284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

DATA PACKAGE

METALS

PROJECT NAME : USACE018-44 DOD

FIRST ENVIRONMENT, INC.

10 Park Place, Bldg 1A, Suite 504

Butler, NJ - 07405

Phone No: 973-334-0003

ORDER ID : Q2819

ATTENTION : Al Smith

Laboratory Certification ID # 20012

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Cover Page

Order ID : Q2819

Project ID : USACE018-44 DOD

Client : First Environment, Inc.

Lab Sample Number	Client Sample Number
Q2819-01	22BP-N
Q2819-02	22BP-E
Q2819-03	22BP-W
Q2819-04	22BP-S
Q2819-05	11M-W
Q2819-06	11M-S
Q2819-07	11M-N
Q2819-08	11M-E
Q2819-09	84SB-E
Q2819-10	84SB-S
Q2819-11	84SB-W
Q2819-12	17M-S
Q2819-13	17M-E
Q2819-14	17M-W
Q2819-15	17M-N
Q2819-16	38M-S
Q2819-17	38M-N
Q2819-18	38M-W
Q2819-19	38M-E
Q2819-20	82H-E

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 8/19/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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CASE NARRATIVE

First Environment, Inc.
Project Name: USACE018-44 DOD
Project # N/A
Order ID # Q2819
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
03 Solid samples were received on 08/08/2025

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Mercury, Metals ICP-TAL, METALS-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for Mercury,Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010D, digestion based on method 3050 (soils). The analysis and digestion of Mercury was based on method 7471B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all compounds.
The Duplicate (POWDERMSD) analysis met criteria for all compounds except for Iron and Vanadium due to Chemical Interference during Digestion process.
The Matrix Spike (POWDERMS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver, Thallium and Vanadium due to Chemical interference during Digestion Process.
The Matrix Spike Duplicate (POWDERMSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Potassium, Selenium, Silver and Vanadium due to Chemical Interference during Digestion process.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (POWDERL) met criteria for all compounds except for Aluminum, Calcium, Chromium, Copper, Iron, Manganese and Zinc due to sample matrix Interference.

E. Additional Comments:
The Post Digest Spike (POWDERA) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver and Vanadium due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

284 Sheffield Street, Mountainside NJ 07092
Tel. 908-789-8900 Fax: 908-789-8922

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q2819 MATRIX: Solid

METHOD: 6010D,7471B

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.		✓	
	The Serial Dilution (POWDERL) met criteria for all compounds except for Aluminum, Calcium, Chromium, Copper, Iron, Manganese and Zinc due to sample matrix interference.			
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Matrix Spike (POWDERMS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver, Thallium and Vanadium due to Chemical interference during Digestion Process. The Matrix Spike Duplicate (POWDERMSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Potassium, Selenium, Silver and Vanadium due to Chemical Interference during Digestion process.			
7.	Sample Duplicate Analysis Met QC Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Duplicate (POWDERMSD) analysis met criteria for all compounds except for Iron and Vanadium due to Chemical Interference during Digestion process.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY (CONTINUED)

		NA	NO	YES
9.	Analysis Holding Time Met			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

The Post Digest Spike (POWDERA) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver and Vanadium due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

_____ _____

QA REVIEW Date

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2819

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

QA Review Signature: SOHIL JODHANI **Date:** 08/19/2025

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LAB CHRONICLE

OrderID:	Q2819	**OrderDate:**	8/11/2025 12:06:00 PM
Client:	First Environment, Inc.	**Project:**	USACE018-44 DOD
Contact:	Al Smith	**Location:**	D31,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2819-06	**11M-S**	**SOIL**			**08/05/25**			**08/08/25**
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	
Q2819-11	**84SB-W**	**SOIL**			**08/05/25**			**08/08/25**
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	
Q2819-14	**17M-W**	**SOIL**			**08/05/25**			**08/08/25**
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	

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Hit Summary Sheet
SW-846

SDG No.: Q2819 **Order ID:** Q2819

Client: First Environment, Inc. **Project ID:** USACE018-44 DOD

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : 11M-S									
Q2819-06	11M-S	SOIL	Aluminum	1930		0.80	3.81	4.76	mg/Kg
Q2819-06	11M-S	SOIL	Arsenic	1.41		0.18	0.76	0.95	mg/Kg
Q2819-06	11M-S	SOIL	Barium	7.85		0.70	1.19	4.76	mg/Kg
Q2819-06	11M-S	SOIL	Beryllium	0.13	J	0.024	0.071	0.29	mg/Kg
Q2819-06	11M-S	SOIL	Cadmium	0.082	J	0.023	0.071	0.29	mg/Kg
Q2819-06	11M-S	SOIL	Calcium	174		10.6	23.8	95.3	mg/Kg
Q2819-06	11M-S	SOIL	Chromium	5.24		0.045	0.12	0.48	mg/Kg
Q2819-06	11M-S	SOIL	Cobalt	0.76	J	0.095	0.36	1.43	mg/Kg
Q2819-06	11M-S	SOIL	Copper	2.19		0.21	0.76	0.95	mg/Kg
Q2819-06	11M-S	SOIL	Iron	2860		3.80	3.81	4.76	mg/Kg
Q2819-06	11M-S	SOIL	Lead	16.2		0.12	0.46	0.57	mg/Kg
Q2819-06	11M-S	SOIL	Magnesium	311		11.4	23.8	95.3	mg/Kg
Q2819-06	11M-S	SOIL	Manganese	36.8		0.13	0.24	0.95	mg/Kg
Q2819-06	11M-S	SOIL	Nickel	1.71	J	0.12	0.48	1.91	mg/Kg
Q2819-06	11M-S	SOIL	Potassium	124		26.4	76.2	95.3	mg/Kg
Q2819-06	11M-S	SOIL	Silver	0.13	J	0.11	0.24	0.48	mg/Kg
Q2819-06	11M-S	SOIL	Sodium	44.2	J	17.0	76.2	95.3	mg/Kg
Q2819-06	11M-S	SOIL	Vanadium	4.22		0.24	0.95	1.91	mg/Kg
Q2819-06	11M-S	SOIL	Zinc	8.80		0.22	0.48	1.91	mg/Kg
Client ID : 84SB-W									
Q2819-11	84SB-W	SOIL	Aluminum	1440		0.82	3.89	4.86	mg/Kg
Q2819-11	84SB-W	SOIL	Arsenic	3.43		0.19	0.78	0.97	mg/Kg
Q2819-11	84SB-W	SOIL	Barium	8.37		0.71	1.22	4.86	mg/Kg
Q2819-11	84SB-W	SOIL	Beryllium	0.28	J	0.024	0.073	0.29	mg/Kg
Q2819-11	84SB-W	SOIL	Cadmium	0.14	J	0.023	0.073	0.29	mg/Kg
Q2819-11	84SB-W	SOIL	Calcium	5360		10.8	24.3	97.2	mg/Kg
Q2819-11	84SB-W	SOIL	Chromium	4.09		0.046	0.12	0.49	mg/Kg
Q2819-11	84SB-W	SOIL	Cobalt	0.91	J	0.097	0.37	1.46	mg/Kg
Q2819-11	84SB-W	SOIL	Copper	6.23		0.21	0.78	0.97	mg/Kg
Q2819-11	84SB-W	SOIL	Iron	3500		3.88	3.89	4.86	mg/Kg
Q2819-11	84SB-W	SOIL	Lead	22.7		0.13	0.47	0.58	mg/Kg
Q2819-11	84SB-W	SOIL	Magnesium	2580		11.7	24.3	97.2	mg/Kg
Q2819-11	84SB-W	SOIL	Manganese	29.6		0.14	0.24	0.97	mg/Kg
Q2819-11	84SB-W	SOIL	Mercury	0.065		0.0080	0.012	0.014	mg/Kg
Q2819-11	84SB-W	SOIL	Nickel	2.42		0.13	0.49	1.94	mg/Kg
Q2819-11	84SB-W	SOIL	Potassium	139		26.9	77.8	97.2	mg/Kg
Q2819-11	84SB-W	SOIL	Silver	0.15	J	0.12	0.24	0.49	mg/Kg

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Hit Summary Sheet
SW-846

SDG No.: Q2819 **Order ID:** Q2819

Client: First Environment, Inc. **Project ID:** USACE018-44 DOD

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q2819-11	84SB-W	SOIL	Sodium	91.1	J	17.3	77.8	97.2	mg/Kg
Q2819-11	84SB-W	SOIL	Vanadium	4.31		0.24	0.97	1.94	mg/Kg
Q2819-11	84SB-W	SOIL	Zinc	21.5		0.22	0.49	1.94	mg/Kg
Client ID :	**17M-W**								
Q2819-14	17M-W	SOIL	Aluminum	936		0.83	3.96	4.95	mg/Kg
Q2819-14	17M-W	SOIL	Arsenic	2.78		0.19	0.79	0.99	mg/Kg
Q2819-14	17M-W	SOIL	Barium	2.44	J	0.72	1.24	4.95	mg/Kg
Q2819-14	17M-W	SOIL	Beryllium	0.058	J	0.025	0.074	0.30	mg/Kg
Q2819-14	17M-W	SOIL	Cadmium	0.048	J	0.024	0.074	0.30	mg/Kg
Q2819-14	17M-W	SOIL	Calcium	171		11.0	24.8	99.0	mg/Kg
Q2819-14	17M-W	SOIL	Chromium	3.15		0.047	0.12	0.50	mg/Kg
Q2819-14	17M-W	SOIL	Cobalt	0.37	J	0.099	0.37	1.49	mg/Kg
Q2819-14	17M-W	SOIL	Copper	2.73		0.22	0.79	0.99	mg/Kg
Q2819-14	17M-W	SOIL	Iron	1540		3.95	3.96	4.95	mg/Kg
Q2819-14	17M-W	SOIL	Lead	4.67		0.13	0.48	0.59	mg/Kg
Q2819-14	17M-W	SOIL	Magnesium	159		11.9	24.8	99.0	mg/Kg
Q2819-14	17M-W	SOIL	Manganese	15.0		0.14	0.25	0.99	mg/Kg
Q2819-14	17M-W	SOIL	Nickel	1.08	J	0.13	0.50	1.98	mg/Kg
Q2819-14	17M-W	SOIL	Potassium	73.1	J	27.4	79.2	99.0	mg/Kg
Q2819-14	17M-W	SOIL	Sodium	36.7	J	17.6	79.2	99.0	mg/Kg
Q2819-14	17M-W	SOIL	Vanadium	2.33		0.25	0.99	1.98	mg/Kg
Q2819-14	17M-W	SOIL	Zinc	11.9		0.23	0.50	1.98	mg/Kg

SAMPLE DATA

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/05/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	11M-S	SDG No.:	Q2819
Lab Sample ID:	Q2819-06	Matrix:	SOIL
Level (low/med):	low	% Solid:	90.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	1930		1	0.80	3.81	4.76	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-36-0	Antimony	0.60	UN	1	0.21	0.60	2.38	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-38-2	Arsenic	1.41	N	1	0.18	0.76	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-39-3	Barium	7.85		1	0.70	1.19	4.76	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-41-7	Beryllium	0.13	JN	1	0.024	0.071	0.29	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-43-9	Cadmium	0.082	J	1	0.023	0.071	0.29	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-70-2	Calcium	174		1	10.6	23.8	95.3	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-47-3	Chromium	5.24	N	1	0.045	0.12	0.48	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-48-4	Cobalt	0.76	J	1	0.095	0.36	1.43	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-50-8	Copper	2.19		1	0.21	0.76	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7439-89-6	Iron	2860	*	1	3.80	3.81	4.76	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7439-92-1	Lead	16.2		1	0.12	0.46	0.57	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7439-95-4	Magnesium	311		1	11.4	23.8	95.3	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7439-96-5	Manganese	36.8		1	0.13	0.24	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7439-97-6	Mercury	0.011	U	1	0.0080	0.011	0.014	mg/Kg	08/11/25 16:30	08/12/25 11:08	7471B	
7440-02-0	Nickel	1.71	J	1	0.12	0.48	1.91	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-09-7	Potassium	124	N	1	26.4	76.2	95.3	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7782-49-2	Selenium	0.76	UN	1	0.25	0.76	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-22-4	Silver	0.13	JN	1	0.11	0.24	0.48	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-23-5	Sodium	44.2	J	1	17.0	76.2	95.3	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-28-0	Thallium	0.95	UN	1	0.22	0.95	1.91	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-62-2	Vanadium	4.22	N*	1	0.24	0.95	1.91	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050
7440-66-6	Zinc	8.80		1	0.22	0.48	1.91	mg/Kg	08/12/25 12:55	08/13/25 16:02	6010D	SW3050

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/05/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	84SB-W	SDG No.:	Q2819
Lab Sample ID:	Q2819-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	86.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	1440		1	0.82	3.89	4.86	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-36-0	Antimony	0.61	UN	1	0.21	0.61	2.43	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-38-2	Arsenic	3.43	N	1	0.19	0.78	0.97	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-39-3	Barium	8.37		1	0.71	1.22	4.86	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-41-7	Beryllium	0.28	JN	1	0.024	0.073	0.29	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-43-9	Cadmium	0.14	J	1	0.023	0.073	0.29	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-70-2	Calcium	5360		1	10.8	24.3	97.2	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-47-3	Chromium	4.09	N	1	0.046	0.12	0.49	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-48-4	Cobalt	0.91	J	1	0.097	0.37	1.46	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-50-8	Copper	6.23		1	0.21	0.78	0.97	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7439-89-6	Iron	3500	*	1	3.88	3.89	4.86	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7439-92-1	Lead	22.7		1	0.13	0.47	0.58	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7439-95-4	Magnesium	2580		1	11.7	24.3	97.2	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7439-96-5	Manganese	29.6		1	0.14	0.24	0.97	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7439-97-6	Mercury	0.065		1	0.0080	0.012	0.014	mg/Kg	08/11/25 16:30	08/12/25 11:25	7471B	
7440-02-0	Nickel	2.42		1	0.13	0.49	1.94	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-09-7	Potassium	139	N	1	26.9	77.8	97.2	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7782-49-2	Selenium	0.78	UN	1	0.25	0.78	0.97	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-22-4	Silver	0.15	JN	1	0.12	0.24	0.49	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-23-5	Sodium	91.1	J	1	17.3	77.8	97.2	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-28-0	Thallium	0.97	UN	1	0.22	0.97	1.94	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-62-2	Vanadium	4.31	N*	1	0.24	0.97	1.94	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050
7440-66-6	Zinc	21.5		1	0.22	0.49	1.94	mg/Kg	08/12/25 12:55	08/13/25 16:06	6010D	SW3050

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/05/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	17M-W	SDG No.:	Q2819
Lab Sample ID:	Q2819-14	Matrix:	SOIL
Level (low/med):	low	% Solid:	85.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	936		1	0.83	3.96	4.95	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-36-0	Antimony	0.62	UN	1	0.22	0.62	2.48	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-38-2	Arsenic	2.78	N	1	0.19	0.79	0.99	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-39-3	Barium	2.44	J	1	0.72	1.24	4.95	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-41-7	Beryllium	0.058	JN	1	0.025	0.074	0.30	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-43-9	Cadmium	0.048	J	1	0.024	0.074	0.30	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-70-2	Calcium	171		1	11.0	24.8	99.0	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-47-3	Chromium	3.15	N	1	0.047	0.12	0.50	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-48-4	Cobalt	0.37	J	1	0.099	0.37	1.49	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-50-8	Copper	2.73		1	0.22	0.79	0.99	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7439-89-6	Iron	1540	*	1	3.95	3.96	4.95	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7439-92-1	Lead	4.67		1	0.13	0.48	0.59	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7439-95-4	Magnesium	159		1	11.9	24.8	99.0	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7439-96-5	Manganese	15.0		1	0.14	0.25	0.99	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7439-97-6	Mercury	0.013	U	1	0.0090	0.013	0.016	mg/Kg	08/11/25 16:30	08/12/25 11:27	7471B	
7440-02-0	Nickel	1.08	J	1	0.13	0.50	1.98	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-09-7	Potassium	73.1	JN	1	27.4	79.2	99.0	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7782-49-2	Selenium	0.79	UN	1	0.26	0.79	0.99	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-22-4	Silver	0.25	UN	1	0.12	0.25	0.50	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-23-5	Sodium	36.7	J	1	17.6	79.2	99.0	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-28-0	Thallium	0.99	UN	1	0.23	0.99	1.98	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-62-2	Vanadium	2.33	N*	1	0.25	0.99	1.98	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050
7440-66-6	Zinc	11.9		1	0.23	0.50	1.98	mg/Kg	08/12/25 12:55	08/13/25 16:10	6010D	SW3050

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV08	Mercury	4.39	4.0	110	90 - 110	CV	08/12/2025	09:56	LB136782

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV22	Mercury	5.22	5.0	104	90 - 110	CV	08/12/2025	10:03	LB136782
CCV23	Mercury	5.26	5.0	105	90 - 110	CV	08/12/2025	11:11	LB136782
CCV24	Mercury	5.28	5.0	106	90 - 110	CV	08/12/2025	11:51	LB136782
CCV25	Mercury	5.14	5.0	103	90 - 110	CV	08/12/2025	12:32	LB136782
CCV26	Mercury	4.84	5.0	97	90 - 110	CV	08/12/2025	12:55	LB136782

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	7680	8000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Antimony	4000	4000	100	90 - 110	P	08/13/2025	12:21	LB136801
	Arsenic	3870	4000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Barium	7790	8000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Beryllium	189	200	95	90 - 110	P	08/13/2025	12:21	LB136801
	Cadmium	1920	2000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Calcium	19200	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Chromium	788	800	98	90 - 110	P	08/13/2025	12:21	LB136801
	Cobalt	1950	2000	98	90 - 110	P	08/13/2025	12:21	LB136801
	Copper	997	1000	100	90 - 110	P	08/13/2025	12:21	LB136801
	Iron	3950	4000	99	90 - 110	P	08/13/2025	12:21	LB136801
	Lead	3770	4000	94	90 - 110	P	08/13/2025	12:21	LB136801
	Magnesium	19100	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Manganese	1920	2000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Nickel	1950	2000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Potassium	19400	20000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Selenium	3880	4000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Silver	1030	1000	103	90 - 110	P	08/13/2025	12:21	LB136801
	Sodium	19100	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Thallium	3750	4000	94	90 - 110	P	08/13/2025	12:21	LB136801
	Vanadium	1940	2000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Zinc	1950	2000	98	90 - 110	P	08/13/2025	12:21	LB136801

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	95.1	100	95	80 - 120	P	08/13/2025	12:28	LB136801
	Antimony	50.1	50.0	100	80 - 120	P	08/13/2025	12:28	LB136801
	Arsenic	21.3	20.0	106	80 - 120	P	08/13/2025	12:28	LB136801
	Barium	94.7	100	95	80 - 120	P	08/13/2025	12:28	LB136801
	Beryllium	6.08	6.0	101	80 - 120	P	08/13/2025	12:28	LB136801
	Cadmium	5.59	6.0	93	80 - 120	P	08/13/2025	12:28	LB136801
	Calcium	2040	2000	102	80 - 120	P	08/13/2025	12:28	LB136801
	Chromium	10.5	10.0	105	80 - 120	P	08/13/2025	12:28	LB136801
	Cobalt	29.4	30.0	98	80 - 120	P	08/13/2025	12:28	LB136801
	Copper	21.3	20.0	107	80 - 120	P	08/13/2025	12:28	LB136801
	Iron	107	100	107	80 - 120	P	08/13/2025	12:28	LB136801
	Lead	11.2	12.0	93	80 - 120	P	08/13/2025	12:28	LB136801
	Magnesium	2120	2000	106	80 - 120	P	08/13/2025	12:28	LB136801
	Manganese	21.0	20.0	105	80 - 120	P	08/13/2025	12:28	LB136801
	Nickel	39.6	40.0	99	80 - 120	P	08/13/2025	12:28	LB136801
	Potassium	1990	2000	100	80 - 120	P	08/13/2025	12:28	LB136801
	Selenium	19.2	20.0	96	80 - 120	P	08/13/2025	12:28	LB136801
	Silver	10.1	10.0	101	80 - 120	P	08/13/2025	12:28	LB136801
	Sodium	1850	2000	92	80 - 120	P	08/13/2025	12:28	LB136801
	Thallium	43.0	40.0	107	80 - 120	P	08/13/2025	12:28	LB136801
	Vanadium	38.9	40.0	97	80 - 120	P	08/13/2025	12:28	LB136801
	Zinc	42.4	40.0	106	80 - 120	P	08/13/2025	12:28	LB136801

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9630	10000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Antimony	4930	5000	99	90 - 110	P	08/13/2025	12:58	LB136801
	Arsenic	4900	5000	98	90 - 110	P	08/13/2025	12:58	LB136801
	Barium	9640	10000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Beryllium	240	250	96	90 - 110	P	08/13/2025	12:58	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Chromium	1000	1000	100	90 - 110	P	08/13/2025	12:58	LB136801
	Cobalt	2420	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Copper	1230	1250	98	90 - 110	P	08/13/2025	12:58	LB136801
	Iron	5030	5000	101	90 - 110	P	08/13/2025	12:58	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	12:58	LB136801
	Magnesium	24000	25000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	12:58	LB136801
	Nickel	2430	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Potassium	25000	25000	100	90 - 110	P	08/13/2025	12:58	LB136801
	Selenium	4930	5000	98	90 - 110	P	08/13/2025	12:58	LB136801
	Silver	1230	1250	99	90 - 110	P	08/13/2025	12:58	LB136801
	Sodium	24600	25000	99	90 - 110	P	08/13/2025	12:58	LB136801
	Thallium	4820	5000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Vanadium	2420	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Zinc	2490	2500	99	90 - 110	P	08/13/2025	12:58	LB136801
CCV02	Aluminum	9700	10000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Antimony	4970	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Arsenic	4950	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Barium	9660	10000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Beryllium	240	250	96	90 - 110	P	08/13/2025	13:42	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Calcium	24200	25000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Chromium	987	1000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Copper	1230	1250	99	90 - 110	P	08/13/2025	13:42	LB136801
	Iron	4980	5000	100	90 - 110	P	08/13/2025	13:42	LB136801
	Lead	4850	5000	97	90 - 110	P	08/13/2025	13:42	LB136801

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24100	25000	96	90 - 110	P	08/13/2025	13:42	LB136801
	Manganese	2420	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Nickel	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Potassium	24600	25000	98	90 - 110	P	08/13/2025	13:42	LB136801
	Selenium	4980	5000	100	90 - 110	P	08/13/2025	13:42	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	13:42	LB136801
	Sodium	24100	25000	96	90 - 110	P	08/13/2025	13:42	LB136801
	Thallium	4960	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Vanadium	2450	2500	98	90 - 110	P	08/13/2025	13:42	LB136801
	Zinc	2460	2500	98	90 - 110	P	08/13/2025	13:42	LB136801
CCV03	Aluminum	9650	10000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Antimony	5020	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Arsenic	4990	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Barium	9670	10000	97	90 - 110	P	08/13/2025	14:33	LB136801
	Beryllium	238	250	95	90 - 110	P	08/13/2025	14:33	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	14:33	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Chromium	993	1000	99	90 - 110	P	08/13/2025	14:33	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	14:33	LB136801
	Copper	1240	1250	99	90 - 110	P	08/13/2025	14:33	LB136801
	Iron	5010	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	14:33	LB136801
	Magnesium	23900	25000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	14:33	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	14:33	LB136801
	Potassium	24700	25000	99	90 - 110	P	08/13/2025	14:33	LB136801
	Selenium	5020	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	14:33	LB136801
	Sodium	23300	25000	93	90 - 110	P	08/13/2025	14:33	LB136801
	Thallium	4820	5000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Vanadium	2450	2500	98	90 - 110	P	08/13/2025	14:33	LB136801
	Zinc	2480	2500	99	90 - 110	P	08/13/2025	14:33	LB136801
CCV04	Aluminum	9760	10000	98	90 - 110	P	08/13/2025	15:23	LB136801
	Antimony	5060	5000	101	90 - 110	P	08/13/2025	15:23	LB136801

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV04	Arsenic	5010	5000	100	90 - 110	P	08/13/2025	15:23	LB136801
	Barium	9660	10000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Beryllium	239	250	96	90 - 110	P	08/13/2025	15:23	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	15:23	LB136801
	Calcium	24300	25000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Chromium	991	1000	99	90 - 110	P	08/13/2025	15:23	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	15:23	LB136801
	Copper	1240	1250	99	90 - 110	P	08/13/2025	15:23	LB136801
	Iron	5000	5000	100	90 - 110	P	08/13/2025	15:23	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Magnesium	24200	25000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	15:23	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	15:23	LB136801
	Potassium	24700	25000	99	90 - 110	P	08/13/2025	15:23	LB136801
	Selenium	5070	5000	101	90 - 110	P	08/13/2025	15:23	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	15:23	LB136801
	Sodium	23700	25000	95	90 - 110	P	08/13/2025	15:23	LB136801
	Thallium	4760	5000	95	90 - 110	P	08/13/2025	15:23	LB136801
	Vanadium	2470	2500	99	90 - 110	P	08/13/2025	15:23	LB136801
	Zinc	2500	2500	100	90 - 110	P	08/13/2025	15:23	LB136801
CCV05	Aluminum	9690	10000	97	90 - 110	P	08/13/2025	16:14	LB136801
	Antimony	5090	5000	102	90 - 110	P	08/13/2025	16:14	LB136801
	Arsenic	5010	5000	100	90 - 110	P	08/13/2025	16:14	LB136801
	Barium	9840	10000	98	90 - 110	P	08/13/2025	16:14	LB136801
	Beryllium	235	250	94	90 - 110	P	08/13/2025	16:14	LB136801
	Cadmium	2400	2500	96	90 - 110	P	08/13/2025	16:14	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	16:14	LB136801
	Chromium	991	1000	99	90 - 110	P	08/13/2025	16:14	LB136801
	Cobalt	2420	2500	97	90 - 110	P	08/13/2025	16:14	LB136801
	Copper	1240	1250	100	90 - 110	P	08/13/2025	16:14	LB136801
	Iron	5090	5000	102	90 - 110	P	08/13/2025	16:14	LB136801
	Lead	4810	5000	96	90 - 110	P	08/13/2025	16:14	LB136801
	Magnesium	23800	25000	95	90 - 110	P	08/13/2025	16:14	LB136801
	Manganese	2380	2500	95	90 - 110	P	08/13/2025	16:14	LB136801

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV05	Nickel	2430	2500	97	90 - 110	P	08/13/2025	16:14	LB136801
	Potassium	25000	25000	100	90 - 110	P	08/13/2025	16:14	LB136801
	Selenium	5070	5000	101	90 - 110	P	08/13/2025	16:14	LB136801
	Silver	1250	1250	100	90 - 110	P	08/13/2025	16:14	LB136801
	Sodium	23800	25000	95	90 - 110	P	08/13/2025	16:14	LB136801
	Thallium	4540	5000	91	90 - 110	P	08/13/2025	16:14	LB136801
	Vanadium	2460	2500	98	90 - 110	P	08/13/2025	16:14	LB136801
	Zinc	2510	2500	101	90 - 110	P	08/13/2025	16:14	LB136801
CCV06	Aluminum	9690	10000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Antimony	5110	5000	102	90 - 110	P	08/13/2025	17:05	LB136801
	Arsenic	5040	5000	101	90 - 110	P	08/13/2025	17:05	LB136801
	Barium	9810	10000	98	90 - 110	P	08/13/2025	17:05	LB136801
	Beryllium	238	250	95	90 - 110	P	08/13/2025	17:05	LB136801
	Cadmium	2420	2500	97	90 - 110	P	08/13/2025	17:05	LB136801
	Calcium	24100	25000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Chromium	988	1000	99	90 - 110	P	08/13/2025	17:05	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	17:05	LB136801
	Copper	1250	1250	100	90 - 110	P	08/13/2025	17:05	LB136801
	Iron	5070	5000	102	90 - 110	P	08/13/2025	17:05	LB136801
	Lead	4850	5000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Magnesium	24000	25000	96	90 - 110	P	08/13/2025	17:05	LB136801
	Manganese	2400	2500	96	90 - 110	P	08/13/2025	17:05	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	17:05	LB136801
	Potassium	24800	25000	99	90 - 110	P	08/13/2025	17:05	LB136801
	Selenium	5150	5000	103	90 - 110	P	08/13/2025	17:05	LB136801
	Silver	1260	1250	100	90 - 110	P	08/13/2025	17:05	LB136801
	Sodium	23300	25000	93	90 - 110	P	08/13/2025	17:05	LB136801
	Thallium	5380	5000	108	90 - 110	P	08/13/2025	17:05	LB136801
	Vanadium	2460	2500	98	90 - 110	P	08/13/2025	17:05	LB136801
	Zinc	2520	2500	101	90 - 110	P	08/13/2025	17:05	LB136801
CCV07	Aluminum	9840	10000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Antimony	5120	5000	102	90 - 110	P	08/13/2025	17:46	LB136801
	Arsenic	5060	5000	101	90 - 110	P	08/13/2025	17:46	LB136801
	Barium	9850	10000	98	90 - 110	P	08/13/2025	17:46	LB136801

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV07	Beryllium	241	250	96	90 - 110	P	08/13/2025	17:46	LB136801
	Cadmium	2440	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Calcium	24600	25000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Chromium	1010	1000	101	90 - 110	P	08/13/2025	17:46	LB136801
	Cobalt	2450	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Copper	1250	1250	100	90 - 110	P	08/13/2025	17:46	LB136801
	Iron	5140	5000	103	90 - 110	P	08/13/2025	17:46	LB136801
	Lead	4880	5000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Magnesium	24400	25000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Manganese	2430	2500	97	90 - 110	P	08/13/2025	17:46	LB136801
	Nickel	2460	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Potassium	24800	25000	99	90 - 110	P	08/13/2025	17:46	LB136801
	Selenium	5160	5000	103	90 - 110	P	08/13/2025	17:46	LB136801
	Silver	1260	1250	100	90 - 110	P	08/13/2025	17:46	LB136801
	Sodium	23600	25000	95	90 - 110	P	08/13/2025	17:46	LB136801
	Thallium	5360	5000	107	90 - 110	P	08/13/2025	17:46	LB136801
	Vanadium	2490	2500	100	90 - 110	P	08/13/2025	17:46	LB136801
	Zinc	2530	2500	101	90 - 110	P	08/13/2025	17:46	LB136801

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CRDL STANDARD FOR AA & ICP

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRA	Mercury	0.23	0.2	113	70 - 130	CV	08/12/2025	10:34	LB136782
CRI01	Aluminum	92.9	100	93	65 - 135	P	08/13/2025	12:37	LB136801
	Antimony	50.2	50.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Arsenic	20.6	20.0	103	65 - 135	P	08/13/2025	12:37	LB136801
	Barium	93.9	100	94	65 - 135	P	08/13/2025	12:37	LB136801
	Beryllium	6.01	6.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Cadmium	5.49	6.0	92	65 - 135	P	08/13/2025	12:37	LB136801
	Calcium	2010	2000	100	65 - 135	P	08/13/2025	12:37	LB136801
	Chromium	10.00	10.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Cobalt	29.0	30.0	97	65 - 135	P	08/13/2025	12:37	LB136801
	Copper	20.9	20.0	104	65 - 135	P	08/13/2025	12:37	LB136801
	Iron	95.9	100	96	65 - 135	P	08/13/2025	12:37	LB136801
	Lead	10.0	12.0	83	65 - 135	P	08/13/2025	12:37	LB136801
	Magnesium	2120	2000	106	65 - 135	P	08/13/2025	12:37	LB136801
	Manganese	20.8	20.0	104	65 - 135	P	08/13/2025	12:37	LB136801
	Nickel	38.7	40.0	97	65 - 135	P	08/13/2025	12:37	LB136801
	Potassium	1930	2000	97	65 - 135	P	08/13/2025	12:37	LB136801
	Selenium	21.1	20.0	106	65 - 135	P	08/13/2025	12:37	LB136801
	Silver	10.3	10.0	103	65 - 135	P	08/13/2025	12:37	LB136801
	Sodium	1810	2000	91	65 - 135	P	08/13/2025	12:37	LB136801
	Thallium	40.7	40.0	102	65 - 135	P	08/13/2025	12:37	LB136801
	Vanadium	42.3	40.0	106	65 - 135	P	08/13/2025	12:37	LB136801
	Zinc	41.0	40.0	102	65 - 135	P	08/13/2025	12:37	LB136801

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB08	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	10:01	LB136782

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB22	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	10:08	LB136782
CCB23	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	11:21	LB136782
CCB24	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	11:54	LB136782
CCB25	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	12:37	LB136782
CCB26	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	13:00	LB136782

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	12:33	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	12:33	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	12:33	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	12:33	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	12:33	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	12:33	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	12:33	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	12:33	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	12:33	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	12:33	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	12:33	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	12:33	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	12:33	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	12:33	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	12:33	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	12:33	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	12:33	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	12:33	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	12:33	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	12:33	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	12:33	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	12:33	LB136801

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	13:03	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	13:03	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	13:03	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	13:03	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	13:03	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	13:03	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	13:03	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	13:03	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	13:03	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	13:03	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	13:03	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	13:03	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	13:03	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	13:03	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	13:03	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	13:03	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	13:03	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	13:03	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	13:03	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	13:03	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	13:03	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	13:03	LB136801
CCB02	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	13:46	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	13:46	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	13:46	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	13:46	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	13:46	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	13:46	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	13:46	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	13:46	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	13:46	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	13:46	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	13:46	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	13:46	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	13:46	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	13:46	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	13:46	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	13:46	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	13:46	LB136801

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	13:46	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	13:46	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	13:46	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	13:46	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	13:46	LB136801
CCB03	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	14:37	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	14:37	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	14:37	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	14:37	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	14:37	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	14:37	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	14:37	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	14:37	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	14:37	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	14:37	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	14:37	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	14:37	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	14:37	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	14:37	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	14:37	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	14:37	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	14:37	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	14:37	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	14:37	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	14:37	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	14:37	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	14:37	LB136801
CCB04	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	15:27	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	15:27	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	15:27	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	15:27	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	15:27	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	15:27	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	15:27	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	15:27	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	15:27	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	15:27	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	15:27	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	15:27	LB136801

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	15:27	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	15:27	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	15:27	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	15:27	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	15:27	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	15:27	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	15:27	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	15:27	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	15:27	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	15:27	LB136801
CCB05	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	16:19	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	16:19	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	16:19	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	16:19	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	16:19	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	16:19	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	16:19	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	16:19	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	16:19	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	16:19	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	16:19	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	16:19	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	16:19	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	16:19	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	16:19	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	16:19	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	16:19	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	16:19	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	16:19	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	16:19	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	16:19	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	16:19	LB136801
CCB06	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	17:09	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	17:09	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	17:09	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	17:09	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	17:09	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	17:09	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	17:09	LB136801

Alliance TECHNICAL GROUP
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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	17:09	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	17:09	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	17:09	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	17:09	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	17:09	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	17:09	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	17:09	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	17:09	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	17:09	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	17:09	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	17:09	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	17:09	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	17:09	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	17:09	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	17:09	LB136801
CCB07	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	17:50	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	17:50	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	17:50	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	17:50	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	17:50	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	17:50	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	17:50	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	17:50	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	17:50	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	17:50	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	17:50	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	17:50	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	17:50	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	17:50	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	17:50	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	17:50	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	17:50	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	17:50	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	17:50	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	17:50	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	17:50	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	17:50	LB136801

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Metals
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PREPARATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169204BL		**SOLID**		**Batch Number:**		**PB169204**		**Prep Date:**	**08/11/2025**	
	Mercury	0.0080	<0.014	U	0.011	0.014	CV	08/12/2025	10:46	LB136782

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Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169211BL		**SOLID**		**Batch Number:**		**PB169211**		**Prep Date:**	**08/12/2025**	
	Aluminum	0.84	<2.5	U	4.00	5.00	P	08/13/2025	15:06	LB136801
	Antimony	0.22	<1.25	U	0.63	2.50	P	08/13/2025	15:06	LB136801
	Arsenic	0.19	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Barium	0.73	<2.5	U	1.25	5.00	P	08/13/2025	15:06	LB136801
	Beryllium	0.025	<0.15	U	0.075	0.30	P	08/13/2025	15:06	LB136801
	Cadmium	0.024	<0.15	U	0.075	0.30	P	08/13/2025	15:06	LB136801
	Calcium	11.1	<50	U	25.0	100	P	08/13/2025	15:06	LB136801
	Chromium	0.047	<0.25	U	0.13	0.50	P	08/13/2025	15:06	LB136801
	Cobalt	0.10	<0.75	U	0.38	1.50	P	08/13/2025	15:06	LB136801
	Copper	0.22	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Iron	3.99	<2.5	U	4.00	5.00	P	08/13/2025	15:06	LB136801
	Lead	0.13	<0.3	U	0.48	0.60	P	08/13/2025	15:06	LB136801
	Magnesium	12.0	<50	U	25.0	100	P	08/13/2025	15:06	LB136801
	Manganese	0.14	<0.5	U	0.25	1.00	P	08/13/2025	15:06	LB136801
	Nickel	0.13	<1	U	0.50	2.00	P	08/13/2025	15:06	LB136801
	Potassium	27.7	<50	U	80.0	100	P	08/13/2025	15:06	LB136801
	Selenium	0.26	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Silver	0.12	<0.25	U	0.25	0.50	P	08/13/2025	15:06	LB136801
	Sodium	17.8	<50	U	80.0	100	P	08/13/2025	15:06	LB136801
	Thallium	0.23	<1	U	1.00	2.00	P	08/13/2025	15:06	LB136801
	Vanadium	0.25	<1	U	1.00	2.00	P	08/13/2025	15:06	LB136801
	Zinc	0.23	<1	U	0.50	2.00	P	08/13/2025	15:06	LB136801

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Metals
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INTERFERENCE CHECK SAMPLE

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	240000	255000	94	216000	294000	08/13/2025	12:41	LB136801
	Antimony	-4.82			-50	50	08/13/2025	12:41	LB136801
	Arsenic	13.5			-20	20	08/13/2025	12:41	LB136801
	Barium	-0.47	6.0	8	-94	106	08/13/2025	12:41	LB136801
	Beryllium	1.31			-6	6	08/13/2025	12:41	LB136801
	Cadmium	2.33	1.0	233	-5	7	08/13/2025	12:41	LB136801
	Calcium	229000	245000	94	208000	282000	08/13/2025	12:41	LB136801
	Chromium	58.2	52.0	112	42	62	08/13/2025	12:41	LB136801
	Cobalt	1.85			-30	30	08/13/2025	12:41	LB136801
	Copper	4.82	2.0	241	-18	22	08/13/2025	12:41	LB136801
	Iron	99200	101000	98	85600	116500	08/13/2025	12:41	LB136801
	Lead	-6.38			-12	12	08/13/2025	12:41	LB136801
	Magnesium	243000	255000	95	216000	294000	08/13/2025	12:41	LB136801
	Manganese	8.17	7.0	117	-13	27	08/13/2025	12:41	LB136801
	Nickel	5.22	2.0	261	-38	42	08/13/2025	12:41	LB136801
	Potassium	-4.10			0	0	08/13/2025	12:41	LB136801
	Selenium	2.91			-20	20	08/13/2025	12:41	LB136801
	Silver	2.33			-10	10	08/13/2025	12:41	LB136801
	Sodium	3.06			0	0	08/13/2025	12:41	LB136801
	Thallium	2.91			-40	40	08/13/2025	12:41	LB136801
	Vanadium	3.65			-40	40	08/13/2025	12:41	LB136801
	Zinc	2.20			-40	40	08/13/2025	12:41	LB136801
ICSAB01	Aluminum	247000	247000	100	209000	285000	08/13/2025	12:45	LB136801
	Antimony	588	618	95	525	711	08/13/2025	12:45	LB136801
	Arsenic	111	104	107	88.4	120	08/13/2025	12:45	LB136801
	Barium	492	537	92	437	637	08/13/2025	12:45	LB136801
	Beryllium	487	495	98	420	570	08/13/2025	12:45	LB136801
	Cadmium	994	972	102	826	1120	08/13/2025	12:45	LB136801
	Calcium	236000	235000	100	199000	271000	08/13/2025	12:45	LB136801
	Chromium	558	542	103	460	624	08/13/2025	12:45	LB136801
	Cobalt	498	476	105	404	548	08/13/2025	12:45	LB136801
	Copper	486	511	95	434	588	08/13/2025	12:45	LB136801
	Iron	102000	99300	103	84400	114500	08/13/2025	12:45	LB136801
	Lead	42.2	49.0	86	37	61	08/13/2025	12:45	LB136801
	Magnesium	250000	248000	101	210000	286000	08/13/2025	12:45	LB136801
	Manganese	493	507	97	430	584	08/13/2025	12:45	LB136801
	Nickel	992	954	104	810	1100	08/13/2025	12:45	LB136801
	Potassium	42.9			0	0	08/13/2025	12:45	LB136801
	Selenium	50.5	46.0	110	26	66	08/13/2025	12:45	LB136801
	Silver	216	201	108	170	232	08/13/2025	12:45	LB136801
	Sodium	-3.58			0	0	08/13/2025	12:45	LB136801
	Thallium	113	108	105	68	148	08/13/2025	12:45	LB136801

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Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSAB01	Vanadium	479	491	98	417	565	08/13/2025	12:45	LB136801
	Zinc	1040	952	109	809	1095	08/13/2025	12:45	LB136801

METAL QC DATA

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metals
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MATRIX SPIKE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2819

contract: FIRS02 **lab code:** ACE

matrix: Solid **sample id:** Q2828-01 **client id:** POWDERMS

Percent Solids for Sample: 99.4 **Spiked ID:** Q2828-01MS **Percent Solids for Spike Sample:** 99.4

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	9300		7750		82.1	1892		P
Antimony	mg/Kg	79 - 114	12.2		4.95		32.9	22	N	P
Arsenic	mg/Kg	82 - 111	17.9		5.28		32.9	38	N	P
Barium	mg/Kg	83 - 113	117		123		8.2	-68		P
Beryllium	mg/Kg	83 - 113	3.99		0.95		8.2	37	N	P
Cadmium	mg/Kg	82 - 113	12.5		4.95		8.2	93		P
Calcium	mg/Kg	81 - 116	10400		8670		41.1	4260		P
Chromium	mg/Kg	85 - 113	62.4		60.9		16.4	9	N	P
Cobalt	mg/Kg	85 - 112	47.2		40.3		8.2	84		P
Copper	mg/Kg	81 - 117	80.6		76.1		12.3	37		P
Iron	mg/Kg	81 - 118	10200		12000		120	-1436		P
Lead	mg/Kg	81 - 112	110		71.4		41.1	95		P
Magnesium	mg/Kg	78 - 115	1470		1200		82.1	323		P
Manganese	mg/Kg	84 - 114	219		207		8.2	147		P
Nickel	mg/Kg	83 - 113	157		143		20.5	70		P
Potassium	mg/Kg	81 - 116	551		309		410	59	N	P
Selenium	mg/Kg	78 - 111	30.0		0.51	J	82.1	36	N	P
Silver	mg/Kg	82 - 112	3.22		1.58		3.1	53	N	P
Sodium	mg/Kg	83 - 118	1030		872		120	128		P
Thallium	mg/Kg	83 - 111	67.0		0.43	J	82.1	81	N	P
Vanadium	mg/Kg	82 - 114	56.1		31.8		12.3	197	N	P
Zinc	mg/Kg	82 - 113	244		240		8.2	46		P

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2819

contract: FIRS02 **lab code:** ACE

matrix: Solid **sample id:** Q2828-01 **client id:** POWDERMSD

Percent Solids for Sample: 99.4 **Spiked ID:** Q2828-01MSD **Percent Solids for Spike Sample:** 99.4

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	10600		7750		87.5	3219		P
Antimony	mg/Kg	79 - 114	10.5		4.95		35.0	16	N	P
Arsenic	mg/Kg	82 - 111	20.2		5.28		35.0	43	N	P
Barium	mg/Kg	83 - 113	120		123		8.7	-28		P
Beryllium	mg/Kg	83 - 113	4.64		0.95		8.7	43	N	P
Cadmium	mg/Kg	82 - 113	13.8		4.95		8.7	101		P
Calcium	mg/Kg	81 - 116	12400		8670		43.7	8468		P
Chromium	mg/Kg	85 - 113	76.4		60.9		17.5	88		P
Cobalt	mg/Kg	85 - 112	52.6		40.3		8.7	142		P
Copper	mg/Kg	81 - 117	84.2		76.1		13.1	61		P
Iron	mg/Kg	81 - 118	12600		12000		130	492		P
Lead	mg/Kg	81 - 112	116		71.4		43.7	102		P
Magnesium	mg/Kg	78 - 115	1710		1200		87.5	575		P
Manganese	mg/Kg	84 - 114	251		207		8.7	505		P
Nickel	mg/Kg	83 - 113	178		143		21.9	163		P
Potassium	mg/Kg	81 - 116	582		309		440	62	N	P
Selenium	mg/Kg	78 - 111	34.3		0.51	J	87.5	39	N	P
Silver	mg/Kg	82 - 112	3.45		1.58		3.3	57	N	P
Sodium	mg/Kg	83 - 118	1050		872		130	141		P
Thallium	mg/Kg	83 - 111	75.0		0.43	J	87.5	85		P
Vanadium	mg/Kg	82 - 114	41.4		31.8		13.1	73	N	P
Zinc	mg/Kg	82 - 113	250		240		8.7	115		P

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2819

contract: FIRS02 **lab code:** ACE

matrix: Solid **sample id:** Q2831-01 **client id:** VNJ-238MS

Percent Solids for Sample: 93.1 **Spiked ID:** Q2831-01MS **Percent Solids for Spike Sample:** 93.1

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.29		0.037		0.26	97		CV

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2819

contract: FIRS02 **lab code:** ACE

matrix: Solid **sample id:** Q2831-01 **client id:** VNJ-238MSD

Percent Solids for Sample: 93.1 **Spiked ID:** Q2831-01MSD **Percent Solids for Spike Sample:** 93.1

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.30		0.037		0.28	92		CV

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Metals
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POST DIGEST SPIKE SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Matrix: Solid **Level:** LOW **Client ID:** POWDERA

Sample ID: Q2828-01 **Spiked ID:** Q2828-01A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	79 - 114	23.9		4.95		37.3	51	N	P
Arsenic	mg/Kg	82 - 111	23.2		5.28		37.3	48	N	P
Beryllium	mg/Kg	83 - 113	5.02		0.95		9.30	44	N	P
Chromium	mg/Kg	85 - 113	68.9		60.9		18.6	43	N	P
Potassium	mg/Kg	81 - 116	575		309		470	57	N	P
Selenium	mg/Kg	78 - 111	44.6		0.51	J	93.2	47	N	P
Silver	mg/Kg	82 - 112	3.46		1.58		3.50	54	N	P
Thallium	mg/Kg	83 - 111	80.5		0.43	J	93.2	86		P
Vanadium	mg/Kg	82 - 114	38.6		31.8		14.0	49	N	P

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2828-01 **Client ID:** POWDERDUP

Percent Solids for Sample: 99.4 **Duplicate ID** Q2828-01DUP **Percent Solids for Spike Sample:** 99.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	7750		7150		8		P
Antimony	mg/Kg	20	4.95		4.87		2		P
Arsenic	mg/Kg	20	5.28		5.00		5		P
Barium	mg/Kg	20	123		112		9		P
Beryllium	mg/Kg	20	0.95		0.88		7		P
Cadmium	mg/Kg	20	4.95		4.56		8		P
Calcium	mg/Kg	20	8670		8040		8		P
Chromium	mg/Kg	20	60.9		55.8		9		P
Cobalt	mg/Kg	20	40.3		36.8		9		P
Copper	mg/Kg	20	76.1		71.4		6		P
Iron	mg/Kg	20	12000		11000		9		P
Lead	mg/Kg	20	71.4		66.2		8		P
Magnesium	mg/Kg	20	1200		1120		7		P
Manganese	mg/Kg	20	207		192		8		P
Nickel	mg/Kg	20	143		131		9		P
Potassium	mg/Kg	20	309		285		8		P
Selenium	mg/Kg	20	0.51	J	0.58	J	14		P
Silver	mg/Kg	20	1.58		1.47		7		P
Sodium	mg/Kg	20	872		806		8		P
Thallium	mg/Kg	20	0.43	J	0.64	J	40		P
Vanadium	mg/Kg	20	31.8		29.6		7		P
Zinc	mg/Kg	20	240		222		8		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2828-01MS **Client ID:** POWDERMSD

Percent Solids for Sample: 99.4 **Duplicate ID** Q2828-01MSD **Percent Solids for Spike Sample:** 99.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	9300		10600		13		P
Antimony	mg/Kg	20	12.2		10.5		15		P
Arsenic	mg/Kg	20	17.9		20.2		12		P
Barium	mg/Kg	20	117		120		3		P
Beryllium	mg/Kg	20	3.99		4.64		15		P
Cadmium	mg/Kg	20	12.5		13.8		10		P
Calcium	mg/Kg	20	10400		12400		18		P
Chromium	mg/Kg	20	62.4		76.4		20		P
Cobalt	mg/Kg	20	47.2		52.6		11		P
Copper	mg/Kg	20	80.6		84.2		4		P
Iron	mg/Kg	20	10200		12600		21	*	P
Lead	mg/Kg	20	110		116		5		P
Magnesium	mg/Kg	20	1470		1710		15		P
Manganese	mg/Kg	20	219		251		14		P
Nickel	mg/Kg	20	157		178		13		P
Potassium	mg/Kg	20	551		582		5		P
Selenium	mg/Kg	20	30.0		34.3		13		P
Silver	mg/Kg	20	3.22		3.45		7		P
Sodium	mg/Kg	20	1030		1050		2		P
Thallium	mg/Kg	20	67.0		75.0		11		P
Vanadium	mg/Kg	20	56.1		41.4		30	*	P
Zinc	mg/Kg	20	244		250		2		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2831-01 **Client ID:** VNJ-238DUP

Percent Solids for Sample: 93.1 **Duplicate ID** Q2831-01DUP **Percent Solids for Spike Sample:** 93.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.037		0.040		8		CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2831-01MS **Client ID:** VNJ-238MSD

Percent Solids for Sample: 93.1 **Duplicate ID** Q2831-01MSD **Percent Solids for Spike Sample:** 93.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.29		0.30		2		CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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LABORATORY CONTROL SAMPLE SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169204BS							
Mercury	mg/Kg	0.27	0.23		85	80 - 124	CV

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LABORATORY CONTROL SAMPLE SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169211BS							
Aluminum	mg/Kg	100	98.1		98	74 - 119	P
Antimony	mg/Kg	40.0	40.7		102	79 - 114	P
Arsenic	mg/Kg	40.0	39.2		98	82 - 111	P
Barium	mg/Kg	10.0	9.27		93	83 - 113	P
Beryllium	mg/Kg	10.0	9.71		97	83 - 113	P
Cadmium	mg/Kg	10.0	9.41		94	82 - 113	P
Calcium	mg/Kg	50.0	49.9	J	100	81 - 116	P
Chromium	mg/Kg	20.0	20.3		102	85 - 113	P
Cobalt	mg/Kg	10.0	9.68		97	85 - 112	P
Copper	mg/Kg	15.0	15.4		103	81 - 117	P
Iron	mg/Kg	150	151		101	81 - 118	P
Lead	mg/Kg	50.0	47.4		95	81 - 112	P
Magnesium	mg/Kg	100	97.2	J	97	78 - 115	P
Manganese	mg/Kg	10.0	9.87		99	84 - 114	P
Nickel	mg/Kg	25.0	24.4		98	83 - 113	P
Potassium	mg/Kg	500	486		97	81 - 116	P
Selenium	mg/Kg	100	99.5		100	78 - 111	P
Silver	mg/Kg	3.8	3.78		100	82 - 112	P
Sodium	mg/Kg	150	138		92	83 - 118	P
Thallium	mg/Kg	100	97.7		98	83 - 111	P
Vanadium	mg/Kg	15.0	15.0		100	82 - 114	P
Zinc	mg/Kg	10.0	10.3		103	82 - 113	P

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Metals

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ICP SERIAL DILUTIONS

SAMPLE NO.

POWDERL

Lab Name: Alliance **Contract:** FIRS02

Lab Code: ACE **Lb No.:** lb136801 **Lab Sample ID :** Q2828-01L **SDG No.:** Q2819

Matrix (soil/water): Solid **Level (low/med):** LOW

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	7750		13300		71		P
Antimony	4.95		8.21	J	66		P
Arsenic	5.28		8.73		65		P
Barium	123		208		69		P
Beryllium	0.95		1.70		80		P
Cadmium	4.95		3.90		21		P
Calcium	8670		15400		77		P
Chromium	60.9		109		78		P
Cobalt	40.3		39.1		3		P
Copper	76.1		139		82		P
Iron	12000		20300		70		P
Lead	71.4		72.9		2		P
Magnesium	1200		2170		80		P
Manganese	207		372		80		P
Nickel	143		142		0		P
Potassium	309		468		51		P
Selenium	0.51	J	4.66	U	100.0		P
Silver	1.58		2.85		81		P
Sodium	872		1270		46		P
Thallium	0.43	J	1.28	J	199		P
Vanadium	31.8		56.3		77		P
Zinc	240		435		81		P

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Metals

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ICP SERIAL DILUTIONS

SAMPLE NO.

VNJ-238L

Lab Name: Alliance **Contract:** FIRS02

Lab Code: ACE **Lb No.:** lb136782 **Lab Sample ID :** Q2831-01L **SDG No.:** Q2819

Matrix (soil/water): Solid **Level (low/med):** LOW

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Mercury	0.037		0.070	U	100.0		CV

METAL PREPARATION & INSTRUMENT DATA

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Aluminum	396.100	0.0000000	-0.0002060	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	-0.0000440	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000930	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	-0.0075970	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0007850	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001440	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001490	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0001050	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0002870
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0009530
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0003570
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0054900
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Aluminum	396.100	0.0000000	0.0000000	0.0000590	0.0000000	0.0396900
Antimony	206.833	0.0122000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	-0.0029000	0.0000000	0.0000000	0.0000000	0.0004900
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	-0.0000710	-0.0003400
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000070	0.0002200	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	-0.0007860
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0006510	0.0020500
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0007460	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000120
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0017400	-0.0100400
Vanadium	292.402	-0.0025100	0.0000000	0.0000000	0.0000000	-0.0072000
Zinc	213.800	0.0000000	0.0009010	0.0000000	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Aluminum	396.100	0.0000000	0.0000000	0.0012800	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	-0.0047000	0.0036100	0.0000000	0.0000000
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0003330	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0067600	0.0000000	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	-0.0035600	-0.0007970	0.0000000	-0.0018900	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000630	0.0001280	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0001110	0.0000000
Cobalt	228.616	0.0000000	0.0018800	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0003840	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0007420	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	-0.0039700	0.0000000	-0.0115600	0.0000000
Vanadium	292.402	0.0000000	0.0005320	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
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SAMPLE PREPARATION SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169204**						
PB169204BL	PB169204BL	MB	SOLID	08/11/2025	0.51	35.0	100.00
PB169204BS	PB169204BS	LCS	SOLID	08/11/2025	0.51	35.0	100.00
Q2819-06	11M-S	SAM	SOLID	08/11/2025	0.55	35.0	90.50
Q2819-11	84SB-W	SAM	SOLID	08/11/2025	0.56	35.0	86.80
Q2819-14	17M-W	SAM	SOLID	08/11/2025	0.52	35.0	85.60
Q2831-01DUP	VNJ-238DUP	DUP	SOLID	08/11/2025	0.50	35.0	93.10
Q2831-01MS	VNJ-238MS	MS	SOLID	08/11/2025	0.57	35.0	93.10
Q2831-01MSD	VNJ-238MSD	MSD	SOLID	08/11/2025	0.54	35.0	93.10

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Metals
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SAMPLE PREPARATION SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2819

Contract: FIRS02 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169211**						
PB169211BL	PB169211BL	MB	SOLID	08/12/2025	2.00	100.0	100.00
PB169211BS	PB169211BS	LCS	SOLID	08/12/2025	2.00	100.0	100.00
Q2819-06	11M-S	SAM	SOLID	08/12/2025	2.32	100.0	90.50
Q2819-11	84SB-W	SAM	SOLID	08/12/2025	2.37	100.0	86.80
Q2819-14	17M-W	SAM	SOLID	08/12/2025	2.36	100.0	85.60
Q2828-01DUP	POWDERDUP	DUP	SOLID	08/12/2025	2.33	100.0	99.40
Q2828-01MS	POWDERMS	MS	SOLID	08/12/2025	2.45	100.0	99.40
Q2828-01MSD	POWDERMSD	MSD	SOLID	08/12/2025	2.30	100.0	99.40

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metals
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ANALYSIS RUN LOG

Client: First Environment, Inc. **Contract:** FIRS02

Lab code: ACE **Sdg no.:** Q2819

Instrument id number: **Method:** **Run number:** LB136782

Start date: 08/12/2025 **End date:** 08/12/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	0919	HG
S0.2	S0.2	1	0924	HG
S2.5	S2.5	1	0926	HG
S5	S5	1	0929	HG
S7.5	S7.5	1	0939	HG
S10	S10	1	0953	HG
ICV08	ICV08	1	0956	HG
ICB08	ICB08	1	1001	HG
CCV22	CCV22	1	1003	HG
CCB22	CCB22	1	1008	HG
CRA	CRA	1	1034	HG
PB169204BL	PB169204BL	1	1046	HG
PB169204BS	PB169204BS	1	1050	HG
Q2819-06	11M-S	1	1108	HG
CCV23	CCV23	1	1111	HG
CCB23	CCB23	1	1121	HG
Q2819-11	84SB-W	1	1125	HG
Q2819-14	17M-W	1	1127	HG
CCV24	CCV24	1	1151	HG
CCB24	CCB24	1	1154	HG
Q2831-01DUP	VNJ-238DUP	1	1208	HG
Q2831-01MS	VNJ-238MS	1	1210	HG
Q2831-01MSD	VNJ-238MSD	1	1212	HG
Q2831-01L	VNJ-238L	5	1215	HG
CCV25	CCV25	1	1232	HG
CCB25	CCB25	1	1237	HG
CCV26	CCV26	1	1255	HG
CCB26	CCB26	1	1300	HG

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metals
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ANALYSIS RUN LOG

Client: First Environment, Inc. **Contract:** FIRS02

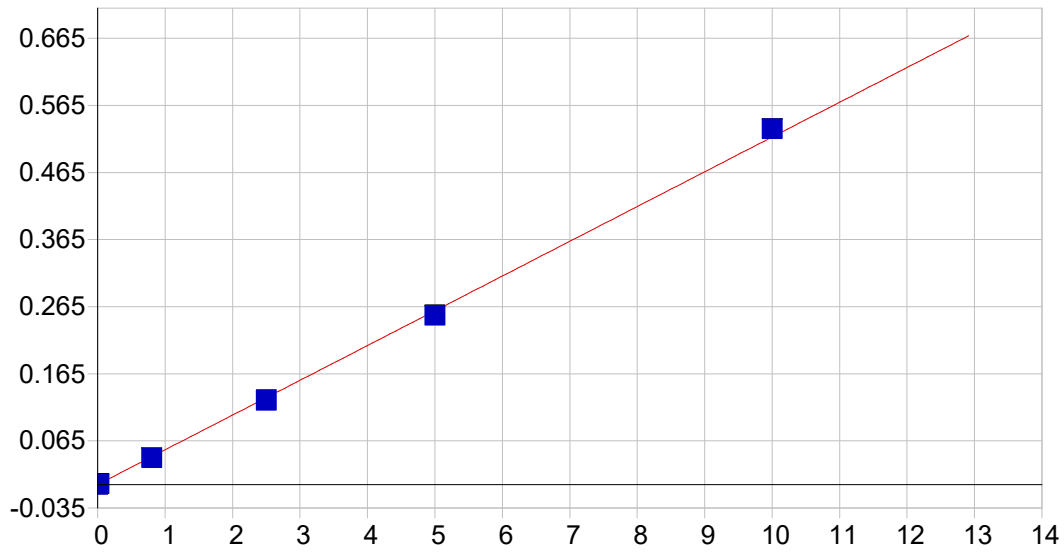
Lab code: ACE **Sdg no.:** Q2819

Instrument id number: **Method:** **Run number:** LB136801

Start date: 08/13/2025 **End date:** 08/13/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1156	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1200	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1204	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1208	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1212	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1217	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1221	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1228	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1233	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1237	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1241	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1245	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1258	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1303	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01DUP	POWDERDUP	1	1312	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01L	POWDERL	5	1316	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01MS	POWDERMS	1	1320	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01MSD	POWDERMSD	1	1325	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01A	POWDERA	1	1330	Ag,As,Be,Cr,K,Sb,Se,Tl,V
CCV02	CCV02	1	1342	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1346	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV03	CCV03	1	1433	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1437	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169211BL	PB169211BL	1	1506	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169211BS	PB169211BS	1	1519	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1523	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1527	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2819-06	11M-S	1	1602	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2819-11	84SB-W	1	1606	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2819-14	17M-W	1	1610	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV05	CCV05	1	1614	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB05	CCB05	1	1619	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV06	CCV06	1	1705	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB06	CCB06	1	1709	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV07	CCV07	1	1746	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB07	CCB07	1	1750	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

METAL
RAW DATA

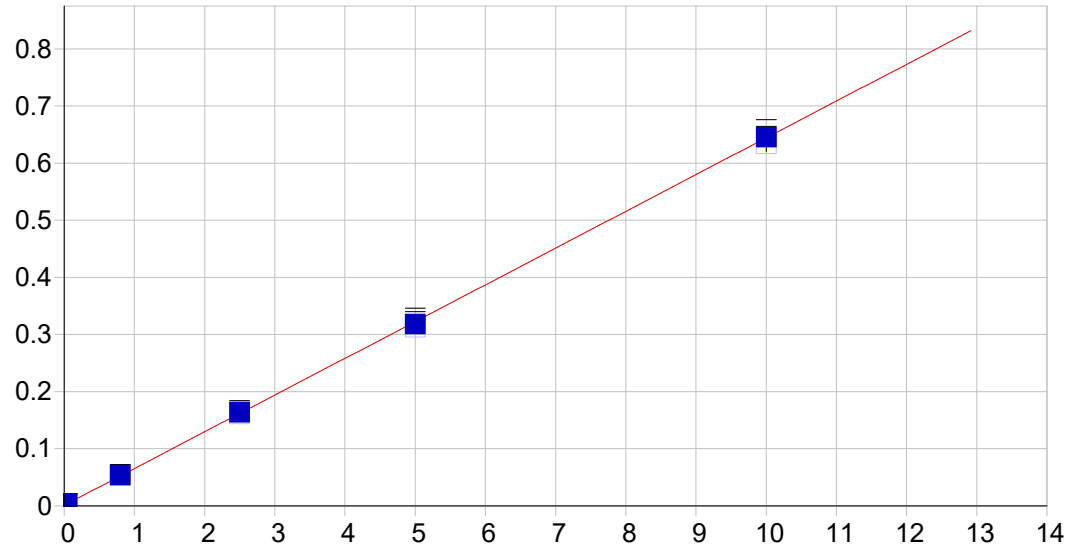


As 189.042 {479}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000117	Re-Slope:	1.000000
A1 (Gain):	0.051802	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999647	Status:	OK.
Std Error of Est:	0.000032		
Predicted MDL:	0.002146		
Predicted MQL:	0.007153		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00012	.000	1
S1	.02000	.02154	.002	7.68	.00099	.000	1
S3	2.5000	2.4240	-.076	-3.04	.12531	.001	1
S4	5.0000	4.8667	-.133	-2.67	.25171	.001	1
S5	10.000	10.239	.239	2.39	.52972	.001	1
S2	.80000	.76889	-.031	-3.89	.03967	.000	1

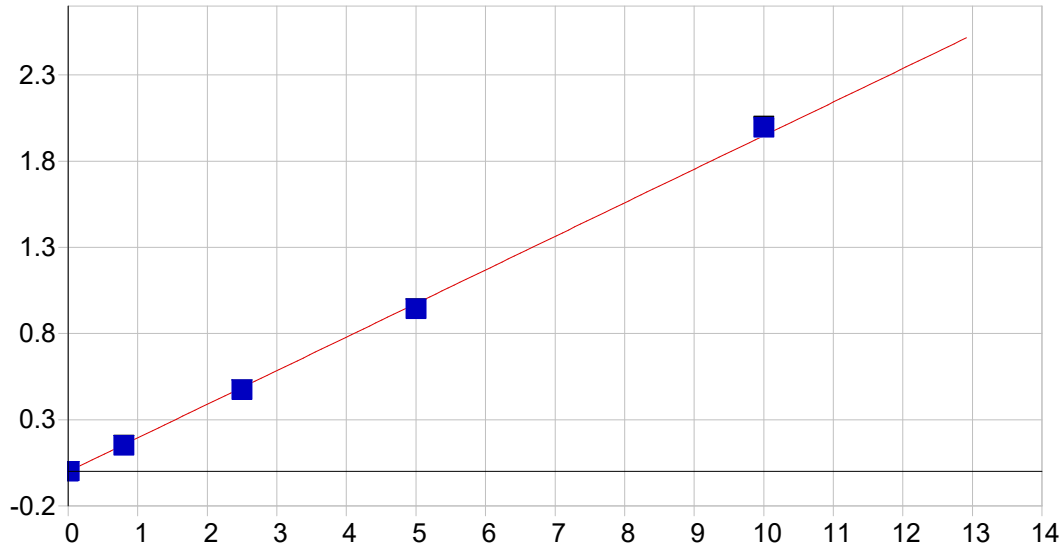


Tl 190.856 {477}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000991	Re-Slope:	1.000000
A1 (Gain):	0.064329	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999950	Status:	OK.
Std Error of Est:	0.000021		
Predicted MDL:	0.001756		
Predicted MQL:	0.005854		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00099	.000	1
S1	.04000	.04239	.002	5.97	.00355	.000	1
S3	2.5000	2.5264	.026	1.06	.16058	.003	1
S4	5.0000	4.9348	-.065	-1.30	.31258	.010	1
S5	10.000	10.017	.017	.173	.63366	.014	1
S2	.80000	.81920	.019	2.40	.05275	.001	1

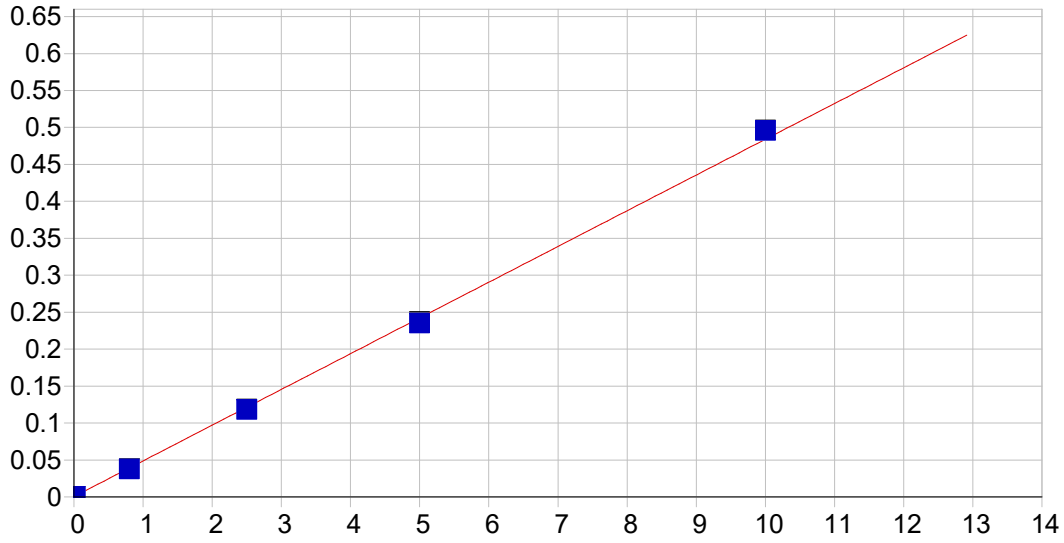


Pb 220.353 {453}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000182	Re-Slope:	1.000000
A1 (Gain):	0.194780	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999619	Status:	OK.
Std Error of Est:	0.000097		
Predicted MDL:	0.001287		
Predicted MQL:	0.004290		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00018	.000	1
S1	.01200	.01099	-.001	-8.45	.00228	.000	1
S3	2.5000	2.4317	-.068	-2.73	.47333	.001	1
S4	5.0000	4.8411	-.159	-3.18	.94213	.001	1
S5	10.000	10.251	.251	2.51	1.9948	.007	1
S2	.80000	.77732	-.023	-2.83	.15143	.000	1

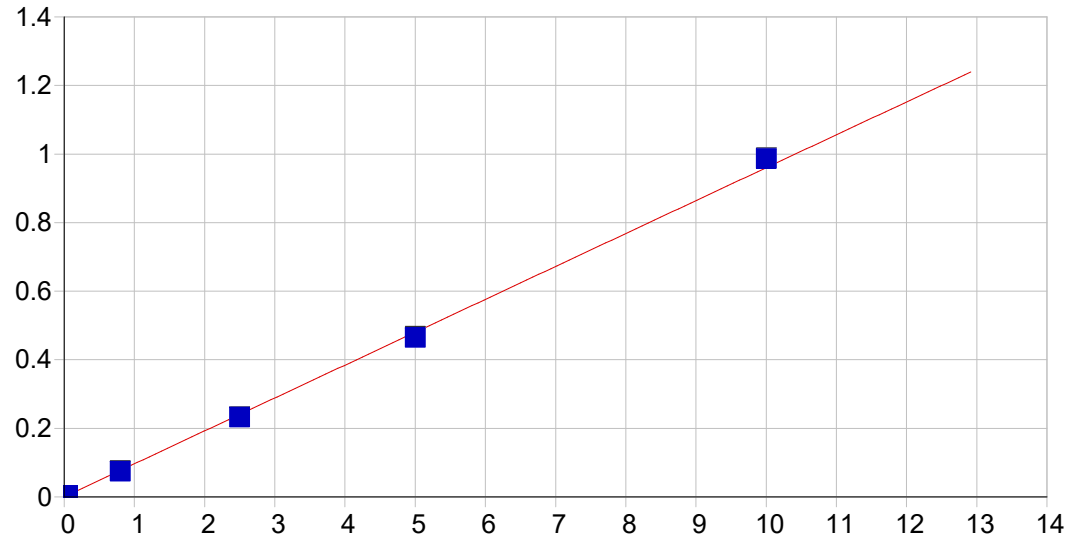


Se 196.090 {472}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000420	Re-Slope:	1.000000
A1 (Gain):	0.048357	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999648	Status:	OK.
Std Error of Est:	0.000030		
Predicted MDL:	0.002878		
Predicted MQL:	0.009594		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00042	.000	1
S1	.02000	.01951	-.000	-2.46	.00136	.000	1
S3	2.5000	2.4318	-.068	-2.73	.11798	.001	1
S4	5.0000	4.8553	-.145	-2.89	.23514	.002	1
S5	10.000	10.242	.242	2.42	.49555	.001	1
S2	.80000	.77159	-.028	-3.55	.03772	.000	1

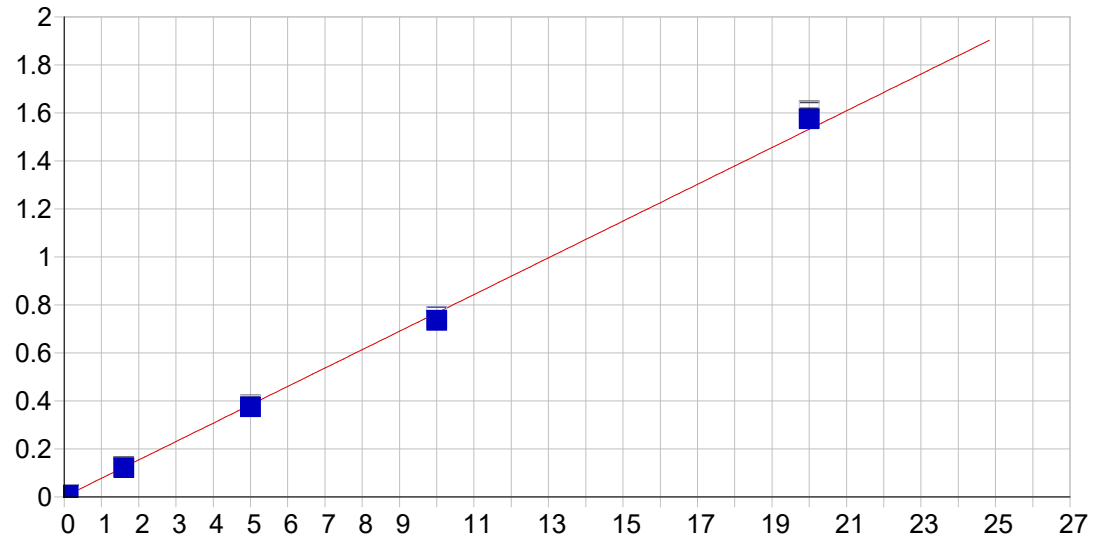


Sb 206.833 {463}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000614	Re-Slope:	1.000000
A1 (Gain):	0.095945	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999554	Status:	OK.
Std Error of Est:	0.000107		
Predicted MDL:	0.001837		
Predicted MQL:	0.006125		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00061	.000	1
S1	.05000	.05143	.001	2.86	.00556	.000	1
S3	2.5000	2.4172	-.083	-3.31	.23318	.001	1
S4	5.0000	4.8364	-.164	-3.27	.46595	.002	1
S5	10.000	10.272	.272	2.72	.98878	.001	1
S2	.80000	.77287	-.027	-3.39	.07498	.000	1

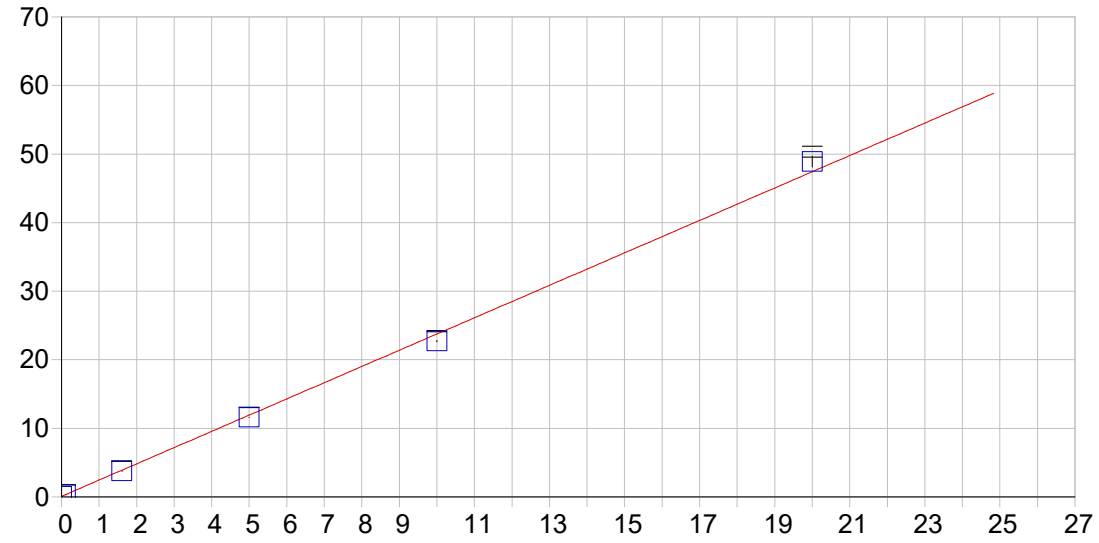


Al 396.152 { 85}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000958	Re-Slope:	1.000000
A1 (Gain):	0.076561	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999527	Status:	OK.
Std Error of Est:	0.000178		
Predicted MDL:	0.010335		
Predicted MQL:	0.034449		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00096	.001	1
S1	.10000	.09588	-.004	-4.12	.00889	.001	1
S3	5.0000	4.8745	-.125	-2.51	.38158	.001	1
S4	10.000	9.5917	-.408	-4.08	.75016	.001	1
S5	20.000	20.562	.562	2.81	1.6049	.003	1
S2	1.6000	1.5765	-.023	-1.47	.12403	.001	1

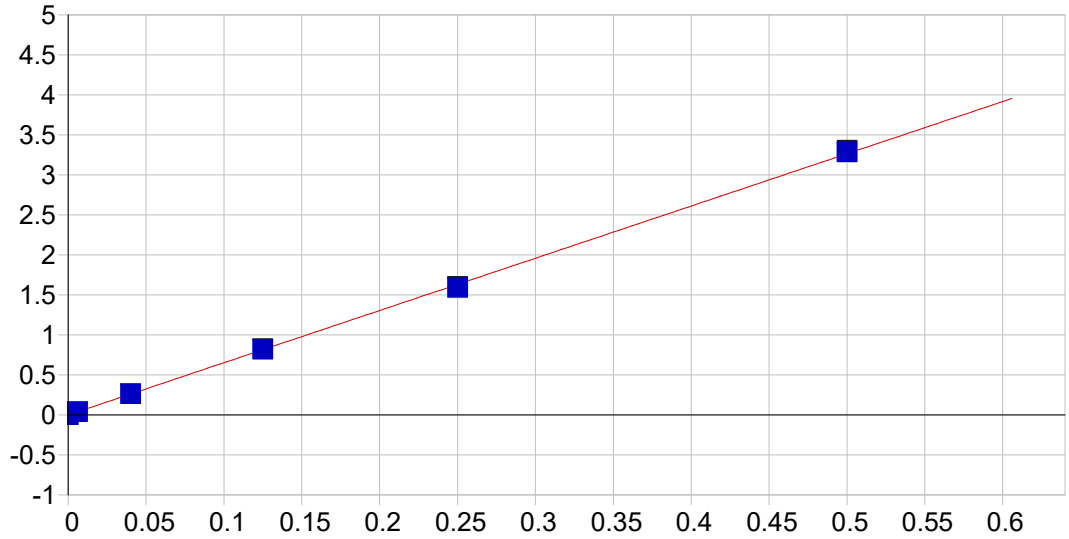


Ba 493.409 { 68}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.091138	Re-Slope:	1.000000
A1 (Gain):	2.366509	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999400	Status:	OK.
Std Error of Est:	0.006080		
Predicted MDL:	0.000990		
Predicted MQL:	0.003302		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.09115	.002	1
S1	.10000	.10350	.004	3.50	.33608	.001	1
S3	5.0000	4.8646	-.135	-2.71	11.603	.031	1
S4	10.000	9.5554	-.445	-4.45	22.704	.093	1
S5	20.000	20.621	.621	3.10	48.890	.796	1
S2	1.6000	1.5558	-.044	-2.77	3.7728	.008	1

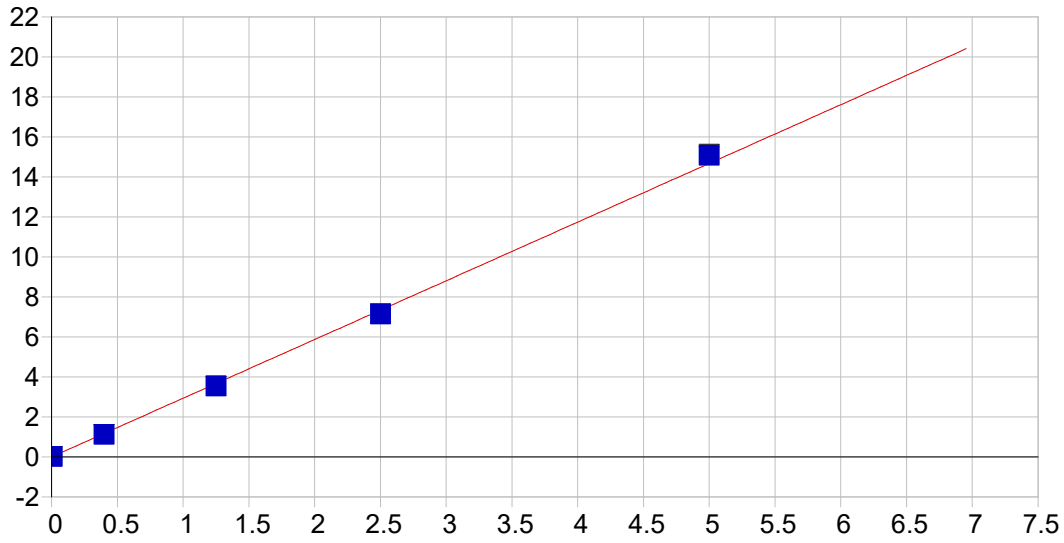


Be 234.861 {144}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000711	Re-Slope:	1.000000
A1 (Gain):	6.529471	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999868	Status:	OK.
Std Error of Est:	0.000304		
Predicted MDL:	0.000068		
Predicted MQL:	0.000227		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00072	.000	1
S1	.00600	.00652	.001	8.65	.04156	.000	1
S3	.12500	.12568	.001	.545	.81626	.006	1
S4	.25000	.24401	-.006	-2.39	1.5853	.010	1
S5	.50000	.50397	.004	.794	3.2753	.018	1
S2	.04000	.04082	.001	2.05	.26465	.001	1

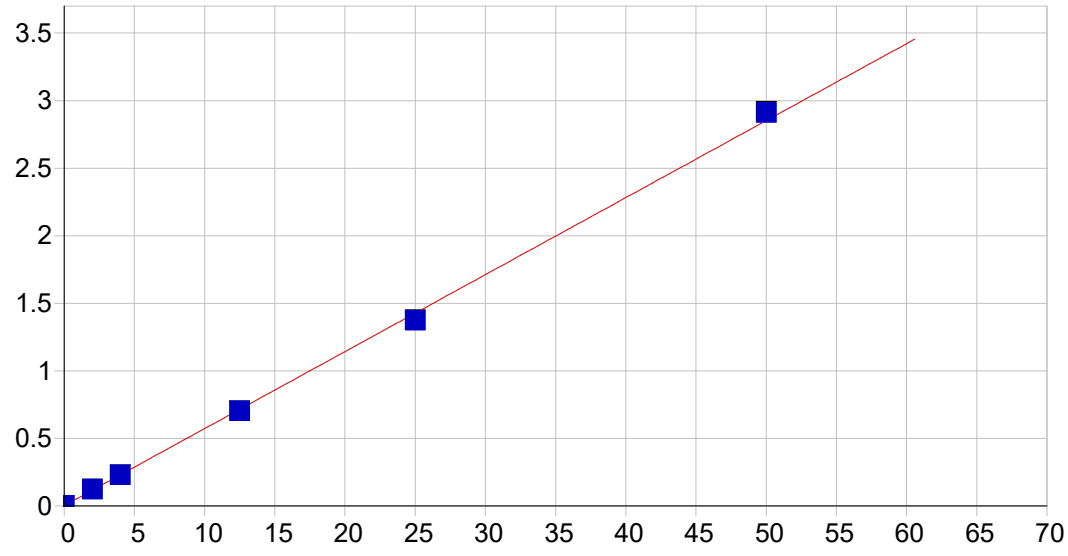


Cd 226.502 {449}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000006	Re-Slope:	1.000000
A1 (Gain):	2.935216	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999545	Status:	OK.
Std Error of Est:	0.000805		
Predicted MDL:	0.000073		
Predicted MQL:	0.000244		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00001	.000	1
S1	.00600	.00575	-.000	-4.14	.01695	.000	1
S3	1.2500	1.2035	-.046	-3.72	3.5350	.002	1
S4	2.5000	2.4315	-.068	-2.74	7.1419	.005	1
S5	5.0000	5.1358	.136	2.72	15.084	.047	1
S2	.40000	.37946	-.021	-5.13	1.1146	.001	1

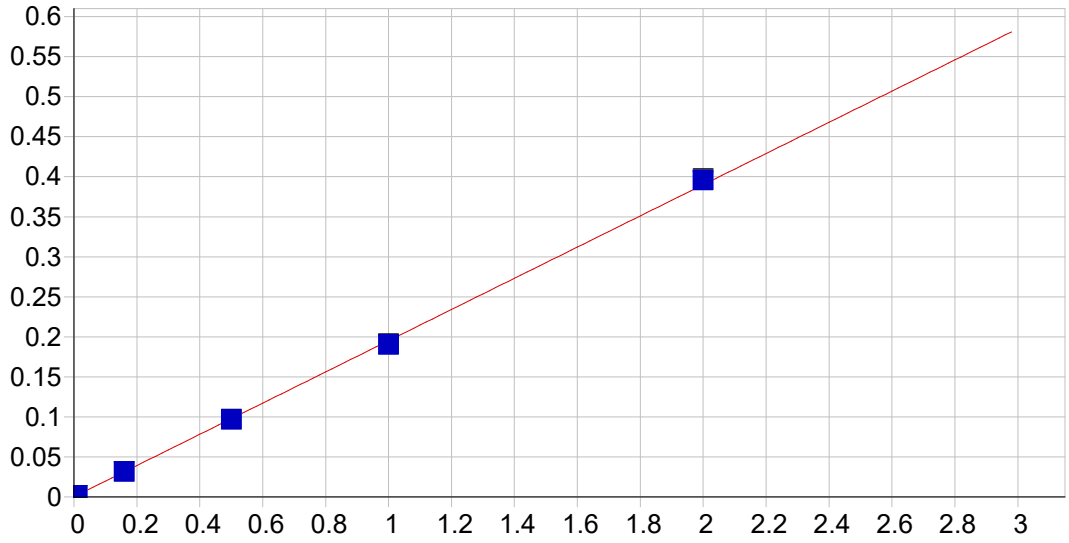


Ca 373.690 { 90}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002587	Re-Slope:	1.000000
A1 (Gain):	0.056985	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999640	Status:	OK.
Std Error of Est:	0.000809		
Predicted MDL:	0.010881		
Predicted MQL:	0.036272		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00004	-.000	.000	.00259	.000	1
S2	4.0000	3.9770	-.023	-.575	.22922	.001	1
S3	12.500	12.280	-.220	-1.76	.70238	.001	1
S4	25.000	24.074	-.926	-3.71	1.3744	.001	1
S5	50.000	51.052	1.05	2.10	2.9118	.009	1
S1	2.0000	2.1169	.117	5.85	.12322	.000	1

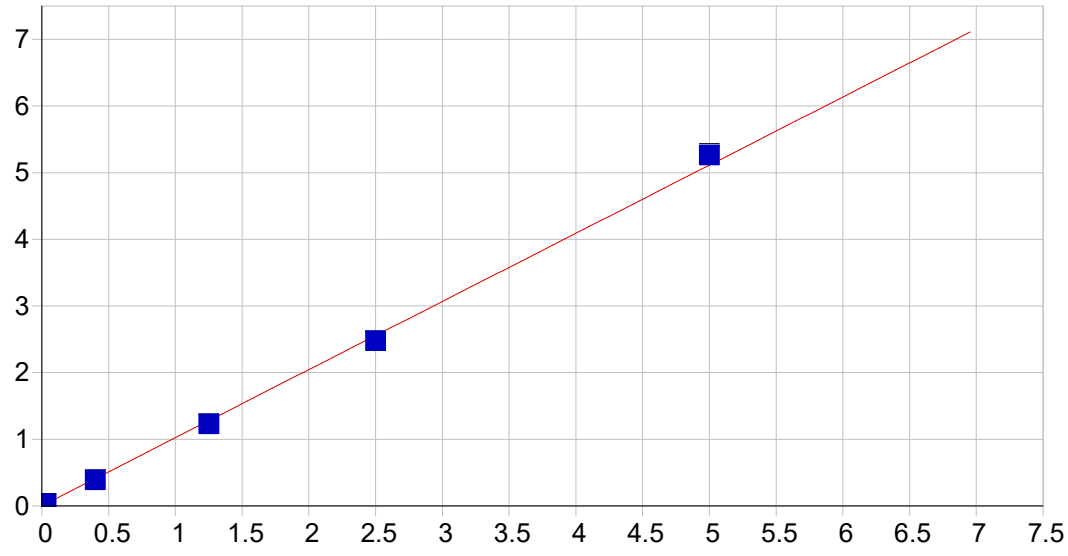


Cr 267.716 {126}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000235	Re-Slope:	1.000000
A1 (Gain):	0.194899	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999850	Status:	OK.
Std Error of Est:	0.000025		
Predicted MDL:	0.000328		
Predicted MQL:	0.001093		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00023	.000	1
S1	.01000	.01062	.001	6.22	.00231	.000	1
S3	.50000	.49493	-.005	-1.01	.09673	.000	1
S4	1.0000	.97554	-.024	-2.45	.19044	.001	1
S5	2.0000	2.0289	.029	1.44	.39581	.001	1
S2	.16000	.16005	.000	.029	.03144	.000	1

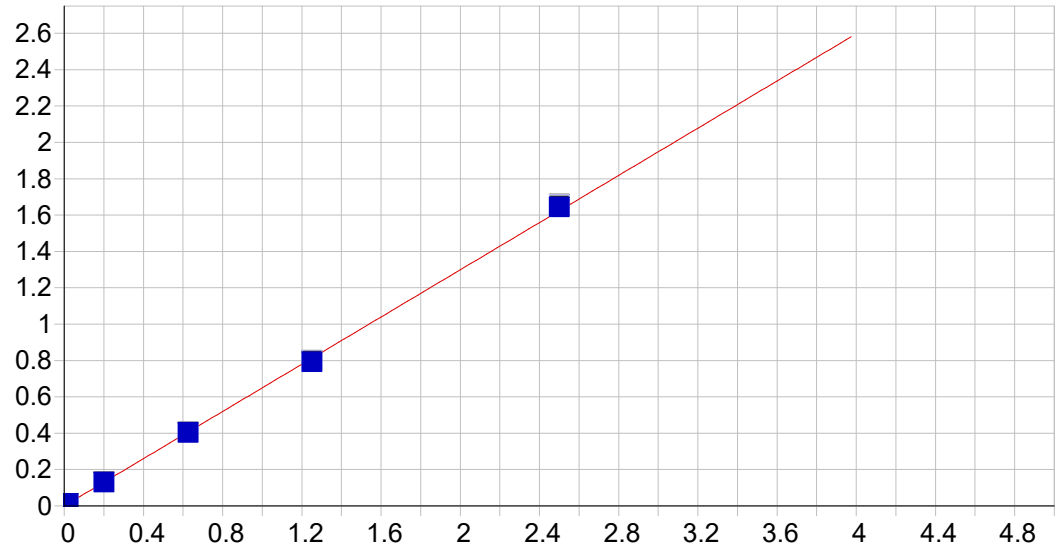


Co 228.616 {448}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000233	Re-Slope:	1.000000
A1 (Gain):	1.022573	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999476	Status:	OK.
Std Error of Est:	0.000674		
Predicted MDL:	0.000186		
Predicted MQL:	0.000621		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00024	.000	1
S1	.03000	.03031	.000	1.02	.03109	.000	1
S3	1.2500	1.2002	-.050	-3.99	1.2297	.001	1
S4	2.5000	2.4207	-.079	-3.17	2.4799	.003	1
S5	5.0000	5.1471	.147	2.94	5.2722	.013	1
S2	.40000	.38174	-.018	-4.56	.39128	.001	1

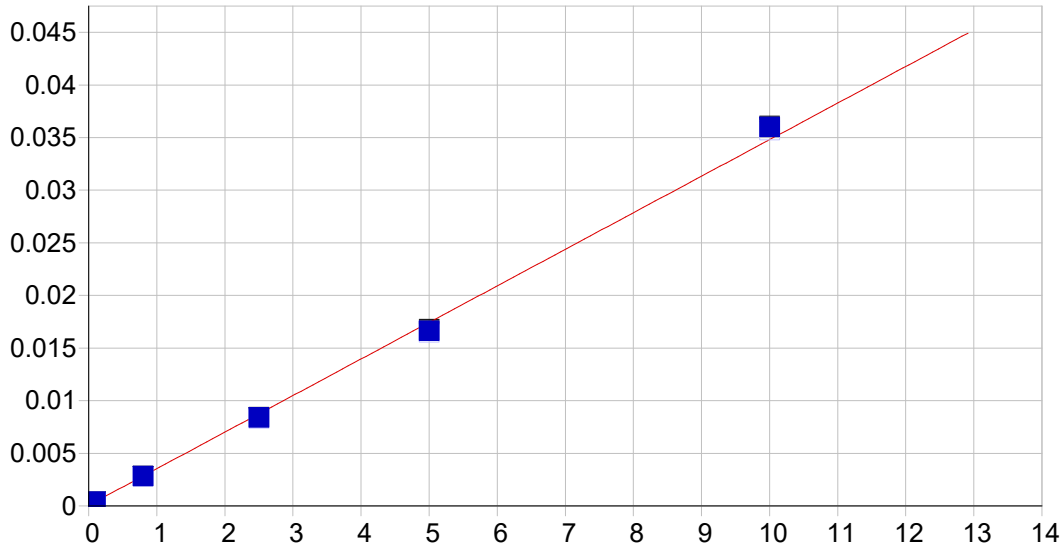


Cu 224.700 {450}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000461	Re-Slope:	1.000000
A1 (Gain):	0.649328	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999855	Status:	OK.
Std Error of Est:	0.000131		
Predicted MDL:	0.000410		
Predicted MQL:	0.001367		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00046	.000	1
S1	.02000	.02184	.002	9.19	.01479	.000	1
S3	.62500	.61951	-.005	-.878	.40611	.001	1
S4	1.2500	1.2202	-.030	-2.38	.79954	.001	1
S5	2.5000	2.5328	.033	1.31	1.6586	.001	1
S2	.20000	.20060	.001	.302	.13180	.000	1

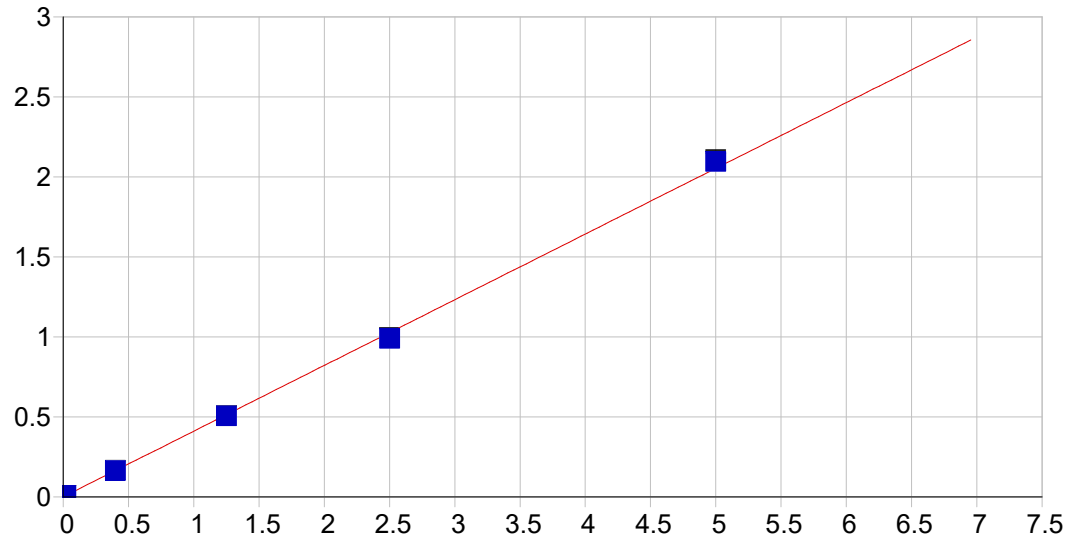


Fe 240.488 {140}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000061	Re-Slope:	1.000000
A1 (Gain):	0.003475	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999264	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.006094		
Predicted MQL:	0.020313		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00006	.000	1
S1	.10000	.09774	-.002	-2.26	.00040	.000	1
S3	2.5000	2.3953	-.105	-4.19	.00831	.000	1
S4	5.0000	4.7713	-.229	-4.57	.01649	.000	1
S5	10.000	10.342	.342	3.42	.03570	.000	1
S2	.80000	.79341	-.007	-.823	.00279	.000	1

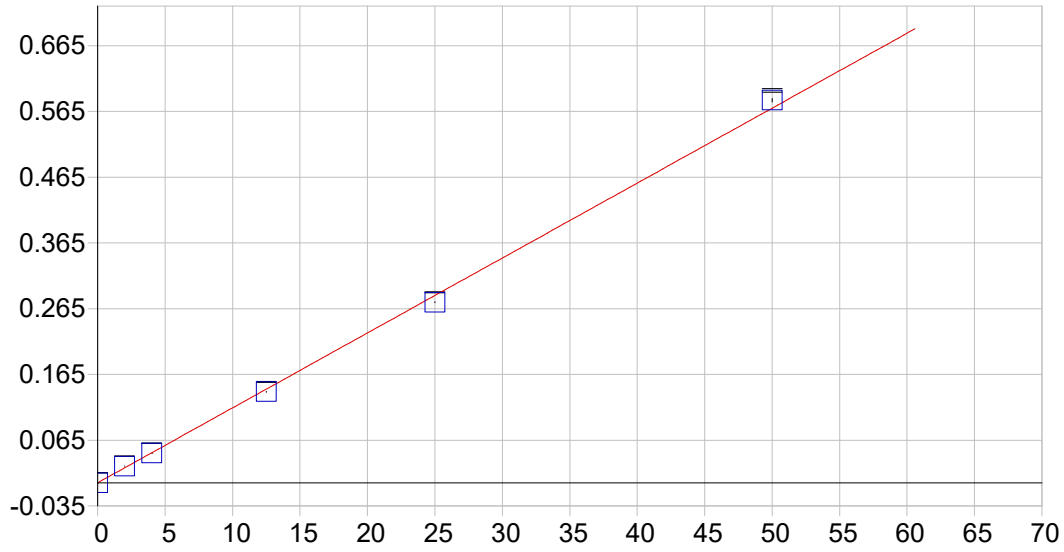


Mn 257.610 {131}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000377	Re-Slope:	1.000000
A1 (Gain):	0.410630	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999681	Status:	OK.
Std Error of Est:	0.000172		
Predicted MDL:	0.000548		
Predicted MQL:	0.001828		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00038	.000	1
S1	.02000	.02244	.002	12.2	.00960	.000	1
S3	1.2500	1.2313	-.019	-1.50	.50607	.001	1
S4	2.5000	2.4121	-.088	-3.52	.99105	.004	1
S5	5.0000	5.1044	.104	2.09	2.0968	.010	1
S2	.40000	.39988	-.000	-.029	.16461	.001	1

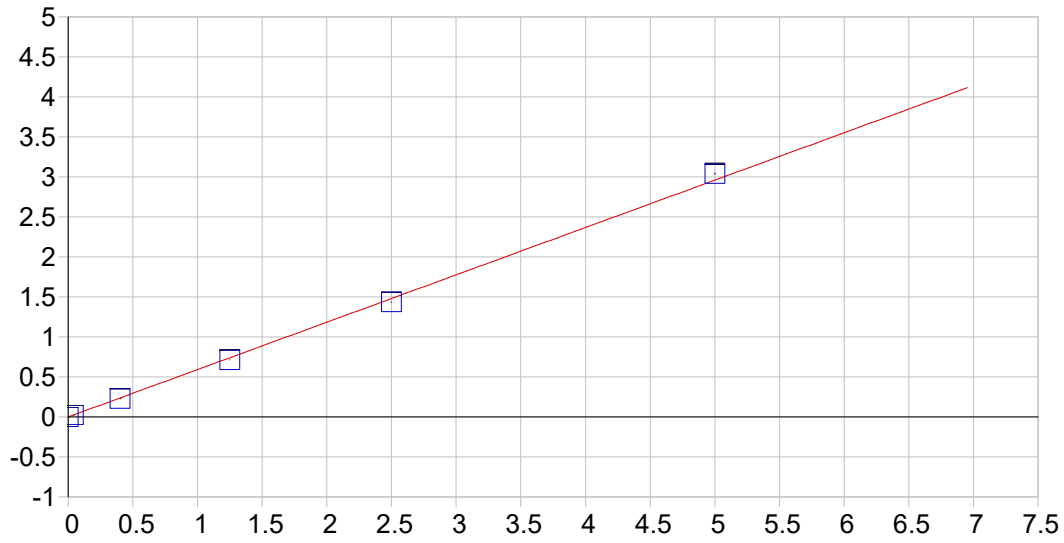


Mg 279.079 {121}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000111	Re-Slope:	1.000000
A1 (Gain):	0.011396	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999505	Status:	OK.
Std Error of Est:	0.000190		
Predicted MDL:	0.025511		
Predicted MQL:	0.085037		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00013	-.000	.000	.00011	.000	1
S2	4.0000	3.9655	-.034	-.861	.04530	.000	1
S3	12.500	12.161	-.339	-2.71	.13869	.001	1
S4	25.000	24.086	-.914	-3.66	.27459	.001	1
S5	50.000	51.054	1.05	2.11	.58192	.003	1
S1	2.0000	2.2343	.234	11.7	.02557	.000	1

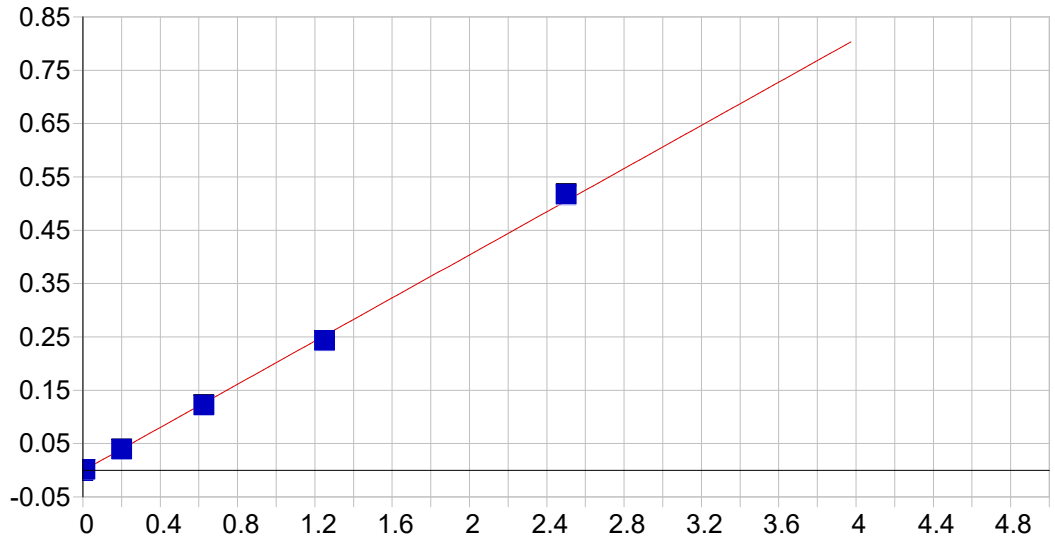


Ni 231.604 {446}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000402	Re-Slope:	1.000000
A1 (Gain):	0.592023	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999554	Status:	OK.
Std Error of Est:	0.000415		
Predicted MDL:	0.000342		
Predicted MQL:	0.001142		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00040	.000	1
S1	.04000	.04057	.001	1.42	.02361	.000	1
S3	1.2500	1.2056	-.044	-3.55	.71333	.001	1
S4	2.5000	2.4237	-.076	-3.05	1.4345	.002	1
S5	5.0000	5.1357	.136	2.71	3.0400	.008	1
S2	.40000	.38441	-.016	-3.90	.22718	.000	1

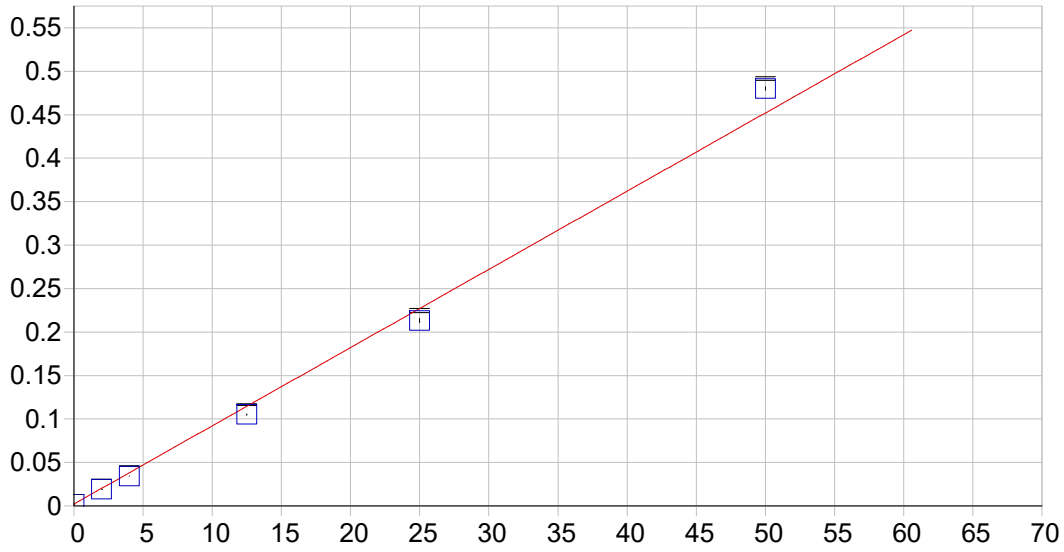


Ag 328.068 {103}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000676	Re-Slope:	1.000000
A1 (Gain):	0.202270	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999619	Status:	OK.
Std Error of Est:	0.000046		
Predicted MDL:	0.000494		
Predicted MQL:	0.001648		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00068	.000	1
S1	.01000	.01010	.000	.965	.00135	.000	1
S3	.62500	.60872	-.016	-2.61	.12184	.000	1
S4	1.2500	1.2064	-.044	-3.49	.24211	.000	1
S5	2.5000	2.5613	.061	2.45	.51494	.001	1
S2	.20000	.19853	-.001	-.735	.03928	.000	1

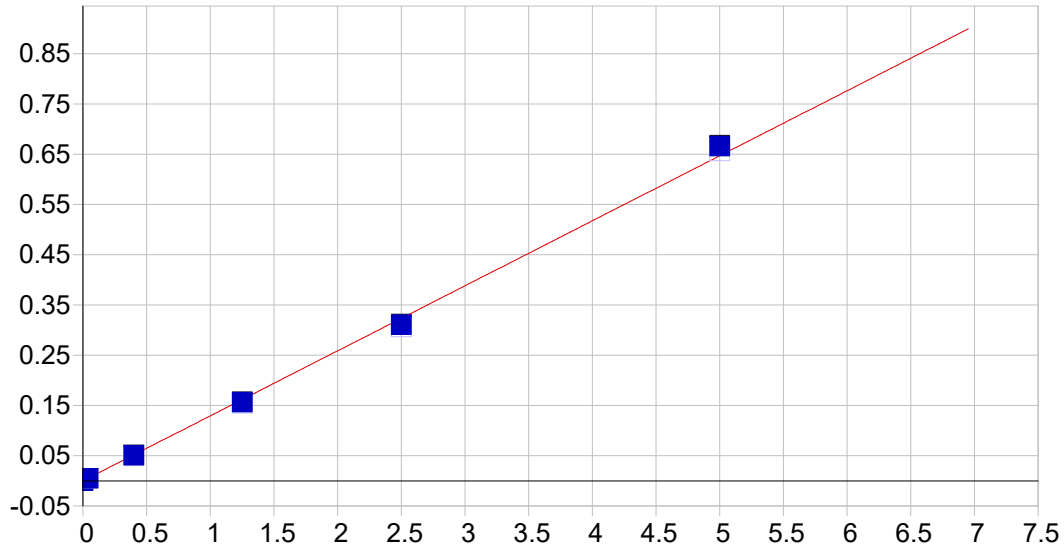


Na 589.592 { 57}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002148	Re-Slope:	1.000000
A1 (Gain):	0.008998	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997709	Status:	OK.
Std Error of Est:	0.000323		
Predicted MDL:	0.016861		
Predicted MQL:	0.056205		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00049	.000	.000	.00215	.000	1
S2	4.0000	3.5761	-.424	-10.6	.03433	.000	1
S3	12.500	11.451	-1.05	-8.40	.10518	.001	1
S4	25.000	23.455	-1.54	-6.18	.21320	.002	1
S5	50.000	53.125	3.12	6.25	.48016	.002	1
S1	2.0000	1.8930	-.107	-5.35	.01918	.000	1

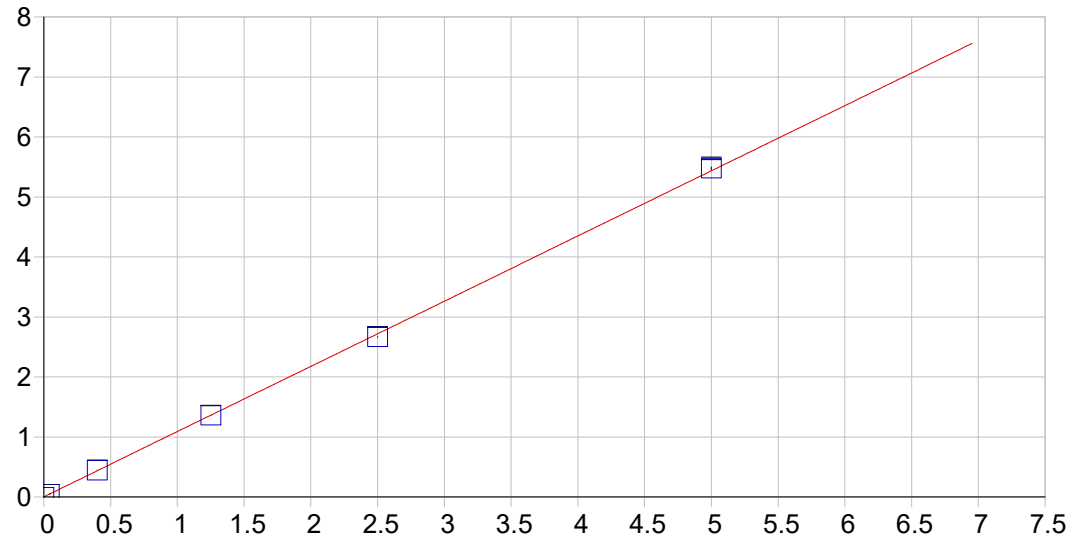


V 292.402 {115}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000121	Re-Slope:	1.000000
A1 (Gain):	0.129419	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999452	Status:	OK.
Std Error of Est:	0.000099		
Predicted MDL:	0.002642		
Predicted MQL:	0.008805		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00012	.000	1
S1	.04000	.04030	.000	.762	.00490	.000	1
S3	1.2500	1.2083	-.042	-3.34	.15389	.001	1
S4	2.5000	2.4029	-.097	-3.88	.30614	.001	1
S5	5.0000	5.1481	.148	2.96	.65670	.002	1
S2	.40000	.39043	-.010	-2.39	.04965	.001	1

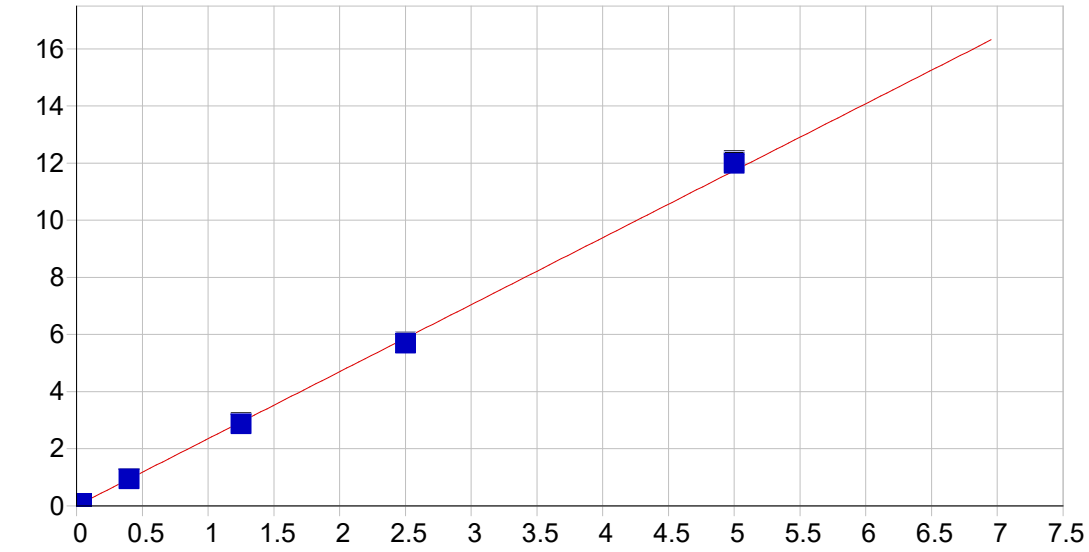


Zn 206.200 {464}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002224	Re-Slope:	1.000000
A1 (Gain):	1.086588	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999920	Status:	OK.
Std Error of Est:	0.000323		
Predicted MDL:	0.000148		
Predicted MQL:	0.000494		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00222	.000	1
S1	.04000	.04263	.003	6.58	.04855	.000	1
S3	1.2500	1.2478	-.002	-.173	1.3581	.001	1
S4	2.5000	2.4535	-.046	-1.86	2.6682	.006	1
S5	5.0000	5.0386	.039	.772	5.4771	.019	1
S2	.40000	.40741	.007	1.85	.44491	.001	1

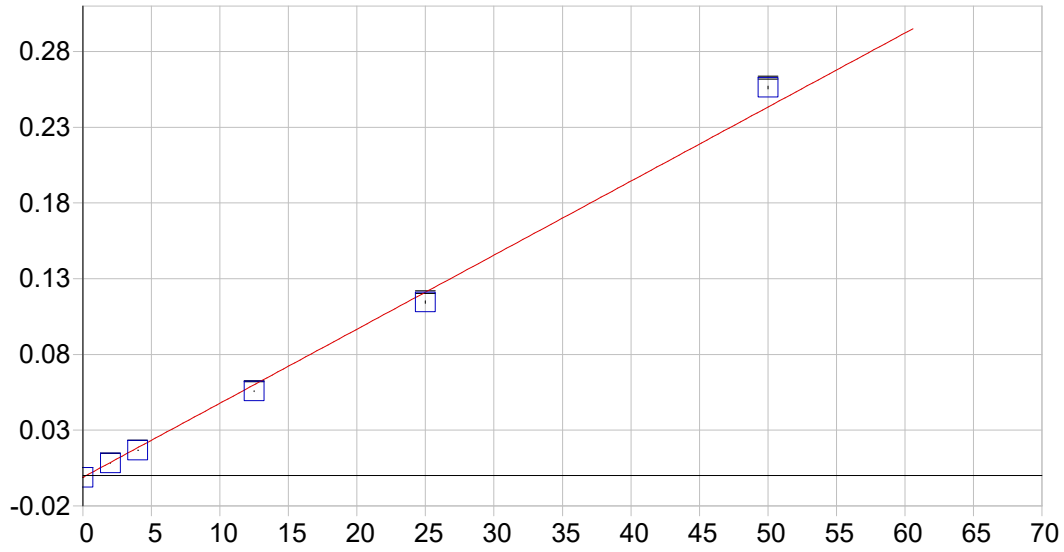


Zn 213.856 {158}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006101	Re-Slope:	1.000000
A1 (Gain):	2.346035	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999718	Status:	OK.
Std Error of Est:	0.001318		
Predicted MDL:	0.000239		
Predicted MQL:	0.000798		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00610	.000	1
S1	.04000	.04146	.001	3.65	.10403	.001	1
S3	1.2500	1.2206	-.029	-2.35	2.8900	.019	1
S4	2.5000	2.4240	-.076	-3.04	5.7337	.007	1
S5	5.0000	5.1050	.105	2.10	12.064	.027	1
S2	.40000	.39894	-.001	-.266	.94855	.003	1

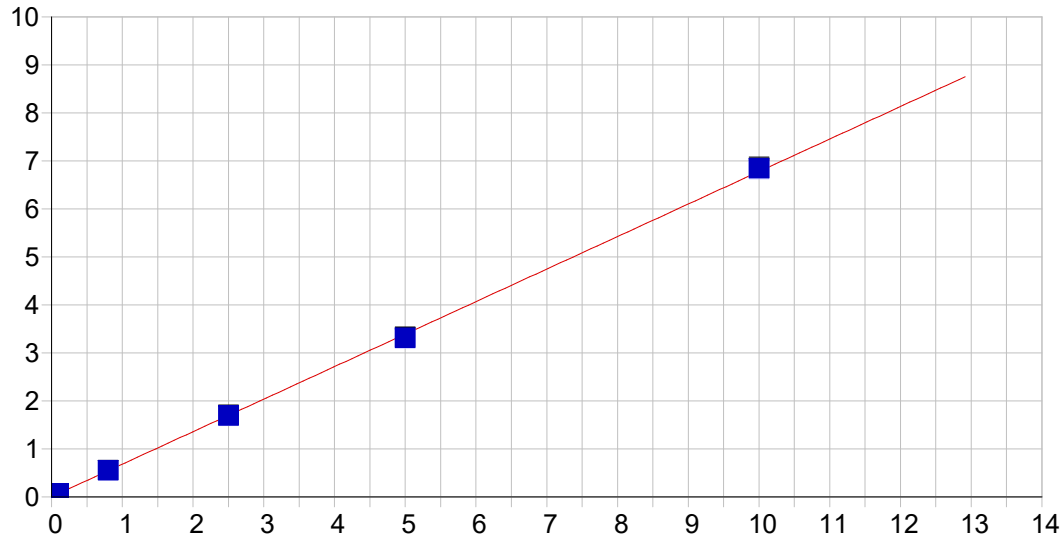


K 766.490 { 44}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001111	Re-Slope:	1.000000
A1 (Gain):	0.004888	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998355	Status:	OK.
Std Error of Est:	0.000149		
Predicted MDL:	0.037068		
Predicted MQL:	0.123562		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00040	.000	.000	-.00111	.000	1
S2	4.0000	3.6503	-.350	-8.74	.01673	.000	1
S3	12.500	11.631	-.869	-6.95	.05575	.000	1
S4	25.000	23.647	-1.35	-5.41	.11449	.001	1
S5	50.000	52.652	2.65	5.30	.25628	.001	1
S1	2.0000	1.9200	-.080	-4.00	.00827	.000	1

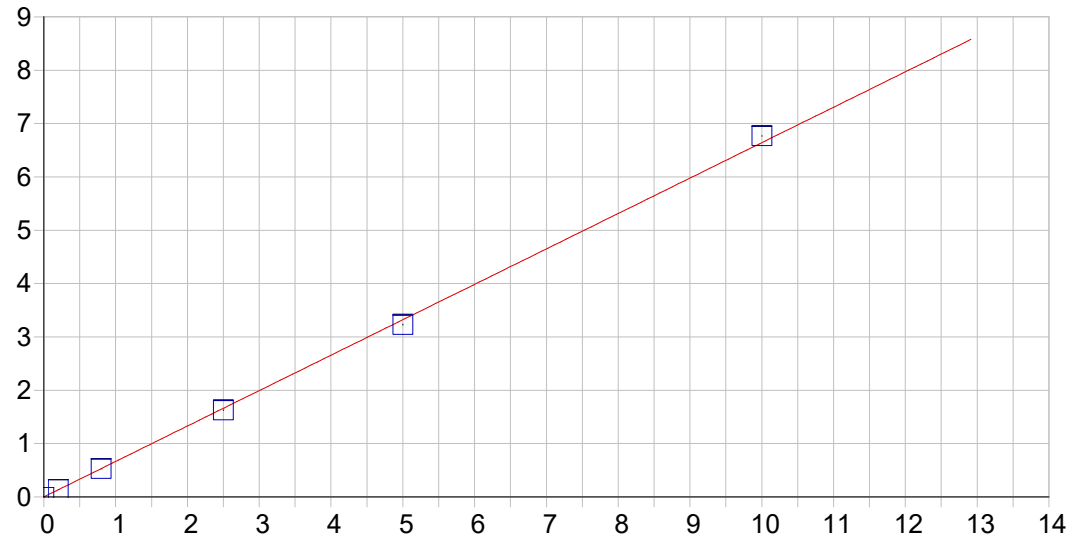


B 249.678 {135}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004322	Re-Slope:	1.000000
A1 (Gain):	0.677407	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999891	Status:	OK.
Std Error of Est:	0.000522		
Predicted MDL:	0.000710		
Predicted MQL:	0.002365		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00432	.001	1
S1	.10000	.10509	.005	5.09	.07511	.001	1
S3	2.5000	2.4955	-.005	-.182	1.6887	.015	1
S4	5.0000	4.8874	-.113	-2.25	3.3029	.018	1
S5	10.000	10.103	.103	1.03	6.8239	.024	1
S2	.80000	.80887	.009	1.11	.55030	.003	1

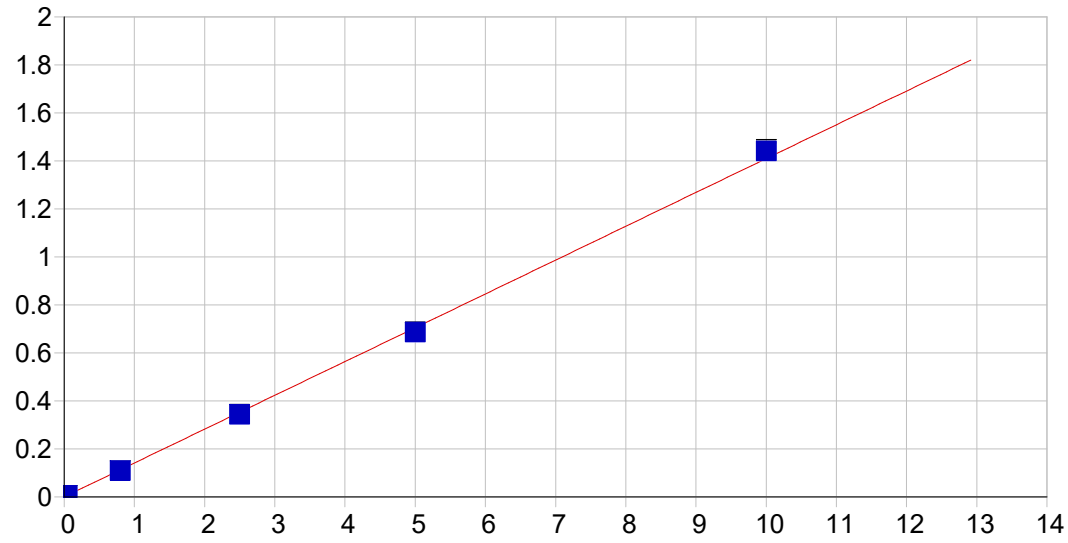


Mo 202.030 {467}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000737	Re-Slope:	1.000000
A1 (Gain):	0.664236	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999761	Status:	OK.
Std Error of Est:	0.001081		
Predicted MDL:	0.000254		
Predicted MQL:	0.000847		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00074	.000	1
S1	.20000	.20886	.009	4.43	.13947	.001	1
S3	2.5000	2.4459	-.054	-2.16	1.6254	.005	1
S4	5.0000	4.8633	-.137	-2.73	3.2311	.009	1
S5	10.000	10.187	.187	1.87	6.7674	.007	1
S2	.80000	.79479	-.005	-.651	.52867	.001	1

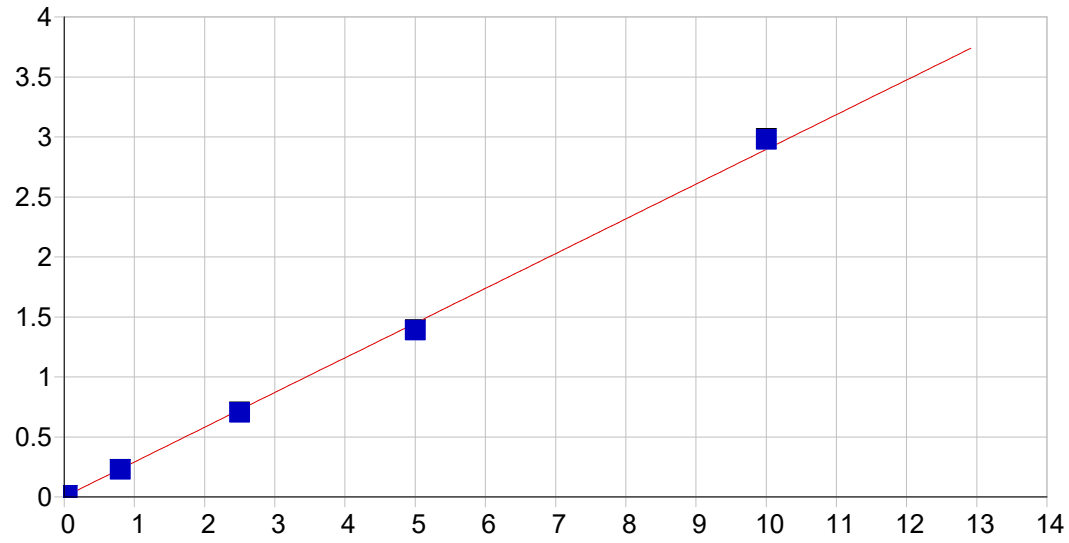


Sn 189.989 {478}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000375	Re-Slope:	1.000000
A1 (Gain):	0.140910	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999689	Status:	OK.
Std Error of Est:	0.000116		
Predicted MDL:	0.000640		
Predicted MQL:	0.002132		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00038	.000	1
S1	.04000	.04056	.001	1.40	.00608	.000	1
S3	2.5000	2.4362	-.064	-2.55	.34330	.000	1
S4	5.0000	4.8659	-.134	-2.68	.68531	.001	1
S5	10.000	10.226	.226	2.26	1.4399	.006	1
S2	.80000	.77101	-.029	-3.62	.10890	.000	1

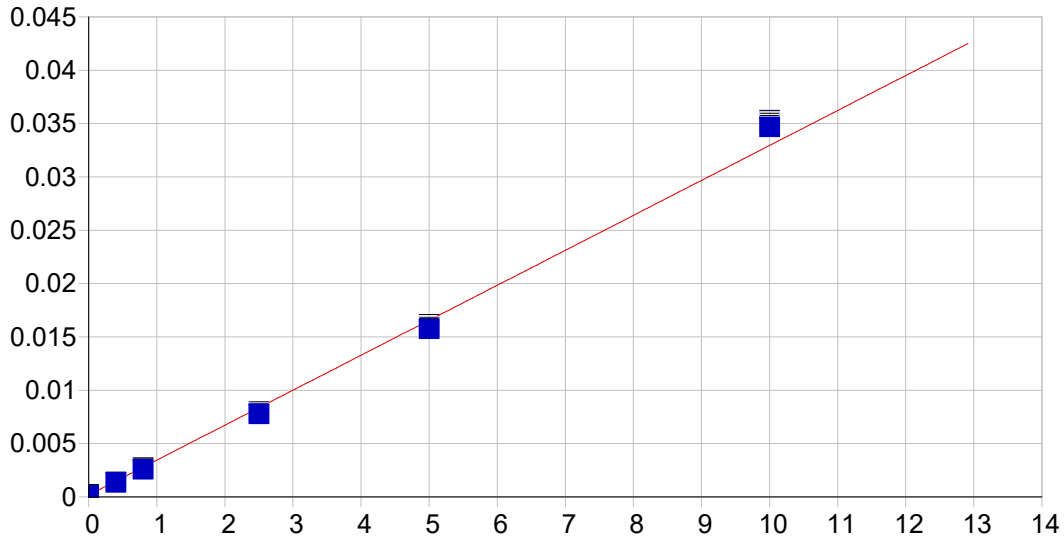


Ti 336.121 {100}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001461	Re-Slope:	1.000000
A1 (Gain):	0.289410	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999484	Status:	OK.
Std Error of Est:	0.000308		
Predicted MDL:	0.001532		
Predicted MQL:	0.005108		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00146	.000	1
S1	.04000	.04053	.001	1.33	.01318	.000	1
S3	2.5000	2.4300	-.070	-2.80	.70448	.002	1
S4	5.0000	4.7971	-.203	-4.06	1.3893	.004	1
S5	10.000	10.289	.289	2.89	2.9783	.008	1
S2	.80000	.78286	-.017	-2.14	.22794	.000	1

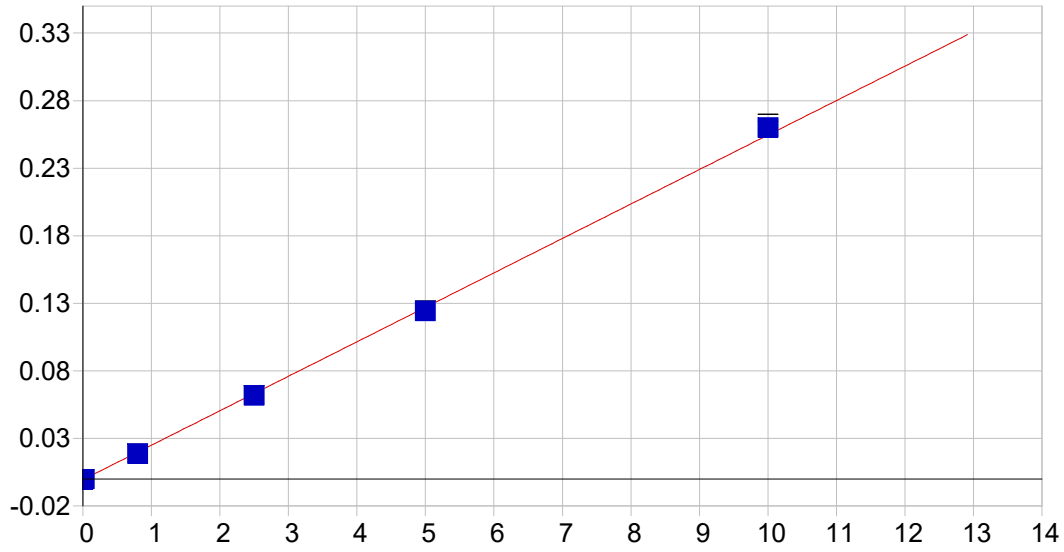


Si 288.158 {117}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000168	Re-Slope:	1.000000
A1 (Gain):	0.003278	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998379	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.011631		
Predicted MQL:	0.038769		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00010	.000	.000	.00017	.000	1
S1	.40000	.36203	-.038	-9.49	.00136	.000	1
S3	2.5000	2.3216	-.178	-7.14	.00790	.000	1
S4	5.0000	4.7525	-.248	-4.95	.01599	.000	1
S5	10.000	10.531	.531	5.31	.03518	.000	1
S2	.80000	.73234	-.068	-8.46	.00261	.000	1

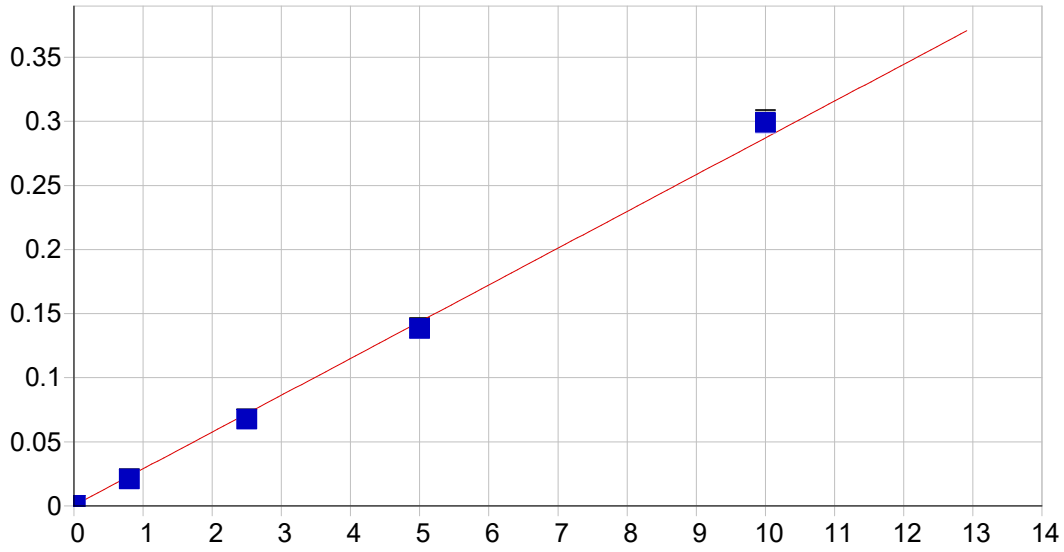


P 177.495 {490}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000608	Re-Slope:	1.000000
A1 (Gain):	0.025515	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999697	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.002628		
Predicted MQL:	0.008761		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00061	.000	1
S1	.02000	.01831	-.002	-8.43	-.00014	.000	1
S3	2.5000	2.4392	-.061	-2.43	.06162	.000	1
S4	5.0000	4.8970	-.103	-2.06	.12432	.000	1
S5	10.000	10.213	.213	2.13	.25994	.003	1
S2	.80000	.75251	-.047	-5.94	.01859	.000	1

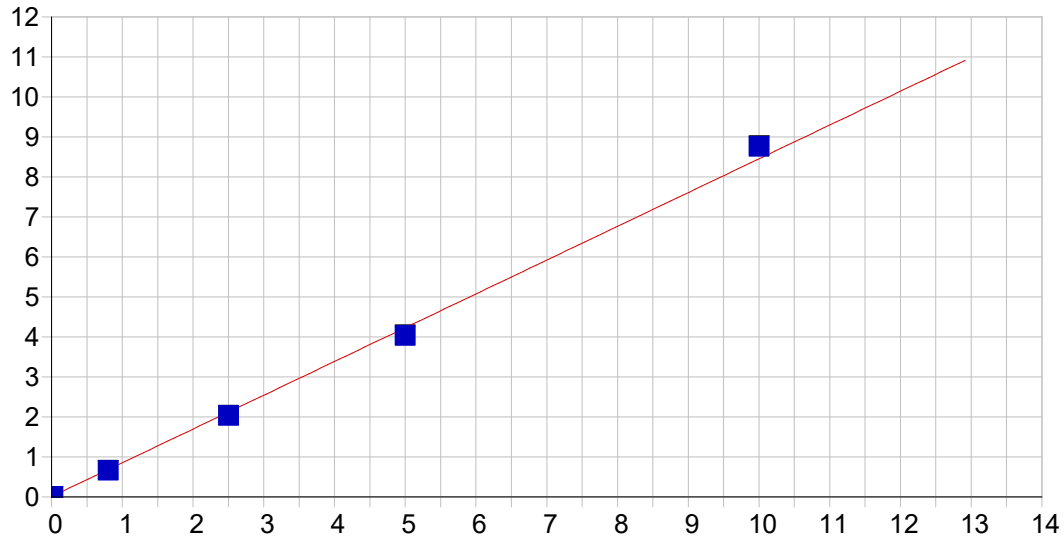


S 182.034 {485}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000268	Re-Slope:	1.000000
A1 (Gain):	0.028687	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998847	Status:	OK.
Std Error of Est:	0.000032		
Predicted MDL:	0.002850		
Predicted MQL:	0.009500		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00027	.000	1
S1	.02000	.01547	-.005	-22.6	.00069	.000	1
S3	2.5000	2.3514	-.149	-5.95	.06753	.000	1
S4	5.0000	4.8167	-.183	-3.67	.13807	.001	1
S5	10.000	10.417	.417	4.17	.29835	.002	1
S2	.80000	.71942	-.081	-10.1	.02085	.000	1

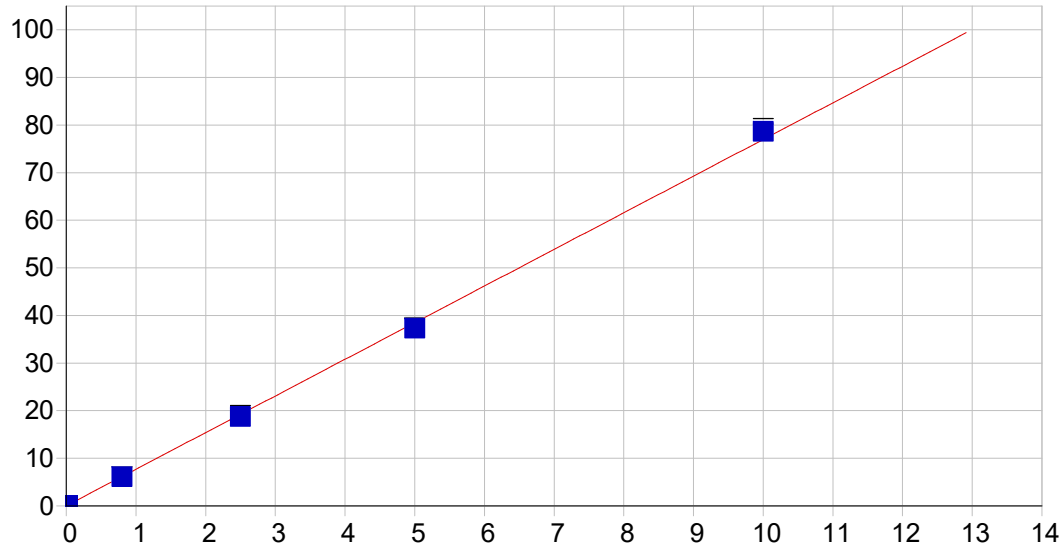


Li 670.784 { 50}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.008509	Re-Slope:	1.000000
A1 (Gain):	0.844447	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999199	Status:	OK.
Std Error of Est:	0.000793		
Predicted MDL:	0.001761		
Predicted MQL:	0.005870		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00851	.002	1
S5	10.000	10.365	.365	3.65	8.7676	.018	1
S4	5.0000	4.7650	-.235	-4.70	4.0357	.015	1
S3	2.5000	2.3997	-.100	-4.01	2.0366	.003	1
S1	.02000	.01873	-.001	-6.35	.02462	.001	1
S2	.80000	.77199	-.028	-3.50	.66096	.001	1

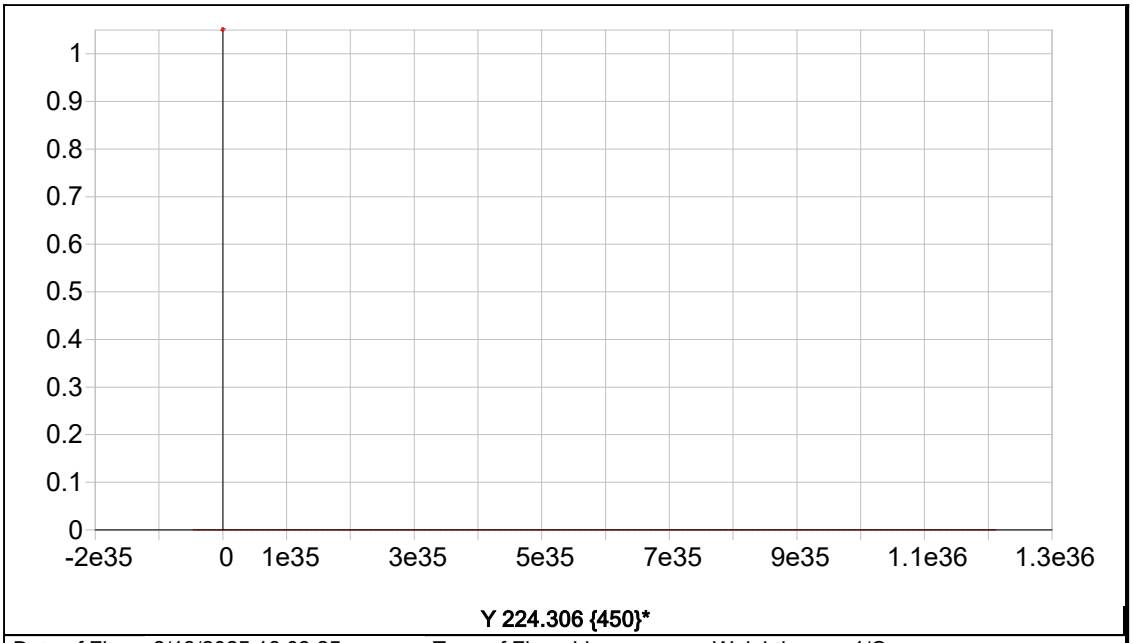


Sr 407.771 { 83}

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003479	Re-Slope:	1.000000
A1 (Gain):	7.696765	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999695	Status:	OK.
Std Error of Est:	0.004457		
Predicted MDL:	0.000099		
Predicted MQL:	0.000331		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00348	.001	1
S1	.02000	.02037	.000	1.86	.16101	.000	1
S3	2.5000	2.4354	-.065	-2.58	18.767	.251	1
S4	5.0000	4.8500	-.150	-3.00	37.370	.137	1
S5	10.000	10.222	.222	2.22	78.755	.586	1
S2	.80000	.79198	-.008	-1.00	6.1051	.006	1

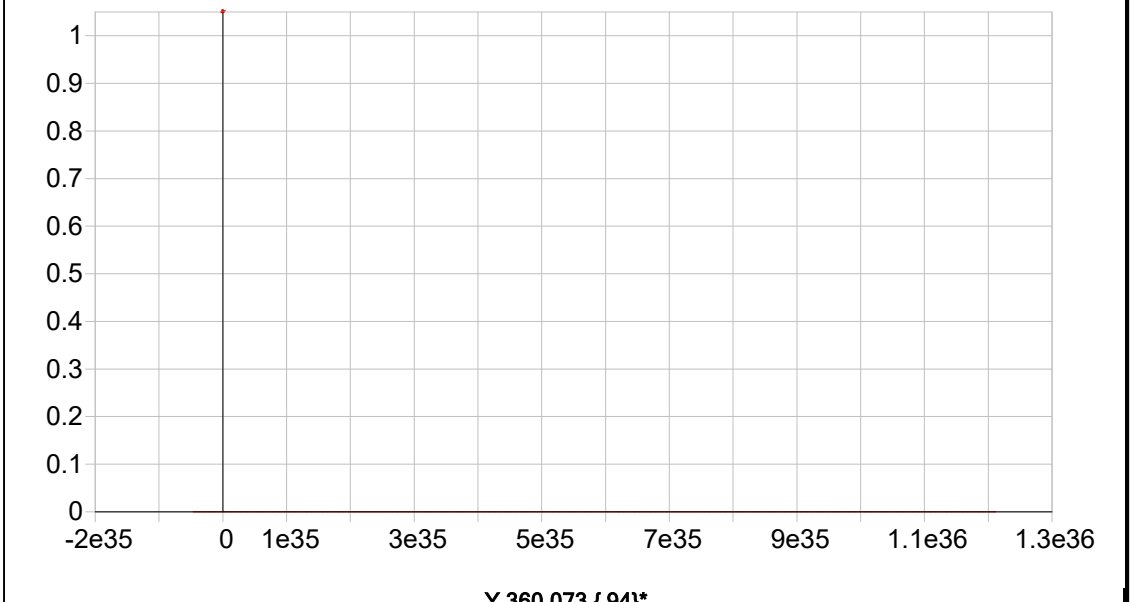


Y 224.306 {450}*

Date of Fit:	8/13/2025 16:03:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



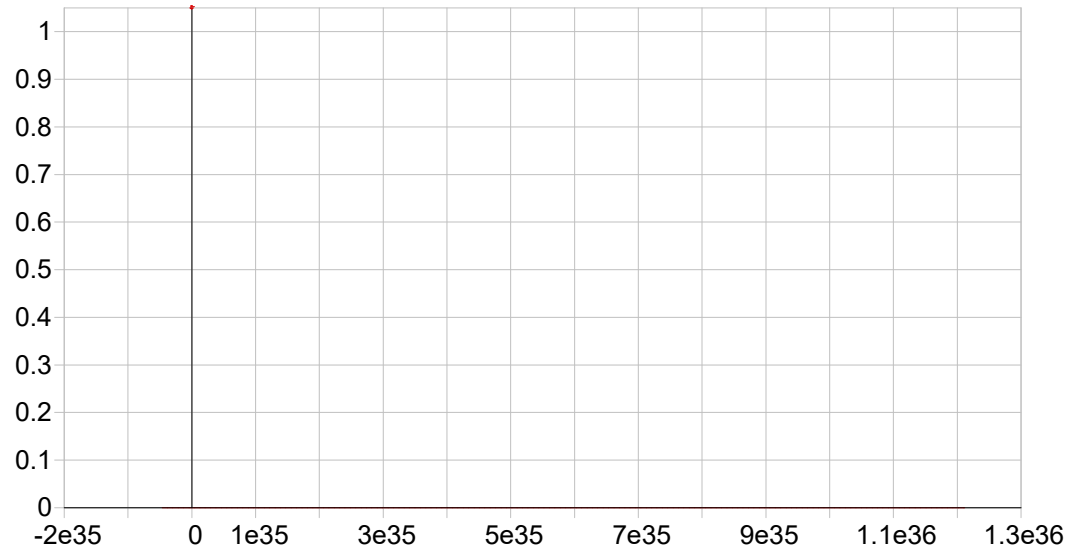
Y 360.073 { 94}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.000000		Status:	Warning	Zero Gain	
Std Error of Est:	0.000000					
Predicted MDL:	n/a					
Predicted MQL:	n/a					

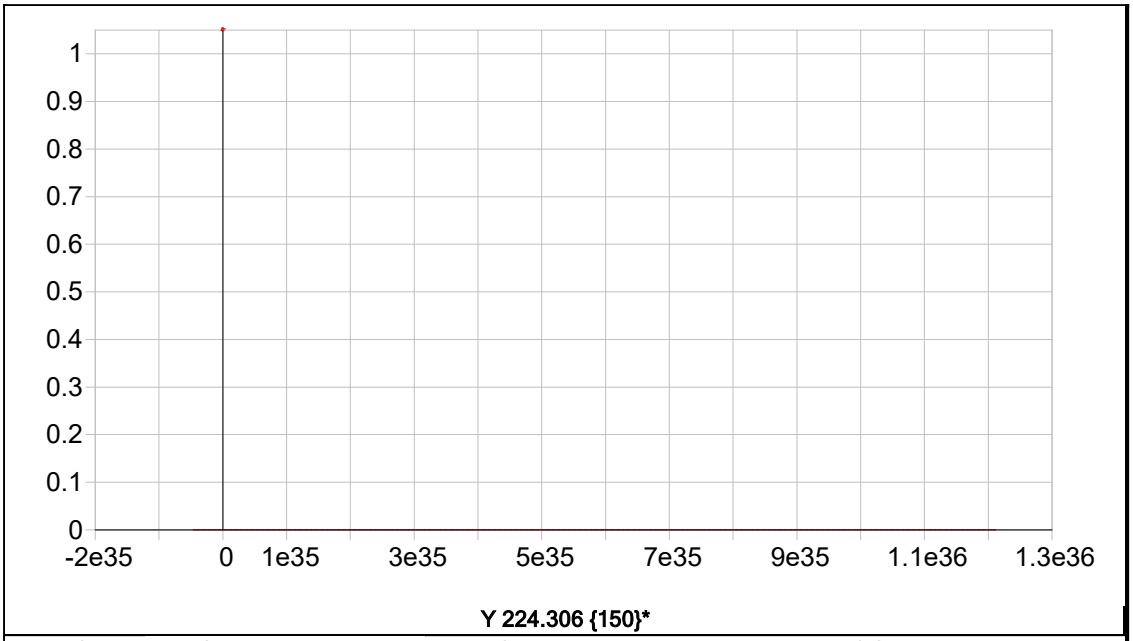
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



Y 371.030 { 91}*

Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):		0.000000		Re-Slope:	1.000000	
A1 (Gain):		0.000000		Y-int:	0.000000	
A2 (Curvature):		0.000000				
n (Exponent):		1.000000				
Correlation:		0.000000		Status:	Warning	Zero Gain
Std Error of Est:		0.000000				
Predicted MDL:		n/a				
Predicted MQL:		n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis

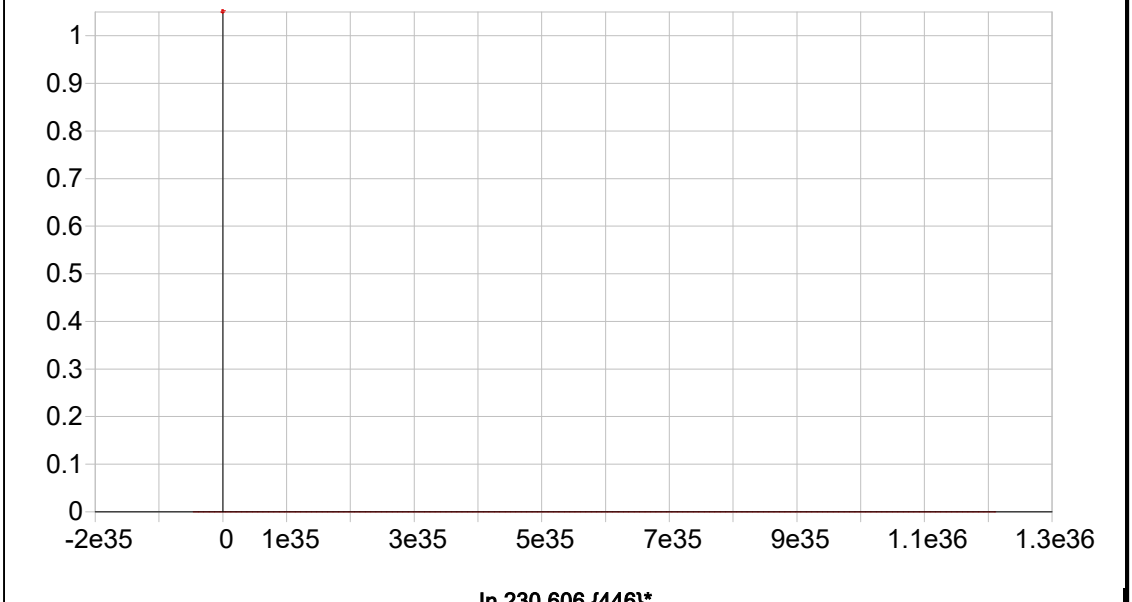


Y 224.306 {150}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



In 230.606 {446}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.000000		Status:	Warning	Zero Gain	
Std Error of Est:		0.000000					
Predicted MDL:		n/a					
Predicted MQL:		n/a					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S0 Acquired: 8/13/2025 11:56:09 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00012**	**.00099**	**.00018**	**.00042**	**.00061**	**.00096**	**.09115**	**-.00072**
Stddev	.00001	.00008	.00023	.00004	.00002	.00054	.00169	.00032
%RSD	11.798	8.2372	126.08	9.5520	3.8011	56.597	1.8506	45.393
#1	-.00011	.00090	.00044	.00041	.00064	.00033	.08965	-.00044
#2	-.00011	.00105	.00010	.00039	.00060	.00128	.09082	-.00107
#3	-.00013	.00103	.00001	.00047	.00060	.00126	.09297	-.00063

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00259**	**.00023**	**.00024**	**.00046**	**.00006**	**.00038**	**.00011**
Stddev	.00012	.00023	.00003	.00019	.00014	.00002	.00016	.00026
%RSD	1445.8	8.8787	10.873	79.569	31.413	26.412	41.366	237.07
#1	.00006	.00236	.00021	.00038	.00040	.00005	.00056	-.00017
#2	.00010	.00282	.00025	.00031	.00036	.00005	.00029	.00017
#3	-.00013	.00258	.00024	.00002	.00062	.00008	.00029	.00034

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00040**	**-.00068**	**.00215**	**-.00012**	**.00610**	**-.00111**	**.00432**	**.00074**
Stddev	.00015	.00004	.00007	.00017	.00034	.00011	.00059	.00007
%RSD	36.354	5.4678	3.4595	141.44	5.5783	10.063	13.565	10.186
#1	-.00051	-.00071	.00207	-.00032	.00577	-.00104	.00382	.00068
#2	-.00046	-.00064	.00221	-.00005	.00645	-.00104	.00418	.00082
#3	-.00024	-.00068	.00218	-.00000	.00608	-.00124	.00496	.00071

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00146**	**.00017**	**-.00061**	**.00027**	**.00851**	**.00348**
Stddev	.00011	.00026	.00004	.00004	.00002	.00192	.00068
%RSD	28.119	17.986	24.511	6.9450	8.5623	22.614	19.590
#1	.00049	.00139	.00018	-.00064	.00029	.01058	.00315
#2	.00035	.00124	.00020	-.00063	.00025	.00817	.00427
#3	.00029	.00175	.00012	-.00056	.00027	.00678	.00303

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S0 Acquired: 8/13/2025 11:56:09 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5846.1**	**103620.**	**10717.**	**4580.8**	**7518.8**
Stddev	9.1	117.	61.	12.7	13.9
%RSD	.15484	.11285	.56536	.27636	.18486
#1	5840.1	103630.	10779.	4578.3	7505.2
#2	5856.5	103740.	10713.	4569.6	7533.0
#3	5841.7	103500.	10658.	4594.6	7518.2

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S1 Acquired: 8/13/2025 12:00:31 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00099**	**.00355**	**.00228**	**.00136**	**.00556**	**.00889**	**.33608**	**.04156**
Stddev	.00005	.00006	.00017	.00003	.00005	.00066	.00075	.00037
%RSD	4.8850	1.5813	7.4028	2.2296	.85816	7.4060	.22369	.88732
#1	.00105	.00362	.00245	.00133	.00561	.00814	.33565	.04114
#2	.00097	.00352	.00211	.00139	.00553	.00921	.33695	.04177
#3	.00096	.00352	.00227	.00137	.00554	.00933	.33565	.04178

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01695**	**.12322**	**.00231**	**.03109**	**.01479**	**.00040**	**.00960**	**.02557**
Stddev	.00025	.00033	.00008	.00014	.00016	.00001	.00019	.00029
%RSD	1.5039	.27128	3.6790	.46259	1.1040	3.2185	1.9325	1.1517
#1	.01723	.12357	.00240	.03125	.01493	.00039	.00972	.02591
#2	.01674	.12319	.00224	.03107	.01481	.00039	.00938	.02536
#3	.01687	.12290	.00228	.03097	.01461	.00041	.00969	.02545

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02361**	**.00135**	**.01918**	**.00490**	**.10403**	**.00827**	**.07511**	**.13947**
Stddev	.00031	.00010	.00010	.00027	.00097	.00012	.00058	.00109
%RSD	1.3018	7.3903	.54544	5.5792	.93125	1.4218	.77058	.78236
#1	.02361	.00124	.01927	.00490	.10503	.00832	.07555	.14042
#2	.02392	.00143	.01906	.00518	.10309	.00837	.07532	.13828
#3	.02331	.00137	.01921	.00463	.10396	.00814	.07445	.13971

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00608**	**.01318**	**.00136**	**-.00014**	**.00069**	**.02462**	**.16101**
Stddev	.00005	.00035	.00001	.00005	.00004	.00110	.00037
%RSD	.85809	2.6841	1.0584	33.670	5.3741	4.4543	.22731
#1	.00603	.01359	.00137	-.00013	.00065	.02486	.16105
#2	.00611	.01293	.00136	-.00010	.00069	.02558	.16136
#3	.00612	.01303	.00134	-.00019	.00072	.02342	.16063

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S1 Acquired: 8/13/2025 12:00:31 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5596.1	98960.	10361.	4343.9	7086.6
Stddev	14.0	81.	27.	17.9	21.9
%RSD	.25060	.08209	.25637	.41295	.30968
#1	5581.6	99054.	10336.	4325.5	7061.3
#2	5609.6	98918.	10358.	4361.3	7099.9
#3	5597.2	98908.	10389.	4344.8	7098.7

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S2 Acquired: 8/13/2025 12:04:50 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03967**	**.05275**	**.15143**	**.03772**	**.07498**	**.12403**	**3.7728**	**.26465**
Stddev	.00017	.00134	.00039	.00033	.00047	.00079	.0077	.00071
%RSD	.42943	2.5471	.25485	.86907	.62659	.64084	.20458	.26811
#1	.03986	.05430	.15122	.03806	.07525	.12320	3.7719	.26401
#2	.03952	.05205	.15119	.03740	.07443	.12411	3.7810	.26452
#3	.03963	.05190	.15187	.03770	.07524	.12479	3.7656	.26541

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.1146**	**.22922**	**.03144**	**.39128**	**.13180**	**.00279**	**.16461**	**.04530**
Stddev	.0010	.00072	.00010	.00061	.00041	.00001	.00103	.00012
%RSD	.08950	.31246	.30475	.15648	.30983	.47946	.62526	.25702
#1	1.1137	.22890	.03148	.39071	.13195	.00280	.16344	.04533
#2	1.1144	.22871	.03151	.39122	.13134	.00281	.16537	.04518
#3	1.1156	.23004	.03133	.39193	.13211	.00278	.16503	.04540

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.22718**	**.03928**	**.03433**	**.04965**	**.94855**	**.01673**	**.55030**	**.52867**
Stddev	.00038	.00007	.00014	.00057	.00336	.00008	.00269	.00118
%RSD	.16859	.18510	.41651	1.1458	.35431	.46016	.48855	.22400
#1	.22712	.03922	.03446	.04908	.95191	.01673	.54997	.52957
#2	.22683	.03928	.03434	.05022	.94855	.01666	.54780	.52733
#3	.22759	.03936	.03418	.04966	.94519	.01681	.55314	.52911

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.10890**	**.22794**	**.00261**	**.01859**	**.02085**	**.66096**	**6.1051**
Stddev	.00025	.00027	.00011	.00016	.00006	.00124	.0056
%RSD	.22625	.11781	4.2783	.84896	.31127	.18771	.09106
#1	.10884	.22767	.00256	.01871	.02082	.65952	6.1067
#2	.10869	.22821	.00253	.01841	.02080	.66166	6.1096
#3	.10917	.22795	.00274	.01864	.02092	.66169	6.0989

Sample Name: S2 Acquired: 8/13/2025 12:04:50 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5834.2	102520.	10899.	4543.5	7278.7
Stddev	20.7	109.	36.	24.3	11.2
%RSD	.35442	.10614	.33016	.53424	.15406
#1	5819.3	102440.	10928.	4519.2	7269.0
#2	5857.8	102480.	10911.	4543.5	7291.0
#3	5825.5	102650.	10859.	4567.7	7276.1

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S3 Acquired: 8/13/2025 12:08:54 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12531**	**.16058**	**.47333**	**.11798**	**.23318**	**.38158**	**11.603**	**.81626**
Stddev	.00058	.00332	.00073	.00073	.00074	.00072	.031	.00597
%RSD	.46412	2.0683	.15377	.61790	.31580	.18754	.26425	.73117
#1	.12467	.15726	.47319	.11744	.23264	.38084	11.638	.80962
#2	.12544	.16058	.47269	.11770	.23289	.38227	11.588	.82118
#3	.12581	.16390	.47412	.11881	.23402	.38164	11.583	.81798

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.5350**	**.70238**	**.09673**	**1.2297**	**.40611**	**.00831**	**.50607**	**.13869**
Stddev	.0024	.00099	.00024	.0012	.00073	.00005	.00116	.00076
%RSD	.06726	.14074	.24898	.09641	.17916	.54279	.22970	.54688
#1	3.5374	.70151	.09697	1.2306	.40542	.00836	.50715	.13790
#2	3.5326	.70346	.09674	1.2283	.40603	.00827	.50484	.13941
#3	3.5349	.70218	.09649	1.2300	.40687	.00830	.50623	.13877

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.71333**	**.12184**	**.10518**	**.15389**	**2.8900**	**.05575**	**1.6887**	**1.6254**
Stddev	.00078	.00030	.00102	.00062	.0188	.00038	.0146	.0050
%RSD	.10954	.24376	.96671	.40450	.65142	.67359	.86512	.30965
#1	.71412	.12213	.10611	.15461	2.8818	.05614	1.6726	1.6213
#2	.71256	.12184	.10409	.15347	2.9115	.05539	1.7012	1.6238
#3	.71329	.12154	.10534	.15360	2.8767	.05571	1.6921	1.6310

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.34330**	**.70448**	**.00790**	**.06162**	**.06753**	**2.0366**	**18.767**
Stddev	.00049	.00197	.00009	.00011	.00005	.0029	.251
%RSD	.14245	.27950	1.1216	.17170	.07487	.14186	1.3398
#1	.34346	.70603	.00800	.06173	.06758	2.0394	18.554
#2	.34275	.70515	.00783	.06151	.06748	2.0336	18.702
#3	.34369	.70226	.00788	.06162	.06754	2.0368	19.044

Sample Name: S3 Acquired: 8/13/2025 12:08:54 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5699.2	100690.	10886.	4460.2	6930.0
Stddev	3.9	199.	97.	19.9	11.7
%RSD	.06886	.19730	.89149	.44656	.16855
#1	5696.3	100900.	10995.	4459.0	6920.0
#2	5697.6	100660.	10808.	4440.9	6927.2
#3	5703.7	100510.	10855.	4480.6	6942.8

Sample Name: S4 Acquired: 8/13/2025 12:12:59 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.25171**	**.31258**	**.94213**	**.23514**	**.46595**	**.75016**	**22.704**	**1.5853**
Stddev	.00069	.01034	.00065	.00177	.00239	.00078	.093	.0097
%RSD	.27577	3.3092	.06919	.75396	.51292	.10357	.40974	.60926
#1	.25114	.30068	.94248	.23321	.46327	.75065	22.653	1.5887
#2	.25150	.31762	.94254	.23553	.46673	.75057	22.811	1.5927
#3	.25248	.31943	.94138	.23669	.46786	.74927	22.648	1.5743

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7.1419**	**1.3744**	**.19044**	**2.4799**	**.79954**	**.01649**	**.99105**	**.27459**
Stddev	.0046	.0008	.00058	.0031	.00135	.00014	.00440	.00068
%RSD	.06505	.06197	.30335	.12447	.16861	.84838	.44438	.24795
#1	7.1419	1.3754	.19006	2.4776	.79959	.01644	.99522	.27420
#2	7.1372	1.3737	.19016	2.4786	.79817	.01638	.98644	.27538
#3	7.1465	1.3742	.19111	2.4834	.80087	.01665	.99148	.27419

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.4345**	**.24211**	**.21320**	**.30614**	**5.7337**	**.11449**	**3.3029**	**3.2311**
Stddev	.0023	.00003	.00243	.00090	.0074	.00085	.0182	.0094
%RSD	.15854	.01145	1.1377	.29499	.12914	.74073	.55153	.29198
#1	1.4328	.24213	.21323	.30617	5.7299	.11433	3.3136	3.2217
#2	1.4336	.24212	.21075	.30522	5.7422	.11373	3.3132	3.2310
#3	1.4371	.24208	.21561	.30702	5.7290	.11540	3.2818	3.2406

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.68531**	**1.3893**	**.01599**	**.12432**	**.13807**	**4.0357**	**37.370**
Stddev	.00107	.0039	.00017	.00015	.00056	.0152	.137
%RSD	.15632	.27905	1.0925	.11901	.40504	.37562	.36677
#1	.68525	1.3930	.01595	.12431	.13743	4.0455	37.528
#2	.68427	1.3852	.01585	.12447	.13836	4.0182	37.305
#3	.68641	1.3896	.01619	.12417	.13843	4.0433	37.278

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S4 Acquired: 8/13/2025 12:12:59 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5645.0	100180.	11009.	4394.4	6724.3
Stddev	9.9	387.	45.	13.7	10.8
%RSD	.17453	.38664	.40904	.31203	.16008
#1	5637.2	100530.	11017.	4410.2	6712.5
#2	5656.1	100250.	10960.	4387.4	6733.6
#3	5641.7	99765.	11049.	4385.6	6726.7

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: S5 Acquired: 8/13/2025 12:17:10 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.52972**	**.63366**	**1.9948**	**.49555**	**.98878**	**1.6049**	**48.890**	**3.2753**
Stddev	.00057	.01358	.0073	.00077	.00085	.0029	.796	.0185
%RSD	.10790	2.1431	.36699	.15481	.08636	.18246	1.6274	.56399
#1	.52944	.63123	2.0027	.49576	.98862	1.6046	48.872	3.2867
#2	.53037	.64829	1.9937	.49619	.98802	1.6021	48.104	3.2540
#3	.52933	.62146	1.9881	.49470	.98970	1.6079	49.695	3.2852

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**15.084**	**2.9118**	**.39581**	**5.2722**	**1.6586**	**.03570**	**2.0968**	**.58192**
Stddev	.047	.0087	.00140	.0125	.0012	.00010	.0099	.00261
%RSD	.31162	.29870	.35251	.23744	.07043	.27258	.47176	.44855
#1	15.136	2.9107	.39742	5.2866	1.6599	.03562	2.0982	.58223
#2	15.073	2.9037	.39514	5.2641	1.6576	.03581	2.0863	.57917
#3	15.044	2.9210	.39488	5.2659	1.6584	.03567	2.1059	.58436

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.0400**	**.51494**	**.48016**	**.65670**	**12.064**	**.25628**	**6.8239**	**6.7674**
Stddev	.0075	.00113	.00190	.00204	.027	.00097	.0245	.0069
%RSD	.24774	.22012	.39602	.31018	.22014	.38010	.35844	.10149
#1	3.0487	.51523	.48100	.65617	12.080	.25638	6.8324	6.7742
#2	3.0363	.51591	.48149	.65498	12.079	.25719	6.7963	6.7676
#3	3.0351	.51370	.47798	.65895	12.034	.25525	6.8429	6.7605

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.4399**	**2.9783**	**.03518**	**.25994**	**.29835**	**8.7676**	**78.755**
Stddev	.0062	.0076	.00014	.00260	.00217	.0184	.586
%RSD	.43098	.25457	.39135	1.0012	.72611	.20932	.74368
#1	1.4454	2.9785	.03504	.26244	.29893	8.7630	78.239
#2	1.4412	2.9706	.03531	.26012	.30016	8.7520	78.635
#3	1.4332	2.9857	.03519	.25724	.29595	8.7879	79.392

Sample Name: S5 Acquired: 8/13/2025 12:17:10 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5431.8	95688.	10758.	4147.7	6335.1
Stddev	6.9	332.	45.	6.1	13.8
%RSD	.12679	.34662	.42271	.14602	.21731
#1	5424.4	95521.	10733.	4142.1	6319.3
#2	5438.0	95473.	10810.	4146.9	6341.8
#3	5433.1	96070.	10730.	4154.1	6344.2

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICV01 Acquired: 8/13/2025 12:21:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.872529**	**3.747317**	**3.774946**	**3.879669**	**3.998496**	**7.680930**
Stddev	.003902	.037013	.002479	.002217	.003616	.014768
%RSD	.1007619	.9877262	.0656677	.0571342	.0904217	.1922650
#1	3.869111	3.761842	3.775273	3.880245	3.994378	7.664547
#2	3.876781	3.705245	3.772320	3.877221	3.999959	7.685023
#3	3.871695	3.774865	3.777245	3.881540	4.001150	7.693219

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.787087**	**.1894277**	**1.917346**	**19.17133**	**.7879995**	**1.951427**
Stddev	.066900	.0012904	.002480	.04239	.0021177	.002684
%RSD	.8591090	.6812079	.1293524	.2210986	.2687385	.1375592
#1	7.825703	.1883907	1.918168	19.13004	.7870095	1.952023
#2	7.825719	.1908728	1.914559	19.16923	.7865583	1.948495
#3	7.709838	.1890195	1.919310	19.21473	.7904309	1.953764

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9971016**	**3.950722**	**1.921770**	**19.09299**	**1.945451**	**1.032062**
Stddev	.0002298	.013018	.007647	.07624	.001243	.001841
%RSD	.0230492	.3295101	.3979201	.3992970	.0638887	.1783370
#1	.9968415	3.961226	1.913017	19.02672	1.946515	1.029977
#2	.9971860	3.936157	1.925135	19.07593	1.944085	1.033462
#3	.9972774	3.954781	1.927157	19.17631	1.945754	1.032747

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.09833**	**1.937518**	**1.949359**	**19.37323**	**3.744833**	**3.976290**
Stddev	.11337	.000955	.006075	.14820	.031631	.002192
%RSD	.5936094	.0492879	.3116617	.7649614	.8446475	.0551334
#1	19.13358	1.938246	1.942348	19.41682	3.721577	3.978804
#2	18.97152	1.936437	1.952632	19.20813	3.780851	3.974774
#3	19.18989	1.937872	1.953095	19.49475	3.732071	3.975293

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICV01 Acquired: 8/13/2025 12:21:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.853517	3.852559	3.736703	F .0077036	F .0271601	F -.002909
Stddev	.004442	.006257	.022650	.0014054	.0016283	.000859
%RSD	.1152699	.1624205	.6061370	18.24403	5.995220	29.52355
#1	3.852701	3.856439	3.762802	.0088118	.0256722	-.003731
#2	3.849539	3.845341	3.722186	.0061228	.0269086	-.002979
#3	3.858310	3.855899	3.725122	.0081763	.0288995	-.002017

Elem	Sr4077
Units	ppm
Avg	F -.003642
Stddev	.000035
%RSD	.9554361
#1	-.003668
#2	-.003602
#3	-.003654

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5737.902	102195.8	11664.72	4400.772	6955.925
Stddev	8.744	439.9	73.91	18.175	12.061
%RSD	.1523977	.4304161	.6336377	.4129998	.1733879
#1	5729.834	102378.4	11747.31	4404.439	6942.067
#2	5736.678	102514.9	11604.79	4416.834	6964.047
#3	5747.194	101694.0	11642.06	4381.043	6961.661

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: LLICV01 Acquired: 8/13/2025 12:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0212869**	**.0429580**	**.0111791**	**.0192117**	**.0500587**	**.0951201**	**.0946827**
Stddev	.0006105	.0016753	.0008049	.0015265	.0008149	.0080282	.0009918
%RSD	2.867938	3.899746	7.200015	7.945656	1.627822	8.440043	1.047528
#1	.0218636	.0410657	.0117637	.0203123	.0498314	.0892454	.0958260
#2	.0206474	.0435562	.0115126	.0174690	.0493816	.0918472	.0940538
#3	.0213498	.0442520	.0102611	.0198537	.0509631	.1042677	.0941682

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0060843**	**.0055941**	**2.040672**	**.0104963**	**.0294114**	**.0213323**	**.1068463**
Stddev	.0000529	.0000093	.006249	.0000555	.0000699	.0001400	.0039101
%RSD	.8691142	.1670398	.3062115	.5291471	.2377351	.6562415	3.659527
#1	.0060266	.0055895	2.035366	.0104408	.0294738	.0214512	.1066157
#2	.0060959	.0056049	2.039089	.0104963	.0294246	.0213678	.1108666
#3	.0061304	.0055880	2.047559	.0105519	.0293359	.0211780	.1030567

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0210293**	**2.116955**	**.0395706**	**.0101235**	**1.848759**	**.0389247**	**.0424371**
Stddev	.0002964	.023230	.0001587	.0003544	.012154	.0002070	.0005068
%RSD	1.409592	1.097332	.4009776	3.500519	.6574014	.5317571	1.194122
#1	.0208042	2.109694	.0397342	.0100837	1.852025	.0391251	.0425327
#2	.0213652	2.098222	.0394174	.0104961	1.835306	.0387117	.0418893
#3	.0209187	2.142948	.0395601	.0097907	1.858946	.0389372	.0428892

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.992274**	**.1113647**	**.2068390**	**.0383012**	**.0383031**	**.3725319**	**.0208482**
Stddev	.025784	.0007750	.0005443	.0000473	.0010136	.0088729	.0009790
%RSD	1.294212	.6959354	.2631299	.1234586	2.646283	2.381779	4.695647
#1	2.013299	.1115285	.2071337	.0383426	.0386341	.3822381	.0198549
#2	2.000017	.1120447	.2062110	.0383112	.0391099	.3648378	.0208777
#3	1.963505	.1105208	.2071724	.0382497	.0371654	.3705199	.0218121

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: LLICV01 Acquired: 8/13/2025 12:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0182723	.0169958	.0196862
Stddev	.0009029	.0002173	.0000835
%RSD	4.941298	1.278290	.4239678
#1	.0173798	.0167453	.0197119
#2	.0182516	.0171085	.0195930
#3	.0191853	.0171335	.0197539

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5807.924	104228.6	11501.84	4465.294	7444.260
Stddev	15.704	182.0	26.10	16.352	12.443
%RSD	.2703829	.1746627	.2269126	.3662041	.1671490
#1	5790.519	104032.4	11473.85	4450.376	7441.534
#2	5812.221	104392.1	11525.51	4482.777	7433.405
#3	5821.031	104261.4	11506.15	4462.729	7457.840

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICB01 Acquired: 8/13/2025 12:33:04 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0020461**	**.0006381**	**-.000063**	**-.000772**	**.0010903**	**-.002729**	**-.004066**
Stddev	.0012696	.0009465	.000677	.001823	.0010147	.003038	.000165
%RSD	62.04908	148.3491	1080.785	236.2314	93.05941	111.3193	4.051191
#1	.0031922	.0009866	-.000840	.000282	.0013354	-.002780	-.004239
#2	.0022647	.0013609	.000260	-.002877	.0019600	.000334	-.003912
#3	.0006814	-.000433	.000393	.000280	-.000024	-.005740	-.004046

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000014**	**.0000246**	**.0017245**	**.0003299**	**.0001895**	**.0003046**	**.0079953**
Stddev	.000020	.0000281	.0036808	.0000707	.0001241	.0004185	.0035244
%RSD	141.3374	114.2945	213.4394	21.41632	65.47087	137.4151	44.08091
#1	-.000033	-.000007	-.002495	.0004113	.0003019	.0007554	.0052188
#2	-.000017	.000035	.004273	.0002839	.0002102	.0002299	.0119603
#3	.000007	.000046	.003396	.0002946	.0000564	-.000072	.0068069

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001986**	**.0058094**	**.0007518**	**.0000605**	**-.049108**	**.0005254**	**.0024536**
Stddev	.0002193	.0140103	.0003315	.0003838	.004769	.0014947	.0002481
%RSD	110.4549	241.1671	44.09304	634.1919	9.710924	284.4610	10.11297
#1	.0004387	-.005213	.0004171	-.000383	-.054107	-.000838	.0021671
#2	.0000090	.021576	.0010800	.000282	-.044609	.002123	.0025914
#3	.0001479	.001065	.0007581	.000282	-.048608	.000291	.0026021

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0223962**	**.0069915**	**.0001878**	**.0007363**	**.0006101**	**-.005488**	**.0031793**
Stddev	.0195386	.0003020	.0002695	.0004124	.0014125	.002475	.0022545
%RSD	87.24066	4.319832	143.5270	56.01670	231.5253	45.09840	70.91221
#1	.0139851	.0073368	-.000110	.0002985	.0011362	-.007188	.0057763
#2	.0447318	.0067764	.000257	.0011175	.0016839	-.006628	.0020369
#3	.0084718	.0068614	.000416	.0007929	-.000990	-.002649	.0017246

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICB01 Acquired: 8/13/2025 12:33:04 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0009618	-.002107	-.000051
Stddev	.0030958	.000913	.000032
%RSD	321.8765	43.32888	63.30726
#1	.0035907	-.001119	-.000018
#2	-.002450	-.002919	-.000082
#3	.001745	-.002284	-.000053

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5920.177	105800.6	11530.31	4505.262	7705.778
Stddev	8.657	219.9	52.01	12.467	10.457
%RSD	.1462266	.2078285	.4510980	.2767269	.1357041
#1	5911.799	105655.1	11495.27	4490.964	7698.761
#2	5919.644	106053.6	11590.08	4513.864	7700.776
#3	5929.088	105693.2	11505.60	4510.958	7717.797

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CRI01 Acquired: 8/13/2025 12:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0205849**	**.0406733**	**.0100082**	**.0210974**	**.0501601**	**.0928898**	**.0938578**
Stddev	.0025719	.0016188	.0006348	.0034708	.0007561	.0136325	.0004453
%RSD	12.49421	3.980102	6.342546	16.45142	1.507352	14.67594	.4744453
#1	.0201310	.0415070	.0106766	.0173189	.0497882	.0820636	.0933436
#2	.0233536	.0417054	.0099343	.0241437	.0510301	.0884066	.0941134
#3	.0182702	.0388075	.0094135	.0218297	.0496620	.1081993	.0941165

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0060104**	**.0054936**	**2.009743**	**.0099982**	**.0290122**	**.0208848**	**.0959440**
Stddev	.0000683	.0000424	.002405	.0003607	.0001192	.0002381	.0069841
%RSD	1.135550	.7720568	.1196751	3.607919	.4106902	1.139924	7.279389
#1	.0060431	.0055425	2.007013	.0104143	.0290463	.0207539	.0954112
#2	.0060560	.0054701	2.011551	.0098071	.0291106	.0211595	.0892415
#3	.0059319	.0054681	2.010665	.0097732	.0288798	.0207408	.1031793

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0208250**	**2.117900**	**.0386926**	**.0103327**	**1.812239**	**.0422618**	**.0410103**
Stddev	.0000943	.029259	.0001655	.0003137	.002549	.0013977	.0006691
%RSD	.4529240	1.381504	.4276398	3.036040	.1406721	3.307217	1.631641
#1	.0209006	2.088228	.0386578	.0100788	1.809427	.0434929	.0417796
#2	.0208551	2.146728	.0388727	.0102360	1.812888	.0425501	.0406878
#3	.0207193	2.118745	.0385473	.0106834	1.814400	.0407424	.0405634

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.934812**	**.1007527**	**.2026697**	**.0373197**	**.0381128**	**.3571710**	**.0209912**
Stddev	.054165	.0010837	.0006563	.0008661	.0007433	.0073746	.0023370
%RSD	2.799475	1.075571	.3238405	2.320852	1.950235	2.064722	11.13306
#1	1.991669	.1000124	.2033662	.0381476	.0385008	.3655936	.0212222
#2	1.883817	.1019965	.2025803	.0373917	.0385818	.3540456	.0185474
#3	1.928950	.1002492	.2020627	.0364199	.0372558	.3518738	.0232041

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CRI01 Acquired: 8/13/2025 12:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0155669	.0169876	.0194383
Stddev	.0011020	.0005103	.0000266
%RSD	7.079181	3.004134	.1366103
#1	.0166446	.0175666	.0194401
#2	.0156141	.0167930	.0194109
#3	.0144421	.0166033	.0194639

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5878.336	104791.1	11474.11	4497.042	7517.225
Stddev	1.598	168.5	52.55	39.435	13.274
%RSD	.0271765	.1608003	.4579527	.8769002	.1765840
#1	5876.496	104708.3	11520.15	4454.636	7504.717
#2	5879.138	104985.0	11416.86	4532.611	7515.805
#3	5879.373	104679.9	11485.30	4503.879	7531.152

Sample Name: ICSA01 Acquired: 8/13/2025 12:41:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0134755**	**.0029051**	**-.006379**	**.0029114**	**-.004818**	**240.2699**
Stddev	.0015729	.0020732	.001490	.0036164	.003585	.5040
%RSD	11.67198	71.36207	23.36131	124.2155	74.40217	.2097530
#1	.0138604	.0051580	-.004993	.0061073	-.003015	240.6353
#2	.0117460	.0010778	-.006189	.0036411	-.008947	240.4794
#3	.0148203	.0024795	-.007955	-.001014	-.002493	239.6949

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000470**	**.0013114**	**.0023261**	**229.2883**	**.0581592**	**.0018541**
Stddev	.000774	.0000873	.0001227	.4618	.0006300	.0001184
%RSD	164.6725	6.658843	5.275484	.2013844	1.083154	6.383889
#1	-.001110	.0013001	.0024222	229.7292	.0588785	.0019160
#2	-.000690	.0012303	.0021878	229.3273	.0578935	.0017176
#3	.000390	.0014038	.0023681	228.8082	.0577057	.0019286

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0048240**	**99.17169**	**.0081692**	**243.0898**	**.0052171**	**.0023332**
Stddev	.0002039	.45403	.0001293	.4697	.0001901	.0004527
%RSD	4.227024	.4578214	1.583067	.1932077	3.643411	19.40112
#1	.0049235	99.35140	.0082993	243.6319	.0051780	.0019210
#2	.0045895	99.50836	.0080407	242.8316	.0050496	.0022609
#3	.0049592	98.65531	.0081676	242.8058	.0054237	.0028176

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0030553**	**.0036474**	**.0021994**	**-.004103**	**.0465611**	**.0004396**
Stddev	.0145555	.0010886	.0002810	.002135	.0024231	.0005469
%RSD	476.4051	29.84718	12.77678	52.04560	5.204049	124.4199
#1	.0192408	.0049021	.0024178	-.001849	.0450116	.0010710
#2	-.008960	.0030859	.0018824	-.004363	.0493534	.0001180
#3	-.001115	.0029541	.0022981	-.006096	.0453184	.0001296

Sample Name: ICSA01 Acquired: 8/13/2025 12:41:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003408	-.005384	.0191567	.0080433	-.007991	F -.029667
Stddev	.000954	.000165	.0046077	.0006923	.006152	.002334
%RSD	27.99310	3.060358	24.05245	8.607079	76.97972	7.868185
#1	-.004471	-.005566	.0231435	.0087184	-.006961	-.031462
#2	-.003127	-.005341	.0141122	.0080764	-.014593	-.030511
#3	-.002626	-.005244	.0202145	.0073350	-.002420	-.027028

Elem	Sr4077
Units	ppm
Avg	-.000415
Stddev	.000141
%RSD	33.96231
#1	-.000341
#2	-.000577
#3	-.000326

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5204.532	91132.91	11089.70	3980.441	5989.069
Stddev	4.463	395.10	51.37	18.704	3.737
%RSD	.0857542	.4335453	.4631804	.4698862	.0624027
#1	5200.730	90746.55	11031.60	3965.808	5986.924
#2	5203.419	91115.98	11108.42	3974.002	5993.384
#3	5209.446	91536.21	11129.08	4001.514	5986.898

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICSAB01 Acquired: 8/13/2025 12:45:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1106466**	**.1128171**	**.0422017**	**.0505495**	**.5881123**	**246.7037**
Stddev	.0050037	.0025893	.0034502	.0021315	.0030349	.6852
%RSD	4.522257	2.295135	8.175500	4.216752	.5160492	.2777456
#1	.1124155	.1106635	.0387382	.0493812	.5915942	247.4761
#2	.1049987	.1120977	.0456384	.0530098	.5867150	246.1690
#3	.1145255	.1156900	.0422284	.0492575	.5860276	246.4660

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4924139**	**.4866317**	**.9942478**	**235.8991**	**.5580352**	**.4980184**
Stddev	.0033397	.0019292	.0017136	.8031	.0014520	.0009333
%RSD	.6782315	.3964369	.1723476	.3404239	.2601970	.1873945
#1	.4956595	.4888437	.9932979	236.6501	.5584377	.4975656
#2	.4889874	.4852974	.9932195	235.0525	.5564244	.4973979
#3	.4925949	.4857540	.9962259	235.9946	.5592434	.4990917

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4858476**	**101.6958**	**.4933530**	**249.5102**	**.9920598**	**.2159779**
Stddev	.0008161	.4135	.0021714	.7409	.0003657	.0004686
%RSD	.1679772	.4066189	.4401321	.2969430	.0368587	.2169859
#1	.4867018	101.6401	.4950965	250.0856	.9922602	.2158847
#2	.4850758	101.3129	.4909208	248.6742	.9916377	.2155629
#3	.4857651	102.1343	.4940419	249.7708	.9922814	.2164862

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003581**	**.4786019**	**1.036676**	**.0429249**	**.9922032**	**1.025640**
Stddev	.008404	.0016721	.002684	.0122727	.0026526	.001398
%RSD	234.7125	.3493630	.2588793	28.59119	.2673424	.1363193
#1	-.000562	.4803976	1.039605	.0438434	.9934008	1.027173
#2	-.013077	.4783184	1.036091	.0302187	.9891630	1.024434
#3	.002897	.4770897	1.034334	.0547126	.9940459	1.025315

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICSAB01 Acquired: 8/13/2025 12:45:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.014192	.9962127	1.025751	F .0085425	F -.003250	F -.032460
Stddev	.002322	.0030495	.003653	.0045384	.001359	.000917
%RSD	.2289273	.3061054	.3560896	53.12684	41.81546	2.824814
#1	1.011822	.9987402	1.028019	.0051222	-.002467	-.032318
#2	1.014294	.9928257	1.021537	.0068141	-.002463	-.031622
#3	1.016462	.9970721	1.027696	.0136911	-.004819	-.033439

Elem	Sr4077
Units	ppm
Avg	F .0006371
Stddev	.0005195
%RSD	81.53226
#1	.0011466
#2	.0006567
#3	.0001082

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5276.807	92053.53	11147.28	4022.523	6063.212
Stddev	4.006	308.37	48.84	17.541	2.865
%RSD	.0759231	.3349901	.4381269	.4360805	.0472593
#1	5272.726	91974.87	11094.33	4006.839	6063.869
#2	5276.961	92393.61	11190.56	4041.465	6060.075
#3	5280.734	91792.10	11156.96	4019.266	6065.691

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICSADLX20 Acquired: 8/13/2025 12:49:58 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0016662**	**.0004461**	**-.000930**	**-.000543**	**-.002258**	**11.81398**	**-.003443**
Stddev	.0021118	.0015700	.000423	.001440	.000380	.04807	.000460
%RSD	126.7443	351.9226	45.49889	265.3630	16.81115	.4068997	13.36699
#1	.0016100	-.000817	-.000838	.000136	-.002189	11.85082	-.003069
#2	-.000417	-.000048	-.001391	.000433	-.001918	11.83152	-.003957
#3	.003806	.002204	-.000560	-.002196	-.002668	11.75960	-.003303

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001197**	**.0000111**	**11.78764**	**.0027379**	**-.000011**	**.0003281**	**4.713823**
Stddev	.0000386	.0000244	.00732	.0001998	.000070	.0002010	.011185
%RSD	32.21384	220.3649	.0620667	7.297680	638.5062	61.27001	.2372759
#1	.0001472	.0000170	11.77984	.0029549	.000069	.0002794	4.703251
#2	.0001362	-.000016	11.78872	.0026973	-.000042	.0001559	4.712684
#3	.0000756	.000032	11.79435	.0025615	-.000060	.0005490	4.725533

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001094**	**12.22265**	**.0002019**	**-.000183**	**-.067916**	**.0012792**	**-.000401**
Stddev	.0004360	.04381	.0001770	.000358	.025394	.0010677	.000237
%RSD	398.5806	.3584475	87.67820	195.9442	37.39100	83.46339	59.16842
#1	-.000390	12.24687	.0000780	.000229	-.042532	.0003052	-.000454
#2	.000304	12.17208	.0001230	-.000423	-.093321	.0024207	-.000606
#3	.000414	12.24901	.0004046	-.000355	-.067894	.0011116	-.000141

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.039682**	**.0002339**	**-.000140**	**-.001188**	**-.000089**	**.0019297**	**.0018500**
Stddev	.005958	.0006861	.000045	.000313	.001067	.0032203	.0011160
%RSD	15.01318	293.3161	32.09339	26.35886	1197.441	166.8847	60.32268
#1	-.046553	.0008541	-.000191	-.001483	-.001279	.0055024	.0026517
#2	-.036549	-.000503	-.000110	-.000859	.000231	-.000749	.0023227
#3	-.035946	.000351	-.000117	-.001223	.000781	.001036	.0005755

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICSADLX20 Acquired: 8/13/2025 12:49:58 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002158	-.006689	-.000026
Stddev	.002637	.001510	.000012
%RSD	122.1855	22.57041	45.33292
#1	.000680	-.005457	-.000033
#2	-.004532	-.008373	-.000031
#3	-.002623	-.006236	-.000012

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5846.827	102377.5	11319.59	4431.459	7393.786
Stddev	14.168	530.5	58.08	28.994	6.043
%RSD	.2423127	.5181323	.5131334	.6542756	.0817341
#1	5832.313	101789.3	11252.53	4413.340	7393.536
#2	5860.621	102819.6	11353.47	4464.899	7399.950
#3	5847.547	102523.7	11352.79	4416.138	7387.871

Sample Name: ICSABDLX20 Acquired: 8/13/2025 12:54:14 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051708	.0080030	.0014689	.0049421	.0284657	12.31042	.0200983
Stddev	.0014910	.0012738	.0004836	.0037558	.0005819	.02913	.0013867
%RSD	28.83515	15.91616	32.92407	75.99624	2.044308	.2366435	6.899455
#1	.0039537	.0066374	.0009183	.0081381	.0280884	12.28041	.0185246
#2	.0068339	.0091589	.0018251	.0008054	.0291359	12.31227	.0211409
#3	.0047248	.0082129	.0016633	.0058827	.0281729	12.33859	.0206294

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0253331	.0471222	12.20490	.0284416	.0237561	.0253892	4.821184
Stddev	.0003163	.0000573	.03281	.0003447	.0000645	.0000652	.016281
%RSD	1.248658	.1215111	.2687919	1.211763	.2715122	.2569712	.3376936
#1	.0249733	.0471883	12.17052	.0288051	.0238197	.0254628	4.839821
#2	.0254583	.0470891	12.20832	.0281195	.0237577	.0253384	4.809724
#3	.0255676	.0470890	12.23587	.0284004	.0236907	.0253666	4.814009

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0251611	12.66865	.0478411	.0100466	-.082355	.0245321	.0501608
Stddev	.0005361	.04374	.0001212	.0004238	.003989	.0017694	.0001986
%RSD	2.130691	.3452777	.2534120	4.218723	4.843279	7.212456	.3959678
#1	.0257800	12.62920	.0479292	.0099463	-.082937	.0260297	.0503138
#2	.0248380	12.66106	.0477029	.0096818	-.078108	.0249868	.0499363
#3	.0248654	12.71569	.0478913	.0105115	-.086021	.0225797	.0502324

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.027170	.0494710	.0516894	.0481216	.0498170	.0454517	.0023753
Stddev	.023706	.0003120	.0001934	.0008298	.0014647	.0036934	.0026308
%RSD	87.25090	.6305877	.3742337	1.724347	2.940181	8.125891	110.7588
#1	-.042417	.0491541	.0519127	.0490324	.0515066	.0421454	.0036628
#2	.000142	.0494810	.0515731	.0474087	.0489078	.0494377	.0041143
#3	-.039233	.0497778	.0515823	.0479235	.0490365	.0447721	-.000651

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: ICSABDLX20 Acquired: 8/13/2025 12:54:14 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.003774**	**-.007824**	**-.000041**
Stddev	.000901	.001075	.000051
%RSD	23.88389	13.74498	124.4206
#1	-.002900	-.008639	-.000082
#2	-.004701	-.008228	.000016
#3	-.003722	-.006605	-.000057

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5788.032**	**102529.6**	**11275.12**	**4431.801**	**7304.387**
Stddev	6.942	244.8	64.99	17.825	10.346
%RSD	.1199305	.2387992	.5763729	.4022091	.1416355
#1	5788.647	102437.3	11342.62	4415.268	7297.166
#2	5780.803	102807.2	11269.78	4450.685	7299.757
#3	5794.645	102344.4	11212.97	4429.449	7316.239

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV01 Acquired: 8/13/2025 12:58:27 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.904034**	**4.815737**	**4.855153**	**4.926587**	**4.929568**	**9.630559**	**9.639505**
Stddev	.003827	.093365	.003356	.000953	.020754	.015530	.074813
%RSD	.0780312	1.938746	.0691173	.0193419	.4210013	.1612545	.7761128
#1	4.903444	4.836858	4.852830	4.925749	4.906877	9.642837	9.631930
#2	4.908121	4.896731	4.853628	4.926387	4.934237	9.613101	9.568767
#3	4.900537	4.713620	4.859000	4.927623	4.947589	9.635739	9.717818

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2396649**	**2.431220**	**24.08287**	**1.004169**	**2.424524**	**1.228070**	**5.033339**
Stddev	.0007196	.002959	.09699	.001192	.004031	.002902	.025154
%RSD	.3002633	.1217028	.4027220	.1187049	.1662660	.2363132	.4997529
#1	.2396428	2.429014	24.14632	1.005306	2.421873	1.227030	5.004453
#2	.2389566	2.430064	23.97123	1.004273	2.422536	1.225830	5.045148
#3	.2403954	2.434583	24.13107	1.002928	2.429163	1.231348	5.050415

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.391793**	**24.03336**	**2.428809**	**1.232624**	**24.64873**	**2.424834**	**2.485846**
Stddev	.014767	.10979	.004260	.001100	.04149	.010607	.001488
%RSD	.6173828	.4568282	.1753993	.0892242	.1683048	.4374388	.0598746
#1	2.385681	24.03945	2.425560	1.232369	24.60117	2.423347	2.487404
#2	2.381063	23.92066	2.427235	1.233829	24.67747	2.415049	2.484439
#3	2.408634	24.13998	2.433632	1.231674	24.66755	2.436106	2.485694

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.03939**	**4.708310**	**4.951383**	**4.865971**	**4.797024**	**5.028014**	**4.746392**
Stddev	.11178	.012115	.006688	.003206	.016798	.019018	.004821
%RSD	.4464116	.2573088	.1350742	.0658779	.3501760	.3782440	.1015688
#1	24.92825	4.705204	4.947132	4.863532	4.785107	5.007270	4.750071
#2	25.15180	4.698050	4.947924	4.864781	4.789728	5.032148	4.748170
#3	25.03813	4.721676	4.959092	4.869602	4.816236	5.044626	4.740934

Sample Name: CCV01 Acquired: 8/13/2025 12:58:27 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.763198**	**4.755884**	**4.799049**
Stddev	.007889	.015111	.023342
%RSD	.1656218	.3177372	.4863836
#1	4.763274	4.747278	4.817676
#2	4.771049	4.747042	4.772865
#3	4.755272	4.773333	4.806607

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5716.124**	**98246.45**	**11482.45**	**4313.172**	**6870.297**
Stddev	19.794	201.04	26.66	7.498	22.475
%RSD	.3462904	.2046323	.2322168	.1738287	.3271372
#1	5722.865	98226.65	11474.21	4304.542	6876.671
#2	5731.667	98056.03	11512.26	4316.889	6888.896
#3	5693.839	98456.65	11460.87	4318.085	6845.322

Sample Name: CCB01 Acquired: 8/13/2025 13:03:05 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000665**	**.0002982**	**-.000160**	**.0019303**	**-.000085**	**-.014664**	**-.003595**
Stddev	.000786	.0006068	.000133	.0005636	.001328	.005725	.001019
%RSD	118.1845	203.5272	82.78132	29.19613	1554.203	39.03765	28.33739
#1	-.001490	.0005790	-.000264	.0025654	-.001515	-.020811	-.004488
#2	.000074	-.000398	-.000011	.0014897	.000151	-.013698	-.002485
#3	-.000579	.000714	-.000206	.0017359	.001108	-.009484	-.003813

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000038**	**-.000159**	**-.023724**	**.0014164**	**-.000206**	**.0009549**	**-.007527**
Stddev	.000034	.000037	.000970	.0005836	.000143	.0003958	.000646
%RSD	88.68050	22.99370	4.087030	41.20752	69.44955	41.45068	8.585247
#1	-.000047	-.000191	-.022623	.0020379	-.000325	.0014098	-.006947
#2	-.000001	-.000119	-.024447	.0008800	-.000047	.0007663	-.008224
#3	-.000068	-.000168	-.024103	.0013311	-.000245	.0006887	-.007412

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000097**	**-.022407**	**-.000059**	**.0003136**	**-.097923**	**-.001545**	**.0010055**
Stddev	.000325	.006411	.000094	.0005164	.006892	.000712	.0001678
%RSD	333.1988	28.61382	159.2137	164.6458	7.038613	46.12859	16.68869
#1	-.000233	-.020516	-.000124	.0001423	-.096068	-.001737	.0010634
#2	-.000332	-.017153	.000049	-.000095	-.105553	-.002141	.0008164
#3	.000273	-.029551	-.000102	.000894	-.092147	-.000755	.0011367

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.014650**	**.0059156**	**-.000159**	**.0000338**	**-.001152**	**.0038132**	**.0010622**
Stddev	.016514	.0003154	.000202	.0004324	.000530	.0062807	.0014760
%RSD	112.7205	5.331710	127.4271	1278.706	45.99109	164.7087	138.9568
#1	.002381	.0060799	-.000132	.0002199	-.001375	-.003419	.0027407
#2	-.030592	.0061148	-.000373	-.000460	-.000547	.006957	.0004786
#3	-.015740	.0055519	.000029	.000342	-.001533	.007902	-.000033

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB01 Acquired: 8/13/2025 13:03:05 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.001350**	**-.004000**	**-.000299**
Stddev	.001798	.001573	.000052
%RSD	133.2183	39.32689	17.41513
#1	-.001136	-.003459	-.000260
#2	.000332	-.002769	-.000279
#3	-.003245	-.005772	-.000358

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5851.750**	**104344.0**	**11399.46**	**4448.811**	**7637.193**
Stddev	5.292	478.6	120.53	11.758	4.517
%RSD	.0904386	.4586607	1.057325	.2642944	.0591440
#1	5853.156	104753.0	11439.63	4458.315	7638.654
#2	5856.197	103817.6	11263.97	4452.457	7640.799
#3	5845.897	104461.4	11494.76	4435.662	7632.127

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01 Acquired: 8/13/2025 13:07:24 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1134400**	**.0091516**	**1.533352**	**.0108986**	**.1062454**	**166.4215**	**2.636055**
Stddev	.0015758	.0040709	.001904	.0014848	.0027283	1.3196	.011931
%RSD	1.389133	44.48259	.1241626	13.62367	2.567924	.7929354	.4526193
#1	.1134908	.0050198	1.532807	.0121019	.1073272	166.8840	2.626658
#2	.1118394	.0092765	1.531779	.0113547	.1082669	164.9329	2.632029
#3	.1149898	.0131587	1.535469	.0092393	.1031421	167.4476	2.649479

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0202952**	**.1062010**	**186.2417**	**1.308005**	**.8657477**	**1.634701**	**256.9624**
Stddev	.0001481	.0004095	2.7180	.004477	.0004183	.003580	4.5732
%RSD	.7299014	.3855493	1.459390	.3423139	.0483169	.2189785	1.779725
#1	.0204270	.1057696	187.4768	1.309300	.8659356	1.631343	260.6307
#2	.0203238	.1065842	188.1228	1.303023	.8660392	1.638467	251.8385
#3	.0201349	.1062493	183.1255	1.311693	.8652684	1.634294	258.4179

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.443344**	**25.86734**	**3.062504**	**.0338287**	**18.71360**	**.6835053**	**5.160948**
Stddev	.009517	.03745	.001462	.0016321	.22414	.0004427	.011324
%RSD	.2141747	.1447709	.0477248	4.824718	1.197735	.0647699	.2194135
#1	4.437145	25.90887	3.063683	.0353896	18.54055	.6837543	5.173606
#2	4.438587	25.85698	3.060869	.0321336	18.63345	.6829942	5.157459
#3	4.454301	25.83616	3.062961	.0339629	18.96680	.6837675	5.151780

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.638579**	**.9711255**	**.1761253**	**.1868855**	**14.96628**	**4.791280**	**3.820196**
Stddev	.038190	.0151179	.0001415	.0008033	.02037	.037473	.012040
%RSD	.5752779	1.556740	.0803617	.4298641	.1361015	.7821169	.3151649
#1	6.607898	.9861273	.1759761	.1872383	14.96144	4.786174	3.810288
#2	6.626488	.9558942	.1761422	.1859661	14.94876	4.756621	3.816704
#3	6.681351	.9713551	.1762576	.1874521	14.98863	4.831044	3.833596

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01 Acquired: 8/13/2025 13:07:24 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.773174	.3623238	1.257674
Stddev	.036608	.0018432	.014664
%RSD	.4709588	.5087047	1.165947
#1	7.764086	.3632790	1.273092
#2	7.741966	.3601991	1.256028
#3	7.813471	.3634933	1.243903

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10847.07	190843.4	24787.89	8059.269	5851.491
Stddev	23.51	876.4	139.91	14.056	6.464
%RSD	.2167710	.4592384	.5644095	.1744020	.1104658
#1	10874.18	191183.3	24628.60	8043.386	5858.912
#2	10832.27	191499.0	24844.22	8064.318	5847.087
#3	10834.77	189847.9	24890.85	8070.102	5848.474

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01DUP Acquired: 8/13/2025 13:12:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1158155**	**.0148352**	**1.532858**	**.0134744**	**.1128472**	**165.6223**	**2.601885**
Stddev	.0015015	.0029402	.002353	.0008166	.0007135	2.9241	.010841
%RSD	1.296437	19.81900	.1535243	6.060074	.6322709	1.765542	.4166676
#1	.1172474	.0115629	1.530339	.0142994	.1134845	162.3270	2.595097
#2	.1142530	.0172546	1.535001	.0134573	.1120763	166.6324	2.596170
#3	.1159463	.0156882	1.533233	.0126666	.1129807	167.9075	2.614388

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0203181**	**.1055997**	**186.2800**	**1.293369**	**.8525037**	**1.653211**	**255.0616**
Stddev	.0001062	.0001265	1.5873	.005095	.0013593	.002973	2.7857
%RSD	.5225224	.1198118	.8521250	.3939655	.1594527	.1798595	1.092172
#1	.0202344	.1055010	185.3925	1.288126	.8524774	1.650434	258.2317
#2	.0202824	.1057423	188.1126	1.293677	.8538760	1.656348	253.0042
#3	.0204375	.1055557	185.3349	1.298303	.8511577	1.652852	253.9490

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.454185**	**25.99138**	**3.023303**	**.0339602**	**18.67039**	**.6861745**	**5.142791**
Stddev	.020187	.05425	.003063	.0012542	.03486	.0049921	.006382
%RSD	.4532054	.2087361	.1013161	3.693023	.1867154	.7275241	.1240934
#1	4.439820	25.92941	3.019793	.0353625	18.63341	.6808485	5.135883
#2	4.445471	26.01442	3.025437	.0329458	18.70265	.6869278	5.144023
#3	4.477265	26.03032	3.024679	.0335723	18.67511	.6907471	5.148467

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.603250**	**.9747618**	**.1783009**	**.1853271**	**14.84422**	**3.869544**	**3.781350**
Stddev	.030996	.0059859	.0001001	.0016453	.05866	.022660	.011464
%RSD	.4694029	.6140847	.0561218	.8877616	.3951431	.5856026	.3031768
#1	6.637791	.9810424	.1784010	.1870788	14.81215	3.844501	3.782269
#2	6.594100	.9691223	.1783006	.1850881	14.80859	3.888632	3.769455
#3	6.577859	.9741207	.1782009	.1838145	14.91192	3.875500	3.792328

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01DUP Acquired: 8/13/2025 13:12:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.734245	.3603983	1.261066
Stddev	.040429	.0010436	.015900
%RSD	.5227262	.2895702	1.260865
#1	7.738389	.3607265	1.251076
#2	7.691904	.3592301	1.279401
#3	7.772442	.3612384	1.252720

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10603.16	189222.5	24470.91	8067.296	5787.316
Stddev	22.72	175.1	131.64	26.251	12.262
%RSD	.2143126	.0925284	.5379531	.3254063	.2118816
#1	10617.09	189391.1	24546.45	8045.391	5799.051
#2	10576.94	189041.6	24547.38	8096.394	5774.587
#3	10615.46	189234.8	24318.91	8060.102	5788.311

Sample Name: Q2828-01LX5 Acquired: 8/13/2025 13:16:46 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0374715**	**.0054799**	**.3129119**	**.0034262**	**.0352743**	**56.94094**	**.8923724**
Stddev	.0030387	.0019713	.0007200	.0013189	.0009382	.14880	.0014934
%RSD	8.109254	35.97277	.2301101	38.49380	2.659784	.2613265	.1673533
#1	.0384185	.0032081	.3121144	.0021354	.0354689	56.76937	.8911017
#2	.0399239	.0064933	.3135144	.0047714	.0360999	57.03476	.8940173
#3	.0340721	.0067382	.3131068	.0033718	.0342540	57.01870	.8919981

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0072923**	**.0167536**	**65.96660**	**.4662722**	**.1679308**	**.5963318**	**87.31986**
Stddev	.0000975	.0000931	.09158	.0050144	.0005588	.0009259	.27581
%RSD	1.337256	.5558538	.1388234	1.075420	.3327414	.1552667	.3158593
#1	.0072447	.0166691	65.86390	.4715687	.1673239	.5952874	87.59274
#2	.0074045	.0167382	66.03976	.4656498	.1680448	.5966561	87.32562
#3	.0072278	.0168534	65.99613	.4615980	.1684239	.5970519	87.04121

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.597058**	**9.332307**	**.6110464**	**.0122545**	**5.451154**	**.2416844**	**1.868615**
Stddev	.003012	.015072	.0011982	.0002839	.017208	.0020022	.007942
%RSD	.1885819	.1615043	.1960946	2.316671	.3156702	.8284214	.4250164
#1	1.593591	9.334797	.6099449	.0121666	5.462255	.2423569	1.860546
#2	1.599027	9.316146	.6108720	.0125719	5.459874	.2432637	1.876424
#3	1.598556	9.345980	.6123222	.0120249	5.431331	.2394325	1.868875

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.008778**	**.3605193**	**.0609411**	**.0368072**	**5.260559**	**1.535192**	**.7285319**
Stddev	.030265	.0011303	.0002233	.0000442	.003747	.026223	.0044502
%RSD	1.506614	.3135261	.3664465	.1200149	.0712353	1.708100	.6108499
#1	2.017505	.3592621	.0611443	.0367570	5.260691	1.561722	.7238226
#2	1.975108	.3614515	.0609771	.0368244	5.264239	1.534565	.7291056
#3	2.033720	.3608444	.0607020	.0368402	5.256747	1.509288	.7326675

Sample Name: Q2828-01LX5 Acquired: 8/13/2025 13:16:46 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**1.417286**	**.1153787**	**.4399982**
Stddev	.005971	.0004917	.0016475
%RSD	.4212716	.4261647	.3744271
#1	1.424138	.1157406	.4381381
#2	1.413197	.1155766	.4412736
#3	1.414524	.1148189	.4405829

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6797.836**	**120467.2**	**14251.06**	**5159.481**	**6763.759**
Stddev	4.545	191.4	72.55	18.358	6.699
%RSD	.0668549	.1589031	.5090718	.3558027	.0990436
#1	6800.417	120479.8	14330.11	5172.609	6771.340
#2	6792.589	120269.8	14187.52	5138.503	6761.305
#3	6800.503	120652.0	14235.56	5167.330	6758.634

Sample Name: Q2828-01MS Acquired: 8/13/2025 13:20:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4351764**	**1.631806**	**2.687091**	**.7305922**	**.2975854**	**226.5995**	**2.854597**
Stddev	.0027281	.050930	.004847	.0045100	.0030584	2.1090	.021283
%RSD	.6268927	3.121092	.1803775	.6173082	1.027749	.9307268	.7455781
#1	.4355422	1.578458	2.686194	.7279700	.2973353	224.1644	2.830455
#2	.4322839	1.637048	2.682755	.7280067	.2946597	227.7955	2.870649
#3	.4377032	1.679913	2.692323	.7357998	.3007612	227.8387	2.862687

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0971046**	**.3053206**	**253.8815**	**1.519295**	**1.149584**	**1.963534**	**249.5014**
Stddev	.0007481	.0006048	2.5695	.010415	.002146	.000298	2.4786
%RSD	.7704324	.1980948	1.012103	.6855172	.1866773	.0151547	.9934152
#1	.0962449	.3052109	250.9508	1.507276	1.148241	1.963518	246.8062
#2	.0976077	.3047781	255.7482	1.525667	1.148453	1.963244	251.6829
#3	.0974611	.3059728	254.9454	1.524943	1.152059	1.963839	250.0152

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.333563**	**35.79715**	**3.824304**	**.0783584**	**24.96618**	**1.366538**	**5.945174**
Stddev	.014569	.18385	.005270	.0007498	.00881	.006098	.024668
%RSD	.2731514	.5135933	.1378003	.9568491	.0352953	.4462156	.4149186
#1	5.317401	35.61445	3.825148	.0774946	24.95866	1.359577	5.966449
#2	5.345686	35.98213	3.818663	.0787399	24.97587	1.370936	5.918134
#3	5.337603	35.79488	3.829101	.0788406	24.96401	1.369101	5.950938

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.41596**	**1.260318**	**.3335284**	**.8504869**	**15.32760**	**5.942173**	**9.990505**
Stddev	.01873	.012414	.0010168	.0028623	.04145	.028959	.025481
%RSD	.1395949	.9849807	.3048548	.3365440	.2703969	.4873392	.2550539
#1	13.39991	1.246265	.3325826	.8484021	15.27986	5.910251	10.00195
#2	13.41145	1.269790	.3333989	.8493084	15.34852	5.949513	9.96131
#3	13.43654	1.264899	.3346037	.8537503	15.35441	5.966756	10.00826

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01MS Acquired: 8/13/2025 13:20:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.405993	.4839844	1.580557
Stddev	.052539	.0012301	.017248
%RSD	.5585735	.2541656	1.091286
#1	9.353141	.4831675	1.576974
#2	9.406625	.4833866	1.565381
#3	9.458214	.4853992	1.599315

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11150.53	196965.1	26052.92	8416.630	5545.990
Stddev	18.99	1494.4	236.39	16.122	5.603
%RSD	.1703315	.7587226	.9073641	.1915531	.1010329
#1	11166.06	198514.7	26310.19	8428.839	5552.447
#2	11129.35	195532.8	25845.28	8398.355	5542.405
#3	11156.16	196847.8	26003.31	8422.697	5543.117

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01MSD Acquired: 8/13/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4615840**	**1.715748**	**2.650532**	**.7844096**	**.2400832**	**241.6083**	**2.750904**
Stddev	.0014728	.030870	.001999	.0023306	.0007801	2.2615	.042241
%RSD	.3190697	1.799219	.0754252	.2971139	.3249339	.9360124	1.535533
#1	.4603177	1.687476	2.648324	.7818328	.2407470	244.0371	2.751524
#2	.4612341	1.711081	2.651052	.7863701	.2402786	239.5632	2.792832
#3	.4632002	1.748685	2.652220	.7850259	.2392239	241.2247	2.708357

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1061506**	**.3148512**	**282.9101**	**1.746571**	**1.203677**	**1.923987**	**288.2252**
Stddev	.0002332	.0006359	1.8151	.007134	.001830	.002565	3.2417
%RSD	.2196529	.2019656	.6415928	.4084683	.1520090	.1333316	1.124696
#1	.1063684	.3141310	284.3286	1.748688	1.201599	1.921458	291.5038
#2	.1059046	.3153350	283.5371	1.738618	1.204387	1.926587	285.0218
#3	.1061787	.3150876	280.8646	1.752407	1.205046	1.923916	288.1502

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.736477**	**39.05291**	**4.079435**	**.0788640**	**24.11455**	**.9461061**	**5.724962**
Stddev	.029504	.08312	.005347	.0010605	.10649	.0024564	.021914
%RSD	.5143223	.2128394	.1310627	1.344657	.4416175	.2596280	.3827767
#1	5.757364	39.14467	4.073860	.0799670	24.15044	.9489230	5.730063
#2	5.749342	38.98265	4.084519	.0778519	24.19847	.9449851	5.700947
#3	5.702725	39.03143	4.079925	.0787732	23.99475	.9444103	5.743875

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.30633**	**1.279237**	**.3421945**	**.8797464**	**14.67077**	**1.143119**	**9.957083**
Stddev	.03329	.008530	.0006492	.0033389	.04647	.017539	.045158
%RSD	.2502135	.6668188	.1897172	.3795345	.3167335	1.534312	.4535276
#1	13.32852	1.287682	.3420382	.8771325	14.68701	1.162189	10.00213
#2	13.32244	1.270624	.3416377	.8785990	14.70694	1.139488	9.95730
#3	13.26805	1.279405	.3429076	.8835078	14.61836	1.127679	9.91182

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01MSD Acquired: 8/13/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.579984	.4892810	1.560177
Stddev	.022632	.0022723	.017256
%RSD	.2362426	.4644240	1.106057
#1	9.568223	.4909751	1.564974
#2	9.565654	.4901691	1.574528
#3	9.606075	.4866987	1.541030

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10569.60	185523.5	24488.62	8022.232	5387.879
Stddev	8.81	562.7	26.55	28.638	5.614
%RSD	.0833058	.3033084	.1084259	.3569804	.1042035
#1	10575.21	185376.6	24463.69	8033.160	5388.470
#2	10574.14	186145.1	24516.54	8043.797	5393.175
#3	10559.46	185048.8	24485.63	7989.739	5381.993

Sample Name: Q2828-01A Acquired: 8/13/2025 13:30:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4985563**	**1.727627**	**2.394146**	**.9585126**	**.5136132**	**174.0700**	**2.651098**
Stddev	.0127946	.072811	.112491	.0253087	.0159573	.9918	.008567
%RSD	2.566324	4.214509	4.698568	2.640417	3.106871	.5697729	.3231585
#1	.5020827	1.759048	2.438899	.9679940	.5192490	175.2100	2.659650
#2	.5092178	1.779450	2.477372	.9777115	.5259879	173.4052	2.642516
#3	.4843683	1.644381	2.266166	.9298321	.4956028	173.5948	2.651128

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1078394**	**.2920576**	**192.9332**	**1.479441**	**1.018800**	**1.764613**	**257.2287**
Stddev	.0002290	.0151426	1.1552	.004351	.051056	.045010	1.6002
%RSD	.2123098	5.184791	.5987651	.2940722	5.011344	2.550723	.6220730
#1	.1076176	.2988290	191.6937	1.475171	1.041834	1.784497	257.5228
#2	.1078256	.3026328	193.9798	1.479284	1.054280	1.796258	255.5018
#3	.1080749	.2747109	193.1260	1.483868	.960285	1.713085	258.6613

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.586002**	**27.82926**	**3.425555**	**.0742261**	**20.53416**	**.8293754**	**5.280278**
Stddev	.011470	.06904	.164230	.0007513	.06541	.0017896	.006902
%RSD	.2501002	.2480940	4.794263	1.012168	.3185292	.2157720	.1307175
#1	4.592972	27.89665	3.498943	.0742723	20.58898	.8306126	5.284897
#2	4.572764	27.75868	3.540296	.0734528	20.46176	.8273234	5.283594
#3	4.592270	27.83246	3.237428	.0749533	20.55175	.8301902	5.272344

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.34843**	**1.100116**	**.3691177**	**.8588195**	**14.91686**	**3.738774**	**9.330480**
Stddev	.02891	.006739	.0088644	.0359762	.03014	.020807	.451604
%RSD	.2340916	.6125717	2.401496	4.189034	.2020420	.5565135	4.840099
#1	12.34718	1.099619	.3739229	.8760554	14.93945	3.717871	9.532941
#2	12.32017	1.093640	.3745419	.8829352	14.88264	3.738969	9.645426
#3	12.37794	1.107091	.3588883	.8174681	14.92848	3.759484	8.813072

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2828-01A Acquired: 8/13/2025 13:30:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.567011	.4534073	1.365456
Stddev	.382646	.0018455	.006631
%RSD	5.056764	.4070324	.4855914
#1	7.729611	.4554836	1.370162
#2	7.841503	.4519537	1.357873
#3	7.129917	.4527845	1.368333

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10592.85	185875.3	24225.45	7907.430	5852.049
Stddev	136.59	303.8	18.83	33.349	226.891
%RSD	1.289441	.1634175	.0777375	.4217425	3.877115
#1	10528.16	186222.7	24242.12	7875.736	5746.291
#2	10500.63	185659.7	24205.02	7904.335	5697.344
#3	10749.77	185743.6	24229.21	7942.219	6112.511

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV02 Acquired: 8/13/2025 13:42:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.949760**	**4.959503**	**4.852074**	**4.982082**	**4.970518**	**9.695432**	**9.662181**
Stddev	.008222	.043373	.003983	.004322	.002979	.013974	.133465
%RSD	.1661075	.8745405	.0820986	.0867538	.0599281	.1441246	1.381311
#1	4.945489	4.927510	4.855461	4.981265	4.973161	9.707947	9.655441
#2	4.959239	4.942129	4.847685	4.978226	4.971104	9.680354	9.532215
#3	4.944553	5.008869	4.853075	4.986754	4.967290	9.697994	9.798889

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2404294**	**2.432348**	**24.24217**	**.9874279**	**2.426362**	**1.233085**	**4.979648**
Stddev	.0010260	.003406	.06117	.0023567	.002690	.001601	.035100
%RSD	.4267275	.1400448	.2523355	.2386671	.1108509	.1298123	.7048683
#1	.2401409	2.435142	24.26725	.9899564	2.428882	1.231449	5.014956
#2	.2395785	2.428553	24.17244	.9852925	2.423530	1.233160	4.979228
#3	.2415687	2.433349	24.28681	.9870347	2.426673	1.234647	4.944760

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.415383**	**24.10653**	**2.434774**	**1.235911**	**24.10775**	**2.445297**	**2.459773**
Stddev	.009072	.14085	.003600	.000164	.17284	.004068	.006594
%RSD	.3755825	.5842922	.1478514	.0132602	.7169484	.1663490	.2680792
#1	2.421927	24.10849	2.438770	1.235770	24.27911	2.449432	2.452422
#2	2.405027	23.96471	2.431785	1.236091	24.11068	2.441300	2.461730
#3	2.419194	24.24639	2.433767	1.235874	23.93347	2.445160	2.465167

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.58278**	**4.818771**	**4.982915**	**4.884147**	**4.850847**	**5.108879**	**4.740257**
Stddev	.14503	.020018	.005117	.009146	.017529	.024578	.019218
%RSD	.5899829	.4154131	.1026955	.1872541	.3613697	.4810744	.4054274
#1	24.66268	4.807965	4.979921	4.893465	4.869623	5.131006	4.761259
#2	24.67030	4.806478	4.979999	4.883790	4.834910	5.082425	4.735965
#3	24.41537	4.841870	4.988823	4.875184	4.848008	5.113205	4.723548

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV02 Acquired: 8/13/2025 13:42:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.789228**	**4.691877**	**4.874356**
Stddev	.008200	.014598	.024380
%RSD	.1712100	.3111262	.5001740
#1	4.790081	4.708733	4.850932
#2	4.796967	4.683532	4.899591
#3	4.780635	4.683367	4.872544

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5628.741**	**99513.57**	**11398.15**	**4267.446**	**6777.463**
Stddev	7.659	284.50	60.04	14.171	10.063
%RSD	.1360747	.2858916	.5267156	.3320646	.1484718
#1	5629.214	99203.61	11377.40	4278.198	6772.061
#2	5636.153	99762.81	11465.81	4272.752	6789.073
#3	5620.856	99574.29	11351.24	4251.388	6771.255

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB02 Acquired: 8/13/2025 13:46:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007395**	**-.000110**	**-.000212**	**.0008023**	**-.001855**	**-.017428**	**-.005219**
Stddev	.0009079	.001248	.001121	.0027119	.001276	.002048	.001690
%RSD	122.7650	1135.386	529.6019	338.0241	68.78618	11.75390	32.37903
#1	.0002206	-.000462	.000716	-.001961	-.003304	-.018412	-.003322
#2	.0017879	.001277	.000106	.000907	-.000898	-.015073	-.006563
#3	.0002101	-.001144	-.001457	.003460	-.001364	-.018798	-.005773

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000071**	**-.000106**	**-.014381**	**.0001949**	**-.000093**	**-.000229**	**-.007042**
Stddev	.000017	.000042	.008184	.0003369	.000093	.000264	.000950
%RSD	23.97527	39.50109	56.90658	172.9026	99.95443	115.5440	13.49072
#1	-.000055	-.000104	-.022739	.0005834	-.000196	-.000451	-.008084
#2	-.000070	-.000148	-.014022	-.000016	-.000014	.000064	-.006816
#3	-.000089	-.000065	-.006383	.000018	-.000070	-.000299	-.006225

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000148**	**-.012578**	**-.000139**	**-.000051**	**-.007774**	**-.000516**	**-.000457**
Stddev	.000238	.004012	.000274	.000282	.008801	.000422	.000184
%RSD	160.4225	31.89640	197.0884	549.7045	113.2215	81.75090	40.21013
#1	-.000381	-.010357	-.000275	.000272	-.005774	-.000908	-.000394
#2	-.000158	-.017209	.000177	-.000245	-.017403	-.000070	-.000664
#3	.000094	-.010168	-.000319	-.000180	-.000144	-.000570	-.000313

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1141832**	**.0063237**	**.0000460**	**.0003722**	**-.000269**	**.0103934**	**.0006505**
Stddev	.0261732	.0003078	.0001857	.0001704	.001067	.0175891	.0015128
%RSD	22.92217	4.867042	403.9285	45.78533	396.2427	169.2337	232.5626
#1	.0840241	.0066199	.0000858	.0002075	-.001092	.0031930	.0022614
#2	.1275707	.0063457	.0002085	.0003612	-.000652	-.002453	-.000740
#3	.1309546	.0060055	-.000156	.0005478	.000936	.030440	.000430

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB02 Acquired: 8/13/2025 13:46:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000826**	**-.002222**	**-.000385**
Stddev	.001082	.000297	.000013
%RSD	130.9256	13.36158	3.308400
#1	.000422	-.002151	-.000370
#2	-.001416	-.001967	-.000393
#3	-.001484	-.002548	-.000392

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5806.516**	**104236.5**	**11409.06**	**4447.255**	**7564.010**
Stddev	9.174	248.6	90.83	17.722	3.764
%RSD	.1580008	.2385264	.7961604	.3984855	.0497651
#1	5796.239	103984.8	11416.82	4427.024	7564.422
#2	5809.427	104242.7	11495.76	4454.709	7567.552
#3	5813.882	104482.0	11314.59	4460.032	7560.057

Sample Name: Q2830-01 Acquired: 8/13/2025 13:50:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1453111**	**-.056883**	**.3865274**	**.0131982**	**-.022559**	**152.2161**	**1.736366**
Stddev	.0009073	.001454	.0008237	.0036534	.002791	.1455	.004921
%RSD	.6244071	2.556802	.2131029	27.68147	12.37309	.0956025	.2834265
#1	.1454709	-.055205	.3867949	.0146423	-.019433	152.2886	1.740244
#2	.1461279	-.057657	.3871841	.0159088	-.024800	152.0486	1.730830
#3	.1443344	-.057787	.3856032	.0090434	-.023445	152.3112	1.738026

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0173701**	**.0147549**	**24.50382**	**.2734636**	**.1620453**	**.1345569**	**440.7952**
Stddev	.0000865	.0008025	.05598	.0015646	.0002981	.0032392	7.2620
%RSD	.4981133	5.438563	.2284726	.5721374	.1839742	2.407349	1.647467
#1	.0173360	.0138483	24.56844	.2752627	.1618765	.1308169	448.8563
#2	.0174684	.0150422	24.46997	.2727076	.1623895	.1363828	438.7644
#3	.0173057	.0153741	24.47305	.2724207	.1618698	.1364711	434.7647

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.053170**	**43.39191**	**.2419968**	**.0125469**	**1.615406**	**.5301259**	**.7093288**
Stddev	.008929	.11217	.0005779	.0023185	.023901	.0024664	.0028820
%RSD	.1265909	.2584947	.2387986	18.47885	1.479546	.4652570	.4063013
#1	7.063184	43.45313	.2413544	.0150755	1.641766	.5327165	.7093729
#2	7.046041	43.46015	.2424743	.0120445	1.609304	.5278059	.7121884
#3	7.050282	43.26246	.2421617	.0105208	1.595148	.5298554	.7064249

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.93763**	**.2061289**	**.0039361**	**.0175232**	**2.264388**	**6.567941**	**9.327685**
Stddev	.06222	.0197373	.0001829	.0016550	.003505	.048097	.006302
%RSD	.5212011	9.575225	4.645983	9.444708	.1547686	.7323005	.0675626
#1	12.00235	.2284110	.0038572	.0161573	2.266175	6.609928	9.323849
#2	11.87826	.1991339	.0038059	.0193637	2.260350	6.578430	9.324248
#3	11.93228	.1908417	.0041452	.0170487	2.266640	6.515465	9.334958

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2830-01 Acquired: 8/13/2025 13:50:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.041949**	**.6125078**	**-.279202**
Stddev	.016170	.0010017	.006923
%RSD	.7919129	.1635426	2.479715
#1	2.026327	.6136305	-.286871
#2	2.040902	.6117053	-.277326
#3	2.058617	.6121878	-.273411

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6119.552**	**107055.6**	**13022.57**	**4596.786**	**6449.588**
Stddev	7.994	543.1	11.22	22.320	6.216
%RSD	.1306277	.5073419	.0861711	.4855565	.0963758
#1	6110.346	106533.9	13031.54	4571.547	6453.282
#2	6124.736	107014.8	13009.99	4604.886	6442.412
#3	6123.575	107617.9	13026.18	4613.925	6453.071

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2830-03 Acquired: 8/13/2025 13:55:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1069329**	**-.058267**	**.3408371**	**.0184989**	**-.023934**	**285.4843**	**1.256137**
Stddev	.0054180	.001836	.0010438	.0029298	.001281	1.7627	.009323
%RSD	5.066772	3.151502	.3062355	15.83794	5.350297	.6174488	.7421650
#1	.1059495	-.060360	.3403176	.0152174	-.025344	287.4928	1.256099
#2	.1020739	-.056925	.3420387	.0194269	-.022843	284.1942	1.265479
#3	.1127753	-.057517	.3401551	.0208524	-.023616	284.7659	1.246834

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0200945**	**.0183256**	**13.93393**	**.4177108**	**.2867184**	**.1966260**	**546.8259**
Stddev	.0000651	.0003885	.03499	.0007056	.0009352	.0044343	4.2256
%RSD	.3237473	2.119844	.2511435	.1689157	.3261755	2.255180	.7727529
#1	.0200965	.0184833	13.90667	.4177481	.2865534	.1995388	544.2780
#2	.0201585	.0186104	13.97339	.4183969	.2877250	.1988165	544.4962
#3	.0200284	.0178830	13.92172	.4169873	.2858766	.1915228	551.7036

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.443343**	**93.59478**	**.5106256**	**.0164036**	**2.137585**	**.5050311**	**1.294008**
Stddev	.039951	.38588	.0018568	.0021047	.020426	.0025238	.003464
%RSD	.5367407	.4122851	.3636318	12.83043	.9555561	.4997373	.2676837
#1	7.436096	93.47368	.5093758	.0148412	2.142030	.5021470	1.292839
#2	7.486422	94.02668	.5127593	.0155727	2.155422	.5068353	1.297905
#3	7.407512	93.28397	.5097418	.0187968	2.115302	.5061110	1.291280

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**31.98573**	**^ *****	**.0084098**	**.0201118**	**4.861828**	**6.028986**	**3.927140**
Stddev	.02819	-----	.0005355	.0002997	.016239	.030391	.010970
%RSD	.0881428	-----	6.367142	1.490399	.3340137	.5040852	.2793332
#1	31.98346	^ -----	.0090075	.0202926	4.852424	6.037934	3.927290
#2	32.01500	^ -----	.0079740	.0197658	4.880580	5.995126	3.938034
#3	31.95875	^ -----	.0082479	.0202769	4.852481	6.053899	3.916096

Sample Name: Q2830-03 Acquired: 8/13/2025 13:55:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**1.148863**	**.9060076**	**-.400646**
Stddev	.010284	.0038149	.004533
%RSD	.8951699	.4210639	1.131329
#1	1.141996	.9036094	-.398279
#2	1.160687	.9104067	-.397786
#3	1.143906	.9040068	-.405872

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5872.360**	**103376.9**	**12822.03**	**4485.751**	**6090.982**
Stddev	16.435	298.3	80.93	24.339	17.017
%RSD	.2798652	.2885852	.6311699	.5425853	.2793761
#1	5856.661	103071.6	12809.47	4492.041	6081.982
#2	5870.977	103391.2	12748.11	4458.884	6080.356
#3	5889.443	103667.8	12908.50	4506.327	6110.609

Sample Name: Q2830-05 Acquired: 8/13/2025 13:59:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0981097**	**-.049740**	**.3946600**	**.0048797**	**-.022567**	**210.1859**	**2.187957**
Stddev	.0010152	.003686	.0005067	.0022408	.000572	2.9339	.004397
%RSD	1.034745	7.409790	.1283799	45.92187	2.533900	1.395850	.2009432
#1	.0988646	-.045697	.3949134	.0052919	-.022903	213.3367	2.185531
#2	.0969556	-.050611	.3940766	.0068858	-.021906	207.5326	2.193032
#3	.0985090	-.052913	.3949900	.0024613	-.022891	209.6885	2.185309

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0251375**	**.0285491**	**20.79386**	**.3784151**	**.3824168**	**.1868235**	**469.9531**
Stddev	.0002079	.0002725	.02010	.0005088	.0003619	.0012097	1.2231
%RSD	.8268877	.9545306	.0966698	.1344550	.0946473	.6475056	.2602682
#1	.0253632	.0287931	20.80846	.3788631	.3820680	.1859195	468.5525
#2	.0249540	.0282550	20.80218	.3785203	.3823918	.1863532	470.8111
#3	.0250954	.0285993	20.77093	.3778619	.3827906	.1881977	470.4956

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.99003**	**91.00166**	**.6855060**	**.0110437**	**2.210052**	**.4841577**	**1.257853**
Stddev	.01316	.10038	.0021833	.0003044	.019969	.0007250	.002923
%RSD	.1013234	.1103038	.3184924	2.756213	.9035583	.1497453	.2323714
#1	13.00512	91.06672	.6833150	.0106936	2.188100	.4844402	1.254484
#2	12.98403	90.88605	.6855213	.0111919	2.227138	.4846989	1.259366
#3	12.98094	91.05220	.6876815	.0112456	2.214919	.4833340	1.259709

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.36584**	**^ *****	**.0106158**	**.0188448**	**5.040346**	**6.474977**	**6.195487**
Stddev	.15145	-----	.0000928	.0016341	.002647	.029825	.013510
%RSD	.4679389	-----	.8743992	8.671432	.0525142	.4606186	.2180576
#1	32.19118	^ -----	.0105786	.0169585	5.043362	6.445573	6.182473
#2	32.46086	^ -----	.0105473	.0198295	5.038409	6.505206	6.209443
#3	32.44548	^ -----	.0107215	.0197465	5.039267	6.474154	6.194545

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2830-05 Acquired: 8/13/2025 13:59:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.052204**	**.9037890**	**-.277054**
Stddev	.008756	.0020129	.001073
%RSD	.4266834	.2227147	.3874281
#1	2.062032	.9015527	-.275819
#2	2.045234	.9054556	-.277761
#3	2.049345	.9043587	-.277582

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6912.601**	**123022.2**	**15099.17**	**5259.239**	**6026.339**
Stddev	4.661	262.8	57.80	16.562	4.823
%RSD	.0674281	.2135984	.3828035	.3149163	.0800352
#1	6907.804	123213.6	15054.11	5277.778	6026.448
#2	6917.113	123130.5	15164.34	5254.035	6031.106
#3	6912.885	122722.6	15079.06	5245.903	6021.462

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2830-07 Acquired: 8/13/2025 14:03:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2164020**	**-.086202**	**.3725533**	**.0126132**	**-.034533**	**232.5435**	**2.703325**
Stddev	.0020258	.002440	.0048387	.0019213	.003323	2.7196	.011360
%RSD	.9361312	2.830043	1.298802	15.23228	9.623952	1.169486	.4202122
#1	.2150516	-.084667	.3724754	.0146163	-.038242	230.4673	2.707604
#2	.2154232	-.089015	.3677541	.0107858	-.033529	231.5412	2.711924
#3	.2187314	-.084925	.3774306	.0124376	-.031827	235.6220	2.690447

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0318307**	**.0331737**	**26.50333**	**.4026310**	**.2514180**	**.1070152**	**635.3351**
Stddev	.0001591	.0004114	.02141	.0005523	.0004308	.0017124	2.7732
%RSD	.4999650	1.240123	.0807693	.1371638	.1713455	1.600164	.4364864
#1	.0318912	.0336477	26.52071	.4020195	.2515941	.1073989	632.2128
#2	.0316502	.0329649	26.47941	.4027800	.2509270	.1051435	637.5117
#3	.0319507	.0329086	26.50986	.4030935	.2517328	.1085033	636.2809

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.406815**	**69.61454**	**.4438670**	**.0160380**	**2.111442**	**.7571068**	**.9436670**
Stddev	.027553	.13335	.0004000	.0011218	.009959	.0021030	.0014319
%RSD	.2929047	.1915481	.0901211	6.994476	.4716822	.2777619	.1517369
#1	9.420118	69.54421	.4440964	.0147561	2.122432	.7581159	.9449674
#2	9.425192	69.53109	.4434051	.0168399	2.103015	.7546894	.9439012
#3	9.375135	69.76833	.4440995	.0165181	2.108878	.7585150	.9421325

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**20.91657**	**^ *****	**.0071506**	**.0224507**	**3.350843**	**7.718096**	**16.67951**
Stddev	.05597	-----	.0001171	.0008657	.006427	.022225	.05170
%RSD	.2675800	-----	1.637720	3.856207	.1917944	.2879593	.3099444
#1	20.95895	^ -----	.0071322	.0216211	3.355016	7.694176	16.66228
#2	20.93763	^ -----	.0070437	.0223826	3.354071	7.738108	16.63863
#3	20.85312	^ -----	.0072758	.0233485	3.343442	7.722005	16.73762

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2830-07 Acquired: 8/13/2025 14:03:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.752929	.8552609	-.447667
Stddev	.024383	.0016938	.002827
%RSD	1.391001	.1980485	.6314977
#1	1.725597	.8565158	-.444412
#2	1.760741	.8559327	-.449082
#3	1.772449	.8533342	-.449507

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6521.479	116295.9	14513.92	4946.778	5954.749
Stddev	13.480	81.2	47.96	18.246	7.674
%RSD	.2066945	.0698483	.3304376	.3688440	.1288658
#1	6505.990	116366.6	14528.89	4965.887	5946.839
#2	6527.894	116207.1	14552.61	4929.539	5962.162
#3	6530.553	116313.8	14460.26	4944.908	5955.247

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-01 Acquired: 8/13/2025 14:07:58 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0842644**	**-.028549**	**.7568970**	**.0092254**	**-.001733**	**129.3234**	**.9619753**
Stddev	.0018064	.003787	.0025219	.0046695	.001596	.2170	.0032684
%RSD	2.143742	13.26499	.3331951	50.61560	92.09078	.1677751	.3397588
#1	.0857302	-.029119	.7546658	.0103259	-.003434	129.3041	.9582198
#2	.0822463	-.024510	.7596333	.0041040	-.001495	129.1166	.9635293
#3	.0848167	-.032019	.7563920	.0132464	-.000269	129.5493	.9641767

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0110824**	**.0130389**	**29.22138**	**.2229414**	**.1304059**	**.4015786**	**287.3479**
Stddev	.0000183	.0001943	.03085	.0004774	.0007261	.0005560	.9555
%RSD	.1649328	1.490445	.1055895	.2141515	.5568365	.1384538	.3325383
#1	.0110677	.0128947	29.24894	.2230085	.1298015	.4016671	286.4096
#2	.0110767	.0129622	29.18805	.2224339	.1302048	.4009837	288.3198
#3	.0111029	.0132599	29.22716	.2233817	.1312114	.4020851	287.3142

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.318509**	**44.53995**	**.2586293**	**.0106994**	**2.636514**	**.3195009**	**1.659430**
Stddev	.015617	.11522	.0008225	.0000502	.014832	.0014166	.006740
%RSD	.2133840	.2586944	.3180095	.4688305	.5625434	.4433748	.4061625
#1	7.322214	44.64692	.2576882	.0107320	2.620050	.3178988	1.665255
#2	7.301373	44.41795	.2592102	.0106417	2.648828	.3200162	1.652048
#3	7.331940	44.55498	.2589895	.0107246	2.640665	.3205878	1.660988

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.90753**	**.1555091**	**.0052800**	**.0739703**	**3.042918**	**11.72958**	**7.082379**
Stddev	.03364	.0093015	.0002461	.0008128	.002422	.04835	.013683
%RSD	.2606456	5.981301	4.661024	1.098832	.0795903	.4122122	.1931991
#1	12.87202	.1485422	.0050530	.0748184	3.044507	11.67378	7.087302
#2	12.93892	.1660717	.0055416	.0731981	3.040131	11.75898	7.066916
#3	12.91166	.1519134	.0052453	.0738942	3.044117	11.75599	7.092920

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-01 Acquired: 8/13/2025 14:07:58 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.757684	.2486897	-.132920
Stddev	.044599	.0011034	.001025
%RSD	.5748951	.4436814	.7711807
#1	7.706414	.2483096	-.131963
#2	7.787511	.2478265	-.134002
#3	7.779126	.2499329	-.132795

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6320.222	111627.8	13570.13	4762.696	6503.062
Stddev	13.159	29.7	59.74	6.222	11.252
%RSD	.2082032	.0266202	.4402398	.1306349	.1730257
#1	6327.456	111641.2	13526.41	4769.809	6511.421
#2	6328.177	111593.7	13638.20	4760.011	6507.496
#3	6305.033	111648.5	13545.78	4758.267	6490.269

Sample Name: Q2818-01 Acquired: 8/13/2025 14:11:59 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2462969	-.069644	.3354100	.0130213	-.018397	112.4632
Stddev	.0012952	.003752	.0013166	.0048755	.000980	.2340
%RSD	.5258676	5.387055	.3925382	37.44268	5.327224	.2080750
#1	.2449346	-.067971	.3359474	.0186501	-.017518	112.5226
#2	.2464436	-.067019	.3339097	.0102981	-.018220	112.6618
#3	.2475125	-.073941	.3363729	.0101158	-.019454	112.2053

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8276041	.0201980	.0267863	35.14157	1.105311	.0887568
Stddev	.0039778	.0000887	.0003532	.10878	.004022	.0002024
%RSD	.4806467	.4393552	1.318600	.3095544	.3639050	.2279821
#1	.8265402	.0201625	.0271701	35.13530	1.103455	.0889904
#2	.8320057	.0202990	.0264749	35.25336	1.109926	.0886411
#3	.8242664	.0201326	.0267140	35.03606	1.102551	.0886389

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5169805	540.4245	2.067864	12.72622	.1702107	.0153687
Stddev	.0014479	1.1601	.010081	.07795	.0007809	.0013469
%RSD	.2800703	.2146682	.4875018	.6125339	.4587622	8.763910
#1	.5172343	539.9670	2.066710	12.76450	.1693470	.0158187
#2	.5154225	539.5629	2.078472	12.77763	.1708666	.0138544
#3	.5182848	541.7437	2.058410	12.63653	.1704185	.0164329

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.627463	1.127048	1.580430	23.04248	^ *****	.0151367
Stddev	.013806	.004197	.003761	.14557	-----	.0003061
%RSD	.5254600	.3724033	.2379777	.6317488	-----	2.022111
#1	2.615976	1.129014	1.583086	22.95315	^ -----	.0154716
#2	2.642780	1.129901	1.582077	23.21046	^ -----	.0148713
#3	2.623633	1.122229	1.576126	22.96385	^ -----	.0150672

Sample Name: Q2818-01 Acquired: 8/13/2025 14:11:59 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0584856	2.938632	3.014497	F 46.56130	16.56324	.0715998
Stddev	.0018447	.010070	.024435	.18311	.10076	.0004075
%RSD	3.154063	.3426813	.8105747	.3932588	.6083331	.5691201
#1	.0566042	2.934504	3.008757	46.46829	16.53407	.0711311
#2	.0585614	2.950111	3.041290	46.44336	16.48029	.0718701
#3	.0602912	2.931282	2.993443	46.77224	16.67537	.0717983

Elem	Sr4077
Units	ppm
Avg	-.203737
Stddev	.002307
%RSD	1.132247
#1	-.203987
#2	-.201316
#3	-.205909

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6505.282	116815.1	14586.43	4966.785	6412.573
Stddev	6.301	286.7	28.92	21.413	2.696
%RSD	.0968644	.2454425	.1982957	.4311184	.0420488
#1	6503.059	116812.9	14567.60	4942.072	6409.605
#2	6512.393	116529.4	14571.96	4979.821	6414.872
#3	6500.393	117102.8	14619.74	4978.461	6413.243

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2818-02 Acquired: 8/13/2025 14:16:10 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2545211**	**-.069890**	**.3866487**	**.0127639**	**-.017780**	**108.6222**
Stddev	.0016831	.003461	.0014114	.0036067	.001657	.2133
%RSD	.6612892	4.952637	.3650320	28.25681	9.320586	.1963731
#1	.2553146	-.073679	.3851463	.0140571	-.019657	108.4475
#2	.2556607	-.066894	.3868531	.0086890	-.016516	108.8599
#3	.2525879	-.069096	.3879468	.0155457	-.017168	108.5592

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7594194**	**.0201688**	**.0271667**	**32.80926**	**1.098975**	**.0855620**
Stddev	.0033874	.0001196	.0006660	.08813	.001460	.0000602
%RSD	.4460551	.5927880	2.451716	.2686042	.1328341	.0703293
#1	.7557895	.0200884	.0264044	32.71273	1.100395	.0855333
#2	.7624963	.0203062	.0276359	32.88541	1.099053	.0856311
#3	.7599725	.0201118	.0274599	32.82965	1.097478	.0855215

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4744454**	**534.4423**	**1.931949**	**11.77155**	**.1668473**	**.0150368**
Stddev	.0022762	3.1452	.009811	.02410	.0001242	.0013096
%RSD	.4797657	.5885101	.5078149	.2047647	.0744245	8.708974
#1	.4722957	536.7234	1.921135	11.74549	.1669135	.0153019
#2	.4768300	530.8543	1.940279	11.77610	.1669242	.0136151
#3	.4742105	535.7491	1.934433	11.79305	.1667040	.0161936

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.452424**	**1.133393**	**1.477880**	**21.72002**	^ *****	**.0141732**
Stddev	.004034	.005879	.004034	.03342	-----	.0001423
%RSD	.1645005	.5186950	.2729910	.1538895	-----	1.004391
#1	2.456539	1.129117	1.481070	21.68251	^ -----	.0140227
#2	2.448476	1.140097	1.479226	21.74666	^ -----	.0141912
#3	2.452256	1.130965	1.473345	21.73087	^ -----	.0143057

Sample Name: Q2818-02 Acquired: 8/13/2025 14:16:10 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0578646	2.805185	3.128855	F 44.96693	14.47537	.0694440
Stddev	.0006240	.009307	.023205	.06087	.10163	.0007622
%RSD	1.078428	.3317661	.7416472	.1353728	.7020610	1.097547
#1	.0572046	2.797529	3.155627	44.90487	14.36199	.0702671
#2	.0579440	2.815544	3.116429	45.02654	14.50585	.0687626
#3	.0584451	2.802483	3.114510	44.96938	14.55826	.0693022

Elem	Sr4077
Units	ppm
Avg	-.224434
Stddev	.004153
%RSD	1.850307
#1	-.227936
#2	-.219846
#3	-.225521

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6436.522	116239.7	14489.29	4933.282	6323.225
Stddev	9.761	77.4	57.37	12.272	10.112
%RSD	.1516498	.0666187	.3959303	.2487548	.1599176
#1	6443.927	116314.2	14530.81	4919.397	6330.209
#2	6440.177	116245.2	14423.83	4937.773	6327.836
#3	6425.461	116159.7	14513.23	4942.676	6311.629

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2823-01 Acquired: 8/13/2025 14:20:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0595789**	**-.019709**	**.6776581**	**.0015832**	**-.010210**	**79.00177**	**.7523120**
Stddev	.0034710	.001638	.0010042	.0019171	.000188	.08725	.0019272
%RSD	5.825966	8.312127	.1481942	121.0878	1.845286	.1104444	.2561695
#1	.0632265	-.018900	.6786612	.0033229	-.010356	79.07834	.7541088
#2	.0591935	-.018632	.6766527	-.000472	-.009997	78.90677	.7525504
#3	.0563166	-.021594	.6776602	.001899	-.010276	79.02019	.7502766

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0071076**	**.0087216**	**39.35586**	**.2045438**	**.0829697**	**.2532587**	**208.5730**
Stddev	.0001596	.0002049	.07032	.0009577	.0005058	.0008350	.6916
%RSD	2.245017	2.348884	.1786734	.4682113	.6095739	.3297056	.3315707
#1	.0072905	.0088676	39.43584	.2040452	.0824443	.2528842	208.2867
#2	.0070354	.0084874	39.32795	.2056479	.0830114	.2526764	209.3618
#3	.0069969	.0088099	39.30377	.2039382	.0834533	.2542154	208.0706

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.078888**	**31.45919**	**.1655363**	**.0060345**	**4.077726**	**.2871253**	**.6014302**
Stddev	.007116	.06920	.0005944	.0008514	.040903	.0008044	.0012764
%RSD	.2311380	.2199715	.3590567	14.10940	1.003078	.2801656	.2122278
#1	3.086641	31.53791	.1660194	.0063611	4.057113	.2874946	.6012849
#2	3.077368	31.43171	.1648725	.0066744	4.124834	.2876787	.6002326
#3	3.072654	31.40795	.1657169	.0050682	4.051231	.2862025	.6027730

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.947202**	**.0832210**	**.0074125**	**.0262555**	**2.867014**	**1.927358**	**3.548915**
Stddev	.038130	.0017401	.0001892	.0001883	.002132	.006536	.003031
%RSD	.4797947	2.090957	2.552212	.7173225	.0743457	.3391339	.0853944
#1	7.929443	.0827836	.0075810	.0264117	2.868529	1.920358	3.549962
#2	7.990973	.0851380	.0074488	.0263084	2.864577	1.933302	3.545500
#3	7.921191	.0817413	.0072079	.0260463	2.867938	1.928414	3.551283

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2823-01 Acquired: 8/13/2025 14:20:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.176423**	**.1429790**	**-.052955**
Stddev	.005012	.0009951	.000635
%RSD	.2302675	.6959702	1.198276
#1	2.182205	.1440108	-.052615
#2	2.173326	.1420252	-.053687
#3	2.173737	.1429009	-.052562

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6096.054**	**109663.4**	**13198.58**	**4675.450**	**6669.800**
Stddev	15.783	115.6	45.71	6.149	15.250
%RSD	.2589088	.1053905	.3463608	.1315232	.2286411
#1	6108.999	109642.7	13155.17	4668.473	6681.476
#2	6100.691	109559.7	13246.29	4677.796	6675.378
#3	6078.471	109788.0	13194.28	4680.081	6652.547

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03 Acquired: 8/13/2025 14:24:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001782**	**.0022204**	**.0072347**	**.0057846**	**-.000345**	**.2128086**	**.2527329**
Stddev	.001345	.0018925	.0013501	.0020184	.001414	.0027700	.0016029
%RSD	75.48122	85.23361	18.66155	34.89236	410.2523	1.301650	.6342331
#1	-.000765	.0042956	.0075343	.0059234	.001027	.2155533	.2535139
#2	-.003307	.0017760	.0084098	.0077301	-.001796	.2128587	.2508892
#3	-.001274	.0005897	.0057599	.0037004	-.000265	.2100139	.2537956

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000979**	**.0009984**	**18.27654**	**.0001951**	**.0007236**	**.0133758**	**.0766454**
Stddev	.0000255	.0000861	.02150	.0002028	.0001225	.0002703	.0055073
%RSD	26.09615	8.620233	.1176456	103.9375	16.92504	2.020487	7.185439
#1	.0000888	.0010729	18.29203	-.000013	.0006898	.0134573	.0800146
#2	.0001267	.0010182	18.25199	.000392	.0006216	.0130742	.0796315
#3	.0000781	.0009042	18.28560	.000206	.0008594	.0135959	.0702899

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4360914**	**5.240611**	**.0046601**	**.0002476**	**346.6346**	**.0004213**	**.4801889**
Stddev	.0001023	.028827	.0004023	.0001374	4.4560	.0023461	.0003268
%RSD	.0234688	.5500614	8.633362	55.48468	1.285492	556.8789	.0680459
#1	.4359813	5.214469	.0050681	.0003150	347.2159	-.002265	.4800080
#2	.4361837	5.271526	.0046484	.0000895	350.7714	.001462	.4805661
#3	.4361091	5.235838	.0042637	.0003382	341.9165	.002067	.4799926

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.283750**	**.0615317**	**-.000045**	**.0126468**	**-.000006**	**1.012198**	**.0363648**
Stddev	.029012	.0002360	.000100	.0009100	.000794	.011543	.0018684
%RSD	2.259923	.3836309	223.5305	7.195346	12531.79	1.140378	5.137891
#1	1.252012	.0617605	-.000143	.0133302	-.000835	1.000759	.0373706
#2	1.308903	.0612890	.000057	.0116139	.000068	1.023842	.0342090
#3	1.290334	.0615455	-.000048	.0129963	.000748	1.011991	.0375149

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03 Acquired: 8/13/2025 14:24:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.475763**	**-.011109**	**.0848972**
Stddev	.020844	.000913	.0001657
%RSD	.8419229	8.215181	.1951584
#1	2.499631	-.010942	.0849354
#2	2.461143	-.010291	.0847158
#3	2.466515	-.012094	.0850406

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5385.989**	**94690.45**	**11623.75**	**4075.253**	**6446.534**
Stddev	4.937	253.82	57.76	10.361	4.117
%RSD	.0916672	.2680559	.4969014	.2542410	.0638679
#1	5390.458	94887.34	11557.40	4081.787	6446.719
#2	5386.819	94403.99	11662.82	4063.306	6450.557
#3	5380.689	94780.03	11651.02	4080.665	6442.328

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03DUP Acquired: 8/13/2025 14:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003354**	**.0014374**	**.0034986**	**.0042349**	**.0005220**	**.1115003**	**.1365477**
Stddev	.000283	.0009253	.0011448	.0008564	.0013241	.0033446	.0010934
%RSD	8.424692	64.37288	32.72062	20.22219	253.6791	2.999625	.8007627
#1	-.003031	.0020996	.0047531	.0032468	.0011585	.1123039	.1361672
#2	-.003473	.0018325	.0032321	.0047640	.0014076	.1078271	.1377805
#3	-.003557	.0003802	.0025106	.0046938	-.001000	.1143698	.1356954

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000020**	**.0004604**	**10.20916**	**-.000284**	**.0000906**	**.0075155**	**.0398376**
Stddev	.000058	.0000458	.02268	.000087	.0000781	.0003572	.0037292
%RSD	295.5362	9.953500	.2221622	30.70127	86.22854	4.753048	9.361138
#1	.000045	.0004936	10.20332	-.000298	.0000717	.0071280	.0441430
#2	-.000069	.0004081	10.23418	-.000364	.0000236	.0075867	.0377548
#3	-.000035	.0004796	10.18996	-.000191	.0001764	.0078317	.0376150

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2470744**	**2.956949**	**.0029505**	**.0001497**	**189.9947**	**-.000525**	**.2629899**
Stddev	.0009725	.015717	.0001315	.0002272	.5586	.001145	.0009218
%RSD	.3936256	.5315327	4.457111	151.7977	.2939906	218.1441	.3505160
#1	.2460813	2.939145	.0029633	-.000055	190.6256	-.000821	.2620424
#2	.2471167	2.968900	.0028131	.000394	189.5632	-.001494	.2638837
#3	.2480250	2.962801	.0030752	.000110	189.7952	.000739	.2630436

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6666184**	**.0327151**	**.0000563**	**-.000364**	**-.000543**	**.5428755**	**.0242340**
Stddev	.0221596	.0001096	.0000735	.000304	.001098	.0123307	.0026964
%RSD	3.324182	.3351035	130.6769	83.40287	202.2671	2.271361	11.12637
#1	.6918465	.0325885	.0000677	-.000625	-.001644	.5383948	.0212463
#2	.6577061	.0327748	-.000022	-.000031	.000551	.5568200	.0264865
#3	.6503024	.0327818	.000123	-.000436	-.000535	.5334116	.0249691

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03DUP Acquired: 8/13/2025 14:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**1.343508**	**-.009309**	**.0470925**
Stddev	.003919	.001076	.0001571
%RSD	.2916972	11.55872	.3336625
#1	1.347467	-.009336	.0470512
#2	1.339631	-.010371	.0472661
#3	1.343427	-.008220	.0469601

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5510.051**	**97698.65**	**11644.48**	**4184.562**	**6724.039**
Stddev	3.895	466.06	34.27	16.117	10.535
%RSD	.0706947	.4770432	.2942668	.3851555	.1566725
#1	5512.259	97160.55	11642.56	4177.265	6734.819
#2	5512.340	97960.96	11611.21	4173.384	6723.532
#3	5505.553	97974.46	11679.66	4203.037	6713.768

Sample Name: CCV03 Acquired: 8/13/2025 14:33:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.986424**	**4.822139**	**4.858771**	**5.024045**	**5.017082**	**9.649308**	**9.671877**
Stddev	.003959	.085199	.007191	.017583	.010405	.020193	.045147
%RSD	.0793983	1.766839	.1480049	.3499746	.2073991	.2092710	.4667852
#1	4.990412	4.914749	4.851550	5.029091	5.009077	9.640154	9.679255
#2	4.982494	4.747085	4.858832	5.004491	5.013324	9.672457	9.712880
#3	4.986365	4.804581	4.865932	5.038553	5.028844	9.635314	9.623495

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2382256**	**2.432166**	**24.13075**	**.9926120**	**2.431683**	**1.239833**	**5.013994**
Stddev	.0018072	.002384	.04250	.0020740	.003451	.001124	.046923
%RSD	.7585863	.0980048	.1761411	.2089462	.1419019	.0906852	.9358501
#1	.2401196	2.431048	24.17977	.9908566	2.428915	1.240269	4.971475
#2	.2380372	2.430546	24.10842	.9920788	2.430586	1.238556	5.006168
#3	.2365201	2.434903	24.10406	.9949005	2.435549	1.240675	5.064338

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.389669**	**23.92152**	**2.442080**	**1.238723**	**23.27223**	**2.445371**	**2.483963**
Stddev	.008551	.01033	.003269	.002431	.13607	.007631	.008131
%RSD	.3578296	.0431736	.1338689	.1962353	.5846781	.3120772	.3273534
#1	2.397991	23.92854	2.441360	1.237511	23.13046	2.448595	2.491076
#2	2.390109	23.92636	2.439231	1.237136	23.28446	2.450861	2.485714
#3	2.380906	23.90966	2.445649	1.241521	23.40177	2.436657	2.475099

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.67334**	**4.759229**	**5.020476**	**4.883955**	**4.832826**	**5.100712**	**4.779387**
Stddev	.16418	.037341	.006420	.010498	.003462	.038615	.011436
%RSD	.6654027	.7846068	.1278746	.2149406	.0716289	.7570491	.2392803
#1	24.48716	4.796477	5.021408	4.892453	4.829107	5.059807	4.778083
#2	24.73554	4.759413	5.013642	4.872220	4.833417	5.105796	4.768659
#3	24.79734	4.721796	5.026380	4.887192	4.835954	5.136533	4.791419

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV03 Acquired: 8/13/2025 14:33:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.787702**	**4.582997**	**4.827607**
Stddev	.033485	.005874	.012223
%RSD	.6993966	.1281670	.2531995
#1	4.808043	4.579106	4.829398
#2	4.749054	4.589754	4.838837
#3	4.806008	4.580131	4.814587

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5574.767**	**98989.92**	**11516.30**	**4230.194**	**6730.322**
Stddev	3.921	397.78	60.67	5.893	7.412
%RSD	.0703324	.4018375	.5268301	.1393006	.1101267
#1	5573.760	99432.30	11463.50	4224.832	6729.355
#2	5579.094	98875.74	11502.83	4229.246	6738.170
#3	5571.448	98661.72	11582.57	4236.503	6723.441

Sample Name: CCB03 Acquired: 8/13/2025 14:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013043**	**-.000444**	**-.000035**	**.0014647**	**-.000561**	**-.013096**	**-.007571**
Stddev	.0010760	.000922	.000585	.0012494	.000295	.002866	.000470
%RSD	82.49632	207.4499	1672.267	85.29743	52.54865	21.88644	6.204061
#1	.0000706	.000239	.000442	.0020247	-.000875	-.012492	-.007045
#2	.0020486	-.001493	-.000688	.0023362	-.000291	-.010581	-.007949
#3	.0017939	-.000079	.000140	.0000333	-.000517	-.016217	-.007719

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000034**	**-.000120**	**-.010327**	**.0001169**	**-.000137**	**.0004249**	**-.007554**
Stddev	.0000183	.000021	.005361	.0002231	.000052	.0002892	.002689
%RSD	541.4829	17.32571	51.91306	190.8846	38.10200	68.06249	35.60151
#1	.0000243	-.000125	-.010753	.0001450	-.000078	.0007587	-.006192
#2	-.000004	-.000138	-.015462	.0003246	-.000175	.0002634	-.005818
#3	-.000010	-.000097	-.004765	-.000119	-.000159	.0002525	-.010651

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000657**	**-.023313**	**-.000155**	**.0007437**	**.1904242**	**.0000452**	**-.000538**
Stddev	.000429	.009521	.000080	.0004234	.0047336	.0020678	.000099
%RSD	65.34766	40.83963	51.30466	56.92453	2.485802	4578.159	18.42797
#1	-.000597	-.016827	-.000124	.0002873	.1873210	.0021762	-.000624
#2	-.001113	-.018867	-.000246	.0011237	.1880790	-.001953	-.000430
#3	-.000261	-.034243	-.000096	.0008202	.1958725	-.000088	-.000561

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2739713**	**.0035535**	**.0000632**	**-.000024**	**-.000684**	**.0102449**	**.0004323**
Stddev	.0411817	.0004324	.0001732	.000330	.000986	.0066173	.0012958
%RSD	15.03137	12.16744	274.1544	1388.755	144.2009	64.59191	299.7441
#1	.2747650	.0032845	.0001078	-.000324	-.001277	.0150189	.0003350
#2	.3147504	.0033237	-.000128	-.000077	.000455	.0130246	.0017740
#3	.2323986	.0040522	.000210	.000329	-.001230	.0026911	-.000812

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB03 Acquired: 8/13/2025 14:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0001712	.0016517	-.000300
Stddev	.0001214	.0005783	.000041
%RSD	70.91110	35.01581	13.72156
#1	.0000660	.0023193	-.000345
#2	.0003040	.0013039	-.000293
#3	.0001435	.0013318	-.000263

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5808.967	103706.5	11557.20	4391.536	7615.299
Stddev	13.586	22.7	49.75	20.429	14.576
%RSD	.2338870	.0219044	.4304791	.4652011	.1914060
#1	5810.487	103729.6	11515.66	4369.999	7611.062
#2	5821.730	103705.7	11543.61	4410.640	7631.524
#3	5794.685	103684.1	11612.34	4393.970	7603.310

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03LX5 Acquired: 8/13/2025 14:41:43 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000224**	**.0008080**	**.0007574**	**.0013239**	**-.000649**	**.0318481**	**.0454297**
Stddev	.000812	.0002989	.0003265	.0019765	.001485	.0010529	.0008129
%RSD	362.5866	36.99664	43.11248	149.2915	228.7796	3.306092	1.789435
#1	-.001148	.0011313	.0009554	-.000886	-.001682	.0322999	.0462405
#2	.000100	.0007510	.0003805	.001933	-.001318	.0325996	.0446146
#3	.000376	.0005416	.0009362	.002924	.001053	.0306446	.0454341

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000047**	**.0000973**	**3.744385**	**.0000387**	**.0000530**	**.0024554**	**.0085002**
Stddev	.0000088	.0000408	.011643	.0000553	.0000989	.0001339	.0007300
%RSD	189.2416	41.95617	.3109418	143.1035	186.5810	5.452624	8.588246
#1	-.000004	.0000666	3.757727	.0000986	.0000058	.0023697	.0085723
#2	.000013	.0001436	3.739145	.0000279	-.000013	.0023868	.0077368
#3	.000005	.0000817	3.736283	-.000010	.000167	.0026097	.0091915

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0880318**	**1.067370**	**.0005679**	**.0002273**	**65.56280**	**.0001943**	**.0933207**
Stddev	.0002132	.007704	.0000554	.0003818	.53608	.0014219	.0006836
%RSD	.2421539	.7217580	9.747564	167.9915	.8176580	731.7425	.7324795
#1	.0882504	1.066151	.0006241	.0002473	65.17578	.0005096	.0928510
#2	.0878245	1.060348	.0005134	-.000164	66.17469	-.001359	.0941049
#3	.0880206	1.075610	.0005663	.000599	65.33794	.001432	.0930062

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3965807**	**.0144797**	**-.000184**	**.0026916**	**-.000028**	**.2001550**	**.0066870**
Stddev	.0160923	.0005667	.000141	.0001849	.001149	.0095789	.0022604
%RSD	4.057775	3.913686	76.91514	6.869458	4079.186	4.785760	33.80202
#1	.3871823	.0143500	-.000126	.0027694	.001112	.2107249	.0040900
#2	.4151621	.0139891	-.000080	.0024805	-.001187	.1920481	.0082107
#3	.3873976	.0151000	-.000345	.0028250	-.000009	.1976919	.0077605

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03LX5 Acquired: 8/13/2025 14:41:43 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4870356	.0004293	.0170986
Stddev	.0016418	.0011333	.0000646
%RSD	.3371069	264.0082	.3778988
#1	.4886342	.0017373	.0170310
#2	.4853537	-.000192	.0171597
#3	.4871187	-.000257	.0171052

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5585.186	100202.2	11652.56	4255.730	6912.357
Stddev	1.550	72.2	89.21	18.708	5.359
%RSD	.0277572	.0721033	.7655904	.4395848	.0775208
#1	5585.117	100261.2	11574.69	4275.163	6906.259
#2	5586.770	100121.6	11749.90	4237.844	6916.315
#3	5583.672	100223.8	11633.10	4254.183	6914.497

Sample Name: Q2831-03MS Acquired: 8/13/2025 14:46:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8458270**	**1.737286**	**.9652560**	**2.107903**	**.8443818**	**2.148898**	**.3826328**
Stddev	.0032919	.055051	.0019581	.005155	.0007695	.011355	.0004337
%RSD	.3891977	3.168775	.2028598	.2445769	.0911301	.5284083	.1133377
#1	.8420374	1.792371	.9674898	2.110184	.8451014	2.159785	.3821437
#2	.8479788	1.737216	.9638363	2.111525	.8435706	2.137127	.3829703
#3	.8474648	1.682270	.9644419	2.102001	.8444732	2.149782	.3827843

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1909194**	**.2022705**	**14.48074**	**.4198337**	**.2044384**	**.3160573**	**3.317671**
Stddev	.0006541	.0005574	.03179	.0017132	.0006591	.0005505	.022368
%RSD	.3425861	.2755808	.2195316	.4080718	.3224065	.1741778	.6742153
#1	.1906266	.2027879	14.50251	.4184322	.2051783	.3160583	3.327126
#2	.1904629	.2016802	14.44426	.4193253	.2039140	.3155063	3.333758
#3	.1916687	.2023436	14.49546	.4217436	.2042230	.3166073	3.292127

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5195057**	**5.857036**	**.5152142**	**.0776577**	**257.9875**	**.3094912**	**.5653778**
Stddev	.0007524	.036244	.0015212	.0004349	2.0905	.0026752	.0021538
%RSD	.1448350	.6188112	.2952615	.5600181	.8103231	.8643875	.3809552
#1	.5199643	5.825510	.5162708	.0781599	259.7102	.3074428	.5641219
#2	.5199155	5.896636	.5134706	.0774043	255.6617	.3125178	.5678648
#3	.5186373	5.848962	.5159011	.0774089	258.5907	.3085129	.5641467

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.81714**	**.3078938**	**.4365804**	**.7112207**	**.2010500**	**1.682962**	**5.963440**
Stddev	.05405	.0015414	.0007741	.0016633	.0003920	.007348	.047251
%RSD	.4573821	.5006193	.1773155	.2338691	.1949985	.4366399	.7923422
#1	11.75549	.3075952	.4370464	.7127760	.2013333	1.685239	6.017025
#2	11.85636	.3065235	.4356868	.7094671	.2012142	1.674745	5.945545
#3	11.83957	.3095626	.4370079	.7114188	.2006026	1.688903	5.927751

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03MS Acquired: 8/13/2025 14:46:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.831955	.1880088	.2552432
Stddev	.004998	.0007590	.0000944
%RSD	.2728126	.4037142	.0369676
#1	1.835144	.1885904	.2553116
#2	1.834526	.1871502	.2551356
#3	1.826195	.1882857	.2552825

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5439.391	97001.11	11758.90	4135.885	6517.757
Stddev	8.286	426.72	49.67	13.807	13.219
%RSD	.1523291	.4399137	.4224153	.3338441	.2028180
#1	5429.842	97463.44	11784.21	4151.551	6505.464
#2	5443.642	96917.51	11790.81	4130.611	6531.740
#3	5444.688	96622.38	11701.67	4125.491	6516.068

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03MSD Acquired: 8/13/2025 14:50:08 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8248648**	**1.750507**	**.9362422**	**2.071232**	**.8250552**	**2.146683**	**.4082486**
Stddev	.0033446	.018036	.0017761	.009606	.0010754	.016818	.0020494
%RSD	.4054669	1.030313	.1897025	.4637894	.1303381	.7834435	.5019883
#1	.8263015	1.768061	.9345192	2.082132	.8241325	2.151418	.4096091
#2	.8210419	1.732026	.9380670	2.064003	.8247969	2.160626	.4058915
#3	.8272509	1.751433	.9361406	2.067560	.8262362	2.128005	.4092451

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1864374**	**.1978592**	**16.49128**	**.4134135**	**.1997713**	**.3086908**	**3.292396**
Stddev	.0015550	.0004035	.00567	.0014333	.0001766	.0006836	.027436
%RSD	.8340785	.2039125	.0343917	.3467045	.0884234	.2214542	.8333133
#1	.1881190	.1980268	16.48739	.4137637	.1996369	.3082781	3.262573
#2	.1861416	.1973989	16.48867	.4118375	.1997055	.3094799	3.298051
#3	.1850514	.1981519	16.49779	.4146392	.1999714	.3083144	3.316563

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5638115**	**6.376995**	**.5031403**	**.0762612**	**299.6543**	**.3025380**	**.6117689**
Stddev	.0036059	.039751	.0005890	.0003046	4.3223	.0038459	.0018888
%RSD	.6395530	.6233514	.1170613	.3994313	1.442421	1.271200	.3087506
#1	.5651357	6.342419	.5026829	.0759154	294.6635	.3018415	.6129626
#2	.5597308	6.420427	.5029330	.0764897	302.1703	.3066846	.6127529
#3	.5665681	6.368138	.5038049	.0763785	302.1293	.2990880	.6095912

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.87250**	**.3056645**	**.4329779**	**.6947003**	**.1979171**	**1.791201**	**5.774218**
Stddev	.13244	.0025377	.0006989	.0005534	.0006869	.020793	.008269
%RSD	1.115480	.8302192	.1614189	.0796592	.3470739	1.160863	.1432019
#1	11.74365	.3085916	.4337263	.6947725	.1977898	1.767312	5.777394
#2	11.86559	.3043194	.4323421	.6941144	.1973027	1.801060	5.764832
#3	12.00825	.3040825	.4328652	.6952141	.1986588	1.805231	5.780427

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03MSD Acquired: 8/13/2025 14:50:08 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.043275	.1853131	.2619561
Stddev	.006391	.0008483	.0012361
%RSD	.3127669	.4577749	.4718664
#1	2.047637	.1849999	.2622989
#2	2.035939	.1846659	.2605848
#3	2.046250	.1862735	.2629846

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5412.546	95621.60	11643.53	4093.967	6490.141
Stddev	5.226	213.61	87.78	14.727	6.093
%RSD	.0965558	.2233897	.7539105	.3597244	.0938754
#1	5411.979	95831.57	11557.82	4098.980	6491.923
#2	5407.627	95404.52	11639.54	4077.388	6483.357
#3	5418.032	95628.70	11733.25	4105.532	6495.145

Sample Name: Q2831-03A Acquired: 8/13/2025 14:54:16 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8161852**	**1.719967**	**.9271782**	**2.051999**	**.8218899**	**2.112069**	**.4152201**
Stddev	.0025675	.051805	.0016566	.006699	.0029110	.013334	.0011182
%RSD	.3145669	3.011978	.1786717	.3264794	.3541796	.6313132	.2693077
#1	.8133408	1.661563	.9290787	2.047123	.8245381	2.114963	.4163468
#2	.8183312	1.737965	.9264162	2.049236	.8187730	2.123719	.4141106
#3	.8168838	1.760372	.9260397	2.059638	.8223585	2.097526	.4152031

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1823069**	**.1958270**	**17.37746**	**.4037123**	**.1970383**	**.3050489**	**3.259105**
Stddev	.0014486	.0001843	.03862	.0003254	.0002935	.0003343	.021954
%RSD	.7945675	.0941342	.2222462	.0805935	.1489609	.1096017	.6736165
#1	.1823624	.1956581	17.42196	.4036041	.1968462	.3051724	3.261160
#2	.1808314	.1957992	17.35258	.4040780	.1968926	.3046704	3.279959
#3	.1837269	.1960236	17.35786	.4034549	.1973762	.3053040	3.236196

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5818434**	**6.601214**	**.4985090**	**.0749881**	**315.4277**	**.2977980**	**.6383998**
Stddev	.0018705	.047845	.0001743	.0004465	2.4947	.0015731	.0014964
%RSD	.3214869	.7247877	.0349711	.5953886	.7908790	.5282555	.2344010
#1	.5838508	6.610990	.4983779	.0748782	313.5838	.2996047	.6395410
#2	.5801493	6.549237	.4987068	.0754792	318.2663	.2970575	.6367055
#3	.5815301	6.643416	.4984423	.0746068	314.4331	.2967318	.6389528

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.90156**	**.3035321**	**.4269753**	**.7003077**	**.1937429**	**1.872723**	**5.769628**
Stddev	.08156	.0031720	.0007963	.0021545	.0006656	.012466	.014138
%RSD	.6852792	1.045028	.1865055	.3076533	.3435298	.6656707	.2450370
#1	11.93287	.3038839	.4269369	.6982305	.1936932	1.864609	5.757904
#2	11.96281	.3001988	.4261989	.7025320	.1931036	1.887077	5.785328
#3	11.80898	.3065135	.4277901	.7001606	.1944320	1.866484	5.765653

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2831-03A Acquired: 8/13/2025 14:54:16 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.199047**	**.1836694**	**.2632172**
Stddev	.016043	.0014938	.0005194
%RSD	.7295647	.8133028	.1973294
#1	2.183032	.1846845	.2633951
#2	2.198991	.1843696	.2636242
#3	2.215119	.1819542	.2626322

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5378.167**	**95313.66**	**11712.23**	**4072.355**	**6425.140**
Stddev	7.429	216.53	61.11	22.964	8.912
%RSD	.1381366	.2271780	.5217566	.5639076	.1387091
#1	5375.971	95335.45	11711.70	4076.893	6418.966
#2	5386.447	95087.05	11773.60	4047.461	6435.357
#3	5372.084	95518.47	11651.39	4092.712	6421.097

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169214BL Acquired: 8/13/2025 14:58:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010235**	**-.001369**	**-.000749**	**.0004666**	**-.001921**	**-.017821**
Stddev	.0016576	.000870	.001029	.0018969	.001751	.008505
%RSD	161.9481	63.52798	137.3356	406.5549	91.13790	47.72294
#1	.0009849	-.000381	-.001178	-.001717	-.001667	-.008046
#2	.0027000	-.001705	-.001494	.001709	-.000311	-.021890
#3	-.000614	-.002020	.000425	.001407	-.003785	-.023527

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.006645**	**-.000032**	**-.000155**	**-.010913**	**.0002165**	**-.000203**
Stddev	.000943	.000014	.000064	.008788	.0001215	.000101
%RSD	14.19433	42.72825	41.49957	80.52361	56.12477	49.86982
#1	-.006678	-.000028	-.000123	-.009754	.0000770	-.000108
#2	-.005685	-.000021	-.000112	-.002763	.0002994	-.000191
#3	-.007571	-.000048	-.000229	-.020223	.0002732	-.000310

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000247**	**-.003087**	**-.000551**	**-.016681**	**-.000100**	**.0007818**
Stddev	.000437	.005731	.000210	.021290	.000125	.0000986
%RSD	177.3000	185.6381	38.16177	127.6314	125.4901	12.60749
#1	.000257	.000946	-.000792	-.030047	-.000101	.0007171
#2	-.000469	-.009647	-.000402	.007871	.000026	.0008952
#3	-.000528	-.000560	-.000459	-.027867	-.000224	.0007330

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6899983**	**-.000811**	**-.000316**	**.6461554**	**-.002127**	**-.000022**
Stddev	.0482194	.001431	.000049	.0117819	.000504	.000146
%RSD	6.988336	176.4536	15.60825	1.823382	23.70824	657.4477
#1	.7288618	-.001793	-.000363	.6589839	-.002709	.000128
#2	.7050966	-.001472	-.000265	.6436634	-.001817	-.000032
#3	.6360364	.000831	-.000321	.6358188	-.001854	-.000163

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169214BL Acquired: 8/13/2025 14:58:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000303	-.000362	.0126520	.0001514	-.000187	F .0167851
Stddev	.000239	.001056	.0168624	.0017202	.001669	.0009989
%RSD	78.93664	291.4126	133.2787	1136.296	892.6703	5.951275
#1	-.000292	.000187	.0320242	-.000502	.001722	.0178294
#2	-.000548	.000306	.0046624	-.001146	-.001373	.0166874
#3	-.000070	-.001580	.0012693	.002103	-.000909	.0158387

Elem	Sr4077
Units	ppm
Avg	-.000385
Stddev	.000022
%RSD	5.690411
#1	-.000392
#2	-.000403
#3	-.000361

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5755.226	103286.9	11494.17	4335.281	7536.664
Stddev	12.533	91.4	21.48	17.691	19.896
%RSD	.2177708	.0884516	.1868431	.4080599	.2639897
#1	5743.195	103363.4	11470.19	4353.659	7521.600
#2	5768.207	103185.7	11511.64	4333.814	7559.218
#3	5754.276	103311.5	11500.67	4318.370	7529.176

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169214BS Acquired: 8/13/2025 15:02:41 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7938186**	**2.189076**	**.9560042**	**2.026724**	**.8034402**	**1.975594**
Stddev	.0021161	.023292	.0021111	.007024	.0023960	.007247
%RSD	.2665748	1.064003	.2208226	.3465452	.2982235	.3668485
#1	.7938879	2.177530	.9583097	2.022218	.8009094	1.983903
#2	.7958992	2.173812	.9541659	2.023136	.8056737	1.970578
#3	.7916687	2.215885	.9555368	2.034816	.8037376	1.972301

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1889560**	**.2000878**	**.1899912**	**1.011083**	**.4100973**	**.1953476**
Stddev	.0005085	.0017927	.0002470	.003965	.0009950	.0001890
%RSD	.2691272	.8959469	.1300109	.3921409	.2426386	.0967637
#1	.1887475	.2013838	.1902228	1.007401	.4097026	.1952237
#2	.1885849	.2008377	.1900197	1.015280	.4093602	.1955651
#3	.1895357	.1980420	.1897312	1.010568	.4112291	.1952539

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3102760**	**3.023575**	**.2008767**	**1.981185**	**.4909465**	**.0765581**
Stddev	.0002951	.051688	.0005262	.019595	.0004238	.0005259
%RSD	.0950965	1.709502	.2619648	.9890339	.0863225	.6869422
#1	.3104296	2.989808	.2002727	1.969465	.4913109	.0761178
#2	.3104626	2.997838	.2011220	1.970283	.4910471	.0764162
#3	.3099358	3.083079	.2012356	2.003805	.4904814	.0771405

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.969037**	**.3040168**	**.2082205**	**9.866256**	**.2916774**	**.4093377**
Stddev	.021020	.0026288	.0010499	.076192	.0014277	.0004565
%RSD	.7079573	.8647066	.5042331	.7722504	.4894870	.1115208
#1	2.952377	.3013267	.2094113	9.845729	.2913583	.4089553
#2	2.962081	.3065798	.2074280	9.802431	.2932376	.4092147
#3	2.992652	.3041438	.2078222	9.950610	.2904362	.4098431

Sample Name: PB169214BS Acquired: 8/13/2025 15:02:41 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6666399	.1919342	.8958332	5.371450	F -.001421	.2000307
Stddev	.0007908	.0018770	.0019460	.020209	.001956	.0004630
%RSD	.1186221	.9779166	.2172320	.3762335	137.6998	.2314649
#1	.6674579	.1898465	.8941467	5.389964	-.001980	.2005640
#2	.6665823	.1934822	.8953905	5.374494	.000754	.1997321
#3	.6658795	.1924739	.8979625	5.349891	-.003036	.1997958

Elem	Sr4077
Units	ppm
Avg	.1943626
Stddev	.0001925
%RSD	.0990383
#1	.1944057
#2	.1941522
#3	.1945299

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5751.688	102143.9	11497.78	4323.500	7336.115
Stddev	10.907	158.0	94.96	4.580	21.047
%RSD	.1896324	.1547224	.8259352	.1059422	.2868955
#1	5742.439	102201.5	11455.24	4326.232	7317.695
#2	5748.910	102265.1	11431.51	4318.212	7331.595
#3	5763.716	101965.1	11606.57	4326.056	7359.054

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169211BL Acquired: 8/13/2025 15:06:42 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004111**	**-.000199**	**-.001120**	**-.003356**	**-.000939**	**-.020048**	**-.008017**
Stddev	.0007195	.000661	.000975	.001254	.000843	.002858	.001327
%RSD	175.0380	332.3926	87.00738	37.36476	89.71201	14.25701	16.55008
#1	-.000324	-.000044	-.002174	-.002179	-.001320	-.018584	-.006525
#2	.000443	-.000924	-.000933	-.004675	.000027	-.018219	-.009064
#3	.001114	.000371	-.000252	-.003215	-.001525	-.023342	-.008461

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000183**	**-.000076**	**-.015517**	**.0000725**	**-.000194**	**-.000221**	**-.007885**
Stddev	.0000233	.000047	.008146	.0001255	.000098	.000184	.002626
%RSD	127.5846	60.99397	52.49584	173.1570	50.42397	83.06363	33.30239
#1	-.000001	-.000106	-.006967	.0001875	-.000271	-.000428	-.006194
#2	.000012	-.000023	-.023187	.0000914	-.000226	-.000156	-.006551
#3	.000044	-.000100	-.016396	-.000061	-.000084	-.000078	-.010911

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000367**	**-.004463**	**-.000069**	**.0002437**	**.1680191**	**-.000545**	**-.000495**
Stddev	.000595	.015803	.000434	.0004300	.0025115	.002112	.000291
%RSD	161.9412	354.1147	626.6471	176.4375	1.494784	387.6116	58.74022
#1	-.000771	.009089	-.000367	-.000130	.1681156	-.002955	-.000160
#2	.000316	-.000656	-.000269	.000147	.1654607	.000984	-.000649
#3	-.000647	-.021821	.000428	.000714	.1704810	.000336	-.000676

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2929585**	**-.002242**	**-.000193**	**-.000169**	**.0003801**	**-.002124**	**.0002534**
Stddev	.0238256	.000233	.000304	.000568	.0008979	.002269	.0022480
%RSD	8.132756	10.39470	157.4197	336.4873	236.2466	106.8311	887.0102
#1	.3100437	-.002024	.000138	.000487	.0013544	-.001325	.0028152
#2	.2657415	-.002214	-.000460	-.000501	.0002000	-.004684	-.000665
#3	.3030903	-.002488	-.000258	-.000492	-.000414	-.000363	-.001390

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169211BL Acquired: 8/13/2025 15:06:42 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002507	-.001726	-.000380
Stddev	.002432	.001021	.000048
%RSD	97.01249	59.15866	12.57555
#1	.000001	-.001593	-.000348
#2	-.002666	-.002807	-.000435
#3	-.004856	-.000778	-.000357

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5798.323	102055.2	11545.26	4324.539	7614.703
Stddev	7.539	466.9	61.26	16.988	8.538
%RSD	.1300236	.4575016	.5305655	.3928282	.1121196
#1	5789.658	101640.4	11504.38	4310.325	7608.147
#2	5801.929	102560.9	11515.70	4343.354	7611.604
#3	5803.383	101964.2	11615.69	4319.939	7624.357

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169215BL Acquired: 8/13/2025 15:15:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015062**	**-.000428**	**-.000812**	**-.002134**	**-.001279**	**-.023435**	**-.005510**
Stddev	.0001711	.000552	.000620	.000704	.001398	.003566	.000870
%RSD	11.36091	129.1807	76.33808	32.99679	109.2534	15.21467	15.78782
#1	.0013103	-.000504	-.001492	-.001385	-.002614	-.020095	-.005545
#2	.0015813	-.000938	-.000666	-.002235	.000174	-.023020	-.004624
#3	.0016269	.000159	-.000278	-.002783	-.001397	-.027190	-.006363

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000047**	**-.000135**	**-.015382**	**.0000405**	**-.000207**	**-.000469**	**-.013124**
Stddev	.000058	.000064	.006357	.0002126	.000163	.000147	.001165
%RSD	124.0776	47.38313	41.32737	524.7280	78.42537	31.31782	8.875237
#1	.000009	-.000102	-.021738	.0000395	-.000136	-.000455	-.013966
#2	-.000041	-.000209	-.009023	-.000172	-.000394	-.000622	-.011794
#3	-.000107	-.000095	-.015386	.000254	-.000093	-.000329	-.013610

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000145**	**.0010432**	**.0003212**	**.0004175**	**.0690850**	**-.000806**	**-.000630**
Stddev	.000564	.0173742	.0000882	.0000908	.0156023	.001863	.000149
%RSD	390.2070	1665.397	27.45343	21.75538	22.58418	231.1434	23.67576
#1	.000463	.0005179	.0002315	.0005218	.0543786	-.002948	-.000591
#2	-.000652	-.016062	.0003242	.0003559	.0674258	.000088	-.000794
#3	-.000245	.018674	.0004078	.0003747	.0854505	.000442	-.000504

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1915622**	**-.002501**	**-.000308**	**-.000352**	**-.000664**	**.0001007**	**.0002412**
Stddev	.0137264	.000266	.000173	.000475	.001153	.0030708	.0008293
%RSD	7.165503	10.63528	56.21316	134.8013	173.6091	3048.390	343.7718
#1	.1860739	-.002255	-.000109	-.000887	-.000429	-.000044	.0006213
#2	.1814292	-.002784	-.000424	-.000187	-.001916	.003242	-.000710
#3	.2071836	-.002465	-.000391	.000018	.000353	-.002895	.000812

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169215BL Acquired: 8/13/2025 15:15:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000445**	**-.004324**	**-.000377**
Stddev	.000902	.000723	.000033
%RSD	202.4703	16.71955	8.805651
#1	-.000192	-.004431	-.000339
#2	-.001447	-.003553	-.000390
#3	.000303	-.004987	-.000402

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5744.394**	**102711.1**	**11389.97**	**4334.163**	**7539.356**
Stddev	11.519	111.5	203.83	12.352	15.660
%RSD	.2005314	.1085839	1.789570	.2849853	.2077039
#1	5731.097	102613.7	11497.06	4322.124	7522.271
#2	5750.756	102832.8	11154.91	4333.561	7553.027
#3	5751.331	102686.7	11517.93	4346.805	7542.769

Sample Name: PB169211BS Acquired: 8/13/2025 15:19:21 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7848174**	**1.954682**	**.9478664**	**1.989791**	**.8133987**	**1.961216**
Stddev	.0024503	.035435	.0011982	.001370	.0026707	.004952
%RSD	.3122066	1.812850	.1264075	.0688278	.3283425	.2525182
#1	.7837395	1.959969	.9491421	1.991090	.8104130	1.959730
#2	.7830909	1.916899	.9467649	1.989923	.8155600	1.966742
#3	.7876218	1.987176	.9476922	1.988361	.8142233	1.957177

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1853821**	**.1942511**	**.1881470**	**.9979744**	**.4062653**	**.1935854**
Stddev	.0009630	.0012350	.0003905	.0080823	.0008658	.0003802
%RSD	.5194793	.6357772	.2075344	.8098726	.2131039	.1964173
#1	.1858355	.1929472	.1885978	.9887545	.4068685	.1939572
#2	.1842761	.1944030	.1879177	1.001331	.4066540	.1931972
#3	.1860348	.1954031	.1879253	1.003837	.4052733	.1936016

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3085259**	**3.018975**	**.1973862**	**1.944879**	**.4873920**	**.0755795**
Stddev	.0002140	.028553	.0008450	.020887	.0003084	.0002915
%RSD	.0693534	.9457873	.4280677	1.073929	.0632701	.3857110
#1	.3086825	3.051796	.1982846	1.941037	.4877408	.0757756
#2	.3082821	3.005280	.1966075	1.967421	.4871558	.0757185
#3	.3086132	2.999849	.1972664	1.926181	.4872792	.0752445

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.751885**	**.2998950**	**.2065639**	**9.713072**	**.2837502**	**.4137481**
Stddev	.013668	.0020729	.0003828	.051070	.0016970	.0007590
%RSD	.4966925	.6911981	.1853020	.5257830	.5980526	.1834400
#1	2.767391	.2975351	.2063815	9.770009	.2828754	.4143840
#2	2.746679	.3014212	.2063065	9.697895	.2826690	.4129078
#3	2.741584	.3007286	.2070038	9.671310	.2857060	.4139524

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169211BS Acquired: 8/13/2025 15:19:21 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6712240**	**.1938734**	**.9436818**	**5.420376**	F **.0001134**	**.1906200**
Stddev	.0022518	.0016192	.0098181	.006628	.0005296	.0005905
%RSD	.3354744	.8351992	1.040398	.1222854	467.1833	.3097584
#1	.6734125	.1922009	.9510521	5.426410	.0004135	.1901507
#2	.6689139	.1954336	.9474568	5.413281	-.000498	.1912830
#3	.6713454	.1939856	.9325366	5.421438	.000425	.1904264

Elem	Sr4077
Units	ppm
Avg	**.1907465**
Stddev	.0004953
%RSD	.2596457
#1	.1912985
#2	.1906001
#3	.1903409

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5760.607**	**102514.7**	**11697.02**	**4335.838**	**7356.311**
Stddev	7.859	331.6	37.82	32.091	11.319
%RSD	.1364212	.3234640	.3233563	.7401422	.1538715
#1	5753.008	102132.5	11736.44	4300.527	7343.296
#2	5760.110	102686.2	11693.59	4363.225	7363.864
#3	5768.702	102725.5	11661.02	4343.761	7361.772

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV04 Acquired: 8/13/2025 15:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.006582**	**4.764937**	**4.861840**	**5.066387**	**5.057073**	**9.759803**	**9.663803**
Stddev	.008391	.079538	.005222	.007827	.008178	.026934	.120905
%RSD	.1676081	1.669233	.1074077	.1544924	.1617067	.2759644	1.251114
#1	4.998108	4.796499	4.865970	5.060269	5.051677	9.764857	9.693351
#2	5.006752	4.823850	4.855970	5.063684	5.053061	9.730700	9.530863
#3	5.014888	4.674462	4.863579	5.075207	5.066482	9.783851	9.767196

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2390305**	**2.429669**	**24.30502**	**.9910053**	**2.431002**	**1.242334**	**4.996794**
Stddev	.0013599	.001403	.02608	.0002695	.001309	.001685	.041713
%RSD	.5689187	.0577432	.1073167	.0271950	.0538314	.1356615	.8348001
#1	.2388577	2.430933	24.31981	.9913162	2.431519	1.240533	4.994554
#2	.2377653	2.429915	24.27491	.9908622	2.431973	1.243873	5.039583
#3	.2404685	2.428160	24.32035	.9908375	2.429514	1.242595	4.956246

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.394636**	**24.17056**	**2.443000**	**1.242925**	**23.74288**	**2.466601**	**2.504263**
Stddev	.001663	.01215	.001712	.001103	.12195	.004611	.004576
%RSD	.0694360	.0502537	.0700656	.0887644	.5136294	.1869500	.1827204
#1	2.395846	24.18294	2.443771	1.243739	23.69289	2.471856	2.509547
#2	2.395321	24.15866	2.444191	1.241670	23.88188	2.463230	2.501620
#3	2.392740	24.17007	2.441039	1.243367	23.65387	2.464716	2.501623

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.65721**	**4.784846**	**5.044223**	**4.871666**	**4.871899**	**5.099103**	**4.769733**
Stddev	.12776	.025705	.005817	.006420	.005393	.016541	.000592
%RSD	.5181358	.5372075	.1153114	.1317765	.1107047	.3243961	.0124219
#1	24.56000	4.785157	5.038909	4.875508	4.874707	5.080005	4.769991
#2	24.80191	4.758987	5.043322	4.875234	4.865681	5.108392	4.769055
#3	24.60971	4.810393	5.050437	4.864255	4.875310	5.108911	4.770153

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV04 Acquired: 8/13/2025 15:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.797300**	**4.605971**	**4.852389**
Stddev	.012976	.011410	.053692
%RSD	.2704760	.2477323	1.106515
#1	4.794412	4.592854	4.899625
#2	4.811476	4.611453	4.793994
#3	4.786011	4.613606	4.863549

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5545.487**	**99200.59**	**11507.41**	**4182.301**	**6713.448**
Stddev	8.693	130.22	68.47	19.057	6.975
%RSD	.1567527	.1312741	.5950074	.4556596	.1038959
#1	5555.224	99051.88	11472.81	4160.894	6716.892
#2	5542.728	99294.28	11586.28	4197.417	6705.420
#3	5538.508	99255.60	11463.14	4188.593	6718.030

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB04 Acquired: 8/13/2025 15:27:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006266**	**-.000228**	**-.000818**	**-.001163**	**-.001750**	**-.015706**	**-.008146**
Stddev	.0011529	.000821	.001139	.000186	.001919	.007660	.001159
%RSD	183.9847	360.0616	139.3426	15.99170	109.6717	48.77059	14.22457
#1	.0019305	-.000954	-.001659	-.001325	-.003960	-.022755	-.008678
#2	-.000258	-.000392	.000479	-.001204	-.000771	-.016810	-.008944
#3	.000208	.000662	-.001273	-.000960	-.000518	-.007554	-.006817

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000045**	**-.000098**	**-.012792**	**.0002817**	**-.000097**	**-.000294**	**-.005749**
Stddev	.000032	.000042	.010021	.0000558	.000108	.000057	.002936
%RSD	70.34791	42.49146	78.33554	19.80702	111.6106	19.42404	51.06848
#1	-.000015	-.000140	-.024356	.0003404	-.000175	-.000357	-.008842
#2	-.000042	-.000057	-.006663	.0002755	-.000141	-.000246	-.003000
#3	-.000078	-.000096	-.007358	.0002293	.000026	-.000278	-.005405

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000646**	**.0021441**	**.0002269**	**.0004995**	**.0345725**	**-.000698**	**.0002276**
Stddev	.000229	.0139189	.0000453	.0004575	.0111349	.001094	.0000262
%RSD	35.49877	649.1859	19.96302	91.58869	32.20728	156.6740	11.50061
#1	-.000681	-.002513	.0001940	.0008650	.0273777	.000464	.0001993
#2	-.000857	-.008849	.0002786	-.000014	.0473982	-.000850	.0002324
#3	-.000402	.017794	.0002082	.000647	.0289416	-.001708	.0002510

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1786227**	**.0052852**	**-.000120**	**-.000082**	**.0005844**	**.0214060**	**.0023649**
Stddev	.0182456	.0003073	.000182	.000304	.0005932	.0071425	.0027215
%RSD	10.21458	5.814260	152.1822	370.0067	101.5089	33.36692	115.0769
#1	.1995735	.0056400	.000091	-.000357	.0012520	.0288243	.0025590
#2	.1662245	.0051011	-.000221	.000245	.0003831	.0145757	-.000448
#3	.1700700	.0051146	-.000228	-.000134	.0001180	.0208179	.004984

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB04 Acquired: 8/13/2025 15:27:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000558**	**-.002100**	**-.000347**
Stddev	.001640	.000751	.000021
%RSD	293.8440	35.75941	6.084275
#1	.001310	-.002774	-.000371
#2	-.001761	-.002235	-.000331
#3	-.001223	-.001291	-.000338

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5812.099**	**104162.6**	**11752.27**	**4374.846**	**7663.584**
Stddev	9.963	483.3	12.47	16.746	9.584
%RSD	.1714149	.4639507	.1061224	.3827870	.1250534
#1	5816.245	103903.7	11765.60	4357.058	7670.426
#2	5819.319	103863.8	11740.88	4377.175	7667.695
#3	5800.732	104720.1	11750.34	4390.307	7652.631

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169200TB Acquired: 8/13/2025 15:31:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001733**	**-.001251**	**-.000954**	**.0064789**	**.0001909**	**-.012922**	**-.009606**
Stddev	.000746	.001418	.001236	.0009879	.0013411	.001543	.000140
%RSD	43.05275	113.3527	129.6193	15.24854	702.6429	11.94053	1.461455
#1	-.001163	.000386	-.002222	.0064606	.0003743	-.014377	-.009503
#2	-.001458	-.002054	-.000887	.0055003	-.001232	-.013084	-.009549
#3	-.002577	-.002084	.000248	.0074759	.001431	-.011304	-.009766

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000145**	**-.000210**	**.0105569**	**.0000744**	**-.000443**	**-.000113**	**-.005603**
Stddev	.000013	.000035	.0048680	.0003986	.000130	.000396	.008326
%RSD	8.948788	16.85594	46.11250	535.6730	29.44306	349.7343	148.6179
#1	-.000136	-.000169	.0156342	.0001001	-.000449	.000042	-.003759
#2	-.000159	-.000230	.0059294	.0004595	-.000570	.000181	-.014696
#3	-.000138	-.000230	.0101069	-.000336	-.000309	-.000564	.001648

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0055757**	**-.019547**	**.0009463**	**.0002576**	**441.2733**	**-.000780**	**.0027015**
Stddev	.0000689	.014846	.0002477	.0002575	2.2551	.000664	.0002476
%RSD	1.236446	75.95006	26.17142	99.96742	.5110384	85.09278	9.165545
#1	.0054992	-.008862	.0012137	.0001590	443.4230	-.000017	.0024160
#2	.0056329	-.013281	.0007247	.0005497	438.9259	-.001098	.0028299
#3	.0055950	-.036499	.0009007	.0000639	441.4710	-.001225	.0028585

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1628629**	**.0004407**	**.0002781**	**.0017237**	**-.001204**	**.0075056**	**.0085583**
Stddev	.0196115	.0001943	.0000857	.0007288	.001820	.0104390	.0005957
%RSD	12.04171	44.08205	30.80454	42.27880	151.1821	139.0824	6.960305
#1	.1742980	.0002171	.0002634	.0015876	-.000631	.0191918	.0080713
#2	.1402179	.0005368	.0003702	.0010726	-.003240	.0042211	.0083812
#3	.1740728	.0005682	.0002008	.0025110	.000261	-.000896	.0092225

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169200TB Acquired: 8/13/2025 15:31:51 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1028890	-.009087	-.000173
Stddev	.0029027	.000353	.000020
%RSD	2.821224	3.887003	11.44720
#1	.1009599	-.009440	-.000151
#2	.1014799	-.008733	-.000179
#3	.1062273	-.009089	-.000189

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5259.474	93740.99	11870.25	3963.272	6334.302
Stddev	10.789	129.24	42.59	19.409	6.300
%RSD	.2051437	.1378663	.3588237	.4897223	.0994563
#1	5267.172	93670.20	11900.24	3984.606	6327.756
#2	5264.108	93662.61	11889.01	3946.660	6340.322
#3	5247.142	93890.15	11821.49	3958.548	6334.827

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2808-04 Acquired: 8/13/2025 15:36:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012084	-.007142	-.001966	.0008957	-.001231	.0353977	.7543543
Stddev	.0011546	.001331	.000905	.0020298	.001383	.0169755	.0023880
%RSD	95.54893	18.63047	46.02128	226.6194	112.3448	47.95647	.3165628
#1	.0011245	-.008650	-.001111	.0005554	-.001121	.0507281	.7568897
#2	.0024027	-.006640	-.002913	.0030741	-.002667	.0171542	.7540254
#3	.0000980	-.006135	-.001873	-.000942	.000094	.0383109	.7521478

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003242	.0004314	143.6534	-.000585	.0014674	-.001415	44.79447
Stddev	.0000299	.0000682	.2709	.000306	.0000678	.000107	.07574
%RSD	9.231972	15.79592	.1885467	52.29269	4.623183	7.544293	.1690826
#1	.0002944	.0004456	143.7573	-.000726	.0014798	-.001318	44.78370
#2	.0003543	.0004914	143.8570	-.000795	.0015283	-.001530	44.72469
#3	.0003239	.0003573	143.3460	-.000234	.0013943	-.001399	44.87502

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.313864	7.095835	.0203040	.0025133	336.3410	.0000097	.1752275
Stddev	.005340	.024980	.0002070	.0003095	2.3443	.0007534	.0002137
%RSD	.4064632	.3520442	1.019769	12.31277	.6970086	7762.912	.1219832
#1	1.318051	7.085513	.0204942	.0023224	339.0220	-.000633	.1750853
#2	1.315692	7.124322	.0203345	.0023472	335.3247	-.000177	.1751240
#3	1.307850	7.077669	.0200834	.0028704	334.6763	.000839	.1754733

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.853296	.0928011	.0002084	-.002211	-.005004	.9744557	.0088558
Stddev	.026461	.0007300	.0000739	.000550	.000903	.0149631	.0013873
%RSD	1.427756	.7865870	35.43935	24.88461	18.03725	1.535536	15.66535
#1	1.845325	.0920627	.0001431	-.002834	-.004727	.9592809	.0085364
#2	1.831737	.0928183	.0002886	-.001790	-.004273	.9748884	.0076561
#3	1.882825	.0935223	.0001936	-.002010	-.006013	.9891978	.0103750

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2808-04 Acquired: 8/13/2025 15:36:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.711850**	**-.023660**	**.7856772**
Stddev	.008461	.000470	.0019203
%RSD	.3119986	1.984925	.2444132
#1	2.717472	-.023555	.7878258
#2	2.715960	-.024173	.7850774
#3	2.702120	-.023252	.7841284

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5158.161**	**92861.56**	**11796.74**	**3888.707**	**6164.053**
Stddev	4.954	17.34	35.72	6.322	4.149
%RSD	.0960425	.0186783	.3028281	.1625823	.0673081
#1	5160.742	92862.52	11779.42	3882.122	6160.774
#2	5161.292	92843.75	11772.99	3894.728	6162.668
#3	5152.450	92878.40	11837.83	3889.272	6168.718

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2826-02 Acquired: 8/13/2025 15:40:42 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003870**	**.0013367**	**.0016224**	**.0009300**	**.0031688**	**.0630191**	**.1632868**
Stddev	.000858	.0014517	.0000766	.0008565	.0014430	.0067992	.0004741
%RSD	22.16069	108.6039	4.720620	92.10016	45.53870	10.78918	.2903508
#1	-.004848	.0001936	.0015644	-.000052	.0019344	.0612981	.1629348
#2	-.003519	.0029701	.0015937	.001318	.0047553	.0705135	.1630997
#3	-.003244	.0008464	.0017093	.001524	.0028168	.0572458	.1638259

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000201**	**.0074130**	**215.8080**	**.0307831**	**.0034087**	**.0692483**	**-.005556**
Stddev	.000062	.0000339	.2169	.0002474	.0002559	.0004980	.005497
%RSD	31.11475	.4579942	.1005035	.8035180	7.508624	.7190735	98.94037
#1	-.000248	.0074473	215.5626	.0304976	.0032664	.0688442	-.010281
#2	-.000224	.0074122	215.8875	.0309326	.0032554	.0690961	-.006864
#3	-.000130	.0073794	215.9740	.0309190	.0037041	.0698045	.000477

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8521692**	**7.864127**	**.2856859**	**.0001217**	**353.6145**	**.0012170**	**.2019797**
Stddev	.0007872	.071823	.0007400	.0000527	.5166	.0003557	.0006402
%RSD	.0923748	.9133012	.2590378	43.32778	.1461046	29.23057	.3169736
#1	.8521487	7.805185	.2849488	.0001823	354.1647	.0013085	.2021213
#2	.8513925	7.843071	.2856803	.0000960	353.1396	.0015180	.2012806
#3	.8529665	7.944125	.2864288	.0000868	353.5392	.0008244	.2025373

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.455178**	**.1522442**	**.0017668**	**-.002519**	**-.009678**	**7.306074**	**.0321874**
Stddev	.046069	.0007788	.0000610	.001176	.000823	.051828	.0025756
%RSD	.7136775	.5115451	3.453233	46.67749	8.501667	.7093882	8.001861
#1	6.469983	.1519378	.0018062	-.003867	-.008792	7.337459	.0341779
#2	6.492024	.1531296	.0016965	-.001982	-.009823	7.334511	.0292785
#3	6.403526	.1516652	.0017977	-.001708	-.010419	7.246252	.0331058

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2826-02 Acquired: 8/13/2025 15:40:42 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**8.226027**	**-.034296**	**.7481124**
Stddev	.050011	.001144	.0016771
%RSD	.6079566	3.335712	.2241805
#1	8.191122	-.033056	.7495049
#2	8.203639	-.035310	.7485817
#3	8.283321	-.034521	.7462506

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5146.808**	**92279.32**	**11784.68**	**3808.550**	**6169.524**
Stddev	1.627	89.97	46.13	4.458	5.498
%RSD	.0316022	.0974960	.3914651	.1170558	.0891226
#1	5148.622	92262.71	11831.06	3809.639	6173.699
#2	5146.320	92198.82	11784.21	3803.648	6171.580
#3	5145.480	92376.44	11738.79	3812.362	6163.294

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-04 Acquired: 8/13/2025 15:45:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0033375**	**-.003074**	**-.001057**	**.0014729**	**-.000308**	**.0380344**	**.2495645**
Stddev	.0016837	.001029	.000641	.0027602	.000919	.0160508	.0014078
%RSD	50.44936	33.47081	60.59839	187.4022	298.6974	42.20084	.5641090
#1	.0052817	-.003587	-.000964	-.000025	.000667	.0565648	.2511639
#2	.0023584	-.001890	-.000468	-.000215	-.000432	.0284558	.2490165
#3	.0023724	-.003746	-.001739	.004658	-.001159	.0290826	.2485131

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000982**	**.0001396**	**138.2531**	**-.000157**	**.0059795**	**-.001708**	**25.64333**
Stddev	.0000389	.0000339	.4155	.000235	.0000543	.000679	.70712
%RSD	39.61762	24.23960	.3005079	149.3777	.9088097	39.74215	2.757535
#1	.0001155	.0001688	138.6192	-.000254	.0059409	-.001211	25.16834
#2	.0001254	.0001025	137.8015	-.000329	.0059559	-.002482	26.45599
#3	.0000536	.0001476	138.3385	.000111	.0060417	-.001432	25.30567

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.504102**	**8.245154**	**.0126765**	**.0019749**	**369.3551**	**.0004210**	**.1281643**
Stddev	.003141	.015705	.0001787	.0004440	8.0391	.0016323	.0038640
%RSD	.2088171	.1904801	1.409777	22.48106	2.176532	387.7670	3.014896
#1	1.507721	8.255025	.0127857	.0022206	363.2808	.0022615	.1259379
#2	1.502497	8.227043	.0124703	.0022418	378.4713	-.000851	.1326260
#3	1.502087	8.253393	.0127735	.0014624	366.3131	-.000148	.1259288

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.360798**	**.1614519**	**.0019197**	**-.003109**	**-.005713**	**.9725995**	**.2032524**
Stddev	.080698	.0013615	.0003764	.000292	.000385	.0164030	.0038331
%RSD	2.401147	.8433026	19.60880	9.388671	6.747460	1.686509	1.885884
#1	3.302088	.1615220	.0016286	-.002775	-.005993	.9561299	.2075059
#2	3.452818	.1627771	.0023448	-.003312	-.005872	.9889350	.2000657
#3	3.327487	.1600567	.0017858	-.003241	-.005273	.9727336	.2021856

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-04 Acquired: 8/13/2025 15:45:01 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.020646**	**-.025564**	**.5703315**
Stddev	.005679	.000964	.0015278
%RSD	.2810378	3.770428	.2678728
#1	2.014401	-.024725	.5715272
#2	2.025501	-.026617	.5686103
#3	2.022034	-.025351	.5708568

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5140.094**	**91969.88**	**11910.66**	**3834.611**	**6150.932**
Stddev	14.189	2231.06	79.44	103.400	7.563
%RSD	.2760359	2.425855	.6670009	2.696489	.1229531
#1	5145.943	93440.29	11823.35	3896.357	6155.400
#2	5150.423	89402.73	11978.69	3715.239	6155.196
#3	5123.916	93066.63	11929.93	3892.237	6142.200

Sample Name: Q2827-08 Acquired: 8/13/2025 15:49:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004648**	**-.001267**	**.0023193**	**.0023266**	**.0015198**	**.0487123**	**.3903590**
Stddev	.0009130	.000683	.0011875	.0004222	.0007329	.0045938	.0011785
%RSD	196.4136	53.92181	51.19976	18.14667	48.22536	9.430496	.3019021
#1	-.000413	-.001527	.0016642	.0027112	.0020389	.0472627	.3909608
#2	.000398	-.000492	.0036900	.0018749	.0018390	.0538561	.3890011
#3	.001410	-.001782	.0016037	.0023938	.0006814	.0450182	.3911151

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000030**	**.0000027**	**161.0306**	**-.000177**	**.0029226**	**.0004742**	**11.32621**
Stddev	.000045	.0000286	.1109	.000292	.0001423	.0002516	.01758
%RSD	151.4507	1055.262	.0688726	165.3530	4.868289	53.06499	.1552358
#1	-.000075	-.000015	161.0566	.000157	.0029378	.0002823	11.33421
#2	.000014	.000036	160.9090	-.000385	.0030567	.0007591	11.30605
#3	-.000027	-.000013	161.1262	-.000302	.0027733	.0003812	11.33838

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6648473**	**3.602779**	**.0131446**	**.0006610**	**256.3784**	**.0010493**	**.0921859**
Stddev	.0026927	.023224	.0002111	.0005121	1.4984	.0022454	.0004844
%RSD	.4050022	.6446002	1.606094	77.47172	.5844562	213.9792	.5254905
#1	.6662891	3.610170	.0129298	.0011115	258.0277	.0026946	.0922620
#2	.6617407	3.621408	.0131522	.0001041	256.0068	-.001509	.0926278
#3	.6665120	3.576760	.0133518	.0007673	255.1008	.001962	.0916680

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.665077**	**.0347487**	**.0018025**	**-.002590**	**-.006114**	**1.242884**	**.0140477**
Stddev	.034436	.0005577	.0001830	.000708	.000471	.016625	.0014188
%RSD	1.292139	1.605026	10.15119	27.34576	7.704667	1.337593	10.10002
#1	2.700511	.0350012	.0016436	-.003080	-.006611	1.223719	.0139328
#2	2.631733	.0341094	.0020025	-.001778	-.005674	1.251503	.0155204
#3	2.662988	.0351356	.0017612	-.002912	-.006056	1.253428	.0126898

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-08 Acquired: 8/13/2025 15:49:23 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.260382**	**-.027707**	**.6373880**
Stddev	.019203	.001200	.0022095
%RSD	.8495358	4.331528	.3466420
#1	2.242359	-.027369	.6368776
#2	2.258206	-.029040	.6354785
#3	2.280580	-.026712	.6398080

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5038.797**	**90754.12**	**11402.74**	**3777.226**	**6099.754**
Stddev	37.033	188.74	12.15	19.547	35.239
%RSD	.7349610	.2079649	.1065776	.5175070	.5777085
#1	5059.530	90665.48	11412.82	3770.968	6120.440
#2	5060.819	90626.02	11389.25	3761.575	6119.756
#3	4996.041	90970.86	11406.17	3799.137	6059.066

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2808-01 Acquired: 8/13/2025 15:53:46 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1800329	.0741751	2.631210	.0111485	-.056125	138.0349
Stddev	.0032144	.0075606	.001568	.0039018	.000925	.1482
%RSD	1.785433	10.19287	.0595839	34.99810	1.647939	.1073441
#1	.1826189	.0705985	2.629903	.0156013	-.056725	137.9216
#2	.1810458	.0690665	2.630779	.0095167	-.056590	137.9805
#3	.1764341	.0828604	2.632948	.0083276	-.055060	138.2026

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.094576	.0145821	.0838653	225.7189	1.039326	.3533821
Stddev	.002682	.0001221	.0006281	.4492	.004628	.0002190
%RSD	.1280380	.8375648	.7489187	.1990023	.4452901	.0619682
#1	2.093157	.0144809	.0832362	225.2066	1.039877	.3532155
#2	2.092901	.0145476	.0844923	225.9045	1.043655	.3533007
#3	2.097669	.0147177	.0838674	226.0455	1.034448	.3536301

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.759315	895.1544	6.072521	86.12084	2.293298	.0454620
Stddev	.003353	6.4741	.010794	.25625	.000710	.0019672
%RSD	.1215271	.7232422	.1777488	.2975493	.0309422	4.327147
#1	2.756124	901.7589	6.062760	85.82496	2.292673	.0472833
#2	2.759012	894.8853	6.084113	86.26598	2.294069	.0457271
#3	2.762810	888.8190	6.070690	86.27157	2.293153	.0433757

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.08201	10.35382	5.291721	6.838310	^ *****	.0751818
Stddev	.14609	.01088	.008489	.027116	-----	.0004492
%RSD	.8552481	.1050630	.1604148	.3965274	-----	.5974492
#1	17.23668	10.34234	5.282000	6.858528	^ -----	.0751910
#2	17.06298	10.35516	5.295499	6.848906	^ -----	.0756264
#3	16.94636	10.36397	5.297665	6.807496	^ -----	.0747282

Sample Name: Q2808-01 Acquired: 8/13/2025 15:53:46 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.143629	3.997180	8.950507	9.454075	F 62.82702	.1715536
Stddev	.002432	.007489	.143087	.024550	.40623	.0022124
%RSD	.2126665	.1873633	1.598650	.2596788	.6465844	1.289631
#1	1.141105	3.988535	8.940798	9.460310	62.80098	.1720816
#2	1.145958	4.001304	9.098201	9.474906	63.24565	.1734543
#3	1.143825	4.001701	8.812521	9.427008	62.43444	.1691250

Elem	Sr4077
Units	ppm
Avg	.7413666
Stddev	.0226181
%RSD	3.050870
#1	.7157265
#2	.7498832
#3	.7584901

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5696.821	104518.4	13894.88	4253.124	5664.939
Stddev	8.061	192.8	102.65	3.394	3.323
%RSD	.1414970	.1844623	.7387386	.0798042	.0586514
#1	5700.852	104368.8	14011.48	4251.763	5667.372
#2	5702.072	104450.5	13854.96	4250.623	5666.292
#3	5687.540	104736.0	13818.18	4256.988	5661.154

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2817-01 Acquired: 8/13/2025 15:58:02 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0159929**	**.0214913**	**.0569516**	**-.011547**	**.0096765**	**119.7184**	**7.361722**
Stddev	.0043442	.0021804	.0011669	.003261	.0025923	.2278	.017733
%RSD	27.16340	10.14534	2.049020	28.24337	26.78950	.1902590	.2408823
#1	.0126426	.0189748	.0561640	-.009728	.0120109	119.4951	7.351709
#2	.0144349	.0228155	.0563986	-.009600	.0068867	119.7096	7.351259
#3	.0209013	.0226835	.0582923	-.015312	.0101321	119.9504	7.382197

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0019774**	**.0082569**	**2187.873**	**.0593914**	**.0249562**	**.0572867**	**111.2777**
Stddev	.0000469	.0001407	15.838	.0002033	.0004285	.0015108	.3812
%RSD	2.370089	1.704371	.7239144	.3422926	1.717001	2.637314	.3425388
#1	.0020309	.0084009	2206.115	.0595530	.0247352	.0588926	110.9173
#2	.0019574	.0082502	2179.880	.0594580	.0246832	.0570739	111.2391
#3	.0019438	.0081197	2177.624	.0591631	.0254500	.0558935	111.6767

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6303406**	**294.7570**	**.1856770**	**.0184864**	**52.26184**	**.0976766**	**2.813455**
Stddev	.0012775	.0737	.0007114	.0004646	.26752	.0008193	.005626
%RSD	.2026767	.0250085	.3831118	2.513492	.5118759	.8388312	.1999734
#1	.6317361	294.7615	.1863830	.0179514	51.99040	.0968175	2.816595
#2	.6292286	294.8284	.1849604	.0187179	52.26986	.0977629	2.816811
#3	.6300571	294.6812	.1856877	.0187898	52.52525	.0984493	2.806960

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**28.83225**	**.1376957**	**.0047863**	**.0777810**	**9.862906**	**3.127149**	**9.469285**
Stddev	.22718	.0026629	.0006540	.0017422	.046872	.032871	.002983
%RSD	.7879519	1.933894	13.66310	2.239854	.4752354	1.051153	.0315036
#1	28.60651	.1354698	.0040317	.0794891	9.875588	3.136849	9.470172
#2	28.82938	.1369716	.0051871	.0778472	9.902131	3.154078	9.471724
#3	29.06085	.1406458	.0051401	.0760066	9.810997	3.090519	9.465959

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2817-01 Acquired: 8/13/2025 15:58:02 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**17.77725**	**-.286456**	**1.244542**
Stddev	.05895	.003348	.002127
%RSD	.3316002	1.168719	.1708942
#1	17.83882	-.289100	1.245300
#2	17.72133	-.287577	1.242140
#3	17.77162	-.282692	1.246185

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4661.789**	**84226.01**	**11981.89**	**3484.731**	**4867.015**
Stddev	6.606	157.36	40.63	7.452	15.862
%RSD	.1417051	.1868335	.3391069	.2138553	.3259127
#1	4669.383	84307.83	11935.51	3489.956	4877.086
#2	4658.606	84325.61	12011.17	3488.041	4875.228
#3	4657.377	84044.59	11999.00	3476.197	4848.730

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2819-06 Acquired: 8/13/2025 16:02:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0295681**	**-.002025**	**.3391143**	**.0025716**	**-.002239**	**40.53668**	**.1649028**
Stddev	.0009381	.000952	.0003256	.0008557	.001405	.10716	.0003091
%RSD	3.172670	47.03529	.0960099	33.27358	62.75319	.2643643	.1874691
#1	.0305262	-.002576	.3387664	.0016127	-.000651	40.65830	.1651227
#2	.0286514	-.000925	.3394116	.0028447	-.003320	40.45612	.1650363
#3	.0295267	-.002573	.3391649	.0032574	-.002747	40.49561	.1645493

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0027959**	**.0017242**	**3.648005**	**.1100694**	**.0159814**	**.0459838**	**59.94381**
Stddev	.0000498	.0000771	.018676	.0002597	.0002884	.0003141	.13663
%RSD	1.780254	4.473007	.5119561	.2359039	1.804572	.6830040	.2279226
#1	.0028531	.0017643	3.643727	.1103691	.0158759	.0463248	59.89063
#2	.0027622	.0016352	3.631839	.1099141	.0157606	.0457064	60.09903
#3	.0027724	.0017729	3.668449	.1099248	.0163077	.0459203	59.84177

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7734115**	**6.536183**	**.0359841**	**.0027939**	**.9287686**	**.0886997**	**.1848661**
Stddev	.0021155	.010341	.0004410	.0004057	.0127441	.0013520	.0006991
%RSD	.2735216	.1582177	1.225477	14.52069	1.372151	1.524231	.3781866
#1	.7758503	6.547506	.0355489	.0027385	.9178605	.0890158	.1846904
#2	.7720725	6.527237	.0359727	.0032245	.9256685	.0898657	.1842716
#3	.7723117	6.533808	.0364306	.0024188	.9427767	.0872177	.1856363

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.593731**	**.0122503**	**.0041230**	**.0166402**	**1.202571**	**2.058589**	**1.973729**
Stddev	.026574	.0017682	.0000417	.0004858	.002886	.007744	.011679
%RSD	1.024540	14.43363	1.010701	2.919133	.2400049	.3762024	.5917076
#1	2.563046	.0109268	.0041248	.0171662	1.205589	2.049676	1.967975
#2	2.609104	.0142584	.0041637	.0165460	1.199838	2.063671	1.966045
#3	2.609043	.0115657	.0040805	.0162085	1.202286	2.062421	1.987169

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2819-06 Acquired: 8/13/2025 16:02:22 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.081090	.0601279	-.033818
Stddev	.008608	.0007097	.000099
%RSD	.7962149	1.180226	.2933515
#1	1.087160	.0604386	-.033728
#2	1.071239	.0593159	-.033924
#3	1.084871	.0606292	-.033802

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5828.270	105927.1	12790.54	4428.850	7233.982
Stddev	17.873	74.6	74.31	8.621	22.005
%RSD	.3066564	.0704444	.5809669	.1946463	.3041915
#1	5847.456	106013.0	12727.90	4437.973	7254.738
#2	5825.261	105878.5	12872.65	4427.736	7236.297
#3	5812.092	105889.7	12771.09	4420.840	7210.911

Sample Name: Q2819-11 Acquired: 8/13/2025 16:06:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0704648**	**-.004367**	**.4667449**	**.0017330**	**-.003384**	**29.56425**	**.1721573**
Stddev	.0034987	.002492	.0009880	.0015615	.002931	.04793	.0004831
%RSD	4.965171	57.05375	.2116759	90.09899	86.61258	.1621139	.2805978
#1	.0728630	-.001640	.4677795	.0002809	-.001866	29.53883	.1718935
#2	.0720812	-.006524	.4666442	.0033846	-.001524	29.61954	.1727149
#3	.0664501	-.004938	.4658112	.0015335	-.006763	29.53439	.1718637

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0056646**	**.0029592**	**110.3061**	**.0841845**	**.0187954**	**.1282340**	**72.07005**
Stddev	.0000424	.0000212	.0224	.0003283	.0000981	.0008094	.18015
%RSD	.7489706	.7158564	.0203489	.3899735	.5218511	.6311963	.2499690
#1	.0056856	.0029378	110.3125	.0844252	.0187189	.1283444	72.10278
#2	.0056923	.0029802	110.3247	.0838106	.0189060	.1289825	71.87578
#3	.0056157	.0029596	110.2812	.0843178	.0187613	.1273751	72.23160

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6079634**	**53.14769**	**.0498847**	**.0030106**	**1.874281**	**.0886187**	**.4421797**
Stddev	.0012363	.08071	.0004164	.0001571	.003327	.0023310	.0007953
%RSD	.2033503	.1518658	.8348100	5.217064	.1775170	2.630412	.1798579
#1	.6068666	53.16746	.0499115	.0031041	1.877028	.0885502	.4425090
#2	.6093031	53.21669	.0502871	.0030985	1.870582	.0909833	.4427575
#3	.6077204	53.05893	.0494556	.0028293	1.875234	.0863227	.4412726

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.859434**	**.0272433**	**.0034364**	**.0181882**	**1.074529**	**2.073624**	**2.414830**
Stddev	.023004	.0008122	.0003026	.0005704	.002707	.007259	.012654
%RSD	.8044803	2.981392	8.805798	3.135907	.2518943	.3500707	.5240094
#1	2.836883	.0267864	.0033852	.0176564	1.071978	2.065749	2.426694
#2	2.858556	.0267624	.0037614	.0187906	1.074240	2.075073	2.416285
#3	2.882865	.0281810	.0031627	.0181176	1.077368	2.080048	2.401512

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2819-11 Acquired: 8/13/2025 16:06:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**8.773774**	**.0186115**	**.0773708**
Stddev	.034542	.0003194	.0004114
%RSD	.3937015	1.716425	.5316864
#1	8.778689	.0186403	.0772887
#2	8.805596	.0182786	.0778170
#3	8.737037	.0189155	.0770066

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5512.647**	**100173.0**	**12390.82**	**4162.383**	**6647.578**
Stddev	9.278	170.2	36.82	6.630	8.815
%RSD	.1683061	.1698899	.2971413	.1592923	.1326044
#1	5521.993	99977.9	12373.84	4166.015	6657.754
#2	5503.438	100250.9	12365.56	4154.731	6642.672
#3	5512.510	100290.4	12433.07	4166.404	6642.307

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2819-14 Acquired: 8/13/2025 16:10:37 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0562086**	**-.001838**	**.0944071**	**.0016999**	**-.002344**	**18.90034**	**.0493644**
Stddev	.0009465	.000624	.0009691	.0011157	.001170	.02609	.0016606
%RSD	1.683891	33.92103	1.026491	65.63104	49.91350	.1380288	3.364029
#1	.0552950	-.002320	.0940224	.0008047	-.003276	18.87080	.0481875
#2	.0561459	-.002060	.0936895	.0013452	-.002724	18.91001	.0486417
#3	.0571849	-.001134	.0955095	.0029498	-.001031	18.92021	.0512639

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011686**	**.0009600**	**3.458917**	**.0635441**	**.0074544**	**.0551471**	**31.02448**
Stddev	.0000721	.0000533	.010362	.0004881	.0001831	.0002051	.05945
%RSD	6.166037	5.552291	.2995755	.7681515	2.455707	.3719918	.1916310
#1	.0012448	.0009593	3.449301	.0640757	.0076467	.0549441	31.09045
#2	.0011015	.0009071	3.469892	.0634402	.0074342	.0553543	31.00795
#3	.0011594	.0010137	3.457558	.0631162	.0072822	.0551430	30.97505

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3039263**	**3.218632**	**.0218651**	**.0010596**	**.7424036**	**.0469757**	**.2408749**
Stddev	.0012553	.011636	.0000523	.0002110	.0117885	.0014296	.0005640
%RSD	.4130390	.3615157	.2393011	19.91474	1.587880	3.043232	.2341325
#1	.3026352	3.208030	.0218537	.0008258	.7423926	.0468424	.2414763
#2	.3051426	3.216786	.0218194	.0011173	.7541976	.0456175	.2403578
#3	.3040009	3.231081	.0219222	.0012358	.7306206	.0484673	.2407906

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.477232**	**.0041658**	**.0010734**	**.0070126**	**.6799960**	**1.578442**	**1.552906**
Stddev	.003999	.0001915	.0000535	.0001263	.0010118	.009416	.005233
%RSD	.2706850	4.596142	4.987935	1.800273	.1487913	.5965654	.3369728
#1	1.477640	.0043512	.0011163	.0070693	.6788523	1.571093	1.557173
#2	1.473045	.0041773	.0010134	.0068679	.6807743	1.575177	1.547068
#3	1.481011	.0039688	.0010905	.0071005	.6803613	1.589057	1.554479

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2819-14 Acquired: 8/13/2025 16:10:37 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4272766	.0151018	-.011078
Stddev	.0015997	.0010046	.000059
%RSD	.3743919	6.651937	.5339193
#1	.4279249	.0158123	-.011072
#2	.4254545	.0139525	-.011141
#3	.4284504	.0155405	-.011023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5856.838	105729.6	12562.83	4407.339	7437.104
Stddev	1.171	87.5	42.88	8.296	11.229
%RSD	.0199968	.0827426	.3413558	.1882393	.1509811
#1	5857.671	105705.7	12607.08	4411.773	7439.178
#2	5857.343	105826.5	12559.96	4397.768	7447.151
#3	5855.499	105656.5	12521.46	4412.476	7424.983

Sample Name: CCV05 Acquired: 8/13/2025 16:14:50 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.008184**	**4.535581**	**4.810757**	**5.071942**	**5.093948**	**9.688008**	**9.835879**
Stddev	.012213	.134476	.005069	.016476	.010488	.030487	.175521
%RSD	.2438682	2.964905	.1053730	.3248500	.2058863	.3146899	1.784499
#1	4.994081	4.515866	4.815596	5.055795	5.081950	9.723189	10.03740
#2	5.015170	4.412050	4.805485	5.071302	5.098525	9.671504	9.71639
#3	5.015300	4.678825	4.811188	5.088729	5.101369	9.669331	9.75385

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2345472**	**2.404781**	**24.05975**	**.9910976**	**2.415756**	**1.243462**	**5.093967**
Stddev	.0023443	.003151	.06526	.0049268	.002382	.002336	.046423
%RSD	.9994838	.1310496	.2712580	.4971069	.0986044	.1878590	.9113343
#1	.2372284	2.408164	24.13258	.9859178	2.418156	1.241226	5.041633
#2	.2335290	2.401928	24.00656	.9916503	2.413392	1.245887	5.110087
#3	.2328842	2.404252	24.04010	.9957248	2.415722	1.243274	5.130181

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.382668**	**23.82309**	**2.431815**	**1.250084**	**23.79499**	**2.460924**	**2.514845**
Stddev	.013619	.09548	.001667	.000295	.17171	.011911	.006230
%RSD	.5715897	.4007756	.0685383	.0236224	.7216063	.4840047	.2477289
#1	2.397178	23.93248	2.433195	1.250300	23.60174	2.474645	2.517563
#2	2.380667	23.75649	2.429963	1.249748	23.85318	2.454879	2.507718
#3	2.370161	23.78031	2.432287	1.250205	23.93003	2.453248	2.519255

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.01605**	**4.703926**	**5.060931**	**4.822431**	**4.862344**	**5.152760**	**4.623886**
Stddev	.24828	.062604	.008490	.012141	.024646	.067816	.005770
%RSD	.9924974	1.330880	.1677609	.2517579	.5068676	1.316102	.1247822
#1	24.78744	4.775714	5.051870	4.822921	4.890374	5.079557	4.628521
#2	24.98053	4.675387	5.062220	4.810052	4.852593	5.165282	4.625713
#3	25.28018	4.660678	5.068704	4.834319	4.844067	5.213442	4.617424

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV05 Acquired: 8/13/2025 16:14:50 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.723238**	**4.553126**	**4.856926**
Stddev	.036432	.017246	.022126
%RSD	.7713261	.3787828	.4555532
#1	4.705899	4.573014	4.831990
#2	4.698714	4.544085	4.874209
#3	4.765100	4.542281	4.864580

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5506.087**	**98525.82**	**11696.80**	**4119.269**	**6709.778**
Stddev	12.822	418.78	113.77	17.004	7.032
%RSD	.2328637	.4250489	.9726645	.4127957	.1048091
#1	5514.507	98911.53	11566.18	4125.836	6705.549
#2	5491.331	98585.54	11749.90	4132.010	6705.888
#3	5512.424	98080.38	11774.31	4099.961	6717.896

Sample Name: CCB05 Acquired: 8/13/2025 16:19:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018468**	**-.000638**	**-.000707**	**.0013979**	**-.001684**	**-.012440**	**-.010541**
Stddev	.0015917	.000768	.000424	.0001202	.001345	.010019	.001202
%RSD	86.18538	120.3210	60.04589	8.596568	79.89197	80.53817	11.40620
#1	.0028402	-.000613	-.001001	.0013324	-.003185	-.002493	-.010317
#2	.0000110	.000116	-.000900	.0015366	-.000589	-.012298	-.011839
#3	.0026892	-.001419	-.000220	.0013246	-.001276	-.022529	-.009466

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000041**	**-.000169**	**-.017867**	**-.000098**	**-.000078**	**-.000062**	**-.008156**
Stddev	.000045	.000049	.001508	.000061	.000142	.000070	.005202
%RSD	109.8832	29.05314	8.440845	62.08776	182.6525	114.0563	63.78417
#1	.000008	-.000148	-.019258	-.000137	-.000054	.000010	-.006437
#2	-.000050	-.000226	-.016264	-.000028	.000051	-.000130	-.014001
#3	-.000081	-.000134	-.018078	-.000130	-.000231	-.000064	-.004031

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000111**	**-.009397**	**-.000044**	**.0007661**	**.2681295**	**.0011412**	**-.000066**
Stddev	.000342	.006801	.000158	.0004394	.0134366	.0021803	.000185
%RSD	306.5115	72.37306	360.6661	57.34955	5.011242	191.0505	280.6693
#1	-.000226	-.007377	.000092	.0010490	.2526475	.0035233	-.000274
#2	-.000381	-.016978	-.000006	.0002600	.2767491	-.000756	.000081
#3	.000273	-.003835	-.000218	.0009895	.2749921	.000656	-.000004

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2972330**	**.0029028**	**-.000014**	**-.000220**	**-.001009**	**.0044840**	**.0013016**
Stddev	.0116232	.0002418	.000120	.000148	.000543	.0060030	.0018185
%RSD	3.910477	8.329453	838.8570	67.32381	53.83823	133.8770	139.7177
#1	.3022219	.0028757	-.000070	-.000066	-.001614	.0007944	-.000588
#2	.3055290	.0031570	-.000097	-.000232	-.000846	.0012468	.003040
#3	.2839482	.0026757	.000124	-.000361	-.000566	.0114107	.001453

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB05 Acquired: 8/13/2025 16:19:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000600**	**-.001000**	**-.000350**
Stddev	.002094	.001362	.000037
%RSD	348.7752	136.2270	10.47710
#1	-.000861	-.000598	-.000368
#2	-.002551	-.002518	-.000308
#3	.001612	.000116	-.000374

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5705.191**	**103393.4**	**11833.18**	**4257.600**	**7542.594**
Stddev	14.305	88.3	45.83	16.592	11.941
%RSD	.2507329	.0854283	.3873068	.3897100	.1583103
#1	5693.370	103425.1	11854.02	4276.758	7528.867
#2	5721.093	103461.6	11864.89	4248.266	7550.580
#3	5701.109	103293.6	11780.63	4247.778	7548.335

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2820-09 Acquired: 8/13/2025 16:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0628705**	**-.009917**	**.1052736**	**.0077410**	**-.006199**	**60.98124**
Stddev	.0008748	.002270	.0006586	.0014554	.001212	.03229
%RSD	1.391410	22.89401	.6256464	18.80153	19.55075	.0529510
#1	.0618642	-.007415	.1047135	.0073226	-.006028	60.95144
#2	.0632984	-.010490	.1051081	.0065407	-.007488	60.97674
#3	.0634491	-.011846	.1059992	.0093598	-.005082	61.01555

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1100026**	**.0043867**	**.0070576**	**15.45684**	**.1446314**	**.1166744**
Stddev	.0006241	.0000752	.0000989	.01080	.0003502	.0001801
%RSD	.5673837	1.714887	1.401612	.0698713	.2421118	.1543278
#1	.1099426	.0044113	.0070394	15.44923	.1443557	.1168752
#2	.1106546	.0044466	.0069690	15.46920	.1445131	.1165273
#3	.1094106	.0043023	.0071643	15.45210	.1450254	.1166207

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0817355**	**130.2292**	**.5729521**	**18.77518**	**.1260416**	**.0055557**
Stddev	.0004656	.3942	.0015895	.09825	.0003654	.0002949
%RSD	.5696111	.3026802	.2774261	.5233017	.2898635	5.307317
#1	.0822722	129.7986	.5730785	18.88859	.1257706	.0052629
#2	.0814931	130.5723	.5744746	18.72105	.1258972	.0058526
#3	.0814411	130.3167	.5713031	18.71590	.1264571	.0055516

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.31055**	**.2094757**	**.3121155**	**9.048743**	**.1010540**	**.0430849**
Stddev	.07520	.0015439	.0002323	.066356	.0017664	.0002029
%RSD	.3894310	.7370112	.0744417	.7333216	1.748016	.4709123
#1	19.23442	.2111753	.3119546	8.972497	.0996678	.0428907
#2	19.38478	.2081601	.3123819	9.080306	.1004512	.0432955
#3	19.31243	.2090916	.3120101	9.093428	.1030429	.0430685

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2820-09 Acquired: 8/13/2025 16:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086497	2.066037	3.121620	2.959936	F 121.2632	.1111684
Stddev	.0005792	.005517	.027765	.014832	.7538	.0006940
%RSD	6.696455	.2670513	.8894402	.5011064	.6215947	.6242998
#1	.0092032	2.060306	3.095266	2.968400	120.7538	.1108597
#2	.0086981	2.066493	3.150608	2.942809	120.9068	.1106823
#3	.0080478	2.071312	3.118987	2.968598	122.1291	.1119632

Elem	Sr4077
Units	ppm
Avg	.0633939
Stddev	.0004224
%RSD	.6663265
#1	.0637370
#2	.0635225
#3	.0629221

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6047.697	110321.6	13630.82	4600.120	6873.599
Stddev	3.427	159.2	38.95	5.532	10.172
%RSD	.0566610	.1443344	.2857165	.1202650	.1479880
#1	6045.536	110488.3	13590.50	4593.965	6871.080
#2	6051.648	110171.0	13633.71	4601.718	6884.795
#3	6045.908	110305.4	13668.23	4604.678	6864.924

Sample Name: Q2820-10 Acquired: 8/13/2025 16:27:25 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0458854**	**-.001297**	**.0732546**	**.0058382**	**-.003323**	**44.20861**
Stddev	.0004193	.000821	.0011578	.0006372	.000980	.09014
%RSD	.9138928	63.34230	1.580467	10.91365	29.49138	.2038912
#1	.0460564	-.001392	.0720997	.0065457	-.004454	44.28220
#2	.0461923	-.002066	.0744152	.0053094	-.002783	44.10807
#3	.0454076	-.000432	.0732490	.0056596	-.002731	44.23556

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0990888**	**.0026826**	**.0027625**	**16.98924**	**.1498167**	**.0208848**
Stddev	.0003903	.0000304	.0001032	.03780	.0007894	.0001538
%RSD	.3938335	1.132673	3.735938	.2225148	.5269224	.7365924
#1	.0990539	.0027066	.0028136	17.00282	.1506849	.0209178
#2	.0987172	.0026484	.0026438	16.94652	.1496231	.0207171
#3	.0994954	.0026928	.0028303	17.01837	.1491421	.0210194

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0426454**	**74.09354**	**.2983274**	**17.38385**	**.0503060**	**.0033076**
Stddev	.0006275	.25583	.0003033	.04322	.0001572	.0003918
%RSD	1.471417	.3452821	.1016784	.2486388	.3124705	11.84599
#1	.0432976	73.79909	.2979971	17.43194	.0504705	.0028800
#2	.0420459	74.22011	.2983918	17.37140	.0502901	.0036495
#3	.0425927	74.26141	.2985934	17.34823	.0501573	.0033932

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.64488**	**.2306219**	**.1164593**	**11.15268**	**.1006994**	**.0401229**
Stddev	.11666	.0006904	.0006704	.05336	.0006070	.0001028
%RSD	.4548895	.2993487	.5756505	.4784834	.6028037	.2560815
#1	25.51109	.2301783	.1166251	11.09197	.1002404	.0401720
#2	25.72532	.2302702	.1157216	11.17389	.1013877	.0400049
#3	25.69824	.2314173	.1170313	11.19218	.1004701	.0401919

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2820-10 Acquired: 8/13/2025 16:27:25 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0070478	1.855688	2.851007	1.853259	F 75.00901	.0738318
Stddev	.0008563	.004979	.005048	.002335	.09756	.0002360
%RSD	12.14977	.2683070	.1770541	.1259909	.1300627	.3195877
#1	.0062038	1.852929	2.852895	1.853712	75.11712	.0735634
#2	.0079159	1.852699	2.854839	1.850730	74.98237	.0740064
#3	.0070238	1.861435	2.845288	1.855334	74.92754	.0739256

Elem	Sr4077
Units	ppm
Avg	.1434227
Stddev	.0004725
%RSD	.3294259
#1	.1432447
#2	.1430651
#3	.1439583

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5926.693	108055.4	13441.02	4452.094	6965.546
Stddev	6.802	181.1	63.71	11.458	7.792
%RSD	.1147610	.1675556	.4739774	.2573534	.1118586
#1	5923.217	107848.2	13377.08	4438.903	6956.670
#2	5934.531	108134.4	13504.50	4459.574	6968.708
#3	5922.333	108183.5	13441.48	4457.804	6971.259

Sample Name: Q2820-24 Acquired: 8/13/2025 16:31:32 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0100422**	**-.003091**	**.0242821**	**.0002366**	**-.001959**	**11.00623**	**.0339094**
Stddev	.0006359	.001479	.0006591	.0009710	.001611	.00729	.0002141
%RSD	6.331958	47.84728	2.714395	410.4521	82.23863	.0662197	.6313969
#1	.0094449	-.001455	.0238627	.0001629	-.000918	10.99782	.0337945
#2	.0107106	-.003485	.0250418	.0012423	-.003814	11.01021	.0341564
#3	.0099711	-.004334	.0239418	-.000695	-.001144	11.01066	.0337772

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0014067**	**.0015051**	**1.143664**	**.0491919**	**.0071257**	**.0510101**	**22.25977**
Stddev	.0000339	.0000927	.016326	.0001065	.0001757	.0000684	.06609
%RSD	2.412529	6.161059	1.427526	.2165382	2.466422	.1340307	.2968958
#1	.0013740	.0015654	1.148425	.0493053	.0069298	.0509444	22.30463
#2	.0014417	.0013983	1.157080	.0490939	.0071780	.0510809	22.18388
#3	.0014044	.0015517	1.125487	.0491767	.0072694	.0510051	22.29080

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1152239**	**2.958108**	**.0225097**	**.0012271**	**.5835596**	**.0246447**	**.1482109**
Stddev	.0004100	.015245	.0000794	.0005636	.0088615	.0009757	.0009343
%RSD	.3557887	.5153688	.3528426	45.93433	1.518521	3.959066	.6304049
#1	.1154795	2.956077	.0224388	.0014293	.5925514	.0253167	.1471604
#2	.1154411	2.943980	.0225955	.0016618	.5832931	.0250917	.1489491
#3	.1147510	2.974267	.0224949	.0005902	.5748344	.0235256	.1485231

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.383879**	**.0005063**	**.0016523**	**.0053822**	**.4520159**	**1.285582**	**.6670487**
Stddev	.044094	.0003015	.0001295	.0001942	.0031559	.009770	.0033619
%RSD	3.186293	59.55271	7.837949	3.608977	.6981948	.7599497	.5039916
#1	1.434617	.0006134	.0015275	.0054269	.4483829	1.280766	.6697656
#2	1.362192	.0007397	.0017860	.0055502	.4540801	1.279154	.6632890
#3	1.354829	.0001659	.0016433	.0051695	.4535846	1.296824	.6680916

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2820-24 Acquired: 8/13/2025 16:31:32 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.765592	.0176684	-.009014
Stddev	.018823	.0004329	.000072
%RSD	.3264769	2.450278	.7963738
#1	5.786035	.0180353	-.009094
#2	5.748977	.0177789	-.008955
#3	5.761763	.0171909	-.008993

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5815.306	105094.3	12312.37	4383.901	7552.557
Stddev	13.021	81.8	26.21	9.470	12.621
%RSD	.2239121	.0778669	.2128967	.2160136	.1671055
#1	5821.061	105076.5	12318.74	4392.736	7561.195
#2	5824.458	105183.6	12283.56	4373.904	7558.403
#3	5800.399	105022.9	12334.81	4385.063	7538.073

Sample Name: Q2826-01 Acquired: 8/13/2025 16:35:45 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1395862**	**-.025763**	**2.398305**	**.0125785**	**.0065415**	**128.8316**	**1.566728**
Stddev	.0013217	.001038	.001958	.0025831	.0020755	.1042	.006777
%RSD	.9468532	4.030769	.0816551	20.53567	31.72774	.0808437	.4325325
#1	.1388828	-.024771	2.396997	.0122183	.0041538	128.7202	1.560332
#2	.1387650	-.026843	2.397360	.0101944	.0075569	128.8481	1.573830
#3	.1411108	-.025676	2.400556	.0153227	.0079137	128.9265	1.566022

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0092384**	**.0403645**	**369.4236**	**2.532358**	**.1223023**	**3.432179**	**280.8822**
Stddev	.0000987	.0000262	.9183	.005853	.0003617	.002533	.4802
%RSD	1.068560	.0648431	.2485788	.2311251	.2957257	.0738115	.1709635
#1	.0091935	.0403940	370.0573	2.531227	.1219632	3.433751	280.3289
#2	.0091702	.0403439	369.8429	2.527153	.1226830	3.429256	281.1271
#3	.0093516	.0403558	368.3705	2.538693	.1222607	3.433529	281.1905

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.039300**	**96.94582**	**6.744927**	**.0125275**	**6.570137**	**.3384918**	**3.255711**
Stddev	.026798	.26020	.003762	.0001446	.023254	.0022527	.000994
%RSD	.3806913	.2684012	.0557809	1.154358	.3539342	.6655139	.0305178
#1	7.011408	96.82999	6.741070	.0126914	6.544278	.3370258	3.255552
#2	7.064851	96.76365	6.748587	.0124730	6.589330	.3373638	3.254806
#3	7.041641	97.24383	6.745122	.0124180	6.576801	.3410856	3.256774

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.19676**	**.2881801**	**.0084255**	**.3160914**	**2.769079**	**7.537017**	**6.946138**
Stddev	.04321	.0030465	.0001559	.0006798	.010314	.054433	.011706
%RSD	.1946549	1.057164	1.850810	.2150654	.3724642	.7222077	.1685291
#1	22.15471	.2861832	.0082486	.3155884	2.757269	7.516157	6.942225
#2	22.24104	.2916867	.0085428	.3158209	2.776314	7.496099	6.959300
#3	22.19453	.2866705	.0084853	.3168648	2.773652	7.598795	6.936890

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2826-01 Acquired: 8/13/2025 16:35:45 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	15.62017	.2315961	.8013124
Stddev	.01530	.0004101	.0043260
%RSD	.0979717	.1770736	.5398634
#1	15.61340	.2311558	.7972390
#2	15.60942	.2319672	.8058531
#3	15.63769	.2316653	.8008452

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5706.696	104008.1	13626.67	4304.267	5804.035
Stddev	8.034	139.7	7.30	10.523	3.066
%RSD	.1407891	.1342996	.0535347	.2444747	.0528283
#1	5699.817	103890.5	13627.18	4292.283	5801.266
#2	5715.526	104162.5	13633.70	4311.997	5807.330
#3	5704.743	103971.3	13619.13	4308.521	5803.508

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-01 Acquired: 8/13/2025 16:39:54 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1483785**	**-.074518**	**70.05285**	**.0051202**	**.0227446**	**73.14248**
Stddev	.0024244	.002086	.15429	.0029995	.0012414	.11638
%RSD	1.633961	2.798813	.2202465	58.58230	5.458095	.1591145
#1	.1510508	-.075387	70.11788	.0019906	.0237707	73.22952
#2	.1477646	-.076029	69.87669	.0053999	.0230983	73.18764
#3	.1463200	-.072139	70.16398	.0079701	.0213647	73.01029

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.019622**	**.0077333**	**.0335457**	**206.2075**	**2.806505**	**.1333898**
Stddev	.087332	.0000428	.0002606	.3819	.004113	.0005159
%RSD	1.244118	.5537602	.7767909	.1851800	.1465360	.3867898
#1	7.063897	.0077015	.0335720	206.2542	2.807204	.1337388
#2	7.075949	.0077820	.0332729	206.5638	2.802088	.1327972
#3	6.919020	.0077164	.0337921	205.8044	2.810223	.1336335

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.695565**	**485.6378**	**3.347125**	**26.43496**	**.5569049**	**.0737720**
Stddev	.002136	.9572	.013068	.01988	.0011532	.0003967
%RSD	.1259870	.1970914	.3904120	.0751850	.2070772	.5377141
#1	1.693762	486.5389	3.338999	26.43087	.5568312	.0741636
#2	1.697924	485.7416	3.362198	26.45656	.5557903	.0737818
#3	1.695008	484.6330	3.340177	26.41744	.5580932	.0733705

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.91282**	**.5266232**	**10.17829**	**7.509590**	**^ *****	**.2211758**
Stddev	.11791	.0029539	.05684	.041509	-----	.0001737
%RSD	.5146216	.5609228	.5584790	.5527472	-----	.0785169
#1	22.84096	.5245638	10.11667	7.490038	^ -----	.2209858
#2	23.04890	.5300077	10.18951	7.557264	^ -----	.2212153
#3	22.84859	.5252981	10.22868	7.481468	^ -----	.2213263

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-01 Acquired: 8/13/2025 16:39:54 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.752780	1.483108	3.499438	11.47636	F 90.96765	.0630121
Stddev	.006148	.004796	.010824	.03346	.44028	.0007146
%RSD	.3507803	.3233535	.3093095	.2915863	.4839953	1.134003
#1	1.756280	1.478163	3.511893	11.50771	91.19106	.0632498
#2	1.745681	1.487739	3.494113	11.44112	90.46045	.0635774
#3	1.756380	1.483422	3.492307	11.48025	91.25143	.0622089

Elem	Sr4077
Units	ppm
Avg	.4316986
Stddev	.0029183
%RSD	.6759958
#1	.4297735
#2	.4350563
#3	.4302661

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5336.988	98666.08	12923.86	4046.074	6115.859
Stddev	11.976	6.33	11.74	13.005	16.515
%RSD	.2243917	.0064155	.0908273	.3214215	.2700336
#1	5349.960	98663.96	12910.89	4061.006	6120.348
#2	5334.652	98673.20	12926.95	4037.222	6129.665
#3	5326.353	98661.08	12933.75	4039.996	6097.563

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-05 Acquired: 8/13/2025 16:44:11 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1044894**	**-.022758**	**8.629621**	**-.005811**	**.0215296**	**93.47949**
Stddev	.0021559	.001633	.007328	.003909	.0015632	.02872
%RSD	2.063292	7.176200	.0849176	67.26907	7.260596	.0307256
#1	.1021916	-.023672	8.638079	-.008367	.0197732	93.45464
#2	.1048089	-.023730	8.625195	-.001311	.0227682	93.47289
#3	.1064678	-.020872	8.625588	-.007754	.0220474	93.51094

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.833491**	**.0088923**	**.0331300**	**414.0308**	**.2967711**	**.1204523**
Stddev	.011486	.0001465	.0001906	3.3338	.0044883	.0003603
%RSD	.2996258	1.647250	.5754391	.8052033	1.512380	.2991599
#1	3.822894	.0088246	.0331239	416.7793	.2991695	.1205668
#2	3.831881	.0090604	.0329425	410.3224	.2995506	.1200486
#3	3.845696	.0087920	.0333236	414.9908	.2915931	.1207415

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.168222**	**295.5230**	**4.508764**	**62.94097**	**.5112842**	**.0219489**
Stddev	.001116	3.4002	.008909	.00810	.0012810	.0002974
%RSD	.0954979	1.150585	.1975916	.0128678	.2505479	1.354777
#1	1.168335	297.3536	4.510427	62.93166	.5114810	.0222285
#2	1.167053	297.6158	4.499141	62.94640	.5099162	.0216365
#3	1.169276	291.5997	4.516724	62.94485	.5124555	.0219818

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.65561**	**.3852155**	**4.072211**	**30.64986**	**.2677562**	**.0091125**
Stddev	.18589	.0012060	.058918	.27890	.0073364	.0001311
%RSD	.9457486	.3130666	1.446835	.9099443	2.739948	1.438322
#1	19.72236	.3841671	4.121845	30.79223	.2699303	.0091275
#2	19.79891	.3849458	4.087688	30.82883	.2737598	.0089746
#3	19.44556	.3865334	4.007099	30.32851	.2595785	.0092355

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2827-05 Acquired: 8/13/2025 16:44:11 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2312864	6.011005	4.225126	6.646962	F 78.00988	.1138177
Stddev	.0011711	.015091	.074054	.004547	.21543	.0011660
%RSD	.5063224	.2510607	1.752706	.0684006	.2761556	1.024435
#1	.2299414	5.998876	4.259280	6.651283	78.25803	.1130308
#2	.2320800	6.006235	4.275939	6.647385	77.90083	.1132651
#3	.2318378	6.027906	4.140158	6.642219	77.87077	.1151573

Elem	Sr4077
Units	ppm
Avg	1.741626
Stddev	.029660
%RSD	1.703006
#1	1.732582
#2	1.717540
#3	1.774755

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5582.559	102636.8	13253.48	4268.724	5788.391
Stddev	7.768	1201.0	18.65	45.783	5.664
%RSD	.1391463	1.170112	.1407516	1.072521	.0978507
#1	5590.907	102057.7	13271.64	4230.568	5794.514
#2	5575.543	101835.2	13254.43	4256.112	5787.320
#3	5581.228	104017.6	13234.37	4319.490	5783.339

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2829-01 Acquired: 8/13/2025 16:48:29 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0146157**	**.0127385**	**.0165349**	**.0055024**	**.0057026**	**55.68469**	**.0761651**
Stddev	.0012553	.0018284	.0007517	.0025820	.0013963	.02899	.0002045
%RSD	8.588339	14.35333	4.546366	46.92525	24.48575	.0520578	.2684381
#1	.0133578	.0148452	.0164574	.0027669	.0059455	55.65340	.0763976
#2	.0158683	.0118054	.0158249	.0078971	.0042008	55.71062	.0760844
#3	.0146210	.0115650	.0173224	.0058430	.0069616	55.69005	.0760133

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013009**	**.0010851**	**81.50139**	**.1776811**	**.0272492**	**.1724574**	**25.66638**
Stddev	.0000699	.0000220	.11623	.0004306	.0000787	.0001102	.10759
%RSD	5.373722	2.026834	.1426071	.2423640	.2889551	.0638851	.4191708
#1	.0012394	.0011012	81.36718	.1773325	.0272602	.1725013	25.56025
#2	.0012863	.0010600	81.56877	.1775482	.0271656	.1725388	25.66353
#3	.0013769	.0010941	81.56822	.1781625	.0273219	.1723320	25.77537

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4952632**	**16.34188**	**.1046040**	**.0026768**	**4.287983**	**.1538768**	**.2256946**
Stddev	.0024369	.03958	.0001021	.0001853	.030102	.0032141	.0007184
%RSD	.4920426	.2422069	.0975707	6.923747	.7020036	2.088722	.3182873
#1	.4926014	16.30231	.1045348	.0028507	4.257639	.1563915	.2264066
#2	.4958037	16.38148	.1047212	.0024818	4.288473	.1549831	.2249700
#3	.4973844	16.34185	.1045560	.0026979	4.317837	.1502557	.2257072

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5862546**	**.1866260**	**.0247643**	**.0163739**	**4.455656**	**5.020977**	**.2891648**
Stddev	.0298464	.0004926	.0002656	.0002707	.012928	.020250	.0025540
%RSD	5.091032	.2639336	1.072437	1.653148	.2901502	.4032991	.8832270
#1	.5889382	.1861484	.0248499	.0160660	4.440747	5.029726	.2870665
#2	.5551570	.1871323	.0244665	.0165743	4.462461	4.997824	.2884194
#3	.6146686	.1865973	.0249766	.0164813	4.463760	5.035381	.2920086

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2829-01 Acquired: 8/13/2025 16:48:29 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.108610	.0162724	.1966764
Stddev	.007751	.0001082	.0006815
%RSD	.6991807	.6645950	.3465180
#1	1.099706	.0161786	.1959911
#2	1.112272	.0163907	.1966841
#3	1.113851	.0162478	.1973541

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5611.318	100878.3	12124.14	4274.155	6695.629
Stddev	7.889	190.4	11.32	2.471	14.487
%RSD	.1405990	.1887140	.0933311	.0578234	.2163607
#1	5602.896	101025.5	12136.11	4271.928	6692.235
#2	5612.521	100946.2	12122.68	4276.814	6683.140
#3	5618.537	100663.3	12113.62	4273.723	6711.511

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09 Acquired: 8/13/2025 16:52:38 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5068867**	**-.123210**	**11.62454**	**.0582227**	**.1547743**	**70.67201**
Stddev	.0018936	.004310	.02015	.0037146	.0010104	.19003
%RSD	.3735730	3.498242	.1733766	6.380026	.6528439	.2688954
#1	.5083855	-.121075	11.63033	.0539487	.1536767	70.46385
#2	.5075160	-.120383	11.60213	.0606730	.1556657	70.83620
#3	.5047586	-.128171	11.64117	.0600465	.1549806	70.71599

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.635758**	**.0176286**	**.0365074**	**93.91628**	**.8634016**	**.1572956**
Stddev	.006603	.0001553	.0003493	.01233	.0002484	.0008083
%RSD	.1424317	.8811444	.9568729	.0131321	.0287739	.5138664
#1	4.643357	.0174939	.0362677	93.91809	.8636221	.1581316
#2	4.631428	.0177985	.0369082	93.92762	.8631325	.1565182
#3	4.632488	.0175935	.0363463	93.90315	.8634502	.1572371

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.405984**	**753.9727**	**3.460085**	**22.03555**	**.5543822**	**.0253858**
Stddev	.003754	3.9375	.006010	.02107	.0006017	.0016877
%RSD	.0852065	.5222312	.1736878	.0956221	.1085350	6.648293
#1	4.407393	753.4117	3.466763	22.01132	.5550317	.0250086
#2	4.408831	750.3458	3.455113	22.04956	.5538437	.0239186
#3	4.401730	758.1606	3.458378	22.04576	.5542712	.0272302

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.459966**	**.6084114**	**2.516628**	**10.23195**	**^ *****	**.0391904**
Stddev	.010184	.0016812	.003120	.01244	-----	.0003148
%RSD	.2943355	.2763205	.1239663	.1215563	-----	.8032400
#1	3.467697	.6066000	2.514874	10.24186	^ -----	.0389056
#2	3.448427	.6099217	2.514780	10.21800	^ -----	.0395284
#3	3.463773	.6087126	2.520230	10.23600	^ -----	.0391372

Sample Name: Q2832-09 Acquired: 8/13/2025 16:52:38 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8749492	4.626747	F 23.56135	7.183246	16.32204	.1249249
Stddev	.0016167	.006269	.07363	.013380	.05022	.0011741
%RSD	.1847788	.1354896	.3124889	.1862660	.3077005	.9398070
#1	.8734651	4.630581	23.48792	7.182433	16.29213	.1245564
#2	.8747105	4.619512	23.56095	7.170291	16.29398	.1262390
#3	.8766720	4.630146	23.63517	7.197014	16.38003	.1239793

Elem	Sr4077
Units	ppm
Avg	.0758773
Stddev	.0043948
%RSD	5.791960
#1	.0781212
#2	.0786971
#3	.0708135

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5616.504	102408.8	12765.54	4234.089	6008.079
Stddev	3.720	102.0	34.41	14.181	10.395
%RSD	.0662392	.0996101	.2695882	.3349180	.1730158
#1	5612.211	102291.0	12752.64	4223.042	5999.857
#2	5618.779	102470.6	12739.43	4250.080	6019.763
#3	5618.522	102464.7	12804.54	4229.146	6004.617

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09DUP Acquired: 8/13/2025 16:56:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5170091**	**-.128514**	**11.75216**	**.0551547**	**.1570451**	**69.87703**
Stddev	.0036280	.003279	.00789	.0018148	.0007550	.36954
%RSD	.7017233	2.551845	.0671467	3.290404	.4807302	.5288456
#1	.5166836	-.132221	11.74346	.0531075	.1567746	70.30331
#2	.5135548	-.125991	11.75885	.0557905	.1564626	69.64723
#3	.5207888	-.127331	11.75416	.0565660	.1578980	69.68056

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.643892**	**.0177295**	**.0387108**	**93.37976**	**.8672155**	**.1568746**
Stddev	.021892	.0001613	.0006854	.44004	.0011664	.0004926
%RSD	.4714078	.9099266	1.770540	.4712416	.1345000	.3140031
#1	4.668391	.0178801	.0394854	93.88787	.8673944	.1564528
#2	4.626247	.0175593	.0381828	93.12365	.8659700	.1567549
#3	4.637039	.0177493	.0384644	93.12775	.8682821	.1574159

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.474758**	**749.9925**	**3.421493**	**21.66305**	**.5564017**	**.0232006**
Stddev	.010289	1.1504	.013257	.14470	.0004962	.0008693
%RSD	.2299280	.1533893	.3874495	.6679395	.0891768	3.746688
#1	4.469558	749.7730	3.436386	21.82569	.5563485	.0223222
#2	4.468107	751.2368	3.410981	21.54859	.5559342	.0240604
#3	4.486609	748.9676	3.417114	21.61487	.5569223	.0232192

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.266850**	**.6103996**	**2.497082**	**10.05460**	**^ *****	**.0407402**
Stddev	.011192	.0047355	.001938	.04054	-----	.0002222
%RSD	.3426017	.7757958	.0775925	.4032215	-----	.5453071
#1	3.267642	.6150097	2.498009	10.08697	^ -----	.0408028
#2	3.255282	.6055480	2.494855	10.00913	^ -----	.0409243
#3	3.277625	.6106411	2.498381	10.06771	^ -----	.0404934

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09DUP Acquired: 8/13/2025 16:56:47 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8943350	4.565187	F 24.17116	7.043078	16.59765	.1246956
Stddev	.0018740	.024225	.10345	.005152	.02265	.0013964
%RSD	.2095384	.5306367	.4279741	.0731565	.1364949	1.119867
#1	.8923032	4.592525	24.25834	7.039131	16.59435	.1231022
#2	.8947062	4.546389	24.05685	7.041196	16.57683	.1257065
#3	.8959956	4.556648	24.19828	7.048907	16.62178	.1252780

Elem	Sr4077
Units	ppm
Avg	.0765440
Stddev	.0045816
%RSD	5.985578
#1	.0813431
#2	.0722163
#3	.0760725

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5605.268	102739.1	12684.22	4233.567	6008.971
Stddev	10.837	48.5	5.99	5.389	6.048
%RSD	.1933422	.0471929	.0472436	.1272853	.1006416
#1	5599.313	102716.4	12678.80	4228.018	6004.667
#2	5617.777	102706.0	12690.66	4238.779	6015.886
#3	5598.714	102794.7	12683.20	4233.903	6006.362

Sample Name: Q2832-09LX5 Acquired: 8/13/2025 17:00:55 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1114476**	**-.027335**	**2.440055**	**.0130022**	**.0319116**	**15.68400**	**1.009649**
Stddev	.0029274	.000841	.006831	.0009162	.0015833	.05311	.003096
%RSD	2.626740	3.077920	.2799695	7.046108	4.961421	.3386032	.3066798
#1	.1117946	-.027687	2.447355	.0119811	.0327431	15.65265	1.006260
#2	.1141861	-.026375	2.438994	.0132732	.0329059	15.65402	1.010358
#3	.1083622	-.027943	2.433816	.0137521	.0300858	15.74531	1.012330

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0042110**	**.0057110**	**21.52531**	**.1978020**	**.0310388**	**1.034941**	**169.5526**
Stddev	.0000838	.0001279	.08996	.0003938	.0001228	.003069	1.4147
%RSD	1.989236	2.240219	.4179242	.1990693	.3954568	.2965717	.8343679
#1	.0042357	.0055658	21.44552	.1977702	.0310677	1.037541	170.4346
#2	.0041176	.0057603	21.50761	.1982106	.0311445	1.035727	170.3022
#3	.0042796	.0058070	21.62281	.1974250	.0309042	1.031555	167.9208

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7964026**	**5.018822**	**.1126685**	**.0063075**	**.8139610**	**.1380775**	**.5571640**
Stddev	.0036154	.041165	.0008010	.0005217	.0155468	.0023672	.0048166
%RSD	.4539661	.8202128	.7109300	8.270391	1.910022	1.714368	.8644841
#1	.7939115	4.976818	.1135876	.0057634	.8082590	.1356848	.5608768
#2	.7947469	5.020554	.1121195	.0068034	.8315537	.1381293	.5588939
#3	.8005493	5.059094	.1122983	.0063558	.8020702	.1404183	.5517214

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.306839**	**.0302560**	**.0085856**	**.1817699**	**1.038072**	**5.092558**	**1.396058**
Stddev	.049691	.0074943	.0001600	.0009990	.003361	.053783	.001985
%RSD	2.154087	24.76964	1.863019	.5495862	.3238156	1.056115	.1422033
#1	2.270306	.0366018	.0087703	.1808512	1.035580	5.139319	1.393859
#2	2.363423	.0321784	.0084935	.1828334	1.036741	5.104572	1.397720
#3	2.286788	.0219877	.0084930	.1816251	1.041895	5.033784	1.396594

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09LX5 Acquired: 8/13/2025 17:00:55 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.269684	.0261822	.0125809
Stddev	.000464	.0002129	.0017660
%RSD	.0141975	.8132413	14.03697
#1	3.269280	.0264212	.0117673
#2	3.270191	.0260128	.0113683
#3	3.269581	.0261126	.0146070

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5684.676	102977.7	11933.45	4309.641	6969.526
Stddev	8.228	781.0	73.80	39.468	12.280
%RSD	.1447329	.7584010	.6184355	.9158176	.1761996
#1	5680.160	102495.0	11989.20	4270.941	6960.451
#2	5679.694	102559.3	11961.40	4308.146	6964.629
#3	5694.172	103878.7	11849.76	4349.836	6983.500

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV06 Acquired: 8/13/2025 17:05:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.042629**	**5.384016**	**4.847802**	**5.154760**	**5.108953**	**9.693028**	**9.807771**
Stddev	.009903	.165242	.005493	.024028	.023208	.018718	.106625
%RSD	.1963763	3.069125	.1133074	.4661249	.4542676	.1931088	1.087153
#1	5.033789	5.211400	4.847917	5.130167	5.095204	9.672500	9.898930
#2	5.040768	5.399913	4.842252	5.155935	5.095906	9.697434	9.690522
#3	5.053330	5.540736	4.853236	5.178179	5.135748	9.709150	9.833861

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2383448**	**2.423771**	**24.14399**	**.9884967**	**2.431373**	**1.246068**	**5.073739**
Stddev	.0004951	.002177	.07436	.0013958	.000418	.001468	.012611
%RSD	.2077171	.0898264	.3079790	.1412014	.0171762	.1177902	.2485569
#1	.2377735	2.424343	24.05915	.9890562	2.430893	1.246819	5.078277
#2	.2386125	2.425604	24.19784	.9869079	2.431652	1.244377	5.083452
#3	.2386485	2.421364	24.17499	.9895259	2.431574	1.247009	5.059486

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.399823**	**23.99836**	**2.442756**	**1.255255**	**23.30557**	**2.463389**	**2.518384**
Stddev	.012198	.09311	.000861	.001595	.07036	.006836	.003316
%RSD	.5082716	.3879913	.0352654	.1270445	.3018964	.2775143	.1316689
#1	2.392336	23.93731	2.442593	1.256196	23.36529	2.457657	2.515876
#2	2.413898	24.10553	2.443688	1.253414	23.32340	2.470955	2.522144
#3	2.393235	23.95225	2.441988	1.256155	23.22801	2.461554	2.517133

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.75928**	**4.793299**	**5.103397**	**4.897045**	**4.861095**	**5.150910**	**4.658086**
Stddev	.02302	.019725	.013266	.013081	.016477	.009585	.007983
%RSD	.0929938	.4115131	.2599417	.2671207	.3389532	.1860930	.1713830
#1	24.75838	4.772592	5.091379	4.881940	4.847622	5.158183	4.654073
#2	24.78274	4.795438	5.101181	4.904642	4.879465	5.140048	4.652906
#3	24.73671	4.811868	5.117632	4.904552	4.856197	5.154500	4.667280

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV06 Acquired: 8/13/2025 17:05:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.860561**	**4.517107**	**4.895347**
Stddev	.015662	.012428	.025120
%RSD	.3222213	.2751224	.5131321
#1	4.842927	4.503038	4.903653
#2	4.872854	4.526589	4.867126
#3	4.865901	4.521693	4.915260

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5538.876**	**98999.53**	**11604.15**	**4150.276**	**6719.929**
Stddev	9.399	118.63	36.93	10.899	6.276
%RSD	.1697001	.1198249	.3182613	.2626190	.0933876
#1	5539.659	98959.38	11644.58	4144.536	6721.042
#2	5547.860	98906.18	11572.19	4143.445	6725.573
#3	5529.110	99133.02	11595.68	4162.846	6713.171

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB06 Acquired: 8/13/2025 17:09:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012380**	**-.001320**	**-.000696**	**-.001443**	**-.001238**	**-.020077**	**-.010116**
Stddev	.0007930	.002063	.000280	.001705	.002737	.005241	.001104
%RSD	64.05364	156.3131	40.18541	118.1670	221.0879	26.10447	10.91592
#1	.0021497	-.003419	-.000490	-.000281	-.001795	-.021868	-.009124
#2	.0007091	.000705	-.001014	-.003400	-.003654	-.024188	-.009918
#3	.0008551	-.001244	-.000583	-.000648	.001735	-.014176	-.011306

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000043**	**-.000133**	**-.019127**	**.0001300**	**-.000183**	**.0007722**	**-.005072**
Stddev	.0000301	.000018	.002838	.0001797	.000111	.0000879	.003047
%RSD	699.5130	13.53380	14.83772	138.1861	60.33841	11.38265	60.08081
#1	.0000119	-.000153	-.022371	.0000773	-.000196	.0007548	-.005315
#2	-.000029	-.000120	-.017105	.0003302	-.000067	.0006943	-.007991
#3	.000030	-.000125	-.017904	-.000017	-.000287	.0008675	-.001911

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000044**	**-.000266**	**.0004091**	**.0004794**	**.1379824**	**-.001081**	**-.000051**
Stddev	.000432	.010715	.0002488	.0002574	.0116954	.001203	.000030
%RSD	975.4545	4030.787	60.81928	53.69104	8.476017	111.2646	58.50475
#1	-.000529	-.012628	.0001461	.0007473	.1369927	.000152	-.000020
#2	.000299	.005476	.0006408	.0004570	.1268133	-.002251	-.000080
#3	.000098	.006355	.0004405	.0002339	.1501412	-.001145	-.000052

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3089144**	**.0037515**	**-.000142**	**-.000066**	**-.000535**	**.0077620**	**.0026199**
Stddev	.0070065	.0004349	.000137	.000137	.000499	.0085442	.0030560
%RSD	2.268107	11.59199	96.22786	207.4738	93.19977	110.0776	116.6448
#1	.3127437	.0042331	-.000128	-.000022	-.000821	.0174953	.0010956
#2	.3131718	.0033876	-.000013	-.000220	-.000825	.0042918	.0006258
#3	.3008278	.0036336	-.000286	.000043	.000041	.0014988	.0061382

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB06 Acquired: 8/13/2025 17:09:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0056333	-.001380	-.000339
Stddev	.0033433	.001669	.000074
%RSD	59.34913	120.8774	21.89610
#1	.0023516	-.000317	-.000254
#2	.0055134	-.000521	-.000389
#3	.0090349	-.003304	-.000375

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5737.472	103539.6	11562.50	4286.944	7564.012
Stddev	6.663	214.1	57.33	17.884	7.887
%RSD	.1161383	.2067639	.4958422	.4171671	.1042707
#1	5741.045	103333.1	11554.88	4272.072	7572.388
#2	5741.587	103525.1	11623.27	4281.971	7562.921
#3	5729.784	103760.5	11509.37	4306.787	7556.727

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09MS Acquired: 8/13/2025 17:13:32 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.309558**	**1.656942**	**10.79502**	**1.892510**	**.8399824**	**61.98874**
Stddev	.009206	.007912	.08300	.012958	.0063985	.08700
%RSD	.7030122	.4775208	.7688886	.6847247	.7617442	.1403428
#1	1.314431	1.655136	10.82684	1.890284	.8422627	61.90232
#2	1.315303	1.665601	10.85740	1.906437	.8449285	62.07630
#3	1.298939	1.650089	10.70081	1.880808	.8327561	61.98761

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.564405**	**.1844582**	**.2323631**	**72.00912**	**.9885516**	**.3387792**
Stddev	.001956	.0003108	.0028258	.07622	.0032993	.0023966
%RSD	.0428640	.1685178	1.216109	.1058510	.3337553	.7074331
#1	4.562912	.1845214	.2335644	71.93269	.9847432	.3403132
#2	4.566620	.1847326	.2343898	72.08514	.9905453	.3400069
#3	4.563682	.1841206	.2291352	72.00954	.9903662	.3360175

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.960816**	**811.3024**	**3.482315**	**19.78485**	**.9894247**	**.1042820**
Stddev	.036872	6.9841	.007853	.12924	.0063946	.0040601
%RSD	.7432609	.8608495	.2255197	.6532181	.6462959	3.893347
#1	4.979495	809.1432	3.473320	19.67675	.9940100	.1025386
#2	4.984610	805.6530	3.487807	19.92800	.9921442	.1013848
#3	4.918342	819.1112	3.485819	19.74981	.9821198	.1089226

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.759301**	**.7841703**	**2.363669**	**19.61342**	^ *****	**.4233106**
Stddev	.033462	.0014063	.004636	.10988	-----	.0023500
%RSD	.5810167	.1793389	.1961529	.5602447	-----	.5551574
#1	5.735236	.7828704	2.365478	19.48670	^ -----	.4250544
#2	5.745153	.7856631	2.358401	19.67128	^ -----	.4242393
#3	5.797513	.7839774	2.367128	19.68229	^ -----	.4206382

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09MS Acquired: 8/13/2025 17:13:32 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.689791	3.632354	F 25.90019	12.23448	16.93743	.3037707
Stddev	.013491	.008107	.07643	.07837	.12675	.0019426
%RSD	.7983776	.2231756	.2951040	.6405826	.7483320	.6394825
#1	1.698030	3.627734	25.81855	12.26476	17.01400	.3019185
#2	1.697120	3.641715	25.91197	12.29319	17.00715	.3036012
#3	1.674221	3.627614	25.97005	12.14549	16.79112	.3057925

Elem	Sr4077
Units	ppm
Avg	.0558917
Stddev	.0073372
%RSD	13.12753
#1	.0579323
#2	.0619927
#3	.0477503

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5498.562	100468.3	12559.47	4098.853	6001.027
Stddev	28.649	297.2	19.91	4.672	42.164
%RSD	.5210309	.2958354	.1584946	.1139868	.7026181
#1	5478.306	100809.8	12575.88	4102.800	5971.109
#2	5486.039	100326.5	12537.32	4100.064	5982.721
#3	5531.341	100268.4	12565.20	4093.694	6049.250

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09MSD Acquired: 8/13/2025 17:17:35 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.294557	1.615152	10.98460	1.887040	.8324383	62.18777
Stddev	.003662	.055660	.01741	.008558	.0031502	.65500
%RSD	.2828688	3.446112	.1584887	.4535308	.3784326	1.053260
#1	1.292277	1.615802	10.98301	1.884110	.8358301	61.43783
#2	1.292612	1.559170	10.96804	1.880332	.8318807	62.47782
#3	1.298781	1.670484	11.00275	1.896679	.8296041	62.64767

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.382495	.1836054	.2323633	73.99576	1.136670	.3527649
Stddev	.049395	.0015159	.0008976	.78465	.002919	.0003648
%RSD	1.127087	.8256081	.3862691	1.060404	.2568189	.1034222
#1	4.326861	.1826156	.2313685	73.14703	1.133320	.3531475
#2	4.399426	.1828501	.2326089	74.14547	1.138024	.3524209
#3	4.421197	.1853505	.2331124	74.69477	1.138667	.3527262

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.873529	744.0530	4.656637	22.28705	1.041241	.0983552
Stddev	.008628	9.4675	.053335	.25818	.000752	.0037941
%RSD	.1770476	1.272417	1.145349	1.158409	.0722151	3.857538
#1	4.867737	754.8364	4.597304	22.02182	1.040757	.1025373
#2	4.869404	737.1051	4.672012	22.30180	1.040859	.0951339
#3	4.883446	740.2176	4.700596	22.53753	1.042107	.0973944

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.546545	.8733662	2.310044	19.62445	^ *****	.4265446
Stddev	.029133	.0062565	.006141	.11273	-----	.0004053
%RSD	.5252375	.7163649	.2658232	.5744617	-----	.0950223
#1	5.513710	.8674169	2.303445	19.49667	^ -----	.4267091
#2	5.569295	.8727913	2.311097	19.70985	^ -----	.4260829
#3	5.556630	.8798902	2.315590	19.66683	^ -----	.4268417

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09MSD Acquired: 8/13/2025 17:17:35 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.510096	4.538217	F 22.69122	12.24197	16.15476	.2934906
Stddev	.003566	.050692	.12684	.03448	.05947	.0025572
%RSD	.2361131	1.117004	.5589766	.2816146	.3681109	.8713035
#1	1.511652	4.481235	22.55769	12.28141	16.12926	.2925118
#2	1.506017	4.555112	22.81009	12.22692	16.11229	.2915673
#3	1.512618	4.578304	22.70588	12.21758	16.22272	.2963926

Elem	Sr4077
Units	ppm
Avg	.1099942
Stddev	.0179734
%RSD	16.34028
#1	.0892610
#2	.1195603
#3	.1211615

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5494.737	100713.6	12586.10	4111.181	6004.036
Stddev	2.161	333.3	121.41	24.717	3.159
%RSD	.0393373	.3309117	.9646662	.6012175	.0526181
#1	5492.968	101089.8	12699.15	4139.721	6005.216
#2	5497.147	100455.1	12601.38	4097.088	6000.457
#3	5494.097	100596.0	12457.77	4096.734	6006.435

Sample Name: Q2832-09A Acquired: 8/13/2025 17:21:38 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.238164**	**1.757962**	**12.54815**	**1.843375**	**.7097440**	**70.67279**
Stddev	.118726	.317580	.13202	.281859	.1250662	1.16967
%RSD	9.588897	18.06523	1.052071	15.29040	17.62131	1.655055
#1	1.118491	1.449250	12.41121	1.557728	.5848143	71.76194
#2	1.240081	1.740913	12.55861	1.851107	.7094713	69.43651
#3	1.355920	2.083722	12.67462	2.121288	.8349462	70.81992

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.632471**	**.1218876**	**.2327979**	**92.82427**	**1.098159**	**.3583926**
Stddev	.066665	.0096261	.0301571	1.38635	.028184	.0319461
%RSD	1.439077	7.897515	12.95420	1.493522	2.566505	8.913711
#1	4.690819	.1136236	.2020795	94.20972	1.069746	.3255281
#2	4.559813	.1195821	.2339538	91.43701	1.098624	.3603164
#3	4.646781	.1324571	.2623604	92.82609	1.126109	.3893333

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.694833**	**746.9136**	**3.432164**	**22.21839**	**1.053565**	**.0661150**
Stddev	.035250	7.0967	.046512	.35186	.076993	.0057721
%RSD	.7508231	.9501354	1.355184	1.583652	7.307897	8.730461
#1	4.662460	740.4359	3.471186	22.45421	.974046	.0594640
#2	4.689651	754.4990	3.380695	21.81395	1.058893	.0690655
#3	4.732387	745.8059	3.444612	22.38701	1.127756	.0698155

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.508976**	**.7152030**	**2.599404**	**14.58347**	^ *****	**.3215056**
Stddev	.211732	.0245520	.014703	.75933	-----	.0643404
%RSD	4.695800	3.432875	.5656350	5.206809	-----	20.01223
#1	4.324269	.7103557	2.582565	13.95002	^ -----	.2568049
#2	4.462609	.6934362	2.605954	14.37518	^ -----	.3222323
#3	4.740049	.7418172	2.609695	15.42521	^ -----	.3854796

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09A Acquired: 8/13/2025 17:21:38 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.372272	4.601499	F 23.90945	12.51223	16.43532	.1980737
Stddev	.114286	.072106	.27155	.83359	.00747	.0151214
%RSD	8.328216	1.567008	1.135724	6.662195	.0454517	7.634209
#1	1.256868	4.672512	23.81763	11.65716	16.44369	.1887128
#2	1.374543	4.528348	23.69571	12.55698	16.42935	.1899894
#3	1.485406	4.603637	24.21500	13.32254	16.43291	.2155188

Elem	Sr4077
Units	ppm
Avg	.1424456
Stddev	.0235271
%RSD	16.51654
#1	.1497213
#2	.1161401
#3	.1614753

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5620.810	102601.2	12830.37	4220.805	6022.762
Stddev	9.533	496.0	197.68	27.935	11.370
%RSD	.1696006	.4834691	1.540690	.6618498	.1887791
#1	5631.690	103172.4	12630.07	4252.952	6032.775
#2	5613.923	102279.2	13025.31	4202.429	6010.402
#3	5616.817	102351.9	12835.72	4207.033	6025.110

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-03 Acquired: 8/13/2025 17:25:41 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1626718**	**-.044950**	**2.901331**	**.0113233**	**.0076799**	**107.0331**
Stddev	.0009131	.002201	.002485	.0011094	.0011278	.1487
%RSD	.5613091	4.896287	.0856650	9.797345	14.68514	.1389337
#1	.1620674	-.043398	2.901952	.0107605	.0068426	106.9096
#2	.1622257	-.047469	2.898594	.0126013	.0089624	107.1982
#3	.1637222	-.043984	2.903447	.0106082	.0072348	106.9915

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.342180**	**.0100555**	**.0215490**	**91.33607**	**.3554494**	**.1640387**
Stddev	.005733	.0001983	.0002829	.29556	.0009108	.0003430
%RSD	.4271696	1.971818	1.312865	.3235961	.2562466	.2090865
#1	1.336715	.0098752	.0214191	91.16521	.3546814	.1638278
#2	1.348149	.0102679	.0213544	91.67736	.3564557	.1638538
#3	1.341678	.0100234	.0218735	91.16565	.3552112	.1644344

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.415705**	**374.4046**	**4.642225**	**68.82118**	**.4306590**	**.0152839**
Stddev	.002539	.5206	.025842	.17396	.0004056	.0002141
%RSD	.1793361	.1390431	.5566734	.2527693	.0941801	1.400689
#1	1.413366	374.1854	4.630379	68.71613	.4302017	.0151453
#2	1.415344	374.9990	4.671867	69.02198	.4307998	.0155305
#3	1.418405	374.0296	4.624430	68.72543	.4309754	.0151760

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.105826**	**.4579401**	**2.394720**	**16.90506**	**.1801404**	**.0186282**
Stddev	.020034	.0040814	.006937	.02943	.0040195	.0002939
%RSD	.6450465	.8912558	.2896717	.1741122	2.231325	1.577554
#1	3.086806	.4605128	2.386730	16.90812	.1840332	.0186956
#2	3.126739	.4600734	2.398224	16.87422	.1760052	.0183065
#3	3.103933	.4532341	2.399207	16.93285	.1803828	.0188825

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-03 Acquired: 8/13/2025 17:25:41 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2469871	4.236024	F 19.24141	7.884509	6.686284	.2050392
Stddev	.0005437	.015620	.01179	.016669	.019307	.0018937
%RSD	.2201162	.3687427	.0612868	.2114176	.2887548	.9235750
#1	.2469709	4.223382	19.24755	7.867977	6.664633	.2037217
#2	.2464518	4.253486	19.22781	7.884235	6.701712	.2072093
#3	.2475387	4.231205	19.24887	7.901313	6.692506	.2041866

Elem	Sr4077
Units	ppm
Avg	.1316666
Stddev	.0011971
%RSD	.9091903
#1	.1307562
#2	.1330226
#3	.1312210

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5826.036	106127.5	13161.55	4380.642	6080.832
Stddev	1.998	173.7	79.87	6.712	3.922
%RSD	.0342880	.1636373	.6068242	.1532118	.0645058
#1	5828.302	106249.0	13196.96	4387.789	6079.315
#2	5824.531	105928.6	13070.10	4379.665	6077.894
#3	5825.275	106204.9	13217.59	4374.473	6085.287

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-05 Acquired: 8/13/2025 17:29:44 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2126858**	**-.057857**	**4.282957**	**.0139451**	**.0335319**	**121.3003**
Stddev	.0019287	.001749	.013107	.0017553	.0031425	.3202
%RSD	.9068265	3.023507	.3060271	12.58732	9.371671	.2639832
#1	.2137682	-.058919	4.272536	.0159577	.0318303	120.9475
#2	.2104591	-.058813	4.278661	.0127306	.0316071	121.3807
#3	.2138302	-.055838	4.297672	.0131471	.0371582	121.5726

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.590818**	**.0130006**	**.0380501**	**110.6571**	**.5647292**	**.2828633**
Stddev	.005156	.0001815	.0002907	.4541	.0018050	.0004283
%RSD	.3241147	1.396267	.7639067	.4103734	.3196276	.1514286
#1	1.587617	.0128747	.0377186	110.1767	.5640809	.2824898
#2	1.588071	.0129184	.0382611	110.7151	.5667689	.2827692
#3	1.596766	.0132087	.0381707	111.0794	.5633379	.2833308

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.691837**	**460.9497**	**5.820541**	**59.12875**	**.9273159**	**.0196940**
Stddev	.005993	3.9806	.024032	.35432	.0007433	.0020895
%RSD	.2226420	.8635619	.4128816	.5992302	.0801554	10.60966
#1	2.687146	465.3190	5.799810	58.74183	.9264609	.0220597
#2	2.689776	457.5292	5.814931	59.20704	.9278088	.0181007
#3	2.698588	460.0011	5.846881	59.43737	.9276779	.0189216

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.517837**	**.6174950**	**4.542601**	**16.84459**	**^ *******	**.0357038**
Stddev	.020786	.0030618	.008406	.12361	-----	.0000305
%RSD	.5908689	.4958465	.1850524	.7338042	-----	.0855315
#1	3.541401	.6158658	4.534028	16.98531	^ -----	.0356687
#2	3.502102	.6155922	4.542945	16.79484	^ -----	.0357189
#3	3.510010	.6210269	4.550830	16.75360	^ -----	.0357239

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-05 Acquired: 8/13/2025 17:29:44 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3751083	4.722835	F 16.55943	9.668054	7.132989	.1928392
Stddev	.0008599	.010028	.06524	.034766	.026547	.0006657
%RSD	.2292346	.2123258	.3939742	.3595925	.3721711	.3452232
#1	.3746766	4.714886	16.63477	9.628463	7.114119	.1928131
#2	.3745498	4.719517	16.52225	9.693602	7.121502	.1921869
#3	.3760985	4.734101	16.52129	9.682096	7.163345	.1935176

Elem	Sr4077
Units	ppm
Avg	.2481124
Stddev	.0045657
%RSD	1.840181
#1	.2428407
#2	.2508022
#3	.2506943

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5823.194	105927.7	13328.79	4359.507	5932.021
Stddev	11.052	238.7	89.02	8.220	12.536
%RSD	.1897862	.2253476	.6678530	.1885546	.2113249
#1	5834.597	105724.1	13430.54	4367.349	5946.405
#2	5822.456	105868.6	13290.55	4360.216	5926.230
#3	5812.531	106190.4	13265.29	4350.955	5923.427

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-07 Acquired: 8/13/2025 17:33:52 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2874679**	**-.074721**	**5.144197**	**.0215084**	**.0524381**	**124.3803**
Stddev	.0020538	.002733	.007669	.0030139	.0031983	1.4720
%RSD	.7144624	3.658272	.1490853	14.01263	6.099166	1.183478
#1	.2895074	-.072481	5.135585	.0243156	.0487922	125.1856
#2	.2854000	-.077767	5.150291	.0218863	.0547708	125.2740
#3	.2874963	-.073915	5.146714	.0183235	.0537512	122.6813

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.813869**	**.0184552**	**.0544729**	**113.3056**	**2.632413**	**.6104101**
Stddev	.040298	.0003123	.0003477	1.5592	.007636	.0002514
%RSD	1.432127	1.692026	.6382394	1.376103	.2900609	.0411815
#1	2.834766	.0185176	.0541860	113.9965	2.641016	.6101422
#2	2.839427	.0187316	.0543731	114.4000	2.629786	.6104473
#3	2.767415	.0181164	.0548595	111.5203	2.626438	.6106408

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.832450**	**607.0410**	**6.708830**	**75.61339**	**3.130719**	**.0245451**
Stddev	.010228	2.2118	.102984	.86820	.002805	.0008809
%RSD	.2116464	.3643657	1.535057	1.148210	.0895824	3.588910
#1	4.828448	608.2188	6.756525	75.98023	3.127686	.0244057
#2	4.844074	604.4895	6.779321	76.23796	3.133219	.0237423
#3	4.824829	608.4147	6.590645	74.62198	3.131253	.0254874

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.064338**	**1.176196**	**6.873469**	**19.20966**	^ *****	**.0838391**
Stddev	.043165	.013767	.017816	.11828	-----	.0005608
%RSD	.7117840	1.170493	.2591924	.6157240	-----	.6688854
#1	6.111612	1.184914	6.893858	19.34523	^ -----	.0842109
#2	6.027023	1.183350	6.860910	19.15620	^ -----	.0841124
#3	6.054380	1.160325	6.865638	19.12755	^ -----	.0831941

Sample Name: Q2832-07 Acquired: 8/13/2025 17:33:52 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6535547	5.980799	F 35.79728	10.40630	8.317878	.2265325
Stddev	.0022558	.076062	.28656	.03251	.043347	.0016299
%RSD	.3451592	1.271774	.8005136	.3123787	.5211265	.7194833
#1	.6516619	6.018318	36.08968	10.37973	8.271971	.2269559
#2	.6560508	6.030813	35.78524	10.44255	8.323560	.2279090
#3	.6529516	5.893267	35.51693	10.39663	8.358104	.2247328

Elem	Sr4077
Units	ppm
Avg	.1053842
Stddev	.0114699
%RSD	10.88392
#1	.1096276
#2	.1141278
#3	.0923972

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5800.960	105871.8	13566.87	4326.345	5832.947
Stddev	9.265	364.7	163.06	12.800	6.220
%RSD	.1597230	.3444390	1.201909	.2958535	.1066441
#1	5791.743	105456.2	13525.45	4313.945	5826.173
#2	5800.862	106138.4	13428.51	4339.510	5838.402
#3	5810.274	106020.8	13746.64	4325.579	5834.267

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: Q2832-09 Acquired: 8/13/2025 17:37:59 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5833562**	**-.131338**	**9.111050**	**.0710008**	**.1719546**	**61.50977**
Stddev	.0050590	.003681	.008621	.0016051	.0040304	.00467
%RSD	.8672158	2.802799	.0946205	2.260677	2.343871	.0076004
#1	.5878695	-.128256	9.103709	.0728420	.1761977	61.50525
#2	.5778878	-.135414	9.108898	.0702639	.1681774	61.51459
#3	.5843114	-.130343	9.120543	.0698964	.1714886	61.50947

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.400548**	**.0178647**	**.0361356**	**79.32008**	**.6419145**	**.1375850**
Stddev	.014253	.0002679	.0006986	.21180	.0006499	.0001042
%RSD	.3238867	1.499724	1.933378	.2670197	.1012372	.0757587
#1	4.405767	.0176933	.0353480	79.34900	.6420305	.1374896
#2	4.384421	.0177274	.0366805	79.09531	.6424985	.1375691
#3	4.411455	.0181735	.0363782	79.51594	.6412144	.1376963

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.745063**	**768.2963**	**3.109569**	**17.45424**	**.4993310**	**.0229963**
Stddev	.002137	4.0206	.012718	.03517	.0008875	.0016069
%RSD	.0450309	.5233186	.4089854	.2014737	.1777269	6.987746
#1	4.743574	771.6977	3.118726	17.42811	.5003492	.0241457
#2	4.744104	763.8591	3.095048	17.44038	.4987216	.0211601
#3	4.747511	769.3320	3.114932	17.49422	.4989223	.0236831

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.391611**	**.5236261**	**2.082344**	**11.08840**	^ *****	**.0442732**
Stddev	.017421	.0046049	.004243	.01116	-----	.0001413
%RSD	.5136557	.8794296	.2037689	.1006528	-----	.3192506
#1	3.405650	.5278303	2.084552	11.09936	^ -----	.0444270
#2	3.397068	.5187046	2.085028	11.08878	^ -----	.0442436
#3	3.372114	.5243433	2.077452	11.07705	^ -----	.0441491

Sample Name: Q2832-09 Acquired: 8/13/2025 17:37:59 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7667792	3.988294	F 23.65425	6.883290	20.50084	.1160604
Stddev	.0016833	.008351	.12498	.027925	.07219	.0004079
%RSD	.2195342	.2093785	.5283612	.4056968	.3521323	.3514298
#1	.7648355	3.990875	23.69436	6.862557	20.41940	.1156976
#2	.7677480	3.978958	23.75425	6.872268	20.52613	.1159817
#3	.7677541	3.995050	23.51414	6.915044	20.55698	.1165019

Elem	Sr4077
Units	ppm
Avg	.0367262
Stddev	.0020113
%RSD	5.476564
#1	.0346190
#2	.0386256
#3	.0369339

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5573.339	101612.9	12604.38	4153.808	6082.340
Stddev	7.717	142.7	72.17	7.973	9.873
%RSD	.1384687	.1404786	.5726121	.1919430	.1623176
#1	5566.984	101450.2	12607.90	4146.453	6075.911
#2	5581.926	101671.3	12674.73	4152.690	6093.708
#3	5571.108	101717.2	12530.51	4162.280	6077.402

Sample Name: PB169215BS Acquired: 8/13/2025 17:42:07 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8098559**	**2.163288**	**.9703870**	**2.078532**	**.8419443**	**2.020039**
Stddev	.0021268	.006551	.0020778	.013014	.0025158	.016636
%RSD	.2626112	.3028119	.2141175	.6261072	.2988040	.8235413
#1	.8076511	2.164087	.9689917	2.066937	.8420725	2.037694
#2	.8100216	2.169403	.9693944	2.076053	.8393669	2.017766
#3	.8118949	2.156375	.9727749	2.092608	.8443936	2.004656

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1892723**	**.2017506**	**.1923842**	**1.033484**	**.4157631**	**.1985200**
Stddev	.0017982	.0016368	.0004945	.021898	.0005109	.0006279
%RSD	.9500428	.8112796	.2570582	2.118841	.1228838	.3162666
#1	.1912906	.2036224	.1918542	1.058335	.4152032	.1978224
#2	.1886852	.2010412	.1924650	1.017015	.4158823	.1986979
#3	.1878411	.2005883	.1928334	1.025102	.4162039	.1990397

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3164279**	**3.063915**	**.2036323**	**2.018439**	**.5003844**	**.0773759**
Stddev	.0005911	.007467	.0020322	.025195	.0013786	.0002532
%RSD	.1867989	.2436933	.9979807	1.248248	.2755112	.3272504
#1	.3159403	3.059599	.2057227	2.040085	.4989993	.0770885
#2	.3162583	3.072537	.2035106	1.990782	.5003976	.0775663
#3	.3170853	3.059609	.2016637	2.024449	.5017565	.0774728

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.790608**	**.3086457**	**.2094068**	**9.889119**	**.2942874**	**.4272990**
Stddev	.019448	.0019316	.0003615	.040434	.0023908	.0008186
%RSD	.6969171	.6258194	.1726331	.4088703	.8124165	.1915649
#1	2.807110	.3094516	.2096575	9.894204	.2965155	.4266514
#2	2.769166	.3100438	.2089924	9.846383	.2945849	.4270266
#3	2.795549	.3064417	.2095706	9.926769	.2917617	.4282190

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: PB169215BS Acquired: 8/13/2025 17:42:07 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6897690**	**.1990584**	**.9339743**	**5.416043**	F **.0019589**	**.1915965**
Stddev	.0027190	.0023859	.0106976	.021028	.0011814	.0013790
%RSD	.3941916	1.198589	1.145383	.3882599	60.31055	.7197359
#1	.6867652	.2015360	.9275689	5.392761	.0010165	.1931535
#2	.6904800	.1988631	.9280301	5.421713	.0015759	.1905292
#3	.6920619	.1967762	.9463240	5.433655	.0032843	.1911067

Elem	Sr4077
Units	ppm
Avg	**.1958461**
Stddev	.0015679
%RSD	.8005777
#1	.1976450
#2	.1951235
#3	.1947698

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5643.099**	**101499.1**	**11437.82**	**4238.110**	**7221.228**
Stddev	14.629	143.0	102.85	18.419	17.611
%RSD	.2592284	.1408958	.8992056	.4345984	.2438769
#1	5659.783	101347.7	11319.08	4217.177	7241.518
#2	5632.472	101631.9	11495.16	4251.832	7212.258
#3	5637.041	101517.8	11499.21	4245.322	7209.909

Sample Name: CCV07 Acquired: 8/13/2025 17:46:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.061751**	**5.358708**	**4.884184**	**5.158125**	**5.121728**	**9.835716**	**9.846023**
Stddev	.006174	.049189	.004860	.013048	.013897	.016428	.125289
%RSD	.1219640	.9179269	.0994963	.2529624	.2713388	.1670220	1.272483
#1	5.061243	5.363418	4.885294	5.146779	5.114275	9.854138	9.978686
#2	5.055847	5.307334	4.888392	5.155214	5.113147	9.822589	9.829669
#3	5.068162	5.405373	4.878865	5.172383	5.137762	9.830419	9.729715

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2412303**	**2.444688**	**24.56440**	**1.005668**	**2.448709**	**1.252828**	**5.139318**
Stddev	.0014978	.003691	.06028	.002626	.002727	.001636	.032814
%RSD	.6208869	.1509783	.2453991	.2611341	.1113816	.1305542	.6384872
#1	.2429523	2.445921	24.63349	1.004971	2.450829	1.252413	5.108507
#2	.2405088	2.447604	24.53718	1.003461	2.449667	1.251440	5.135624
#3	.2402298	2.440538	24.52253	1.008572	2.445632	1.254631	5.173822

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.426538**	**24.43010**	**2.462730**	**1.255634**	**23.63989**	**2.492681**	**2.532925**
Stddev	.008475	.08315	.003602	.001815	.13670	.003999	.004493
%RSD	.3492821	.3403772	.1462586	.1445167	.5782662	.1604231	.1773659
#1	2.436291	24.52612	2.464274	1.256361	23.58539	2.497180	2.538045
#2	2.420961	24.38187	2.465302	1.253569	23.53884	2.491332	2.531089
#3	2.422362	24.38230	2.458613	1.256973	23.79543	2.489532	2.529642

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.81823**	**4.789741**	**5.140567**	**4.939621**	**4.920080**	**5.230056**	**4.702327**
Stddev	.14336	.026219	.010365	.008277	.007624	.051728	.003153
%RSD	.5776378	.5473900	.2016318	.1675685	.1549586	.9890547	.0670513
#1	24.73653	4.819353	5.137956	4.936586	4.927466	5.179097	4.698751
#2	24.73439	4.780386	5.131757	4.948988	4.912238	5.228550	4.703520
#3	24.98376	4.769482	5.151987	4.933290	4.920535	5.282520	4.704709

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCV07 Acquired: 8/13/2025 17:46:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.856117**	**4.514361**	**4.915100**
Stddev	.008828	.007981	.010800
%RSD	.1817848	.1767899	.2197312
#1	4.847165	4.520595	4.925030
#2	4.864815	4.505366	4.916670
#3	4.856369	4.517121	4.903602

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5571.628**	**98750.90**	**11525.47**	**4172.309**	**6754.504**
Stddev	9.155	100.03	60.25	10.100	14.252
%RSD	.1643132	.1012949	.5227922	.2420781	.2110032
#1	5565.641	98859.18	11469.48	4166.065	6738.047
#2	5582.167	98731.60	11517.71	4166.900	6762.660
#3	5567.076	98661.93	11589.23	4183.962	6762.805

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB07 Acquired: 8/13/2025 17:50:17 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007834**	**-.000977**	**-.001403**	**-.000714**	**-.000627**	**-.015122**	**-.009368**
Stddev	.0005179	.001205	.001112	.000675	.000462	.006713	.001339
%RSD	66.10615	123.3274	79.25845	94.55189	73.71355	44.39299	14.28868
#1	.0011536	.000094	-.002684	-.001455	-.000543	-.020681	-.010900
#2	.0001916	-.000744	-.000688	-.000134	-.001126	-.007664	-.008422
#3	.0010050	-.002282	-.000836	-.000554	-.000213	-.017022	-.008784

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000134**	**-.000105**	**-.009295**	**.0000067**	**-.000172**	**-.000066**	**-.002980**
Stddev	.0000322	.000086	.004347	.0000791	.000073	.000219	.005712
%RSD	240.2001	82.04779	46.76270	1182.281	42.55719	329.5975	191.6678
#1	-.000023	-.000120	-.005527	.0000899	-.000173	-.000231	-.008596
#2	.000038	-.000182	-.008308	-.000068	-.000244	.000182	.002824
#3	.000025	-.000012	-.014050	-.000002	-.000098	-.000151	-.003169

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000295**	**-.016698**	**-.000070**	**.0005424**	**.0497158**	**.0018910**	**-.000262**
Stddev	.000317	.014768	.000167	.0001428	.0062732	.0009997	.000092
%RSD	107.4310	88.44412	239.0154	26.32410	12.61808	52.86805	35.20208
#1	.000034	-.030382	-.000262	.0006393	.0461085	.0008380	-.000366
#2	-.000597	-.001043	.000021	.0006094	.0569594	.0028272	-.000190
#3	-.000321	-.018669	.000032	.0003784	.0460794	.0020079	-.000229

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2415448**	**.0049203**	**.0000744**	**-.000227**	**-.000145**	**.0051313**	**.0012769**
Stddev	.0327008	.0004377	.0001539	.000141	.000456	.0032052	.0011478
%RSD	13.53821	8.895402	206.7526	62.10962	314.4662	62.46361	89.88482
#1	.2461504	.0050151	-.000102	-.000351	.000305	.0087122	.0025234
#2	.2067853	.0044429	.000143	-.000074	-.000133	.0025309	.0010438
#3	.2716987	.0053027	.000182	-.000255	-.000607	.0041507	.0002636

Reviewed By:jaswal
On:8/19/2025 2:31:42 AM
Inst Id :P4
LB :LB136801

Sample Name: CCB07 Acquired: 8/13/2025 17:50:17 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

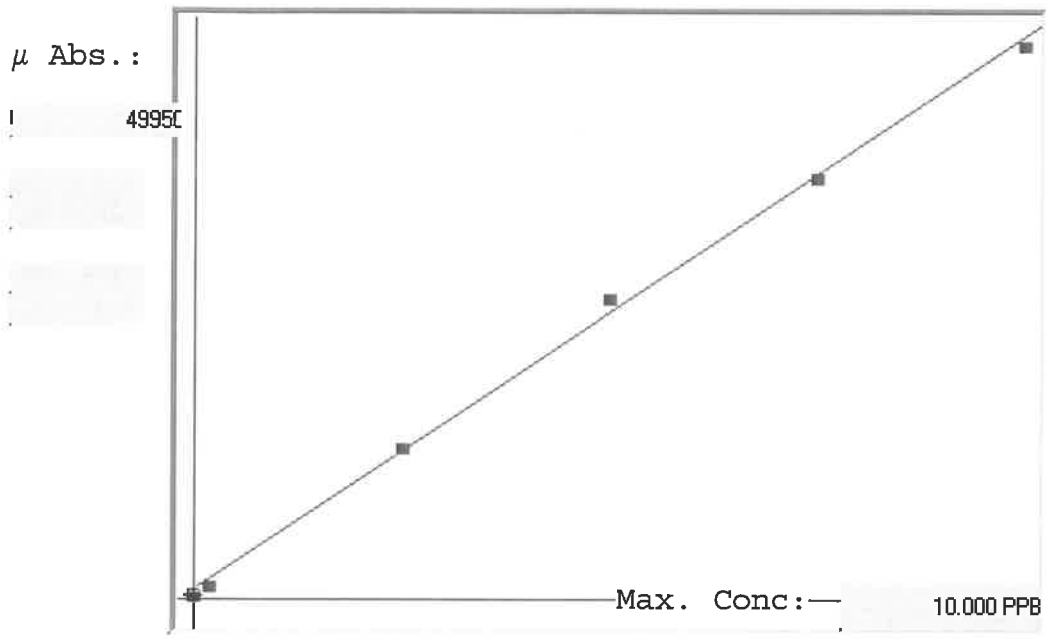
Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0002820	-.004491	-.000254
Stddev	.0019750	.001698	.000037
%RSD	700.4355	37.81408	14.61798
#1	-.001986	-.003235	-.000270
#2	.001212	-.003815	-.000212
#3	.001620	-.006423	-.000281

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5764.274	103250.6	11518.18	4320.515	7589.105
Stddev	3.950	84.7	32.77	5.128	11.655
%RSD	.0685278	.0820157	.2844690	.1186836	.1535706
#1	5767.850	103178.1	11496.66	4325.909	7600.862
#2	5760.034	103343.7	11501.99	4319.933	7577.556
#3	5764.937	103230.0	11555.89	4315.703	7588.897

Reviewed By:jaswal
On:8/12/2025 4:08:53 PM
Inst Id :CV1
LB :LB136782

LB136782
INSTRUMENT ID: CV1

7471B



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.0	0.000	-0.086	-0.086	446	0.000	446				
0.2	0.200	0.093	-0.107	1341	0.0 %	1341				
2.5	2.500	2.590	0.090	13794	0.0 %	13794				
5.0	5.000	5.285	0.285	27234	0.0 %	27234				
7.5	7.500	7.478	-0.022	38167	0.0 %	38167				
10.0	10.000	9.840	-0.160	49950	0.0 %	49950				

10
-47
4
6
0
-2

Reviewed By:jaswal
On:8/12/2025 4:08:53 PM
Inst Id :CV1
LB :LB136782

LB136782 INSTRUMENT ID:CV1

Method: 7471B Operator: Admin Date of Analysis: 12 Aug 2025 09:07:38

Type	Sample ID	Extended ID	Conc	µ Abs	Units	Type	Stnd Conc	Method	Date
S	0.0 - 1	50.0	-	446	PPB	Std	0.0000	7471B	12 Aug 2025 09:19:35
S	0.2 - 1	50.2	-	1341	PPB	Std	0.2000	7471B	12 Aug 2025 09:24:36
S	2.5 - 1	52.5	-	13794	PPB	Std	2.5000	7471B	12 Aug 2025 09:26:53
S	5.0 - 1	55.0	-	27234	PPB	Std	5.0000	7471B	12 Aug 2025 09:29:10
S	7.5 - 1	57.5	-	38167	PPB	Std	7.5000	7471B	12 Aug 2025 09:39:41
S	10.0 - 1		-	49950	PPB	Std	10.0000	7471B	12 Aug 2025 09:53:26
U	ICV08 - 1	ICV08 310.0	4.3863	22751	PPB	SMPL		7471B	12 Aug 2025 09:56:18
U	ICB08 - 1	ICB08	-0.0716	520	PPB	SMPL		7471B	12 Aug 2025 10:01:20
U	CCV22 - 1	CCV22	5.2239	26928	PPB	SMPL		7471B	12 Aug 2025 10:03:35
U	CCB22 - 1	CCB22	-0.0724	516	PPB	SMPL		7471B	12 Aug 2025 10:08:24
U	CRA - 1	CRA	0.2252	2000	PPB	SMPL		7471B	12 Aug 2025 10:34:36
U	HighStd - 1	HighStd	9.7293	49396	PPB	SMPL		7471B	12 Aug 2025 10:36:53
U	ChkStd - 1	ChkStd	7.5478	38517	PPB	SMPL		7471B	12 Aug 2025 10:41:37
U	PB169204BL - 1	PB169204BL	-0.1754	2	PPB	SMPL		7471B	12 Aug 2025 10:46:30
U	PB169204BS - 1	PB169204BS	3.3496	17581	PPB	SMPL		7471B	12 Aug 2025 10:50:43
X	Q2808-01 - 1	TP-7	HIGH	120704	PPB			7471B	12 Aug 2025 10:57:40
U	Q2809-01 - 1	OR-03-08082025	0.2278	2013	PPB	SMPL		7471B	12 Aug 2025 11:01:20
U	Q2818-01 - 1	B-2-5-1	1.7855	9781	PPB	SMPL		7471B	12 Aug 2025 11:03:49
U	Q2818-02 - 1	B-3-5-2	1.1159	6442	PPB	SMPL		7471B	12 Aug 2025 11:06:26
U	Q2819-06 - 1	11M-S	0.0247	1000	PPB	SMPL		7471B	12 Aug 2025 11:08:54
U	CCV23 - 1	CCV23	5.2650	27133	PPB	SMPL		7471B	12 Aug 2025 11:11:16
U	CCB23 - 1	CCB23	-0.1123	317	PPB	SMPL		7471B	12 Aug 2025 11:21:20
U	~~Q2819-11 - 1~~ SIR. 08/12/25	~~84SB-W~~	~~-0.1758~~	~~0~~	~~PPB~~	~~SMPL~~		~~7471B~~	~~12 Aug 2025 11:23:35~~
U	Q2819-11 - 1	84SB-W	0.8984	5357	PPB	SMPL		7471B	12 Aug 2025 11:25:11
U	Q2819-14 - 1	17M-W	-0.1460	149	PPB	SMPL		7471B	12 Aug 2025 11:27:26
U	Q2820-09 - 1	705R-S	-0.0790	483	PPB	SMPL		7471B	12 Aug 2025 11:29:43
U	Q2820-10 - 1	SOIL-DUP-2	-0.1309	224	PPB	SMPL		7471B	12 Aug 2025 11:31:59
U	Q2820-24 - 1	22M-S	-0.0724	516	PPB	SMPL		7471B	12 Aug 2025 11:34:15
U	Q2823-01 - 1	SU-04-081125	0.3315	2530	PPB	SMPL		7471B	12 Aug 2025 11:36:31
U	Q2826-01 - 1	WC1	1.7765	9736	PPB	SMPL		7471B	12 Aug 2025 11:38:48
U	Q2827-01 - 1	TP-8	52.4175	262279	PPB	SMPL		7471B	12 Aug 2025 11:41:06
U	Q2827-05 - 1	TP-9	3.2700	17184	PPB	SMPL		7471B	12 Aug 2025 11:43:25
U	Q2828-01 - 1	POWDER	0.0943	1347	PPB	SMPL		7471B	12 Aug 2025 11:46:31
U	CCV24 - 1	CCV24	5.2804	27210	PPB	SMPL		7471B	12 Aug 2025 11:51:42
U	CCB24 - 1	CCB24	-0.1592	83	PPB	SMPL		7471B	12 Aug 2025 11:54:39
U	Q2830-01 - 1	BIN0009-DRIVEWAY-TP-SOUTH-EAST	0.2356	2052	PPB	SMPL		7471B	12 Aug 2025 11:56:56
U	Q2830-03 - 1	BIN0009-DRIVEWAY-TP-WEST	0.2936	2341	PPB	SMPL		7471B	12 Aug 2025 11:59:11
U	Q2830-05 - 1	BIN0009-DRIVEWAY-TP-WESTSIDE	0.0347	1050	PPB	SMPL		7471B	12 Aug 2025 12:01:28
U	Q2830-07 - 1	BIN0009-DRIVEWAY-TP-EASTSIDE	0.1869	1809	PPB	SMPL		7471B	12 Aug 2025 12:03:45
U	Q2831-01 - 1	VNJ-238	0.5368	3554	PPB	SMPL		7471B	12 Aug 2025 12:06:00
U	Q2831-01DUP - 1	VNJ-238DUP	0.5364	3552	PPB	SMPL		7471B	12 Aug 2025 12:08:18
U	Q2831-01MS - 1	VNJ-238MS	4.3947	22793	PPB	SMPL		7471B	12 Aug 2025 12:10:35
U	Q2831-01MSD - 1	VNJ-238MSD	4.2459	22051	PPB	SMPL		7471B	12 Aug 2025 12:12:53
U	Q2831-01LX5 - 1		-0.1775	-8	PPB	SMPL		7471B	12 Aug 2025 12:15:15
U	Q2831-01A - 1		4.5096	23366	PPB	SMPL		7471B	12 Aug 2025 12:17:33
U	CCV25 - 1	CCV25	5.1445	26532	PPB	SMPL		7471B	12 Aug 2025 12:32:09
U	CCB25 - 1	CCB25	-0.1161	298	PPB	SMPL		7471B	12 Aug 2025 12:37:00
U	Q2808-01DLX100 - 1		3.0223	15949	PPB	SMPL		7471B	12 Aug 2025 12:44:31
U	Q2827-01DLX10 - 1		5.7579	29591	PPB	SMPL		7471B	12 Aug 2025 12:47:52
U	CCV26 - 1	CCV26	4.8431	25029	PPB	SMPL		7471B	12 Aug 2025 12:55:42
U	CCB26 - 1	CCB26	-0.1570	94	PPB	SMPL		7471B	12 Aug 2025 13:00:29

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB169211

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pippete ID: ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

Block ID: 1. HOT BLOCK #5 2. N/A

Start Digest Date: 08/12/2025 **Time :** 12:55 **Temp :** 97 °C

End Digest Date: 08/12/2025 **Time :** 14:55 **Temp :** 98 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #5

Dig Technician Signature: SLG.

Supervisor Signature: JSP

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6180
LFS-2	1.00	M6181
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	5.00	M6158
1:1 HNO3	10.00	MP86404
30% H2O2	3.00	M6170
Conc. HCL	10.00	M6151
PTFE Boiling Stones	N/A	M5581
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#5 CELL#35 97C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/12/25 15:55	SLG met dig	JSP / Met Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB169211

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB169211BL	PBS211	N/A	2.00	100	Colorless	Colorless	Fine	N/A	N/A	1
PB169211BS	LCS211	N/A	2.00	100	Colorless	Colorless	Fine	N/A	M6180,M6181	2
Q2808-01	TP-7	N/A	2.42	100	Brown	Yellow	Medium	N/A	N/A	3
Q2809-01	OR-03-08082025	N/A	2.34	100	Brown	Yellow	Medium	N/A	N/A	4
Q2817-01	LEAD-PAINT-CHIPS	N/A	2.27	100	Brown	Yellow	Medium	N/A	N/A	5
Q2818-01	B-2-5-1	N/A	2.34	100	Brown	Yellow	Medium	N/A	N/A	6
Q2818-02	B-3-5-2	N/A	2.33	100	Brown	Yellow	Medium	N/A	N/A	7
Q2819-06	11M-S	N/A	2.32	100	Brown	Yellow	Medium	N/A	N/A	8
Q2819-11	84SB-W	N/A	2.37	100	Brown	Yellow	Medium	N/A	N/A	9
Q2819-14	17M-W	N/A	2.36	100	Brown	Yellow	Medium	N/A	N/A	10
Q2820-09	705R-S	N/A	2.25	100	Brown	Yellow	Medium	N/A	N/A	11
Q2820-10	SOIL-DUP-2	N/A	2.17	100	Brown	Yellow	Medium	N/A	N/A	12
Q2820-24	22M-S	N/A	2.24	100	Brown	Yellow	Medium	N/A	N/A	13
Q2823-01	SU-04-081125	N/A	2.47	100	Brown	Yellow	Medium	N/A	N/A	14
Q2826-01	WC1	N/A	2.19	100	Brown	Yellow	Medium	N/A	N/A	15
Q2827-01	TP-8	N/A	2.26	100	Brown	Yellow	Medium	N/A	N/A	16
Q2827-05	TP-9	N/A	2.32	100	Brown	Yellow	Medium	N/A	N/A	17
Q2828-01	POWDER	N/A	2.16	100	Brown	Yellow	Medium	N/A	N/A	18
Q2828-01MS	POWDERMS	N/A	2.45	100	Brown	Yellow	Medium	N/A	M6180,M6181	20
Q2828-01MSD	POWDERMSD	N/A	2.30	100	Brown	Yellow	Medium	N/A	M6180,M6181	21
Q2828-01DUP	POWDERDUP	N/A	2.33	100	Brown	Yellow	Medium	N/A	N/A	19

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB169211 **WorkList ID :** 191219 **Department :** Digestion **Date :** 08-12-2025 11:49:06

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2808-01	TP-7	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/08/2025	6010D
Q2809-01	OR-03-08082025	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	08/08/2025	6010D
Q2817-01	LEAD-PAINT-CHIPS	Solid	Metals Group3	Cool 4 deg C	HOME01	D31	08/11/2025	6010D
Q2818-01	B-2-5-1	Solid	Metals ICP-TAL	Cool 4 deg C	EARTH03		08/11/2025	6010D
Q2818-02	B-3-5-2	Solid	Metals ICP-TAL	Cool 4 deg C	EARTH03		08/11/2025	6010D
Q2819-06	11M-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2819-11	84SB-W	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2819-14	17M-W	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2820-09	705R-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/07/2025	6010D
Q2820-10	SOIL-DUP-2	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/07/2025	6010D
Q2820-24	22M-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/08/2025	6010D
Q2823-01	SU-04-081125	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	08/11/2025	6010D
Q2826-01	WC1	Solid	Metals ICP-TAL	Cool 4 deg C	GENV01	D31	08/11/2025	6010D
Q2827-01	TP-8	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/11/2025	6010D
Q2827-05	TP-9	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/11/2025	6010D
Q2828-01	POWDER	Solid	Metals ICP-Group1	Cool 4 deg C	VIVA01	D21	08/11/2025	6010D

Date/Time 08/12/25 12:05
Raw Sample Received by: SM method
Raw Sample Relinquished by: L. C (SM)

Date/Time 08/12/25 13:05
Raw Sample Received by: L. C (SM)
Raw Sample Relinquished by: SM method

268 of 470
Q2819-METALS

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB169204

SOP ID : M7471B-Mercury-19

SDG No : N/A

Matrix : SOIL

Pippete ID: HG A

Balance ID : M SC-3

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 08/11/2025 **Time :** 16:30 **Temp :** 95 °C

End Digest Date: 08/11/2025 **Time :** 16:40 **Temp :** 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: SJ

Supervisor Signature: SD

Temp : 1. 95°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP86713
CCV	30mL	MP86715
CRA	30mL	MP86717
Blank Spike	0.48mL	MP86706
Matrix Spike	0.48mL	MP86706

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	2.5mL	MP86719
KMnO4 (5%)	4.5mL	MP85893
Hydroxylamine HCL (12%)	2.0mL	MP85895
PTFE Boiling Stones	----------	M5582
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP86707
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP86708
2.5 ppb	S2.5	30mL	MP86709
5.0 ppb	S5.0	30mL	MP86710
7.5 ppb	S7.5	30mL	MP86711
10.0 ppb	S10.0	30mL	MP86712
ICV	ICV	30mL	MP86713
ICB	ICB	30mL	MP86714
CCV	CCV	30mL	MP86715
CCB	CCB	30mL	MP86716
CRI	CRI	30mL	MP86717
CHK STD	CHK STD	30mL	MP86718

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/11/25 16:50	SJ/LS wet dig	SJ (Botanical Lab)
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB169204

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
PB169204BL	PBS204	0.51	35	N/A	N/A	1-1
PB169204BS	LCS204	0.51	35	N/A	MP86706	2
Q2808-01	TP-7	0.53	35	N/A	N/A	3
Q2809-01	OR-03-08082025	0.55	35	N/A	N/A	4
Q2818-01	B-2-5-1	0.52	35	N/A	N/A	5
Q2818-02	B-3-5-2	0.53	35	N/A	N/A	6
Q2819-06	11M-S	0.55	35	N/A	N/A	7
Q2819-11	84SB-W	0.56	35	N/A	N/A	8
Q2819-14	17M-W	0.52	35	N/A	N/A	9
Q2820-09	705R-S	0.54	35	N/A	N/A	10
Q2820-10	SOIL-DUP-2	0.51	35	N/A	N/A	11
Q2820-24	22M-S	0.51	35	N/A	N/A	12
Q2823-01	SU-04-081125	0.52	35	N/A	N/A	13
Q2826-01	WC1	0.51	35	N/A	N/A	14
Q2827-01	TP-8	0.59	35	N/A	N/A	15
Q2827-05	TP-9	0.57	35	N/A	N/A	16
Q2828-01	POWDER	0.56	35	N/A	N/A	17
Q2830-01	BIN0009-DRIVEWAY-TP-SOUTH-EAST	0.53	35	N/A	N/A	18
Q2830-03	BIN0009-DRIVEWAY-TP-WEST	0.56	35	N/A	N/A	19
Q2830-05	BIN0009-DRIVEWAY-TP-WESTSIDE	0.55	35	N/A	N/A	20
Q2830-07	BIN0009-DRIVEWAY-TP-EASTSIDE	0.58	35	N/A	N/A	21
Q2831-01	VNJ-238	0.54	35	N/A	N/A	22
Q2831-01MS	VNJ-238MS	0.57	35	N/A	MP86706	24
Q2831-01MSD	VNJ-238MSD	0.54	35	N/A	MP86706	25
Q2831-01DUP	VNJ-238DUP	0.50	35	N/A	N/A	23

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB169204 **WorkList ID :** 191207 **Department :** Digestion **Date :** 08-11-2025 15:47:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2808-01	TP-7	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/08/2025	7471B
Q2809-01	OR-03-08082025	Solid	Mercury	Cool 4 deg C	PSEG05	D31	08/08/2025	7471B
Q2818-01	B-2-5-1	Solid	Mercury	Cool 4 deg C	EARTH03		08/11/2025	7471B
Q2818-02	B-3-5-2	Solid	Mercury	Cool 4 deg C	EARTH03		08/11/2025	7471B
Q2819-06	11M-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2819-11	845SB-W	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2819-14	17M-W	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2820-09	705R-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/07/2025	7471B
Q2820-10	SOIL-DUP-2	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/07/2025	7471B
Q2820-24	22M-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/08/2025	7471B
Q2823-01	SU-04-081125	Solid	Mercury	Cool 4 deg C	PSEG05	D31	08/11/2025	7471B
Q2826-01	WC1	Solid	Mercury	Cool 4 deg C	GENV01	D31	08/11/2025	7471B
Q2827-01	TP-8	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2827-05	TP-9	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2828-01	POWDER	Solid	Mercury	Cool 4 deg C	VIVA01	D21	08/11/2025	7471B
Q2830-01	BIN009-DRIVEWAY-TP-SOUTH	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-03	BIN009-DRIVEWAY-TP-WEST	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-05	BIN009-DRIVEWAY-TP-WEST5	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-07	BIN009-DRIVEWAY-TP-EASTS	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2831-01	VNJ-238	Solid	Mercury	Cool 4 deg C	PSEG03	D21	08/11/2025	7471B

Date/Time 08/11/25 16:05
Raw Sample Received by: [signature]
Raw Sample Relinquished by: [signature]

Date/Time 08/11/25 17:05
Raw Sample Received by: [signature]
Raw Sample Relinquished by: [signature]

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC: LB136783

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2732-02	WC-A7-01-C	74	1.15	10.37	11.52	11.18	96.7	
Q2819-01	22BP-N	1	1.15	10.16	11.31	9.57	82.9	
Q2819-02	22BP-E	2	1.16	10.67	11.83	10.3	85.7	
Q2819-03	22BP-W	3	1.16	10.83	11.99	10.45	85.8	
Q2819-04	22BP-S	4	1.15	9.96	11.11	9.92	88.1	
Q2819-05	11M-W	5	1.14	10.45	11.59	10.7	91.5	
Q2819-06	11M-S	6	1.16	10.83	11.99	10.96	90.5	
Q2819-07	11M-N	7	1.16	10.81	11.97	9.37	75.9	
Q2819-08	11M-E	8	1.17	10.27	11.44	8.54	71.8	
Q2819-09	84SB-E	9	1.13	10.62	11.75	5.12	37.6	
Q2819-10	84SB-S	10	1.18	10.11	11.29	10.51	92.3	
Q2819-11	84SB-W	11	1.14	10.14	11.28	9.94	86.8	
Q2819-12	17M-S	12	1.19	118.66	119.85	11.15	8.4	
Q2819-13	17M-E	13	1.17	10.38	11.55	9.86	83.7	
Q2819-14	17M-W	14	1.15	10.46	11.61	10.1	85.6	
Q2819-15	17M-N	15	1.15	10.57	11.72	9.96	83.3	
Q2819-16	38M-S	16	1.15	10.77	11.92	11.1	92.4	
Q2819-17	38M-N	17	1.16	10.41	11.57	10.27	87.5	
Q2819-18	38M-W	18	1.14	10.66	11.8	10.34	86.3	
Q2819-19	38M-E	19	1.13	10.13	11.26	10.02	87.8	
Q2819-20	82H-E	20	1.17	10.64	11.81	9.38	77.2	
Q2820-01	82H-S	21	1.16	10.76	11.92	10.04	82.5	
Q2820-02	82H-W	22	1.15	11.21	12.36	10.51	83.5	
Q2820-03	82H-N	23	1.16	11.14	12.3	10.9	87.4	
Q2820-04	SOIL-DUP-1	24	1.16	10.83	11.99	10.56	86.8	
Q2820-05	518R-E	25	1.16	10.40	11.56	6.23	48.8	
Q2820-06	518R-N	26	1.18	10.55	11.73	9.35	77.4	
Q2820-07	518R-S	27	1.17	10.52	11.69	9.44	78.6	

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC: LB136783

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2820-08	518R-W	28	1.13	10.80	11.93	10.74	89.0	
Q2820-09	705R-S	29	1.14	10.59	11.73	7.05	55.8	
Q2820-10	SOIL-DUP-2	30	1.15	10.87	12.02	6.41	48.4	
Q2820-11	10PC-W	31	1.11	10.25	11.36	10.58	92.4	
Q2820-12	10PC-S	32	1.19	10.52	11.71	10.88	92.1	
Q2820-13	10P-W	33	1.14	10.09	11.23	10.34	91.2	
Q2820-14	10P-E	34	1.19	10.37	11.56	9.62	81.3	
Q2820-15	10P-S	35	1.18	10.21	11.39	10.22	88.5	
Q2820-16	10P-N	36	1.11	10.09	11.2	9.81	86.2	
Q2820-17	88H-E	37	1.16	10.42	11.58	9.77	82.6	
Q2820-18	88H-N	38	1.16	10.90	12.06	10.57	86.3	
Q2820-19	88H-W	39	1.18	10.66	11.84	10.62	88.6	
Q2820-20	88H-S	40	1.18	10.12	11.3	9.74	84.6	
Q2820-21	22M-N	41	1.14	11.06	12.2	11.34	92.2	
Q2820-22	22M-W	42	1.17	10.90	12.07	6.94	52.9	
Q2820-23	22M-E	43	1.17	10.27	11.44	4.66	34.0	
Q2820-24	22M-S	44	1.13	10.68	11.81	10.63	89.0	
Q2832-01	TG-S01	45	1.15	10.46	11.61	10.92	93.4	
Q2832-03	TG-S02	46	1.18	10.41	11.59	10.97	94.0	
Q2832-05	TG-S03	47	1.15	10.50	11.65	11.00	93.8	
Q2832-07	TG-S04	48	1.17	10.58	11.75	11.02	93.1	
Q2832-09	TG-S05	49	1.15	10.40	11.55	10.6	90.9	
Q2836-02	WC-A2-15-C	75	1.18	10.38	11.56	9.67	81.8	
Q2836-06	WC-A2-16-C	76	1.19	10.43	11.62	10.66	90.8	
Q2836-10	WC-A2-17-C	77	1.19	10.48	11.67	10.96	93.2	
Q2836-14	WC-A5-02-C	78	1.19	10.17	11.36	8.8	74.8	
Q2838-01	TP-11	50	1.14	10.60	11.74	10.44	87.7	
Q2838-02	TP-11-EPH	51	1.14	10.85	11.99	9.57	77.7	

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC: LB136783

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2838-03	TP-11-VOC	52	1.19	11.24	12.43	9.97	78.1	
Q2838-05	TP-10	53	1.14	11.08	12.22	10.75	86.7	
Q2838-06	TP-10-EPH	54	1.18	10.42	11.6	7.63	61.9	
Q2838-07	TP-10-VOC	55	1.18	10.50	11.68	8.68	71.4	
Q2839-01	BC274436-1-1	56	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-02	BC274436-1-2	57	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-03	BC151973-1-1	58	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-04	BC151973-1-2	59	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-05	BC271336-1-1	60	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-06	BC271336-1-2	61	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-07	BC271242-1-1	62	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-08	BC271242-1-2	63	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-09	BC271242-2-1	64	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-10	BC271242-2-2	65	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-11	BC226751-1-1	66	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-12	BC226751-1-2	67	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-13	BC226751-2-1	68	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-14	BC226751-2-2	69	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-15	JEC773V-1-1	70	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-16	JEC773V-1-2	71	1.00	1.00	2.00	2.00	100.0	PILC
Q2840-01	0804-SOIL	72	1.12	11.32	12.44	10.42	82.2	
Q2840-02	0804-D	73	1.00	1.00	2.00	2.00	100.0	debris

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

VB 136783

WorkList Name : %1-081225 **WorkList ID :** 191210 **Department :** Wet-Chemistry **Date :** 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2820-06	518R-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-07	518R-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-08	518R-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-09	705R-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-10	SOIL-DUP-2	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2819-19	38M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-20	82H-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-01	82H-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-02	82H-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-03	82H-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-04	SOIL-DUP-1	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-13	17M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-14	17M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-15	17M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-16	38M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-17	38M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-18	38M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-07	11M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-08	11M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-09	84SB-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-10	84SB-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO

Date/Time 08112125 1510

Raw Sample Received by: SB WC

Raw Sample Relinquished by:

Date/Time 08112125 1735

Raw Sample Received by:

Raw Sample Relinquished by: SB WC

Q2819-METALS

WORKLIST(Hardcopy Internal Chain)

VB 136783

WorkList Name : %1-081225 **WorkList ID :** 191210 **Department :** Wet-Chemistry **Date :** 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2819-01	22BP-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-02	22BP-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-03	22BP-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-04	22BP-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-05	11M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-06	11M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2820-23	22M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-24	22M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-17	88H-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-18	88H-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-19	88H-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-20	88H-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-21	22M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-22	22M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-11	10PC-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-12	10PC-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-13	10P-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-14	10P-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-15	10P-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-16	10P-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-05	518R-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO

276 of 470

Date/Time 08/12/25 15:00

Raw Sample Received by: JB WSC

Raw Sample Relinquished by: [signature]

Date/Time 08/12/25 17:35

Raw Sample Received by: [signature]

Raw Sample Relinquished by: JB WSC

WORKLIST(Hardcopy Internal Chain)

VB 136783

WorkList Name : %1-081225 **WorkList ID :** 191210 **Department :** Wet-Chemistry **Date :** 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2839-04	BC151973-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-05	BC271336-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-06	BC271336-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-07	BC271242-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-08	BC271242-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-09	BC271242-2-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-10	BC271242-2-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-11	BC226751-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-12	BC226751-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-13	BC226751-2-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-14	BC226751-2-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-15	JEC773V-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-16	JEC773V-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2840-01	0804-SOIL	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/12/2025	Chemtech -SO
Q2840-02	0804-D	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/12/2025	Chemtech -SO

Date/Time 08112125 15:00

Raw Sample Received by: JB WPC

Raw Sample Relinquished by:

Date/Time 08112125 17:35

Raw Sample Received by:

Raw Sample Relinquished by: JB WPC

WS 131783

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-081225 **WorkList ID :** 191210 **Department :** Wet-Chemistry **Date :** 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2819-11	84SB-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-12	17M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2832-01	TG-S01	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2732-02	WC-A7-01-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J21	08/12/2025	Chemtech -SO
Q2832-03	TG-S02	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-05	TG-S03	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-07	TG-S04	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-09	TG-S05	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/12/2025	Chemtech -SO
Q2836-02	WC-A2-15-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-06	WC-A2-16-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-10	WC-A2-17-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-14	WC-A5-02-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2838-01	TP-11	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-02	TP-11-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-03	TP-11-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-05	TP-10	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-06	TP-10-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-07	TP-10-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2839-01	BC274436-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-02	BC274436-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-03	BC151973-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO

Date/Time 08/12/25 15:00

Raw Sample Received by: SB WDC

Raw Sample Relinquished by: CA SM

Date/Time 08/12/25 17:35

Raw Sample Received by: CA SM

Raw Sample Relinquished by: SB WDC

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/12/25 09:19		sagar	OK
2	S0.2	S0.2	CAL2	08/12/25 09:24		sagar	OK
3	S2.5	S2.5	CAL3	08/12/25 09:26		sagar	OK
4	S5	S5	CAL4	08/12/25 09:29		sagar	OK
5	S7.5	S7.5	CAL5	08/12/25 09:39		sagar	OK
6	S10	S10	CAL6	08/12/25 09:53		sagar	OK
7	ICV08	ICV08	ICV	08/12/25 09:56		sagar	OK
8	ICB08	ICB08	ICB	08/12/25 10:01		sagar	OK
9	CCV22	CCV22	CCV	08/12/25 10:03		sagar	OK
10	CCB22	CCB22	CCB	08/12/25 10:08		sagar	OK
11	CRA	CRA	CRDL	08/12/25 10:34		sagar	OK
12	HighStd	HighStd	HIGH STD	08/12/25 10:36		sagar	OK
13	ChkStd	ChkStd	SAM	08/12/25 10:41		sagar	OK
14	PB169204BL	PB169204BL	MB	08/12/25 10:46		sagar	OK
15	PB169204BS	PB169204BS	LCS	08/12/25 10:50		sagar	OK
16	Q2808-01	TP-7	SAM	08/12/25 10:57	High	sagar	Dilution
17	Q2809-01	OR-03-08082025	SAM	08/12/25 11:01		sagar	OK
18	Q2818-01	B-2-5-1	SAM	08/12/25 11:03		sagar	OK

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

19	Q2818-02	B-3-5-2	SAM	08/12/25 11:06		sagar	OK
20	Q2819-06	11M-S	SAM	08/12/25 11:08		sagar	OK
21	CCV23	CCV23	CCV	08/12/25 11:11		sagar	OK
22	CCB23	CCB23	CCB	08/12/25 11:21		sagar	OK
23	Q2819-11	84SB-W	SAM	08/12/25 11:25		sagar	OK
24	Q2819-14	17M-W	SAM	08/12/25 11:27		sagar	OK
25	Q2820-09	705R-S	SAM	08/12/25 11:29		sagar	OK
26	Q2820-10	SOIL-DUP-2	SAM	08/12/25 11:31		sagar	OK
27	Q2820-24	22M-S	SAM	08/12/25 11:34		sagar	OK
28	Q2823-01	SU-04-081125	SAM	08/12/25 11:36		sagar	OK
29	Q2826-01	WC1	SAM	08/12/25 11:38		sagar	OK
30	Q2827-01	TP-8	SAM	08/12/25 11:41	High	sagar	Dilution
31	Q2827-05	TP-9	SAM	08/12/25 11:43		sagar	OK
32	Q2828-01	POWDER	SAM	08/12/25 11:46		sagar	OK
33	CCV24	CCV24	CCV	08/12/25 11:51		sagar	OK
34	CCB24	CCB24	CCB	08/12/25 11:54		sagar	OK
35	Q2830-01	BIN0009-DRIVEWAY-	SAM	08/12/25 11:56		sagar	OK
36	Q2830-03	BIN0009-DRIVEWAY-	SAM	08/12/25 11:59		sagar	OK
37	Q2830-05	BIN0009-DRIVEWAY-	SAM	08/12/25 12:01		sagar	OK
38	Q2830-07	BIN0009-DRIVEWAY-	SAM	08/12/25 12:03		sagar	OK

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Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

39	Q2831-01	VNJ-238	SAM	08/12/25 12:06		sagar	OK
40	Q2831-01DUP	VNJ-238DUP	DUP	08/12/25 12:08		sagar	OK
41	Q2831-01MS	VNJ-238MS	MS	08/12/25 12:10		sagar	OK
42	Q2831-01MSD	VNJ-238MSD	MSD	08/12/25 12:12		sagar	OK
43	Q2831-01L	VNJ-238L	SD	08/12/25 12:15		sagar	OK
44	Q2831-01A	VNJ-238A	PS	08/12/25 12:17		sagar	OK
45	CCV25	CCV25	CCV	08/12/25 12:32		sagar	OK
46	CCB25	CCB25	CCB	08/12/25 12:37		sagar	OK
47	Q2808-01DL	TP-7DL	SAM	08/12/25 12:44	Report 100X	sagar	Confirms
48	Q2827-01DL	TP-8DL	SAM	08/12/25 12:47	Report 10X	sagar	Confirms
49	CCV26	CCV26	CCV	08/12/25 12:55		sagar	OK
50	CCB26	CCB26	CCB	08/12/25 13:00		sagar	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/13/25 11:56		Jaswal	OK
2	S1	S1	CAL2	08/13/25 12:00		Jaswal	OK
3	S2	S2	CAL3	08/13/25 12:04		Jaswal	OK
4	S3	S3	CAL4	08/13/25 12:08		Jaswal	OK
5	S4	S4	CAL5	08/13/25 12:12		Jaswal	OK
6	S5	S5	CAL6	08/13/25 12:17		Jaswal	OK
7	ICV01	ICV01	ICV	08/13/25 12:21		Jaswal	OK
8	LLICV01	LLICV01	LLICV	08/13/25 12:28		Jaswal	OK
9	ICB01	ICB01	ICB	08/13/25 12:33		Jaswal	OK
10	CRI01	CRI01	CRDL	08/13/25 12:37		Jaswal	OK
11	ICSA01	ICSA01	ICSA	08/13/25 12:41		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	08/13/25 12:45		Jaswal	OK
13	ICSADL	ICSADL	ICSA	08/13/25 12:49		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	08/13/25 12:54		Jaswal	OK
15	CCV01	CCV01	CCV	08/13/25 12:58		Jaswal	OK
16	CCB01	CCB01	CCB	08/13/25 13:03		Jaswal	OK
17	Q2828-01	POWDER	SAM	08/13/25 13:07		Jaswal	OK
18	Q2828-01DUP	POWDERDUP	DUP	08/13/25 13:12		Jaswal	OK

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

19	Q2828-01L	POWDERL	SD	08/13/25 13:16		Jaswal	OK
20	Q2828-01MS	POWDERMS	MS	08/13/25 13:20		Jaswal	OK
21	Q2828-01MSD	POWDERMSD	MSD	08/13/25 13:25		Jaswal	OK
22	Q2828-01A	POWDERA	PS	08/13/25 13:30	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
23	CCV02	CCV02	CCV	08/13/25 13:42		Jaswal	OK
24	CCB02	CCB02	CCB	08/13/25 13:46		Jaswal	OK
25	Q2830-01	BIN0009-DRIVEWAY-	SAM	08/13/25 13:50		Jaswal	OK
26	Q2830-03	BIN0009-DRIVEWAY-	SAM	08/13/25 13:55		Jaswal	OK
27	Q2830-05	BIN0009-DRIVEWAY-	SAM	08/13/25 13:59		Jaswal	OK
28	Q2830-07	BIN0009-DRIVEWAY-	SAM	08/13/25 14:03		Jaswal	OK
29	Q2831-01	VNJ-238	SAM	08/13/25 14:07		Jaswal	OK
30	Q2818-01	B-2-5-1	SAM	08/13/25 14:11		Jaswal	OK
31	Q2818-02	B-3-5-2	SAM	08/13/25 14:16		Jaswal	OK
32	Q2823-01	SU-04-081125	SAM	08/13/25 14:20		Jaswal	OK
33	Q2831-03	VNJ-238	SAM	08/13/25 14:24		Jaswal	OK
34	Q2831-03DUP	VNJ-238DUP	DUP	08/13/25 14:28		Jaswal	OK
35	CCV03	CCV03	CCV	08/13/25 14:33		Jaswal	OK
36	CCB03	CCB03	CCB	08/13/25 14:37		Jaswal	OK
37	Q2831-03L	VNJ-238L	SD	08/13/25 14:41		Jaswal	OK

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

38	Q2831-03MS	VNJ-238MS	MS	08/13/25 14:46		Jaswal	OK
39	Q2831-03MSD	VNJ-238MSD	MSD	08/13/25 14:50		Jaswal	OK
40	Q2831-03A	VNJ-238A	PS	08/13/25 14:54	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
41	PB169214BL	PB169214BL	MB	08/13/25 14:58		Jaswal	OK
42	PB169214BS	PB169214BS	LCS	08/13/25 15:02		Jaswal	OK
43	PB169211BL	PB169211BL	MB	08/13/25 15:06		Jaswal	OK
44	PB169215BL	PB169215BL	MB	08/13/25 15:15		Jaswal	OK
45	PB169211BS	PB169211BS	LCS	08/13/25 15:19		Jaswal	OK
46	CCV04	CCV04	CCV	08/13/25 15:23		Jaswal	OK
47	CCB04	CCB04	CCB	08/13/25 15:27		Jaswal	OK
48	PB169200TB	PB169200TB	MB	08/13/25 15:31		Jaswal	OK
49	Q2808-04	TP-7	SAM	08/13/25 15:36		Jaswal	OK
50	Q2826-02	WC1	SAM	08/13/25 15:40		Jaswal	OK
51	Q2827-04	TP-8	SAM	08/13/25 15:45		Jaswal	OK
52	Q2827-08	TP-9	SAM	08/13/25 15:49		Jaswal	OK
53	Q2808-01	TP-7	SAM	08/13/25 15:53		Jaswal	OK
54	Q2817-01	LEAD-PAINT-CHIPS	SAM	08/13/25 15:58		Jaswal	OK
55	Q2819-06	11M-S	SAM	08/13/25 16:02		Jaswal	OK
56	Q2819-11	84SB-W	SAM	08/13/25 16:06		Jaswal	OK

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

57	Q2819-14	17M-W	SAM	08/13/25 16:10		Jaswal	OK
58	CCV05	CCV05	CCV	08/13/25 16:14		Jaswal	OK
59	CCB05	CCB05	CCB	08/13/25 16:19		Jaswal	OK
60	Q2820-09	705R-S	SAM	08/13/25 16:23		Jaswal	OK
61	Q2820-10	SOIL-DUP-2	SAM	08/13/25 16:27		Jaswal	OK
62	Q2820-24	22M-S	SAM	08/13/25 16:31		Jaswal	OK
63	Q2826-01	WC1	SAM	08/13/25 16:35		Jaswal	OK
64	Q2827-01	TP-8	SAM	08/13/25 16:39		Jaswal	OK
65	Q2827-05	TP-9	SAM	08/13/25 16:44		Jaswal	OK
66	Q2829-01	SILICA	SAM	08/13/25 16:48		Jaswal	OK
67	Q2832-09	TG-S05	SAM	08/13/25 16:52		Jaswal	OK
68	Q2832-09DUP	TG-S05DUP	DUP	08/13/25 16:56		Jaswal	OK
69	Q2832-09L	TG-S05L	SD	08/13/25 17:00		Jaswal	OK
70	CCV06	CCV06	CCV	08/13/25 17:05		Jaswal	OK
71	CCB06	CCB06	CCB	08/13/25 17:09		Jaswal	OK
72	Q2832-09MS	TG-S05MS	MS	08/13/25 17:13		Jaswal	OK
73	Q2832-09MSD	TG-S05MSD	MSD	08/13/25 17:17		Jaswal	OK
74	Q2832-09A	TG-S05A	PS	08/13/25 17:21	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
75	Q2832-03	TG-S02	SAM	08/13/25 17:25		Jaswal	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

76	Q2832-05	TG-S03	SAM	08/13/25 17:29		Jaswal	OK
77	Q2832-07	TG-S04	SAM	08/13/25 17:33		Jaswal	OK
78	PB169215BS	PB169215BS	LCS	08/13/25 17:42		Jaswal	OK
79	CCV07	CCV07	CCV	08/13/25 17:46		Jaswal	OK
80	CCB07	CCB07	CCB	08/13/25 17:50		Jaswal	OK

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Prep Standard - Chemical Standard Summary

Order ID : Q2819

Test : Mercury,Metals ICP-TAL

Prepbatch ID : PB169204,PB169211,

Sequence ID/Qc Batch ID: LB136782,LB136801,LB136801,LB136801,

Standard ID :
MP85893,MP85895,MP86404,MP86640,MP86641,MP86642,MP86643,MP86646,MP86647,MP86648,MP86651,MP866
53,MP86655,MP86656,MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712,MP86713,MP86714,MP
86715,MP86716,MP86717,MP86718,MP86719,MP86721,MP86752,MP86753,

Chemical ID :
M4371,M4916,M5062,M5467,M5581,M5582,M5658,M5697,M5748,M5798,M5799,M5800,M5801,M5805,M5814,M5816
,M5820,M5884,M5962,M5969,M5970,M5979,M5985,M5998,M6021,M6023,M6027,M6028,M6030,M6032,M6058,M607
6,M6077,M6086,M6128,M6137,M6140,M6142,M6144,M6145,M6146,M6151,M6158,M6159,M6162,M6163,M6164,M61
65,M6170,M6171,M6174,M6176,M6177,M6178,M6179,M6180,M6181,M6182,M6184,W3112,

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP85893	06/05/2025	12/05/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 100.00000gram of M4916 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP85895	06/05/2025	08/15/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
169	1:1HNO3	MP86404	07/17/2025	11/16/2025	Sagar Kanani	METALS_SCALE_2 (M SC-2)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/17/2025

FROM 1250.00000ml of M6162 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
902	ICP AES CAL BLK (SO/ICB/CCB)	MP86640	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = Final Quantity: 2500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP86641	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5970 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6146 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP86640 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP86642	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP86643	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 25.00000ml of MP86641 + 75.00000ml of MP86640 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP86646	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP86647	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6162 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP86648	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 200.00000ml of M6162 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP86651	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 5.00000ml of M6182 + 45.00000ml of MP86640 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP86653	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 4.00000ml of MP86641 + 46.00000ml of MP86640 = Final Quantity: 50.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP86655	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 0.00000ml of M5748 + 0.00000ml of M5805 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5816 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M5979 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M6086 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M6137 + 89.03000ml of MP86640 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2951	ICP AES S1/CRI WORK STD	MP86656	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 1.00000ml of MP86655 + 49.00000ml of MP86640 = Final Quantity: 50.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP86706	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M5062 + 2.50000ml of M6162 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP86707	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP86708	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86706 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP86709	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 245.00000ml of W3112 + 2.50000ml of MP86706 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP86710	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 242.50000ml of W3112 + 5.00000ml of MP86706 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP86711	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 240.00000ml of W3112 + 7.50000ml of MP86706 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP86712	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 237.50000ml of W3112 + 10.00000ml of MP86706 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP86713	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP86714	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP86715	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6162 + 10.00000ml of MP86706 = Final Quantity: 500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP86716	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6162 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP86717	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86706 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP86718	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 2.50000ml of M6162 + 240.50000ml of W3112 + 7.00000ml of MP86706 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
887	AQUA REGIA FOR HG ON 7471A	MP86719	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 150.00000ml of M6151 + 50.00000ml of M6162 = Final Quantity: 200.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
104	5% RINSING HCL	MP86721	08/11/2025	08/17/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/14/2025

FROM 100.00000ml of M6151 + 1900.00000ml of W3112 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4163	NEW ICV-060925	MP86752	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/14/2025

FROM 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.60000ml of MP86640 = Final Quantity: 50.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP86753	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/14/2025

FROM 0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP86640 = Final Quantity: 100.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000215387	06/25/2025	07/01/2019 / RICHARD	06/07/2019 / RICHARD	M4371

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3227-05 / Potassium Permanganate (2.5kg)	210800	03/31/2026	11/30/2022 / mohan	07/28/2021 / mohan	M4916

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	03/20/2026	03/20/2025 / jaswal	06/12/2023 / jaswal	M5581

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	12/31/2025	06/17/2023 / Al-Terek	06/12/2023 / jaswal	M5582

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57050 / Sn, 1000 PPM, 125 ml	071123	07/11/2026	02/09/2024 / bin	02/09/2024 / bin	M5799

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57033 / As, 1000 PPM, 125 ml	111323	11/13/2026	02/09/2024 / bin	02/09/2024 / bin	M5801

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	122223	12/22/2026	04/17/2025 / Janvi	01/03/2024 / jaswal	M5805

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000281938	07/06/2026	04/30/2024 / mohan	04/25/2024 / mohan	M5884

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	03/31/2026	03/31/2025 / kareem	06/11/2024 / Jaswal	M5969

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	08/05/2026	08/06/2025 / Janvi	02/22/2024 / Jaswal	M5979

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB727800	07/30/2026	07/30/2025 / Janvi	02/22/2024 / kareem	M5998

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / Tl, 1000 PPM, 125 ml	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	062024	06/20/2027	06/04/2025 / Janvi	08/05/2024 / Jaswal	M6027

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	070124	07/01/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6028

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57047 / Ag, 1000 PPM, 125 ml	122823	12/28/2026	08/05/2024 / kareem	08/05/2024 / Jaswal	M6030

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	010924	01/09/2027	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6032

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	V2-MEB746173	01/29/2026	01/29/2025 / JANVI	08/22/2024 / Jaswal	M6058

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	01/01/2026	01/01/2025 / kareem	09/19/2024 / kareem	M6076

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	09/06/2029	01/23/2025 / kareem	09/19/2024 / kareem	M6077

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Calcium, 500 ml, 10000 PPM	082324	08/23/2027	03/06/2025 / JANVI	10/14/2024 / jaswal	M6086

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	011025	01/10/2028	06/25/2025 / Janvi	01/13/2025 / Jaswal	M6140

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58119 / K, 10000 PPM, 500 ml	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	072424	07/24/2027	01/23/2025 / kareem	01/13/2025 / Jaswal	M6144

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	121724	12/17/2027	02/04/2025 / jaswal	01/13/2025 / Jaswal	M6145

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	02/17/2026	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	09/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	06/08/2026	06/09/2025 / jaswal	06/06/2025 / jaswal	M6163

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2186-03 / Hydrogen Peroxide (cs/4x4L)	24D1961001	10/16/2025	06/25/2025 / jaswal	05/20/2025 / Sagar	M6170

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	011525	01/15/2028	07/15/2025 / jaswal	02/13/2025 / Janvi	M6171

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	V2-MEB742428	07/31/2026	07/31/2025 / Janvi	05/05/2025 / Janvi	M6174

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	092724	09/27/2027	08/06/2025 / Janvi	08/06/2025 / Janvi	M6176

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	031525	03/15/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6177

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	080528	08/05/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6178

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	08/05/2026	08/06/2025 / Janvi	06/02/2024 / Janvi	M6179

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	W2-MEB752149	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6180

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	V2-MEB7433480	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6181

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6182

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6184

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / Iwona	07/03/2024 / Iwona	W3112

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M6032

R 8/5/24

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CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Lot #**		
Lot Number:	**010924**	**Solvent:**	24002546	Nitric Acid	
Description:	**Barium (Ba)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	010927				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

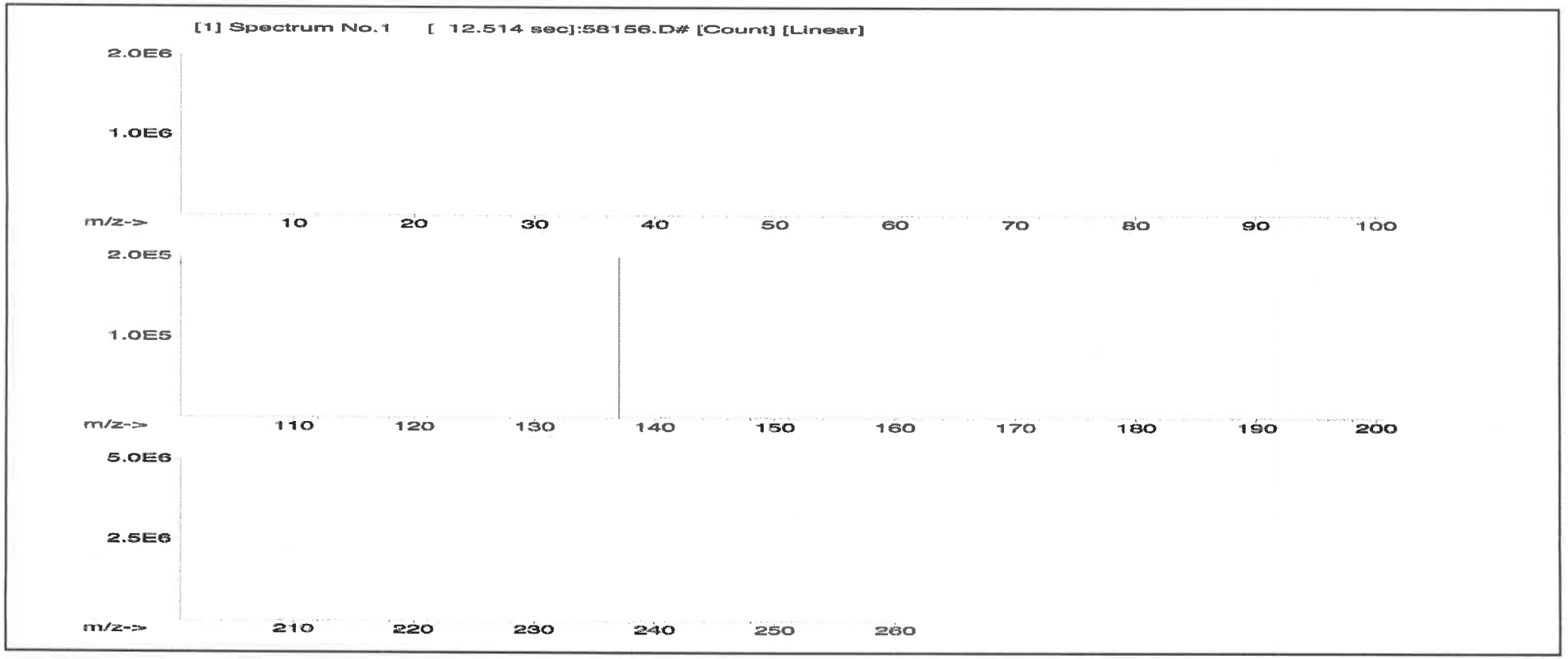
Giovanni Esposito

Formulated By:	Giovanni Esposito	010924

Pedro Rentas

Reviewed By:	Pedro L. Rentas	010924

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Barium nitrate (Ba)	IN023	BAD022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	**1000.1**	**2.0**	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 01/03/24 M5804, M5805

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 122223
Description: Calcium (Ca)

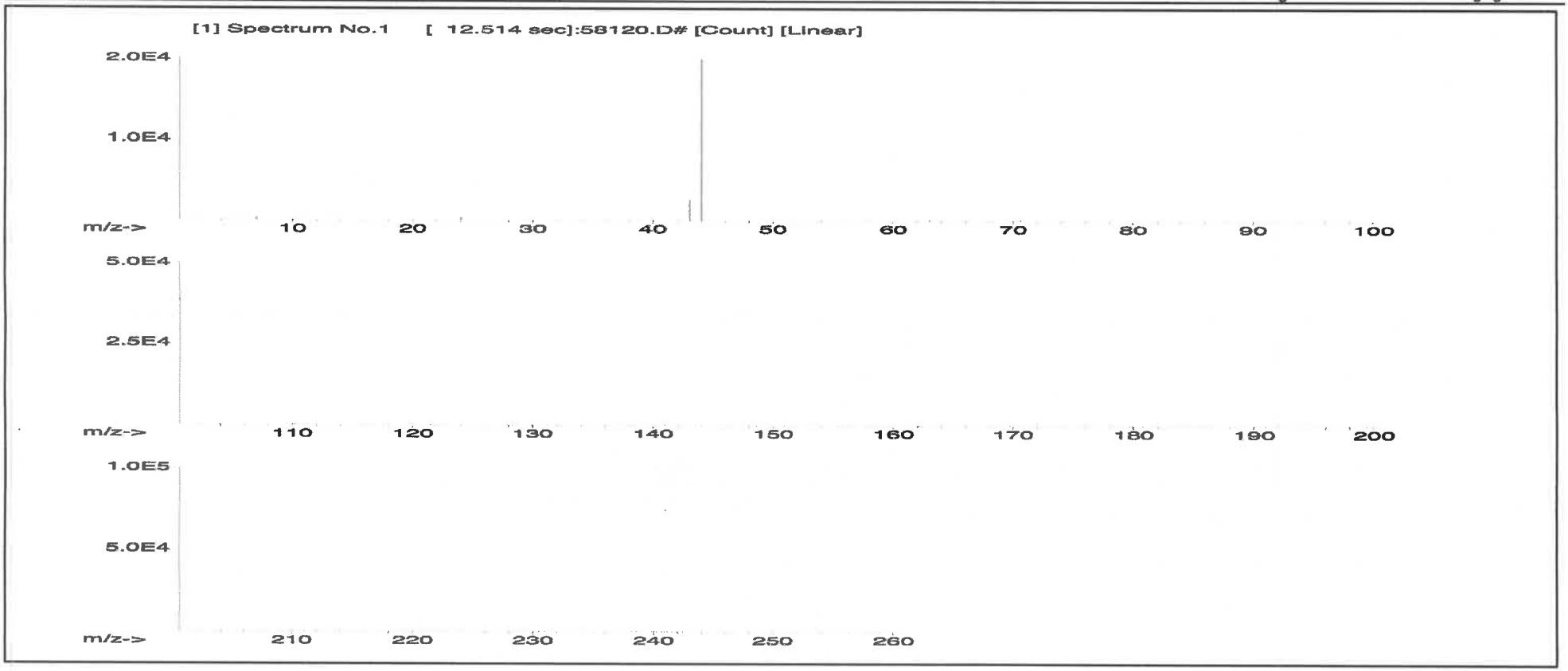
Expiration Date: 122226
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.0

	Lot #			
Solvent:	24002546	Nitric Acid		
2%	80.0 (mL)	Nitric Acid		
			5E-05	Balance Uncertainty
			0.06	Flask Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	122223
Reviewed By:	Pedro L. Rentas	122223

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD03202383	10000	99.999	0.10	39.9	100.2525	100.2670	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	30	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Revd 10/14/2024 M6085/M6086/M6087

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 082324
Description: Calcium (Ca)

Expiration Date: 082327
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.1 0.15 Flask Uncertainty

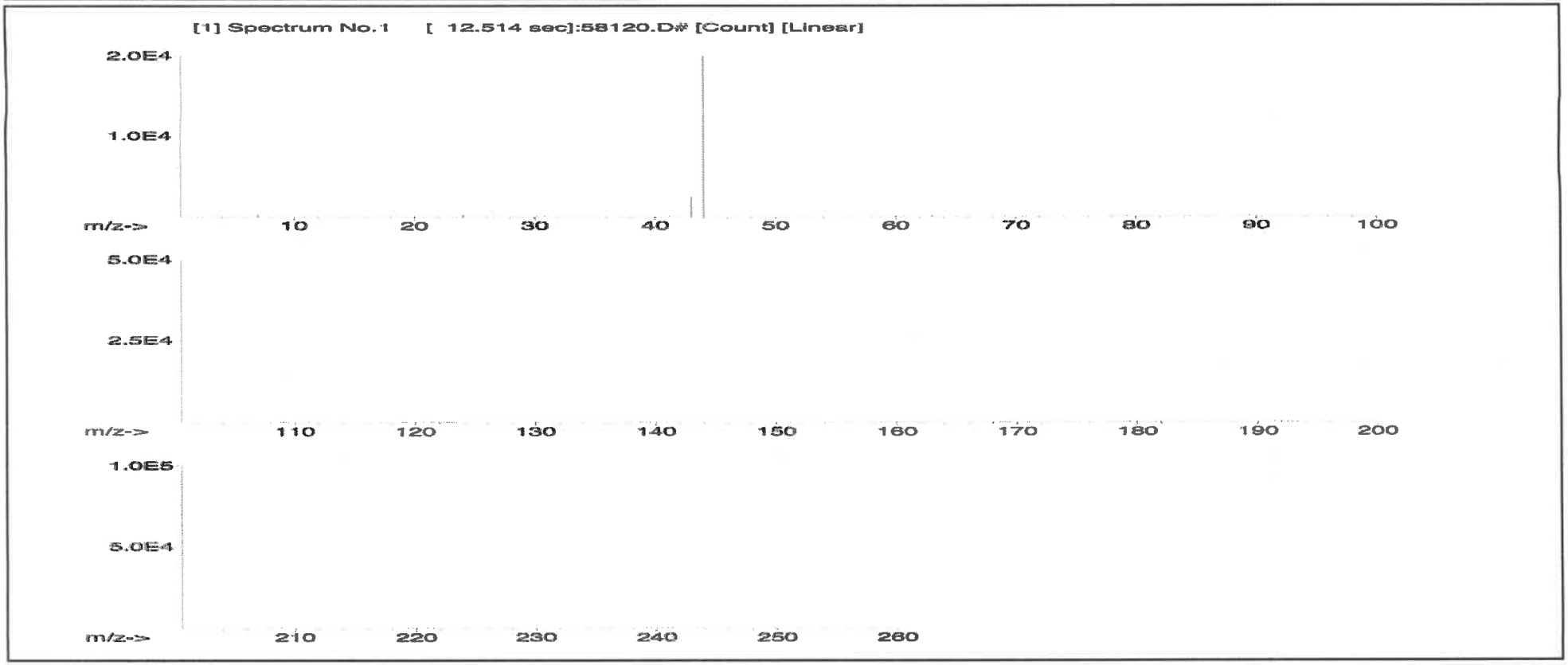
	Lot #		
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 082324

Pedro Rentas
Reviewed By: Pedro L. Rentas 082324

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD03203B3	10000	99.999	0.10	39.9	100.2537	100.2656	**10001.2**	**20.0**	471-34-1	5 mg/m3	ori-rat >2000mg/kg	3109a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	30	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6028

R 8/15/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

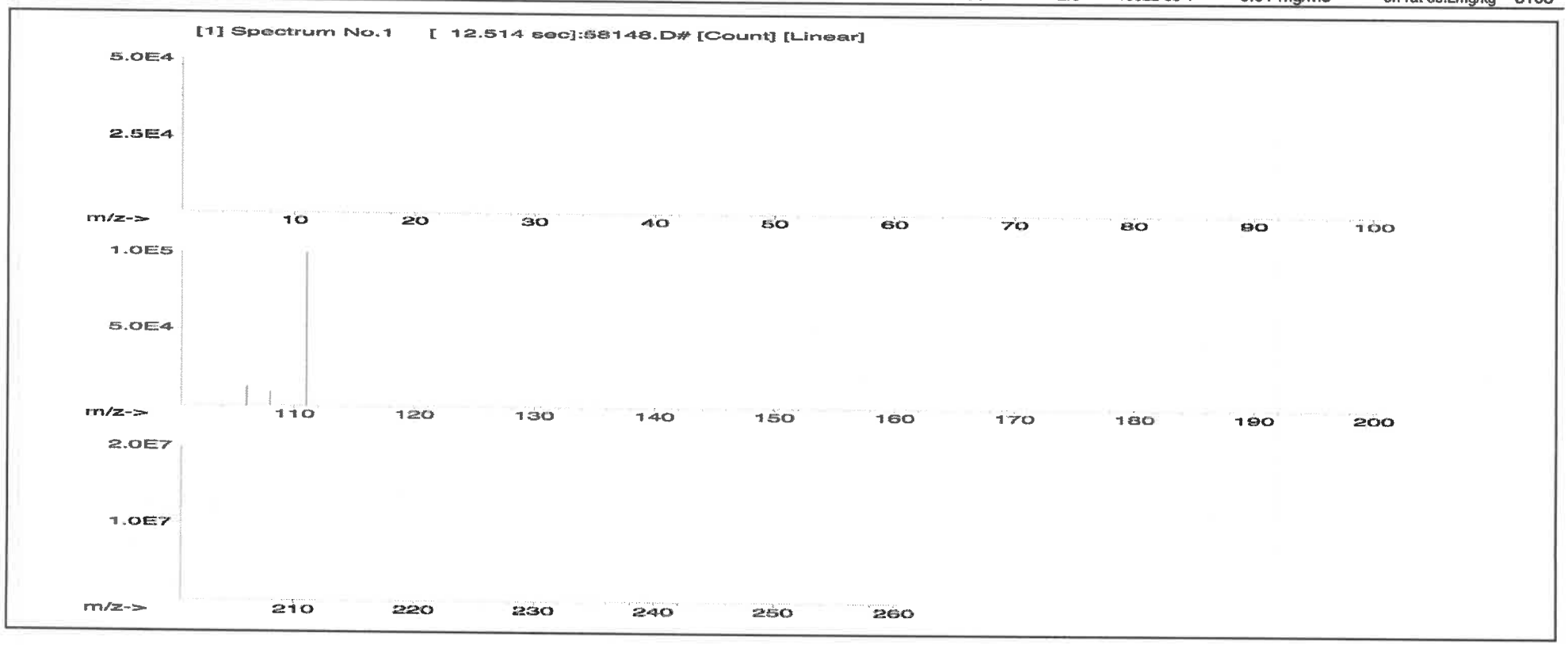
Weight shown below was diluted to (mL): 2000.07 ± 0.100 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	± 5E-05 Balance Uncertainty

Aleah O'Brady
Formulated By: Aleah O'Brady 070124

Pedro Rentas
Reviewed By: Pedro L. Rentas 070124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM092021A1	1000	99.999	0.10	36.5	5.4797	5.4804	**1000.1**	**2.0**	10022-68-1	0.01 mg/m3	orl-rat 60.2mg/kg	3108



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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	T	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
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M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec – 06.07.19

J.T.Baker® | avantor™

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrable Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH_4)	Passes Test	PT
Sulfur Compounds (as SO_4)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

ThermoFisher SCIENTIFIC

M4913-16

MB

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

M5062
M5063
M3

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

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

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 2021

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

11.2 Lot Expiration Date

- September 22, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
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Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

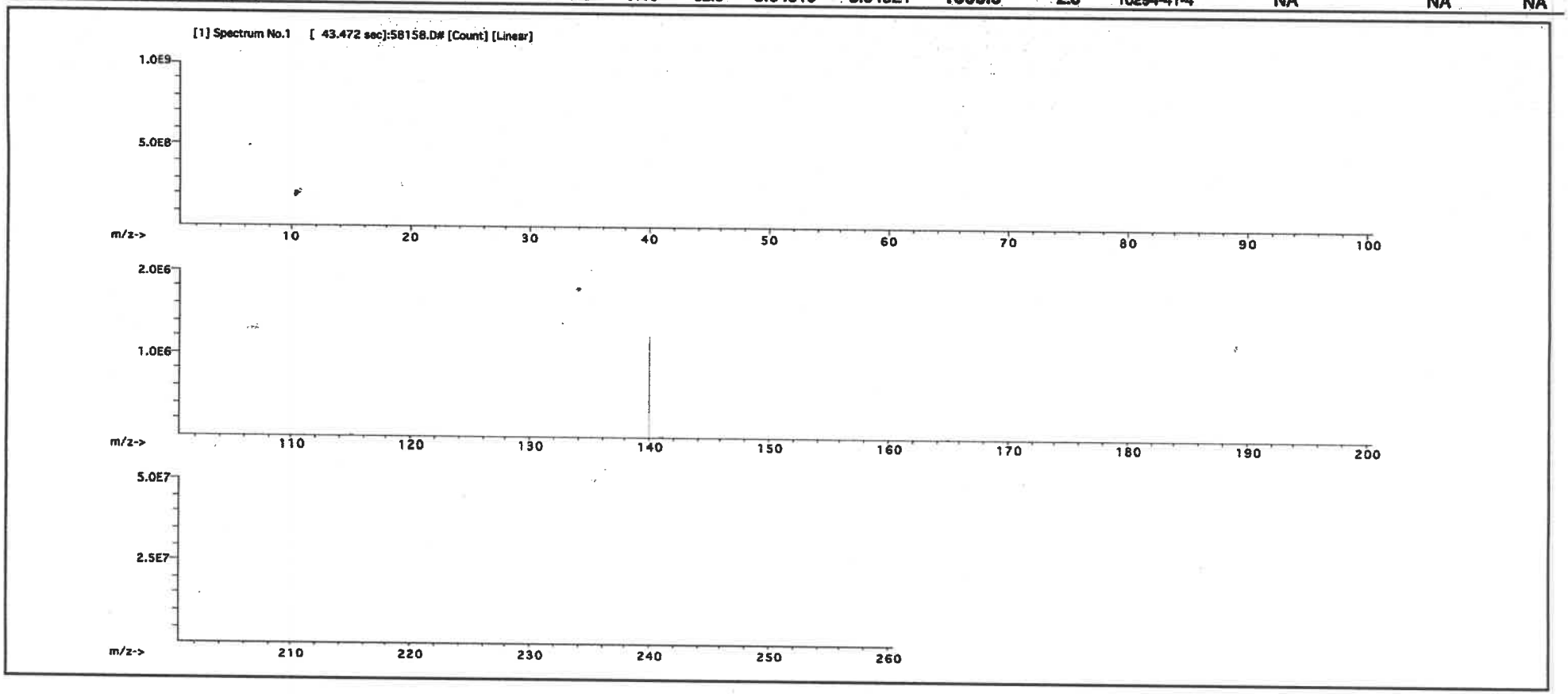
Weight shown below was diluted to (mL): 1000.12 ± 0.058 Flask Uncertainty

		Lot #	
Solvent:	2%	21110221	Nitric Acid
		20.0 (mL)	Nitric Acid

5E-05 Balance Uncertainty

Formulated By:	Lawrence Barry	020623
Reviewed By:	Pedro L. Rentas	020623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	1000.0	2.0	10294-41-4	NA	NA	NA



Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

JENSEN INERT PRODUCTS

MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER:	PCI SCIENTIFIC SUPPLY, INC
PURCHASE ORDER NO.	6054931
CATALOG NO.	BOI5021-450L
PRODUCT DESCRIPTION:	BOILING STONES, TFE, 454GMS
QUANTITY:	10 EACH
LOT NO.	W126678
SPECIFICATION (S):	Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.

Laura Valencia

Laura Valencia
Quality Assurance Inspector

F:U:J:CF:PCISCI:COC-55118-BOI5021-061223

3773 NW 126th Avenue • Coral Springs, Florida 33065 • Fax (954) 344-2008 • 1-800 446-3781
Email: jensen@jenseninert.com Visit our Web Site at www.jenseninert.com

JENSEN INERT PRODUCTS

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M5658 R ! 8/25/23

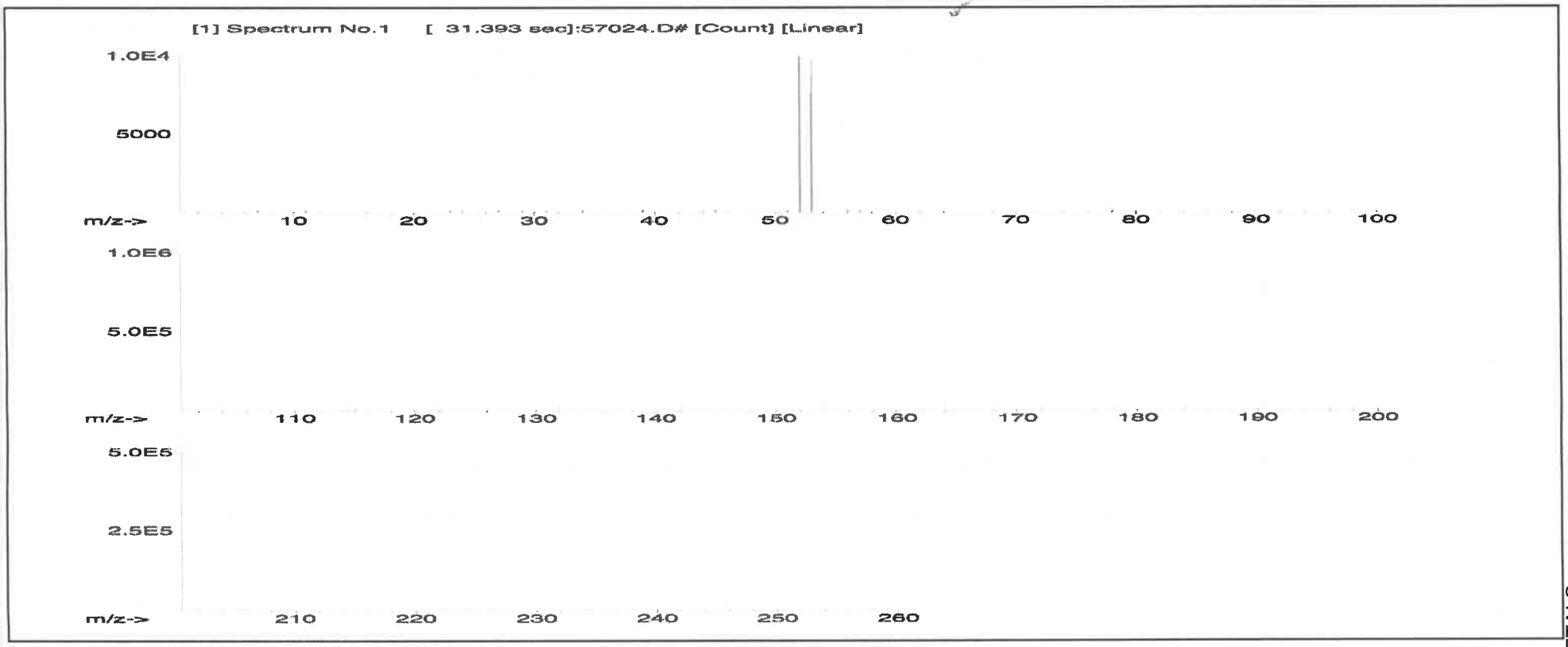
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Chromium(III) nitrate nonahydrate (Cr)	58124	071122	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	7789-02-8	0.5 mg(Cr)/m3	orl-rat 3250 mg/kg	3112a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M5697 R: 10/27/23

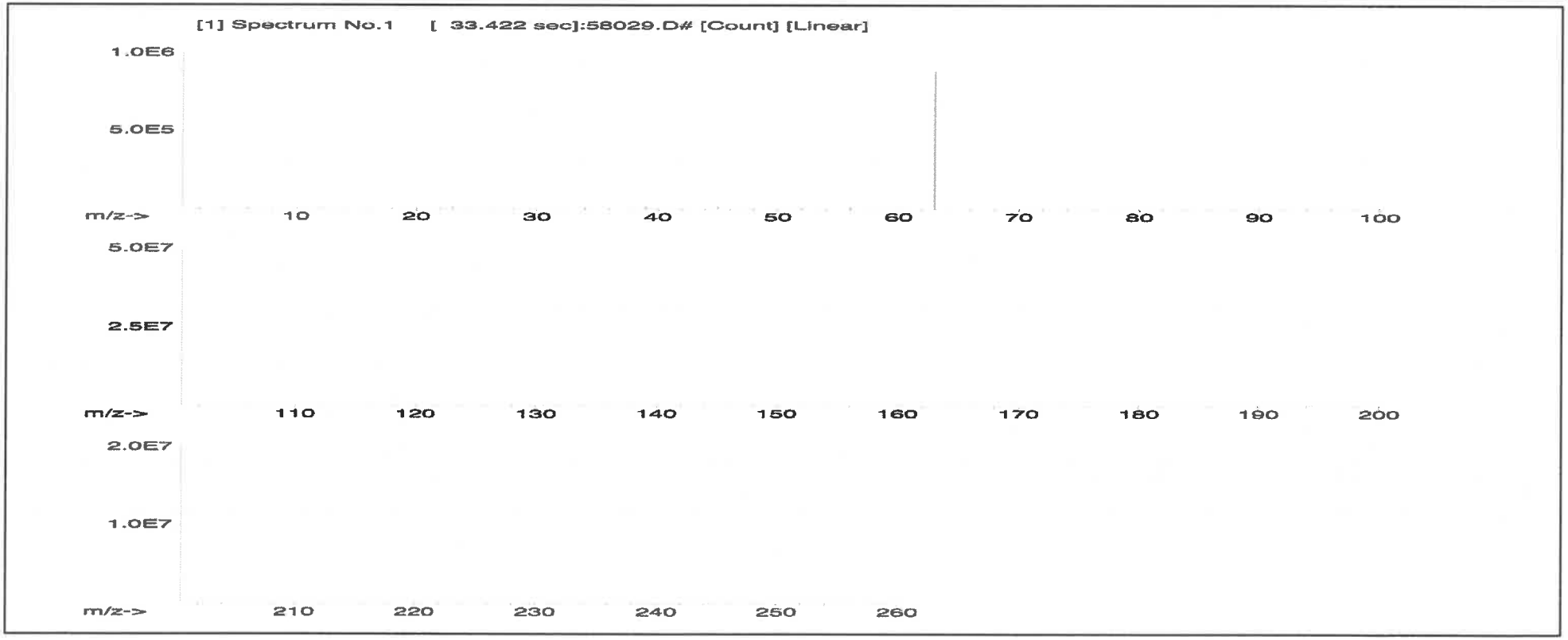
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58029**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Copper (Cu)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Copper(II) nitrate trihydrate (Cu)	58129	100223	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	10031-43-3	1 mg/m3	orl-rat 794 mg/kg	3114



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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R: 12/20/23 M5748

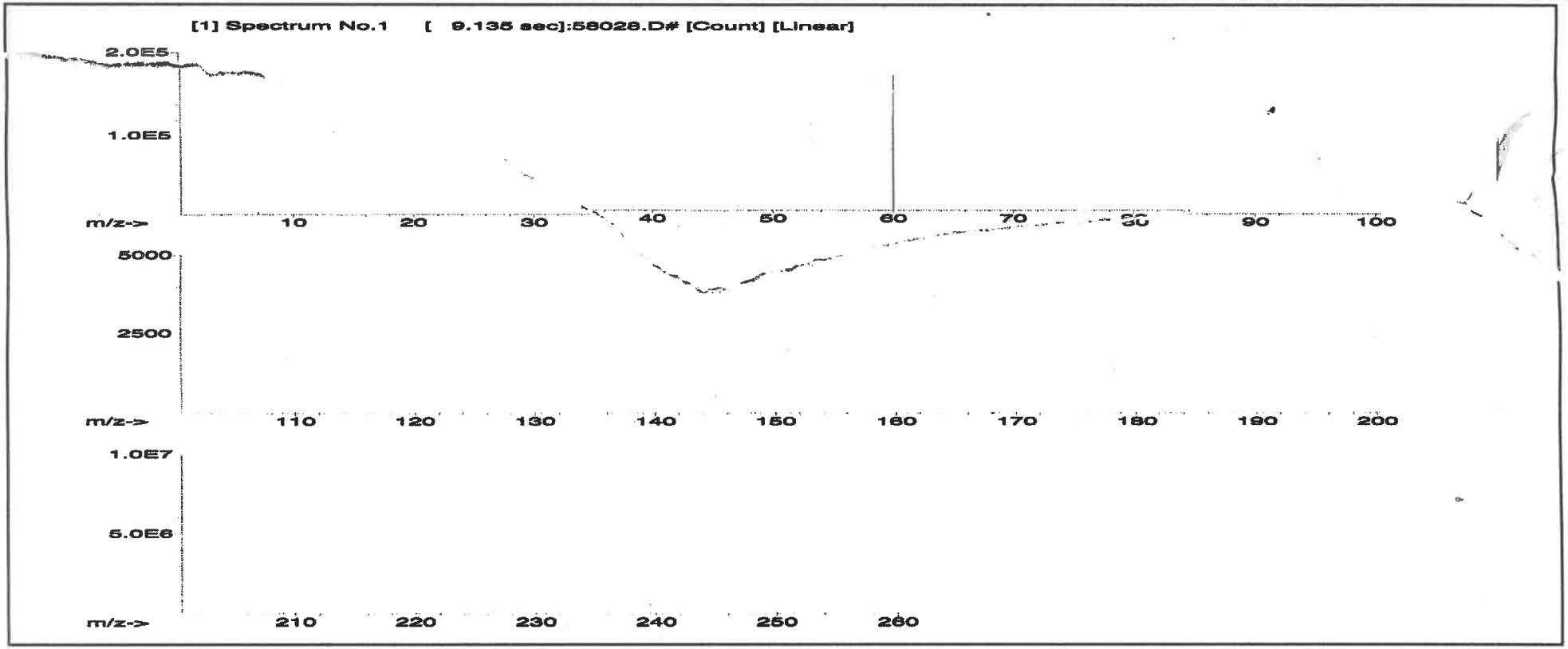
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AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**	24002546	Nitric Acid	
Lot Number:	**091223**			
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	091226			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	091223
Reviewed By:	Pedro L. Rentas	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Nickel(II) nitrate hexahydrate (Ni)	58128	062023	0.1000	200.0	0.084	1000	10000.4	**1000.0**	2.2	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5798

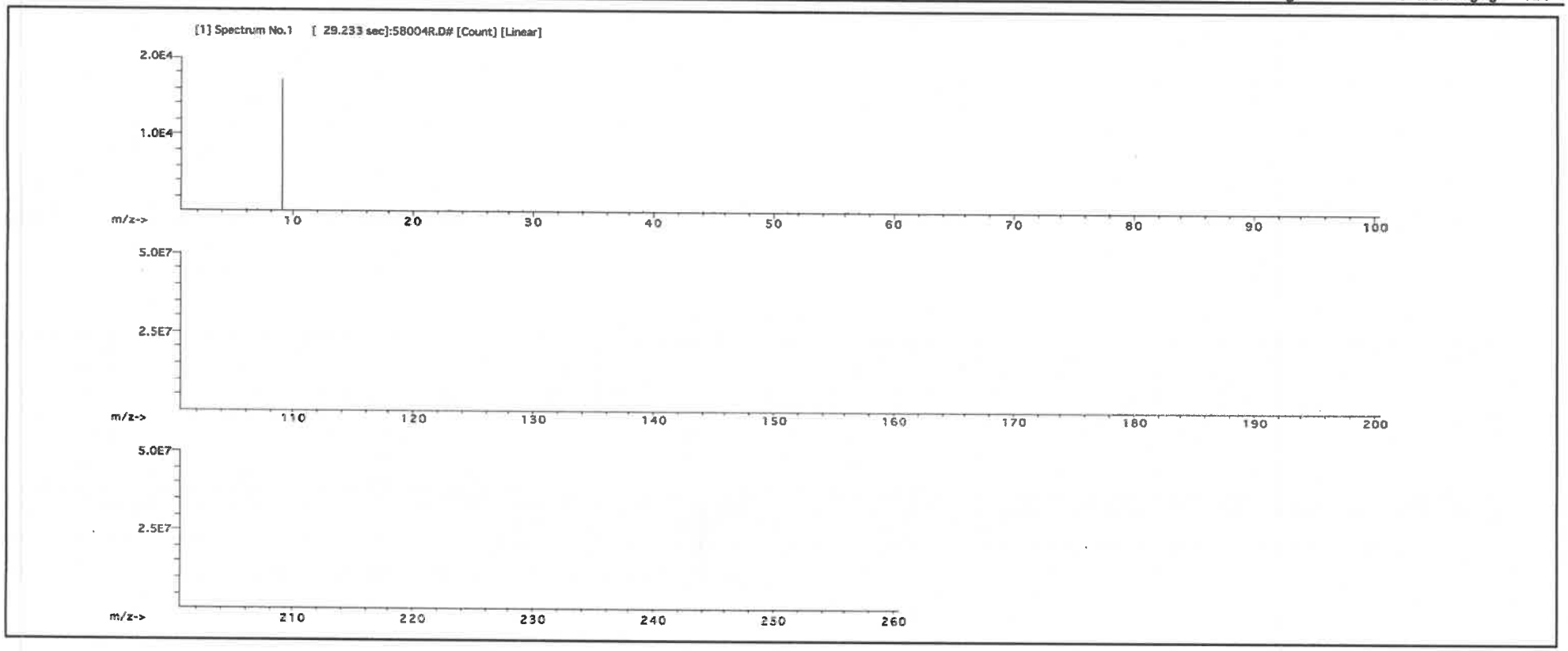
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57004**	24002546	Nitric Acid		
Lot Number:	**102523**				
Description:	**Beryllium (Be)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	102526				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	13597-99-4	0.2ug/m3	intrvns-rat 3.16mg/kg	NA



Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

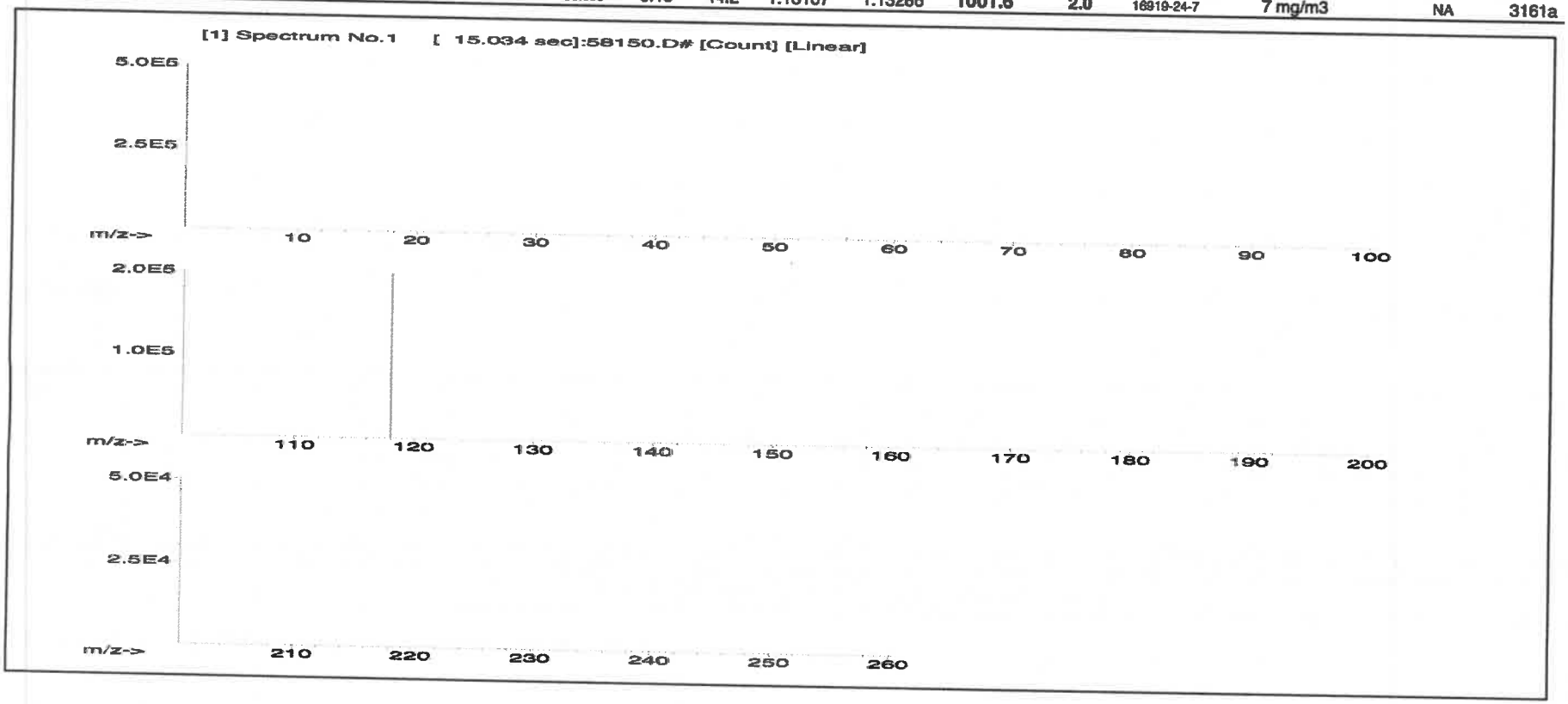
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

Solvents:	Lot #	
	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	T	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All standards should be stored with caps tight and under appropriate laboratory conditions.
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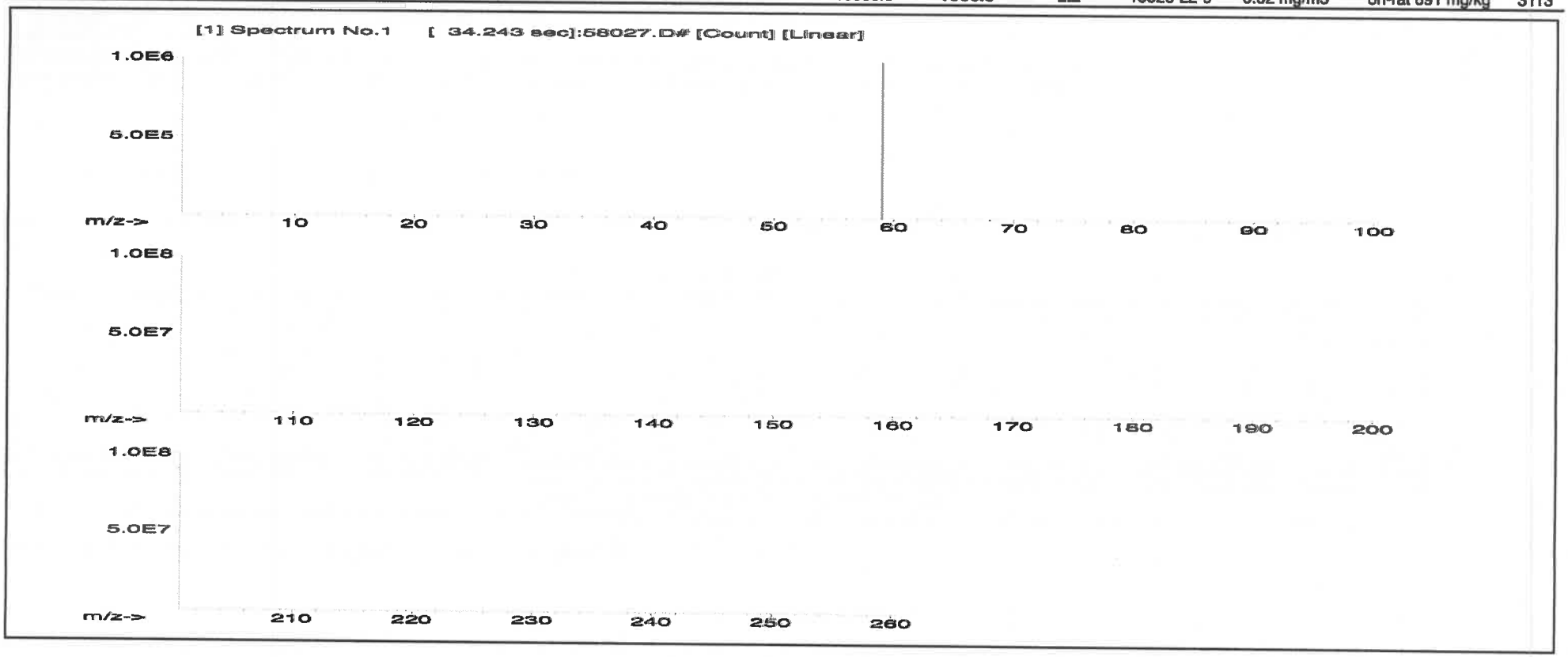
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By: Lawrence Barry 091923

Reviewed By: Pedro L. Rentas 091923

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cobalt(II) nitrate hexahydrate (Co)	58127	050923	0.1000	200.0	0.084	1000	10000.0	**1000.0**	2.2	10026-22-9	0.02 mg/m3	orl-rat 691 mg/kg	3113



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Gé	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5801 BH

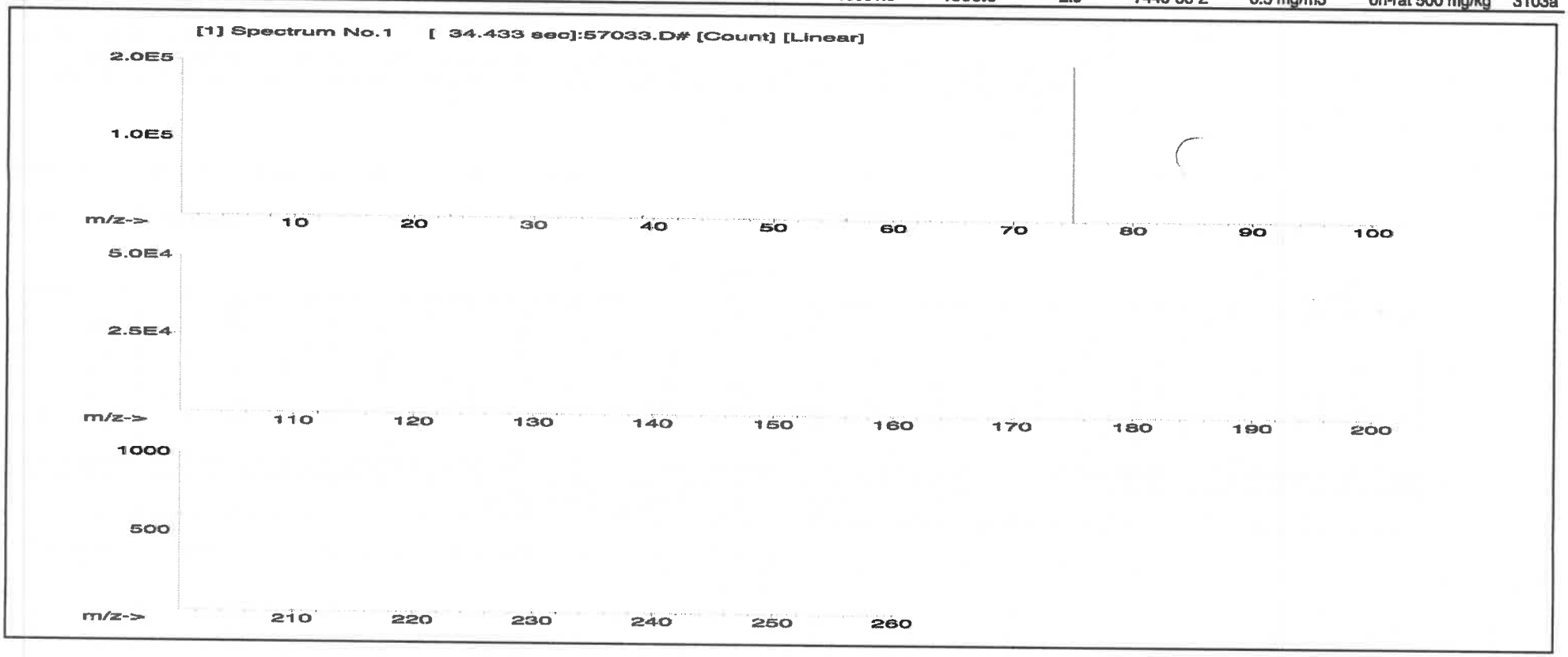
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CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**	24002546	Nitric Acid		
Lot Number:	**111323**				
Description:	**Arsenic (As)**	2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty		

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rentas	111323

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	**1000.0**	2.0	7440-38-2	0.5 mg/m3	orl-rat 500 mg/kg	3103a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge*	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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A: 02/09/24 M.5814

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CERTIFIED WEIGHT REPORT:

Part Number: 57005
Lot Number: 071123
Description: Boron (B)

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

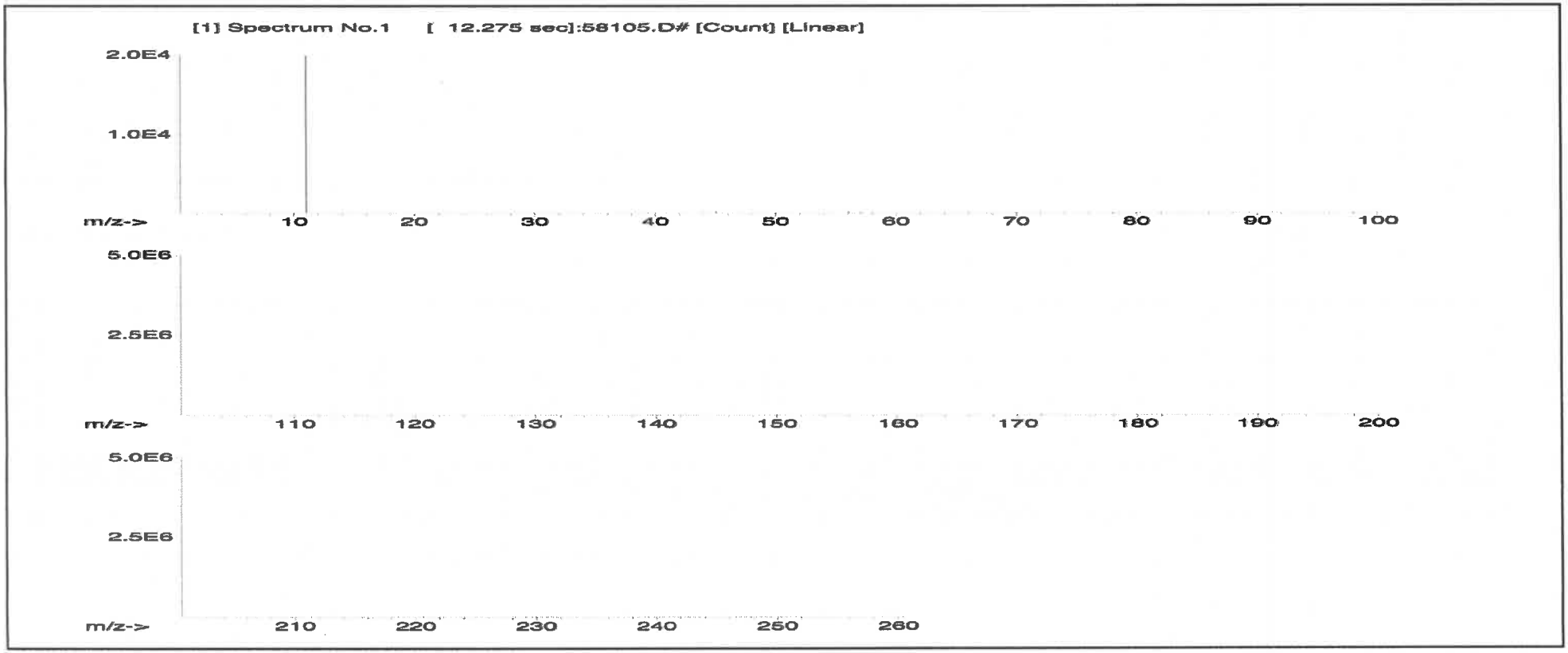
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

	Lot #			
Solvent:	MKBQ8597V	Ammonium hydroxide		
	2.0%	40.0 (mL)	Ammonium hydroxide	

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Boric acid (B)	IN018	BV092016A1	1000	99.9999	0.10	17.3	11.55772	11.56201	**1000.4**	**2.0**	10043-35-3	2 mg/m3	orl-rat 2660 mg/kg	3107



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	T	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5816

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CERTIFIED WEIGHT REPORT:

Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

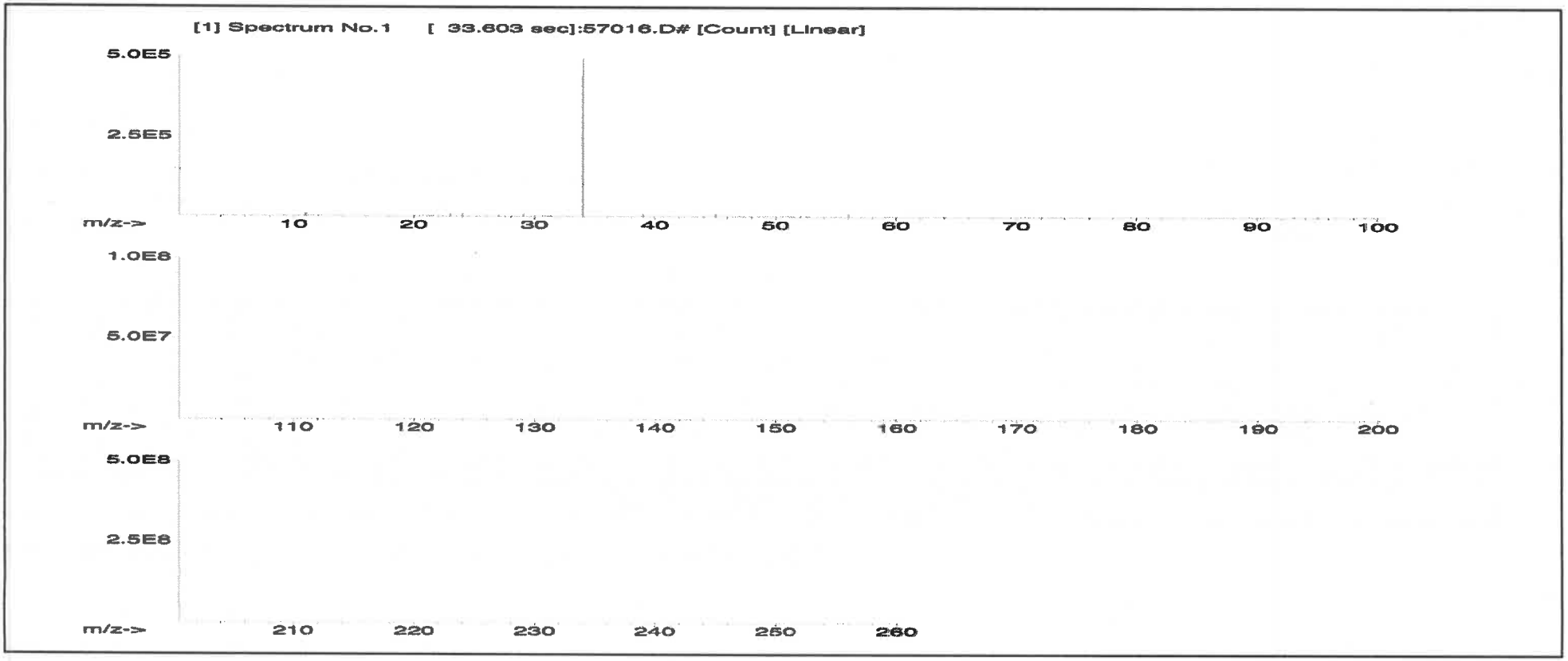
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

Solvent: Lot # 122923 ASTM Type 1 Water

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5820

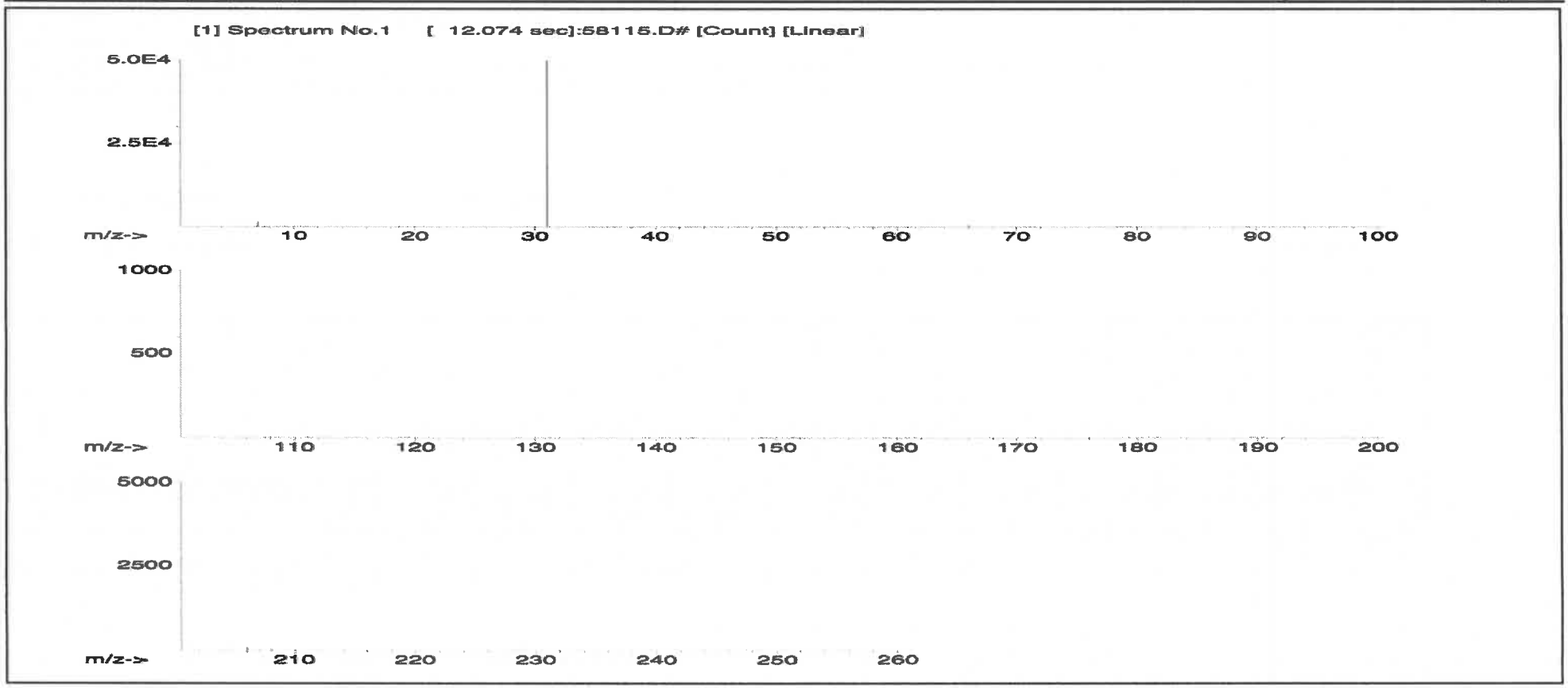
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CERTIFIED WEIGHT REPORT:

		Lot #		
Part Number:	**57015**	**Solvent:**	24002546	Nitric Acid
Lot Number:	**091123**			
Description:	**Phosphorous (P)**			
		2%	40.0 (mL)	Nitric Acid
Expiration Date:	091126			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	091123
Reviewed By:	Pedro L. Rentas	091123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	1000	99.999	0.10	27.5	7.2729	7.2730	**1000.0**	**2.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/k	3186



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

MF884
MB

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Material No.: 3624-01
Batch No.: 0000281938
Manufactured Date: 2021-06-07
Retest Date: 2026-06-07
Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	≤ 0.005 %	0.003 %
Iodide (I)	≤ 0.002 %	< 0.002 %
Bromide (Br)	≤ 0.01 %	< 0.01 %
Chlorate and Nitrate (as NO_3)	≤ 0.003 %	< 0.001 %
ACS - Phosphate (PO_4)	≤ 5 ppm	< 5 ppm
Sulfate (SO_4)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 0.005 %	0.001 %

For Laboratory,Research,or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

James T Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

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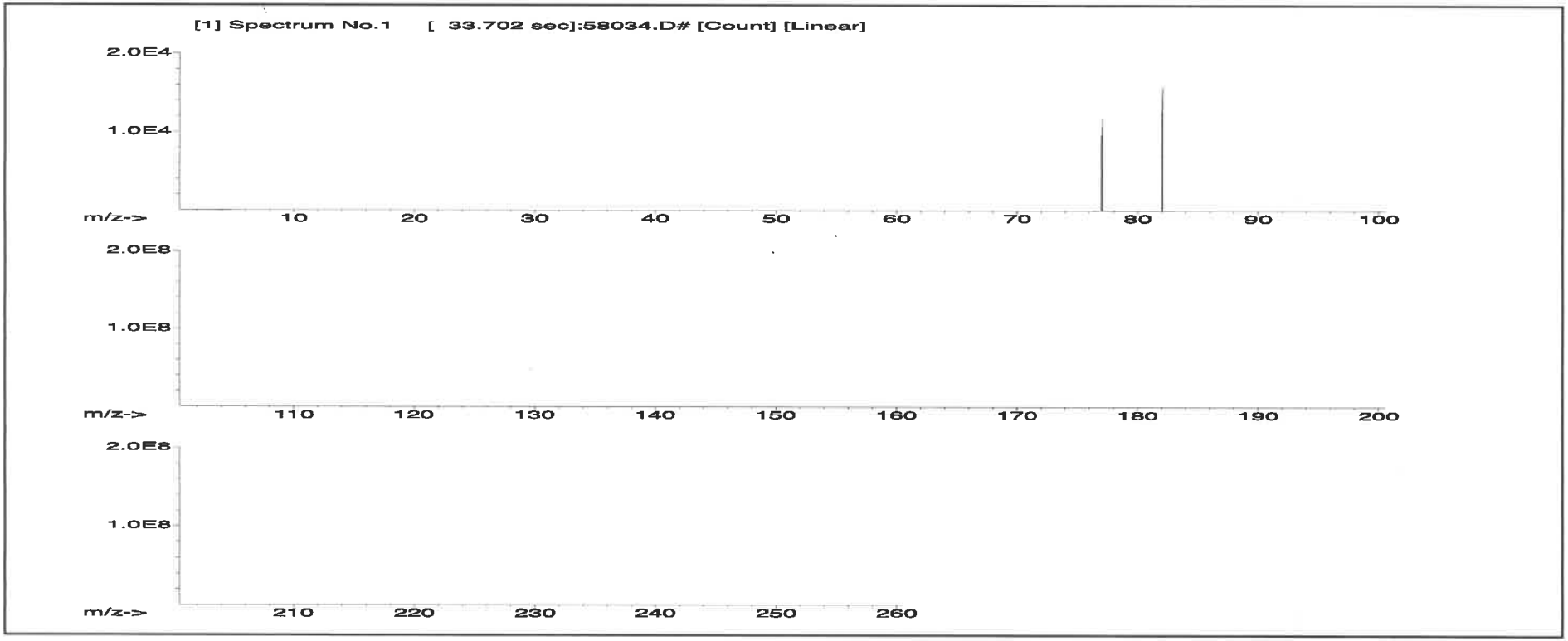
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57034**	24002546	Nitric Acid	
Lot Number:	**060624**			
Description:	**Selenium (Se)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060627			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rentas	060624

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	**1000.0**	**2.2**	7782-49-2	0.2 mg/m3	orl-rat 6700 mg/kg	3149



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	T	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5969 R: 06/11/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

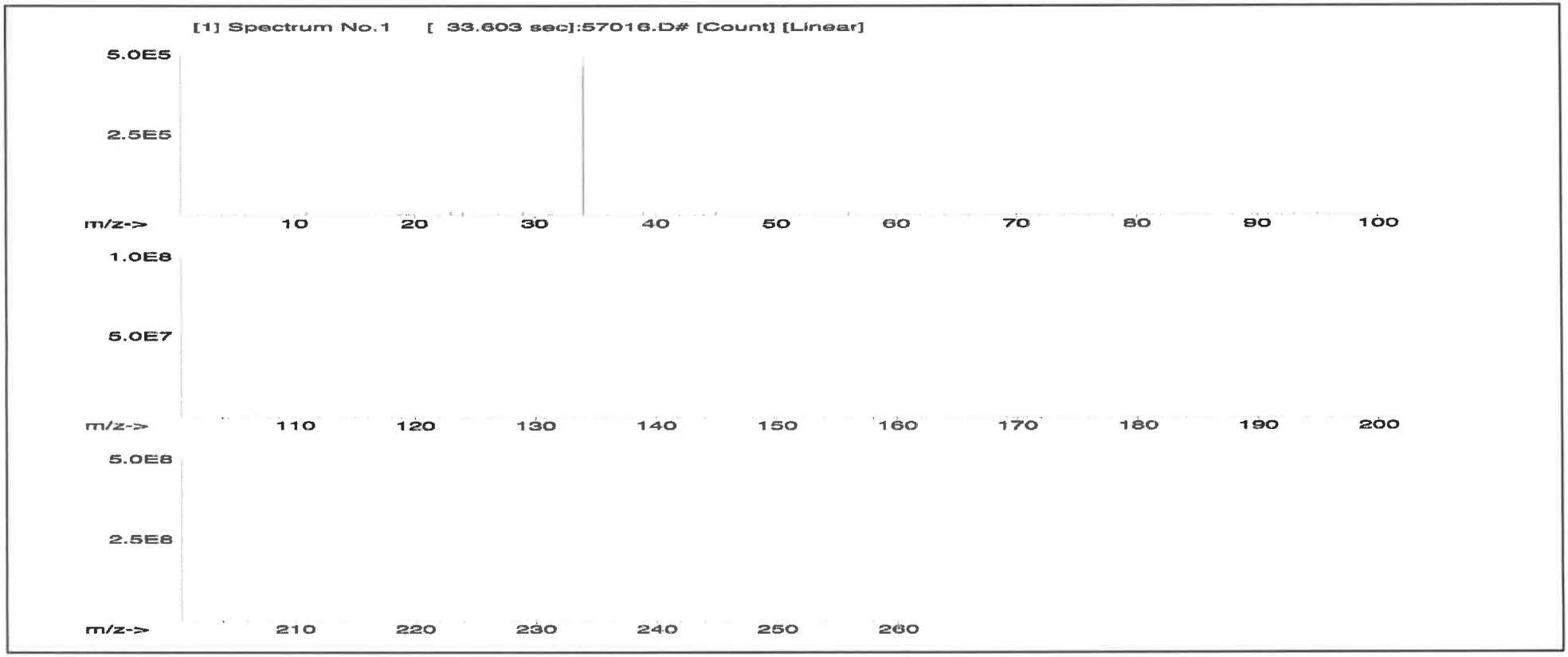
CERTIFIED WEIGHT REPORT:

Part Number:	**57016**		**Solvent:**	122923 ASTM Type 1 Water
Lot Number:	**122923**			
Description:	**Sulfur (S)**			
Expiration Date:	122926			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05 Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.0	0.06 Flask Uncertainty		

Lot #

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



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Certified Reference Material CRM

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 062127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11

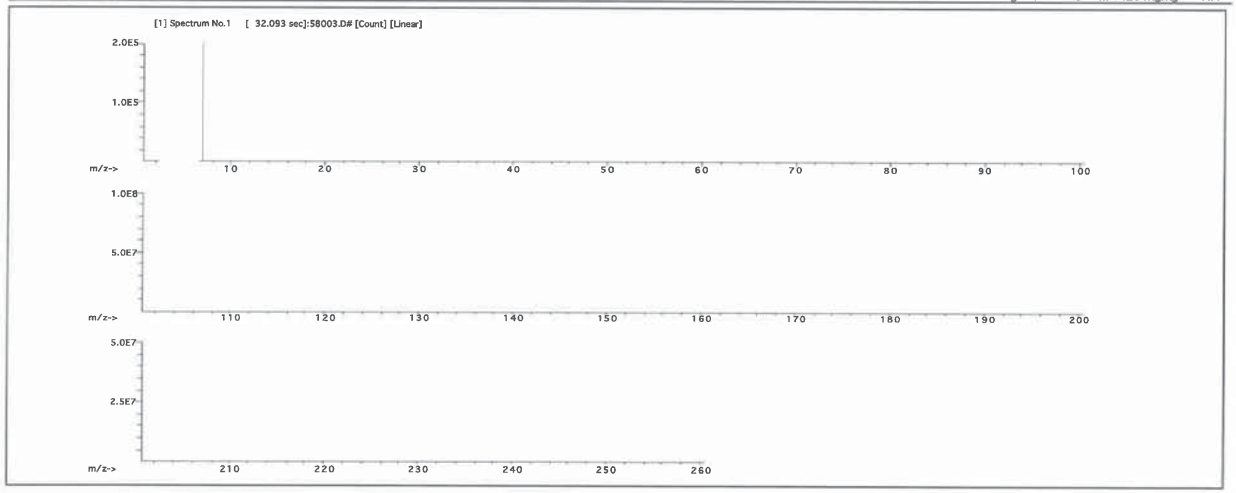
Lot #	Solvent:		
24002546	Nitric Acid		
2.0%	5.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.016 Flask Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 062124

Pedro Rentas
Reviewed By: Pedro L. Rentas 062124

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	T	Ni	<0.02	Pr	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

MS978, MS979

INORGANIC VENTURES

Certificate of Analysis

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R: 2/22/24

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 865.01

ACCREDITED Reference Material Producer Certificate 865.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGT11
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	TI Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1002 ± 4 µg/mL**
	ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

x_i = mean of Assay Method i with standard uncertainty $u_{Char\ i}$

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

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

CRM/RM Expanded Uncertainty ($\pm$) = $u_{CRM/RM} = k\,(u^2_{Char} + u^2_{Lb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{Lb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{Lb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

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

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 for months in 1% 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=Z (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- June 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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info@inorganicventures.com

MS985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN10
Lot Number:	U2-IN729349
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Indium
Starting Material:	Indium Metal
Starting Material Lot#:	2511
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10021 ± 56 µg/mL** ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	**10035 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**10001 ± 33 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000760	M	Eu	<	0.000760	O	Na		0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al		0.003385	O	Fe		0.004462	M	Nb	<	0.000760	O	Si		0.024619	M	Zr	<	0.000760
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760				
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760				
O	B		0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760				
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb		0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760				
O	Ca		0.004616	s	In	<		M	Pr	<	0.000760	M	Th	<	0.000760				
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100				
M	Ce	<	0.000760	O	K		0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760				
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760				
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600				
M	Cu	<	0.003800	O	Mg		0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn		0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760				

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

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 21, 2023

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

11.2 Lot Expiration Date

- February 21, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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Certificate of Analysis

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MS-997

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-3
Lot Number:	T2-MEB727800
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 500 µg/mL ea: Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 7 µg/mL	Cadmium, Cd	500.0 ± 2.2 µg/mL
Lead, Pb	1 000 ± 4 µg/mL	Selenium, Se	1 000 ± 6 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.042 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 21, 2022

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

11.2 Lot Expiration Date

- December 21, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746172
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 12, 2024

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

11.2 Lot Expiration Date

- August 12, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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Certificate of Analysis

M6074
M6075
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M6077

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F: 540-585-3012
info@inorganicventures.com

EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

R->1/13/25
M6128

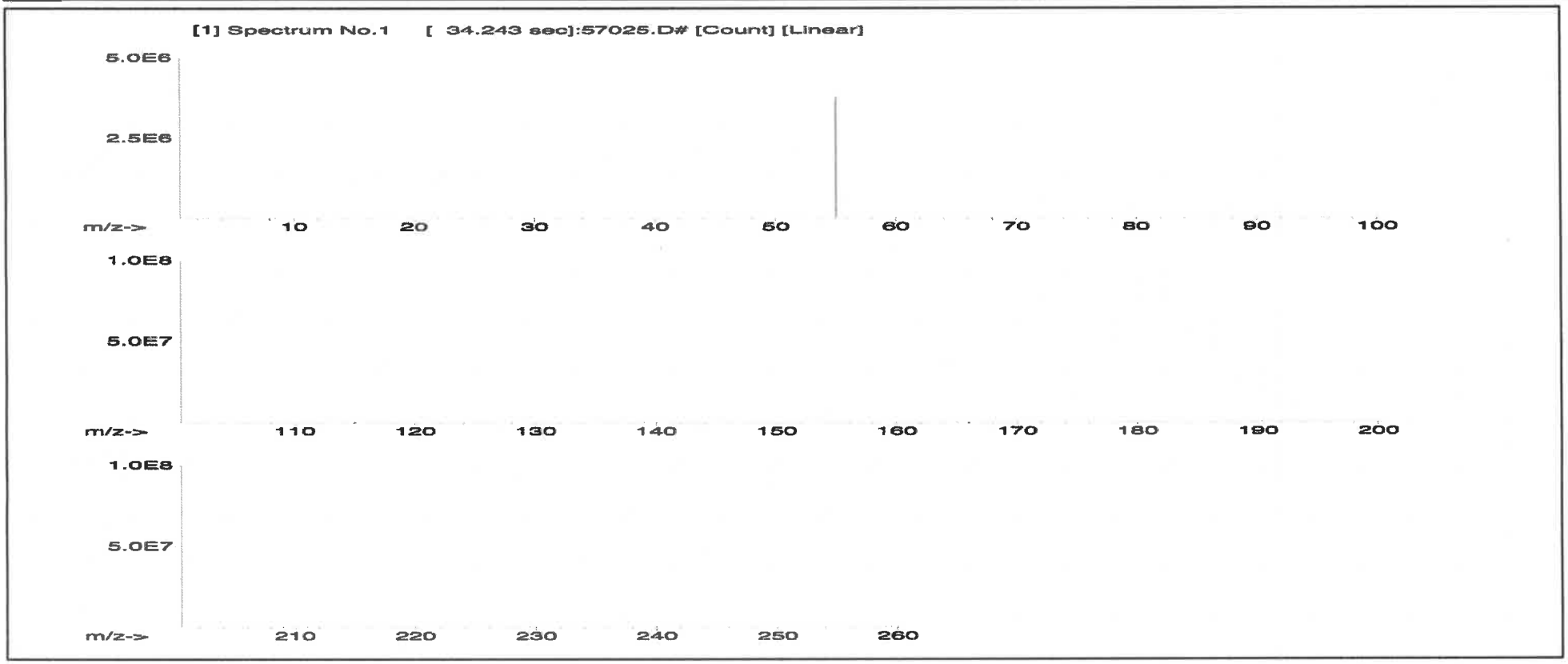
Part Number: 58025
Lot Number: 101124
Description: Manganese (Mn)
Expiration Date: 101127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2 0.10 Flask Uncertainty

		Lot #	
Solvent:	24002546	Nitric Acid	
	2%	80.0 (mL)	Nitric Acid

5E-05 Balance Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 101124
Pedro Rentas
Reviewed By: Pedro L. Rentas 101124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Manganese(II) nitrate hydrate (Mn)	IN031	MNM092020A1	1000	99.999	0.10	20.8	19.2322	19.2344	**1000.1**	**2.0**	15710-66-4	5 mg/m3	orl-rat >300mg/kg	3132



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Certified Reference Material CRM

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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certificate of Analysis

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M6137 R→10/3/24

1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	V2-SI744713
Matrix:	tr. HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Silicon
Starting Material:	Silica
Starting Material Lot#:	1771
Starting Material Purity:	99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **999 ± 5 µg/mL**
ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546

Assay Method #2 **1000 ± 7 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000310	M	Eu	<	0.000310	O	Na		0.001656	M	Se	<	0.022000	M	Zn	<	0.002500
M	Al		0.010787	M	Fe	<	0.027000	M	Nb	<	0.001300	s	Si	<		O	Zr	<	0.001900
M	As	<	0.001900	M	Ga	<	0.001300	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.000910	M	Gd	<	0.000310	M	Ni	<	0.005500	M	Sn		0.000096				
M	B		0.016180	M	Ge	<	0.001900	M	Os	<	0.000610	O	Sr		0.000092				
M	Ba		0.000096	M	Hf		0.000423	i	P	<		M	Ta		0.002542				
O	Be	<	0.000570	M	Hg	<	0.000610	M	Pb	<	0.000310	M	Tb	<	0.000310				
M	Bi	<	0.000310	M	Ho	<	0.000610	M	Pd	<	0.000610	M	Te	<	0.000910				
O	Ca		0.011557	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.001900				
M	Cd	<	0.000310	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.001078				
M	Ce	<	0.000610	O	K		0.000577	M	Rb	<	0.009100	M	Tl	<	0.000310				
M	Co	<	0.001600	M	La	<	0.000310	M	Re	<	0.000310	M	Tm	<	0.000310				
M	Cr	<	0.010000	O	Li	<	0.000460	M	Rh	<	0.000310	M	U	<	0.000310				
M	Cs	<	0.000310	M	Lu	<	0.000310	M	Ru	<	0.000310	O	V	<	0.001300				
M	Cu	<	0.002500	O	Mg		0.001348	O	S	<	0.570000	M	W	<	0.001900				
M	Dy	<	0.000310	M	Mn	<	0.002500	M	Sb	<	0.000310	M	Y	<	0.000310				
M	Er	<	0.000310	M	Mo	<	0.000310	O	Sc	<	0.000590	M	Yb	<	0.000310				

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

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphic (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 10, 2024

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

11.2 Lot Expiration Date

- **July 10, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor

Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

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AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

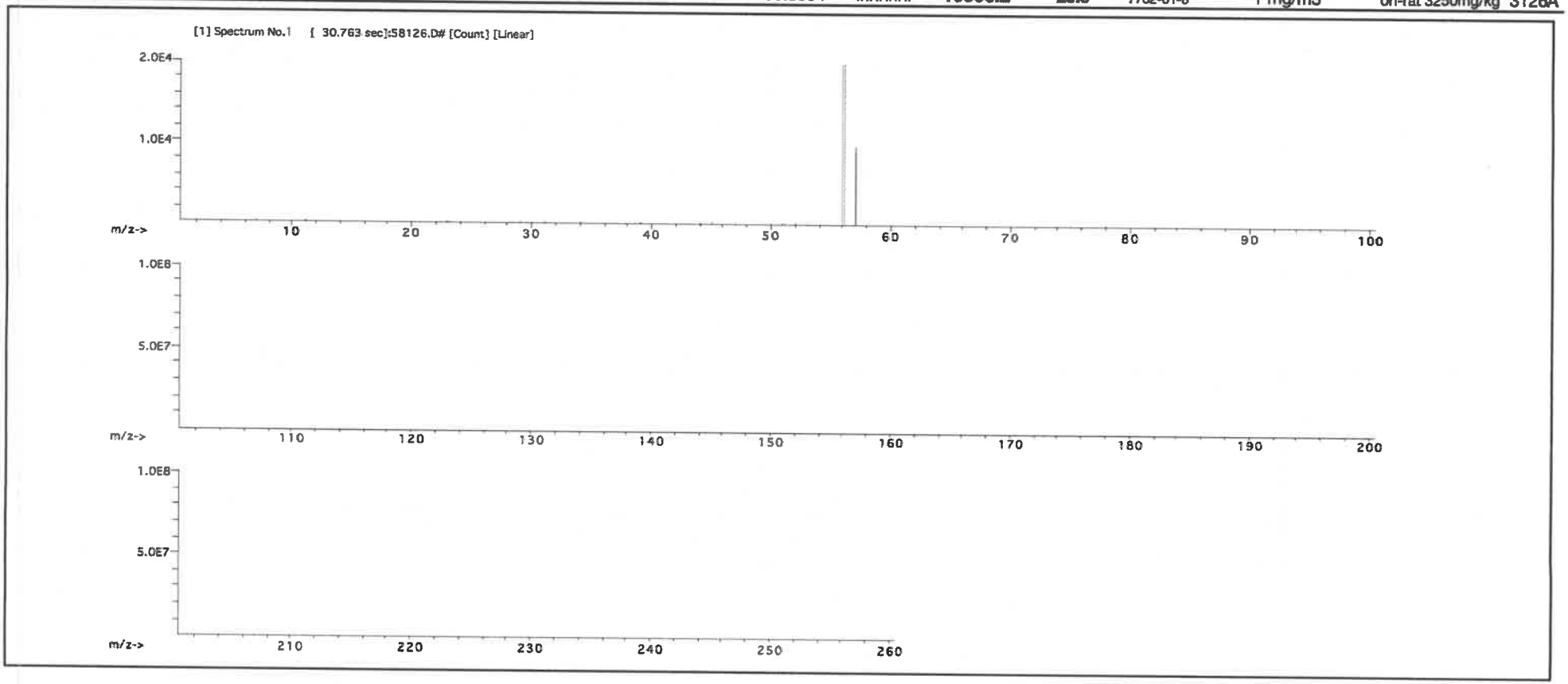
Part Number: 58126 R->1|B|2S
Lot Number: 011025
Description: Iron (Fe) M6140
Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	Lot #		
Solvent:	24012496	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Rentas	011025

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Iron(III) nitrate nonahydrate (Fe)	IN028	FED082023A1	10000	99.999	0.10	13.0	153.8534	######	**10000.2**	**20.0**	7782-61-8	1 mg/m3	orl-rat 3250mg/kg	3126A



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	T	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

R-> 1/13/25

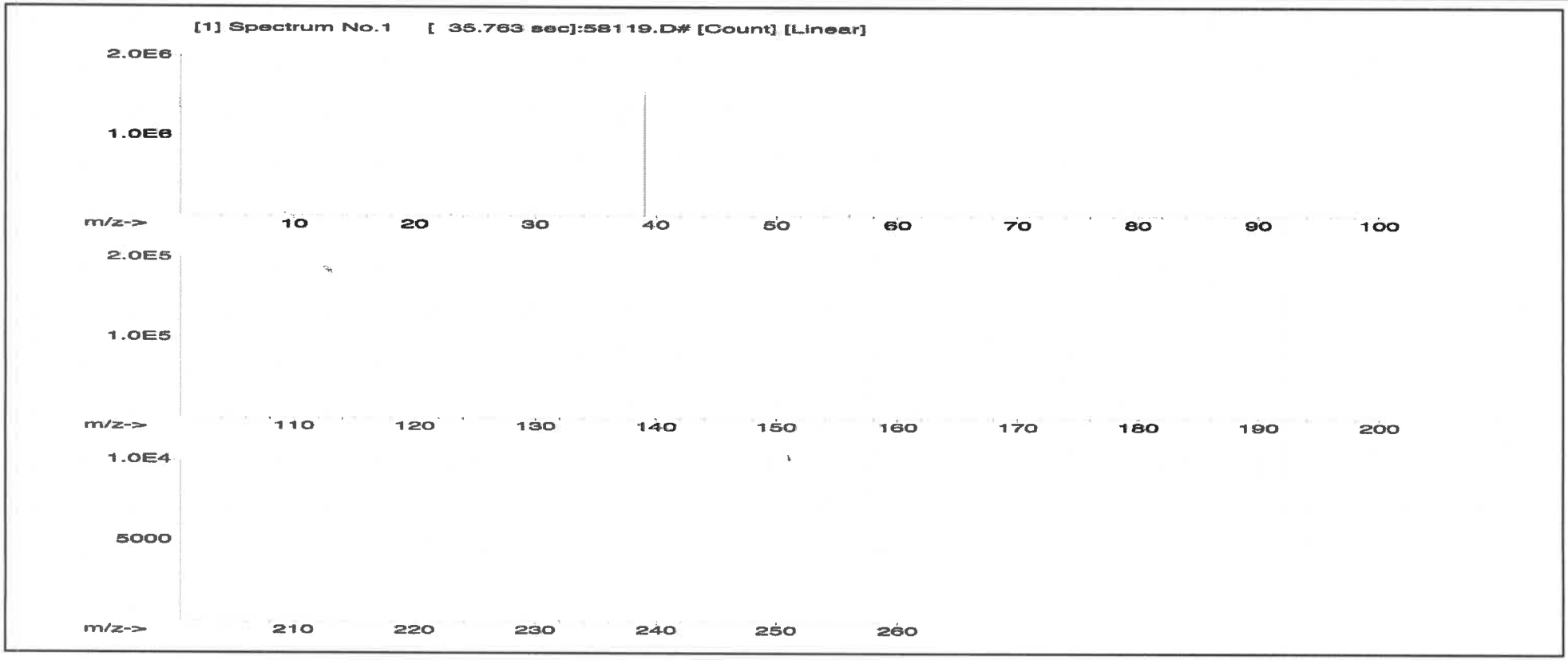
Part Number:	**57119**		**Lot #**		
Lot Number:	**103024**	**Solvent:**	24002546	Nitric Acid	
Description:	**Potassium (K)**	2%	80.0 (mL)	Nitric Acid	
Expiration Date:	103027				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.1	0.15	Flask Uncertainty		

M6141
M6142
M6143

Giovanni Esposito

Formulated By:	Giovanni Esposito	103024
Reviewed By:	Pedro L. Rentas	103024

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Potassium nitrate (K)	IN034	KD062022A1	10000	99.999	0.10	37.7	106.1040	######	**10001.1**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3750 mg/kg	3141a



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ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	T	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

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CERTIFIED WEIGHT REPORT:

R->1/13/25

Part Number: 58111
Lot Number: 072424
Description: Sodium (Na)

MG144

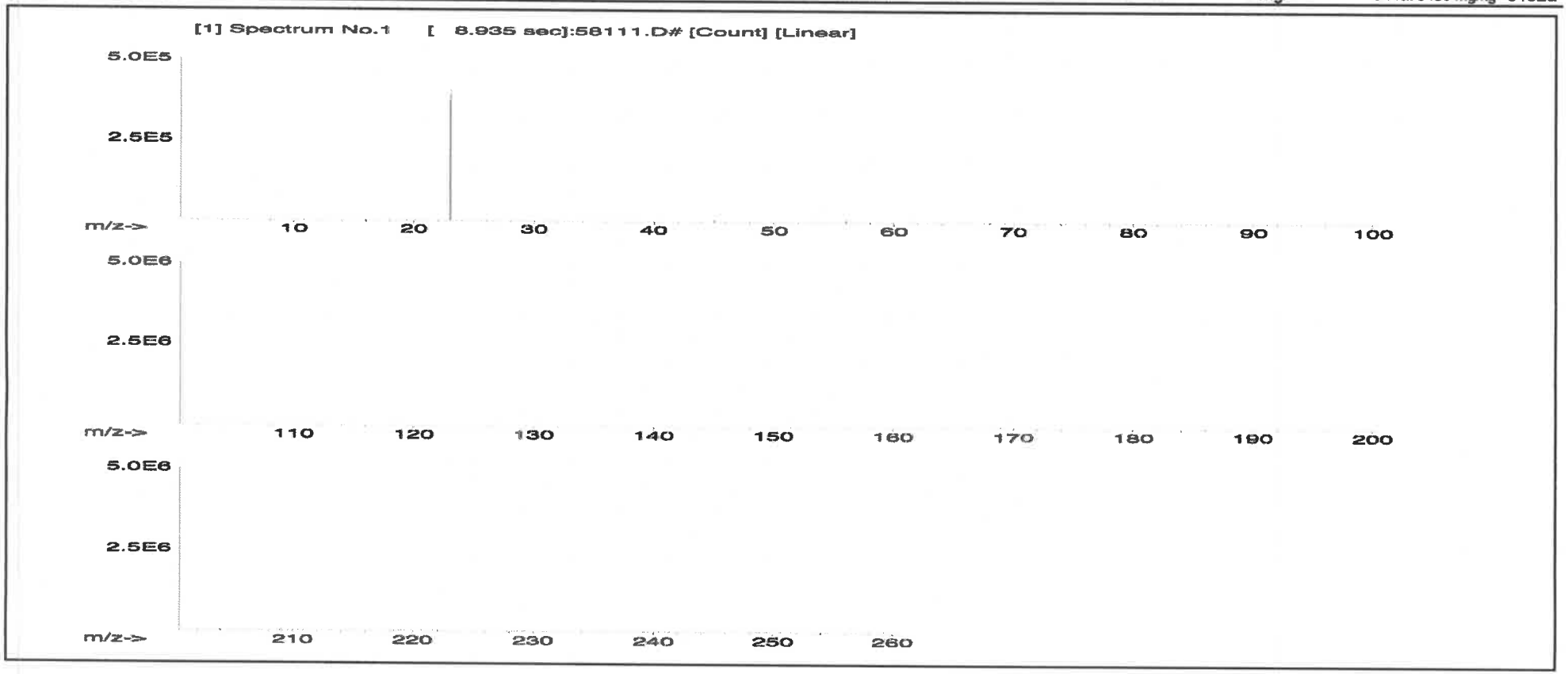
Expiration Date: 072427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2

	Lot #		
Solvent:	24002546	Nitric Acid	
	2%	80.0 (mL)	Nitric Acid
5E-05	Balance Uncertainty		
0.10	Flask Uncertainty		

Formulated By: Benson Chan 072424

Reviewed By: Pedro L. Rentas 072424

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	148.7096	######	**10000.0**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	T	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

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AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)

R → 1/13/25

M6145

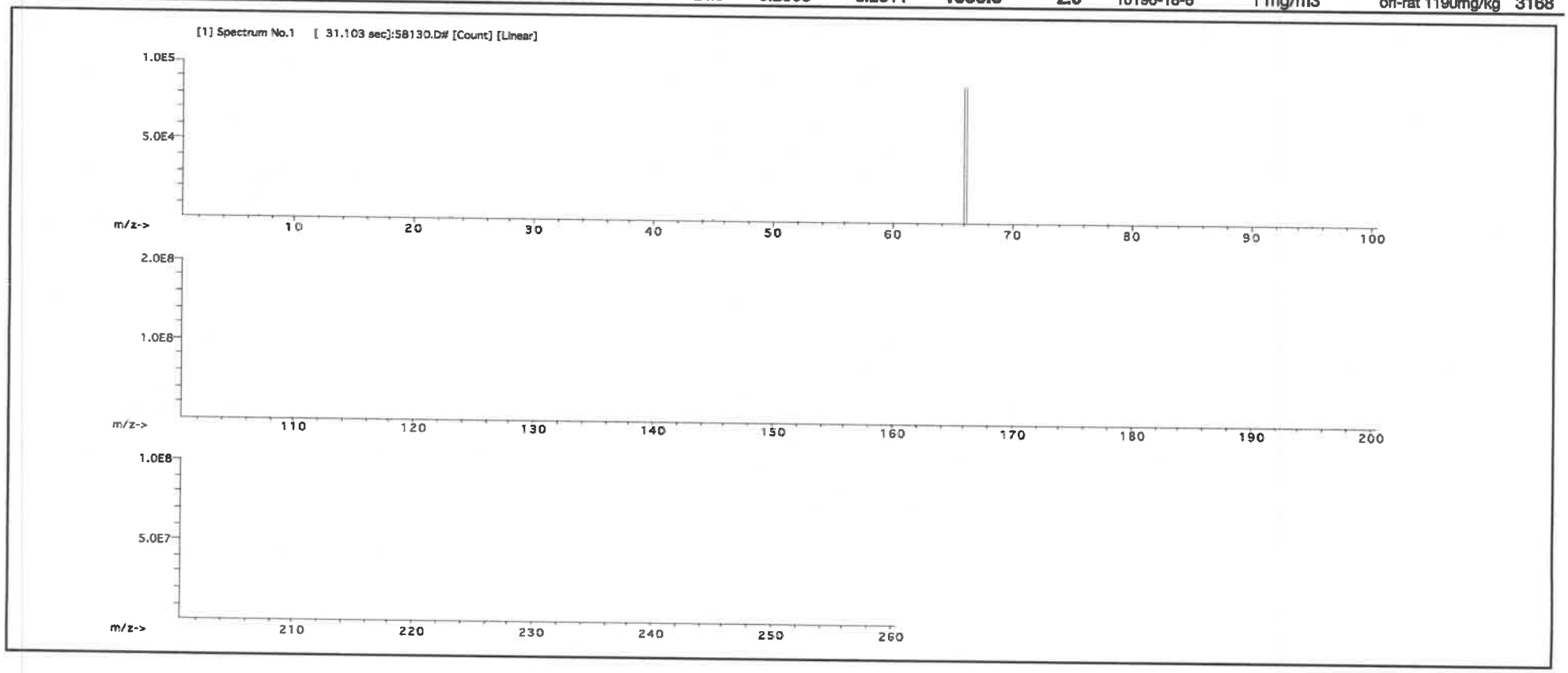
Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

		Lot #	
Solvent:	24012496	Nitric Acid	
	2%	40.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty

Aleah O'Brady

Formulated By:	Aleah O'Brady	121724
Reviewed By:	Pedro L. Rentas	121724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE032021A1	1000	99.999	0.10	24.3	8.2308	8.2311	**1000.0**	**2.0**	10196-18-6	1 mg/m3	ori-rat 1190mg/kg	3168



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	T
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

M6151

R→ 1/15/25

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl_2)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO_4)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO_3)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH_4)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R-02102/2025

M-6158

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

M-6162

R. Date :- 04/27/2025

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855 282 6867 or +1 610 386 1700

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	13 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-1
Lot Number:	V2-MEB744107
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	2 500 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 1 000 µg/mL ea: Aluminum, Barium, 500 µg/mL ea: Iron, 250 µg/mL ea: Nickel, Vanadium, Zinc, Cobalt, Manganese, 125 µg/mL ea: Silver, Copper, 100 µg/mL ea: Chromium, 25 µg/mL ea: Beryllium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 000 ± 4 µg/mL	Barium, Ba	1 000 ± 6 µg/mL
Beryllium, Be	24.98 ± 0.12 µg/mL	Calcium, Ca	2 500 ± 8 µg/mL
Chromium, Cr	99.9 ± 0.6 µg/mL	Cobalt, Co	250.2 ± 1.2 µg/mL
Copper, Cu	125.0 ± 0.5 µg/mL	Iron, Fe	500.0 ± 2.2 µg/mL
Magnesium, Mg	2 500 ± 11 µg/mL	Manganese, Mn	249.9 ± 1.1 µg/mL
Nickel, Ni	250.0 ± 1.2 µg/mL	Potassium, K	2 500 ± 11 µg/mL
Silver, Ag	125.0 ± 0.6 µg/mL	Sodium, Na	2 500 ± 11 µg/mL
Vanadium, V	250.0 ± 1.1 µg/mL	Zinc, Zn	249.9 ± 1.1 µg/mL

Density: 1.081 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 22, 2024

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

11.2 Lot Expiration Date

- **May 22, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

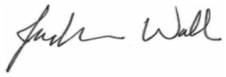
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-2
Lot Number:	U2-MEB733713
Matrix:	3% (w/v) Tartaric acid 1% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Antimony

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**500.0 ± 2.8 µg/mL**		

Density: 1.017 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Sb	ICP Assay	3102a	140911

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

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$
w_i = the weighting factors for each method calculated using the inverse square of the variance:
$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

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

k = coverage factor = 2
$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
$u_{char\ a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2
$u_{char\ a}$ = the errors from characterization
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 01, 2023

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

11.2 Lot Expiration Date

- June 01, 2028

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

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

11.3 Period of Validity

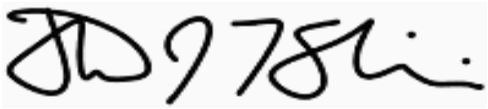
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-3
Lot Number:	V2-MEB749572
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 250 µg/mL ea: Cadmium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**500.0 ± 3.1 µg/mL**	**Cadmium, Cd**	**250.1 ± 1.1 µg/mL**
Lead, Pb	**500.0 ± 2.3 µg/mL**	**Selenium, Se**	**500.0 ± 3.2 µg/mL**
Thallium, Tl	**500.0 ± 3.0 µg/mL**		

Density: 1.040 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 02, 2025

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

11.2 Lot Expiration Date

- **January 02, 2030**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

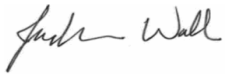
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrogen Peroxide, 30%
CMOS
(Stabilized)

M-6170

R.Date . 8-05|20|2025

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Niobium (Nb)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 600.0 ppb	176.7 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	190.0 – 500.0 ppb	272.3 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 50 ppb	< 1 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.2 µm and greater	≤ 1175 par/ml	202 par/ml
Particle Count – 0.5 µm and greater	≤ 100 par/ml	33 par/ml

>>> Continued on page 3 >>>

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

Michelle Bales
Sr. Manager, Quality Assurance

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001
Manufactured Date: 2024-04-17
Expiration Date: 2025-10-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (H_2O_2)	30.0 - 32.0 %	31.6 %
Color (APHA)	≤ 10	< 5
Free Acid (µeq/g)	≤ 0.2	0.1
Residue after Evaporation	≤ 10 ppm	2 ppm
Ammonium (NH_4)	≤ 3 ppm	< 3 ppm
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Nitrate (NO_3)	≤ 2 ppm	< 2 ppm
Phosphate (PO_4)	≤ 1 ppm	1 ppm
Sulfate (SO_4)	≤ 3 ppm	< 3 ppm
Trace Impurities - Aluminum (Al)	≤ 70.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Barium (Ba)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Chromium (Cr)	≤ 20.0 ppb	1.5 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Gold (Au)	≤ 10.0 ppb	< 5.0 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 250.0 ppb
Trace Impurities - Iron (Fe)	≤ 50.0 ppb	4.6 ppb
Trace Impurities - Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

R -> 013125

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

M 6171

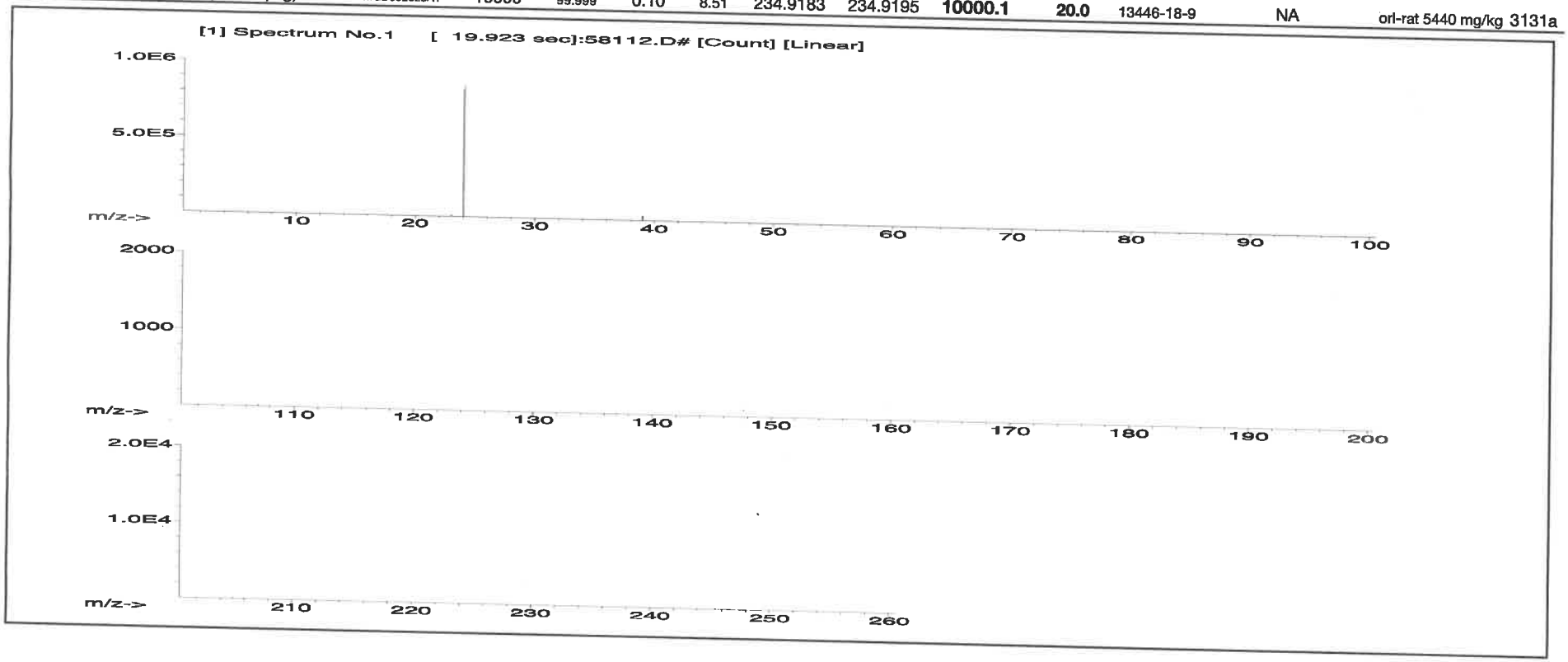
Part Number: 58112
Lot Number: 011525
Description: Magnesium (Mg)

Expiration Date: 011528
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	Lot #		
Solvent:	24012496	Nitric Acid	
	2%	40.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty	
	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	011525
Reviewed By:	Pedro L. Rentas	011525

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9183	234.9195	**10000.1**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



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800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
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M6174
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1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-1
Lot Number:	V2-MEB742428
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea:
	Calcium, Potassium,
	Magnesium, Sodium,
	2 000 µg/mL ea:
	Aluminum, Barium,
	1 000 µg/mL ea:
	Iron,
	500 µg/mL ea:
	Nickel, Vanadium,
	Zinc, Cobalt,
	Manganese,
	250 µg/mL ea:
	Silver, Copper,
	200 µg/mL ea:
	Chromium,
	50 µg/mL ea:
	Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.03 ± 0.30 µg/mL	Calcium, Ca	5 000 ± 16 µg/mL
Chromium, Cr	200.0 ± 1.1 µg/mL	Cobalt, Co	500.0 ± 2.3 µg/mL
Copper, Cu	250.0 ± 1.1 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 22 µg/mL	Manganese, Mn	499.9 ± 2.2 µg/mL
Nickel, Ni	500.1 ± 2.3 µg/mL	Potassium, K	5 000 ± 22 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.117 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 22, 2024

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

11.2 Lot Expiration Date

- March 22, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
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www.absolutestandards.com

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CERTIFIED WEIGHT REPORT:

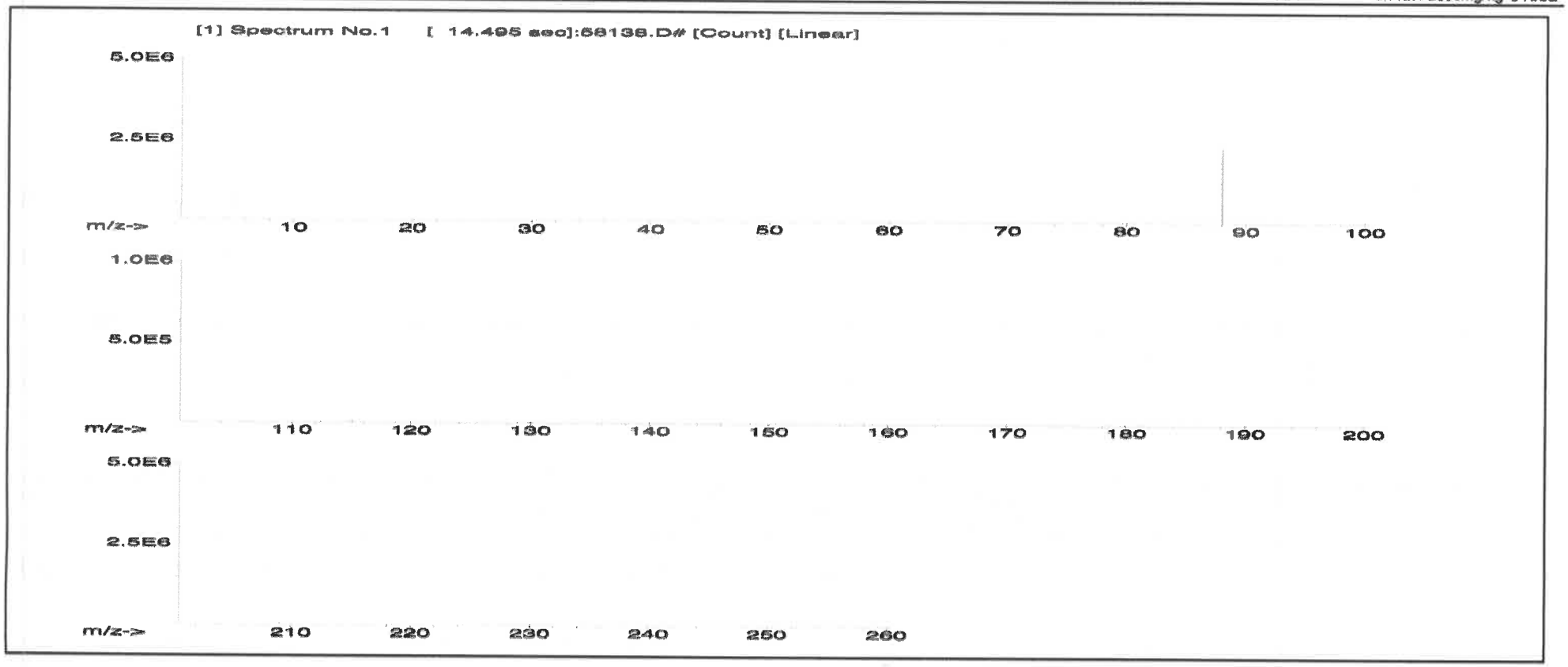
R->8/6/29

M6176

Part Number:	**57038**		**Lot #**		
Lot Number:	**092724**	**Solvent:**	24002546	Nitric Acid	
Description:	**Strontium (Sr)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	092727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Formulated By:	Benson Chan	092724
Reviewed By:	Pedro L. Rentas	092724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	1000	99.997	0.10	41.2	4.85470	4.85481	**1000.0**	**2.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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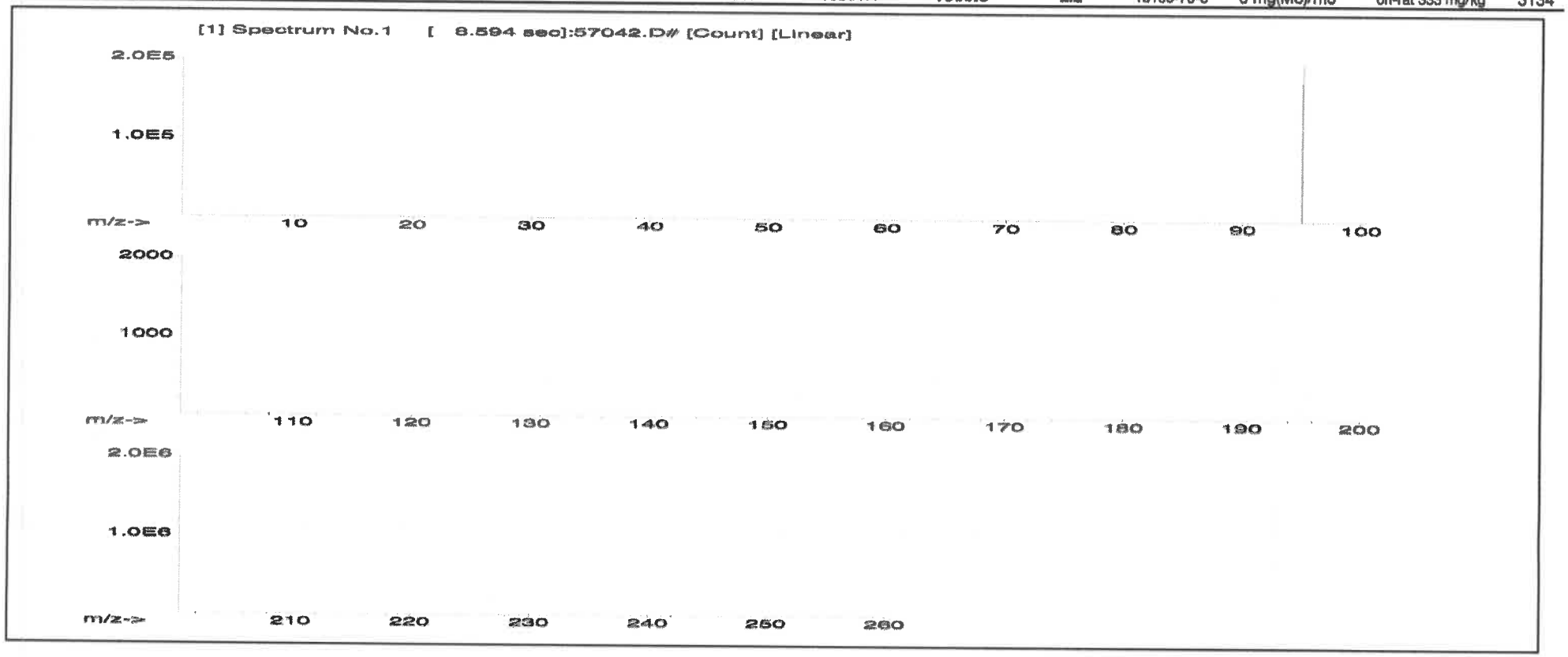
CERTIFIED WEIGHT REPORT:

R→ 8/6/25
M6177

		Lot #	Solvent:		
Part Number:	57042	MKBQ8597V	Ammonium hydroxide		
Lot Number:	080525	080525	ASTM Type 1 Water		
Description:	Molybdenum (Mo)	0.5%	10.0 (mL)	Ammonium hydroxide	
Expiration Date:	080528				
Recommended Storage:	Ambient (15 - 30 °C)				
Nominal Concentration (µg/mL):	1000				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	1999.41	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Rentas	080525

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium molybdate (Mo)	58142	112322	0.1000	200.0	0.084	1000	10001.4	**1000.5**	**2.2**	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	T	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware, and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).
Rev 1.0, 2/25/2025

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CERTIFIED WEIGHT REPORT:

R>8/6/28
M6178

Part Number:	**57082**		**Lot #**		
Lot Number:	**031525**	**Solvent:**	24014457	Nitric Acid	
Description:	**Lead (Pb)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	031528				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.10	Flask Uncertainty		

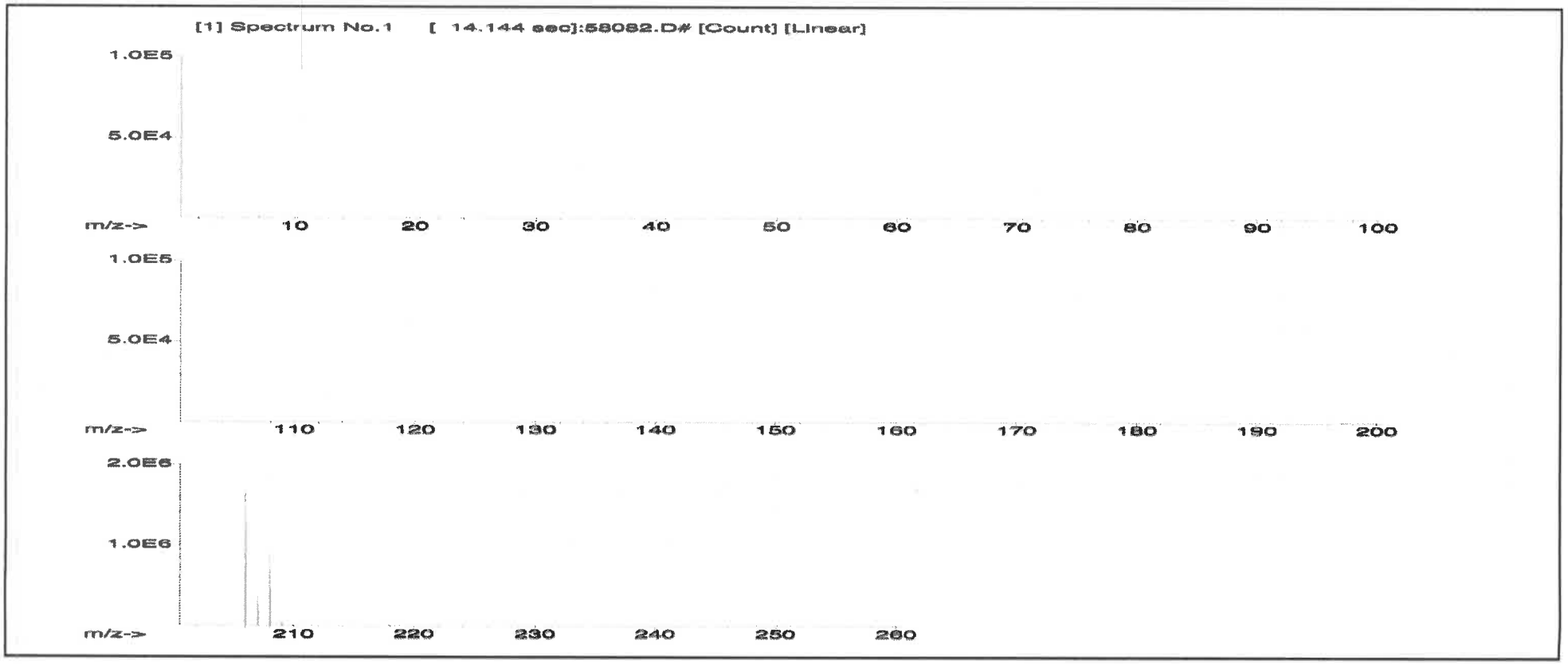
Giovanni Esposito

Formulated By:	Giovanni Esposito	031525

Pedro Rentas

Reviewed By:	Pedro L. Rentas	031525

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD122016A1	1000	99.999	0.10	62.5	3.20015	3.20067	**1000.2**	**2.0**	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certificate of Analysis

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M6179
R -> 6/2/24

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGY10
Lot Number:	V2-Y740548
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Yttrium
Starting Material:	Yttrium Oxide
Starting Material Lot#:	2661 and 06230520YL
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10011 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**9997 ± 50 µg/mL** ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	**9984 ± 31 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.004600	M	Eu		0.009037	M	Na		0.086360	M	Se	<	0.005200	M	Zn		0.030125
M	Al		0.014862	O	Fe		0.002410	M	Nb	<	0.000570	O	Si		0.024100	O	Zr	<	0.002600
M	As	<	0.003500	M	Ga	<	0.000570	M	Nd		0.000923	M	Sm		0.000461				
M	Au	<	0.001700	M	Gd	<	0.003500	M	Ni	<	0.005700	M	Sn	<	0.002300				
O	B		0.002209	M	Ge	<	0.005200	M	Os	<	0.001200	M	Sr	<	0.004600				
O	Ba	<	0.002500	M	Hf	<	0.000570	n	P	<		M	Ta	<	0.000570				
O	Be	<	0.001400	M	Hg	<	0.000570	M	Pb		0.005020	M	Tb		0.001044				
M	Bi	<	0.003500	M	Ho		0.009037	M	Pd	<	0.005100	M	Te	<	0.002300				
O	Ca		0.009841	M	In	<	0.002300	M	Pr	<	0.002300	M	Th	<	0.000570				
M	Cd	<	0.000570	M	Ir	<	0.000570	M	Pt	<	0.000570	M	Ti	<	0.003500				
M	Ce	<	0.002300	O	K		0.018677	M	Rb	<	0.000570	M	Tl	<	0.000570				
M	Co	<	0.000570	M	La		0.000461	M	Re	<	0.000570	M	Tm	<	0.003500				
M	Cr	<	0.004000	O	Li	<	0.009300	M	Rh	<	0.008000	M	U	<	0.000570				
M	Cs	<	0.000570	M	Lu		0.000582	M	Ru	<	0.000570	M	V		0.001265				
M	Cu		0.002610	O	Mg		0.001486	n	S	<		M	W	<	0.002300				
M	Dy		0.003815	M	Mn		0.000582	M	Sb		0.005422	s	Y	<					
M	Er		0.003615	M	Mo	<	0.005700	M	Sc	<	0.001200	M	Yb		0.001827				

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

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H2O)x+2

Chemical Compatibility -Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H2O/ HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	W2-MEB752149
Matrix:	5% (v/v) HNO3

M6180
R-7/22/25

Value / Analyte(s):	1 000 µg/mL ea: Potassium,	
	600 µg/mL ea: Phosphorus,	
	300 µg/mL ea: Sodium,	Iron,
	200 µg/mL ea: Magnesium, Cerium, Thallium,	Aluminum, Selenium,
	100 µg/mL ea: Lead,	Calcium,
	80 µg/mL ea: Arsenic,	
	70 µg/mL ea: Mercury,	
	50 µg/mL ea: Nickel,	
	40 µg/mL ea: Chromium,	
	30 µg/mL ea: Copper, Vanadium,	Boron,
	20 µg/mL ea: Zinc, Barium, Cadmium, Manganese,	Strontium, Beryllium, Cobalt, Lithium,
	7.5 µg/mL ea: Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.2 ± 0.7 µg/mL	Arsenic, As	80.1 ± 0.5 µg/mL
Barium, Ba	20.02 ± 0.12 µg/mL	Beryllium, Be	20.02 ± 0.11 µg/mL
Boron, B	30.02 ± 0.15 µg/mL	Cadmium, Cd	20.04 ± 0.09 µg/mL
Calcium, Ca	100.1 ± 0.3 µg/mL	Cerium, Ce	200.2 ± 1.0 µg/mL
Chromium, Cr	40.02 ± 0.26 µg/mL	Cobalt, Co	20.03 ± 0.09 µg/mL
Copper, Cu	30.03 ± 0.13 µg/mL	Iron, Fe	300.3 ± 1.3 µg/mL
Lead, Pb	100.1 ± 0.5 µg/mL	Lithium, Li	20.03 ± 0.09 µg/mL
Magnesium, Mg	200.2 ± 0.9 µg/mL	Manganese, Mn	19.99 ± 0.09 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.05 ± 0.22 µg/mL
Phosphorus, P	600.5 ± 2.9 µg/mL	Potassium, K	1 001 ± 4 µg/mL
Selenium, Se	200.2 ± 1.1 µg/mL	Silver, Ag	7.52 ± 0.03 µg/mL
Sodium, Na	300.3 ± 1.3 µg/mL	Strontium, Sr	20.02 ± 0.10 µg/mL
Thallium, Tl	200.2 ± 1.0 µg/mL	Vanadium, V	30.02 ± 0.13 µg/mL
Zinc, Zn	20.05 ± 0.09 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 5 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	160830
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 25° C to minimize the effects of transpiration. Use at 20° ± 5° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2025

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

11.2 Lot Expiration Date

- **April 08, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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M6181
R->7/22/28

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-2
Lot Number:	V2-MEB743480
Matrix:	5% (v/v) HNO3 tr. HF
Value / Analyte(s):	200 µg/mL ea: Silica, 80 µg/mL ea: Antimony, 70 µg/mL ea: Tin, 40 µg/mL ea: Molybdenum, 20 µg/mL ea: Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.5 µg/mL	Molybdenum, Mo	40.05 ± 0.22 µg/mL
Silica, SiO2	200.3 ± 1.4 µg/mL	Tin, Sn	70.1 ± 0.4 µg/mL
Titanium, Ti	20.03 ± 0.12 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
SiO2	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{¼}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 07, 2024

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

11.2 Lot Expiration Date

- May 07, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Thomas Kozikowski
Stock VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

M6182

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

M6184

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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M6027

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R1 8/05/24

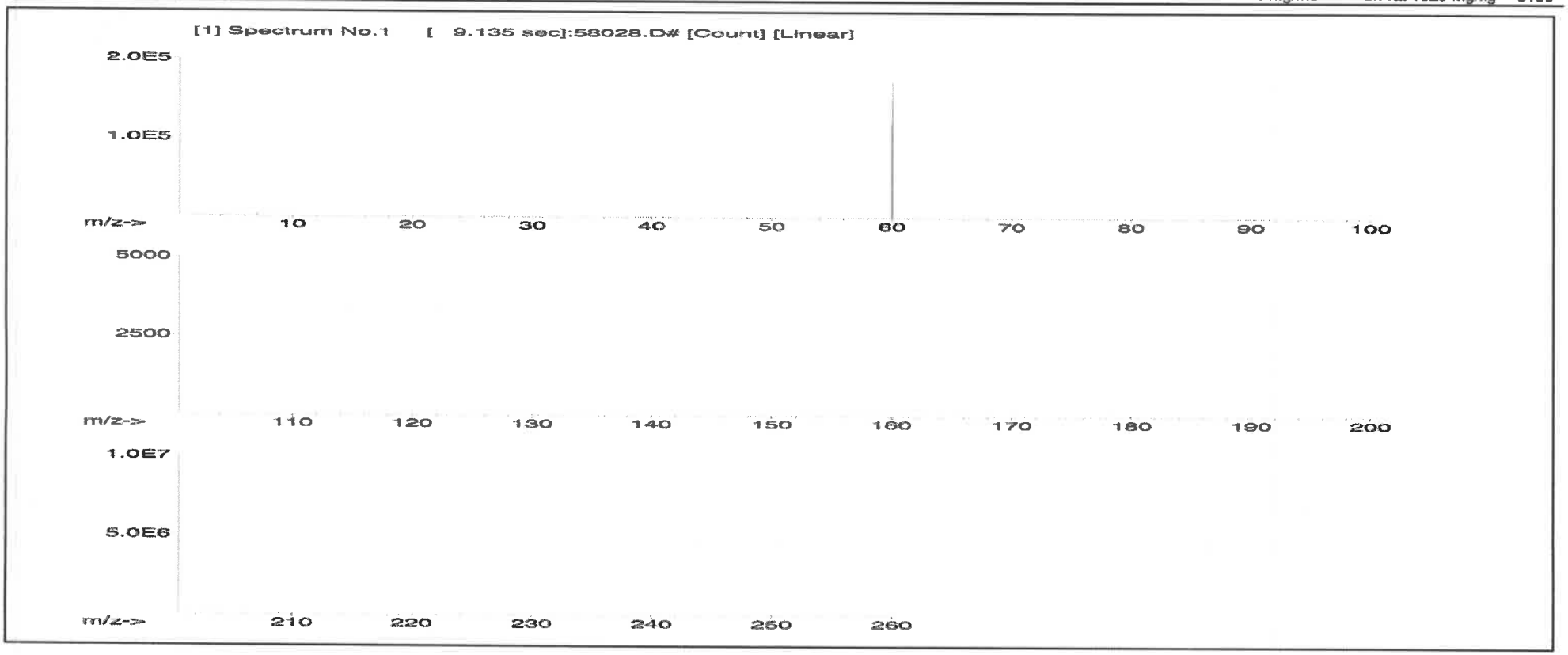
CERTIFIED WEIGHT REPORT:

Part Number:	**57028**
Lot Number:	**062024**
Description:	**Nickel (Ni)**
Expiration Date:	062027
Recommended Storage:	Ambient (20 °C)
Nominal Concentration (µg/mL):	**1000**
NIST Test Number:	6UTB
Volume shown below was diluted to (mL):	2000.07

Lot #	Solvent:		
24002546	Nitric Acid		
2.0%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.100	Flask Uncertainty	

Formulated **By:**	Benson Chan	062024
Reviewed By:	Pedro L. Rentas	062024

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Nickel(II) nitrate hexahydrate (Ni)	58128	062023	0.1000	200.0	0.084	1000	10000.4	**1000.0**	2.2	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

Part Number: 57047
Lot Number: 122823
Description: Silver (Ag)

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

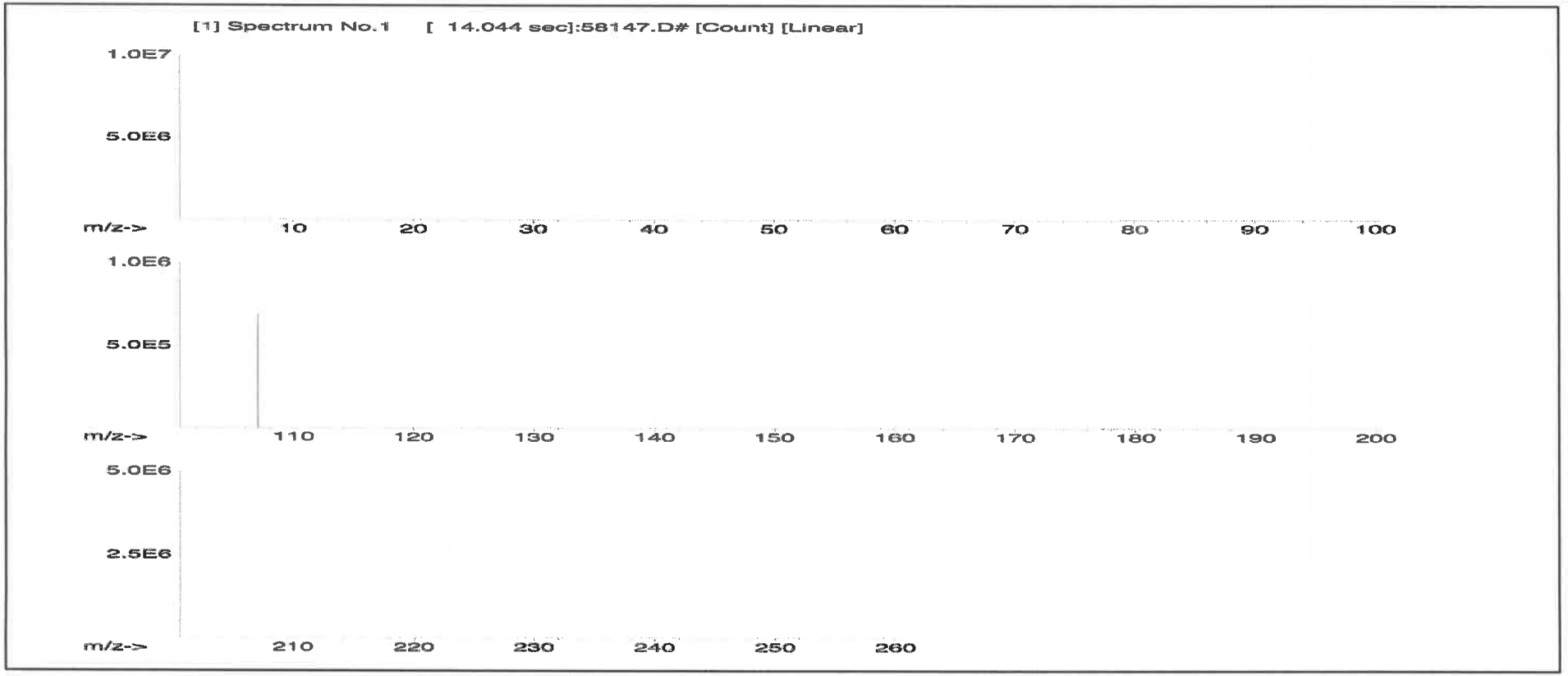
Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	122823
Reviewed By:	Pedro L. Rentas	122823

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	T	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

MG146

Part Number: 57051
Lot Number: 071724
Description: Antimony (Sb)
Expiration Date: 071727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.26

Lot #	Solvent:		
24002546	Nitric Acid		
2.0%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

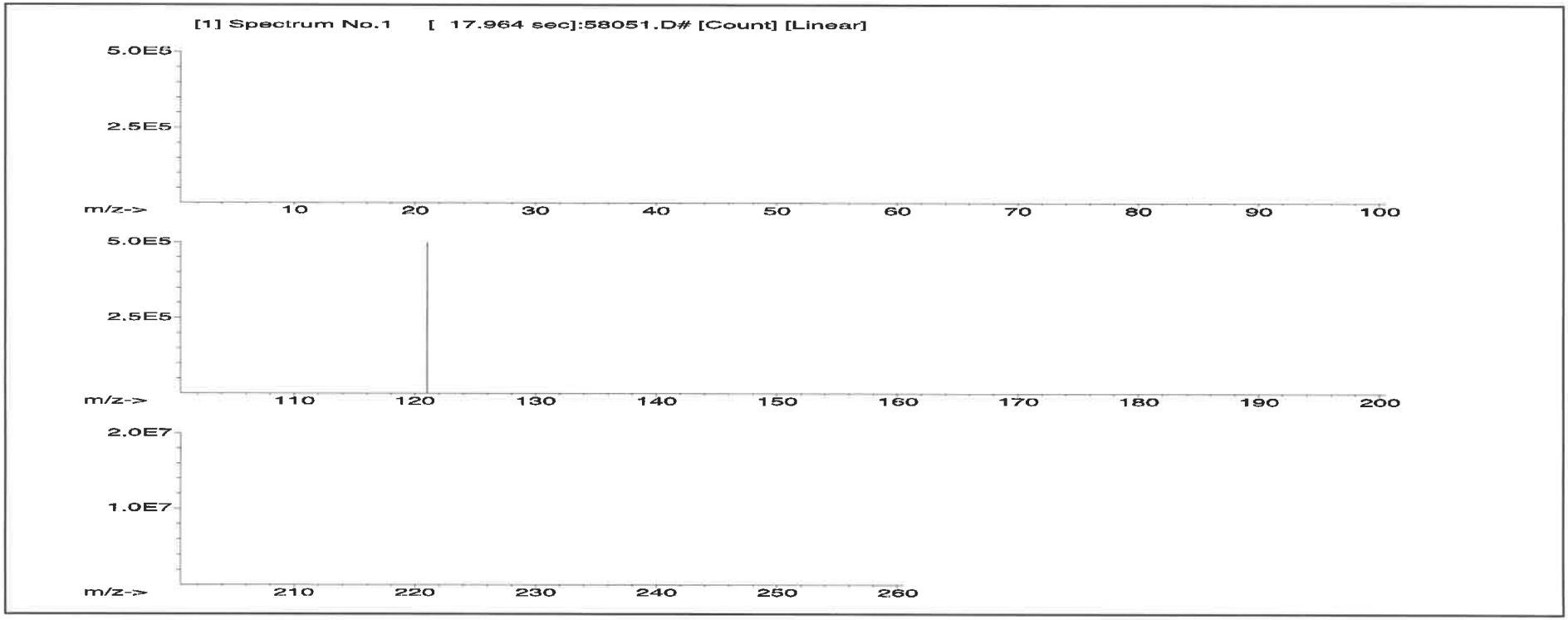
Giovanni Esposito

Formulated By:	Giovanni Esposito	071724

Pedro Rentas

Reviewed By:	Pedro L. Rentas	071724

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	**1000.0**	**2.2**	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

M6023

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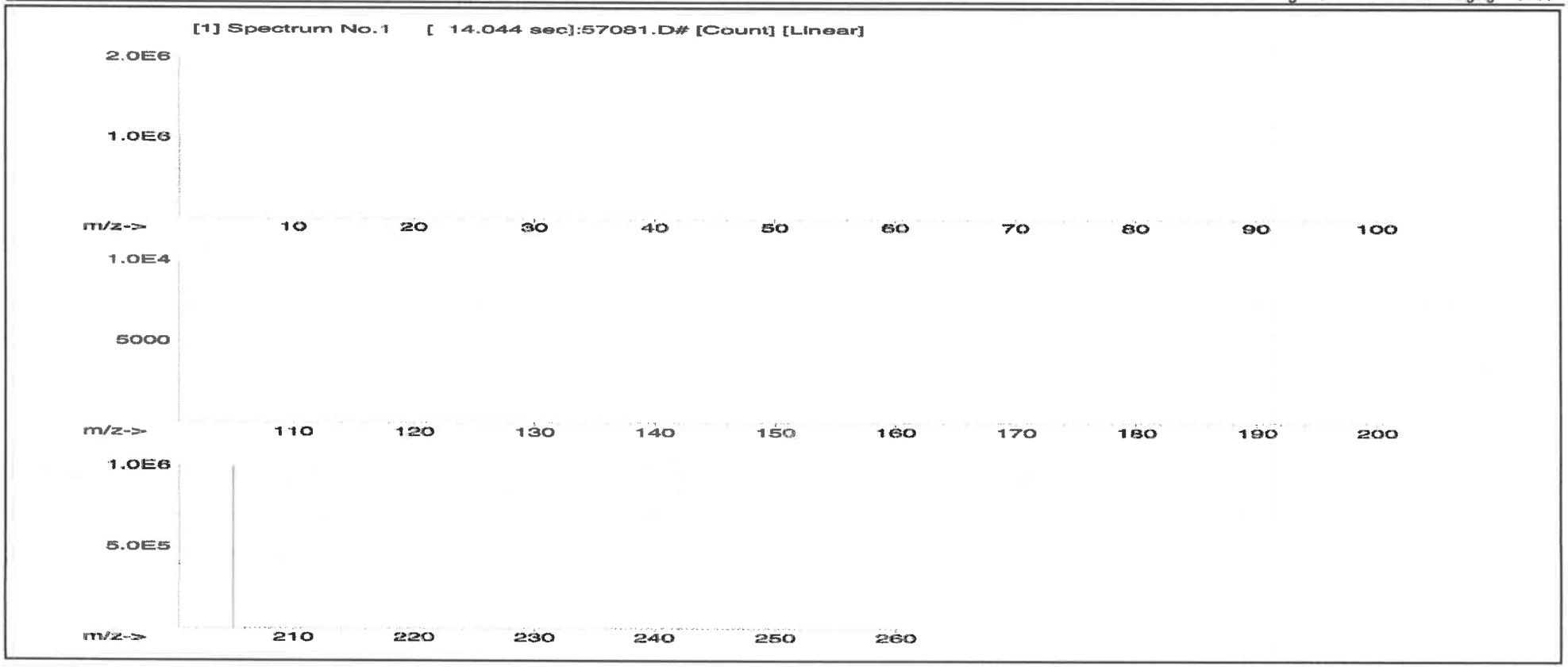
CERTIFIED WEIGHT REPORT:

Part Number:	**57081**		**Lot #**		
Lot Number:	**062724**	**Solvent:**	24002546	Nitric Acid	
Description:	**Thallium (Tl)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	062727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	062724
Reviewed By:	Pedro L. Rentas	062724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	IN037	BCCF4399	1000	99.999	0.10	77.0	2.5975	2.5977	**1000.1**	**2.0**	10102-45-1	0.1 mg/m3	orl-mus 15mg/kg	3158



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M6021

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Rc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**			
Lot Number:	**062424**	24002546	Nitric Acid	
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.3	0.06	Flask Uncertainty	

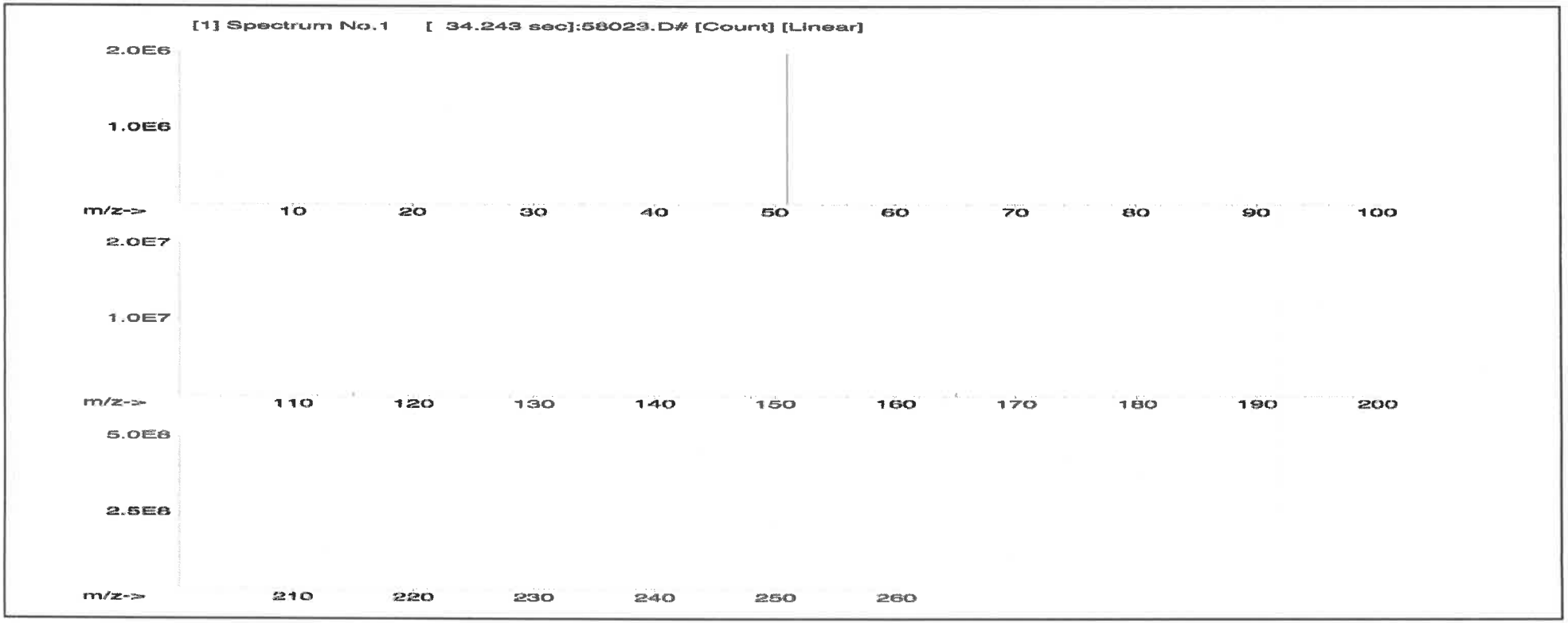
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)	58123	021224	0.1000	200.0	0.084	1000	10000.3	**1000.0**	**2.2**	7803-55-6	0.05 mg/m3	orl-rat 58.1mg/kg	3165



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	T
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

SHIPPING DOCUMENTS

Alliance TECHNICAL GROUP

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

ALLIANCE PROJECT NO.
QUOTE NO. Q2819
COC Number 2045329

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: First Environment
ADDRESS: 10 Park Pl Bldg 1A Suite 304
CITY Butler STATE: NJ ZIP: 07405
ATTENTION: Al Smith
PHONE: 973-334-0003 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: USACE FIMP
PROJECT NO.: USACE018-44 LOCATION: Long Island, NY
PROJECT MANAGER: Al Smith
e-mail: asmith@firstenvironment.com
PHONE: 973-334-0003 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: Same
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☒ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC + Raw Data) ☐ NYS ASP A ☐ NYS ASP B ☐ Other
☒ EDD FORMAT NYSDEC

ANALYSIS

1: VOC/SVOC 2: Pest./PCB 3: metals 4 5 6 7 8 9

PRESERVATIVES

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1	2	3	4	5	6	7	8	9
1.	22BP-N	S			8/4/25	1500	5	X								
2.	22BP-E	S				1434	5	X								
3.	22BP-W	S				1418	5	X								
4.	22BP-S	S				1427	5	X								
5.	11M-W	S			8/5/25	1015	5	X								
6.	11M-S	S				0955	7	X	X	X						
7.	11M-N	S				1100	5	X								
8.	11M-E	S				1110	5	X								
9.	845B-E	S				1340	5	X								
10.	845B-S	S				1410	5	X								

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. GMC	6:01	1. 8.8.25
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☒ COOLER TEMP 3.8i °C
Comments:

Page 1 of 5

CLIENT: ☐ Hand Delivered ☐ Other

Shipment Complete ☐ YES ☐ NO

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Alliance TECHNICAL GROUP

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 · Fax (908) 789-8922
www.chemtech.net

ALLIANCE PROJECT NO.
QUOTE NO. Q2819
COC Number 2045330

CLIENT INFORMATION (REPORT TO BE SENT TO:)

COMPANY:
ADDRESS: See page 1
CITY STATE: ZIP:
ATTENTION:
PHONE: FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME:
PROJECT NO.: LOCATION:
PROJECT MANAGER:
e-mail:
PHONE: FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☒ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC + Raw Data) ☐ NYS ASP A ☐ NYS ASP B ☐ Other
☒ EDD FORMAT NYSDEC

ANALYSIS

1 VOC / 2 SVOC / 3 Pest / 4 PCB / 5 Metals / 6 / 7 / 8 / 9

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	84 SB-W	S	C		8/5/25	1400	7	X	X	X							
2.	17M-S					1605	5	X									
3.	17M-E					1700	5	X									
4.	17M-W					1620	7	X	X	X							
5.	17M-N					1640	5	X									
6.	38M-S				8/6/25	0935	5	X									
7.	38M-N					1005	5	X									
8.	38M-W					0955	5	X	X	X							
9.	38M-E					1020	5	X									
10.	82H-E					1205	5	X									

PRESERVATIVES: A-HCl B-HN03 C-H2SO4 D-NaOH E-ICE F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. GMC	6:01	1. 8.8.25
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☒ COOLER TEMP 3.6 °C
Comments:

Page 2 of 5

CLIENT: ☐ Hand Delivered ☐ Other

Shipment Complete ☐ YES ☐ NO

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284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2819 FIRS02
Client Name : First Environment, Inc.
Client Contact : Al Smith
Invoice Name : First Environment, Inc.
Invoice Contact : Al Smith

Order Date : 8/11/2025 12:06:00 PM
Project Name : USACE018-44 DOD
Receive DateTime : 8/8/2025 6:01:00 PM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2819-01	22BP-N	Solid	08/04/2025	15:00					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-02	22BP-E	Solid	08/04/2025	14:34					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-03	22BP-W	Solid	08/04/2025	14:18					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-04	22BP-S	Solid	08/04/2025	14:27					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-05	11M-W	Solid	08/05/2025	10:15					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-06	11M-S	Solid	08/05/2025	09:55					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-07	11M-N	Solid	08/05/2025	11:00					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-08	11M-E	Solid	08/05/2025	11:10					

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284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

DP 08/16/2025

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2819 FIRS02
Client Name : First Environment, Inc.
Client Contact : Al Smith
Invoice Name : First Environment, Inc.
Invoice Contact : Al Smith

Order Date : 8/11/2025 12:06:00 PM
Project Name : USACE018-44 DOD
Receive DateTime : 8/8/2025 6:01:00 PM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD		FAX DATE	DUE DATES
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-09	84SB-E ~~845SB-E~~	Solid	08/05/2025	13:40						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-10	84SB-S ~~845SB-S~~	Solid	08/05/2025	14:10						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-11	84SB-W ~~845SB-W~~	Solid	08/05/2025	14:00						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-12	17M-S	Solid	08/05/2025	16:05						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-13	17M-E	Solid	08/05/2025	17:00						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-14	17M-W	Solid	08/05/2025	16:20						
					VOC-TCLVOA-10		8260D	10 Bus. Days		
Q2819-15	17M-N	Solid	08/05/2025	16:40						
					VOC-TCLVOA-10		8260D	10 Bus. Days		

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2819 FIRS02
Client Name : First Environment, Inc.
Client Contact : Al Smith
Invoice Name : First Environment, Inc.
Invoice Contact : Al Smith

Order Date : 8/11/2025 12:06:00 PM
Project Name : USACE018-44 DOD
Receive DateTime : 8/8/2025 6:01:00 PM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2819-16	38M-S	Solid	08/06/2025	09:35					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-17	38M-N	Solid	08/06/2025	10:05					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-18	38M-W	Solid	08/06/2025	09:55					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-19	38M-E	Solid	08/06/2025	10:20					
					VOC-TCLVOA-10		8260D		10 Bus. Days
Q2819-20	82H-E	Solid	08/06/2025	12:05					
					VOC-TCLVOA-10		8260D		10 Bus. Days

Relinguished By :
Date / Time : 8-11-25 1450

Received By :
Date / Time : 08/11/25 14:50
Storage Area : VOA Refridgerator Room