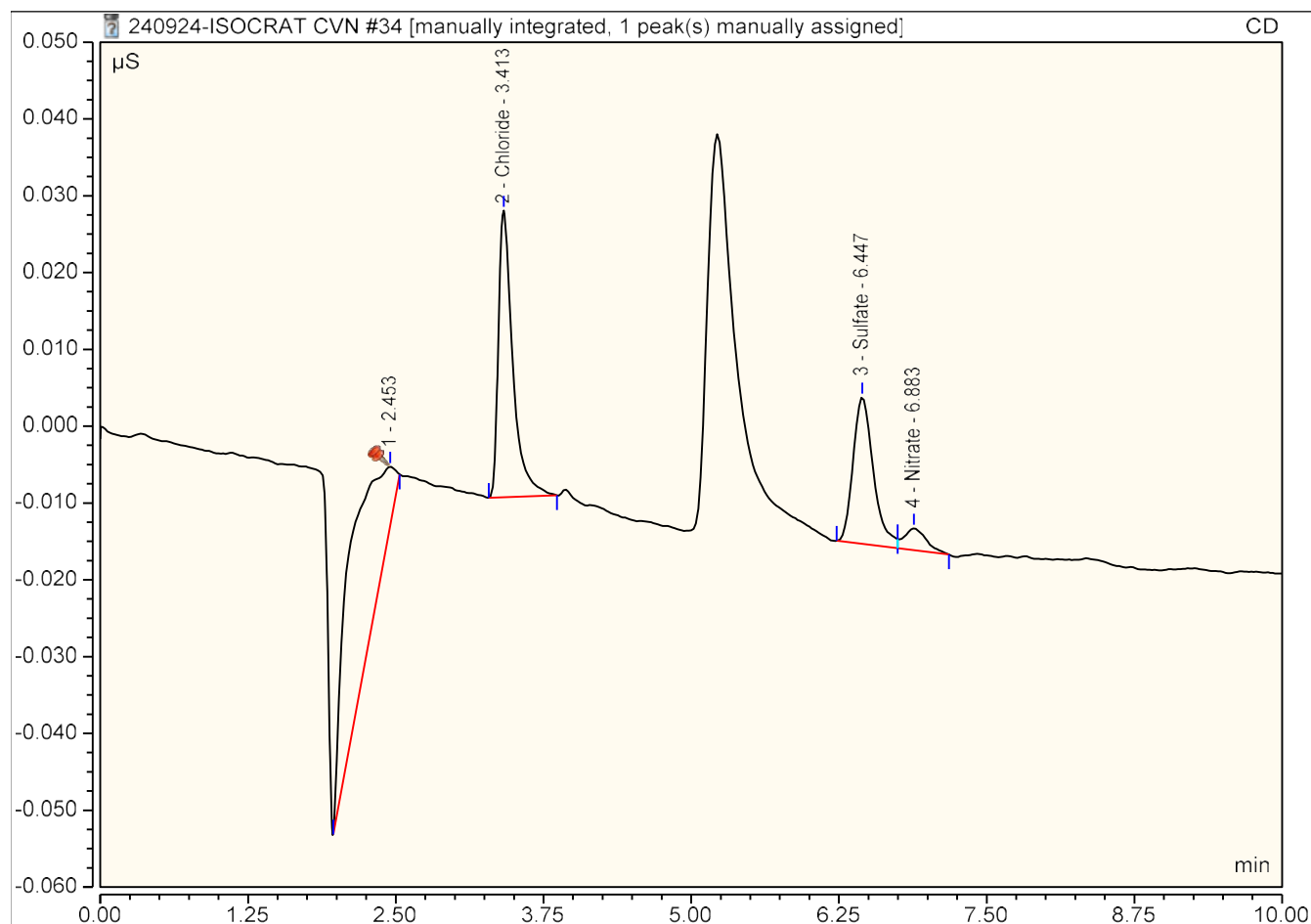
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.550	4.676	1.0468
3	3.41	Chloride	BMB*	4.082	28.449	10.1716
4	5.77	Bromide	BMB	0.116	0.716	0.9965
5	6.32	Sulfate	BM *	5.765	25.068	20.2087
6	6.85	Nitrate	MB*	1.266	5.217	1.0175
TOTAL:				11.78	64.12	33.44



Peak Integration Report

Sample Name:	CCB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 15:44	Run Time:	10.00

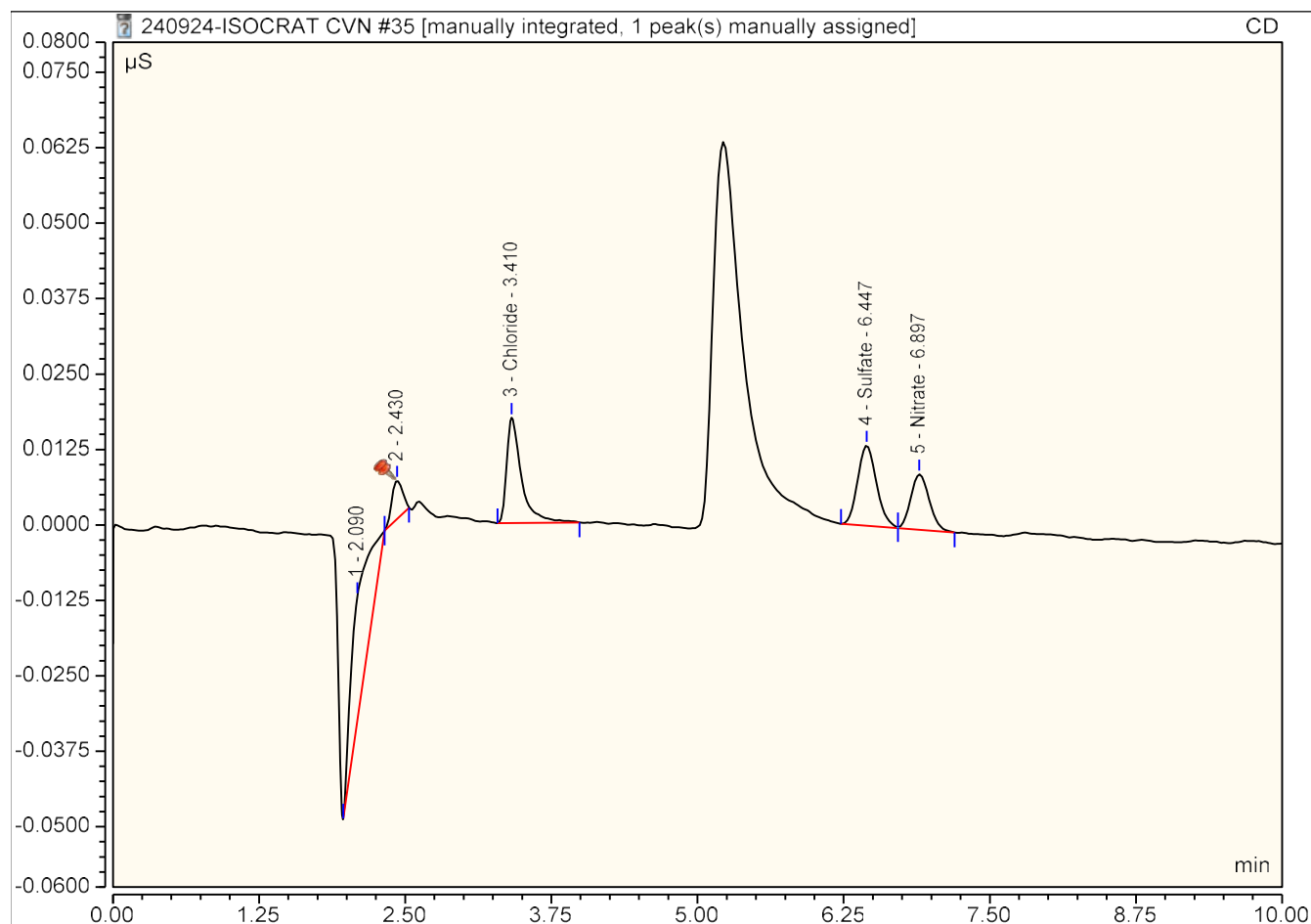
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	3.41	Chloride	BMB*	0.005	0.037	0.2184
3	6.45	Sulfate	BM *	0.004	0.019	0.2897
4	6.88	Nitrate	MB*	0.001	0.003	0.0257
TOTAL:				0.01	0.06	0.53



Peak Integration Report

Sample Name:	L2453894-11	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 15:56	Run Time:	10.00

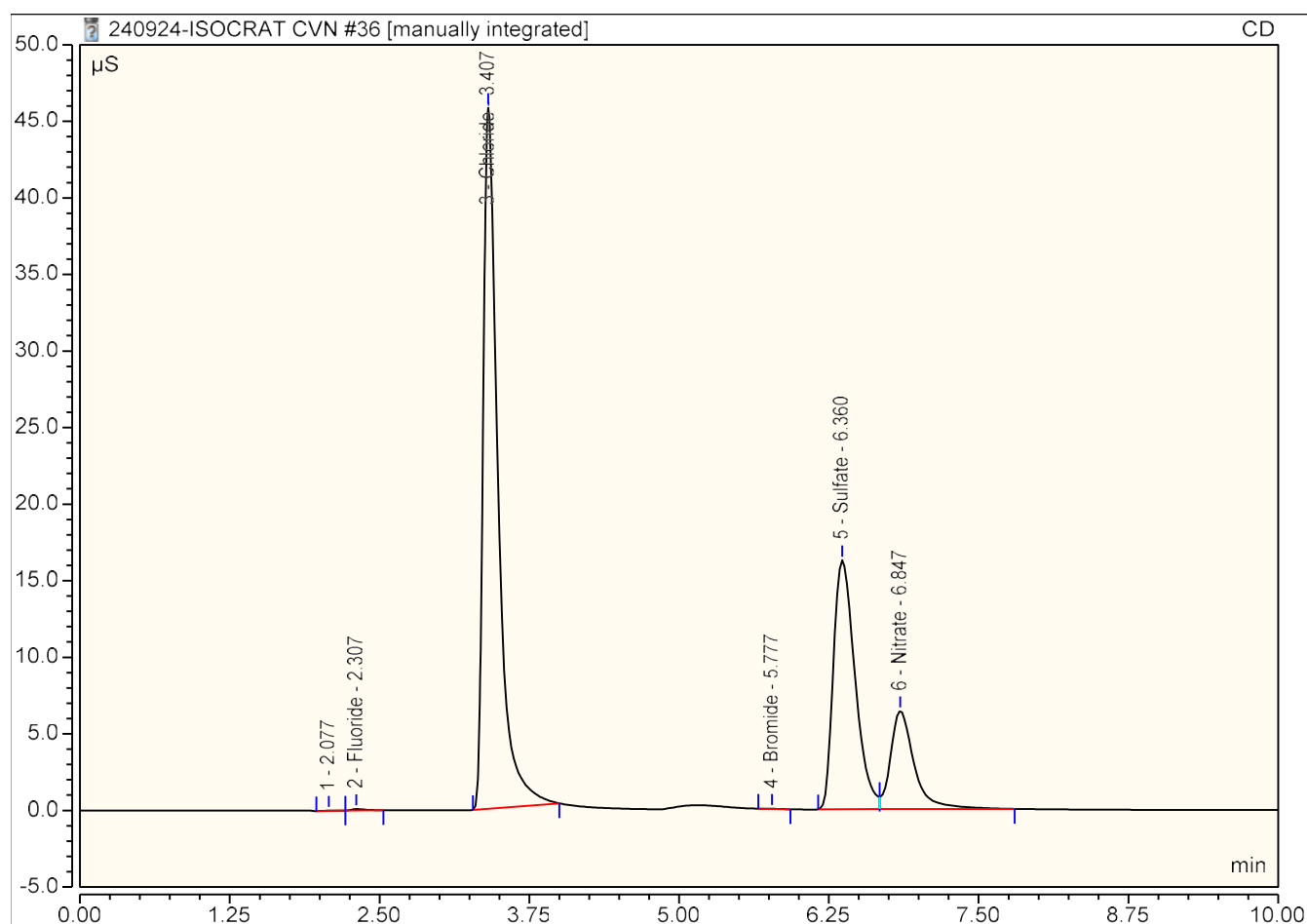
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB*	0.003	0.017	0.2118
4	6.45	Sulfate	BM *	0.002	0.013	0.2851
5	6.90	Nitrate	MB*	0.002	0.009	0.0266
TOTAL:				0.01	0.04	0.52



Peak Integration Report

Sample Name:	L2454050-01 BR CL SO4	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 16:08	Run Time:	10.00

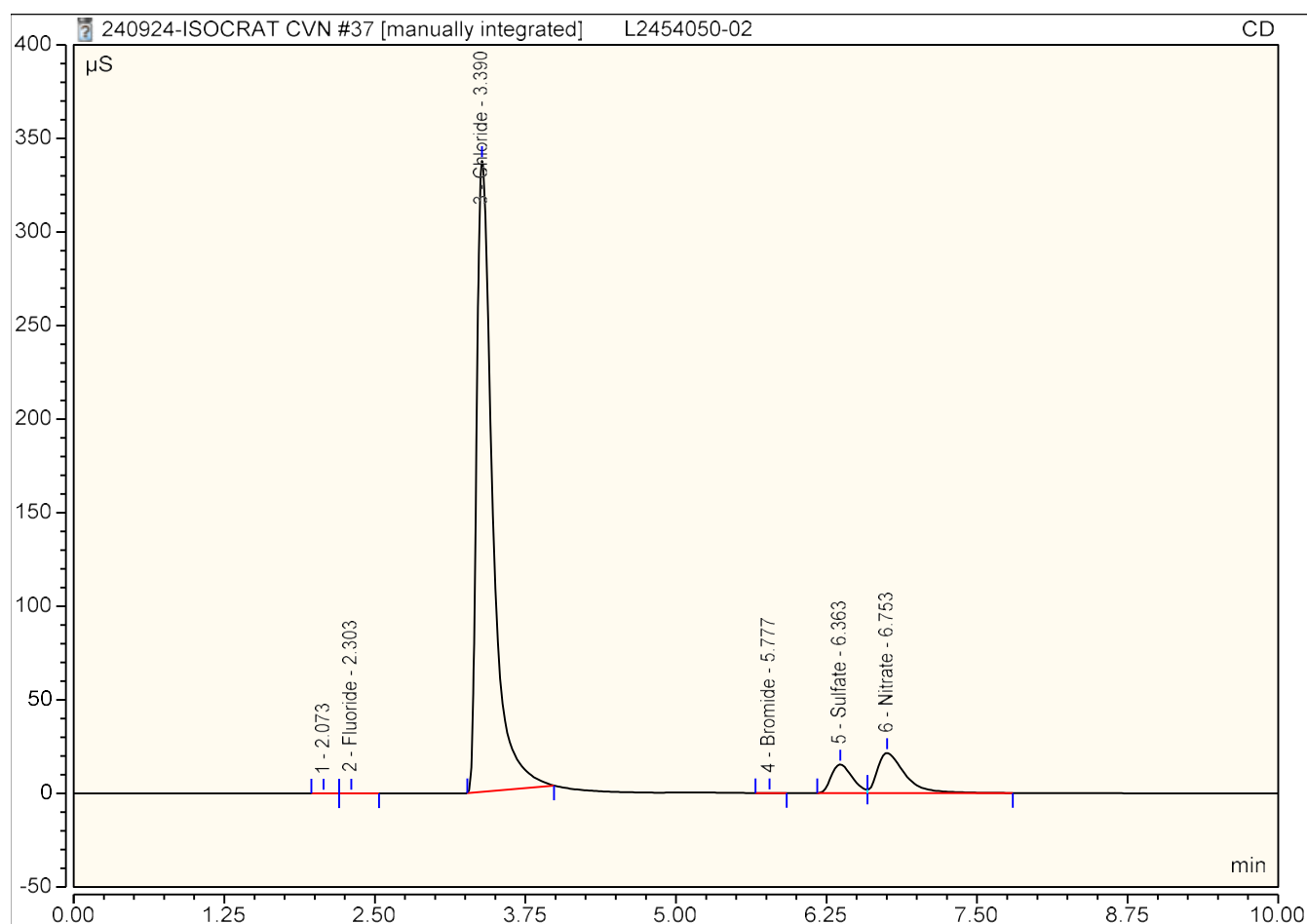
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.012	0.095	0.0659
3	3.41	Chloride	BMB*	6.570	45.774	16.2472
4	5.78	Bromide	BMB	0.001	0.011	0.0440
5	6.36	Sulfate	BM *	3.401	16.260	12.0361
6	6.85	Nitrate	MB*	1.467	6.407	1.1750
TOTAL:				11.45	68.55	29.57



Peak Integration Report

Sample Name:	L2454050-02	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 16:20	Run Time:	10.00

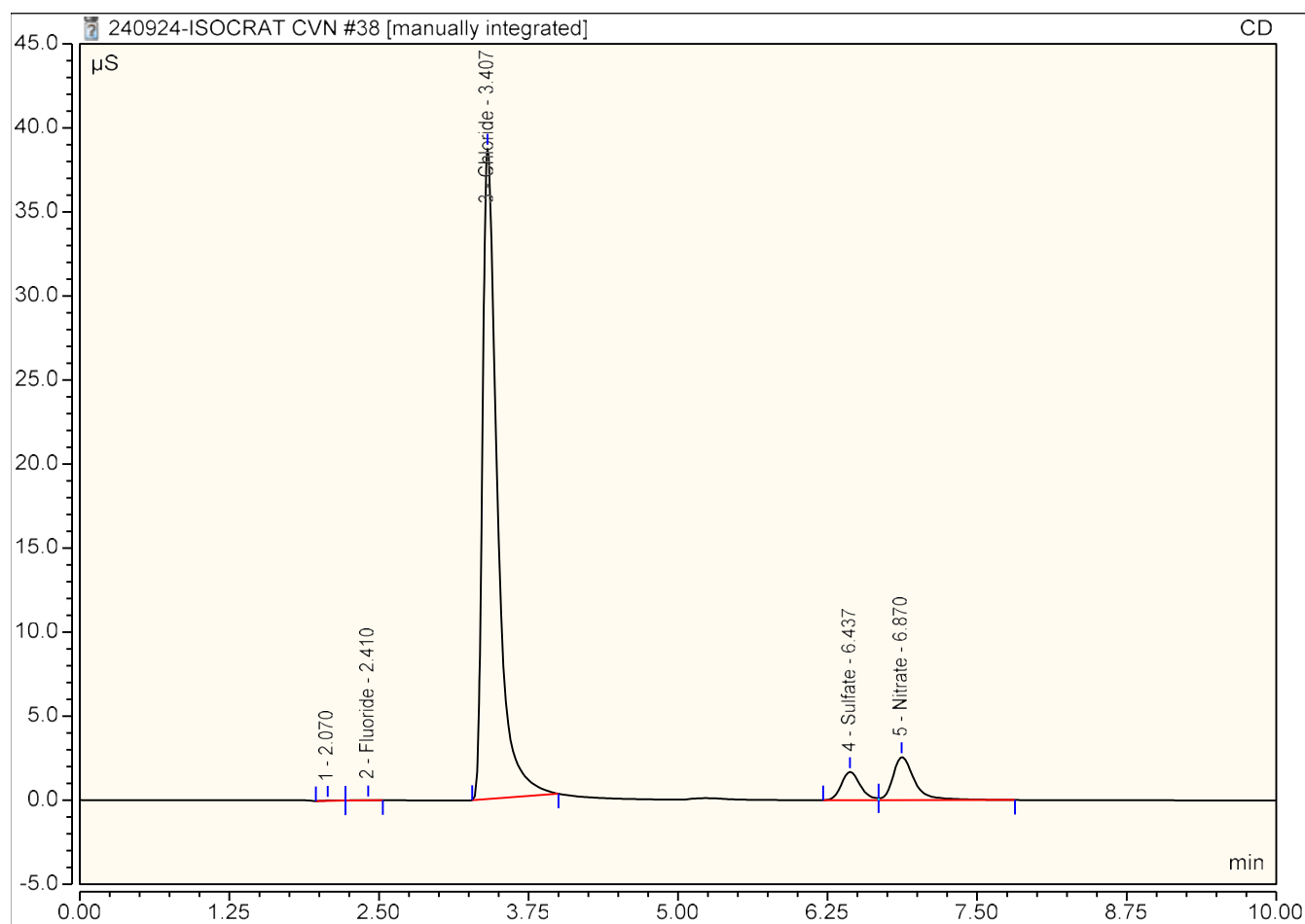
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.007	0.054	0.0575
3	3.39	Chloride	BMB*	52.062	337.074	127.3142
4	5.78	Bromide	BMB	0.001	0.011	0.0443
5	6.36	Sulfate	BM *	3.078	15.317	10.9183
6	6.75	Nitrate	MB*	5.660	21.444	4.4615
TOTAL:				60.81	373.90	142.80



Peak Integration Report

Sample Name:	L2454050-02; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 16:32	Run Time:	10.00

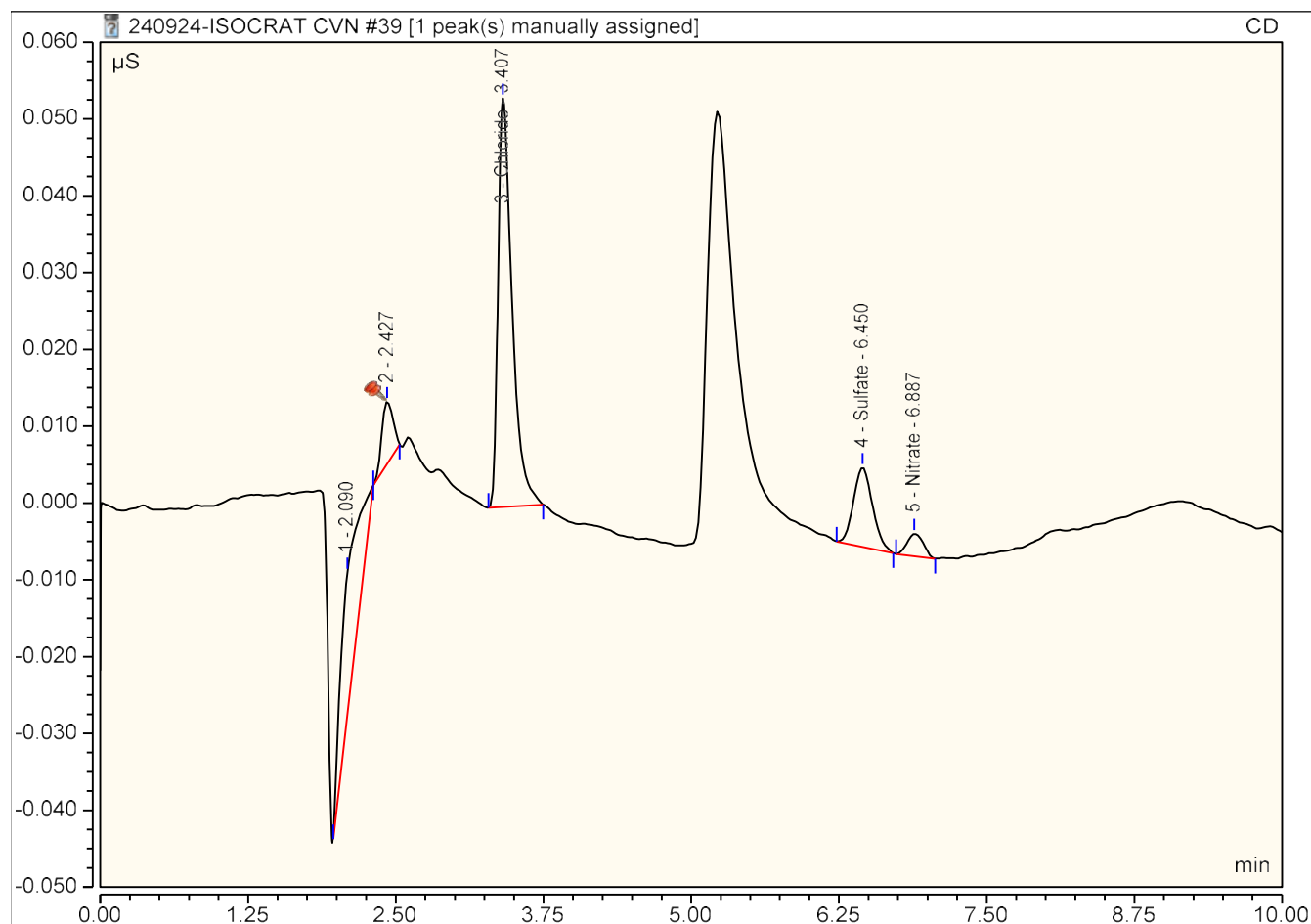
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.41	Fluoride	BMB	0.002	0.010	0.4778
3	3.41	Chloride	BMB*	5.598	38.705	138.7354
4	6.44	Sulfate	BM *	0.310	1.687	13.4670
5	6.87	Nitrate	MB*	0.538	2.567	4.4664
TOTAL:				6.45	42.97	157.15



Peak Integration Report

Sample Name:	L2454050-03	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 16:44	Run Time:	10.00

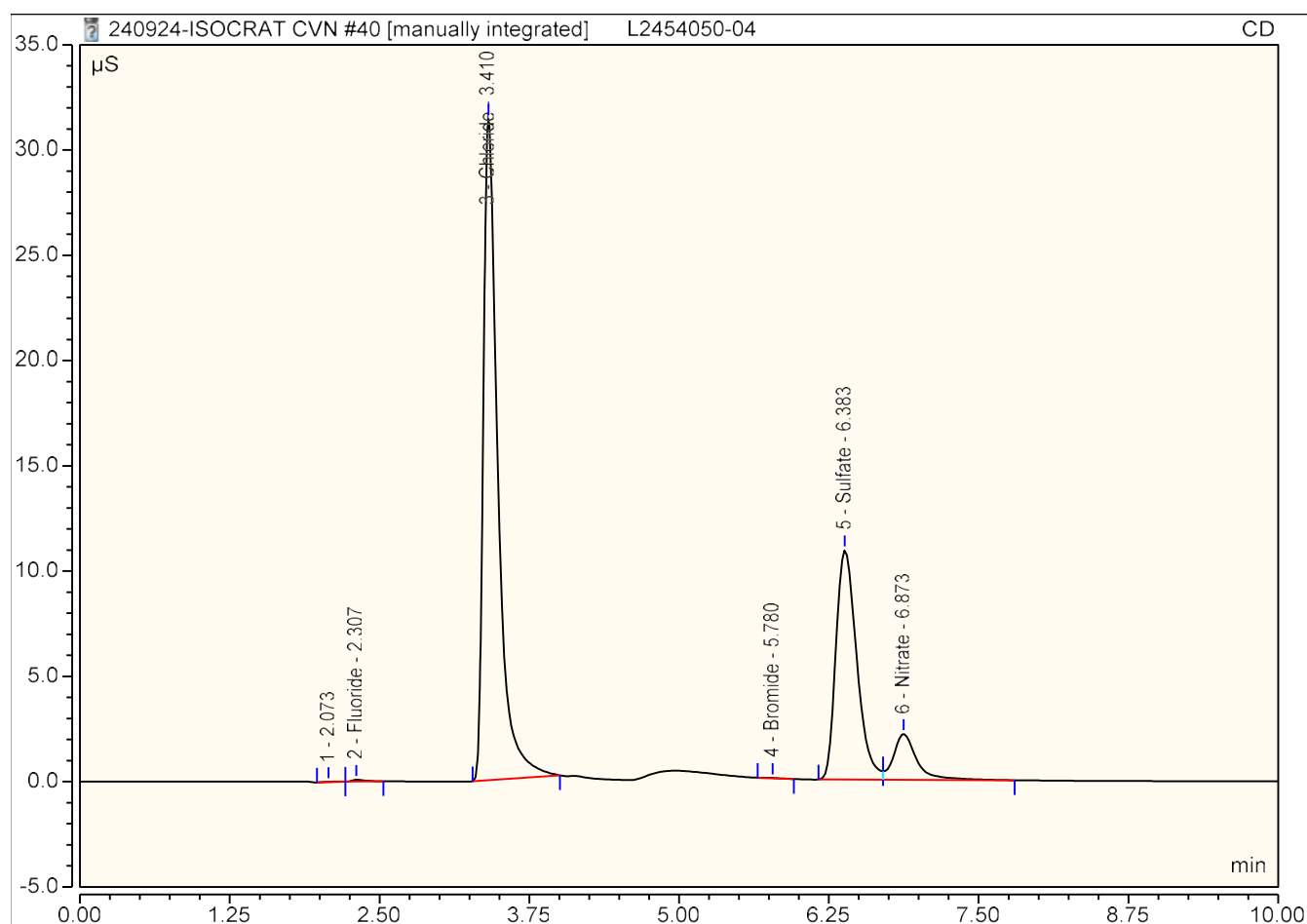
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB	0.007	0.053	0.2234
4	6.45	Sulfate	BMB	0.002	0.010	0.2832
5	6.89	Nitrate	BMB	0.000	0.003	0.0256
TOTAL:				0.01	0.07	0.53



Peak Integration Report

Sample Name:	L2454050-04	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 16:57	Run Time:	10.00

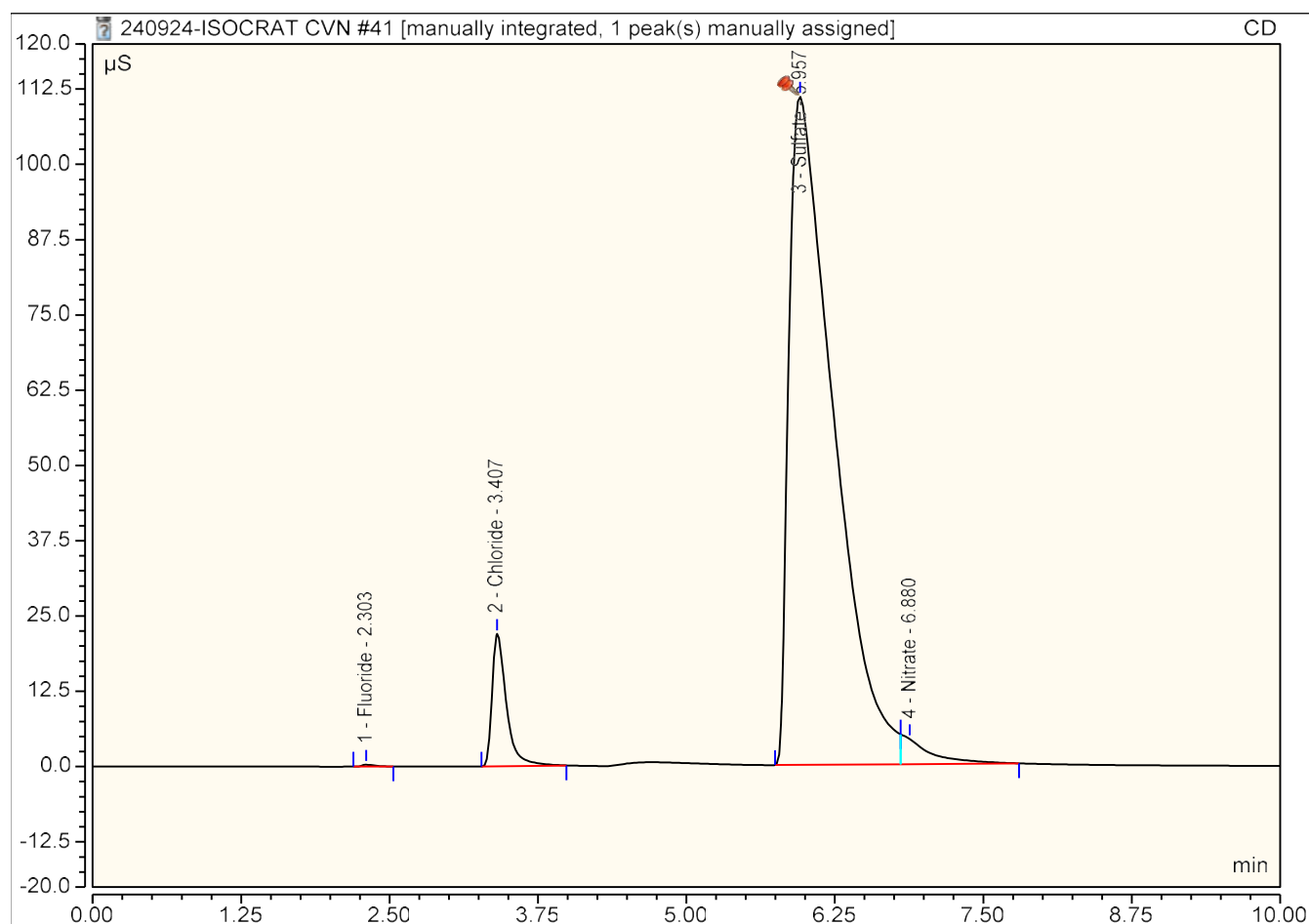
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.011	0.086	0.0644
3	3.41	Chloride	BMB*	4.413	31.418	10.9809
4	5.78	Bromide	BMB	0.002	0.015	0.0490
5	6.38	Sulfate	BM *	2.186	10.889	7.8362
6	6.87	Nitrate	MB*	0.489	2.178	0.4087
TOTAL:				7.10	44.59	19.34



Peak Integration Report

Sample Name:	L2453894-06 CL	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 17:09	Run Time:	10.00

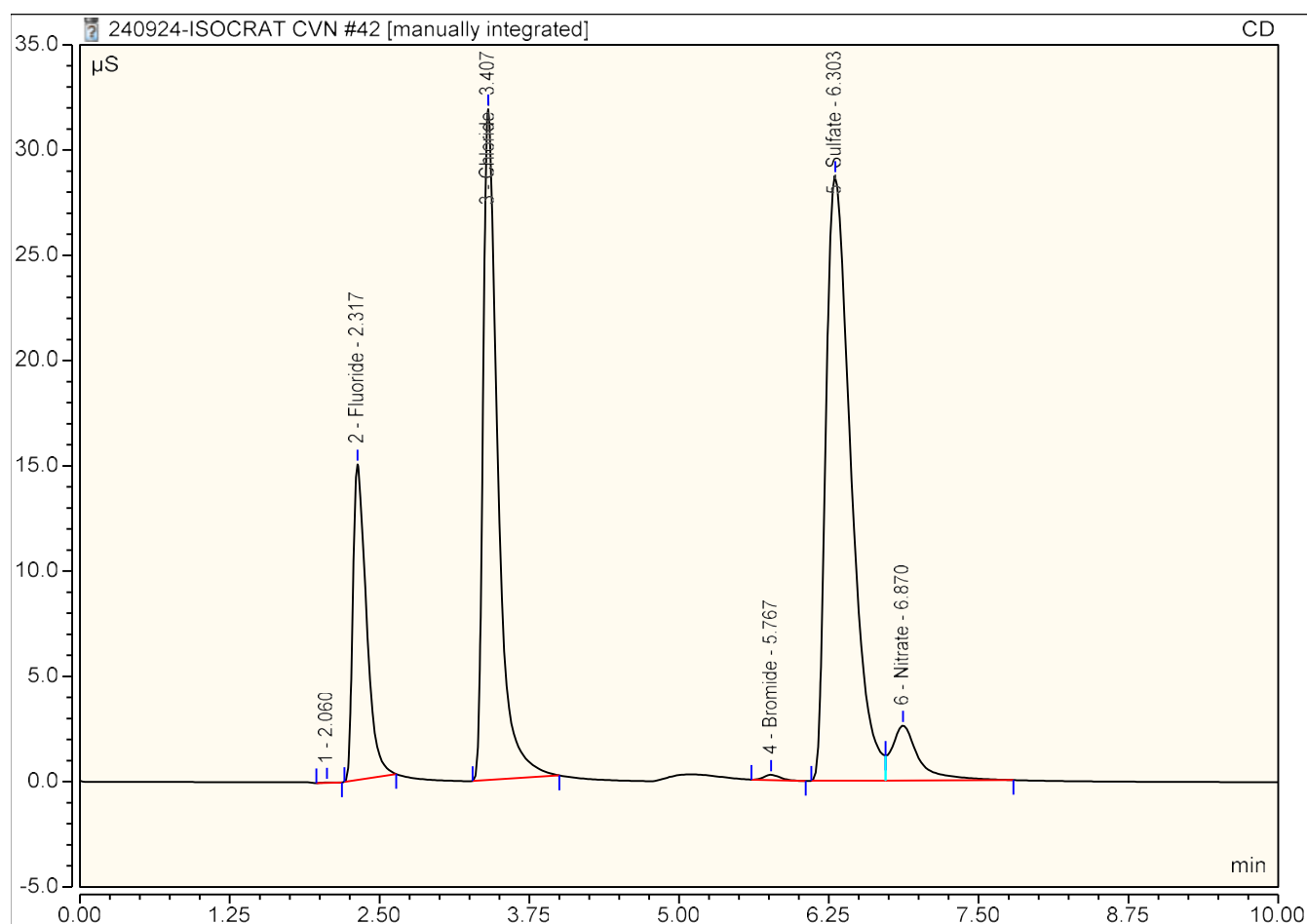
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.30	Fluoride	BMB	0.038	0.314	0.1136
2	3.41	Chloride	BMB*	3.072	21.984	7.7062
3	5.96	Sulfate	BM ^*	48.191	110.992	166.9023
4	6.88	Nitrate	MB*	1.272	4.172	1.0221
TOTAL:				52.57	137.46	175.74



Peak Integration Report

Sample Name:	L2453894-01 MS	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 17:21	Run Time:	10.00

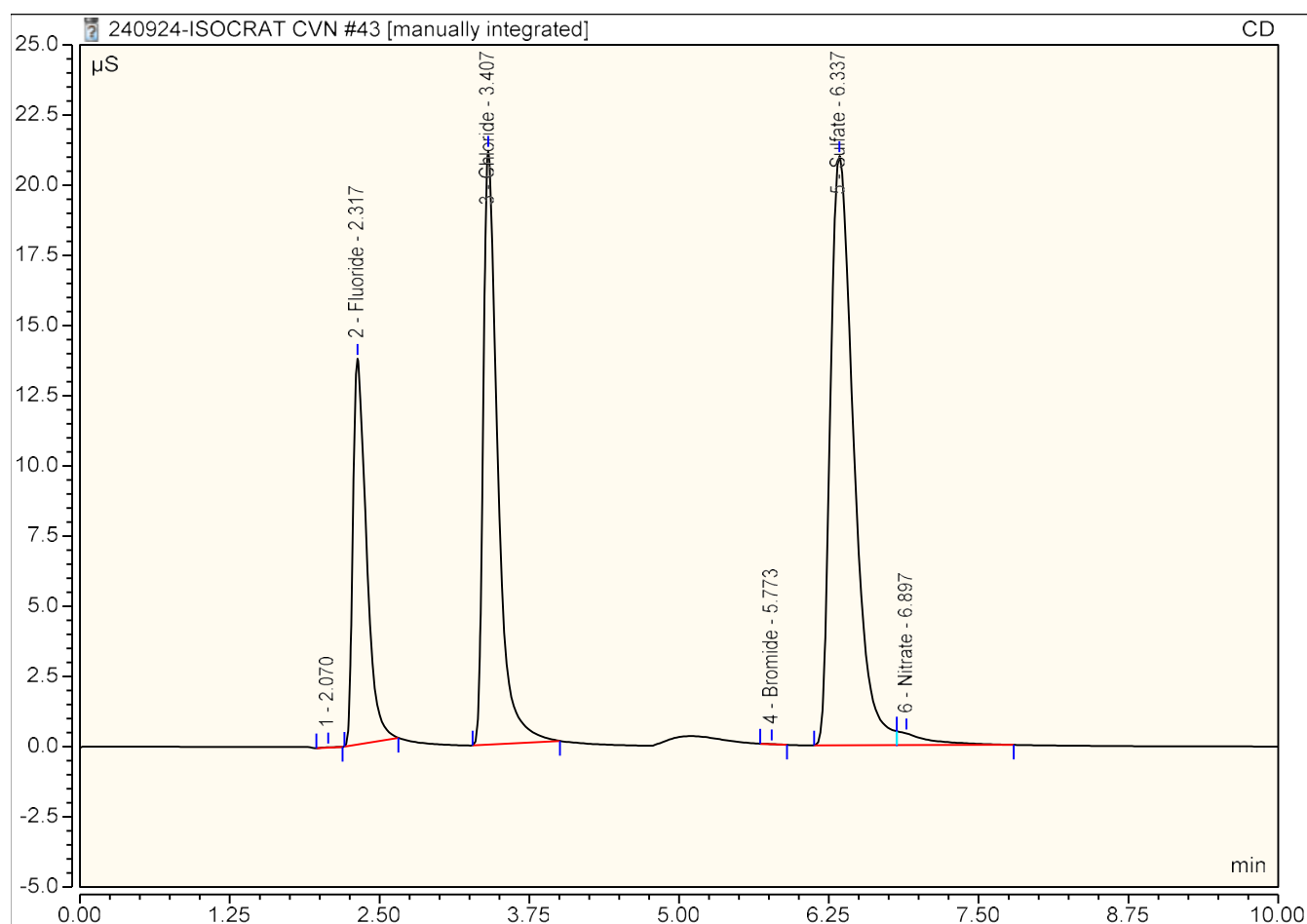
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.32	Fluoride	BMB*	1.964	14.990	3.6260
3	3.41	Chloride	BMB*	4.568	31.867	11.3580
4	5.77	Bromide	BMB	0.040	0.254	0.3668
5	6.30	Sulfate	BM *	6.944	28.727	24.2869
6	6.87	Nitrate	MB*	0.684	2.608	0.5612
TOTAL:				14.20	78.45	40.20



Peak Integration Report

Sample Name:	L2453894-01 DUP	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 17:33	Run Time:	10.00

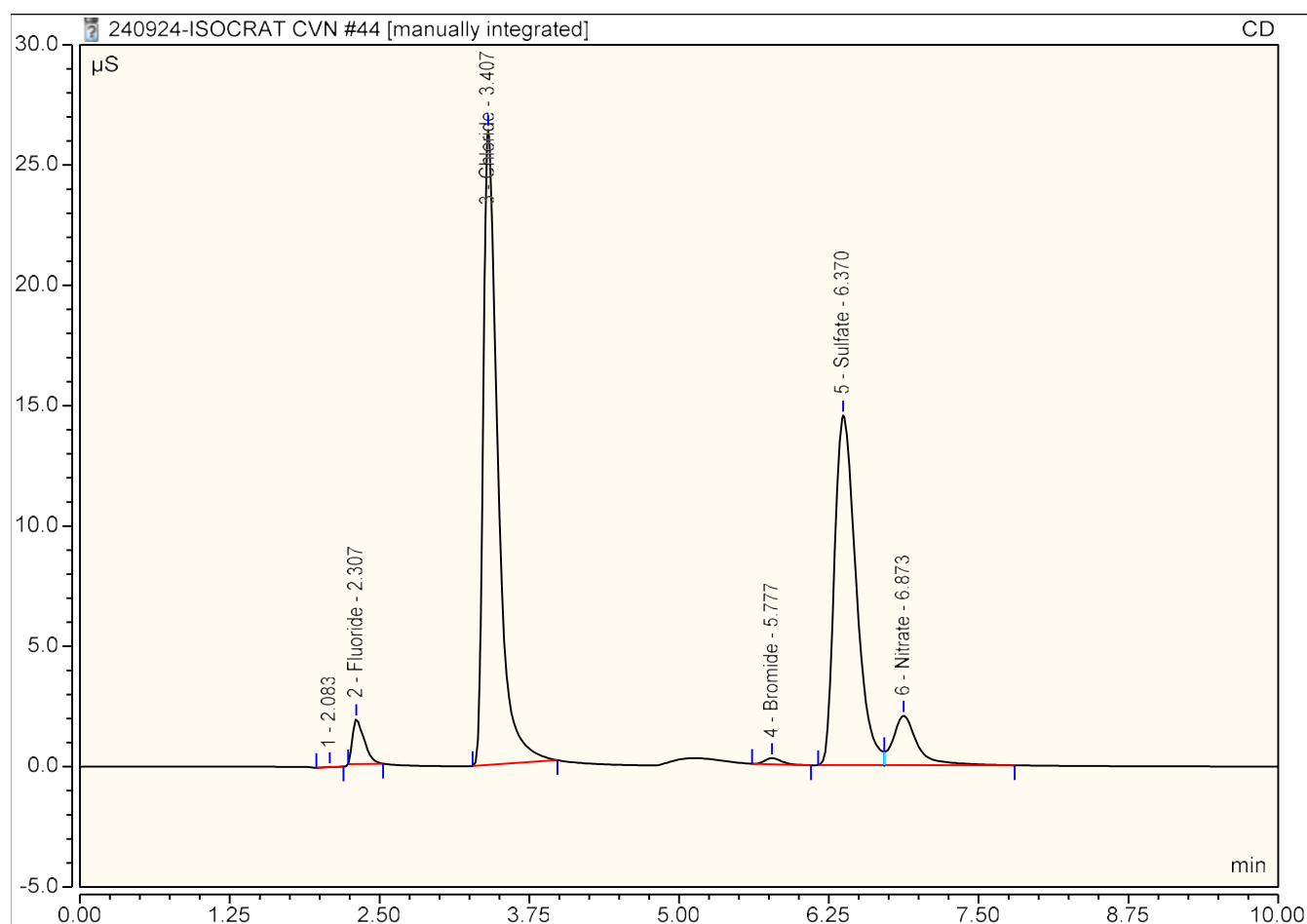
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.32	Fluoride	BMB*	1.792	13.742	3.3127
3	3.41	Chloride	BMB*	2.986	21.158	7.4953
4	5.77	Bromide	BMB	0.001	0.005	0.0371
5	6.34	Sulfate	BM *	4.733	20.989	16.6430
6	6.90	Nitrate	MB*	0.135	0.421	0.1311
TOTAL:				9.65	56.31	27.62



Peak Integration Report

Sample Name:	L2453894-09 MS	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 17:45	Run Time:	10.00

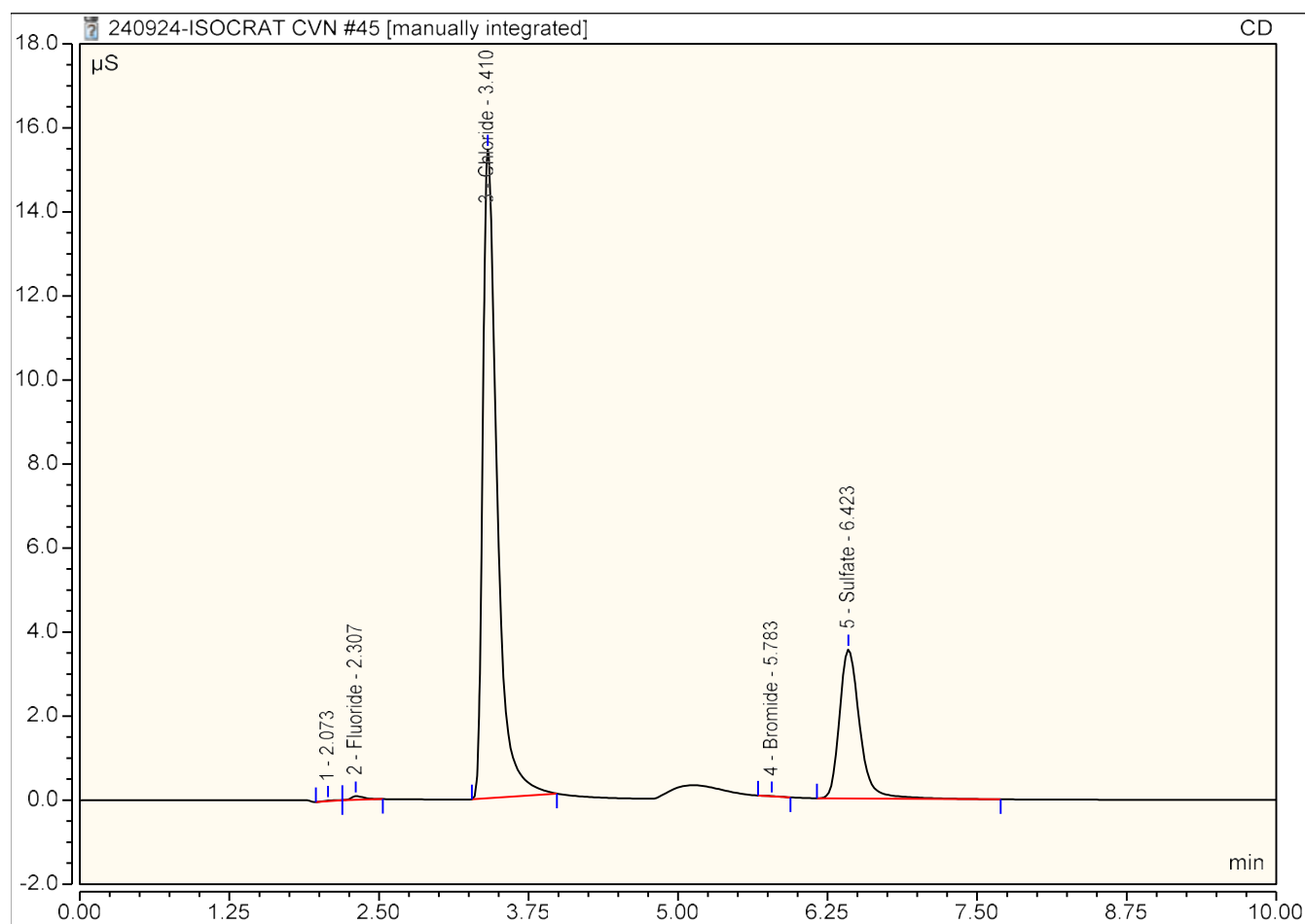
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB*	0.209	1.874	0.4264
3	3.41	Chloride	BMB*	3.747	26.398	9.3546
4	5.78	Bromide	BMB	0.041	0.258	0.3765
5	6.37	Sulfate	BM *	3.036	14.536	10.7732
6	6.87	Nitrate	MB*	0.485	2.060	0.4056
TOTAL:				7.52	45.13	21.34



Peak Integration Report

Sample Name:	L2453894-09 DUP	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 17:57	Run Time:	10.00

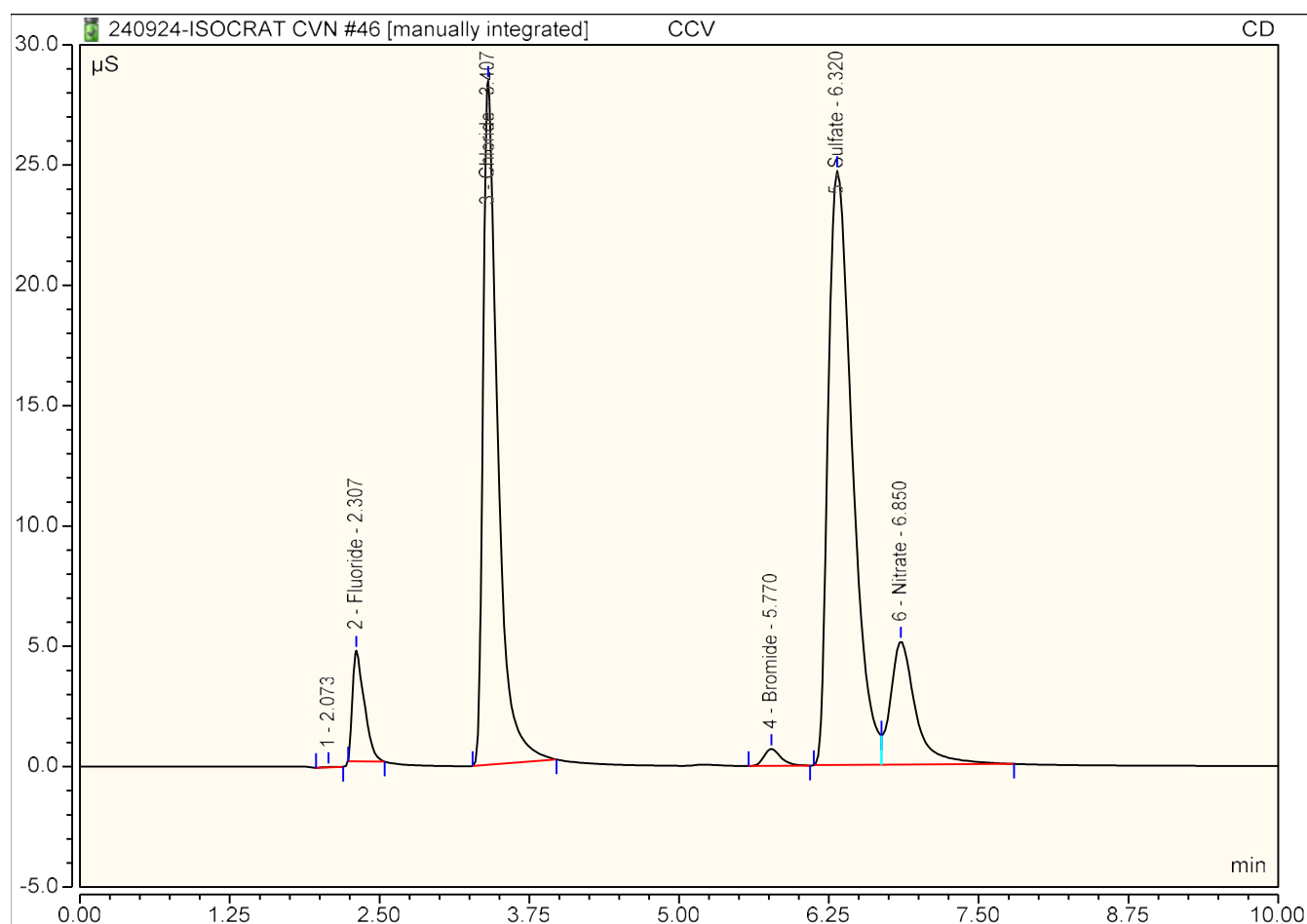
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.011	0.084	0.0638
3	3.41	Chloride	BMB*	2.150	15.438	5.4544
4	5.78	Bromide	BMB	0.001	0.007	0.0402
5	6.42	Sulfate	BMB	0.697	3.548	2.6881
TOTAL:				2.86	19.08	8.25



Peak Integration Report

Sample Name:	CCV	Inj. Vol.:	25.00
Injection Type:	Check Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 18:09	Run Time:	10.00

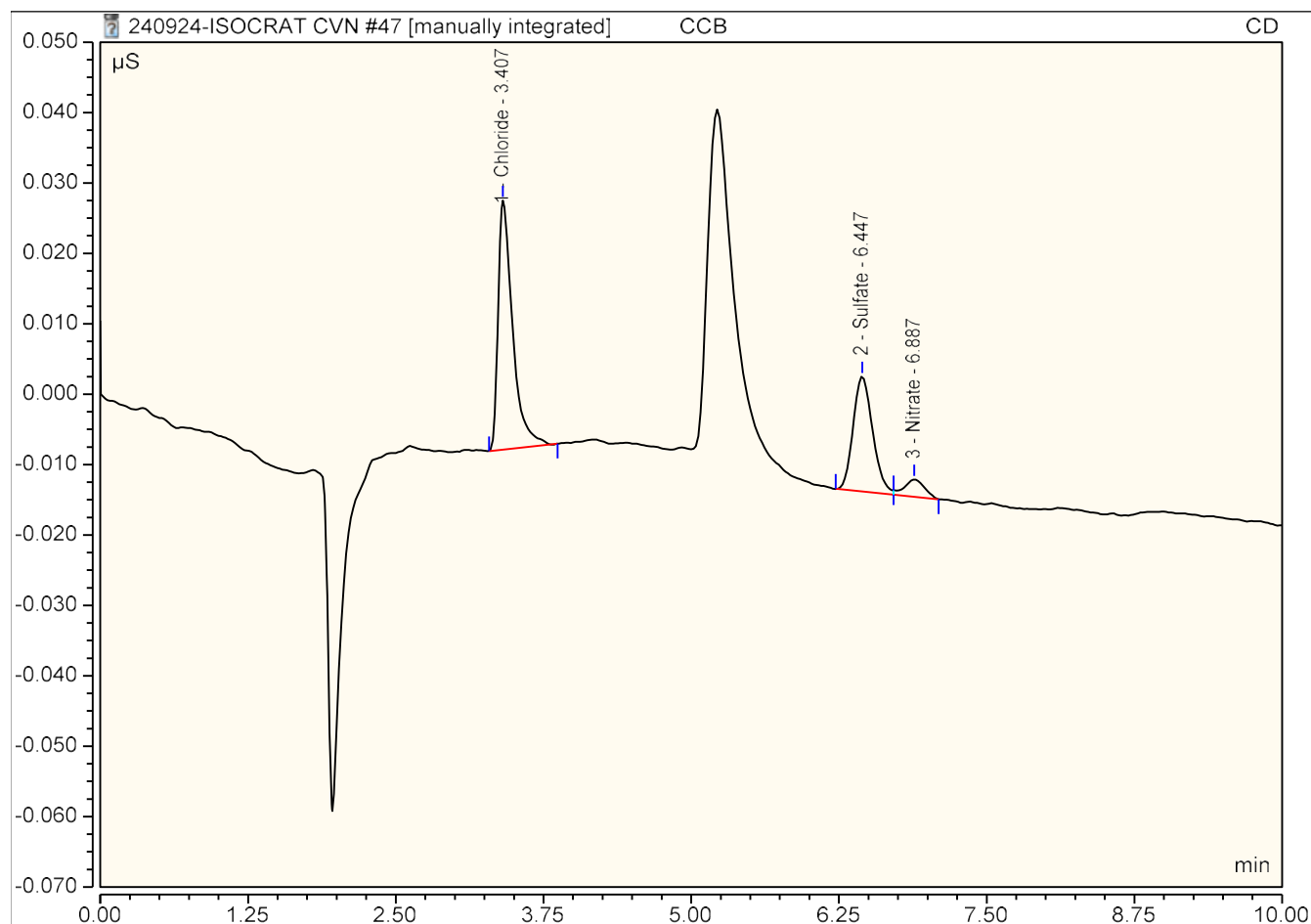
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB*	0.520	4.602	0.9928
3	3.41	Chloride	BMB*	4.056	28.426	10.1077
4	5.77	Bromide	BMB	0.116	0.704	0.9931
5	6.32	Sulfate	BM *	5.756	24.686	20.1769
6	6.85	Nitrate	MB*	1.248	5.116	1.0033
TOTAL:				11.69	63.53	33.27



Peak Integration Report

Sample Name:	CCB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 18:21	Run Time:	10.00

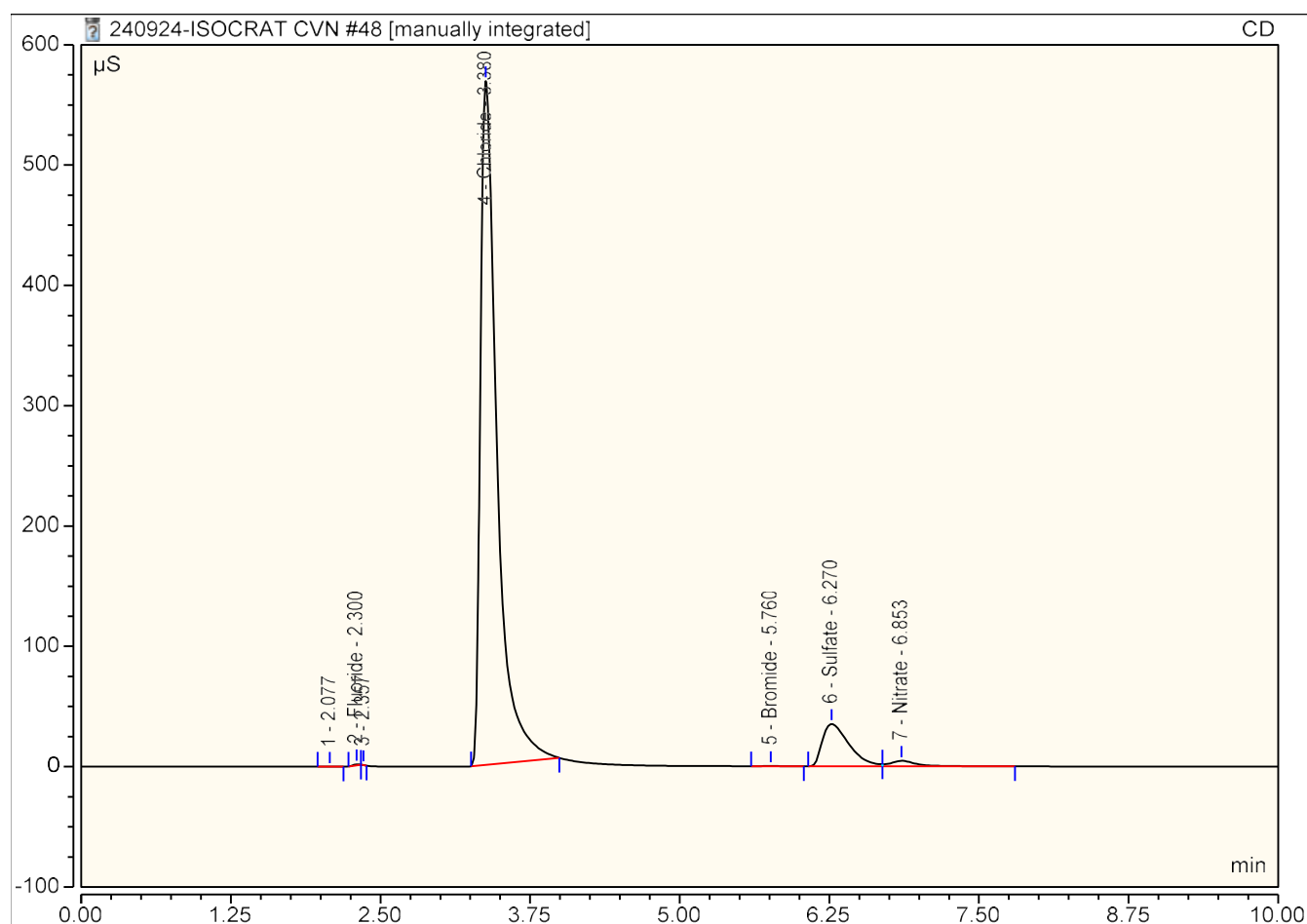
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.41	Chloride	BMB*	0.005	0.035	0.2179
2	6.45	Sulfate	BM *	0.003	0.016	0.2874
3	6.89	Nitrate	MB*	0.000	0.002	0.0256
TOTAL:				0.01	0.05	0.53



Peak Integration Report

Sample Name:	L2454803-01 MS NO3	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 18:33	Run Time:	10.00

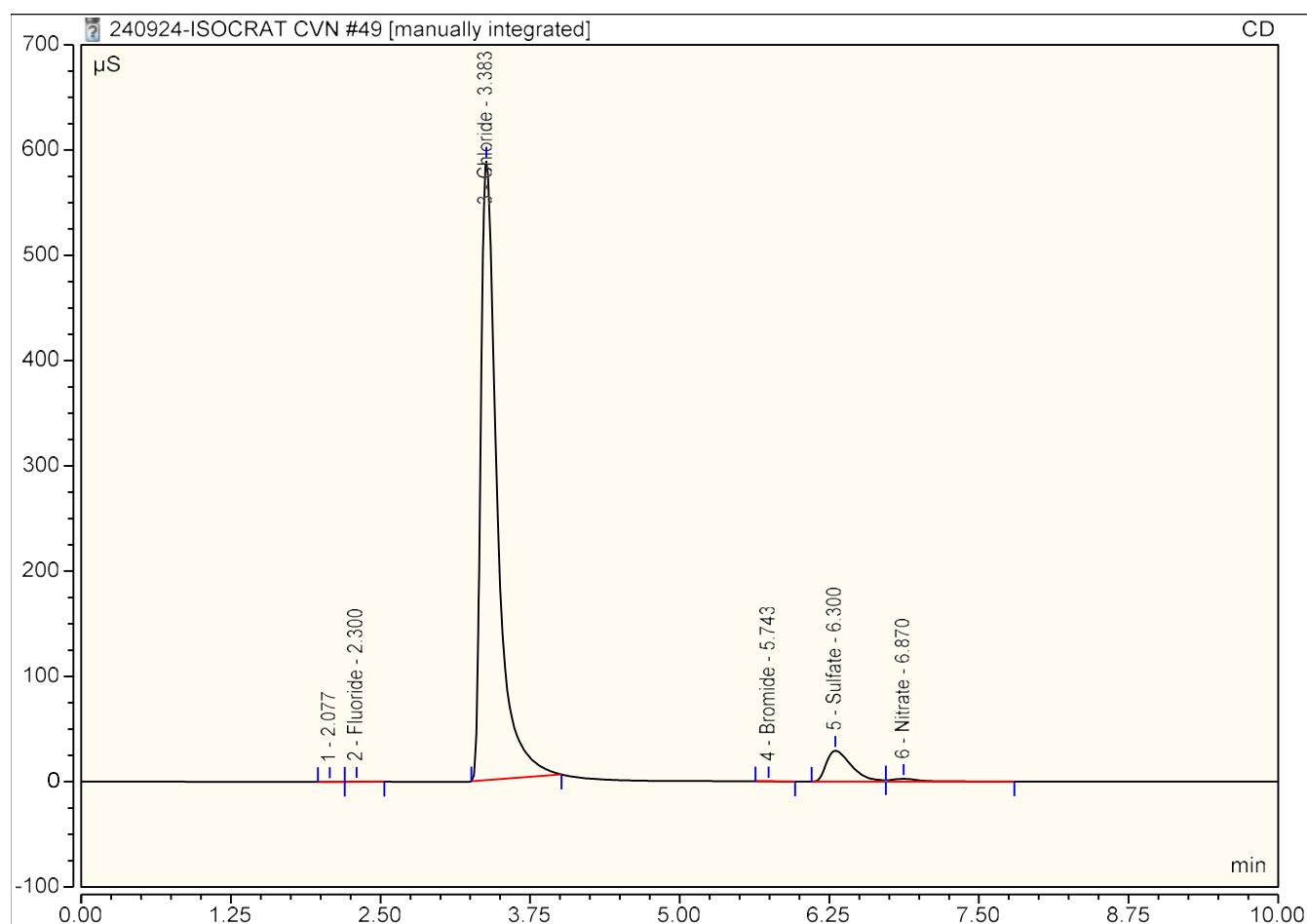
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.053	0.928	0.1410
4	3.38	Chloride	BMB*	91.424	568.341	223.4157
5	5.76	Bromide	BMB	0.051	0.320	0.4570
6	6.27	Sulfate	BM *	9.129	35.324	31.8403
7	6.85	Nitrate	MB*	1.218	4.643	0.9802
TOTAL:				101.87	609.56	256.83



Peak Integration Report

Sample Name:	L2454803-01 DUP	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 18:45	Run Time:	10.00

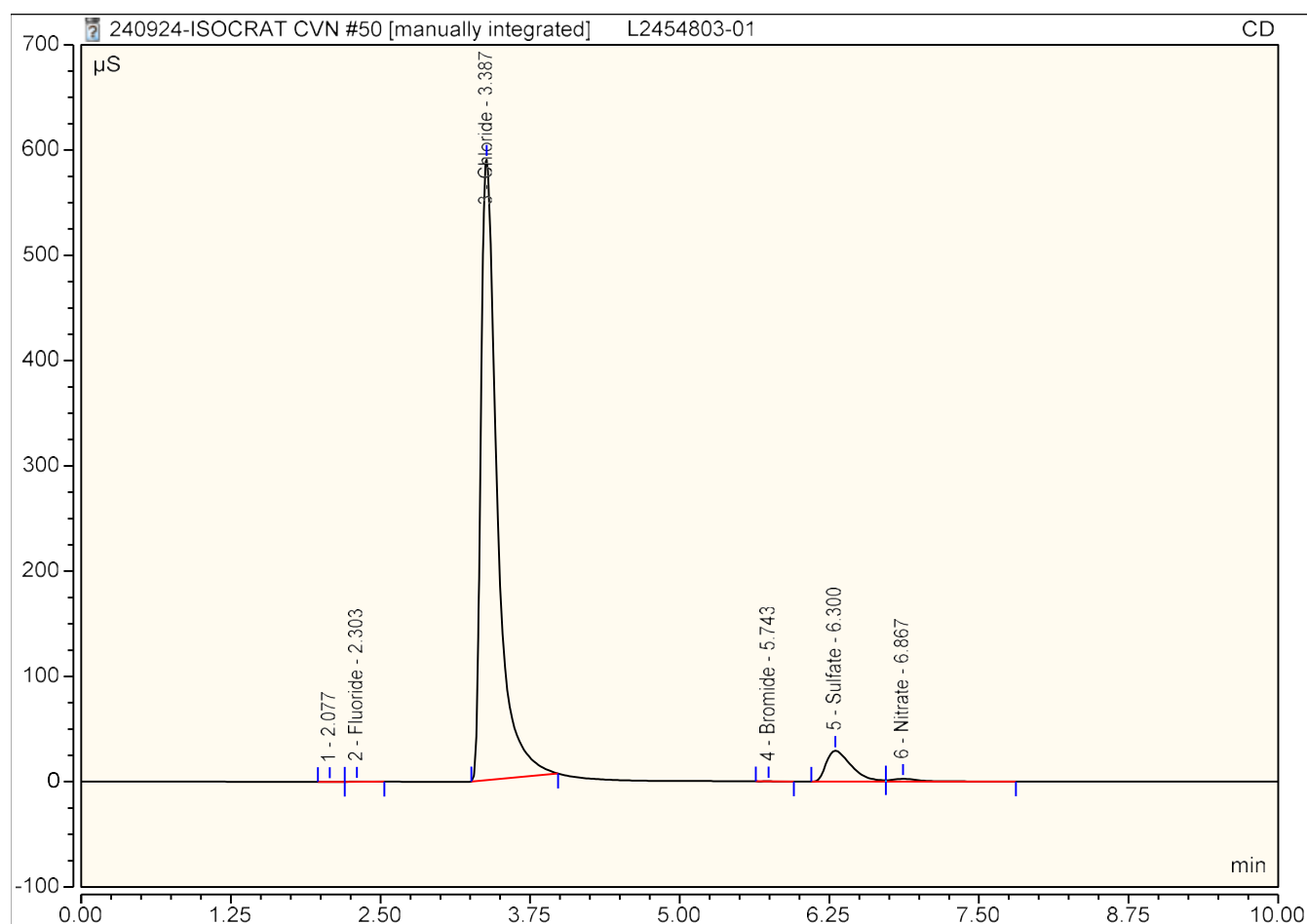
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.022	0.172	0.0837
3	3.38	Chloride	BMB*	94.033	587.830	229.7863
4	5.74	Bromide	BMB	0.006	0.038	0.0815
5	6.30	Sulfate	BM *	7.078	29.263	24.7509
6	6.87	Nitrate	MB*	0.686	2.601	0.5633
TOTAL:				101.83	619.90	255.27



Peak Integration Report

Sample Name:	L2454803-01	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 18:57	Run Time:	10.00

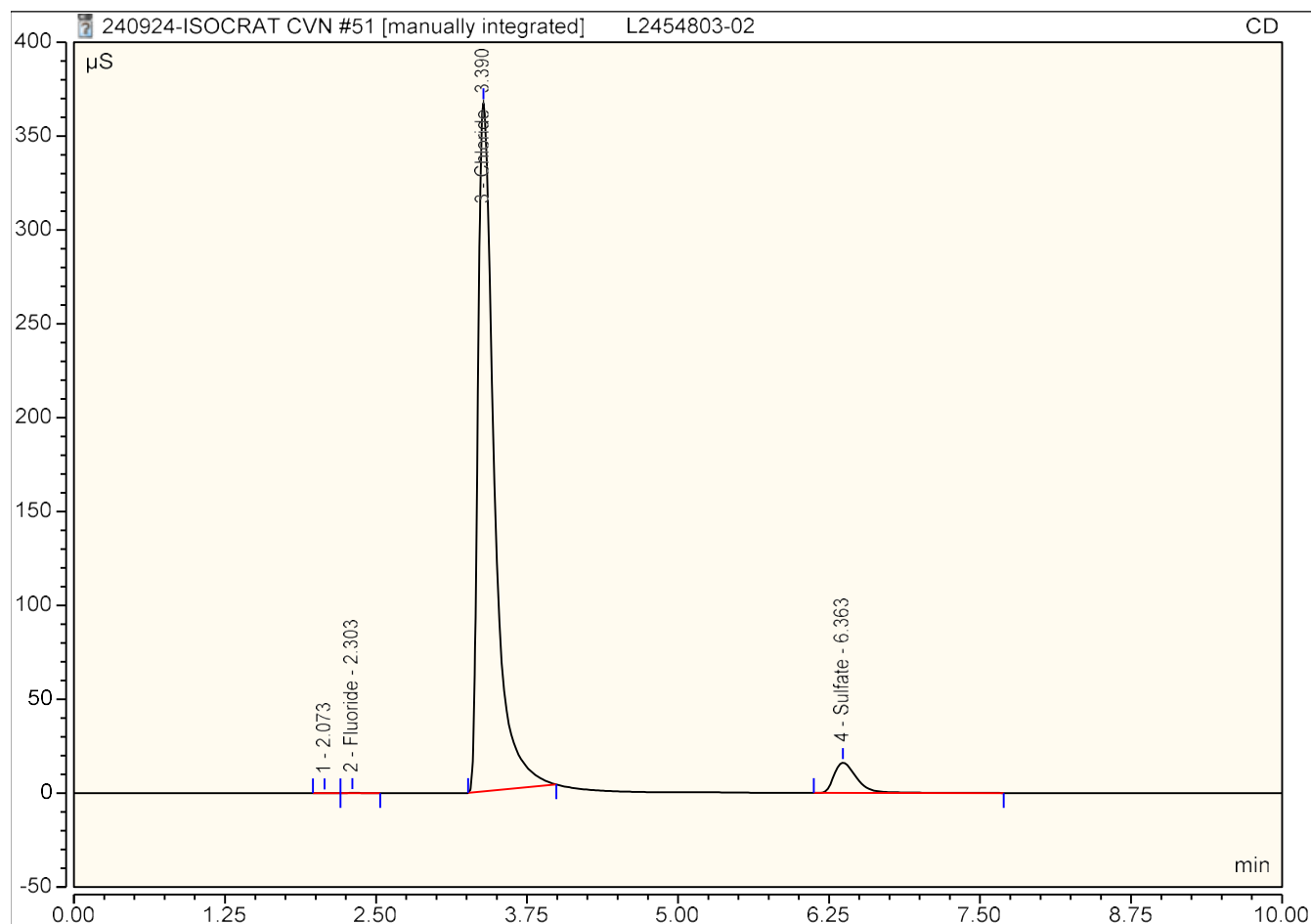
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.022	0.173	0.0837
3	3.39	Chloride	BMB*	93.672	589.320	228.9051
4	5.74	Bromide	BMB	0.006	0.036	0.0788
5	6.30	Sulfate	BM *	7.081	29.199	24.7612
6	6.87	Nitrate	MB*	0.687	2.613	0.5635
TOTAL:				101.47	621.34	254.39



Peak Integration Report

Sample Name:	L2454803-02	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 19:10	Run Time:	10.00

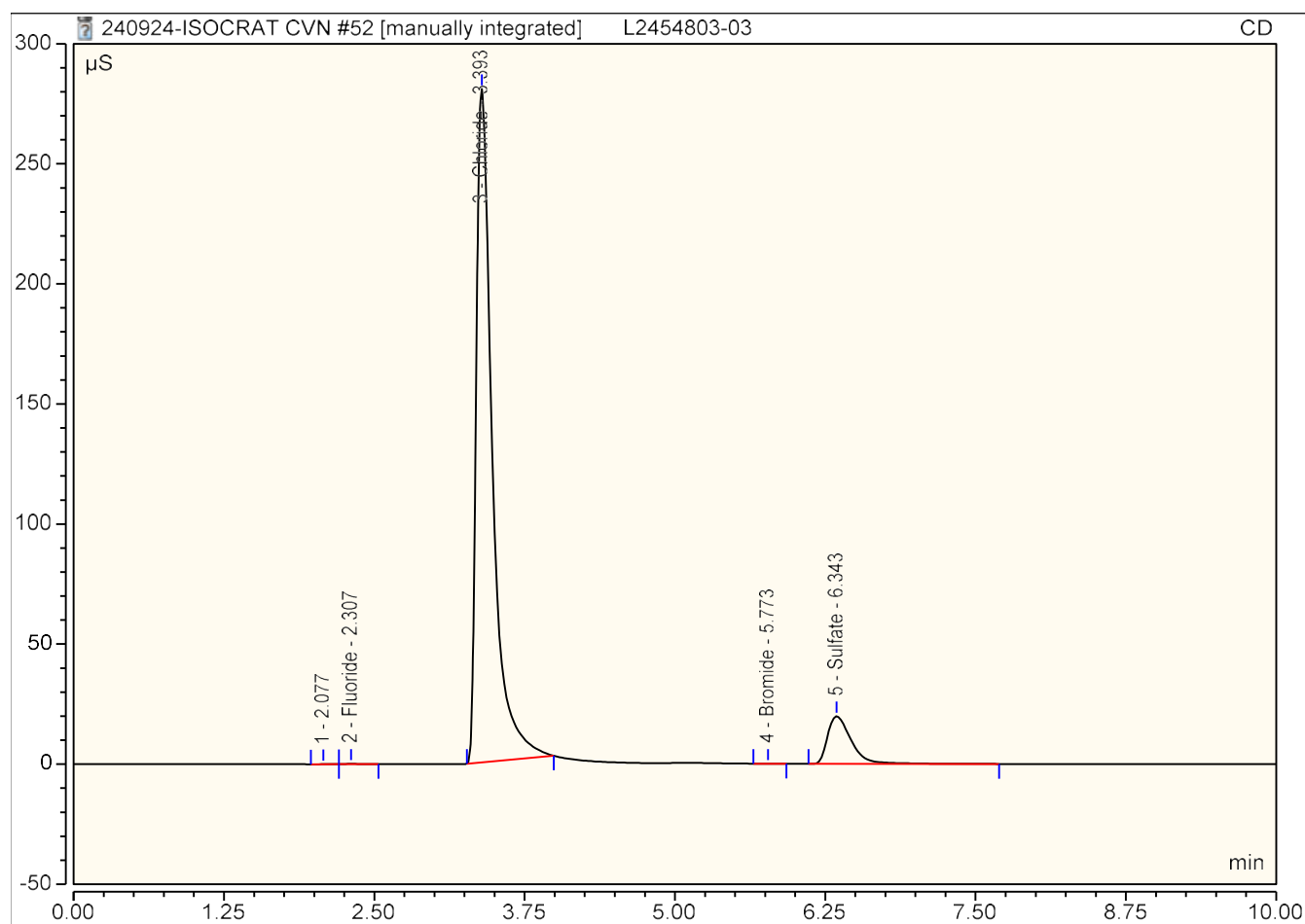
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.020	0.168	0.0815
3	3.39	Chloride	BMB*	57.805	366.741	141.3367
4	6.36	Sulfate	BMB	3.548	16.106	12.5429
TOTAL:				61.37	383.02	153.96



Peak Integration Report

Sample Name:	L2454803-03	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 19:22	Run Time:	10.00

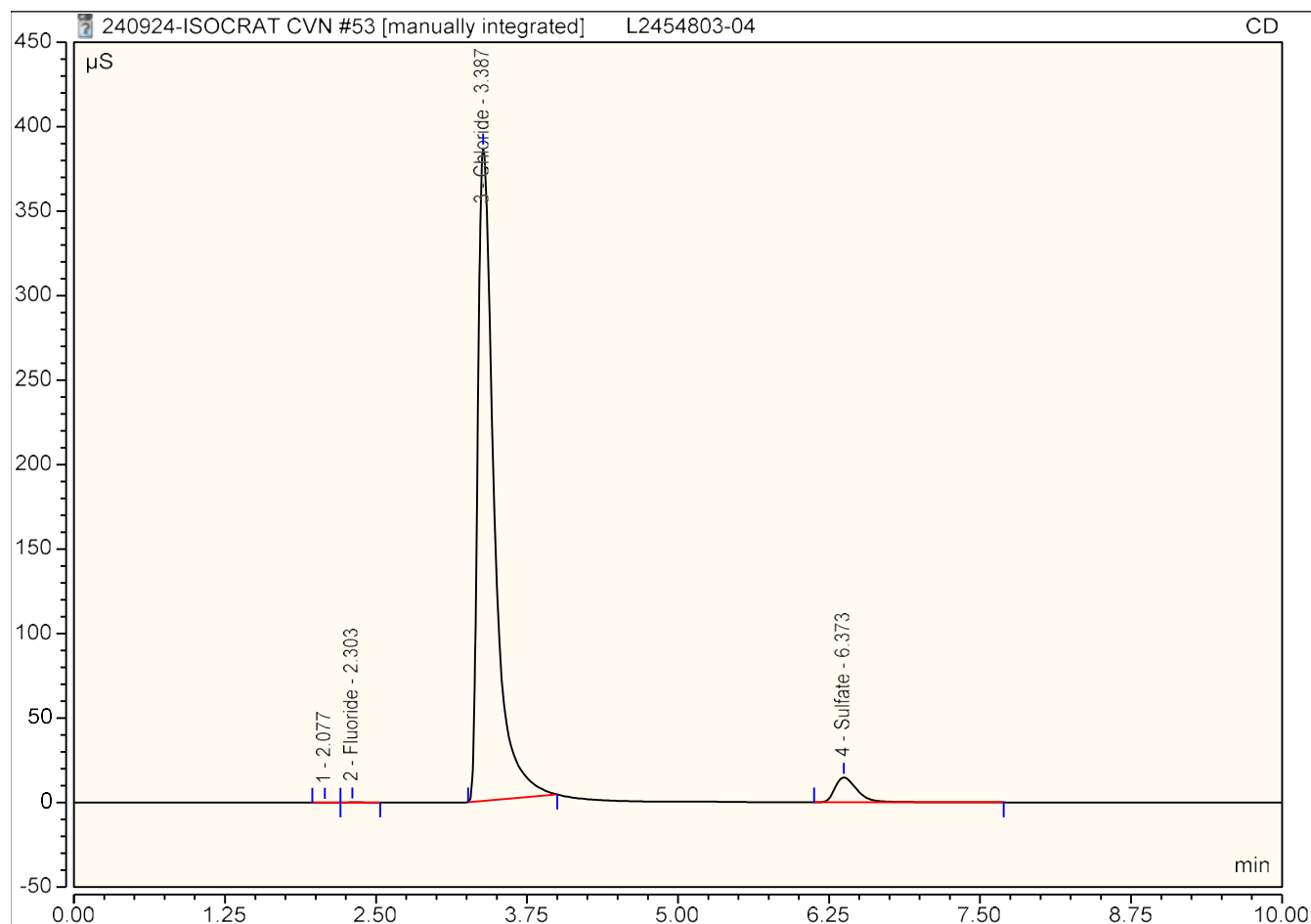
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.018	0.143	0.0769
3	3.39	Chloride	BMB*	43.423	280.477	106.2226
4	5.77	Bromide	BMB	0.002	0.018	0.0513
5	6.34	Sulfate	BMB	4.535	19.849	15.9577
TOTAL:				47.98	300.49	122.31



Peak Integration Report

Sample Name:	L2454803-04	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 19:34	Run Time:	10.00

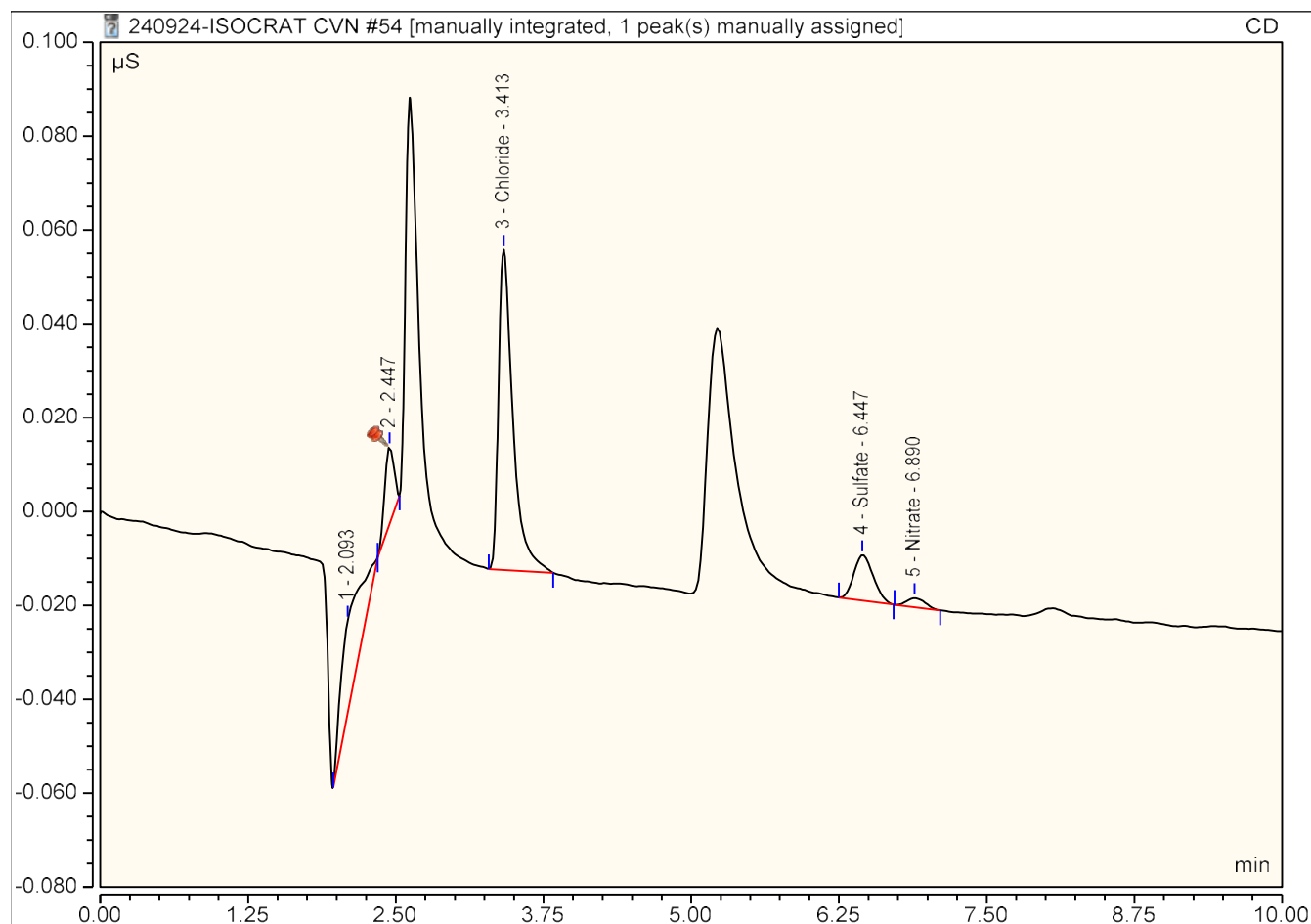
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.30	Fluoride	BMB	0.027	0.220	0.0929
3	3.39	Chloride	BMB*	60.942	386.267	148.9944
4	6.37	Sulfate	BMB	3.175	14.736	11.2540
TOTAL:				64.14	401.22	160.34



Peak Integration Report

Sample Name:	L2454803-05	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 19:46	Run Time:	10.00

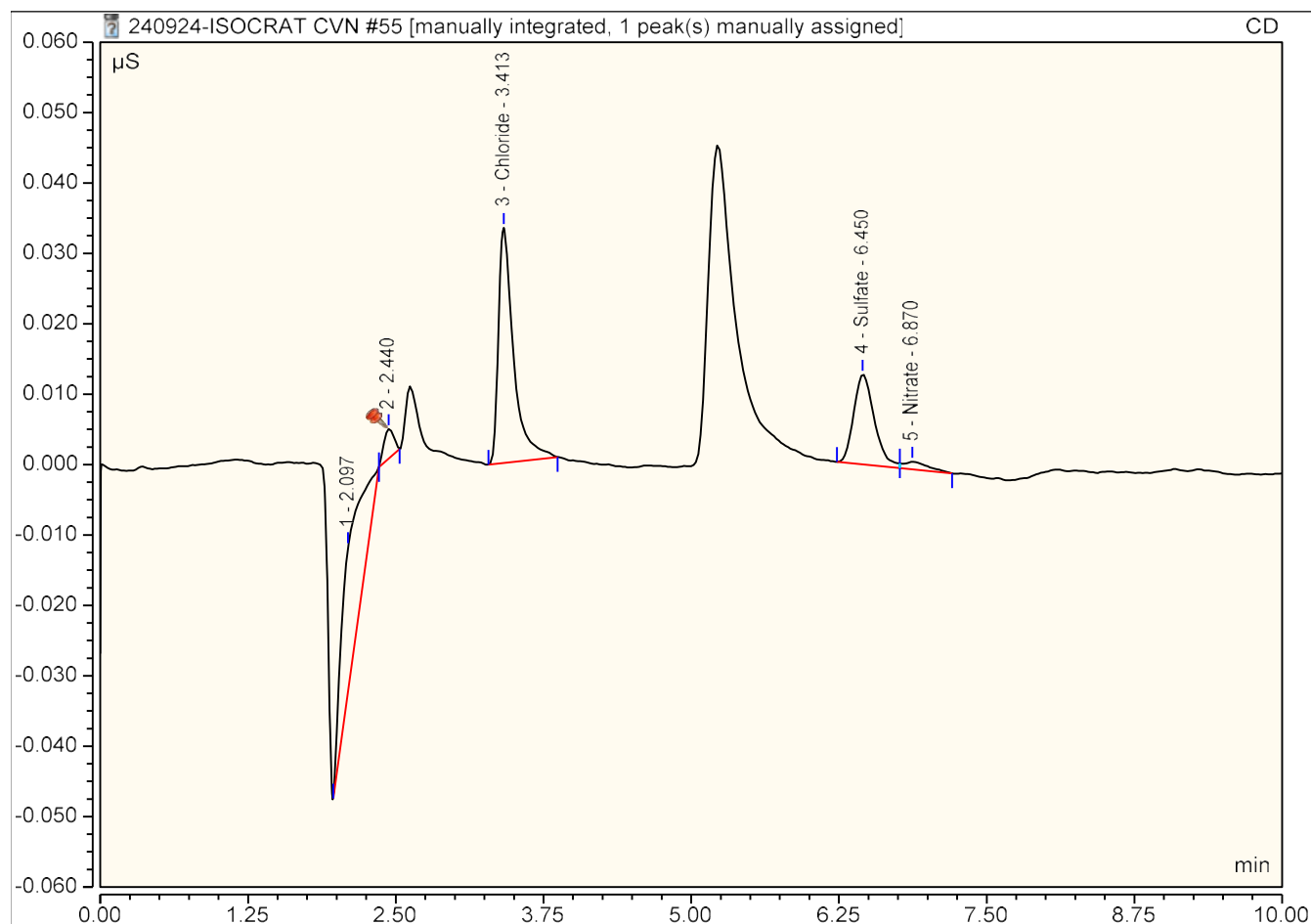
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB*	0.010	0.068	0.2292
4	6.45	Sulfate	BMB	0.002	0.010	0.2829
5	6.89	Nitrate	BMB	0.000	0.002	0.0255
TOTAL:				0.01	0.08	0.54



Peak Integration Report

Sample Name:	XL2454803-05; 10X	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	10.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 19:58	Run Time:	10.00

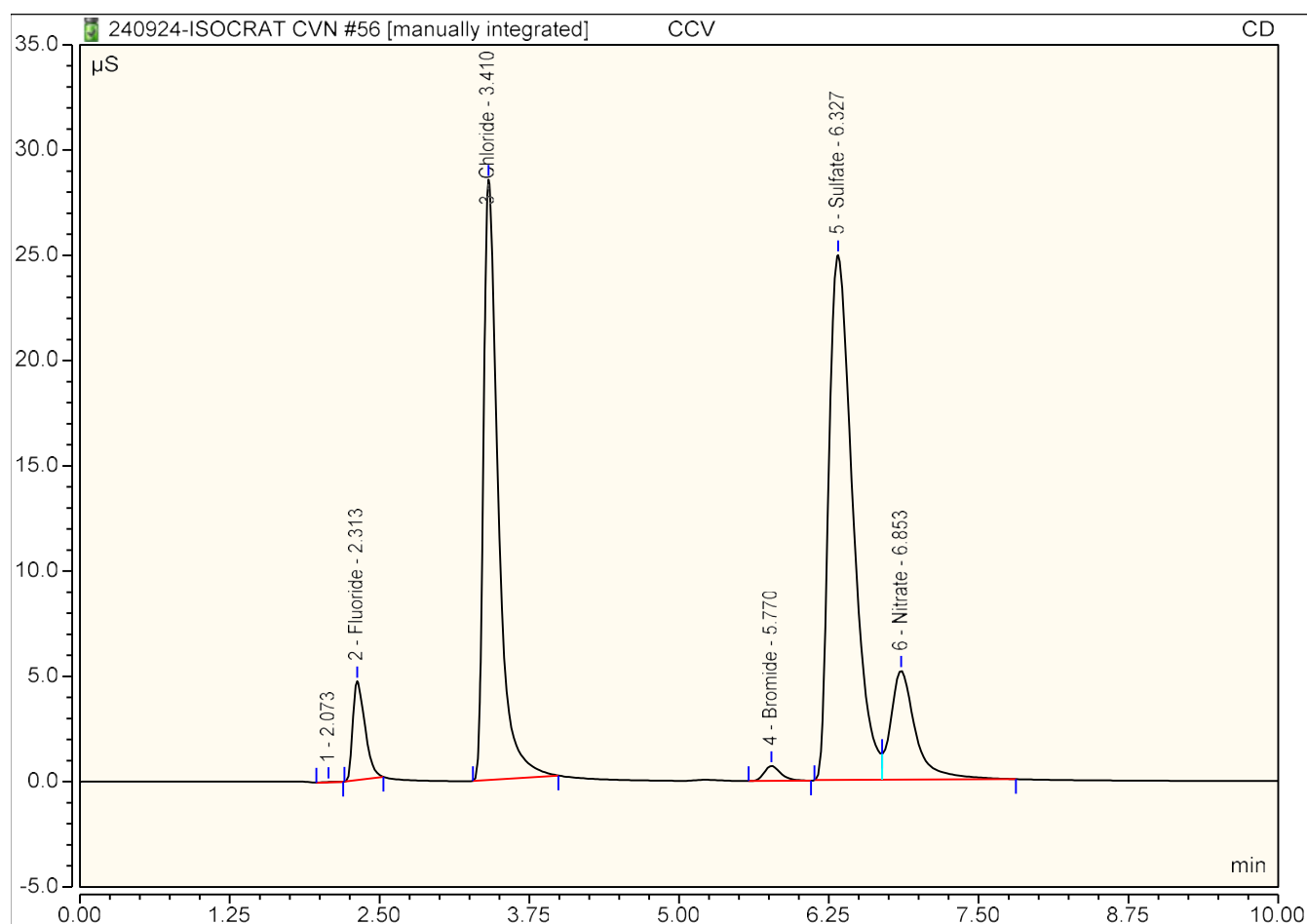
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB*	0.005	0.033	2.1771
4	6.45	Sulfate	BM *	0.003	0.013	2.8545
5	6.87	Nitrate	MB*	0.000	0.001	0.2545
TOTAL:				0.01	0.05	5.29



Peak Integration Report

Sample Name:	CCV	Inj. Vol.:	25.00
Injection Type:	Check Standard	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 20:10	Run Time:	10.00

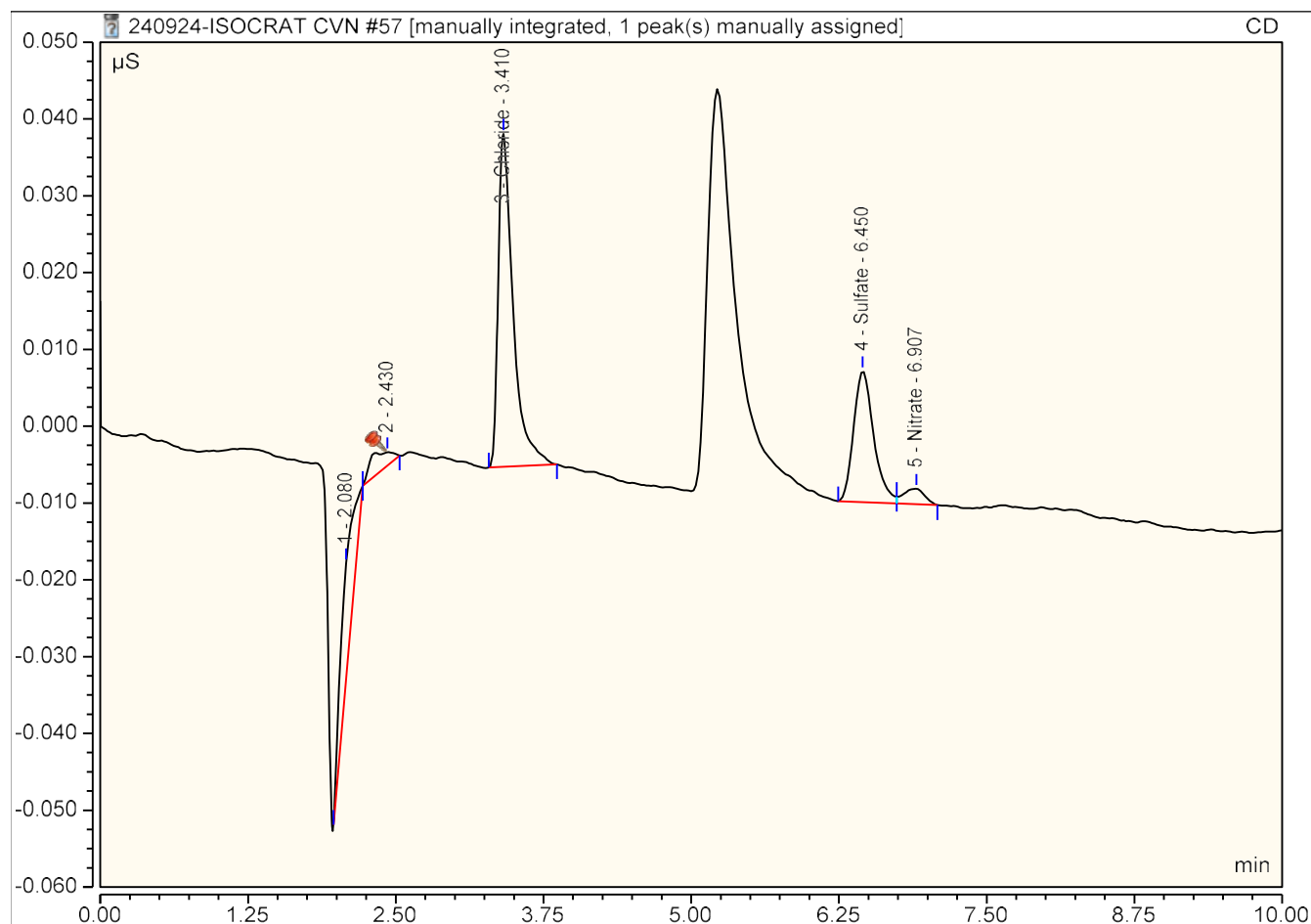
No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	2.31	Fluoride	BMB	0.551	4.697	1.0500
3	3.41	Chloride	BMB*	4.069	28.511	10.1392
4	5.77	Bromide	BMB	0.116	0.711	0.9945
5	6.33	Sulfate	BM *	5.766	24.929	20.2120
6	6.85	Nitrate	MB*	1.250	5.180	1.0051
TOTAL:				11.75	64.03	33.40



Peak Integration Report

Sample Name:	CCB	Inj. Vol.:	25.00
Injection Type:	Unknown	Dilution Factor:	1.0000
Instrument Method:	Anions_050420_ThermoFisher	Operator:	IC 4
Inj. Date / Time:	24-Sep-2024 / 20:22	Run Time:	10.00

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	3.41	Chloride	BMB*	0.006	0.043	0.2210
4	6.45	Sulfate	BM *	0.003	0.017	0.2882
5	6.91	Nitrate	MB*	0.000	0.002	0.0256
TOTAL:				0.01	0.06	0.53



Anion Summary Report

No.	Name	Dilution	Amount CD Fluoride	Amount CD Chloride	Amount CD Nitrate	Amount CD Sulfate	Amount CD Bromide
1	BLANK	1.0	n.a.	0.2129	n.a.	0.2810	n.a.
2	STD 0.5	1.0	0.0592	0.3873	0.0442	0.6237	0.0525
3	STD 1.0	1.0	0.0738	0.5947	0.0646	1.0491	0.0753
4	STD 2.0	1.0	0.1840	1.9971	0.1868	3.9561	0.1890
5	STD 3.0	1.0	0.4607	4.9336	0.4717	9.9320	0.4440
6	STD 4.0	1.0	1.9885	19.7203	2.0078	39.8861	2.0141
7	STD 5.0	1.0	5.0087	50.1170	5.2021	100.0530	5.2575
8	RINSE	1.0	0.0634	0.2129	n.a.	0.2862	n.a.
9	CCV	1.0	1.0482	10.1373	1.0373	20.1100	1.0347
10	CCB	1.0	n.a.	0.2133	n.a.	0.2875	n.a.
11	ICV	1.0	0.8479	8.2124	0.7330	7.9716	0.8283
12	ICB	1.0	n.a.	0.2209	0.0262	0.2942	n.a.
13	BLK	1.0	0.0453	0.2140	0.0255	0.2815	n.a.
14	LCS	1.0	0.8525	8.2394	0.7398	8.0393	0.8223
15	L2453711-05 MS	1.0	0.4263	34.3326	5.3189	14.6552	0.3899
16	L2453711-05 DUP	1.0	0.0572	31.5610	5.0597	6.8590	0.0364
17	L2453894-01 BR CL SO4	1.0	3.3610	7.4986	0.1445	16.6050	0.0375
18	L2453894-02	1.0	0.1532	128.4545	5.2132	20.3402	0.0472
19	L2453894-02; 10X	10.0	0.5617	139.5066	5.1995	22.5646	n.a.
20	L2453894-03; 10X	10.0	0.5798	111.8826	3.6172	173.6685	n.a.
21	CCV	1.0	1.0446	10.1559	1.0208	20.1452	1.0029
22	CCB	1.0	n.a.	0.2183	0.0258	0.2887	n.a.
23	L2453894-04	1.0	0.1749	15.1571	0.8111	101.0062	n.a.
24	L2453894-04; 10X	10.0	0.5820	17.4446	n.a.	116.2798	n.a.
25	L2453894-05	1.0	0.1212	30.6181	0.3542	31.7030	n.a.
26	XL2453894-05; 10X	10.0	0.5327	33.7076	0.5720	34.6946	n.a.
27	L2453894-06; 4X SOR BR	4.0	0.2504	8.1528	1.1345	171.7500	n.a.
28	L2453894-07; 10X	10.0	0.5545	81.0122	1.7289	238.3915	n.a.
29	L2453894-08; 10X	10.0	0.6199	65.1201	n.a.	587.9902	1.4067
30	L2453894-09	1.0	0.0639	5.4846	n.a.	2.7073	0.0404
31	XL2453894-10	1.0	0.1355	68.8590	1.5898	206.8884	n.a.
32	L2453894-10; 10X	10.0	0.5553	75.0930	1.6441	224.6557	n.a.
33	CCV	1.0	1.0468	10.1716	1.0175	20.2087	0.9965
34	CCB	1.0	n.a.	0.2184	0.0257	0.2897	n.a.
35	L2453894-11	1.0	n.a.	0.2118	0.0266	0.2851	n.a.
36	L2454050-01 BR CL SO4	1.0	0.0659	16.2472	1.1750	12.0361	0.0440
37	L2454050-02	1.0	0.0575	127.3142	4.4615	10.9183	0.0443
38	L2454050-02; 10X	10.0	0.4778	138.7354	4.4664	13.4670	n.a.
39	L2454050-03	1.0	n.a.	0.2234	0.0256	0.2832	n.a.
40	L2454050-04	1.0	0.0644	10.9809	0.4087	7.8362	0.0490
41	L2453894-06 CL	1.0	0.1136	7.7062	1.0221	166.9023	n.a.
42	L2453894-01 MS	1.0	3.6260	11.3580	0.5612	24.2869	0.3668

43	L2453894-01 DUP	1.0	3.3127	7.4953	0.1311	16.6430	0.0371
44	L2453894-09 MS	1.0	0.4264	9.3546	0.4056	10.7732	0.3765
45	L2453894-09 DUP	1.0	0.0638	5.4544	n.a.	2.6881	0.0402
46	CCV	1.0	0.9928	10.1077	1.0033	20.1769	0.9931
47	CCB	1.0	n.a.	0.2179	0.0256	0.2874	n.a.
48	L2454803-01 MS NO3	1.0	0.1410	223.4157	0.9802	31.8403	0.4570
49	L2454803-01 DUP	1.0	0.0837	229.7863	0.5633	24.7509	0.0815
50	L2454803-01	1.0	0.0837	228.9051	0.5635	24.7612	0.0788
51	L2454803-02	1.0	0.0815	141.3367	n.a.	12.5429	n.a.
52	L2454803-03	1.0	0.0769	106.2226	n.a.	15.9577	0.0513
53	L2454803-04	1.0	0.0929	148.9944	n.a.	11.2540	n.a.
54	L2454803-05	1.0	n.a.	0.2292	0.0255	0.2829	n.a.
55	XL2454803-05; 10X	10.0	n.a.	2.1771	0.2545	2.8545	n.a.
56	CCV	1.0	1.0500	10.1392	1.0051	20.2120	0.9945
57	CCB	1.0	n.a.	0.2210	0.0256	0.2882	n.a.
	Sum:	141.000	32.2639		62.1466	2636.0714	18.2895
	Average:	2.474	0.7014		1.3223	46.2469	0.6096
	Rel.Std.Dev:	133.881 %	1.5329		1.2805	2.0575	1.6640

Inject Time	Comment
05/Sep/2024 16:08	AU
05/Sep/2024 16:20	LOT#240905-0.5
05/Sep/2024 16:33	LOT#240905-1.0
05/Sep/2024 16:45	LOT#240905-2.0
05/Sep/2024 16:57	LOT#240905-3.0
05/Sep/2024 17:09	LOT#240905-4.0
05/Sep/2024 17:21	LOT#240905-5.0
24/Sep/2024 10:30	MG1975718-720-811
24/Sep/2024 10:42	LOT#240924-C
24/Sep/2024 10:54	CVN
24/Sep/2024 11:06	LOT#240924-I
24/Sep/2024 11:18	CVN
24/Sep/2024 11:30	CVN
24/Sep/2024 11:42	LOT#240924-I
24/Sep/2024 11:54	CVN
24/Sep/2024 12:07	CVN
24/Sep/2024 12:19	CVN
24/Sep/2024 12:31	CVN
24/Sep/2024 12:43	CVN
24/Sep/2024 12:55	CVN
24/Sep/2024 13:07	LOT#240924-C
24/Sep/2024 13:19	CVN
24/Sep/2024 13:31	CVN
24/Sep/2024 13:43	CVN
24/Sep/2024 13:55	CVN
24/Sep/2024 14:07	CVN
24/Sep/2024 14:19	CVN
24/Sep/2024 14:32	CVN
24/Sep/2024 14:44	CVN
24/Sep/2024 14:56	CVN
24/Sep/2024 15:08	CVN
24/Sep/2024 15:20	CVN
24/Sep/2024 15:32	LOT#240924-C
24/Sep/2024 15:44	CVN
24/Sep/2024 15:56	CVN
24/Sep/2024 16:08	CVN
24/Sep/2024 16:20	CVN
24/Sep/2024 16:32	CVN
24/Sep/2024 16:44	CVN
24/Sep/2024 16:57	CVN
24/Sep/2024 17:09	CVN
24/Sep/2024 17:21	CVN

24/Sep/2024 17:33	CVN
24/Sep/2024 17:45	CVN
24/Sep/2024 17:57	CVN
24/Sep/2024 18:09	LOT#240924-C
24/Sep/2024 18:21	CVN
24/Sep/2024 18:33	CVN
24/Sep/2024 18:45	CVN
24/Sep/2024 18:57	CVN
24/Sep/2024 19:10	CVN
24/Sep/2024 19:22	CVN
24/Sep/2024 19:34	CVN
24/Sep/2024 19:46	CVN
24/Sep/2024 19:58	CVN
24/Sep/2024 20:10	LOT#240924-C
24/Sep/2024 20:22	CVN
	0.000
	#DIV/0!
	#DIV/0!

Quality Control

Form 5a Matrix Spike

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : L2453894-09
 Matrix Spike : WG1975720-3
 Matrix Spike Dup :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 MS Analysis Date : 09/24/24 17:45
 MSD Analysis Date :

Parameter	Sample Conc. (mg/l)	Matrix Spike Sample		%R	Matrix Spike Duplicate		%R	RPD	Recovery Limits	RPD Limit
		Spike Added (mg/l)	Spike Conc. (mg/l)		Spike Added (mg/l)	Spike Conc. (mg/l)				
Bromide	0.040J	0.4	0.376	94					90-110	20
Chloride	5.48	4	9.35	96					90-110	18
Sulfate	2.71	8	10.8	101					90-110	20



Form 6 Lab Duplicates

Client	: Roux Env. Eng. & Geology, DPC	Lab Number	: L2454050
Project Name	: CORAM MATERIALS	Project Number	: 2232.0006Y005
Client Sample ID	: NA	Matrix	: WATER
Lab Sample ID	: NA	Analysis Date	: 09/24/24 14:56
Dup Sample ID	: WG1975720-4	DUP Analysis Date	: 09/24/24 17:57

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Bromide	0.040J	0.040J	NC	20
Chloride	5.48	5.45	1	18
Sulfate	2.71	2.69	1	20

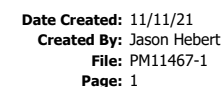
Form 7 Laboratory Control Sample

Client : Roux Env. Eng. & Geology, DPC
 Project Name : CORAM MATERIALS
 Client Sample ID : NA
 Lab Sample ID : WG1975720-2
 Dup Sample ID :

Lab Number : L2454050
 Project Number : 2232.0006Y005
 Matrix : WATER
 LCS Analysis Date : 09/24/24 11:42
 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			
Bromide	0.800	0.822	103.					90-110	20
Chloride	8.00	8.24	103.					90-110	18
Sulfate	8.00	8.04	100.					90-110	20

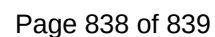


[illegible]

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



Westborough, MA • Mansfield, MA • Bangor, ME • Portsmouth, NH • Mahwah, NJ • Albany, NY • Buffalo, NY • Holmes, PA





Calculations of Anions by Ion Chromatography

Aqueous samples:

The Dionex calculates the area of the peaks produced by the instrument, compares them to the peak area of the calibration standard stored in its memory, and calculates result in mg/L.

If the sample was manually diluted prior to analysis, the calculated mean must be manually multiplied by the dilution factor. The Reported Detection Limit is also multiplied by the same dilution factor.

$$\text{Result, mg/L} = \frac{\text{area} - \text{y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$

