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

DATA PACKAGE

METALS

PROJECT NAME : RFP 916

WESTON SOLUTIONS, INC.

1090 King Georges Post Road

Suite 201

Edison, NJ - 08837-3703

Phone No: 732-585-4410

ORDER ID : Q3179

ATTENTION : Smita Sumbaly

Laboratory Certification ID # 20012

Table Of Contents for Q3179

1) METALS DATA 2

2) Signature Page 4

3) Case Narrative 5

4) Qualifier Page 6

5) Conformance/Non Conformance 7

6) QA Checklist 8

7) Chronicle 9

8) Hit Summary 10

9) Sample Data 11

- 9.1) EME-TS14-01 12

10) METALS CALIBRATION DATA 13

- 10.1) Initial and Continuing Calibration Verification 14
- 10.2) CRDL Standard For AA & ICP 23
- 10.3) Initial and Continuing Calibration Blank Summary 24
- 10.4) Preparation Blank Summary 31
- 10.5) Interference Check Sample 34

11) METALS QC DATA 36

- 11.1) Matrix Spike Summary 37
- 11.2) Post Digest Spike Summary 39
- 11.3) Duplicate Sample Summary 40
- 11.4) Laboratory Control Sample Summary 42
- 11.5) ICP Serial Dilutions 44

12) METALS PREPARATION & INSTRUMENT DATA 45

- 12.1) ICP Interelement Correction Factors 46

13) PREPARATION & ANALYTICAL SUMMARY 51

- 13.1) Sample Preparation Summary 52
- 13.2) Analysis Run Log 54

14) METALS RAW DATA 56

- 14.1) METALS RAW DATA - ANALYTICAL 57
- 14.2) LB137351 57
- 14.3) LB137307 260
- 14.4) METALS RAW DATA - PREP 262
  - 14.4.1) PB169831 262
  - 14.4.2) PB169847 265

15) Analytical Runlogs 268

16) Extraction Logs 276
16.1) PB169818.pdf 276
17) Standard Prep Logs 280
18) Shipping Document 466
18.1) Chain Of Custody 467
18.2) Lab Certificate 468

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

Cover Page

Order ID : Q3179

Project ID : RFP 916

Client : Weston Solutions, Inc.

Lab Sample Number	Client Sample Number
Q3179-01	EME-TS14-01
Q3179-02	EME-TS14-01MS
Q3179-03	EME-TS14-01MSD

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: 10/2/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 916
Project # N/A
Order ID # Q3179
Test Name: SPLP ICP Metals,SPLP Mercury

A. Number of Samples and Date of Receipt:
3 Solid samples were received on 09/23/2025.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: EPH, SPLP BNA, SPLP Cyanide, SPLP Extraction, SPLP ICP Metals, SPLP Mercury, SPLP Metals, SPLP PCB, SPLP Pesticide, SPLP VOA and SPLP ZHE Ext. This data package contains results for SPLP ICP Metals,SPLP Mercury.

C. Analytical Techniques:
The analysis of SPLP ICP Metals was based on method 6010D, digestion based on method 3050 (soils). The analysis of SPLP Mercury was based on method 7470A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (EME-TS14-01MS) analysis met criteria for all samples except for Sodium due to Chemical Interference during Digestion process.
The Matrix Spike Duplicate (EME-TS14-01MSD) analysis met criteria for all samples except for Sodium 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 met the acceptable requirements.

E. Additional Comments:

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

ALLIANCE 284 Sheffield Street, Mountainside New Jersey 07092

NEW JERSEY LAB ID#: 20012: NEW YORK LAB ID#: 11376

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q3179 MATRIX: Water

METHOD: 6010D,7470A

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.			✓
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 (EME-TS14-01MS) analysis met criteria for all samples except for Sodium due to Chemical Interference during Digestion process. The Matrix Spike Duplicate (EME-TS14-01MSD) analysis met criteria for all samples except for Sodium 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.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			
9.	Analysis Holding Time Met			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

_____ _____

QA REVIEW Date

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q3179

	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: JAYESH RAMANI **Date:** 10/02/2025

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

LAB CHRONICLE

OrderID:	Q3179	**OrderDate:**	9/24/2025 11:08:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 916
Contact:	Smita Sumbaly	**Location:**	J42

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3179-01	**EME-TS14-01**	**Water**			**09/23/25**			**09/23/25**
			SPLP ICP Metals	6010D		09/25/25	09/29/25	
			SPLP Mercury	7470A		09/25/25	09/25/25	

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

Hit Summary Sheet
SW-846

SDG No.: Q3179 **Order ID:** Q3179

Client: Weston Solutions, Inc. **Project ID:** RFP 916

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : EME-TS14-01								
Q3179-01	EME-TS14-01	Water	Aluminum	283		5.67	50.0	ug/L
Q3179-01	EME-TS14-01	Water	Barium	130		7.28	50.0	ug/L
Q3179-01	EME-TS14-01	Water	Cadmium	0.95	J	0.25	3.00	ug/L
Q3179-01	EME-TS14-01	Water	Calcium	152000		117	1000	ug/L
Q3179-01	EME-TS14-01	Water	Chromium	3.87	J	1.06	5.00	ug/L
Q3179-01	EME-TS14-01	Water	Copper	4.32	J	2.30	10.0	ug/L
Q3179-01	EME-TS14-01	Water	Iron	51.1		11.7	50.0	ug/L
Q3179-01	EME-TS14-01	Water	Magnesium	18500		122	1000	ug/L
Q3179-01	EME-TS14-01	Water	Manganese	3940		2.97	10.0	ug/L
Q3179-01	EME-TS14-01	Water	Nickel	2.26	J	1.53	20.0	ug/L
Q3179-01	EME-TS14-01	Water	Potassium	11200		459	1000	ug/L
Q3179-01	EME-TS14-01	Water	Sodium	5990		434	1000	ug/L
Q3179-01	EME-TS14-01	Water	Zinc	64.5		8.33	20.0	ug/L

SAMPLE DATA

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

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	09/23/25
Project:	RFP 916	Date Received:	09/23/25
Client Sample ID:	EME-TS14-01	SDG No.:	Q3179
Lab Sample ID:	Q3179-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	283		1	5.67	50.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-36-0	Antimony	3.38	U	1	3.38	25.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-38-2	Arsenic	2.56	U	1	2.56	10.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-39-3	Barium	130		1	7.28	50.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-41-7	Beryllium	0.28	U	1	0.28	3.00	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-43-9	Cadmium	0.95	J	1	0.25	3.00	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-70-2	Calcium	152000		1	117	1000	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-47-3	Chromium	3.87	J	1	1.06	5.00	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-48-4	Cobalt	1.13	U	1	1.13	15.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-50-8	Copper	4.32	J	1	2.30	10.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7439-89-6	Iron	51.1		1	11.7	50.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7439-92-1	Lead	1.15	U	1	1.15	6.00	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7439-95-4	Magnesium	18500		1	122	1000	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7439-96-5	Manganese	3940		1	2.97	10.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7439-97-6	Mercury	0.076	U	1	0.076	0.20	ug/L	09/25/25 12:15	09/25/25 15:50	7470A	
7440-02-0	Nickel	2.26	J	1	1.53	20.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-09-7	Potassium	11200		1	459	1000	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7782-49-2	Selenium	4.82	U	1	4.82	10.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-22-4	Silver	0.81	U	1	0.81	5.00	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-23-5	Sodium	5990	N	1	434	1000	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-28-0	Thallium	2.19	U	1	2.19	20.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-62-2	Vanadium	3.13	U	1	3.13	20.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010
7440-66-6	Zinc	64.5		1	8.33	20.0	ug/L	09/25/25 12:30	09/29/25 18:22	6010D	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	SPLP Metals				

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,
Fax : 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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
ICV47	Mercury	3.86	4.0	96	90 - 110	CV	09/25/2025	14:52	LB137307

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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
CCV42	Mercury	5.03	5.0	101	90 - 110	CV	09/25/2025	14:58	LB137307
CCV43	Mercury	4.89	5.0	98	90 - 110	CV	09/25/2025	15:31	LB137307
CCV44	Mercury	4.77	5.0	96	90 - 110	CV	09/25/2025	15:59	LB137307
CCV45	Mercury	4.87	5.0	98	90 - 110	CV	09/25/2025	16:21	LB137307

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	7660	8000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Antimony	3870	4000	97	90 - 110	P	09/29/2025	12:55	LB137351
	Arsenic	3770	4000	94	90 - 110	P	09/29/2025	12:55	LB137351
	Barium	7740	8000	97	90 - 110	P	09/29/2025	12:55	LB137351
	Beryllium	188	200	94	90 - 110	P	09/29/2025	12:55	LB137351
	Cadmium	1890	2000	94	90 - 110	P	09/29/2025	12:55	LB137351
	Calcium	19100	20000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Chromium	768	800	96	90 - 110	P	09/29/2025	12:55	LB137351
	Cobalt	1890	2000	94	90 - 110	P	09/29/2025	12:55	LB137351
	Copper	961	1000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Iron	3860	4000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Lead	3690	4000	92	90 - 110	P	09/29/2025	12:55	LB137351
	Magnesium	19100	20000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Manganese	1930	2000	96	90 - 110	P	09/29/2025	12:55	LB137351
	Nickel	1890	2000	94	90 - 110	P	09/29/2025	12:55	LB137351
	Potassium	19000	20000	95	90 - 110	P	09/29/2025	12:55	LB137351
	Selenium	3750	4000	94	90 - 110	P	09/29/2025	12:55	LB137351
	Silver	970	1000	97	90 - 110	P	09/29/2025	12:55	LB137351
	Sodium	19000	20000	95	90 - 110	P	09/29/2025	12:55	LB137351
	Thallium	3710	4000	93	90 - 110	P	09/29/2025	12:55	LB137351
	Vanadium	1910	2000	95	90 - 110	P	09/29/2025	12:55	LB137351
	Zinc	1900	2000	95	90 - 110	P	09/29/2025	12:55	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	111	100	111	80 - 120	P	09/29/2025	12:59	LB137351
	Antimony	52.7	50.0	105	80 - 120	P	09/29/2025	12:59	LB137351
	Arsenic	21.6	20.0	108	80 - 120	P	09/29/2025	12:59	LB137351
	Barium	102	100	102	80 - 120	P	09/29/2025	12:59	LB137351
	Beryllium	6.37	6.0	106	80 - 120	P	09/29/2025	12:59	LB137351
	Cadmium	6.29	6.0	105	80 - 120	P	09/29/2025	12:59	LB137351
	Calcium	2090	2000	105	80 - 120	P	09/29/2025	12:59	LB137351
	Chromium	10.3	10.0	103	80 - 120	P	09/29/2025	12:59	LB137351
	Cobalt	30.6	30.0	102	80 - 120	P	09/29/2025	12:59	LB137351
	Copper	21.5	20.0	107	80 - 120	P	09/29/2025	12:59	LB137351
	Iron	104	100	104	80 - 120	P	09/29/2025	12:59	LB137351
	Lead	13.4	12.0	112	80 - 120	P	09/29/2025	12:59	LB137351
	Magnesium	2160	2000	108	80 - 120	P	09/29/2025	12:59	LB137351
	Manganese	21.5	20.0	108	80 - 120	P	09/29/2025	12:59	LB137351
	Nickel	41.9	40.0	105	80 - 120	P	09/29/2025	12:59	LB137351
	Potassium	2000	2000	100	80 - 120	P	09/29/2025	12:59	LB137351
	Selenium	22.5	20.0	113	80 - 120	P	09/29/2025	12:59	LB137351
	Silver	10.1	10.0	101	80 - 120	P	09/29/2025	12:59	LB137351
	Sodium	2080	2000	104	80 - 120	P	09/29/2025	12:59	LB137351
	Thallium	42.7	40.0	107	80 - 120	P	09/29/2025	12:59	LB137351
	Vanadium	37.9	40.0	95	80 - 120	P	09/29/2025	12:59	LB137351
	Zinc	43.4	40.0	109	80 - 120	P	09/29/2025	12:59	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	9800	10000	98	90 - 110	P	09/29/2025	13:42	LB137351
	Antimony	5010	5000	100	90 - 110	P	09/29/2025	13:42	LB137351
	Arsenic	5040	5000	101	90 - 110	P	09/29/2025	13:42	LB137351
	Barium	9840	10000	98	90 - 110	P	09/29/2025	13:42	LB137351
	Beryllium	229	250	92	90 - 110	P	09/29/2025	13:42	LB137351
	Cadmium	2480	2500	99	90 - 110	P	09/29/2025	13:42	LB137351
	Calcium	24500	25000	98	90 - 110	P	09/29/2025	13:42	LB137351
	Chromium	994	1000	99	90 - 110	P	09/29/2025	13:42	LB137351
	Cobalt	2450	2500	98	90 - 110	P	09/29/2025	13:42	LB137351
	Copper	1240	1250	99	90 - 110	P	09/29/2025	13:42	LB137351
	Iron	5180	5000	104	90 - 110	P	09/29/2025	13:42	LB137351
	Lead	4900	5000	98	90 - 110	P	09/29/2025	13:42	LB137351
	Magnesium	24500	25000	98	90 - 110	P	09/29/2025	13:42	LB137351
	Manganese	2430	2500	97	90 - 110	P	09/29/2025	13:42	LB137351
	Nickel	2460	2500	98	90 - 110	P	09/29/2025	13:42	LB137351
	Potassium	25700	25000	103	90 - 110	P	09/29/2025	13:42	LB137351
	Selenium	5120	5000	102	90 - 110	P	09/29/2025	13:42	LB137351
	Silver	1230	1250	99	90 - 110	P	09/29/2025	13:42	LB137351
	Sodium	25700	25000	103	90 - 110	P	09/29/2025	13:42	LB137351
	Thallium	4710	5000	94	90 - 110	P	09/29/2025	13:42	LB137351
	Vanadium	2440	2500	98	90 - 110	P	09/29/2025	13:42	LB137351
	Zinc	2480	2500	99	90 - 110	P	09/29/2025	13:42	LB137351
CCV02	Aluminum	9740	10000	97	90 - 110	P	09/29/2025	14:51	LB137351
	Antimony	4960	5000	99	90 - 110	P	09/29/2025	14:51	LB137351
	Arsenic	4970	5000	99	90 - 110	P	09/29/2025	14:51	LB137351
	Barium	9680	10000	97	90 - 110	P	09/29/2025	14:51	LB137351
	Beryllium	236	250	94	90 - 110	P	09/29/2025	14:51	LB137351
	Cadmium	2440	2500	98	90 - 110	P	09/29/2025	14:51	LB137351
	Calcium	24300	25000	97	90 - 110	P	09/29/2025	14:51	LB137351
	Chromium	984	1000	98	90 - 110	P	09/29/2025	14:51	LB137351
	Cobalt	2420	2500	97	90 - 110	P	09/29/2025	14:51	LB137351
	Copper	1220	1250	98	90 - 110	P	09/29/2025	14:51	LB137351
	Iron	4940	5000	99	90 - 110	P	09/29/2025	14:51	LB137351
	Lead	4840	5000	97	90 - 110	P	09/29/2025	14:51	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	24300	25000	97	90 - 110	P	09/29/2025	14:51	LB137351
	Manganese	2410	2500	96	90 - 110	P	09/29/2025	14:51	LB137351
	Nickel	2430	2500	97	90 - 110	P	09/29/2025	14:51	LB137351
	Potassium	24900	25000	100	90 - 110	P	09/29/2025	14:51	LB137351
	Selenium	5050	5000	101	90 - 110	P	09/29/2025	14:51	LB137351
	Silver	1220	1250	97	90 - 110	P	09/29/2025	14:51	LB137351
	Sodium	24300	25000	97	90 - 110	P	09/29/2025	14:51	LB137351
	Thallium	4620	5000	92	90 - 110	P	09/29/2025	14:51	LB137351
	Vanadium	2430	2500	97	90 - 110	P	09/29/2025	14:51	LB137351
	Zinc	2410	2500	97	90 - 110	P	09/29/2025	14:51	LB137351
CCV03	Aluminum	9740	10000	97	90 - 110	P	09/29/2025	15:53	LB137351
	Antimony	4970	5000	100	90 - 110	P	09/29/2025	15:53	LB137351
	Arsenic	4960	5000	99	90 - 110	P	09/29/2025	15:53	LB137351
	Barium	9450	10000	94	90 - 110	P	09/29/2025	15:53	LB137351
	Beryllium	235	250	94	90 - 110	P	09/29/2025	15:53	LB137351
	Cadmium	2440	2500	98	90 - 110	P	09/29/2025	15:53	LB137351
	Calcium	24100	25000	96	90 - 110	P	09/29/2025	15:53	LB137351
	Chromium	982	1000	98	90 - 110	P	09/29/2025	15:53	LB137351
	Cobalt	2420	2500	97	90 - 110	P	09/29/2025	15:53	LB137351
	Copper	1230	1250	98	90 - 110	P	09/29/2025	15:53	LB137351
	Iron	4890	5000	98	90 - 110	P	09/29/2025	15:53	LB137351
	Lead	4830	5000	97	90 - 110	P	09/29/2025	15:53	LB137351
	Magnesium	24200	25000	97	90 - 110	P	09/29/2025	15:53	LB137351
	Manganese	2370	2500	95	90 - 110	P	09/29/2025	15:53	LB137351
	Nickel	2430	2500	97	90 - 110	P	09/29/2025	15:53	LB137351
	Potassium	24000	25000	96	90 - 110	P	09/29/2025	15:53	LB137351
	Selenium	5030	5000	101	90 - 110	P	09/29/2025	15:53	LB137351
	Silver	1210	1250	97	90 - 110	P	09/29/2025	15:53	LB137351
	Sodium	24100	25000	96	90 - 110	P	09/29/2025	15:53	LB137351
	Thallium	4560	5000	91	90 - 110	P	09/29/2025	15:53	LB137351
	Vanadium	2420	2500	97	90 - 110	P	09/29/2025	15:53	LB137351
	Zinc	2420	2500	97	90 - 110	P	09/29/2025	15:53	LB137351
CCV04	Aluminum	9700	10000	97	90 - 110	P	09/29/2025	16:44	LB137351
	Antimony	4890	5000	98	90 - 110	P	09/29/2025	16:44	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	4870	5000	97	90 - 110	P	09/29/2025	16:44	LB137351
	Barium	9520	10000	95	90 - 110	P	09/29/2025	16:44	LB137351
	Beryllium	231	250	92	90 - 110	P	09/29/2025	16:44	LB137351
	Cadmium	2410	2500	96	90 - 110	P	09/29/2025	16:44	LB137351
	Calcium	24000	25000	96	90 - 110	P	09/29/2025	16:44	LB137351
	Chromium	969	1000	97	90 - 110	P	09/29/2025	16:44	LB137351
	Cobalt	2390	2500	96	90 - 110	P	09/29/2025	16:44	LB137351
	Copper	1210	1250	96	90 - 110	P	09/29/2025	16:44	LB137351
	Iron	4820	5000	96	90 - 110	P	09/29/2025	16:44	LB137351
	Lead	4780	5000	96	90 - 110	P	09/29/2025	16:44	LB137351
	Magnesium	24200	25000	97	90 - 110	P	09/29/2025	16:44	LB137351
	Manganese	2380	2500	95	90 - 110	P	09/29/2025	16:44	LB137351
	Nickel	2390	2500	96	90 - 110	P	09/29/2025	16:44	LB137351
	Potassium	25100	25000	100	90 - 110	P	09/29/2025	16:44	LB137351
	Selenium	4930	5000	99	90 - 110	P	09/29/2025	16:44	LB137351
	Silver	1190	1250	95	90 - 110	P	09/29/2025	16:44	LB137351
	Sodium	24300	25000	97	90 - 110	P	09/29/2025	16:44	LB137351
	Thallium	4750	5000	95	90 - 110	P	09/29/2025	16:44	LB137351
	Vanadium	2410	2500	96	90 - 110	P	09/29/2025	16:44	LB137351
	Zinc	2380	2500	95	90 - 110	P	09/29/2025	16:44	LB137351
CCV05	Aluminum	9620	10000	96	90 - 110	P	09/29/2025	17:36	LB137351
	Antimony	4920	5000	98	90 - 110	P	09/29/2025	17:36	LB137351
	Arsenic	4910	5000	98	90 - 110	P	09/29/2025	17:36	LB137351
	Barium	9290	10000	93	90 - 110	P	09/29/2025	17:36	LB137351
	Beryllium	236	250	94	90 - 110	P	09/29/2025	17:36	LB137351
	Cadmium	2410	2500	97	90 - 110	P	09/29/2025	17:36	LB137351
	Calcium	23800	25000	95	90 - 110	P	09/29/2025	17:36	LB137351
	Chromium	988	1000	99	90 - 110	P	09/29/2025	17:36	LB137351
	Cobalt	2400	2500	96	90 - 110	P	09/29/2025	17:36	LB137351
	Copper	1210	1250	97	90 - 110	P	09/29/2025	17:36	LB137351
	Iron	4920	5000	98	90 - 110	P	09/29/2025	17:36	LB137351
	Lead	4790	5000	96	90 - 110	P	09/29/2025	17:36	LB137351
	Magnesium	23900	25000	96	90 - 110	P	09/29/2025	17:36	LB137351
	Manganese	2360	2500	94	90 - 110	P	09/29/2025	17:36	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	2400	2500	96	90 - 110	P	09/29/2025	17:36	LB137351
	Potassium	26200	25000	105	90 - 110	P	09/29/2025	17:36	LB137351
	Selenium	4980	5000	100	90 - 110	P	09/29/2025	17:36	LB137351
	Silver	1230	1250	98	90 - 110	P	09/29/2025	17:36	LB137351
	Sodium	25100	25000	100	90 - 110	P	09/29/2025	17:36	LB137351
	Thallium	4690	5000	94	90 - 110	P	09/29/2025	17:36	LB137351
	Vanadium	2400	2500	96	90 - 110	P	09/29/2025	17:36	LB137351
	Zinc	2440	2500	98	90 - 110	P	09/29/2025	17:36	LB137351
CCV06	Aluminum	9720	10000	97	90 - 110	P	09/29/2025	18:27	LB137351
	Antimony	4780	5000	96	90 - 110	P	09/29/2025	18:27	LB137351
	Arsenic	4720	5000	94	90 - 110	P	09/29/2025	18:27	LB137351
	Barium	9590	10000	96	90 - 110	P	09/29/2025	18:27	LB137351
	Beryllium	236	250	94	90 - 110	P	09/29/2025	18:27	LB137351
	Cadmium	2370	2500	95	90 - 110	P	09/29/2025	18:27	LB137351
	Calcium	24200	25000	97	90 - 110	P	09/29/2025	18:27	LB137351
	Chromium	954	1000	95	90 - 110	P	09/29/2025	18:27	LB137351
	Cobalt	2380	2500	95	90 - 110	P	09/29/2025	18:27	LB137351
	Copper	1190	1250	95	90 - 110	P	09/29/2025	18:27	LB137351
	Iron	4610	5000	92	90 - 110	P	09/29/2025	18:27	LB137351
	Lead	4720	5000	94	90 - 110	P	09/29/2025	18:27	LB137351
	Magnesium	24200	25000	97	90 - 110	P	09/29/2025	18:27	LB137351
	Manganese	2430	2500	97	90 - 110	P	09/29/2025	18:27	LB137351
	Nickel	2360	2500	94	90 - 110	P	09/29/2025	18:27	LB137351
	Potassium	23700	25000	95	90 - 110	P	09/29/2025	18:27	LB137351
	Selenium	4750	5000	95	90 - 110	P	09/29/2025	18:27	LB137351
	Silver	1160	1250	93	90 - 110	P	09/29/2025	18:27	LB137351
	Sodium	22600	25000	90	90 - 110	P	09/29/2025	18:27	LB137351
	Thallium	4700	5000	94	90 - 110	P	09/29/2025	18:27	LB137351
	Vanadium	2430	2500	97	90 - 110	P	09/29/2025	18:27	LB137351
	Zinc	2340	2500	94	90 - 110	P	09/29/2025	18:27	LB137351
CCV07	Aluminum	9620	10000	96	90 - 110	P	09/29/2025	19:00	LB137351
	Antimony	4870	5000	97	90 - 110	P	09/29/2025	19:00	LB137351
	Arsenic	4820	5000	96	90 - 110	P	09/29/2025	19:00	LB137351
	Barium	9370	10000	94	90 - 110	P	09/29/2025	19:00	LB137351

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	232	250	93	90 - 110	P	09/29/2025	19:00	LB137351
	Cadmium	2390	2500	96	90 - 110	P	09/29/2025	19:00	LB137351
	Calcium	23900	25000	96	90 - 110	P	09/29/2025	19:00	LB137351
	Chromium	963	1000	96	90 - 110	P	09/29/2025	19:00	LB137351
	Cobalt	2390	2500	96	90 - 110	P	09/29/2025	19:00	LB137351
	Copper	1210	1250	96	90 - 110	P	09/29/2025	19:00	LB137351
	Iron	4780	5000	96	90 - 110	P	09/29/2025	19:00	LB137351
	Lead	4730	5000	95	90 - 110	P	09/29/2025	19:00	LB137351
	Magnesium	23800	25000	95	90 - 110	P	09/29/2025	19:00	LB137351
	Manganese	2380	2500	95	90 - 110	P	09/29/2025	19:00	LB137351
	Nickel	2390	2500	96	90 - 110	P	09/29/2025	19:00	LB137351
	Potassium	23800	25000	95	90 - 110	P	09/29/2025	19:00	LB137351
	Selenium	4870	5000	97	90 - 110	P	09/29/2025	19:00	LB137351
	Silver	1190	1250	96	90 - 110	P	09/29/2025	19:00	LB137351
	Sodium	23300	25000	93	90 - 110	P	09/29/2025	19:00	LB137351
	Thallium	4540	5000	91	90 - 110	P	09/29/2025	19:00	LB137351
	Vanadium	2400	2500	96	90 - 110	P	09/29/2025	19:00	LB137351
	Zinc	2400	2500	96	90 - 110	P	09/29/2025	19:00	LB137351

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

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	0.15	0.2	77	70 - 130	CV	09/25/2025	15:03	LB137307
CRI01	Aluminum	91.3	100	91	65 - 135	P	09/29/2025	13:08	LB137351
	Antimony	51.4	50.0	103	65 - 135	P	09/29/2025	13:08	LB137351
	Arsenic	21.9	20.0	110	65 - 135	P	09/29/2025	13:08	LB137351
	Barium	97.6	100	98	65 - 135	P	09/29/2025	13:08	LB137351
	Beryllium	6.38	6.0	106	65 - 135	P	09/29/2025	13:08	LB137351
	Cadmium	6.00	6.0	100	65 - 135	P	09/29/2025	13:08	LB137351
	Calcium	2060	2000	103	65 - 135	P	09/29/2025	13:08	LB137351
	Chromium	9.91	10.0	99	65 - 135	P	09/29/2025	13:08	LB137351
	Cobalt	30.2	30.0	101	65 - 135	P	09/29/2025	13:08	LB137351
	Copper	21.0	20.0	105	65 - 135	P	09/29/2025	13:08	LB137351
	Iron	102	100	102	65 - 135	P	09/29/2025	13:08	LB137351
	Lead	13.2	12.0	110	65 - 135	P	09/29/2025	13:08	LB137351
	Magnesium	2120	2000	106	65 - 135	P	09/29/2025	13:08	LB137351
	Manganese	20.6	20.0	103	65 - 135	P	09/29/2025	13:08	LB137351
	Nickel	41.0	40.0	102	65 - 135	P	09/29/2025	13:08	LB137351
	Potassium	1770	2000	89	65 - 135	P	09/29/2025	13:08	LB137351
	Selenium	19.7	20.0	98	65 - 135	P	09/29/2025	13:08	LB137351
	Silver	9.87	10.0	99	65 - 135	P	09/29/2025	13:08	LB137351
	Sodium	1870	2000	94	65 - 135	P	09/29/2025	13:08	LB137351
	Thallium	42.7	40.0	107	65 - 135	P	09/29/2025	13:08	LB137351
	Vanadium	38.9	40.0	97	65 - 135	P	09/29/2025	13:08	LB137351
	Zinc	41.0	40.0	103	65 - 135	P	09/29/2025	13:08	LB137351

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB47	Mercury	0.076	+/-0.2	U	0.20	CV	09/25/2025	14:54	LB137307

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB42	Mercury	0.076	+/-0.2	U	0.20	CV	09/25/2025	15:01	LB137307
CCB43	Mercury	0.076	+/-0.2	U	0.20	CV	09/25/2025	15:33	LB137307
CCB44	Mercury	0.076	+/-0.2	U	0.20	CV	09/25/2025	16:01	LB137307
CCB45	Mercury	0.076	+/-0.2	U	0.20	CV	09/25/2025	16:23	LB137307

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	14.1	+/-50	J	100	P	09/29/2025	13:03	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	13:03	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	13:03	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	13:03	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	13:03	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	13:03	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	13:03	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	13:03	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	13:03	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	13:03	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	13:03	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	13:03	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	13:03	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	13:03	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	13:03	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	13:03	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	13:03	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	13:03	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	13:03	LB137351
	Thallium	4.38	+/-20	U	40.0	P	09/29/2025	13:03	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	13:03	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	13:03	LB137351

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	13.1	+/-50	J	100	P	09/29/2025	13:46	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	13:46	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	13:46	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	13:46	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	13:46	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	13:46	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	13:46	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	13:46	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	13:46	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	13:46	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	13:46	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	13:46	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	13:46	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	13:46	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	13:46	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	13:46	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	13:46	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	13:46	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	13:46	LB137351
	Thallium	6.68	+/-20	J	40.0	P	09/29/2025	13:46	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	13:46	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	13:46	LB137351
CCB02	Aluminum	11.3	+/-50	U	100	P	09/29/2025	14:55	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	14:55	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	14:55	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	14:55	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	14:55	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	14:55	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	14:55	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	14:55	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	14:55	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	14:55	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	14:55	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	14:55	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	14:55	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	14:55	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	14:55	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	14:55	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	14:55	LB137351

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	10.0	P	09/29/2025	14:55	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	14:55	LB137351
	Thallium	6.88	+/-20	J	40.0	P	09/29/2025	14:55	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	14:55	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	14:55	LB137351
CCB03	Aluminum	11.3	+/-50	U	100	P	09/29/2025	15:57	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	15:57	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	15:57	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	15:57	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	15:57	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	15:57	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	15:57	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	15:57	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	15:57	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	15:57	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	15:57	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	15:57	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	15:57	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	15:57	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	15:57	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	15:57	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	15:57	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	15:57	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	15:57	LB137351
	Thallium	7.88	+/-20	J	40.0	P	09/29/2025	15:57	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	15:57	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	15:57	LB137351
CCB04	Aluminum	11.3	+/-50	U	100	P	09/29/2025	16:48	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	16:48	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	16:48	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	16:48	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	16:48	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	16:48	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	16:48	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	16:48	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	16:48	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	16:48	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	16:48	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	16:48	LB137351

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	2000	P	09/29/2025	16:48	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	16:48	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	16:48	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	16:48	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	16:48	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	16:48	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	16:48	LB137351
	Thallium	4.38	+/-20	U	40.0	P	09/29/2025	16:48	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	16:48	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	16:48	LB137351
CCB05	Aluminum	11.3	+/-50	U	100	P	09/29/2025	17:40	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	17:40	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	17:40	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	17:40	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	17:40	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	17:40	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	17:40	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	17:40	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	17:40	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	17:40	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	17:40	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	17:40	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	17:40	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	17:40	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	17:40	LB137351
	Potassium	1040	+/-1000	J*	2000	P	09/29/2025	17:40	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	17:40	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	17:40	LB137351
	Sodium	986	+/-1000	J	2000	P	09/29/2025	17:40	LB137351
	Thallium	4.38	+/-20	U	40.0	P	09/29/2025	17:40	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	17:40	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	17:40	LB137351
CCB06	Aluminum	11.3	+/-50	U	100	P	09/29/2025	18:31	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	18:31	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	18:31	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	18:31	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	18:31	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	18:31	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	18:31	LB137351

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	18:31	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	18:31	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	18:31	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	18:31	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	18:31	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	18:31	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	18:31	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	18:31	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	18:31	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	18:31	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	18:31	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	18:31	LB137351
	Thallium	4.38	+/-20	U	40.0	P	09/29/2025	18:31	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	18:31	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	18:31	LB137351
CCB07	Aluminum	11.5	+/-50	J	100	P	09/29/2025	19:04	LB137351
	Antimony	6.76	+/-25	U	50.0	P	09/29/2025	19:04	LB137351
	Arsenic	5.12	+/-10	U	20.0	P	09/29/2025	19:04	LB137351
	Barium	14.6	+/-50	U	100	P	09/29/2025	19:04	LB137351
	Beryllium	0.56	+/-3	U	6.00	P	09/29/2025	19:04	LB137351
	Cadmium	0.50	+/-3	U	6.00	P	09/29/2025	19:04	LB137351
	Calcium	234	+/-1000	U	2000	P	09/29/2025	19:04	LB137351
	Chromium	2.12	+/-5	U	10.0	P	09/29/2025	19:04	LB137351
	Cobalt	2.26	+/-15	U	30.0	P	09/29/2025	19:04	LB137351
	Copper	4.60	+/-10	U	20.0	P	09/29/2025	19:04	LB137351
	Iron	23.4	+/-50	U	100	P	09/29/2025	19:04	LB137351
	Lead	2.30	+/-6	U	12.0	P	09/29/2025	19:04	LB137351
	Magnesium	244	+/-1000	U	2000	P	09/29/2025	19:04	LB137351
	Manganese	5.94	+/-10	U	20.0	P	09/29/2025	19:04	LB137351
	Nickel	3.06	+/-20	U	40.0	P	09/29/2025	19:04	LB137351
	Potassium	918	+/-1000	U	2000	P	09/29/2025	19:04	LB137351
	Selenium	9.64	+/-10	U	20.0	P	09/29/2025	19:04	LB137351
	Silver	1.62	+/-5	U	10.0	P	09/29/2025	19:04	LB137351
	Sodium	868	+/-1000	U	2000	P	09/29/2025	19:04	LB137351
	Thallium	4.38	+/-20	U	40.0	P	09/29/2025	19:04	LB137351
	Vanadium	6.26	+/-20	U	40.0	P	09/29/2025	19:04	LB137351
	Zinc	16.7	+/-20	U	40.0	P	09/29/2025	19:04	LB137351

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169847BL		**WATER**		**Batch Number:**	**PB169847**		**Prep Date:**	**09/25/2025**	
	Mercury	0.076	<0.2	U	0.20	CV	09/25/2025	15:36	LB137307

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169847TB		**WATER**		**Batch Number:**	**PB169847**		**Prep Date:**	**09/25/2025**	
	Mercury	0.076	<0.2	U	0.20	CV	09/25/2025	16:06	LB137307

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169831BL		**WATER**		**Batch Number:**	**PB169831**		**Prep Date:**	**09/25/2025**	
	Aluminum	5.67	<25	U	50.0	P	09/29/2025	14:59	LB137351
	Antimony	3.38	<12.5	U	25.0	P	09/29/2025	14:59	LB137351
	Arsenic	2.56	<5	U	10.0	P	09/29/2025	14:59	LB137351
	Barium	7.28	<25	U	50.0	P	09/29/2025	14:59	LB137351
	Beryllium	0.28	<1.5	U	3.00	P	09/29/2025	14:59	LB137351
	Cadmium	0.25	<1.5	U	3.00	P	09/29/2025	14:59	LB137351
	Calcium	117	<500	U	1000	P	09/29/2025	14:59	LB137351
	Chromium	1.06	<2.5	U	5.00	P	09/29/2025	14:59	LB137351
	Cobalt	1.13	<7.5	U	15.0	P	09/29/2025	14:59	LB137351
	Copper	2.30	<5	U	10.0	P	09/29/2025	14:59	LB137351
	Iron	11.7	<25	U	50.0	P	09/29/2025	14:59	LB137351
	Lead	1.15	<3	U	6.00	P	09/29/2025	14:59	LB137351
	Magnesium	122	<500	U	1000	P	09/29/2025	14:59	LB137351
	Manganese	2.97	<5	U	10.0	P	09/29/2025	14:59	LB137351
	Nickel	1.53	<10	U	20.0	P	09/29/2025	14:59	LB137351
	Potassium	459	<500	U	1000	P	09/29/2025	14:59	LB137351
	Selenium	4.82	<5	U	10.0	P	09/29/2025	14:59	LB137351
	Silver	0.81	<2.5	U	5.00	P	09/29/2025	14:59	LB137351
	Sodium	434	<500	U	1000	P	09/29/2025	14:59	LB137351
	Thallium	2.19	<10	U	20.0	P	09/29/2025	14:59	LB137351
	Vanadium	3.13	<10	U	20.0	P	09/29/2025	14:59	LB137351
	Zinc	8.33	<10	U	20.0	P	09/29/2025	14:59	LB137351

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169831TB		**WATER**		**Batch Number:**	**PB169831**		**Prep Date:**	**09/25/2025**	
	Aluminum	7.68	<25	J	50.0	P	09/29/2025	18:06	LB137351
	Antimony	3.38	<12.5	U	25.0	P	09/29/2025	18:06	LB137351
	Arsenic	2.56	<5	U	10.0	P	09/29/2025	18:06	LB137351
	Barium	7.28	<25	U	50.0	P	09/29/2025	18:06	LB137351
	Beryllium	0.28	<1.5	U	3.00	P	09/29/2025	18:06	LB137351
	Cadmium	0.25	<1.5	U	3.00	P	09/29/2025	18:06	LB137351
	Calcium	117	<500	U	1000	P	09/29/2025	18:06	LB137351
	Chromium	1.06	<2.5	U	5.00	P	09/29/2025	18:06	LB137351
	Cobalt	1.13	<7.5	U	15.0	P	09/29/2025	18:06	LB137351
	Copper	2.30	<5	U	10.0	P	09/29/2025	18:06	LB137351
	Iron	11.7	<25	U	50.0	P	09/29/2025	18:06	LB137351
	Lead	1.15	<3	U	6.00	P	09/29/2025	18:06	LB137351
	Magnesium	122	<500	U	1000	P	09/29/2025	18:06	LB137351
	Manganese	2.97	<5	U	10.0	P	09/29/2025	18:06	LB137351
	Nickel	1.53	<10	U	20.0	P	09/29/2025	18:06	LB137351

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Instrument: P4

Potassium	459	<500	U	1000	P	09/29/2025	18:06	LB137351
Selenium	4.82	<5	U	10.0	P	09/29/2025	18:06	LB137351
Silver	0.81	<2.5	U	5.00	P	09/29/2025	18:06	LB137351
Sodium	434	<500	U	1000	P	09/29/2025	18:06	LB137351
Thallium	2.19	<10	U	20.0	P	09/29/2025	18:06	LB137351
Vanadium	3.13	<10	U	20.0	P	09/29/2025	18:06	LB137351
Zinc	8.33	<10	U	20.0	P	09/29/2025	18:06	LB137351

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	246000	255000	96	216000	294000	09/29/2025	13:13	LB137351
	Antimony	-1.32			-50	50	09/29/2025	13:13	LB137351
	Arsenic	4.59			-20	20	09/29/2025	13:13	LB137351
	Barium	2.06	6.0	34	-94	106	09/29/2025	13:13	LB137351
	Beryllium	3.40			-6	6	09/29/2025	13:13	LB137351
	Cadmium	1.18	1.0	118	-5	7	09/29/2025	13:13	LB137351
	Calcium	235000	245000	96	208000	282000	09/29/2025	13:13	LB137351
	Chromium	48.3	52.0	93	42	62	09/29/2025	13:13	LB137351
	Cobalt	0.77			-30	30	09/29/2025	13:13	LB137351
	Copper	21.1	2.0	1055	-18	22	09/29/2025	13:13	LB137351
	Iron	98100	101000	97	85600	116500	09/29/2025	13:13	LB137351
	Lead	0.53			-12	12	09/29/2025	13:13	LB137351
	Magnesium	248000	255000	97	216000	294000	09/29/2025	13:13	LB137351
	Manganese	-1.62	7.0	23	-13	27	09/29/2025	13:13	LB137351
	Nickel	3.83	2.0	192	-38	42	09/29/2025	13:13	LB137351
	Potassium	-3.64			0	0	09/29/2025	13:13	LB137351
	Selenium	3.75			-20	20	09/29/2025	13:13	LB137351
	Silver	0.65			-10	10	09/29/2025	13:13	LB137351
	Sodium	37.7			0	0	09/29/2025	13:13	LB137351
	Thallium	1.22			-40	40	09/29/2025	13:13	LB137351
	Vanadium	1.21			-40	40	09/29/2025	13:13	LB137351
	Zinc	1.67			-40	40	09/29/2025	13:13	LB137351
ICSAB01	Aluminum	250000	247000	101	209000	285000	09/29/2025	13:17	LB137351
	Antimony	619	618	100	525	711	09/29/2025	13:17	LB137351
	Arsenic	112	104	108	88.4	120	09/29/2025	13:17	LB137351
	Barium	502	537	94	437	637	09/29/2025	13:17	LB137351
	Beryllium	495	495	100	420	570	09/29/2025	13:17	LB137351
	Cadmium	993	972	102	826	1120	09/29/2025	13:17	LB137351
	Calcium	238000	235000	101	199000	271000	09/29/2025	13:17	LB137351
	Chromium	549	542	101	460	624	09/29/2025	13:17	LB137351
	Cobalt	499	476	105	404	548	09/29/2025	13:17	LB137351
	Copper	507	511	99	434	588	09/29/2025	13:17	LB137351
	Iron	96800	99300	98	84400	114500	09/29/2025	13:17	LB137351
	Lead	49.8	49.0	102	37	61	09/29/2025	13:17	LB137351
	Magnesium	251000	248000	101	210000	286000	09/29/2025	13:17	LB137351
	Manganese	494	507	97	430	584	09/29/2025	13:17	LB137351
	Nickel	991	954	104	810	1100	09/29/2025	13:17	LB137351
	Potassium	-56.4			0	0	09/29/2025	13:17	LB137351
	Selenium	57.4	46.0	125	26	66	09/29/2025	13:17	LB137351
	Silver	207	201	103	170	232	09/29/2025	13:17	LB137351
	Sodium	34.0			0	0	09/29/2025	13:17	LB137351
	Thallium	115	108	106	68	148	09/29/2025	13:17	LB137351

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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	490	491	100	417	565	09/29/2025	13:17	LB137351
	Zinc	1020	952	107	809	1095	09/29/2025	13:17	LB137351

METAL QC DATA

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Weston Solutions, Inc. **level:** low **sdg no.:** Q3179

contract: ROYF02 **lab code:** ACE

matrix: Water **sample id:** Q3179-01 **client id:** EME-TS14-01MS

Percent Solids for Sample: NA **Spiked ID:** Q3179-02 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	1220		283		1000	94		P
Antimony	ug/L	75 - 125	390		25.0	U	400	98		P
Arsenic	ug/L	75 - 125	382		10.0	U	400	96		P
Barium	ug/L	75 - 125	221		130		100	91		P
Beryllium	ug/L	75 - 125	91.7		3.00	U	100	92		P
Cadmium	ug/L	75 - 125	91.4		0.95	J	100	90		P
Calcium	ug/L	75 - 125	147000		152000		500	-854		P
Chromium	ug/L	75 - 125	191		3.87	J	200	94		P
Cobalt	ug/L	75 - 125	93.4		15.0	U	100	93		P
Copper	ug/L	75 - 125	143		4.32	J	150	92		P
Iron	ug/L	75 - 125	1400		51.1		1500	90		P
Lead	ug/L	75 - 125	444		6.00	U	500	89		P
Magnesium	ug/L	75 - 125	18800		18500		1000	34		P
Manganese	ug/L	75 - 125	3910		3940		100	-26		P
Mercury	ug/L	75 - 125	4.42		0.20	U	4.0	110		CV
Nickel	ug/L	75 - 125	232		2.26	J	250	92		P
Potassium	ug/L	75 - 125	15100		11200		5000	78		P
Selenium	ug/L	75 - 125	952		10.0	U	1000	95		P
Silver	ug/L	75 - 125	34.3		5.00	U	37.5	92		P
Sodium	ug/L	75 - 125	7040		5990		1500	70	N	P
Thallium	ug/L	75 - 125	832		20.0	U	1000	83		P
Vanadium	ug/L	75 - 125	141		20.0	U	150	94		P
Zinc	ug/L	75 - 125	159		64.5		100	95		P

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Weston Solutions, Inc. **level:** low **sdg no.:** Q3179

contract: ROYF02 **lab code:** ACE

matrix: Water **sample id:** Q3179-01 **client id:** EME-TS14-01MSD

Percent Solids for Sample: NA **Spiked ID:** Q3179-03 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	1230		283		1000	95		P
Antimony	ug/L	75 - 125	396		25.0	U	400	99		P
Arsenic	ug/L	75 - 125	390		10.0	U	400	98		P
Barium	ug/L	75 - 125	222		130		100	92		P
Beryllium	ug/L	75 - 125	93.6		3.00	U	100	94		P
Cadmium	ug/L	75 - 125	92.9		0.95	J	100	92		P
Calcium	ug/L	75 - 125	149000		152000		500	-628		P
Chromium	ug/L	75 - 125	194		3.87	J	200	95		P
Cobalt	ug/L	75 - 125	94.8		15.0	U	100	95		P
Copper	ug/L	75 - 125	145		4.32	J	150	94		P
Iron	ug/L	75 - 125	1410		51.1		1500	90		P
Lead	ug/L	75 - 125	452		6.00	U	500	90		P
Magnesium	ug/L	75 - 125	18900		18500		1000	45		P
Manganese	ug/L	75 - 125	3950		3940		100	14		P
Mercury	ug/L	75 - 125	3.97		0.20	U	4.0	99		CV
Nickel	ug/L	75 - 125	236		2.26	J	250	93		P
Potassium	ug/L	75 - 125	15100		11200		5000	79		P
Selenium	ug/L	75 - 125	971		10.0	U	1000	97		P
Silver	ug/L	75 - 125	31.3		5.00	U	37.5	84		P
Sodium	ug/L	75 - 125	7060		5990		1500	71	N	P
Thallium	ug/L	75 - 125	891		20.0	U	1000	89		P
Vanadium	ug/L	75 - 125	145		20.0	U	150	97		P
Zinc	ug/L	75 - 125	161		64.5		100	97		P

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

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Matrix: Water **Level:** LOW **Client ID:** EME-TS14-01A

Sample ID: Q3179-01 **Spiked ID:** Q3179-01A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Sodium	ug/L	75 - 125	7560		5990		1500	105		P

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

Metals

- 6 -
DUPLICATE SAMPLE SUMMARY

Client: Weston Solutions, Inc. **Level:** LOW **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q3179-01 **Client ID:** EME-TS14-01DUP

Percent Solids for Sample: NA **Duplicate ID** Q3179-01DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	283		294		4		P
Antimony	ug/L	20	25.0	U	25.0	U			P
Arsenic	ug/L	20	10.0	U	10.0	U			P
Barium	ug/L	20	130		131		1		P
Beryllium	ug/L	20	3.00	U	3.00	U			P
Cadmium	ug/L	20	0.95	J	1.04	J	9		P
Calcium	ug/L	20	152000		150000		1		P
Chromium	ug/L	20	3.87	J	2.50	J	43		P
Cobalt	ug/L	20	15.0	U	15.0	U			P
Copper	ug/L	20	4.32	J	4.48	J	4		P
Iron	ug/L	20	51.1		42.2	J	19		P
Lead	ug/L	20	6.00	U	1.33	J	200.0		P
Magnesium	ug/L	20	18500		18200		2		P
Manganese	ug/L	20	3940		3900		1		P
Mercury	ug/L	20	0.20	U	0.20	U			CV
Nickel	ug/L	20	2.26	J	2.20	J	3		P
Potassium	ug/L	20	11200		11700		4		P
Selenium	ug/L	20	10.0	U	10.0	U			P
Silver	ug/L	20	5.00	U	5.00	U			P
Sodium	ug/L	20	5990		6220		4		P
Thallium	ug/L	20	20.0	U	20.0	U			P
Vanadium	ug/L	20	20.0	U	20.0	U			P
Zinc	ug/L	20	64.5		64.2		0		P

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

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Weston Solutions, Inc. **Level:** LOW **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q3179-02 **Client ID:** EME-TS14-01MSD

Percent Solids for Sample: NA **Duplicate ID** Q3179-03 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	1220		1230		1		P
Antimony	ug/L	20	390		396		2		P
Arsenic	ug/L	20	382		390		2		P
Barium	ug/L	20	221		222		0		P
Beryllium	ug/L	20	91.7		93.6		2		P
Cadmium	ug/L	20	91.4		92.9		2		P
Calcium	ug/L	20	147000		149000		1		P
Chromium	ug/L	20	191		194		2		P
Cobalt	ug/L	20	93.4		94.8		1		P
Copper	ug/L	20	143		145		1		P
Iron	ug/L	20	1400		1410		1		P
Lead	ug/L	20	444		452		2		P
Magnesium	ug/L	20	18800		18900		1		P
Manganese	ug/L	20	3910		3950		1		P
Mercury	ug/L	20	4.42		3.97		11		CV
Nickel	ug/L	20	232		236		2		P
Potassium	ug/L	20	15100		15100		0		P
Selenium	ug/L	20	952		971		2		P
Silver	ug/L	20	34.3		31.3		9		P
Sodium	ug/L	20	7040		7060		0		P
Thallium	ug/L	20	832		891		7		P
Vanadium	ug/L	20	141		145		3		P
Zinc	ug/L	20	159		161		1		P

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

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169831BS							
Aluminum	ug/L	1000	972		97	80 - 120	P
Antimony	ug/L	400	395		99	80 - 120	P
Arsenic	ug/L	400	385		96	80 - 120	P
Barium	ug/L	100	92.7		93	80 - 120	P
Beryllium	ug/L	100	99.1		99	80 - 120	P
Cadmium	ug/L	100	95.3		95	80 - 120	P
Calcium	ug/L	500	493	J	99	80 - 120	P
Chromium	ug/L	200	197		98	80 - 120	P
Cobalt	ug/L	100	96.2		96	80 - 120	P
Copper	ug/L	150	149		99	80 - 120	P
Iron	ug/L	1500	1450		97	80 - 120	P
Lead	ug/L	500	469		94	80 - 120	P
Magnesium	ug/L	1000	958	J	96	80 - 120	P
Manganese	ug/L	100	97.1		97	80 - 120	P
Nickel	ug/L	250	240		96	80 - 120	P
Potassium	ug/L	5000	4740		95	80 - 120	P
Selenium	ug/L	1000	983		98	80 - 120	P
Silver	ug/L	37.5	36.6		98	80 - 120	P
Sodium	ug/L	1500	1470		98	80 - 120	P
Thallium	ug/L	1000	1150		115	80 - 120	P
Vanadium	ug/L	150	146		97	80 - 120	P
Zinc	ug/L	100	99.0		99	80 - 120	P

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169847BS							
Mercury	ug/L	4.0	4.32		108	80 - 120	CV

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

EME-TS14-01L

Lab Name: Alliance **Contract:** ROYF02

Lab Code: ACE **Lb No.:** lb137351 **Lab Sample ID :** Q3179-01L **SDG No.:** Q3179

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	283		309		9		P
Antimony	25.0	U	125	U			P
Arsenic	10.0	U	50.0	U			P
Barium	130		128	J	1		P
Beryllium	3.00	U	15.0	U			P
Cadmium	0.95	J	15.0	U	100.0		P
Calcium	152000		153000		1		P
Chromium	3.87	J	25.0	U	100.0		P
Cobalt	15.0	U	75.0	U			P
Copper	4.32	J	50.0	U	100.0		P
Iron	51.1		250	U	100.0		P
Lead	6.00	U	30.0	U			P
Magnesium	18500		18700		1		P
Manganese	3940		4040		3		P
Mercury	0.20	U	1.00	U			CV
Nickel	2.26	J	100	U	100.0		P
Potassium	11200		11700		5		P
Selenium	10.0	U	50.0	U			P
Silver	5.00	U	25.0	U			P
Sodium	5990		6750		13		P
Thallium	20.0	U	100	U			P
Vanadium	20.0	U	100	U			P
Zinc	64.5		61.3	J	5		P

METAL PREPARATION & INSTRUMENT DATA

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **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

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169831**						
PB169831BL	PB169831BL	MB	WATER	09/25/2025	50.0	25.0	
PB169831BS	PB169831BS	LCS	WATER	09/25/2025	50.0	25.0	
PB169831TB	PB169831TB	MB	WATER	09/25/2025	50.0	25.0	
Q3179-01	EME-TS14-01	SAM	WATER	09/25/2025	50.0	25.0	
Q3179-01DUP	EME-TS14-01DUP	DUP	WATER	09/25/2025	50.0	25.0	
Q3179-02	EME-TS14-01MS	MS	WATER	09/25/2025	50.0	25.0	
Q3179-03	EME-TS14-01MSD	MSD	WATER	09/25/2025	50.0	25.0	

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Weston Solutions, Inc. **SDG No.:** Q3179

Contract: ROYF02 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169847**						
PB169847BL	PB169847BL	MB	WATER	09/25/2025	30.0	30.0	
PB169847BS	PB169847BS	LCS	WATER	09/25/2025	30.0	30.0	
PB169847TB	PB169847TB	MB	WATER	09/25/2025	30.0	30.0	
Q3179-01	EME-TS14-01	SAM	WATER	09/25/2025	30.0	30.0	
Q3179-01DUP	EME-TS14-01DUP	DUP	WATER	09/25/2025	30.0	30.0	
Q3179-02	EME-TS14-01MS	MS	WATER	09/25/2025	30.0	30.0	
Q3179-03	EME-TS14-01MSD	MSD	WATER	09/25/2025	30.0	30.0	

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Weston Solutions, Inc. **Contract:** ROYF02

Lab code: ACE **Sdg no.:** Q3179

Instrument id number: **Method:** **Run number:** LB137307

Start date: 09/25/2025 **End date:** 09/25/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1433	HG
S0.2	S0.2	1	1435	HG
S2.5	S2.5	1	1437	HG
S5	S5	1	1440	HG
S7.5	S7.5	1	1442	HG
S10	S10	1	1449	HG
ICV47	ICV47	1	1452	HG
ICB47	ICB47	1	1454	HG
CCV42	CCV42	1	1458	HG
CCB42	CCB42	1	1501	HG
CRA	CRA	1	1503	HG
CCV43	CCV43	1	1531	HG
CCB43	CCB43	1	1533	HG
PB169847BL	PB169847BL	1	1536	HG
PB169847BS	PB169847BS	1	1538	HG
Q3179-01	EME-TS14-01	1	1550	HG
Q3179-01DUP	EME-TS14-01DUP	1	1552	HG
Q3179-02	EME-TS14-01MS	1	1554	HG
Q3179-03	EME-TS14-01MSD	1	1557	HG
CCV44	CCV44	1	1559	HG
CCB44	CCB44	1	1601	HG
PB169847TB	PB169847TB	1	1606	HG
Q3179-01L	EME-TS14-01L	5	1613	HG
CCV45	CCV45	1	1621	HG
CCB45	CCB45	1	1623	HG

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Weston Solutions, Inc. **Contract:** ROYF02

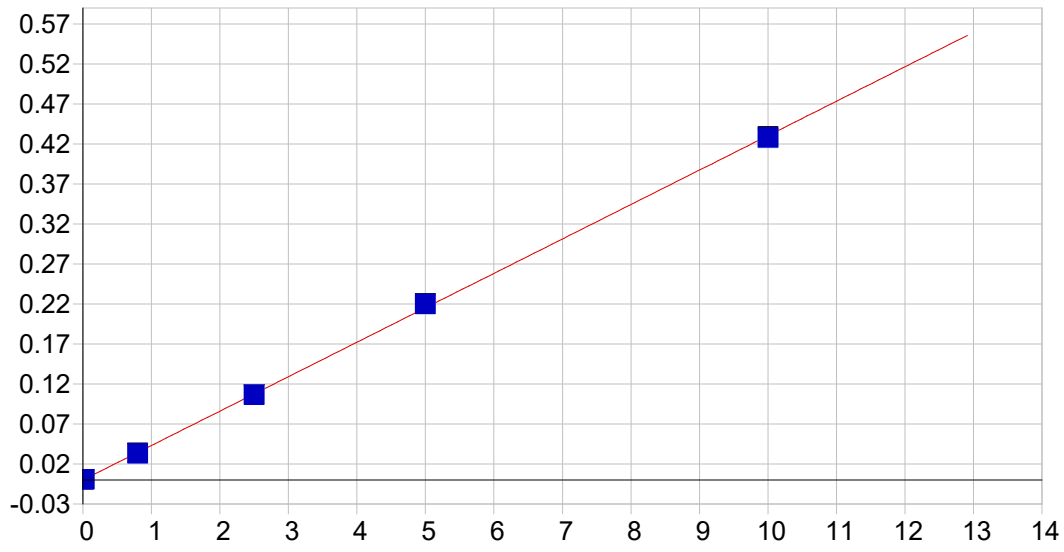
Lab code: ACE **Sdg no.:** Q3179

Instrument id number: **Method:** **Run number:** LB137351

Start date: 09/29/2025 **End date:** 09/29/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1211	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	1216	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	1220	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	1224	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	1228	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	1232	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	1255	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	1259	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	1303	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	1308	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	1313	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	1317	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	1342	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	1346	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1451	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	1455	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169831BL	PB169831BL	1	1459	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169831BS	PB169831BS	1	1504	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	1553	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	1557	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	1644	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	1648	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	1736	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	1740	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169831TB	PB169831TB	1	1806	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-01	EME-TS14-01	1	1822	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	1827	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	1831	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-01DUP	EME-TS14-01DUP	1	1835	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-01L	EME-TS14-01L	5	1839	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-02	EME-TS14-01MS	1	1844	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-03	EME-TS14-01MSD	1	1848	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q3179-01A	EME-TS14-01A	1	1851	Na
CCV07	CCV07	1	1900	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	1904	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

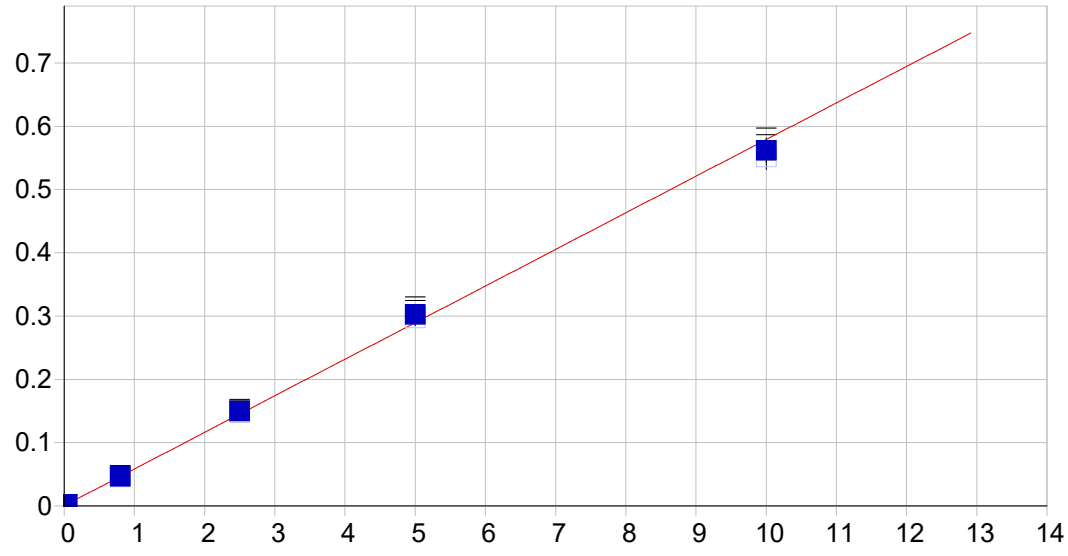


As 189.042 {479}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.043040	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999892	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.002533		
Predicted MQL:	0.008442		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00001	.000	1
S1	.02000	.02249	.002	12.5	.00097	.000	1
S3	2.5000	2.4743	-.026	-1.03	.10639	.000	1
S4	5.0000	5.1071	.107	2.14	.21959	.001	1
S5	10.000	9.9404	-.060	-.596	.42739	.001	1
S2	.80000	.77573	-.024	-3.03	.03336	.000	1

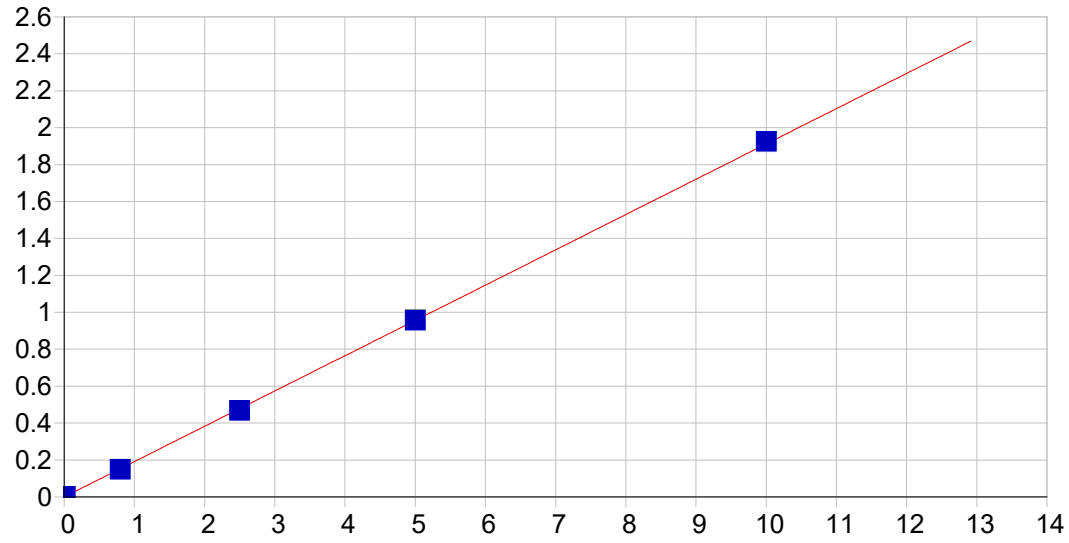


Tl 190.856 {477}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000473	Re-Slope:	1.000000
A1 (Gain):	0.057847	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999411	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.002348		
Predicted MQL:	0.007827		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00047	.000	1
S1	.04000	.04096	.001	2.41	.00269	.000	1
S3	2.5000	2.5799	.080	3.20	.14707	.003	1
S4	5.0000	5.2189	.219	4.38	.29710	.012	1
S5	10.000	9.7062	-.294	-2.94	.55140	.020	1
S2	.80000	.79404	-.006	-.745	.04556	.002	1

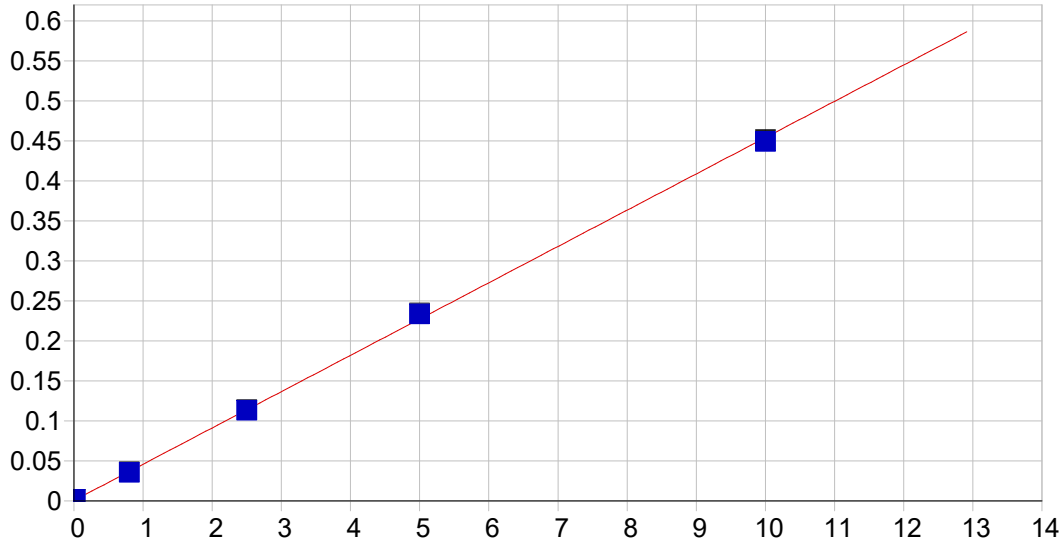


Pb 220.353 {453}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000219	Re-Slope:	1.000000
A1 (Gain):	0.191143	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999936	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	0.001464		
Predicted MQL:	0.004880		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00022	.000	1
S1	.01200	.01305	.001	8.75	.00267	.000	1
S3	2.5000	2.4478	-.052	-2.09	.46756	.001	1
S4	5.0000	5.0036	.004	.072	.95556	.000	1
S5	10.000	10.070	.070	.705	1.9230	.001	1
S2	.80000	.77713	-.023	-2.86	.14859	.000	1

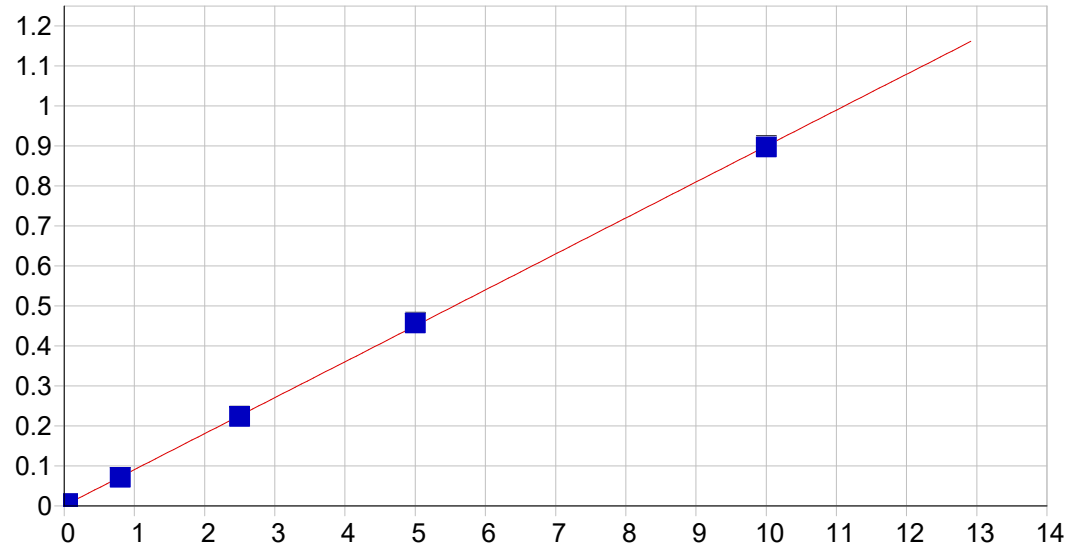


Se 196.090 {472}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000515	Re-Slope:	1.000000
A1 (Gain):	0.045362	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999833	Status:	OK.
Std Error of Est:	0.000019		
Predicted MDL:	0.003154		
Predicted MQL:	0.010515		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00051	.000	1
S1	.02000	.02189	.002	9.46	.00151	.000	1
S3	2.5000	2.4885	-.011	-.459	.11337	.000	1
S4	5.0000	5.1417	.142	2.83	.23369	.001	1
S5	10.000	9.8916	-.108	-1.08	.44909	.002	1
S2	.80000	.77628	-.024	-2.96	.03572	.000	1

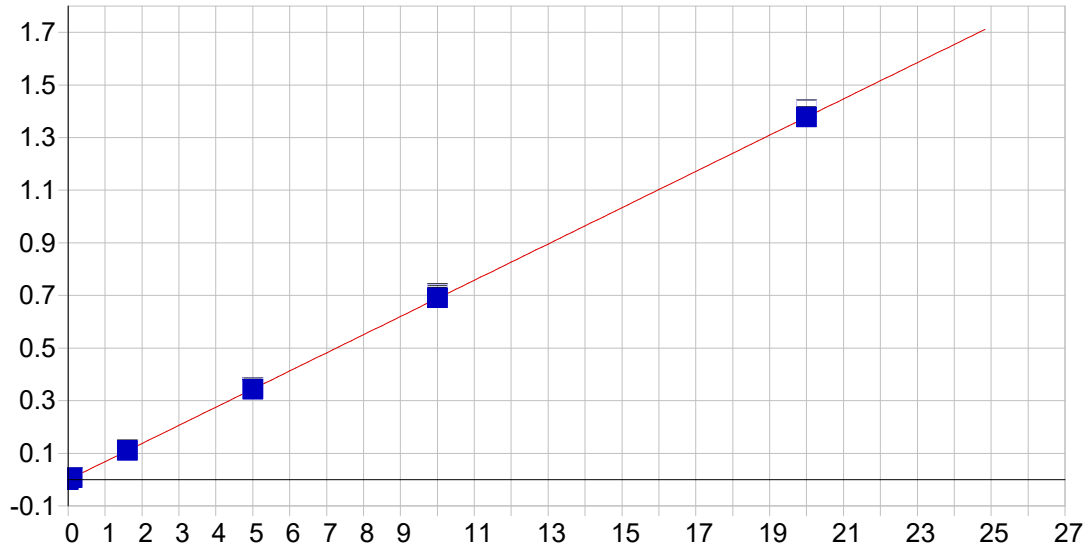


Sb 206.833 {463}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000858	Re-Slope:	1.000000
A1 (Gain):	0.089893	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999948	Status:	OK.
Std Error of Est:	0.000034		
Predicted MDL:	0.002062		
Predicted MQL:	0.006873		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00086	.000	1
S1	.05000	.05187	.002	3.74	.00553	.000	1
S3	2.5000	2.4752	-.025	-.991	.22398	.000	1
S4	5.0000	5.0730	.073	1.46	.45811	.001	1
S5	10.000	9.9686	-.031	-.314	.89941	.002	1
S2	.80000	.78132	-.019	-2.33	.07129	.000	1

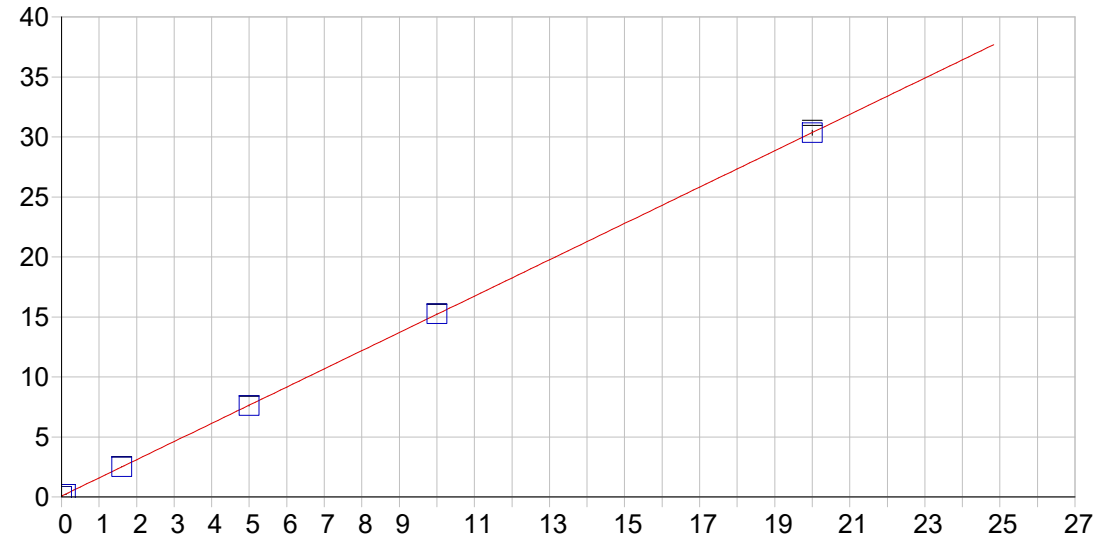


Al 396.152 { 85}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000513	Re-Slope:	1.000000
A1 (Gain):	0.068932	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	OK.
Std Error of Est:	0.000021		
Predicted MDL:	0.014386		
Predicted MQL:	0.047952		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00051	.001	1
S1	.10000	.10691	.007	6.91	.00739	.000	1
S3	5.0000	4.9798	-.020	-.403	.34944	.001	1
S4	10.000	10.021	.021	.210	.70363	.002	1
S5	20.000	19.991	-.009	-.045	1.4043	.001	1
S2	1.6000	1.6008	.001	.049	.11197	.000	1

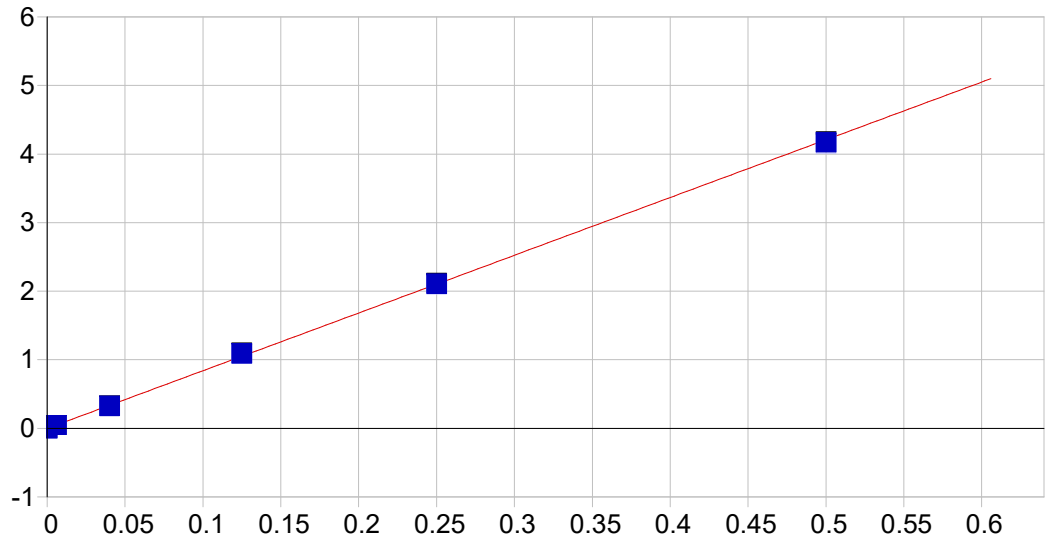


Ba 493.409 { 68}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.071241	Re-Slope:	1.000000
A1 (Gain):	1.514475	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000396		
Predicted MDL:	0.001685		
Predicted MQL:	0.005618		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.07124	.000	1
S1	.10000	.09940	-.001	-.595	.22179	.001	1
S3	5.0000	4.9673	-.033	-.655	7.5940	.016	1
S4	10.000	10.024	.024	.240	15.252	.013	1
S5	20.000	19.993	-.007	-.037	30.349	.212	1
S2	1.6000	1.6168	.017	1.05	2.5199	.009	1

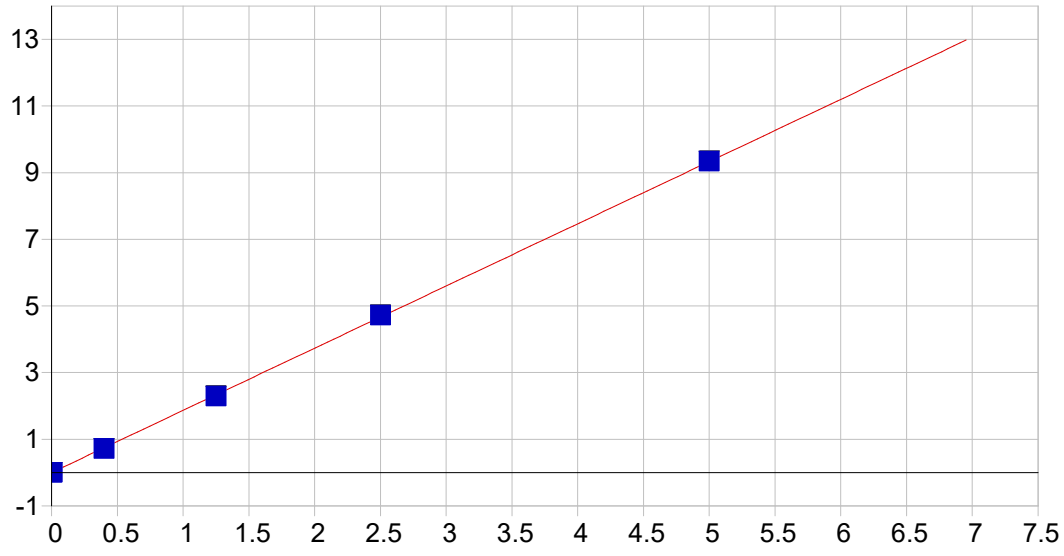


Be 234.861 {144}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001766	Re-Slope:	1.000000
A1 (Gain):	8.419265	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999848	Status:	OK.
Std Error of Est:	0.000421		
Predicted MDL:	0.000084		
Predicted MQL:	0.000279		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00177	.001	1
S1	.00600	.00632	.000	5.40	.05110	.000	1
S3	.12500	.12991	.005	3.93	1.0873	.008	1
S4	.25000	.25037	.000	.149	2.0968	.010	1
S5	.50000	.49536	-.005	-.928	4.1499	.010	1
S2	.04000	.03903	-.001	-2.42	.32534	.002	1

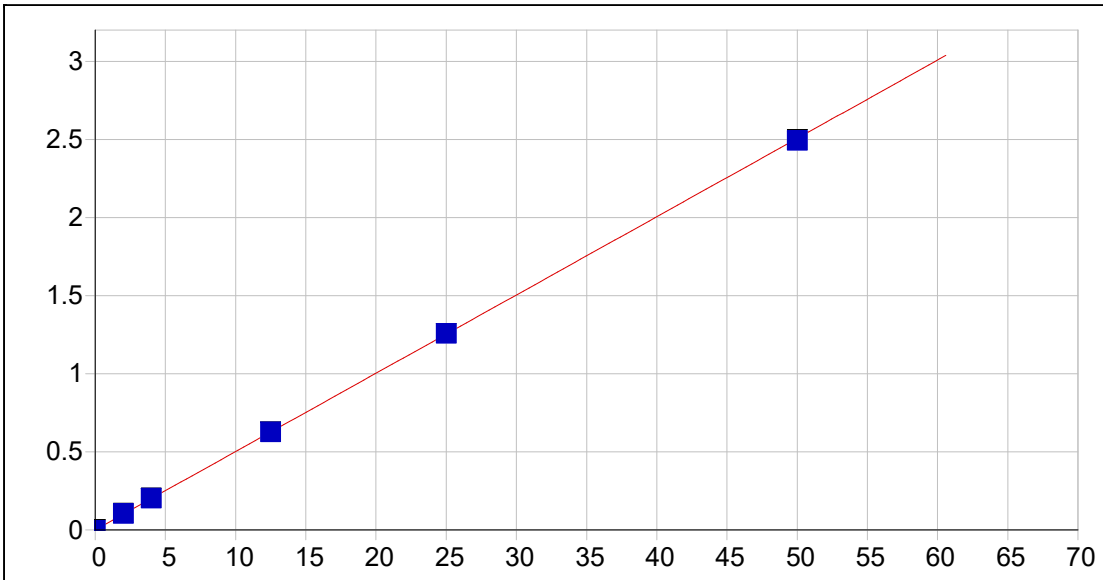


Cd 226.502 {449}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000346	Re-Slope:	1.000000
A1 (Gain):	1.866738	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999936	Status:	OK.
Std Error of Est:	0.000192		
Predicted MDL:	0.000116		
Predicted MQL:	0.000388		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00035	.000	1
S1	.00600	.00610	.000	1.63	.01107	.000	1
S3	1.2500	1.2292	-.021	-1.67	2.2957	.004	1
S4	2.5000	2.5280	.028	1.12	4.7218	.007	1
S5	5.0000	5.0069	.007	.139	9.3524	.011	1
S2	.40000	.38584	-.014	-3.54	.72041	.002	1

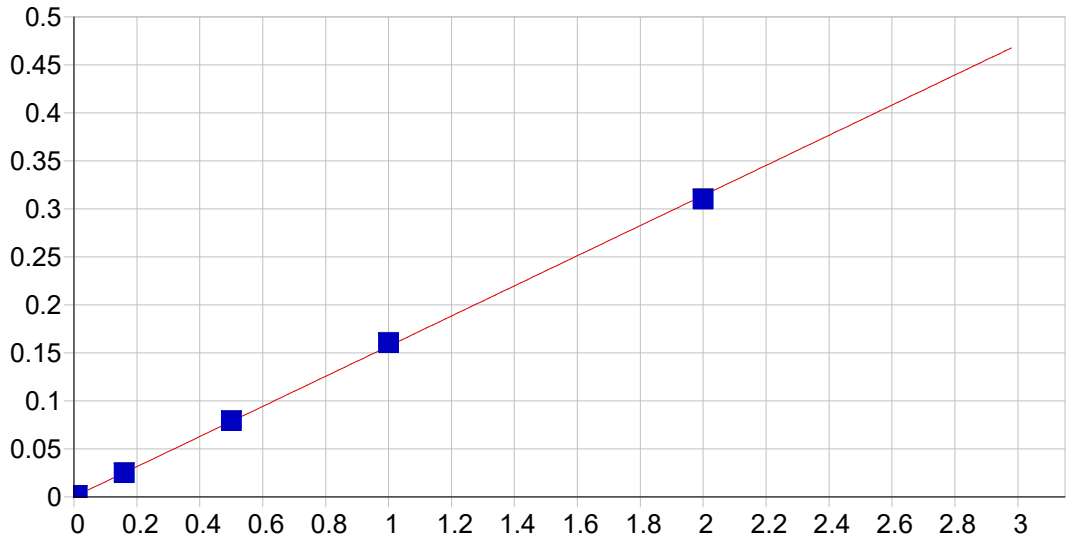


Ca 373.690 { 90}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000580	Re-Slope:	1.000000
A1 (Gain):	0.050114	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999968	Status:	OK.
Std Error of Est:	0.000211		
Predicted MDL:	0.015569		
Predicted MQL:	0.051898		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00011	-.000	.000	.00057	.000	1
S2	4.0000	4.0336	.034	.839	.20272	.001	1
S3	12.500	12.516	.016	.127	.62780	.001	1
S4	25.000	25.101	.101	.405	1.2585	.000	1
S5	50.000	49.759	-.241	-.481	2.4942	.006	1
S1	2.0000	2.0899	.090	4.49	.10531	.001	1

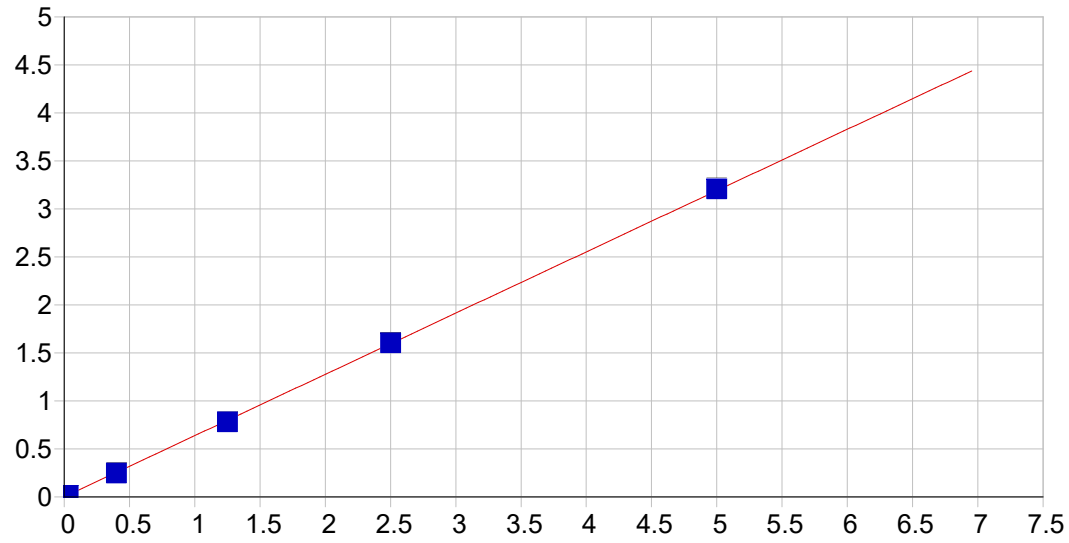


Cr 267.716 {126}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000131	Re-Slope:	1.000000
A1 (Gain):	0.156919	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999884	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.000498		
Predicted MQL:	0.001661		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00013	.000	1
S1	.01000	.01008	.000	.801	.00172	.000	1
S3	.50000	.50419	.004	.838	.07931	.000	1
S4	1.0000	1.0222	.022	2.22	.16067	.000	1
S5	2.0000	1.9755	-.025	-1.23	.31038	.000	1
S2	.16000	.15799	-.002	-1.26	.02494	.000	1

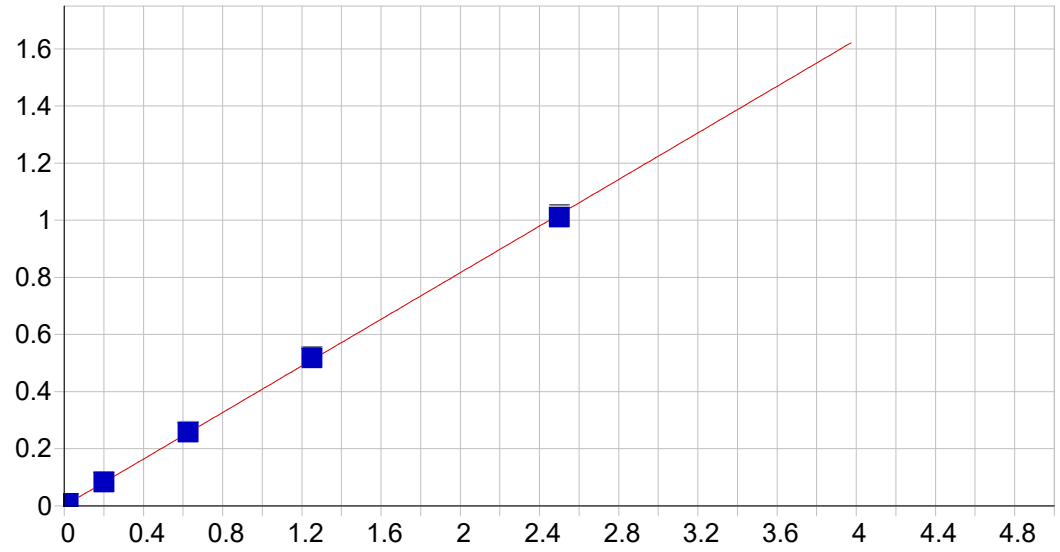


Co 228.616 {448}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000177	Re-Slope:	1.000000
A1 (Gain):	0.638123	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999942	Status:	OK.
Std Error of Est:	0.000139		
Predicted MDL:	0.000302		
Predicted MQL:	0.001007		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00018	.000	1
S1	.03000	.03016	.000	.521	.01934	.000	1
S3	1.2500	1.2241	-.026	-2.07	.78265	.001	1
S4	2.5000	2.5103	.010	.410	1.6047	.001	1
S5	5.0000	5.0271	.027	.542	3.2135	.003	1
S2	.40000	.38841	-.012	-2.90	.24846	.000	1

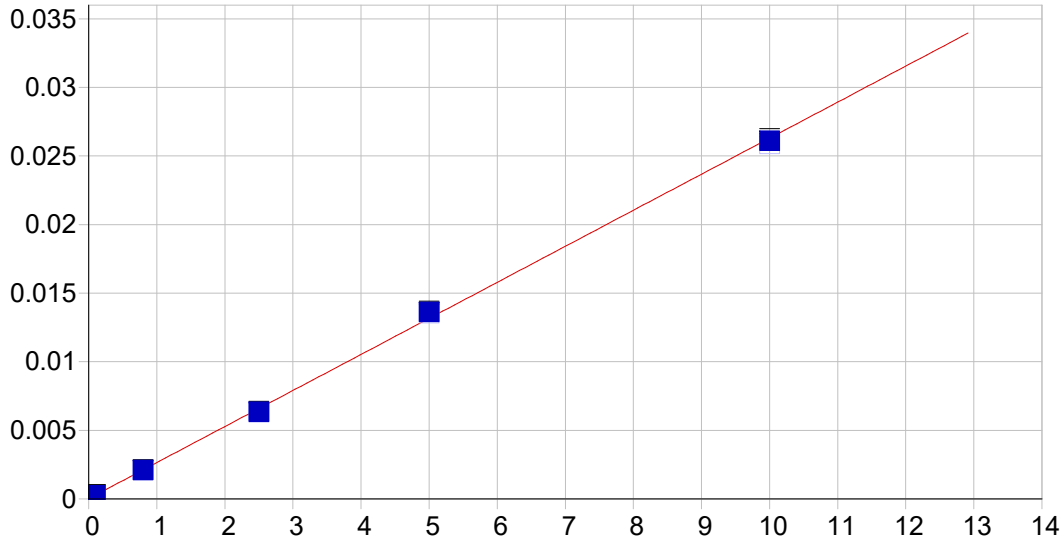


Cu 224.700 {450}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000947	Re-Slope:	1.000000
A1 (Gain):	0.407844	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999935	Status:	OK.
Std Error of Est:	0.000055		
Predicted MDL:	0.000615		
Predicted MQL:	0.002049		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00095	.000	1
S1	.02000	.02104	.001	5.20	.00962	.000	1
S3	.62500	.62993	.005	.788	.25998	.001	1
S4	1.2500	1.2676	.018	1.41	.52216	.001	1
S5	2.5000	2.4749	-.025	-1.01	1.0188	.000	1
S2	.20000	.20159	.002	.793	.08384	.000	1

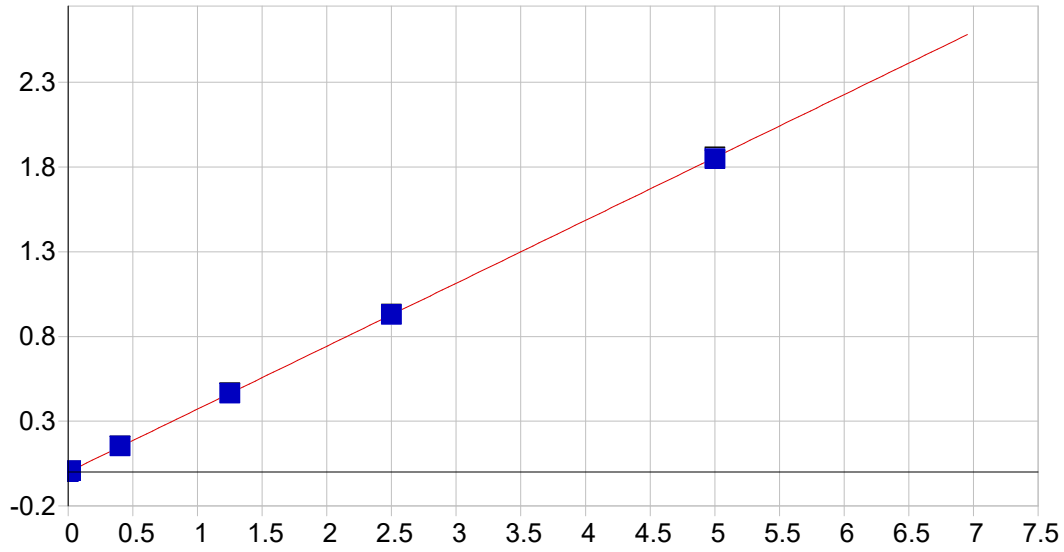


Fe 240.488 {140}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000020	Re-Slope:	1.000000
A1 (Gain):	0.002628	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999697	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.008771		
Predicted MQL:	0.029236		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00002	.000	1
S1	.10000	.10301	.003	3.01	.00029	.000	1
S3	2.5000	2.4063	-.094	-3.75	.00629	.000	1
S4	5.0000	5.1810	.181	3.62	.01352	.000	1
S5	10.000	9.9223	-.078	-.777	.02587	.000	1
S2	.80000	.78746	-.013	-1.57	.00207	.000	1

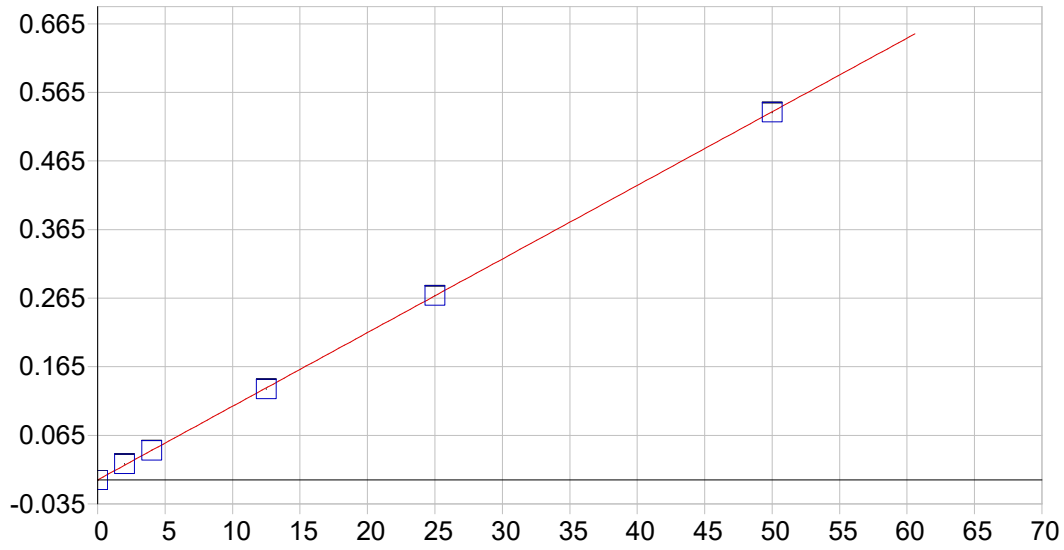


Mn 257.610 {131}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000230	Re-Slope:	1.000000
A1 (Gain):	0.371228	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.000048		
Predicted MDL:	0.000783		
Predicted MQL:	0.002609		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00023	.000	1
S1	.02000	.02190	.002	9.50	.00836	.000	1
S3	1.2500	1.2534	.003	.275	.46563	.001	1
S4	2.5000	2.5032	.003	.129	.92968	.001	1
S5	5.0000	4.9805	-.019	-.389	1.8495	.009	1
S2	.40000	.41089	.011	2.72	.15279	.001	1

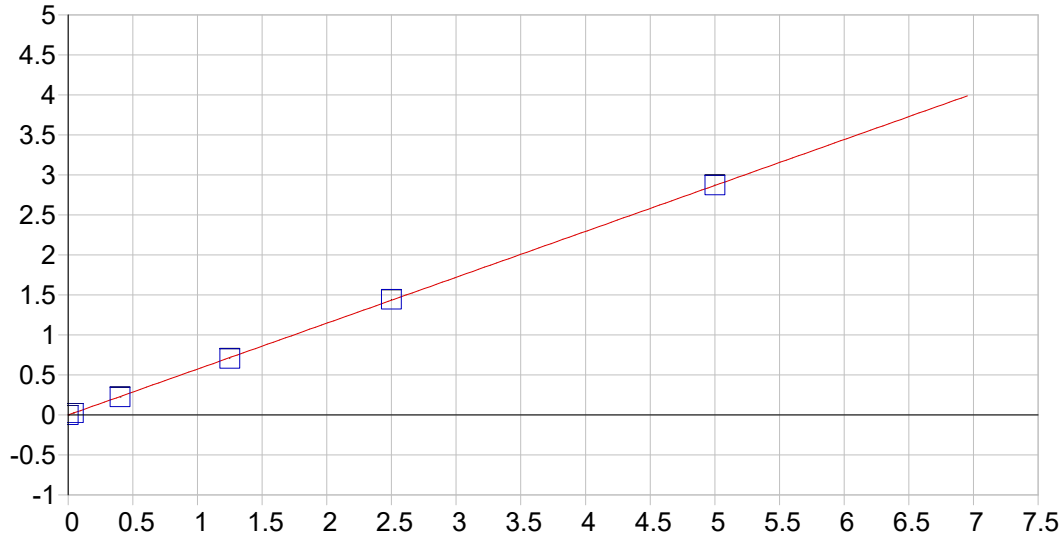


Mg 279.079 {121}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000023	Re-Slope:	1.000000
A1 (Gain):	0.010734	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999914	Status:	OK.
Std Error of Est:	0.000074		
Predicted MDL:	0.035273		
Predicted MQL:	0.117578		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00015	-.000	.000	.00002	.000	1
S2	4.0000	4.0112	.011	.281	.04308	.000	1
S3	12.500	12.359	-.141	-1.13	.13268	.000	1
S4	25.000	25.036	.036	.145	.26876	.000	1
S5	50.000	49.925	-.075	-.151	.53590	.001	1
S1	2.0000	2.1689	.169	8.44	.02330	.000	1

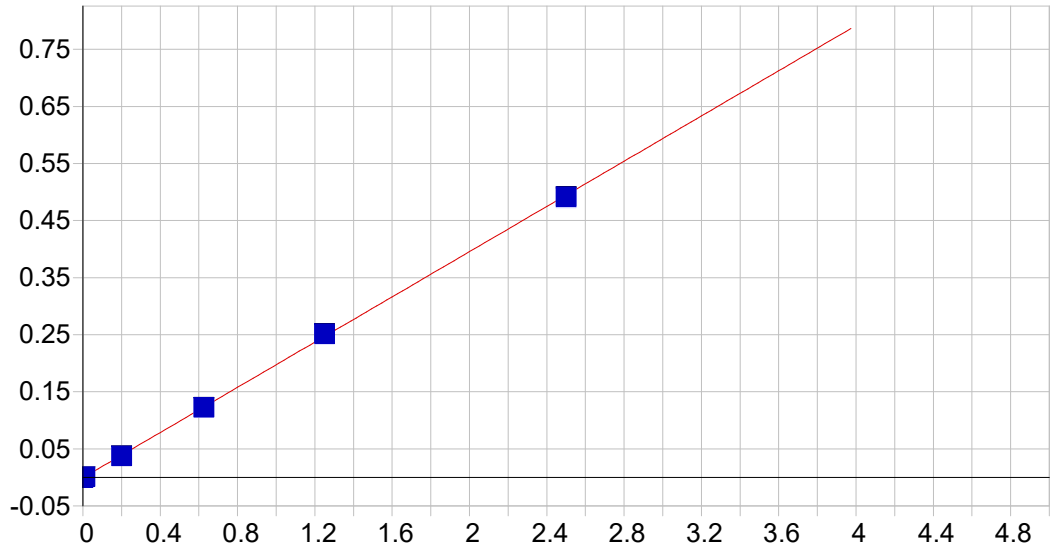


Ni 231.604 {446}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000626	Re-Slope:	1.000000
A1 (Gain):	0.573663	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.000106		
Predicted MDL:	0.000390		
Predicted MQL:	0.001301		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00063	.000	1
S1	.04000	.04108	.001	2.69	.02294	.000	1
S3	1.2500	1.2317	-.018	-1.47	.70594	.001	1
S4	2.5000	2.5155	.015	.620	1.4424	.001	1
S5	5.0000	5.0097	.010	.195	2.8733	.001	1
S2	.40000	.39201	-.008	-2.00	.22426	.000	1

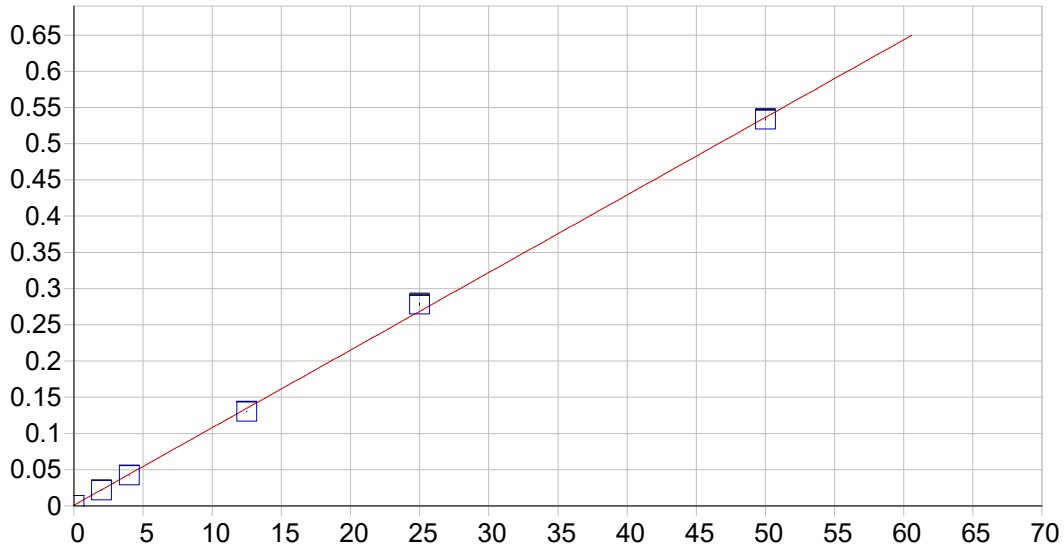


Ag 328.068 {103}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000738	Re-Slope:	1.000000
A1 (Gain):	0.198111	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999918	Status:	OK.
Std Error of Est:	0.000021		
Predicted MDL:	0.000646		
Predicted MQL:	0.002152		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00074	.000	1
S1	.01000	.00992	-.000	-.817	.00121	.000	1
S3	.62500	.62188	-.003	-.500	.12186	.000	1
S4	1.2500	1.2738	.024	1.91	.25042	.000	1
S5	2.5000	2.4855	-.014	-.579	.48927	.001	1
S2	.20000	.19384	-.006	-3.08	.03747	.000	1

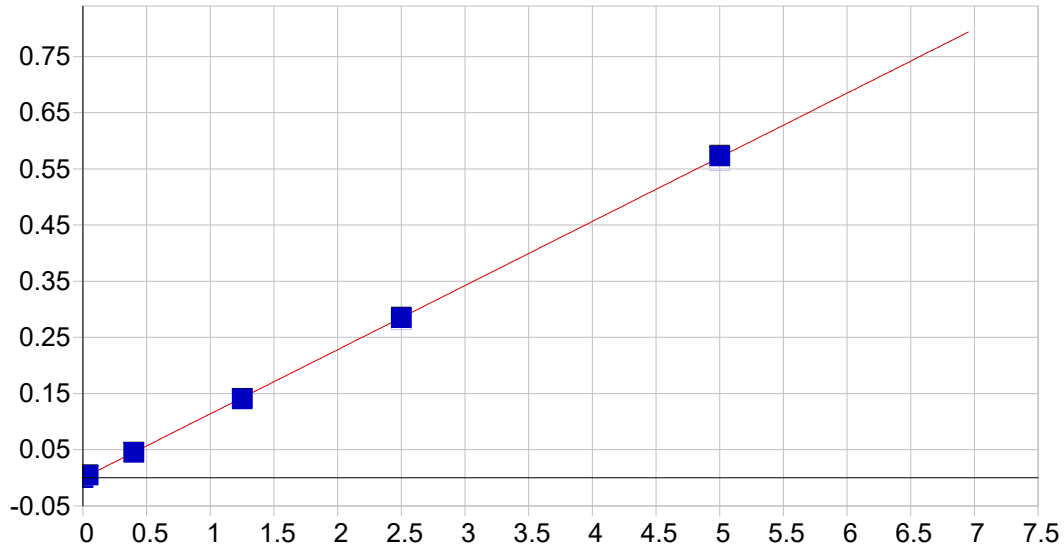


Na 589.592 { 57}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000955	Re-Slope:	1.000000
A1 (Gain):	0.010708	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999695	Status:	OK.
Std Error of Est:	0.000140		
Predicted MDL:	0.014918		
Predicted MQL:	0.049725		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00015	.000	.000	.00096	.000	1
S2	4.0000	3.8520	-.148	-3.70	.04220	.000	1
S3	12.500	12.063	-.437	-3.49	.13013	.000	1
S4	25.000	25.906	.906	3.63	.27835	.002	1
S5	50.000	49.742	-.258	-.516	.53358	.001	1
S1	2.0000	1.9365	-.064	-3.18	.02169	.000	1

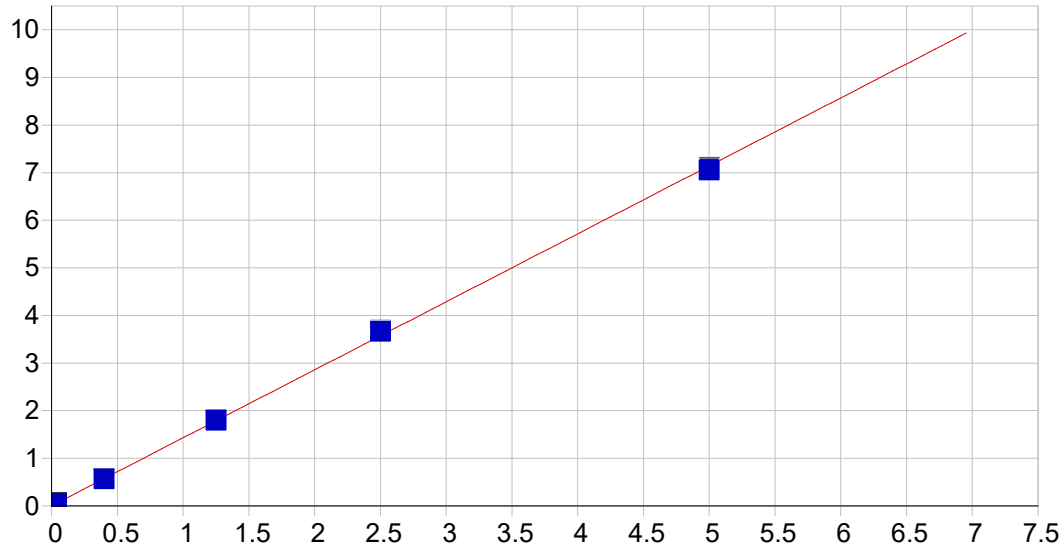


V 292.402 {115}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000289	Re-Slope:	1.000000
A1 (Gain):	0.114211	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	0.000022		
Predicted MDL:	0.003858		
Predicted MQL:	0.012859		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00029	.001	1
S1	.04000	.04366	.004	9.16	.00453	.000	1
S3	1.2500	1.2345	-.015	-1.24	.13863	.001	1
S4	2.5000	2.4996	-.000	-.018	.28102	.001	1
S5	5.0000	5.0156	.016	.313	.56422	.002	1
S2	.40000	.39669	-.003	-.828	.04435	.000	1

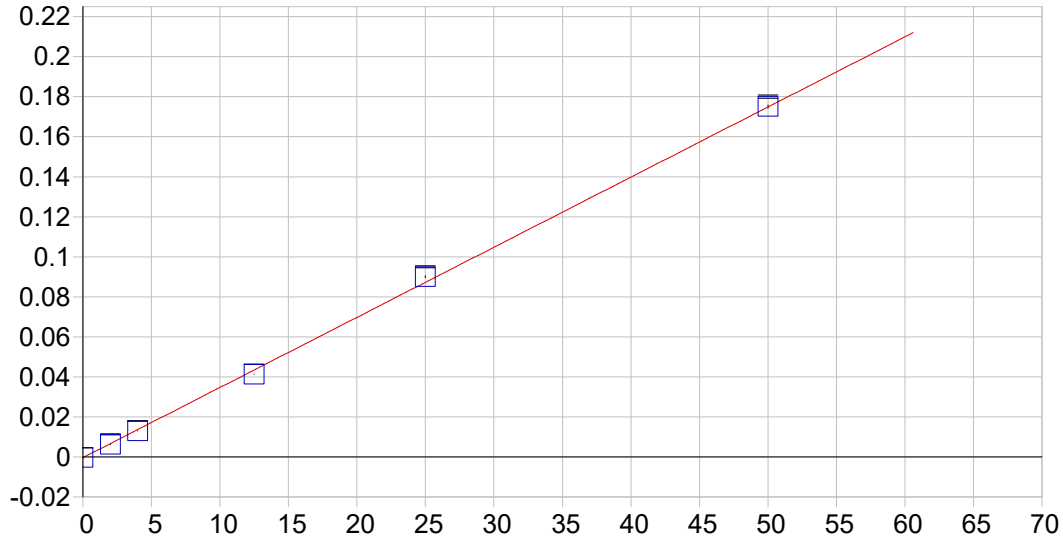


Zn 213.856 {158}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003218	Re-Slope:	1.000000
A1 (Gain):	1.427989	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999865	Status:	OK.
Std Error of Est:	0.000555		
Predicted MDL:	0.000383		
Predicted MQL:	0.001275		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00322	.000	1
S1	.04000	.04162	.002	4.06	.06305	.001	1
S3	1.2500	1.2549	.005	.393	1.8076	.003	1
S4	2.5000	2.5623	.062	2.49	3.6870	.006	1
S5	5.0000	4.9358	-.064	-1.28	7.1011	.011	1
S2	.40000	.39533	-.005	-1.17	.57172	.002	1

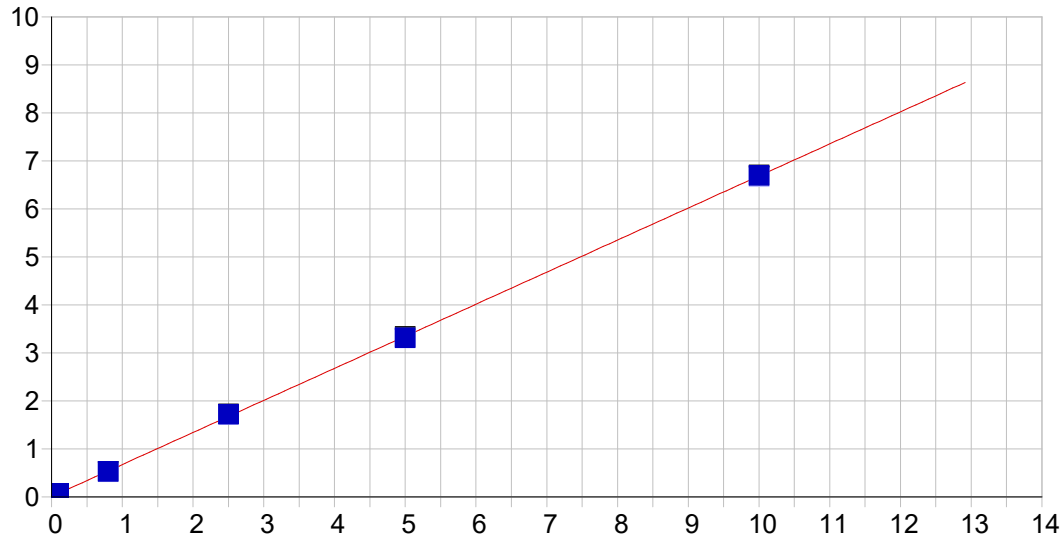


K 766.490 { 44}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000371	Re-Slope:	1.000000
A1 (Gain):	0.003505	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999627	Status:	OK.
Std Error of Est:	0.000051		
Predicted MDL:	0.053178		
Predicted MQL:	0.177258		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00022	.000	.000	-.00037	.000	1
S2	4.0000	3.8067	-.193	-4.83	.01297	.000	1
S3	12.500	11.897	-.603	-4.83	.04132	.000	1
S4	25.000	25.810	.810	3.24	.09008	.000	1
S5	50.000	50.085	.085	.171	.17516	.001	1
S1	2.0000	1.9013	-.099	-4.94	.00629	.000	1

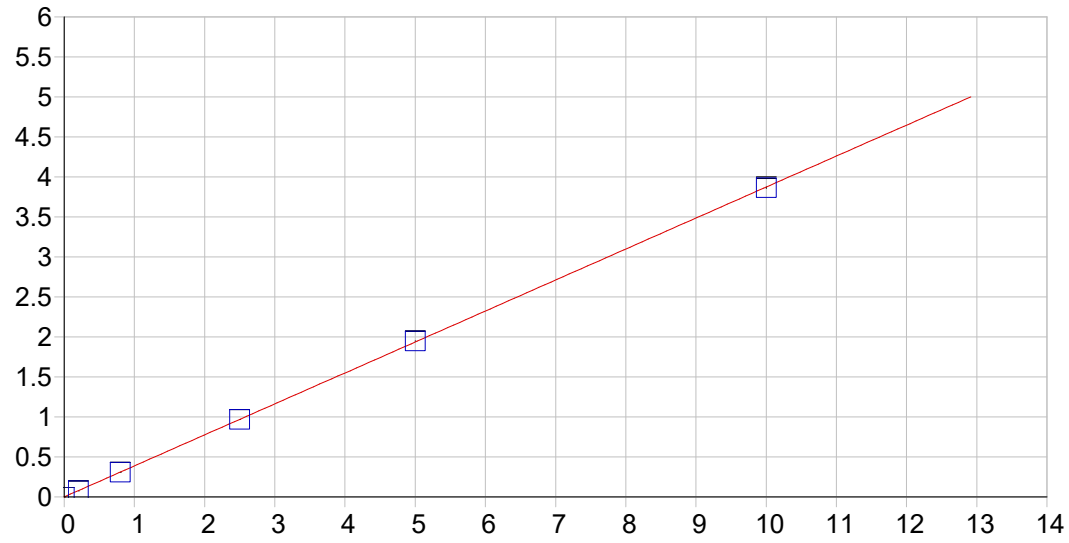


B 249.678 {135}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006415	Re-Slope:	1.000000
A1 (Gain):	0.668011	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999924	Status:	OK.
Std Error of Est:	0.000431		
Predicted MDL:	0.001062		
Predicted MQL:	0.003539		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00641	.001	1
S1	.10000	.10229	.002	2.29	.07435	.000	1
S3	2.5000	2.5611	.061	2.44	1.7113	.010	1
S4	5.0000	4.9547	-.045	-.907	3.3041	.023	1
S5	10.000	10.008	.008	.075	6.6675	.013	1
S2	.80000	.77439	-.026	-3.20	.52179	.001	1

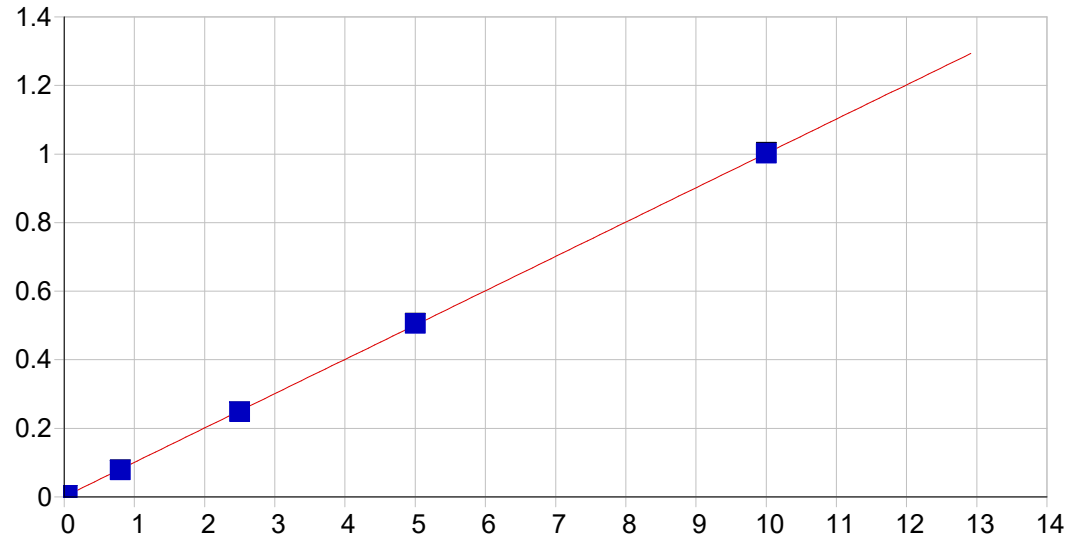


Mo 202.030 {467}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000564	Re-Slope:	1.000000
A1 (Gain):	0.387230	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000107		
Predicted MDL:	0.000412		
Predicted MQL:	0.001375		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00057	.000	1
S1	.20000	.19721	-.003	-1.39	.07693	.000	1
S3	2.5000	2.4951	-.005	-.196	.96674	.001	1
S4	5.0000	5.0287	.029	.574	1.9478	.005	1
S5	10.000	9.9813	-.019	-.187	3.8656	.010	1
S2	.80000	.79767	-.002	-.292	.30944	.000	1

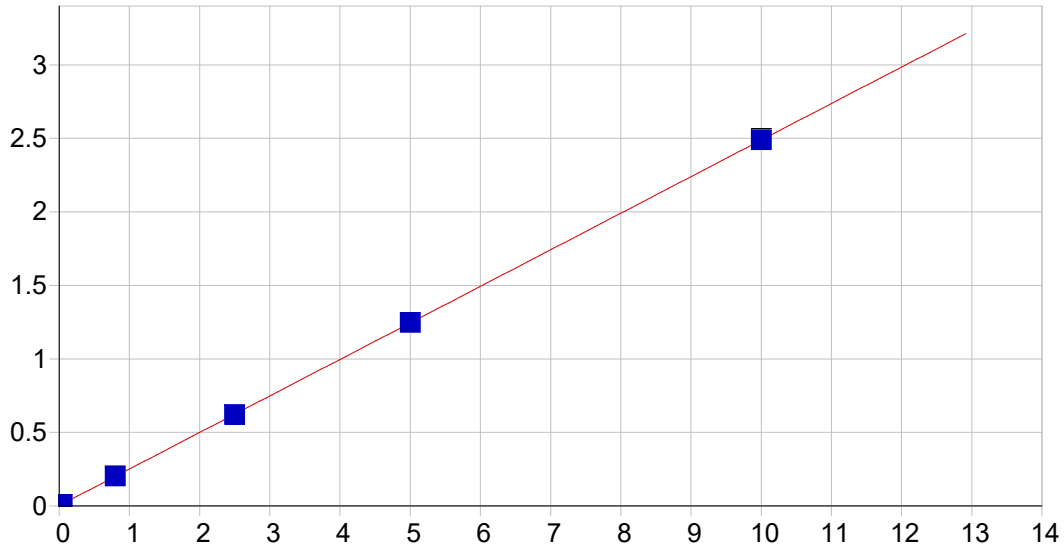


Sn 189.989 {478}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000688	Re-Slope:	1.000000
A1 (Gain):	0.100100	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999965	Status:	OK.
Std Error of Est:	0.000028		
Predicted MDL:	0.000933		
Predicted MQL:	0.003112		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00069	.000	1
S1	.04000	.03956	-.000	-1.09	.00464	.000	1
S3	2.5000	2.4755	-.024	-.980	.24823	.000	1
S4	5.0000	5.0437	.044	.873	.50505	.001	1
S5	10.000	10.004	.004	.044	1.0011	.003	1
S2	.80000	.77683	-.023	-2.90	.07837	.000	1

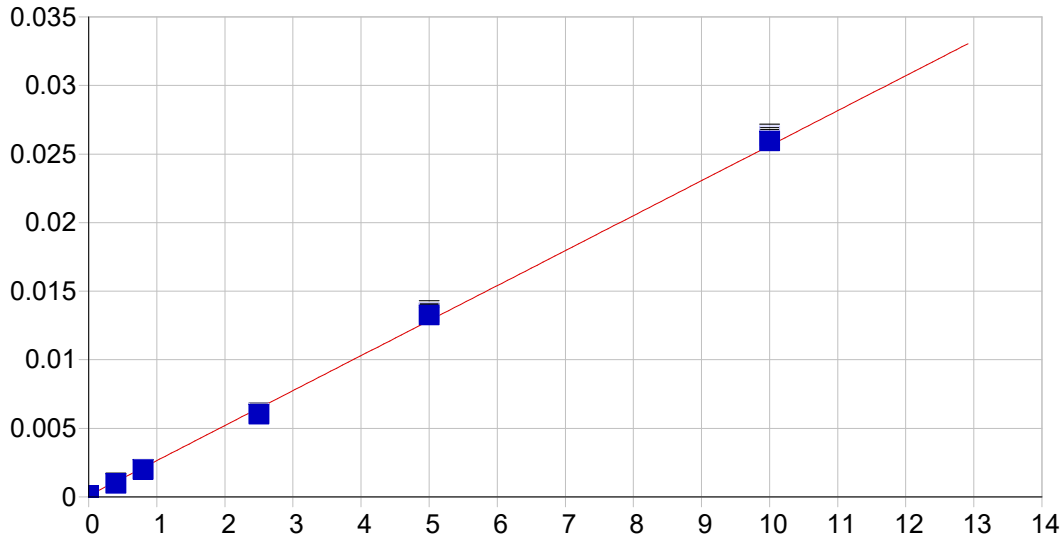


Ti 336.121 {100}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002060	Re-Slope:	1.000000
A1 (Gain):	0.248599	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000028		
Predicted MDL:	0.002269		
Predicted MQL:	0.007563		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00206	.000	1
S1	.04000	.03785	-.002	-5.37	.01146	.001	1
S3	2.5000	2.4866	-.013	-.537	.62000	.001	1
S4	5.0000	5.0052	.005	.104	1.2459	.001	1
S5	10.000	10.007	.007	.071	2.4889	.009	1
S2	.80000	.80325	.003	.406	.20167	.001	1

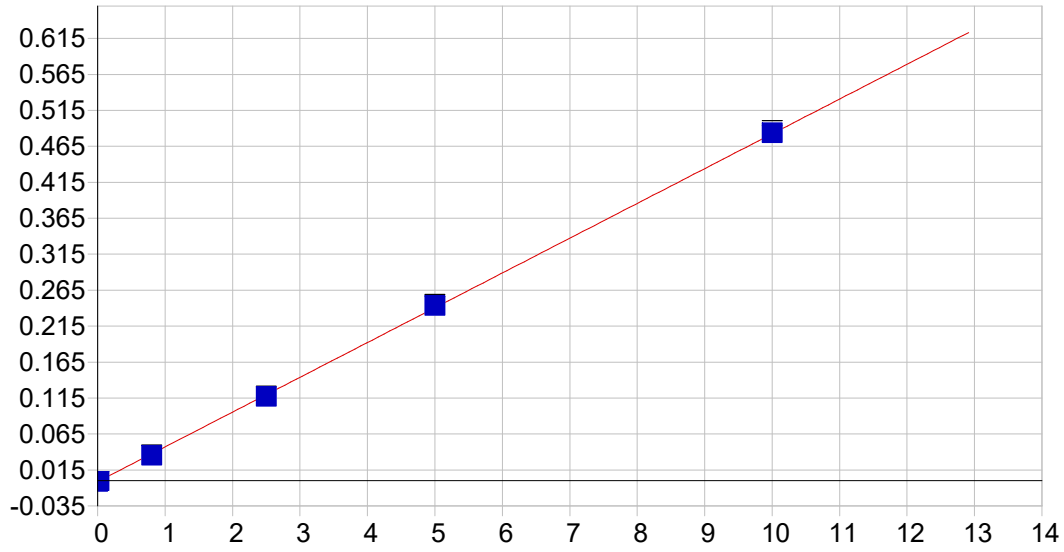


Si 288.158 {117}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000096	Re-Slope:	1.000000
A1 (Gain):	0.002551	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999222	Status:	OK.
Std Error of Est:	0.000011		
Predicted MDL:	0.016200		
Predicted MQL:	0.054001		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00009	.000	.000	.00010	.000	1
S1	.40000	.34991	-.050	-12.5	.00099	.000	1
S3	2.5000	2.3233	-.177	-7.07	.00612	.000	1
S4	5.0000	5.1561	.156	3.12	.01344	.000	1
S5	10.000	10.131	.131	1.31	.02633	.000	1
S2	.80000	.73932	-.061	-7.59	.00201	.000	1

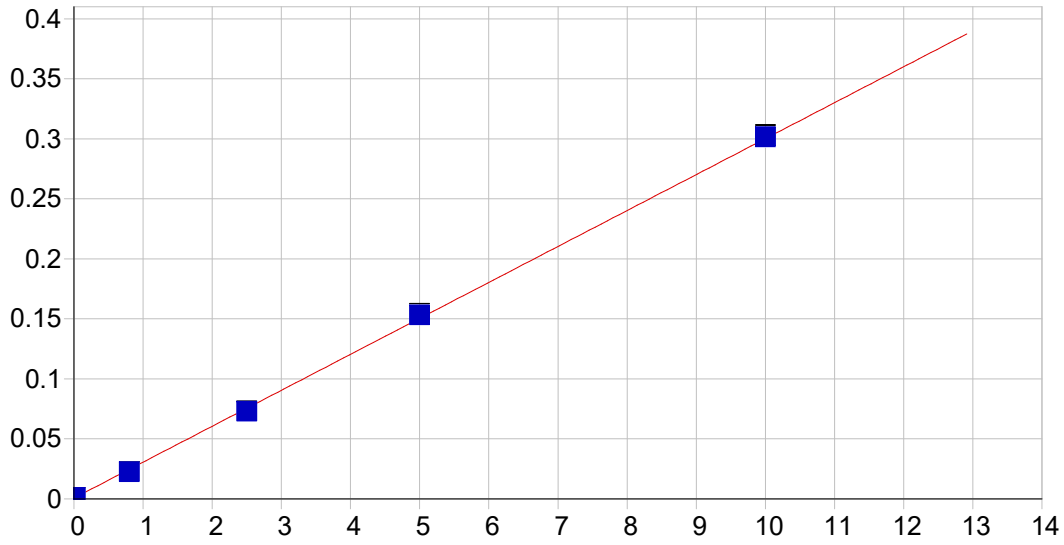


P 177.495 {490}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001311	Re-Slope:	1.000000
A1 (Gain):	0.048363	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999885	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.001686		
Predicted MQL:	0.005620		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00131	.000	1
S1	.02000	.01987	-.000	-.632	-.00035	.000	1
S3	2.5000	2.4497	-.050	-2.01	.11715	.000	1
S4	5.0000	5.0668	.067	1.34	.24370	.001	1
S5	10.000	10.026	.026	.260	.48351	.003	1
S2	.80000	.75764	-.042	-5.30	.03533	.000	1

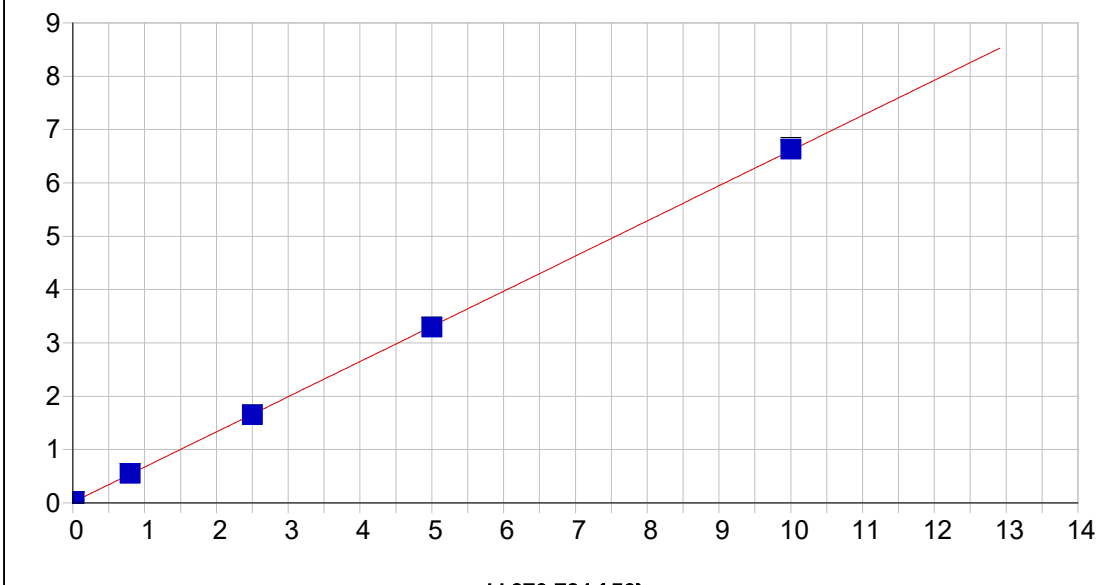


S 182.034 {485}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000663	Re-Slope:	1.000000
A1 (Gain):	0.029945	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999688	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.002946		
Predicted MQL:	0.009819		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00066	.000	1
S1	.02000	.01951	-.000	-2.45	.00122	.000	1
S3	2.5000	2.4141	-.086	-3.44	.07276	.000	1
S4	5.0000	5.1005	.101	2.01	.15301	.001	1
S5	10.000	10.055	.055	.555	.30099	.002	1
S2	.80000	.73033	-.070	-8.71	.02247	.000	1

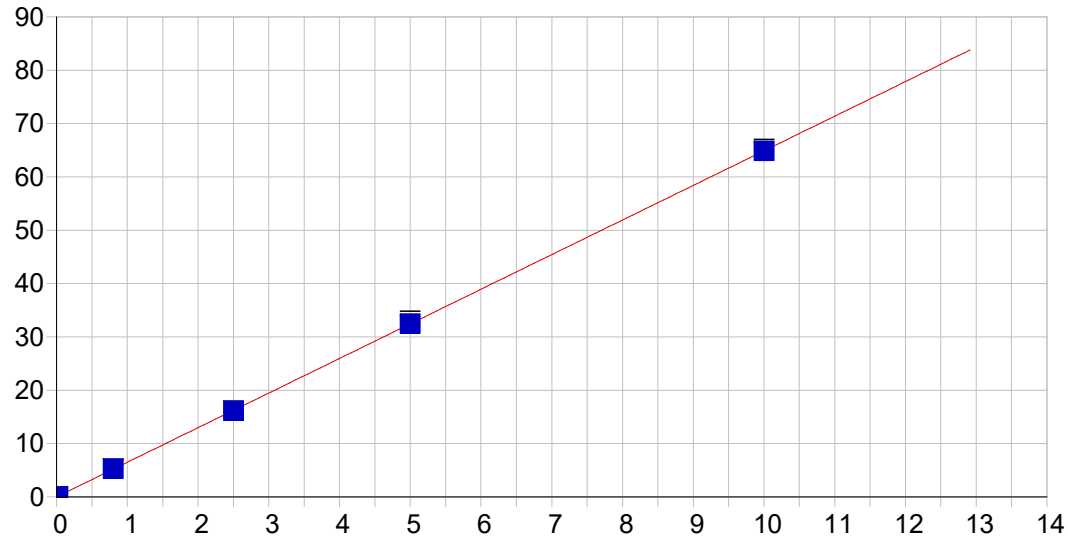


Li 670.784 { 50}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.013234	Re-Slope:	1.000000
A1 (Gain):	0.659302	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999979	Status:	OK.
Std Error of Est:	0.000100		
Predicted MDL:	0.002730		
Predicted MQL:	0.009100		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.01323	.001	1
S5	10.000	10.033	.033	.332	6.6334	.030	1
S4	5.0000	4.9716	-.028	-.568	3.2936	.002	1
S3	2.5000	2.4838	-.016	-.647	1.6521	.004	1
S1	.02000	.01817	-.002	-9.15	.02544	.001	1
S2	.80000	.81327	.013	1.66	.54984	.001	1

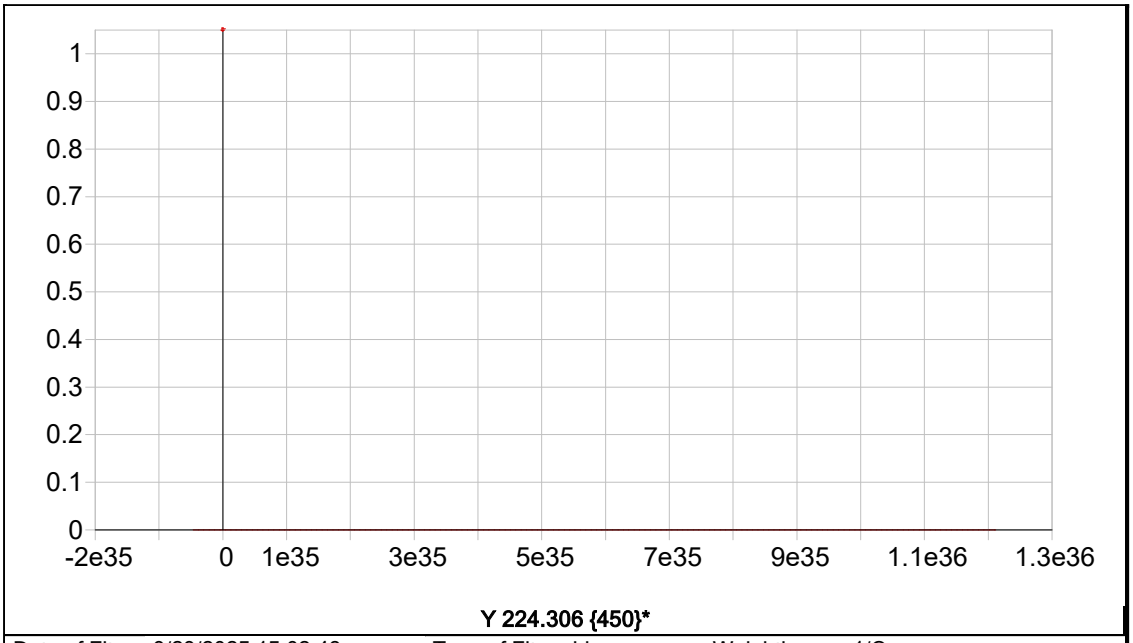


Sr 407.771 { 83}

Date of Fit:	9/29/2025 15:02:43	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002383	Re-Slope:	1.000000
A1 (Gain):	6.489126	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999990	Status:	OK.
Std Error of Est:	0.000683		
Predicted MDL:	0.000147		
Predicted MQL:	0.000489		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00237	.000	1
S1	.02000	.02122	.001	6.09	.14069	.001	1
S3	2.5000	2.4866	-.013	-.536	16.154	.055	1
S4	5.0000	5.0057	.006	.115	32.516	.479	1
S5	10.000	9.9934	-.007	-.066	64.913	.319	1
S2	.80000	.81306	.013	1.63	5.2834	.013	1

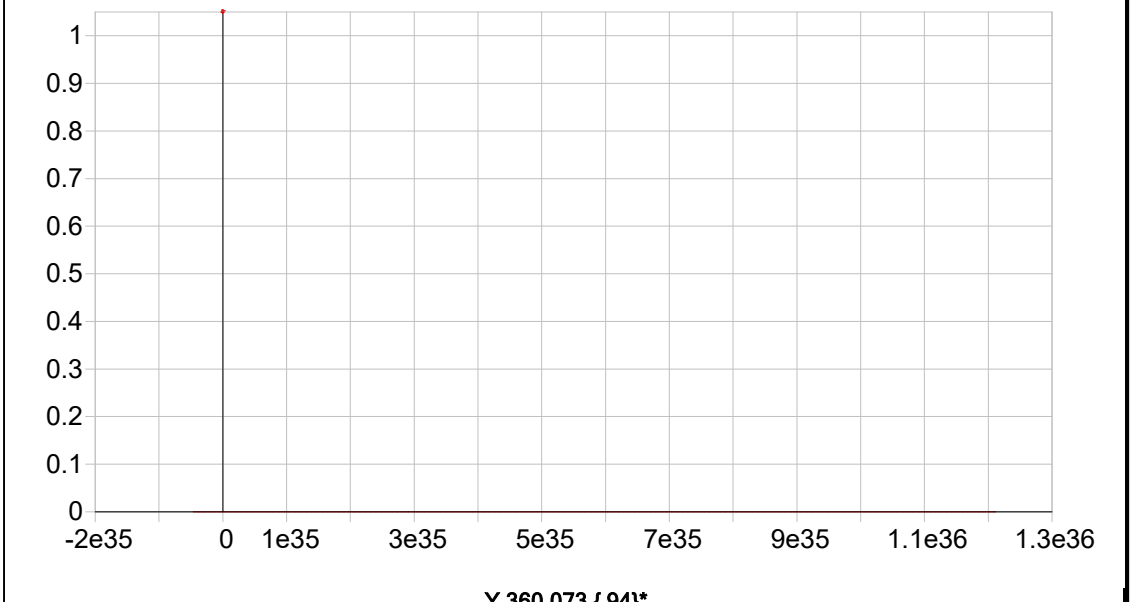


Y 224.306 {450}*

Date of Fit:	9/29/2025 15:02:43	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



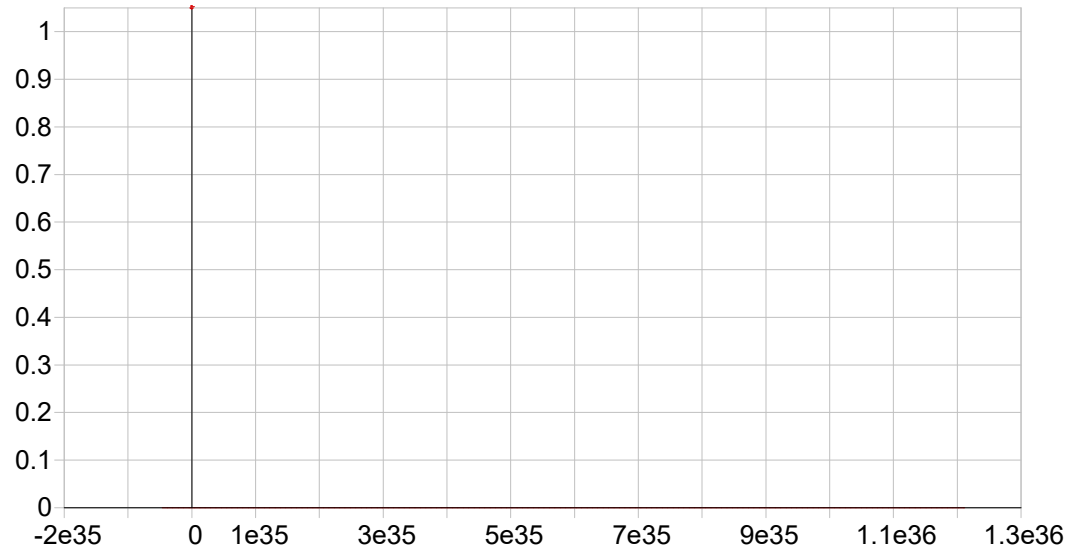
Y 360.073 { 94}*

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					

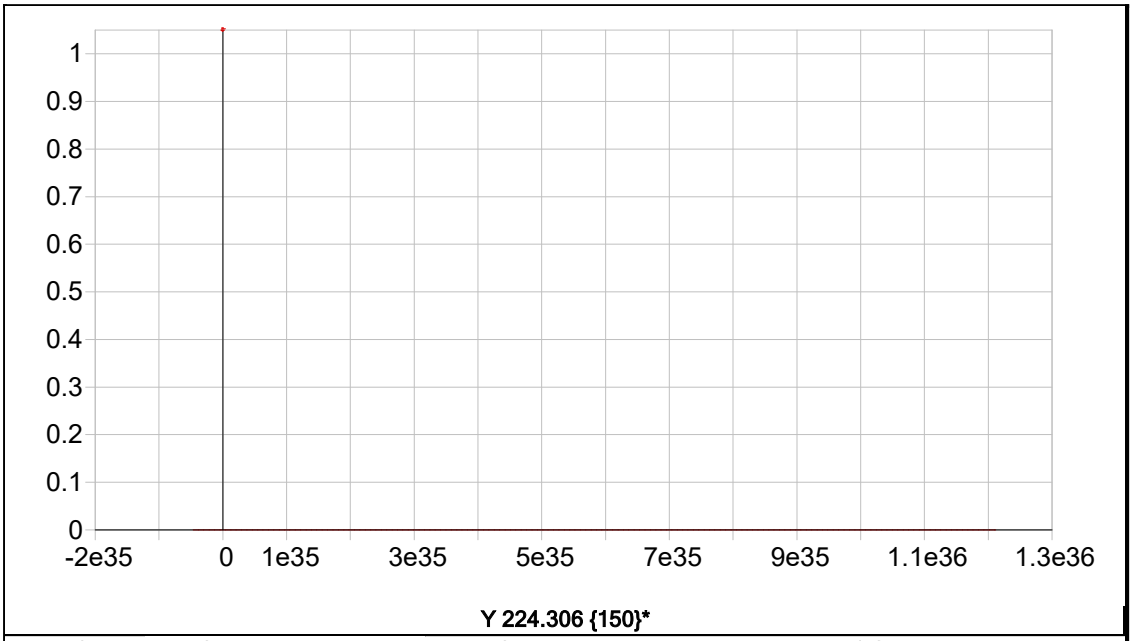
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



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				

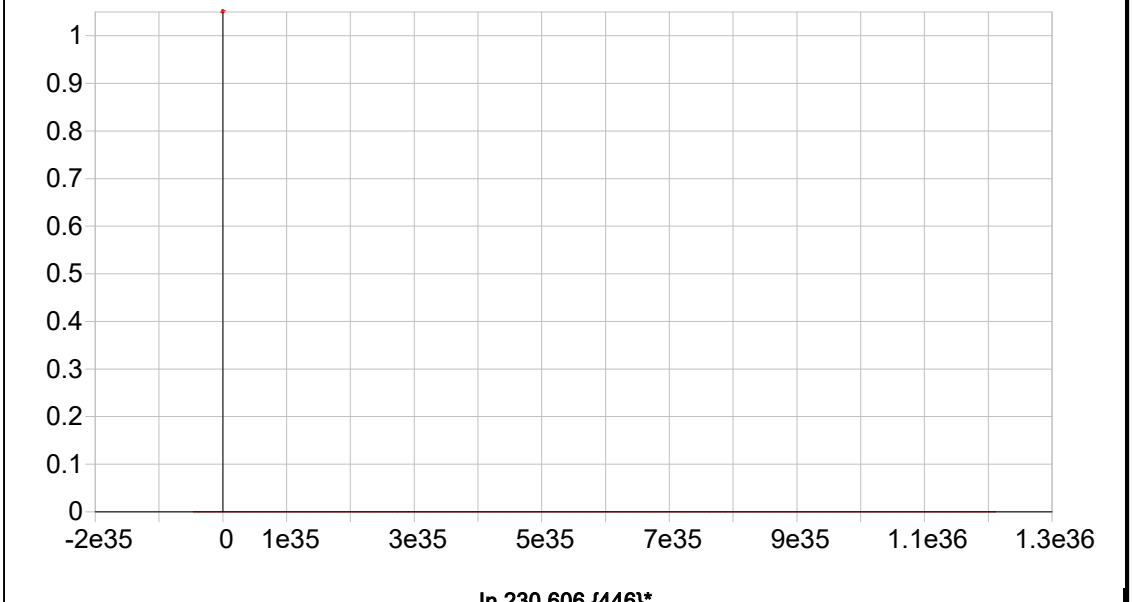
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



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:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S0 Acquired: 9/29/2025 12:11:48 Type: Cal
Method: 6010-200.7 NEW(v222) 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	.00001	.00047	.00022	.00051	.00086	-.00051	.07124	-.00177
Stddev	.00007	.00015	.00019	.00006	.00015	.00061	.00025	.00065
%RSD	1022.1	31.384	84.845	12.038	17.998	119.64	.34993	36.698
#1	-.00005	.00061	.00001	.00058	.00072	.00008	.07153	-.00251
#2	.00009	.00031	.00028	.00050	.00102	-.00114	.07111	-.00132
#3	-.00002	.00050	.00037	.00046	.00083	-.00048	.07108	-.00147

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	-.00035	.00057	.00013	.00018	.00095	.00002	.00023	.00002
Stddev	.00015	.00047	.00002	.00011	.00009	.00001	.00027	.00019
%RSD	43.200	82.408	13.139	60.504	9.0138	49.906	119.09	896.04
#1	-.00017	.00014	.00015	.00022	.00090	.00001	-.00008	-.00017
#2	-.00042	.00108	.00012	.00006	.00104	.00002	.00041	.00002
#3	-.00044	.00051	.00013	.00026	.00089	.00003	.00036	.00021

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	-.00063	-.00074	.00096	-.00029	.00322	-.00037	.00641	.00057
Stddev	.00004	.00004	.00010	.00052	.00023	.00010	.00077	.00005
%RSD	6.8452	4.8813	10.796	179.98	7.1112	26.677	12.041	8.3141
#1	-.00065	-.00078	.00086	-.00026	.00334	-.00044	.00621	.00052
#2	-.00058	-.00071	.00094	-.00082	.00335	-.00042	.00577	.00061
#3	-.00065	-.00072	.00107	.00022	.00295	-.00026	.00727	.00056

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	.00069	.00206	.00010	-.00131	.00066	.01323	.00237
Stddev	.00003	.00028	.00000	.00003	.00003	.00102	.00047
%RSD	5.0555	13.386	3.9424	2.6642	5.0574	7.7431	19.705
#1	.00065	.00213	.00010	-.00127	.00066	.01333	.00193
#2	.00069	.00176	.00010	-.00132	.00063	.01421	.00287
#3	.00072	.00229	.00009	-.00134	.00070	.01217	.00232

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S0 Acquired: 9/29/2025 12:11:48 Type: Cal
Method: 6010-200.7 NEW(v222) 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	6641.9	92259.	7922.3	5255.7	7846.1
Stddev	7.5	50.	77.1	9.1	3.6
%RSD	.11332	.05372	.97306	.17224	.04647
#1	6650.6	92249.	7925.1	5252.1	7845.5
#2	6636.7	92312.	7843.9	5266.0	7842.8
#3	6638.6	92215.	7998.0	5249.0	7850.0

Sample Name: S1 Acquired: 9/29/2025 12:16:12 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**.00097**	**.00269**	**.00267**	**.00151**	**.00553**	**.00739**	**.22179**	**.05110**
Stddev	.00002	.00023	.00009	.00001	.00006	.00019	.00078	.00023
%RSD	2.2934	8.4385	3.3345	.75787	1.1405	2.5642	.35021	.45170
#1	.00099	.00285	.00277	.00150	.00546	.00725	.22233	.05087
#2	.00098	.00243	.00263	.00151	.00555	.00761	.22090	.05110
#3	.00095	.00280	.00261	.00152	.00558	.00732	.22214	.05133

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	**.01107**	**.10531**	**.00172**	**.01934**	**.00962**	**.00029**	**.00836**	**.02330**
Stddev	.00014	.00076	.00004	.00020	.00016	.00001	.00014	.00040
%RSD	1.2950	.72618	2.6094	1.0264	1.6537	4.6831	1.6849	1.7059
#1	.01122	.10523	.00176	.01946	.00953	.00028	.00821	.02309
#2	.01093	.10459	.00172	.01945	.00953	.00030	.00849	.02306
#3	.01108	.10611	.00167	.01911	.00980	.00028	.00839	.02376

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	**.02294**	**.00121**	**.02169**	**.00453**	**.06305**	**.00629**	**.07435**	**.07693**
Stddev	.00028	.00001	.00026	.00029	.00117	.00020	.00048	.00016
%RSD	1.2298	.88265	1.2011	6.3504	1.8477	3.2293	.64647	.20170
#1	.02262	.00121	.02188	.00442	.06221	.00651	.07434	.07675
#2	.02306	.00122	.02180	.00431	.06438	.00611	.07388	.07700
#3	.02314	.00120	.02139	.00485	.06257	.00625	.07484	.07704

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	**.00464**	**.01146**	**.00099**	**-.00035**	**.00122**	**.02544**	**.14069**
Stddev	.00010	.00059	.00002	.00005	.00008	.00087	.00068
%RSD	2.2283	5.1736	2.3742	15.308	6.8038	3.4319	.47980
#1	.00467	.01081	.00096	-.00032	.00113	.02595	.14000
#2	.00453	.01198	.00100	-.00041	.00126	.02444	.14072
#3	.00473	.01160	.00101	-.00032	.00128	.02595	.14135

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S1 Acquired: 9/29/2025 12:16:12 Type: Cal
Method: 6010-200.7 NEW(v222) 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	6552.6	92386.	8091.3	5265.5	7610.9
Stddev	6.1	468.	62.1	40.5	12.8
%RSD	.09267	.50609	.76704	.76835	.16763
#1	6557.2	92278.	8120.4	5267.7	7614.2
#2	6554.8	91983.	8133.5	5224.0	7621.7
#3	6545.7	92899.	8020.0	5304.8	7596.8

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S2 Acquired: 9/29/2025 12:20:28 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**.03336**	**.04556**	**.14859**	**.03572**	**.07129**	**.11197**	**2.5199**	**.32534**
Stddev	.00005	.00165	.00032	.00018	.00031	.00045	.0091	.00231
%RSD	.14318	3.6196	.21679	.49391	.44072	.40132	.35932	.71095
#1	.03341	.04599	.14863	.03572	.07099	.11157	2.5246	.32358
#2	.03331	.04374	.14826	.03554	.07126	.11189	2.5095	.32449
#3	.03335	.04695	.14890	.03589	.07162	.11246	2.5256	.32796

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	**.72041**	**.20272**	**.02494**	**.24846**	**.08384**	**.00207**	**.15279**	**.04308**
Stddev	.00228	.00066	.00006	.00033	.00007	.00003	.00084	.00030
%RSD	.31666	.32679	.22151	.13339	.08695	1.2925	.54979	.70698
#1	.71981	.20347	.02488	.24816	.08376	.00207	.15368	.04273
#2	.71849	.20221	.02497	.24841	.08391	.00205	.15201	.04319
#3	.72293	.20248	.02498	.24882	.08386	.00210	.15269	.04331

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	**.22426**	**.03747**	**.04220**	**.04435**	**.57172**	**.01297**	**.52179**	**.30944**
Stddev	.00034	.00009	.00010	.00047	.00229	.00008	.00140	.00021
%RSD	.15280	.24895	.24287	1.0500	.40058	.60583	.26744	.06778
#1	.22406	.03736	.04222	.04481	.56965	.01302	.52024	.30922
#2	.22406	.03751	.04229	.04436	.57133	.01301	.52295	.30947
#3	.22465	.03754	.04209	.04388	.57418	.01288	.52218	.30964

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	**.07837**	**.20167**	**.00201**	**.03533**	**.02247**	**.54984**	**5.2834**
Stddev	.00029	.00072	.00000	.00028	.00008	.00130	.0129
%RSD	.36602	.35637	.21406	.79284	.35091	.23691	.24398
#1	.07828	.20250	.00201	.03547	.02254	.54947	5.2891
#2	.07814	.20120	.00202	.03500	.02238	.54877	5.2686
#3	.07869	.20132	.00201	.03550	.02249	.55129	5.2924

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S2 Acquired: 9/29/2025 12:20:28 Type: Cal
Method: 6010-200.7 NEW(v222) 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	6700.6	94359.	8429.5	5324.9	7859.7
Stddev	16.5	298.	38.7	31.9	26.9
%RSD	.24659	.31609	.45853	.59952	.34164
#1	6703.3	94700.	8473.3	5349.8	7855.5
#2	6715.5	94152.	8414.6	5336.1	7888.4
#3	6682.8	94223.	8400.5	5288.9	7835.2

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S3 Acquired: 9/29/2025 12:24:32 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**.10639**	**.14707**	**.46756**	**.11337**	**.22398**	**.34944**	**7.5940**	**1.0873**
Stddev	.00016	.00319	.00067	.00022	.00039	.00094	.0161	.0082
%RSD	.14618	2.1671	.14317	.19195	.17620	.26778	.21226	.75479
#1	.10622	.14373	.46791	.11312	.22363	.34837	7.6123	1.0968
#2	.10644	.14742	.46679	.11348	.22389	.35003	7.5819	1.0828
#3	.10651	.15008	.46798	.11350	.22441	.34993	7.5879	1.0823

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	**2.2957**	**.62780**	**.07931**	**.78265**	**.25998**	**.00629**	**.46563**	**.13268**
Stddev	.0042	.00087	.00030	.00100	.00065	.00004	.00094	.00045
%RSD	.18186	.13784	.38446	.12716	.25014	.65072	.20107	.34022
#1	2.2935	.62852	.07963	.78218	.25923	.00625	.46632	.13301
#2	2.2931	.62684	.07928	.78198	.26041	.00629	.46457	.13217
#3	2.3005	.62805	.07903	.78380	.26030	.00633	.46602	.13287

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	**.70594**	**.12186**	**.13013**	**.13863**	**1.8076**	**.04132**	**1.7113**	**.96674**
Stddev	.00138	.00008	.00044	.00087	.0031	.00008	.0100	.00060
%RSD	.19571	.06830	.33886	.62542	.17045	.19781	.58423	.06157
#1	.70553	.12191	.12963	.13827	1.8095	.04123	1.7228	.96610
#2	.70481	.12191	.13048	.13961	1.8093	.04136	1.7055	.96685
#3	.70748	.12177	.13026	.13799	1.8041	.04138	1.7054	.96728

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	**.24823**	**.62000**	**.00612**	**.11715**	**.07276**	**1.6521**	**16.154**
Stddev	.00035	.00115	.00000	.00031	.00039	.0039	.055
%RSD	.14195	.18487	.07035	.26889	.52948	.23358	.34306
#1	.24831	.62081	.00612	.11682	.07233	1.6547	16.213
#2	.24785	.61868	.00612	.11716	.07308	1.6477	16.102
#3	.24854	.62050	.00612	.11745	.07286	1.6541	16.147

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S3 Acquired: 9/29/2025 12:24:32 Type: Cal
Method: 6010-200.7 NEW(v222) 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	6459.9	88137.	7821.9	5042.8	7444.6
Stddev	7.7	85.	34.9	7.0	5.9
%RSD	.11966	.09634	.44578	.13807	.07971
#1	6468.4	88104.	7781.6	5046.3	7449.0
#2	6458.0	88074.	7841.5	5034.8	7446.8
#3	6453.3	88233.	7842.5	5047.3	7437.8

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S4 Acquired: 9/29/2025 12:28:31 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**.21959**	**.29710**	**.95556**	**.23369**	**.45811**	**.70363**	**15.252**	**2.0968**
Stddev	.00068	.01217	.00041	.00086	.00105	.00226	.013	.0102
%RSD	.31003	4.0955	.04290	.36860	.22989	.32127	.08815	.48671
#1	.21967	.30045	.95521	.23360	.45753	.70480	15.267	2.0903
#2	.21888	.28361	.95548	.23287	.45747	.70507	15.241	2.0915
#3	.22023	.30724	.95601	.23459	.45932	.70102	15.249	2.1085

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	**4.7218**	**1.2585**	**.16067**	**1.6047**	**.52216**	**.01352**	**.92968**	**.26876**
Stddev	.0067	.0001	.00027	.0013	.00119	.00005	.00125	.00028
%RSD	.14197	.00520	.16984	.08109	.22771	.36709	.13460	.10499
#1	4.7250	1.2585	.16064	1.6059	.52117	.01347	.92825	.26908
#2	4.7140	1.2586	.16095	1.6033	.52185	.01357	.93024	.26864
#3	4.7262	1.2584	.16041	1.6051	.52348	.01353	.93056	.26855

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	**1.4424**	**.25042**	**.27835**	**.28102**	**3.6870**	**.09008**	**3.3041**	**1.9478**
Stddev	.0008	.00032	.00159	.00082	.0059	.00047	.0231	.0048
%RSD	.05182	.12920	.57083	.29117	.15903	.52465	.69854	.24507
#1	1.4432	.25047	.27814	.28170	3.6818	.08995	3.2980	1.9448
#2	1.4418	.25008	.28004	.28126	3.6860	.09061	3.2848	1.9453
#3	1.4423	.25072	.27688	.28012	3.6934	.08969	3.3297	1.9533

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	**.50505**	**1.2459**	**.01344**	**.24370**	**.15301**	**3.2936**	**32.516**
Stddev	.00094	.0011	.00014	.00143	.00132	.0023	.479
%RSD	.18687	.08900	1.0311	.58634	.86112	.06896	1.4722
#1	.50504	1.2469	.01335	.24396	.15368	3.2939	32.991
#2	.50411	1.2461	.01360	.24216	.15149	3.2913	32.525
#3	.50600	1.2447	.01338	.24498	.15385	3.2958	32.033

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S4 Acquired: 9/29/2025 12:28:31 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**6288.8**	**85298.**	**8122.7**	**4856.4**	**7137.3**
Stddev	16.4	243.	26.7	16.2	7.7
%RSD	.26105	.28431	.32854	.33439	.10734
#1	6307.7	85448.	8129.0	4846.9	7144.9
#2	6278.7	85018.	8145.8	4847.2	7129.6
#3	6279.9	85427.	8093.5	4875.2	7137.4

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S5 Acquired: 9/29/2025 12:32:35 Type: Cal
Method: 6010-200.7 NEW(v222) 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	**.42739**	**.55140**	**1.9230**	**.44909**	**.89941**	**1.4043**	**30.349**	**4.1499**
Stddev	.00135	.01985	.0008	.00192	.00158	.0013	.212	.0098
%RSD	.31543	3.6003	.04287	.42714	.17564	.09148	.69894	.23741
#1	.42584	.53447	1.9239	.44699	.89762	1.4045	30.342	4.1387
#2	.42807	.54648	1.9222	.44953	.90001	1.4029	30.565	4.1572
#3	.42827	.57325	1.9229	.45075	.90061	1.4054	30.141	4.1539

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	**9.3524**	**2.4942**	**.31038**	**3.2135**	**1.0188**	**.02587**	**1.8495**	**.53590**
Stddev	.0105	.0055	.00024	.0026	.0005	.00018	.0093	.00077
%RSD	.11229	.22136	.07605	.08048	.04779	.69087	.50088	.14294
#1	9.3470	2.4879	.31028	3.2136	1.0188	.02567	1.8392	.53659
#2	9.3458	2.4978	.31020	3.2109	1.0183	.02596	1.8523	.53603
#3	9.3645	2.4970	.31064	3.2160	1.0193	.02599	1.8570	.53508

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	**2.8733**	**.48927**	**.53358**	**.56422**	**7.1011**	**.17516**	**6.6675**	**3.8656**
Stddev	.0010	.00057	.00102	.00173	.0107	.00080	.0130	.0101
%RSD	.03437	.11716	.19183	.30616	.15091	.45725	.19531	.26222
#1	2.8722	.48911	.53268	.56226	7.0960	.17434	6.6544	3.8543
#2	2.8737	.48880	.53335	.56492	7.0939	.17519	6.6676	3.8689
#3	2.8740	.48991	.53469	.56549	7.1134	.17594	6.6804	3.8737

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	**1.0011**	**2.4889**	**.02633**	**.48351**	**.30099**	**6.6334**	**64.913**
Stddev	.0028	.0091	.00012	.00332	.00190	.0299	.320
%RSD	.28023	.36637	.46054	.68767	.63102	.45021	.49219
#1	.99851	2.4785	.02632	.47967	.29887	6.6003	64.926
#2	1.0007	2.4926	.02621	.48523	.30160	6.6417	65.226
#3	1.0041	2.4956	.02645	.48562	.30252	6.6582	64.587

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: S5 Acquired: 9/29/2025 12:32:35 Type: Cal
Method: 6010-200.7 NEW(v222) 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	6261.9	86858.	7949.5	4892.7	7003.0
Stddev	5.5	94.	3.3	10.6	13.0
%RSD	.08771	.10776	.04204	.21670	.18540
#1	6255.9	86773.	7948.3	4884.9	6988.0
#2	6263.4	86958.	7946.9	4888.4	7011.2
#3	6266.6	86843.	7953.3	4904.7	7009.8

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICV01 Acquired: 9/29/2025 12:55:40 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**3.767273**	**3.709447**	**3.692510**	**3.750588**	**3.874317**	**7.664538**
Stddev	.001748	.038366	.002682	.014931	.004735	.027252
%RSD	.0463955	1.034279	.0726398	.3981087	.1222115	.3555549
#1	3.765746	3.718639	3.693759	3.759736	3.878569	7.695347
#2	3.769179	3.667320	3.689431	3.733358	3.869215	7.654681
#3	3.766893	3.742382	3.694340	3.758670	3.875166	7.643587

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.740628**	**.1880626**	**1.886753**	**19.14677**	**.7684523**	**1.890673**
Stddev	.016970	.0014181	.002262	.03954	.0018542	.001824
%RSD	.2192307	.7540539	.1198978	.2065034	.2412884	.0964661
#1	7.725676	.1866399	1.888340	19.10118	.7665152	1.892308
#2	7.737137	.1880720	1.884163	19.17169	.7686312	1.888706
#3	7.759073	.1894760	1.887757	19.16743	.7702106	1.891005

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9609158**	**3.855109**	**1.928985**	**19.10475**	**1.889879**	**.9698489**
Stddev	.0011290	.032344	.004441	.03117	.002142	.0039792
%RSD	.1174912	.8389865	.2301992	.1631498	.1133391	.4102874
#1	.9601602	3.883118	1.927910	19.10398	1.891659	.9695060
#2	.9603734	3.819709	1.925181	19.07398	1.887502	.9739885
#3	.9622136	3.862499	1.933864	19.13630	1.890477	.9660523

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.02245**	**1.906310**	**1.902211**	**18.99328**	**3.745535**	**3.939580**
Stddev	.07847	.006208	.003158	.06552	.025904	.003154
%RSD	.4125335	.3256748	.1660310	.3449505	.6915908	.0800534
#1	19.07395	1.899220	1.903955	19.06892	3.719236	3.940209
#2	19.06127	1.908937	1.898566	18.95672	3.746344	3.936159
#3	18.93213	1.910773	1.904114	18.95419	3.771025	3.942371

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICV01 Acquired: 9/29/2025 12:55:40 Type: Unk
Method: 6010-200.7 NEW(v229) 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	3.875986	3.928743	3.766861	F .0065619	3.799217	3.773773
Stddev	.007786	.009838	.015900	.0013828	.007145	.005760
%RSD	.2008895	.2504141	.4221085	21.07330	.1880767	.1526436
#1	3.884725	3.930328	3.765595	.0063458	3.805977	3.768181
#2	3.869785	3.918208	3.783356	.0080400	3.791740	3.773449
#3	3.873448	3.937692	3.751631	.0052998	3.799934	3.779688

Elem	Sr4077
Units	ppm
Avg	4.019661
Stddev	.010667
%RSD	.2653696
#1	4.030742
#2	4.009463
#3	4.018779

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6613.187	90879.17	8396.998	5121.381	7592.134
Stddev	11.791	183.39	57.074	12.466	12.547
%RSD	.1782937	.2017963	.6796902	.2434046	.1652680
#1	6609.337	91045.66	8448.815	5114.534	7580.771
#2	6626.422	90909.24	8406.353	5135.770	7605.600
#3	6603.803	90682.60	8335.824	5113.840	7590.032

Sample Name: LLICV01 Acquired: 9/29/2025 12:59:45 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.0216275**	**.0427347**	**.0134262**	**.0225153**	**.0526515**	**.1106462**	**.1019487**
Stddev	.0030021	.0009853	.0006509	.0021522	.0017903	.0093758	.0019698
%RSD	13.88106	2.305673	4.848004	9.558722	3.400348	8.473628	1.932149
#1	.0197361	.0437677	.0140618	.0237522	.0507625	.1156022	.1005857
#2	.0250891	.0418053	.0134556	.0237636	.0528685	.1165038	.1042071
#3	.0200573	.0426310	.0127610	.0200302	.0543234	.0998325	.1010532

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0063661**	**.0062878**	**2.094504**	**.0103368**	**.0306440**	**.0214825**	**.1039116**
Stddev	.0000690	.0001630	.017723	.0001842	.0001461	.0006774	.0081161
%RSD	1.084648	2.593041	.8461799	1.782275	.4766272	3.153270	7.810557
#1	.0063249	.0064090	2.078510	.0104646	.0305189	.0222116	.1129066
#2	.0064458	.0063520	2.091446	.0104203	.0306087	.0213634	.0971364
#3	.0063276	.0061024	2.113558	.0101257	.0308045	.0208726	.1016920

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0215055**	**2.160597**	**.0419375**	**.0100649**	**2.077392**	**.0378993**	**.0434449**
Stddev	.0009448	.012784	.0002664	.0009545	.024467	.0007908	.0002341
%RSD	4.393324	.5917018	.6351256	9.483319	1.177751	2.086455	.5389198
#1	.0206605	2.171270	.0416314	.0097393	2.049141	.0370803	.0431782
#2	.0225256	2.146429	.0421166	.0111395	2.091745	.0386585	.0436163
#3	.0213304	2.164093	.0420645	.0093158	2.091289	.0379592	.0435404

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.999631**	**.1064867**	**.2019040**	**.0411083**	**.0387315**	**.3748532**	**.0194695**
Stddev	.058732	.0003168	.0004602	.0008142	.0007634	.0118371	.0017493
%RSD	2.937132	.2975478	.2279437	1.980579	1.971075	3.157809	8.985020
#1	1.945634	.1061514	.2018728	.0420149	.0381743	.3667672	.0187743
#2	2.062163	.1067812	.2023791	.0404395	.0384185	.3884398	.0181746
#3	1.991096	.1065274	.2014602	.0408706	.0396017	.3693525	.0214596

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: LLICV01 Acquired: 9/29/2025 12:59:45 Type: Unk
Method: 6010-200.7 NEW(v229) 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	.0160847	.0212052	.0212656
Stddev	.0017914	.0013508	.0000530
%RSD	11.13718	6.370195	.2490323
#1	.0151004	.0205398	.0213266
#2	.0150013	.0227597	.0212384
#3	.0181525	.0203163	.0212317

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6383.190	87449.50	8133.412	5029.572	7399.252
Stddev	2.990	275.42	38.743	10.677	2.074
%RSD	.0468345	.3149430	.4763445	.2122752	.0280291
#1	6383.763	87432.32	8137.356	5040.382	7400.445
#2	6379.956	87183.08	8092.847	5019.034	7400.454
#3	6385.853	87733.11	8170.032	5029.300	7396.857

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICB01 Acquired: 9/29/2025 13:03:57 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**-.000789**	**-.000948**	**-.000539**	**.0006997**	**-.000226**	**.0140728**	**.0011120**
Stddev	.002065	.001864	.000586	.0031131	.000544	.0097085	.0004899
%RSD	261.8504	196.5313	108.7933	444.9128	240.5539	68.98751	44.05301
#1	-.000457	.001084	-.000083	-.002862	-.000538	.0244803	.0016769
#2	.001090	-.002579	-.001200	.002059	.000402	.0052610	.0008538
#3	-.003000	-.001351	-.000333	.002902	-.000543	.0124771	.0008052

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000709**	**-.000048**	**.0070332**	**.0000987**	**.0000876**	**-.000382**	**.0167394**
Stddev	.0000705	.000087	.0103971	.0003684	.0000955	.000338	.0081309
%RSD	99.42407	181.8241	147.8280	373.3141	109.1152	88.56632	48.57335
#1	.0000551	.000040	.0093986	.0004075	.0001118	-.000032	.0126432
#2	.0001478	-.000134	.0160438	.0001977	-.000018	-.000407	.0114713
#3	.0000096	-.000049	-.004343	-.000309	.000169	-.000706	.0261037

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001939**	**.0135852**	**-.000069**	**-.000122**	**-.037056**	**-.003378**	**.0006700**
Stddev	.0003830	.0184310	.000449	.000576	.001174	.001265	.0003289
%RSD	197.4639	135.6694	646.9481	471.3759	3.167140	37.46063	49.09465
#1	-.000237	.0116982	.000423	-.000289	-.037086	-.004435	.0003096
#2	.000322	-.003830	-.000176	-.000596	-.035867	-.001976	.0007462
#3	.000497	.032887	-.000455	.000519	-.038214	-.003723	.0009540

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.118896**	**.0019173**	**-.000147**	**-.001026**	**-.001141**	**-.000634**	**.0010759**
Stddev	.031974	.0006971	.000558	.000283	.001075	.003715	.0011936
%RSD	26.89215	36.35929	380.7119	27.55881	94.22302	585.7756	110.9448
#1	-.155126	.0026832	-.000032	-.001338	-.002243	-.004924	.0019693
#2	-.106934	.0017491	-.000753	-.000787	-.000095	.001536	.0015381
#3	-.094628	.0013197	.000345	-.000952	-.001085	.001485	-.000280

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICB01 Acquired: 9/29/2025 13:03:57 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**-.006646**	**-.004210**	**.0000195**
Stddev	.001991	.002486	.0001207
%RSD	29.96487	59.04464	619.1126
#1	-.005653	-.007038	.0000276
#2	-.008938	-.003227	.0001360
#3	-.005346	-.002366	-.000105

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6608.521**	**90395.86**	**8234.008**	**5076.292**	**7853.670**
Stddev	14.280	139.18	4.938	17.074	20.546
%RSD	.2160916	.1539672	.0599679	.3363385	.2616051
#1	6624.242	90235.26	8231.052	5091.699	7875.352
#2	6604.967	90481.39	8239.708	5079.240	7851.167
#3	6596.352	90470.93	8231.262	5057.936	7834.490

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CRI01 Acquired: 9/29/2025 13:08:16 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.0219213**	**.0427113**	**.0132087**	**.0196609**	**.0514479**	**.0913093**	**.0975995**
Stddev	.0032568	.0031168	.0012203	.0013768	.0007058	.0020973	.0005874
%RSD	14.85696	7.297386	9.238529	7.002652	1.371773	2.296958	.6018091
#1	.0212989	.0451721	.0139750	.0182199	.0514593	.0935852	.0981858
#2	.0190206	.0437553	.0118015	.0198000	.0521479	.0894543	.0976017
#3	.0254444	.0392065	.0138495	.0209629	.0507365	.0908885	.0970111

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0063784**	**.0059955**	**2.059862**	**.0099108**	**.0302248**	**.0210423**	**.1024361**
Stddev	.0000942	.0000972	.017235	.0006692	.0001281	.0006608	.0076838
%RSD	1.476395	1.620597	.8366894	6.752479	.4236480	3.140447	7.501025
#1	.0064703	.0060968	2.040001	.0091530	.0303255	.0207775	.1113082
#2	.0063827	.0059031	2.070883	.0101589	.0300807	.0205549	.0980660
#3	.0062821	.0059864	2.068703	.0104206	.0302682	.0217944	.0979340

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0206474**	**2.119481**	**.0409547**	**.0098720**	**1.870600**	**.0388759**	**.0410298**
Stddev	.0004201	.009379	.0001284	.0001172	.020515	.0029443	.0003667
%RSD	2.034895	.4425237	.3136221	1.187337	1.096698	7.573703	.8937380
#1	.0206171	2.119806	.0411026	.0097684	1.852463	.0354892	.0414328
#2	.0210818	2.109944	.0408716	.0098483	1.892865	.0403108	.0407158
#3	.0202432	2.128694	.0408898	.0099992	1.866471	.0408277	.0409409

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.773473**	**.1034255**	**.2001239**	**.0394883**	**.0371239**	**.3299359**	**.0210117**
Stddev	.014930	.0008063	.0002477	.0006721	.0014421	.0073483	.0012592
%RSD	.8418243	.7796011	.1237929	1.701932	3.884706	2.227178	5.992747
#1	1.757082	.1035798	.2004094	.0389025	.0354654	.3247015	.0200787
#2	1.786294	.1025532	.1999963	.0402220	.0378231	.3383365	.0224440
#3	1.777041	.1041435	.1999659	.0393406	.0380831	.3267697	.0205124

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CRI01 Acquired: 9/29/2025 13:08:16 Type: Unk
Method: 6010-200.7 NEW(v229) 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	.0148206	.0160134	.0206475
Stddev	.0030958	.0032030	.0000960
%RSD	20.88840	20.00212	.4650096
#1	.0127330	.0180717	.0206210
#2	.0133514	.0176454	.0207539
#3	.0183774	.0123231	.0205675

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6681.080	94647.89	8168.178	5257.713	7861.632
Stddev	1.560	375.54	37.653	19.984	7.001
%RSD	.0233429	.3967706	.4609676	.3800831	.0890473
#1	6679.566	94899.79	8124.877	5261.588	7862.375
#2	6682.681	94216.26	8193.220	5236.076	7868.230
#3	6680.993	94827.60	8186.437	5275.475	7854.289

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSA01 Acquired: 9/29/2025 13:13:09 Type: Unk
Method: 6010-200.7 NEW(v229) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0045897**	**.0012247**	**.0005333**	**.0037517**	**-.001317**	**246.4905**	**.0020568**
Stddev	.0042893	.0040238	.0004763	.0022033	.001225	.4684	.0002938
%RSD	93.45440	328.5688	89.31254	58.72799	93.03878	.1900204	14.28397
#1	.0007365	-.000953	.0010832	.0034549	-.001637	246.5749	.0023689
#2	.0092112	.005868	.0002572	.0017118	.000036	246.9109	.0017856
#3	.0038215	-.001241	.0002594	.0060883	-.002351	245.9856	.0020159

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0033966**	**.0011815**	**234.5658**	**.0482930**	**.0007715**	**.0211376**	**98.10082**
Stddev	.0000545	.0001261	.8276	.0001841	.0005127	.0004257	.55437
%RSD	1.603995	10.67255	.3528386	.3812902	66.46121	2.013940	.5651071
#1	.0033554	.0010845	235.0524	.0480851	.0002133	.0206460	98.73529
#2	.0033761	.0011360	235.0349	.0483586	.0008798	.0213888	97.70999
#3	.0034584	.0013240	233.6102	.0484354	.0012215	.0213778	97.85718

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001618**	**248.0719**	**.0038320**	**.0006450**	**.0376666**	**.0012144**	**.0016713**
Stddev	.000599	.5201	.0002335	.0006196	.0078562	.0020466	.0002413
%RSD	37.02659	.2096458	6.094636	96.06397	20.85712	168.5186	14.43576
#1	-.001115	248.4233	.0040948	.0004809	.0296958	.0005772	.0018136
#2	-.002281	248.3180	.0036485	.0001239	.0379010	.0035038	.0013927
#3	-.001458	247.4745	.0037526	.0013301	.0454029	-.000438	.0018075

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003641**	**.0237773**	**-.000583**	**-.003526**	**-.006084**	**.0256629**	**.0080269**
Stddev	.040767	.0032274	.000200	.001060	.002397	.0080187	.0019071
%RSD	1119.738	13.57354	34.34260	30.06596	39.40584	31.24609	23.75909
#1	.033568	.0269214	-.000686	-.002888	-.003383	.0345959	.0101795
#2	-.047217	.0239380	-.000711	-.002940	-.007961	.0233061	.0065483
#3	.002727	.0204726	-.000352	-.004750	-.006908	.0190868	.0073529

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSA01 Acquired: 9/29/2025 13:13:09 Type: Unk
Method: 6010-200.7 NEW(v229) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.002342**	**.0117409**	**.0031372**
Stddev	.001097	.0005344	.0002320
%RSD	46.85133	4.551752	7.395615
#1	-.001272	.0123176	.0031249
#2	-.002290	.0116430	.0033751
#3	-.003465	.0112623	.0029115

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5900.347**	**82075.32**	**7988.788**	**4627.370**	**6647.893**
Stddev	10.316	222.53	7.310	19.485	2.121
%RSD	.1748401	.2711322	.0915048	.4210897	.0319117
#1	5907.036	81818.42	7995.716	4648.841	6650.099
#2	5888.466	82208.38	7981.148	4610.809	6645.868
#3	5905.538	82199.17	7989.500	4622.461	6647.711

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSAB01 Acquired: 9/29/2025 13:17:20 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.1123735**	**.1150728**	**.0497925**	**.0574248**	**.6188145**	**249.8367**
Stddev	.0022719	.0012391	.0008628	.0025167	.0038158	.8356
%RSD	2.021779	1.076802	1.732823	4.382533	.6166298	.3344603
#1	.1098829	.1164057	.0499356	.0601851	.6145257	250.7320
#2	.1143326	.1148566	.0505748	.0568314	.6218335	249.7004
#3	.1129051	.1139560	.0488670	.0552578	.6200843	249.0775

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5015792**	**.4953872**	**.9930838**	**238.3410**	**.5492944**	**.4990351**
Stddev	.0031030	.0044604	.0010525	1.0031	.0029927	.0005729
%RSD	.6186538	.9003883	.1059787	.4208757	.5448262	.1147928
#1	.5040601	.4998552	.9942851	239.4145	.5460264	.4996964
#2	.5025777	.4953720	.9926422	238.1812	.5499557	.4987201
#3	.4980999	.4909344	.9923240	237.4274	.5519011	.4986889

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5068709**	**96.82010**	**.4940739**	**251.1065**	**.9908388**	**.2070763**
Stddev	.0012454	.69597	.0046045	.9882	.0007684	.0008456
%RSD	.2456933	.7188285	.9319504	.3935389	.0775450	.4083439
#1	.5071719	96.21828	.4993654	252.2401	.9917056	.2064729
#2	.5079382	96.65978	.4918777	250.6525	.9905692	.2080428
#3	.5055027	97.58224	.4909787	250.4269	.9902416	.2067131

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0339787**	**.4900548**	**1.019274**	**-.056406**	**.9462910**	**.9841244**
Stddev	.0233401	.0031661	.000455	.048303	.0044381	.0011090
%RSD	68.69027	.6460758	.0446384	85.63469	.4689985	.1126860
#1	.0596831	.4923186	1.018770	-.001795	.9513279	.9853325
#2	.0281421	.4914089	1.019654	-.073891	.9445904	.9831526
#3	.0141108	.4864367	1.019398	-.093531	.9429547	.9838880

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSAB01 Acquired: 9/29/2025 13:17:20 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.9614092**	**.9411838**	**.9003931**	F **.0101371**	**1.015401**	**.9449891**
Stddev	.0025184	.0031999	.0208982	.0028541	.007987	.0030489
%RSD	.2619488	.3399853	2.321003	28.15455	.7866260	.3226382
#1	.9628441	.9445250	.8943839	.0072758	1.023278	.9467314
#2	.9628823	.9408795	.8831579	.0101518	1.015616	.9467672
#3	.9585013	.9381470	.9236375	.0129838	1.007308	.9414686

Elem	Sr4077
Units	ppm
Avg	**1.024056**
Stddev	.006330
%RSD	.6181193
#1	1.030230
#2	1.024356
#3	1.017581

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6050.525**	**85982.80**	**8087.963**	**4772.532**	**6818.293**
Stddev	6.951	442.19	64.497	35.221	9.789
%RSD	.1148802	.5142786	.7974499	.7379996	.1435630
#1	6051.772	86323.67	8016.273	4812.063	6814.234
#2	6043.036	86141.60	8106.333	4761.046	6811.188
#3	6056.769	85483.15	8141.282	4744.488	6829.459

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSA01DLX20 Acquired: 9/29/2025 13:21:21 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.0003045**	**-.000694**	**.0005966**	**-.000064**	**-.000120**	**12.41804**	**.0018541**
Stddev	.0008576	.001902	.0007063	.001018	.003221	.02134	.0019679
%RSD	281.6543	274.2354	118.3805	1590.905	2691.663	.1718248	106.1390
#1	.0011135	.001118	-.000204	.000727	-.000879	12.40012	-.000231
#2	.0003945	-.002675	.000862	.000295	-.002893	12.44164	.003678
#3	-.000595	-.000524	.001132	-.001213	.003413	12.41236	.002115

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002767**	**-.000058**	**12.17133**	**.0025048**	**.0001683**	**.0008413**	**5.052229**
Stddev	.0000417	.000112	.01837	.0005371	.0001821	.0003710	.032012
%RSD	15.07893	194.2405	.1509344	21.44254	108.1978	44.09373	.6336182
#1	.0002693	-.000092	12.17659	.0029368	.0001648	.0012629	5.048545
#2	.0003216	.000067	12.18650	.0026742	-.000012	.0006965	5.022219
#3	.0002392	-.000148	12.15090	.0019034	.000352	.0005646	5.085924

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002073**	**12.72163**	**.0004014**	**-.000294**	**-.041250**	**.0031094**	**.0001684**
Stddev	.0004371	.06672	.0002232	.000199	.017196	.0037968	.0001200
%RSD	210.8678	.5244518	55.61040	67.67818	41.68711	122.1075	71.27412
#1	.0003222	12.66343	.0003031	-.000402	-.060932	.0037058	.0003055
#2	-.000276	12.79444	.0006569	-.000064	-.033681	.0065727	.0000825
#3	.000576	12.70701	.0002443	-.000415	-.029137	-.000950	.0001171

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.195673**	**.0008327**	**.0003437**	**-.001419**	**-.001234**	**-.002175**	**.0001474**
Stddev	.029523	.0003982	.0002840	.000634	.001823	.008403	.0020920
%RSD	15.08817	47.82456	82.63706	44.66918	147.7919	386.2725	1418.981
#1	-.174003	.0010612	.0004901	-.001821	-.002911	.002329	-.001922
#2	-.183716	.0003728	.0005246	-.001746	-.001495	.003015	.002262
#3	-.229299	.0010640	.0000163	-.000688	.000706	-.011871	.000103

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSA01DLX20 Acquired: 9/29/2025 13:21:21 Type: Unk
Method: 6010-200.7 NEW(v229) 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	-.007260	-.007688	.0003750
Stddev	.000974	.001418	.0000413
%RSD	13.41015	18.44036	11.01494
#1	-.008133	-.006051	.0004227
#2	-.007437	-.008536	.0003522
#3	-.006210	-.008477	.0003501

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6403.712	86571.68	8256.774	4938.216	7478.121
Stddev	19.710	339.69	31.294	12.895	12.366
%RSD	.3077885	.3923839	.3790064	.2611201	.1653614
#1	6418.244	86858.35	8288.564	4924.657	7489.890
#2	6411.614	86660.20	8226.002	4950.324	7479.238
#3	6381.277	86196.49	8255.755	4939.666	7465.234

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSAB01DLX20 Acquired: 9/29/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v229) 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	**.0053100**	**.0059803**	**.0026231**	**.0022870**	**.0300265**	**12.44306**	**.0220190**
Stddev	.0022105	.0024852	.0015700	.0031518	.0029425	.04135	.0014865
%RSD	41.62832	41.55627	59.85274	137.8120	9.799552	.3322839	6.751006
#1	.0035748	.0069634	.0033779	.0031902	.0333024	12.40113	.0206276
#2	.0077987	.0031540	.0008183	.0048886	.0276079	12.44424	.0218443
#3	.0045565	.0078236	.0036732	-.001218	.0291691	12.48380	.0235852

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0269837**	**.0497689**	**12.17431**	**.0283907**	**.0246718**	**.0264445**	**4.697853**
Stddev	.0001076	.0001474	.01581	.0003775	.0001438	.0002802	.033492
%RSD	.3987640	.2960993	.1299000	1.329615	.5830272	1.059745	.7129138
#1	.0269104	.0497724	12.16042	.0284429	.0247631	.0267640	4.727327
#2	.0269334	.0496199	12.17100	.0287394	.0245060	.0262402	4.704800
#3	.0271072	.0499145	12.19152	.0279898	.0247464	.0263294	4.661433

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0257860**	**12.65974**	**.0494704**	**.0095484**	**-.048932**	**.0256083**	**.0531373**
Stddev	.0002822	.09726	.0005440	.0001841	.011586	.0011743	.0008857
%RSD	1.094456	.7682392	1.099573	1.927912	23.67788	4.585483	1.666738
#1	.0255146	12.76793	.0498252	.0097597	-.035676	.0268227	.0540232
#2	.0260779	12.57956	.0488442	.0094626	-.057126	.0255233	.0522519
#3	.0257654	12.63172	.0497419	.0094228	-.053994	.0244788	.0531368

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.144650**	**.0488918**	**.0483809**	**.0461613**	**.0467762**	**.0391938**	**.0016186**
Stddev	.056899	.0003238	.0002566	.0007733	.0022281	.0095922	.0010396
%RSD	39.33607	.6622436	.5304851	1.675210	4.763220	24.47386	64.22366
#1	-.098533	.0491323	.0483138	.0454675	.0469717	.0324083	.0009165
#2	-.127180	.0485236	.0481645	.0469950	.0444569	.0501681	.0011266
#3	-.208236	.0490194	.0486645	.0460214	.0489001	.0350052	.0028129

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: ICSAB01DLX20 Acquired: 9/29/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v229) 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	.0427570	.0349836	.0502078
Stddev	.0006640	.0010967	.0001283
%RSD	1.553033	3.134929	.2555511
#1	.0423526	.0341903	.0503465
#2	.0435234	.0345254	.0501835
#3	.0423950	.0362351	.0500934

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6436.113	88238.15	7786.970	4989.403	7519.856
Stddev	14.027	285.88	22.554	38.682	19.800
%RSD	.2179463	.3239848	.2896410	.7752911	.2633072
#1	6424.457	88328.22	7787.329	4959.417	7505.622
#2	6451.681	87918.09	7809.342	4975.727	7542.468
#3	6432.201	88468.16	7764.238	5033.066	7511.478

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV01 Acquired: 9/29/2025 13:42:36 Type: Unk
Method: 6010-200.7 NEW(v224) 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	**5.042729**	**4.711936**	**4.902566**	**5.115578**	**5.013650**	**9.804043**	**9.835487**
Stddev	.008093	.068791	.005490	.005896	.017527	.030593	.032331
%RSD	.1604942	1.459930	.1119736	.1152573	.3495839	.3120475	.3287184
#1	5.033510	4.635844	4.896230	5.114107	4.993412	9.799276	9.847630
#2	5.046010	4.769723	4.905912	5.110556	5.023804	9.836740	9.859988
#3	5.048667	4.730241	4.905554	5.122070	5.023735	9.776113	9.798842

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2291094**	**2.477613**	**24.53050**	**.9938533**	**2.452484**	**1.240595**	**5.178844**
Stddev	.0013893	.003817	.05609	.0061229	.003366	.003070	.046938
%RSD	.6063912	.1540606	.2286590	.6160786	.1372399	.2474468	.9063471
#1	.2293247	2.473803	24.51995	.9872922	2.448597	1.237105	5.153297
#2	.2303786	2.477600	24.59112	.9948528	2.454416	1.241805	5.150220
#3	.2276251	2.481437	24.48044	.9994151	2.454437	1.242876	5.233014

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.432924**	**24.50455**	**2.456874**	**1.233780**	**25.66568**	**2.441727**	**2.482130**
Stddev	.011108	.09285	.004090	.002428	.22059	.006519	.007375
%RSD	.4565722	.3789205	.1664787	.1968064	.8594634	.2669952	.2971389
#1	2.439003	24.40501	2.453076	1.231309	25.47797	2.444948	2.473617
#2	2.439666	24.58882	2.456342	1.233867	25.61044	2.446009	2.486576
#3	2.420103	24.51983	2.461204	1.236163	25.90864	2.434224	2.486198

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.74511**	**4.576946**	**4.996596**	**4.989005**	**4.870283**	**5.203814**	**5.090183**
Stddev	.17747	.031515	.007562	.006006	.011929	.087017	.019309
%RSD	.6893245	.6885493	.1513529	.1203778	.2449377	1.672177	.3793380
#1	25.63038	4.599458	4.987863	4.984760	4.868493	5.124862	5.068040
#2	25.65544	4.590450	5.000924	4.986378	4.883006	5.189467	5.103509
#3	25.94952	4.540930	5.000999	4.995876	4.859350	5.297112	5.099001

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV01 Acquired: 9/29/2025 13:42:36 Type: Unk
Method: 6010-200.7 NEW(v224) 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	**5.104996**	**4.835795**	**4.839843**
Stddev	.021726	.013795	.030786
%RSD	.4255797	.2852648	.6360931
#1	5.079912	4.835234	4.866816
#2	5.117870	4.849862	4.806304
#3	5.117205	4.822289	4.846409

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6322.321**	**87607.63**	**8647.681**	**4913.921**	**7195.064**
Stddev	14.462	588.32	20.648	38.276	16.835
%RSD	.2287449	.6715418	.2387681	.7789238	.2339804
#1	6327.441	88123.24	8638.501	4954.848	7198.009
#2	6333.525	87732.88	8633.216	4907.906	7210.233
#3	6305.995	86966.77	8671.327	4879.009	7176.951

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB01 Acquired: 9/29/2025 13:46:39 Type: Unk
Method: 6010-200.7 NEW(v224) 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	**.0001333**	**.0066849**	**.0002565**	**-.000150**	**.0018470**	**.0131301**	**.0058993**
Stddev	.0004147	.0023124	.0013147	.002048	.0011730	.0058055	.0014612
%RSD	311.0350	34.59187	512.6546	1364.890	63.50872	44.21477	24.76869
#1	.0001005	.0083634	.0017531	.001606	.0029236	.0196332	.0061161
#2	.0005635	.0040472	-.000712	-.002400	.0020204	.0084693	.0043418
#3	-.000264	.0076441	-.000272	.000344	.0005969	.0112879	.0072400

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001188**	**.0001845**	**.0166866**	**.0003717**	**-.000010**	**.0001270**	**.0034508**
Stddev	.0001004	.0001250	.0039017	.0002568	.000431	.0005140	.0032713
%RSD	84.48137	67.78137	23.38253	69.09223	4520.649	404.8089	94.79918
#1	.0001503	.0003007	.0210764	.0006553	.000424	-.000388	.0044223
#2	.0000065	.0002005	.0136139	.0003046	-.000437	.000640	.0061262
#3	.0001997	.0000522	.0153693	.0001550	-.000015	.000129	-.000196

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007855**	**-.014544**	**.0002535**	**-.000171**	**-.016475**	**.0007934**	**-.000137**
Stddev	.0007278	.029077	.0004450	.000252	.009432	.0025995	.000269
%RSD	92.64947	199.9243	175.5631	147.2229	57.24828	327.6350	196.2851
#1	.0003665	.016317	.0006016	-.000460	-.005912	.0036214	.000129
#2	.0003642	-.041427	.0004068	-.000000	-.024054	.0002510	-.000409
#3	.0016258	-.018522	-.000248	-.000052	-.019458	-.001492	-.000131

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.174799**	**.0052286**	**.0003241**	**.0186495**	**-.000380**	**.0184249**	**.0018012**
Stddev	.024206	.0000494	.0002595	.0005680	.000424	.0035063	.0017425
%RSD	13.84819	.9450208	80.05331	3.045755	111.7474	19.03030	96.73982
#1	-.158170	.0052856	.0002476	.0179944	-.000810	.0206498	.0008301
#2	-.202570	.0052002	.0006133	.0190038	-.000368	.0143830	.0038128
#3	-.163657	.0051998	.0001115	.0189504	.000039	.0202419	.0007607

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB01 Acquired: 9/29/2025 13:46:39 Type: Unk
Method: 6010-200.7 NEW(v224) 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	-.007175	-.004920	.0013881
Stddev	.001951	.001975	.0001922
%RSD	27.18455	40.13891	13.84583
#1	-.009059	-.005145	.0015881
#2	-.007302	-.002842	.0013712
#3	-.005165	-.006772	.0012048

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6509.669	89954.34	8577.749	5056.609	7664.461
Stddev	3.422	544.80	63.075	60.089	5.287
%RSD	.0525645	.6056390	.7353378	1.188335	.0689760
#1	6505.718	90562.09	8580.678	5121.312	7663.917
#2	6511.649	89791.14	8639.310	5045.957	7659.468
#3	6511.641	89509.79	8513.261	5002.558	7669.999

Sample Name: LR-1 Acquired: 9/29/2025 13:50:47 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0014227**	**.0128876**	**.0175644**	**-.021911**	**.0090103**	**.0496199**	**.0216493**
Stddev	.0011845	.0045360	.0027906	.003238	.0032623	.0167661	.0030876
%RSD	83.25507	35.19633	15.88789	14.77697	36.20623	33.78900	14.26193
#1	.0020417	.0179115	.0168517	-.025345	.0104697	.0313354	.0251415
#2	.0000570	.0116585	.0151992	-.018914	.0112882	.0532521	.0205255
#3	.0021693	.0090928	.0206422	-.021472	.0052731	.0642721	.0192811

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008466**	**.0007991**	**2456.464**	**.0331924**	**.0064112**	**.0088780**	**.5737800**
Stddev	.0000376	.0000395	29.800	.0001990	.0002901	.0003757	.0112746
%RSD	4.436912	4.938447	1.213115	.5996128	4.524194	4.232212	1.964962
#1	.0008848	.0007706	2447.756	.0331951	.0061183	.0092440	.5790077
#2	.0008453	.0008442	2431.988	.0333901	.0066984	.0088968	.5814919
#3	.0008097	.0007826	2489.648	.0329921	.0064169	.0084933	.5608405

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0255595**	**2240.451**	**.0267920**	**-.002395**	**2206.823**	**.0123743**	**.0659029**
Stddev	.0006471	4.844	.0006653	.000610	20.539	.0039834	.0003723
%RSD	2.531637	.2162088	2.483053	25.47534	.9306916	32.19039	.5649180
#1	.0262560	2245.767	.0260394	-.001691	2230.538	.0169731	.0656519
#2	.0249770	2239.301	.0270352	-.002745	2194.824	.0099977	.0657262
#3	.0254455	2236.286	.0273015	-.002749	2195.106	.0101523	.0663307

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.618959**	**.0121269**	**.0042604**	**-.005953**	**-.109290**	**-.014502**	**.0210970**
Stddev	.333827	.0007962	.0005859	.000986	.001229	.016087	.0022711
%RSD	5.043497	6.565616	13.75128	16.55819	1.124304	110.9241	10.76517
#1	6.296170	.0127892	.0043041	-.006768	-.109635	.003892	.0226304
#2	6.597881	.0112436	.0036539	-.004857	-.110309	-.025937	.0184879
#3	6.962825	.0123481	.0048232	-.006234	-.107925	-.021462	.0221728

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: LR-1 Acquired: 9/29/2025 13:50:47 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.2252383	-.311387	.0611097
Stddev	.0079704	.004912	.0002525
%RSD	3.538648	1.577558	.4132545
#1	.2239288	-.316189	.0613892
#2	.2180037	-.306371	.0610419
#3	.2337823	-.311601	.0608979

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4627.643	68486.78	7354.036	3558.975	4875.531
Stddev	2.808	224.43	22.807	25.699	3.179
%RSD	.0606850	.3276930	.3101327	.7220775	.0651950
#1	4630.776	68279.01	7378.531	3555.600	4872.373
#2	4625.354	68724.80	7350.164	3586.194	4878.730
#3	4626.798	68456.53	7333.412	3535.130	4875.490

Sample Name: LR-2 Acquired: 9/29/2025 13:55:13 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.0713465	-.150041	.0938417	.0064990	-.109486	1853.851	.0205718
Stddev	.0067041	.005357	.0020550	.0071162	.003158	9.720	.0028282
%RSD	9.396484	3.570248	2.189860	109.4973	2.884494	.5242932	13.74780
#1	.0776482	-.155857	.0926587	.0029386	-.106728	1858.616	.0174843
#2	.0643020	-.145308	.0962146	.0018656	-.108799	1842.669	.0230370
#3	.0720893	-.148959	.0926517	.0146926	-.112931	1860.269	.0211941

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0845581	-.010893	12.93821	-.246393	.0344525	2.523835	2529.914
Stddev	.0009360	.001140	.21288	.001045	.0005950	.019028	11.638
%RSD	1.106951	10.46458	1.645325	.4240372	1.727136	.7539236	.4600189
#1	.0842964	-.011573	12.88309	-.247499	.0338459	2.505761	2539.899
#2	.0837807	-.011528	12.75831	-.245423	.0350353	2.522052	2532.710
#3	.0855971	-.009577	13.17322	-.246257	.0344764	2.543692	2517.133

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.463279	1.040463	.0479027	^ *****	4.926778	.0401073	.0293326
Stddev	.001549	.043229	.0004136	-----	.088222	.0009614	.0032918
%RSD	.3342530	4.154752	.8634254	-----	1.790661	2.397007	11.22230
#1	-.465066	1.060945	.0474983	^ -----	4.975112	.0405723	.0256933
#2	-.462339	1.069644	.0478848	^ -----	4.980271	.0390018	.0321023
#3	-.462432	.990800	.0483249	^ -----	4.824952	.0407478	.0302023

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1676.535	^ *****	-.021546	.0224494	.0024096	.4724336	.0740714
Stddev	20.374	-----	.000919	.0023985	.0007099	.0063969	.0059500
%RSD	1.215225	-----	4.263647	10.68418	29.45960	1.354030	8.032735
#1	1692.492	^ -----	-.022150	.0197897	.0022614	.4798163	.0705198
#2	1653.586	^ -----	-.020489	.0231104	.0017855	.4685356	.0809405
#3	1683.527	^ -----	-.021999	.0244481	.0031818	.4689491	.0707540

Sample Name: LR-2 Acquired: 9/29/2025 13:55:13 Type: Unk
Method: 6010-200.7 NEW(v225) 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	-.458214	.2858166	-2.42527
Stddev	.008963	.0032203	.01125
%RSD	1.956181	1.126683	.4639806
#1	-.468472	.2849440	-2.43491
#2	-.451891	.2893833	-2.42799
#3	-.454278	.2831226	-2.41290

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5641.026	76888.92	8028.030	4318.708	6128.325
Stddev	6.219	168.98	85.270	20.551	5.652
%RSD	.1102515	.2197686	1.062149	.4758652	.0922209
#1	5642.681	76729.46	8002.360	4328.090	6122.279
#2	5646.251	77066.03	8123.186	4295.141	6133.475
#3	5634.147	76871.25	7958.545	4332.895	6129.222

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3209-01 Acquired: 9/29/2025 14:04:22 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0456396**	**-.031976**	**.3250026**	**.0038985**	**.0065068**	**124.5947**	**.7233245**
Stddev	.0037339	.001824	.0018872	.0020790	.0013067	.1130	.0023331
%RSD	8.181261	5.705583	.5806711	53.32823	20.08222	.0907219	.3225544
#1	.0489641	-.029930	.3271759	.0022143	.0076114	124.6101	.7253207
#2	.0415998	-.033435	.3240528	.0032591	.0050643	124.6993	.7207596
#3	.0463548	-.032561	.3237789	.0062220	.0068445	124.4748	.7238930

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0135499**	**.0035383**	**32.45551**	**.1912251**	**.1359531**	**.8962890**	**261.2283**
Stddev	.0000829	.0002517	.03246	.0007664	.0002712	.0007857	.9087
%RSD	.6121637	7.114775	.1000267	.4007926	.1995133	.0876653	.3478485
#1	.0135871	.0037944	32.46825	.1904597	.1357507	.8963194	260.3865
#2	.0136077	.0032912	32.47967	.1912231	.1358472	.8954885	262.1916
#3	.0134548	.0035294	32.41861	.1919926	.1362613	.8970591	261.1067

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.113339**	**57.92996**	**.2449859**	**.0093036**	**5.491691**	**.4382105**	**.7975882**
Stddev	.009362	.12090	.0000456	.0001635	.023392	.0058921	.0019483
%RSD	.1830826	.2086945	.0186046	1.757265	.4259525	1.344589	.2442699
#1	5.124097	57.79036	.2449442	.0091292	5.468577	.4368974	.7998338
#2	5.107042	57.99901	.2450346	.0093282	5.515352	.4446485	.7965822
#3	5.108877	58.00050	.2449789	.0094533	5.491142	.4330858	.7963486

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.631309**	**.2934596**	**.0054939**	**.0494095**	**6.546967**	**3.907842**	**4.453005**
Stddev	.029447	.0031639	.0000930	.0012292	.015562	.017562	.019169
%RSD	.4440542	1.078150	1.692373	2.487850	.2376902	.4494111	.4304778
#1	6.638443	.2955396	.0055754	.0494316	6.529857	3.928121	4.434456
#2	6.656533	.2950208	.0055137	.0481693	6.550770	3.897679	4.451819
#3	6.598950	.2898185	.0053926	.0506275	6.560274	3.897725	4.472740

Sample Name: Q3209-01 Acquired: 9/29/2025 14:04:22 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**4.698059**	**.1717795**	**-.130335**
Stddev	.020685	.0010105	.000805
%RSD	.4402847	.5882276	.6173418
#1	4.676675	.1707043	-.129763
#2	4.699536	.1719245	-.131255
#3	4.717965	.1727096	-.129986

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6920.248**	**94800.25**	**9322.494**	**5336.050**	**7223.561**
Stddev	4.845	133.31	22.491	14.663	2.496
%RSD	.0700153	.1406270	.2412600	.2747907	.0345510
#1	6925.805	94942.44	9308.420	5328.088	7220.683
#2	6916.910	94678.08	9348.433	5327.092	7225.134
#3	6918.028	94780.22	9310.629	5352.972	7224.866

Sample Name: LR-3 Acquired: 9/29/2025 14:08:24 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0923144**	**.0318448**	**233.3130**	**.0028283**	**.1359434**	**.0633173**	**.0009554**
Stddev	.0027529	.0032463	1.8528	.0051161	.0060731	.0173862	.0006069
%RSD	2.982043	10.19407	.7941415	180.8914	4.467383	27.45890	63.52307
#1	.0952931	.0281004	231.6057	.0083028	.1295144	.0470516	.0002585
#2	.0898639	.0335649	233.0501	-.001832	.1415835	.0816409	.0013678
#3	.0917863	.0338691	235.2833	.002014	.1367322	.0612594	.0012400

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005270**	**-.003939**	**.2070774**	**22.71674**	**.0118179**	**50.29923**	**.1089845**
Stddev	.000062	.000134	.0022742	.16087	.0004230	.07528	.0171205
%RSD	1.178024	3.392921	1.098252	.7081423	3.578959	.1496672	15.70911
#1	-.005201	-.003832	.2071946	22.87500	.0121645	50.28675	.0892165
#2	-.005321	-.004089	.2092908	22.55339	.0119427	50.23098	.1186936
#3	-.005288	-.003896	.2047468	22.72182	.0113466	50.37998	.1190434

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.00243**	**-.227546**	**23.60481**	**.0024175**	**.2827808**	**-.038704**	**31.26957**
Stddev	.43108	.017984	.03314	.0007845	.0161771	.001922	.36139
%RSD	.8621132	7.903402	.1403830	32.45120	5.720733	4.966411	1.155727
#1	50.39771	-.206843	23.57555	.0015311	.2790289	-.040572	31.49520
#2	49.54279	-.239301	23.59808	.0030225	.3005042	-.036732	31.46077
#3	50.06678	-.236493	23.64079	.0026990	.2688093	-.038808	30.85275

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5221552**	**.0019697**	**-.021582**	**.0020636**	**-.045108**	**-.090059**	**.1590243**
Stddev	.0213818	.0002561	.000599	.0008804	.001312	.009194	.0016100
%RSD	4.094912	13.00084	2.773218	42.66149	2.907478	10.20933	1.012390
#1	.5399066	.0019210	-.022224	.0019233	-.046623	-.085931	.1583275
#2	.5281405	.0017415	-.021039	.0012618	-.044348	-.100594	.1578801
#3	.4984186	.0022467	-.021484	.0030057	-.044354	-.083652	.1608653

Sample Name: LR-3 Acquired: 9/29/2025 14:08:24 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.0809959	.0005292	.0004184
Stddev	.0047222	.0013786	.0000407
%RSD	5.830144	260.5228	9.731749
#1	.0759886	-.001060	.0004304
#2	.0853687	.001409	.0003730
#3	.0816305	.001238	.0004517

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6470.984	97970.25	8744.966	5218.562	7830.227
Stddev	39.322	406.94	51.310	9.142	49.060
%RSD	.6076627	.4153706	.5867356	.1751854	.6265458
#1	6503.626	97817.25	8735.553	5222.338	7872.961
#2	6481.994	98431.52	8800.330	5208.137	7841.066
#3	6427.330	97661.99	8699.014	5225.212	7776.654

Sample Name: Q3212-01 Acquired: 9/29/2025 14:13:10 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0440164**	**-.031595**	**.4561248**	**-.000650**	**-.008117**	**118.0269**	**.5783712**
Stddev	.0044261	.002738	.0093650	.002086	.001086	.5078	.0059665
%RSD	10.05561	8.664724	2.053156	321.0169	13.37479	.4302453	1.031603
#1	.0491253	-.034583	.4669121	-.000672	-.007559	117.9900	.5800191
#2	.0415853	-.030992	.4500762	.001447	-.007423	118.5521	.5833405
#3	.0413387	-.029209	.4513861	-.002725	-.009368	117.5385	.5717539

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0131486**	**.0055125**	**145.0986**	**.1832149**	**.1159651**	**.5395601**	**240.0492**
Stddev	.0001289	.0000931	.9822	.0009570	.0002650	.0032352	.7267
%RSD	.9802537	1.688787	.6768890	.5223535	.2284705	.5995994	.3027410
#1	.0131496	.0054064	145.2096	.1822899	.1162433	.5432717	239.5333
#2	.0132771	.0055504	146.0206	.1831537	.1159361	.5380714	239.7339
#3	.0130193	.0055806	144.0657	.1842010	.1157158	.5373372	240.8803

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.981134**	**67.13466**	**.2036033**	**.0042719**	**13.89224**	**.3749306**	**.5334430**
Stddev	.050267	.42349	.0011972	.0003049	.08356	.0030987	.0006339
%RSD	1.009155	.6308130	.5880241	7.138010	.6014562	.8264633	.1188363
#1	4.999225	67.22432	.2048596	.0046033	13.82882	.3732131	.5329227
#2	5.019852	67.50614	.2034746	.0040032	13.86099	.3730709	.5341491
#3	4.924325	66.67351	.2024755	.0042091	13.98692	.3785076	.5332573

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.51041**	**.1038583**	**.0084093**	**.0508973**	**5.011854**	**4.818965**	**6.653478**
Stddev	.02785	.0123785	.0001284	.0017221	.037562	.040438	.052753
%RSD	.2419732	11.91866	1.526739	3.383494	.7494603	.8391329	.7928592
#1	11.53744	.0962377	.0082797	.0527785	5.009817	4.817000	6.593250
#2	11.48180	.0971960	.0085364	.0493985	5.050392	4.779546	6.675695
#3	11.51197	.1181410	.0084118	.0505149	4.975351	4.860349	6.691488

Sample Name: Q3212-01 Acquired: 9/29/2025 14:13:10 Type: Unk
Method: 6010-200.7 NEW(v225) 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	6.680619	.0985422	.2586067
Stddev	.057615	.0026383	.0050280
%RSD	.8624173	2.677299	1.944254
#1	6.617143	.0970682	.2602877
#2	6.729607	.1015881	.2625788
#3	6.695107	.0969703	.2529536

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7258.729	100393.7	9704.769	5576.741	7029.070
Stddev	7.376	335.5	83.241	36.119	9.465
%RSD	.1016122	.3341531	.8577330	.6476644	.1346548
#1	7251.196	100635.4	9688.701	5618.290	7025.744
#2	7259.053	100535.1	9630.734	5552.831	7021.717
#3	7265.937	100010.7	9794.873	5559.103	7039.749

Sample Name: Q3146-03 Acquired: 9/29/2025 14:17:13 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0054336**	**-.003185**	**21.22664**	**.0004908**	**.0034957**	**.2629146**	**.1278541**
Stddev	.0009248	.001336	.02366	.0030016	.0013571	.0025174	.0008024
%RSD	17.02091	41.93078	.1114536	611.5265	38.82185	.9574802	.6275627
#1	.0061950	-.004665	21.22651	.0019861	.0019606	.2647493	.1279546
#2	.0044044	-.002822	21.20304	-.002965	.0045360	.2639498	.1286015
#3	.0057014	-.002069	21.25036	.002451	.0039905	.2600447	.1270062

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000055**	**.0247524**	**1.569481**	**.0171137**	**.0628710**	**.1840449**	**.0875496**
Stddev	.000053	.0001166	.002725	.0003381	.0002547	.0016003	.0045558
%RSD	95.67212	.4711167	.1736481	1.975558	.4051614	.8695322	5.203640
#1	-.000060	.0247098	1.572480	.0167272	.0627878	.1858790	.0927800
#2	-.000000	.0248844	1.567154	.0172593	.0631569	.1833226	.0854210
#3	-.000105	.0246631	1.568810	.0173546	.0626683	.1829330	.0844477

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1680217**	**.2709470**	**.0080607**	**-.000252**	**475.6692**	**-.001922**	**22.01379**
Stddev	.0011257	.0365245	.0002626	.000210	2.4586	.000811	.22462
%RSD	.6699643	13.48032	3.257215	83.28903	.5168784	42.19137	1.020377
#1	.1678192	.3125931	.0083431	-.000490	473.0902	-.002437	21.78843
#2	.1692349	.2558895	.0080150	-.000172	475.9310	-.000987	22.23767
#3	.1670111	.2443583	.0078240	-.000094	477.9865	-.002342	22.01528

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.099072**	**.0235653**	**-.013239**	**-.002996**	**-.001804**	**.1982322**	**.1986653**
Stddev	.029631	.0001089	.000369	.000469	.001840	.0106575	.0009368
%RSD	2.696026	.4620084	2.785537	15.65431	102.0137	5.376273	.4715600
#1	1.088693	.0235517	-.013532	-.003282	.000262	.1925153	.1992823
#2	1.076027	.0234638	-.012825	-.002455	-.003266	.1916530	.1991264
#3	1.132497	.0236803	-.013360	-.003251	-.002408	.2105284	.1975873

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3146-03 Acquired: 9/29/2025 14:17:13 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.8745862	-.015663	.0079834
Stddev	.0050500	.001243	.0000327
%RSD	.5774159	7.933405	.4095284
#1	.8712291	-.014452	.0080116
#2	.8803939	-.016935	.0079910
#3	.8721356	-.015602	.0079476

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6375.458	90495.64	8651.962	5006.034	7133.618
Stddev	11.517	217.86	70.774	12.696	10.046
%RSD	.1806533	.2407386	.8180076	.2536074	.1408292
#1	6362.166	90563.37	8609.166	5010.353	7122.060
#2	6381.700	90671.59	8613.066	4991.743	7140.263
#3	6382.506	90251.96	8733.653	5016.007	7138.530

Sample Name: Q3183-10 Acquired: 9/29/2025 14:21:51 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**-.000808**	**-.001545**	**.0061751**	**.0036555**	**.0018856**	**.0802414**	**.1156258**
Stddev	.000893	.000550	.0011346	.0025845	.0015382	.0162977	.0017862
%RSD	110.4665	35.61878	18.37383	70.70131	81.57842	20.31089	1.544775
#1	-.001621	-.002165	.0067012	.0025693	.0035244	.0727039	.1139901
#2	.000148	-.001112	.0069511	.0066058	.0016595	.0989435	.1153558
#3	-.000951	-.001359	.0048729	.0017914	.0004729	.0690767	.1175316

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000255**	**.0001518**	**11.83815**	**.0018683**	**-.000125**	**.0052270**	**.0502715**
Stddev	.0000618	.0000406	.01986	.0003353	.000039	.0002647	.0067847
%RSD	242.5873	26.71054	.1678034	17.94511	30.91322	5.064190	13.49609
#1	.0000807	.0001965	11.83780	.0020656	-.000166	.0055322	.0526396
#2	-.000041	.0001416	11.85819	.0020581	-.000090	.0050609	.0426201
#3	.000037	.0001174	11.81846	.0014812	-.000117	.0050878	.0555547

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0338768**	**.6977418**	**.0010949**	**-.000630**	**401.6467**	**-.000328**	**.0311574**
Stddev	.0012444	.0280180	.0002258	.000351	.5574	.004550	.0004523
%RSD	3.673277	4.015524	20.61985	55.78820	.1387875	1385.048	1.451640
#1	.0325812	.7296018	.0013555	-.000692	402.0212	-.003088	.0316550
#2	.0350626	.6769421	.0009592	-.000946	401.0061	-.002821	.0310460
#3	.0339867	.6866815	.0009699	-.000252	401.9129	.004923	.0307713

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.117233**	**.0043530**	**.0010272**	**-.005040**	**.0011709**	**.7955303**	**.0765338**
Stddev	.039186	.0003270	.0002255	.001116	.0019316	.0031174	.0007457
%RSD	3.507380	7.511903	21.95307	22.13868	164.9683	.3918666	.9743080
#1	1.116632	.0041497	.0011627	-.006131	-.000583	.7991295	.0773927
#2	1.078351	.0041790	.0011521	-.003901	.003241	.7937813	.0761567
#3	1.156715	.0047302	.0007669	-.005086	.000854	.7936801	.0760519

Sample Name: Q3183-10 Acquired: 9/29/2025 14:21:51 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.2161633	-.017590	.0995103
Stddev	.0003769	.000668	.0003767
%RSD	.1743771	3.798147	.3785487
#1	.2157875	-.018351	.0992771
#2	.2165414	-.017321	.0999449
#3	.2161609	-.017099	.0993089

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6364.015	88357.78	8168.714	4971.796	7117.804
Stddev	11.082	169.71	40.820	18.185	9.121
%RSD	.1741355	.1920670	.4997104	.3657600	.1281458
#1	6375.453	88198.50	8199.067	4951.777	7127.355
#2	6353.327	88338.57	8184.766	4976.317	7109.183
#3	6363.266	88536.27	8122.308	4987.293	7116.875

Sample Name: Q3183-11 Acquired: 9/29/2025 14:26:18 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**.0017271**	**-.001642**	**.0035443**	**.0024654**	**.0000064**	**.1535005**	**.1578989**
Stddev	.0022271	.001696	.0013216	.0007583	.0001898	.0098829	.0018910
%RSD	128.9525	103.3221	37.28677	30.75948	2967.626	6.438343	1.197590
#1	.0029125	-.000172	.0031611	.0023059	.0000383	.1428853	.1599385
#2	.0031108	-.003498	.0024567	.0017996	-.000197	.1624357	.1575543
#3	-.000842	-.001255	.0050152	.0032909	.000178	.1551803	.1562040

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000312**	**.0001639**	**13.08682**	**.0030604**	**.0000957**	**.0055562**	**.1187781**
Stddev	.0000249	.0000302	.00968	.0001120	.0001030	.0005236	.0087423
%RSD	79.97957	18.45139	.0739707	3.658199	107.6374	9.424378	7.360186
#1	.0000026	.0001824	13.08100	.0029405	.0001398	.0052550	.1202120
#2	.0000428	.0001290	13.09800	.0030785	-.000022	.0061608	.1267147
#3	.0000481	.0001803	13.08148	.0031622	.000169	.0052527	.1094075

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1151697**	**.6438023**	**.0016111**	**-.000482**	**391.2591**	**.0028270**	**.0500753**
Stddev	.0007659	.0269758	.0003222	.000102	2.9520	.0021691	.0001168
%RSD	.6650120	4.190079	19.99928	21.07422	.7544766	76.72798	.2332267
#1	.1142941	.6683782	.0017756	-.000371	387.8551	.0008733	.0501118
#2	.1154997	.6149399	.0018178	-.000505	393.1158	.0024466	.0501694
#3	.1157152	.6480888	.0012398	-.000570	392.8063	.0051612	.0499446

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.249827**	**.0110897**	**.0006611**	**.0106720**	**.0009706**	**1.069113**	**.0737921**
Stddev	.022846	.0010993	.0002538	.0007092	.0006568	.016855	.0012040
%RSD	1.015469	9.912484	38.38729	6.645415	67.67490	1.576574	1.631657
#1	2.240708	.0110035	.0005335	.0101190	.0011828	1.049923	.0741766
#2	2.232948	.0122296	.0009534	.0114716	.0002339	1.081519	.0747569
#3	2.275824	.0100361	.0004964	.0104255	.0014951	1.075898	.0724428

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3183-11 Acquired: 9/29/2025 14:26:18 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.4594911	-.015368	.0947300
Stddev	.0092323	.001714	.0007451
%RSD	2.009239	11.15152	.7865325
#1	.4491058	-.015043	.0950828
#2	.4667681	-.017221	.0938740
#3	.4625994	-.013840	.0952331

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6472.574	90543.00	7959.494	5032.088	7273.525
Stddev	4.695	401.39	21.043	19.639	5.404
%RSD	.0725425	.4433098	.2643709	.3902772	.0742928
#1	6477.674	90809.69	7941.170	5045.246	7267.357
#2	6468.430	90737.92	7982.475	5041.504	7275.794
#3	6471.618	90081.37	7954.836	5009.514	7277.425

Sample Name: Q3183-12 Acquired: 9/29/2025 14:30:44 Type: Unk
Method: 6010-200.7 NEW(v225) 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	**-.000109**	**-.005543**	**.0186956**	**.0033678**	**.0017837**	**.1946351**	**.2401390**
Stddev	.000755	.001017	.0009321	.0011109	.0008470	.0158642	.0015348
%RSD	696.0562	18.35222	4.985706	32.98452	47.48535	8.150740	.6391191
#1	-.000159	-.004647	.0194883	.0023527	.0015147	.2082973	.2418164
#2	.000671	-.005332	.0189298	.0031964	.0027326	.1772361	.2397957
#3	-.000837	-.006648	.0176687	.0045545	.0011040	.1983720	.2388050

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002729**	**.0048219**	**29.34987**	**.0060224**	**.0001089**	**.0104530**	**.1881294**
Stddev	.0000813	.0000497	.04230	.0002575	.0004489	.0003430	.0041663
%RSD	29.78946	1.031072	.1441300	4.276016	412.1518	3.281554	2.214585
#1	.0001800	.0047674	29.39849	.0061219	.0003846	.0108140	.1890948
#2	.0003307	.0048335	29.32156	.0062154	-.000409	.0101314	.1917282
#3	.0003082	.0048648	29.32955	.0057300	.000351	.0104136	.1835651

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0530013**	**4.564426**	**.0064443**	**-.000784**	**418.1521**	**.0021134**	**.0918853**
Stddev	.0004887	.013518	.0002153	.000823	4.4273	.0025492	.0004726
%RSD	.9220512	.2961700	3.341460	105.0693	1.058767	120.6206	.5142779
#1	.0533026	4.574199	.0062384	-.000028	422.7679	.0048334	.0923731
#2	.0532639	4.570080	.0064266	-.001661	417.7472	-.000221	.0918531
#3	.0524375	4.548998	.0066679	-.000662	413.9412	.001728	.0914297

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.177457**	**.0131931**	**.0007306**	**.0088664**	**.0028456**	**2.361840**	**.0352583**
Stddev	.026343	.0008770	.0002724	.0008546	.0019336	.009394	.0007848
%RSD	2.237301	6.647320	37.28346	9.638264	67.95191	.3977537	2.225954
#1	1.162459	.0130962	.0010331	.0094793	.0020693	2.372038	.0361643
#2	1.162037	.0123685	.0006540	.0092298	.0014207	2.359945	.0347862
#3	1.207875	.0141145	.0005047	.0078902	.0050467	2.353539	.0348243

Sample Name: Q3183-12 Acquired: 9/29/2025 14:30:44 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.5284087	-.016935	.1687148
Stddev	.0016662	.002251	.0002022
%RSD	.3153278	13.29150	.1198260
#1	.5303037	-.018788	.1689187
#2	.5277498	-.014430	.1687112
#3	.5271728	-.017586	.1685144

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6407.739	89449.58	8098.048	4961.102	7143.369
Stddev	22.537	361.13	25.791	40.333	17.326
%RSD	.3517173	.4037199	.3184885	.8129884	.2425461
#1	6415.183	89032.59	8068.377	4920.783	7143.124
#2	6425.612	89660.49	8110.675	4961.074	7160.817
#3	6382.421	89655.64	8115.093	5001.449	7126.167

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3210-01 Acquired: 9/29/2025 14:35:08 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.0494557	-.090577	.1320168	-.002116	-.012775	132.3911
Stddev	.0022541	.003425	.0015183	.002208	.003702	.2362
%RSD	4.557832	3.781424	1.150082	104.3092	28.97781	.1784464
#1	.0505401	-.086794	.1333119	-.003877	-.013665	132.1573
#2	.0468644	-.093466	.1323927	-.002832	-.008709	132.3863
#3	.0509627	-.091472	.1303459	.000360	-.015951	132.6297

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8239259	.0166020	.0122965	117.9179	.2380467	.3731619
Stddev	.0051214	.0001416	.0001709	.1259	.0007740	.0004533
%RSD	.6215793	.8530374	1.389421	.1068039	.3251298	.1214665
#1	.8261434	.0165954	.0121957	118.0083	.2376442	.3727202
#2	.8275647	.0167468	.0122000	117.9712	.2375569	.3736259
#3	.8180695	.0164638	.0124937	117.7740	.2389389	.3731394

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.316292	368.4106	3.400036	95.41104	.5279275	.0047355
Stddev	.000563	2.0002	.027375	.14576	.0009644	.0007120
%RSD	.0427396	.5429267	.8051271	.1527722	.1826834	15.03417
#1	1.315924	370.1811	3.422183	95.40699	.5286623	.0052548
#2	1.316939	368.8099	3.408493	95.26735	.5282848	.0050278
#3	1.316013	366.2409	3.369430	95.55878	.5268354	.0039240

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.400432	.6463147	.5100510	60.48877	.1426576	.0186729
Stddev	.043581	.0007152	.0018473	.35124	.0120532	.0003434
%RSD	.9903861	.1106630	.3621718	.5806767	8.449033	1.839109
#1	4.388865	.6455496	.5101358	60.64386	.1516938	.0188562
#2	4.448630	.6464280	.5081628	60.73579	.1473068	.0182767
#3	4.363802	.6469665	.5118544	60.08668	.1289722	.0188857

Sample Name: Q3210-01 Acquired: 9/29/2025 14:35:08 Type: Unk
Method: 6010-200.7 NEW(v225) 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	.0333396	F 16.08623	7.021534	F 16.57501	F 18.56942	.1860523
Stddev	.0008810	.07018	.026603	.04266	.06546	.0004418
%RSD	2.642645	.4362667	.3788721	.2573807	.3525102	.2374790
#1	.0326750	16.13108	7.017969	16.60690	18.55683	.1865218
#2	.0343389	16.12227	7.049740	16.52655	18.51117	.1856447
#3	.0330047	16.00536	6.996894	16.59157	18.64026	.1859904

Elem	Sr4077
Units	ppm
Avg	-.150350
Stddev	.000683
%RSD	.4542586
#1	-.151132
#2	-.150045
#3	-.149873

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8180.170	117436.2	11350.20	6366.532	7069.368
Stddev	10.367	214.9	16.74	19.962	9.566
%RSD	.1267318	.1830152	.1474565	.3135520	.1353176
#1	8170.747	117678.0	11359.37	6362.263	7058.333
#2	8178.488	117364.0	11360.35	6388.284	7075.302
#3	8191.275	117266.7	11330.88	6349.050	7074.470

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV02 Acquired: 9/29/2025 14:51:40 Type: Unk
Method: 6010-200.7 NEW(v226) 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	**4.966303**	**4.622098**	**4.838754**	**5.054085**	**4.961215**	**9.735594**	**9.678583**
Stddev	.008909	.065162	.010677	.011586	.006203	.034863	.043719
%RSD	.1793861	1.409802	.2206577	.2292329	.1250213	.3581016	.4517113
#1	4.956016	4.602684	4.842105	5.042275	4.954090	9.706552	9.700280
#2	4.971358	4.568849	4.826803	5.054547	4.965405	9.774258	9.707209
#3	4.971535	4.694762	4.847353	5.065432	4.964150	9.725972	9.628259

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2359411**	**2.444175**	**24.31973**	**.9842929**	**2.424515**	**1.224506**	**4.937561**
Stddev	.0009720	.003360	.07093	.0006027	.001821	.002616	.045790
%RSD	.4119856	.1374616	.2916585	.0612334	.0750928	.2136300	.9273807
#1	.2348188	2.444960	24.29533	.9849410	2.425097	1.222152	4.986237
#2	.2365119	2.440492	24.39964	.9841887	2.422475	1.224045	4.931104
#3	.2364928	2.447073	24.26422	.9837491	2.425974	1.227322	4.895342

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.407224**	**24.30187**	**2.426944**	**1.216742**	**24.27246**	**2.430804**	**2.414703**
Stddev	.015009	.09920	.003785	.000361	.11139	.006433	.000843
%RSD	.6235039	.4082022	.1559615	.0296604	.4589017	.2646317	.0349291
#1	2.410941	24.33039	2.427969	1.216339	24.39840	2.425048	2.415662
#2	2.420025	24.38369	2.422752	1.216850	24.23208	2.437748	2.414370
#3	2.390705	24.19153	2.430111	1.217036	24.18689	2.429616	2.414076

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.87074**	**4.738500**	**4.952669**	**4.922424**	**4.834541**	**4.983820**	**4.989818**
Stddev	.12303	.023046	.007989	.008672	.015964	.031598	.005524
%RSD	.4946647	.4863535	.1613001	.1761735	.3302013	.6340117	.1107126
#1	25.01246	4.712441	4.945869	4.916974	4.843325	5.016703	4.990949
#2	24.79143	4.756201	4.950670	4.917874	4.844184	4.981072	4.994690
#3	24.80833	4.746857	4.961467	4.932424	4.816115	4.953687	4.983816

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV02 Acquired: 9/29/2025 14:51:40 Type: Unk
Method: 6010-200.7 NEW(v226) 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	**5.024377**	**4.725074**	**4.824980**
Stddev	.013195	.016309	.032409
%RSD	.2626214	.3451550	.6716906
#1	5.009708	4.729017	4.853741
#2	5.028146	4.739051	4.789865
#3	5.035278	4.707156	4.831335

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6438.306**	**89132.46**	**8404.288**	**4976.319**	**7343.047**
Stddev	24.586	347.62	39.059	22.610	29.358
%RSD	.3818717	.3900015	.4647455	.4543435	.3998098
#1	6437.803	88824.24	8427.605	4950.807	7335.477
#2	6463.140	89063.87	8359.196	4984.273	7375.449
#3	6413.976	89509.26	8426.064	4993.877	7318.215

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB02 Acquired: 9/29/2025 14:55:43 Type: Unk
Method: 6010-200.7 NEW(v226) 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	**-.000859**	**.0068844**	**.0001310**	**.0000472**	**-.000082**	**.0025476**	**.0003131**
Stddev	.000528	.0018799	.0011124	.0006863	.002302	.0032178	.0021597
%RSD	61.40587	27.30705	849.4801	1454.963	2818.887	126.3073	689.7512
#1	-.000969	.0048299	-.001137	-.000550	-.001584	.0007495	-.002068
#2	-.000285	.0085185	.000586	.000797	.002568	.0006308	.000863
#3	-.001323	.0073047	.000944	-.000105	-.001229	.0062626	.002145

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001208**	**.0000109**	**.0023019**	**-.000366**	**.0001535**	**-.000188**	**.0024523**
Stddev	.0000493	.0000552	.0038308	.000186	.0001528	.000505	.0058734
%RSD	40.81361	507.3672	166.4164	50.93571	99.53441	268.6104	239.5062
#1	.0001726	-.000036	-.001030	-.000576	.0002124	-.000671	.0092216
#2	.0001155	-.000004	.001448	-.000222	.0002680	-.000228	-.001291
#3	.0000744	.000072	.006488	-.000299	-.000020	.000336	-.000573

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000777**	**.0072275**	**-.000053**	**-.000529**	**.2033973**	**-.000119**	**-.000150**
Stddev	.0002795	.0176700	.000142	.000300	.0134150	.001189	.000377
%RSD	359.7580	244.4838	269.6012	56.63974	6.595463	1002.908	250.8929
#1	.0003244	.0214167	.000010	-.000675	.2184459	-.000686	-.000135
#2	.0001345	.0128304	.000047	-.000728	.1926924	.001248	-.000535
#3	-.000226	-.012565	-.000215	-.000184	.1990536	-.000917	.000219

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3161043**	**.0023672**	**.0000629**	**.0175360**	**-.001263**	**.0067936**	**.0010722**
Stddev	.0565242	.0002907	.0002764	.0002775	.000863	.0153305	.0006670
%RSD	17.88152	12.27851	439.2837	1.582240	68.34308	225.6611	62.20601
#1	.2664563	.0025809	.0002212	.0178228	-.000963	.0243165	.0018263
#2	.3776202	.0024844	-.000256	.0175162	-.002235	-.004144	.0008309
#3	.3042364	.0020362	.000224	.0172690	-.000589	.000208	.0005595

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB02 Acquired: 9/29/2025 14:55:43 Type: Unk
Method: 6010-200.7 NEW(v226) 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	-.009834	.0009483	.0001348
Stddev	.002434	.0003599	.0000846
%RSD	24.75157	37.95199	62.78748
#1	-.010756	.0010676	.0000396
#2	-.011672	.0005439	.0001632
#3	-.007073	.0012333	.0002015

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6761.200	93749.96	8521.972	5224.597	8032.376
Stddev	9.599	255.84	64.607	11.305	10.894
%RSD	.1419718	.2729003	.7581265	.2163797	.1356264
#1	6769.675	93519.69	8584.221	5217.368	8044.362
#2	6763.148	93704.81	8526.457	5237.625	8029.689
#3	6750.776	94025.37	8455.240	5218.799	8023.077

Sample Name: PB169831BL Acquired: 9/29/2025 14:59:48 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**-.000738**	**-.001685**	**.0006291**	**-.000293**	**-.000972**	**.0078935**	**.0025371**
Stddev	.001041	.002524	.0000455	.000545	.001489	.0013329	.0014202
%RSD	140.9964	149.7528	7.234403	186.2715	153.1763	16.88605	55.97843
#1	.000238	-.002705	.0005821	-.000317	.000400	.0075477	.0041192
#2	-.000620	.001189	.0006323	-.000826	-.002556	.0067676	.0021198
#3	-.001834	-.003540	.0006730	.000264	-.000761	.0093652	.0013723

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001208**	**-.000006**	**-.003940**	**-.000229**	**-.000044**	**-.000294**	**.0014673**
Stddev	.0000245	.000009	.005666	.000204	.000185	.000354	.0061133
%RSD	20.24307	138.7381	143.8175	88.99883	421.2800	120.6112	416.6337
#1	.0001084	-.000007	.000799	-.000356	.000103	-.000675	.0044957
#2	.0001490	-.000015	-.010217	.000006	-.000252	.000025	.0054752
#3	.0001051	.000003	-.002402	-.000337	.000017	-.000231	-.005569

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003992**	**-.013170**	**-.000005**	**-.000142**	**.1177567**	**.0023131**	**-.000551**
Stddev	.0002549	.007754	.000196	.000688	.0098168	.0015150	.000121
%RSD	63.84771	58.87677	4196.060	485.1723	8.336537	65.49668	21.91394
#1	.0005729	-.007813	.000044	-.000306	.1118899	.0006792	-.000683
#2	.0001066	-.022061	-.000221	.000614	.1290898	.0025889	-.000446
#3	.0005181	-.009635	.000163	-.000733	.1122903	.0036713	-.000525

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1344693**	**.0003562**	**-.000072**	**.0172532**	**-.001350**	**.0100542**	**.0027671**
Stddev	.0283490	.0007814	.000204	.0001380	.002205	.0141749	.0006966
%RSD	21.08210	219.4041	283.3788	.7997901	163.2979	140.9846	25.17603
#1	.1200065	.0010736	.000163	.0170950	.000100	.0027863	.0035479
#2	.1671326	-.000476	-.000176	.0173158	-.003888	.0263890	.0025440
#3	.1162688	.000471	-.000203	.0173488	-.000263	.0009873	.0022093

Sample Name: PB169831BL Acquired: 9/29/2025 14:59:48 Type: Unk
Method: 6010-200.7 NEW(v227) 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	-.007953	-.003819	.0001225
Stddev	.000322	.002362	.0000575
%RSD	4.045327	61.83540	46.88355
#1	-.008060	-.006251	.0000692
#2	-.008209	-.003673	.0001150
#3	-.007592	-.001534	.0001834

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6969.447	98210.07	8638.195	5330.443	8427.452
Stddev	13.311	334.84	41.912	40.336	14.248
%RSD	.1909947	.3409471	.4851992	.7567144	.1690712
#1	6954.149	98596.37	8598.024	5356.857	8411.041
#2	6975.809	98002.83	8634.906	5284.013	8434.636
#3	6978.384	98031.00	8681.655	5350.458	8436.677

Sample Name: PB169831BS Acquired: 9/29/2025 15:04:08 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.7705745**	**2.292509**	**.9385469**	**1.966489**	**.7901795**	**1.944215**
Stddev	.0067577	.042154	.0017645	.008555	.0019582	.007802
%RSD	.8769684	1.838790	.1879992	.4350272	.2478158	.4012970
#1	.7635378	2.323791	.9365098	1.961438	.7915286	1.942255
#2	.7770134	2.244572	.9395313	1.961663	.7879335	1.937579
#3	.7711722	2.309165	.9395996	1.976367	.7910762	1.952810

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1853880**	**.1982957**	**.1905362**	**.9868046**	**.3931857**	**.1924819**
Stddev	.0024578	.0029999	.0001755	.0130254	.0021149	.0002062
%RSD	1.325749	1.512845	.0920983	1.319955	.5378783	.1071234
#1	.1870229	.1999415	.1907376	.9881515	.3954798	.1926508
#2	.1825615	.1948331	.1904552	.9731581	.3927634	.1922521
#3	.1865794	.2001126	.1904159	.9991042	.3913138	.1925427

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2984026**	**2.903546**	**.1942188**	**1.916549**	**.4804246**	**.0731482**
Stddev	.0012276	.051939	.0007814	.015179	.0009232	.0003805
%RSD	.4113835	1.788815	.4023462	.7920007	.1921723	.5201186
#1	.2973000	2.883966	.1948875	1.908002	.4796844	.0732143
#2	.2997254	2.962429	.1944091	1.934074	.4814591	.0734913
#3	.2981823	2.864243	.1933598	1.907570	.4801304	.0727391

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.940347**	**.2917577**	**.1979667**	**9.476743**	**.2941533**	**.3996616**
Stddev	.049826	.0010637	.0007022	.087640	.0046650	.0004428
%RSD	1.694566	.3645720	.3546883	.9247944	1.585905	.1107918
#1	2.903255	.2928784	.1976770	9.488973	.2953842	.3993489
#2	2.996982	.2907621	.1974558	9.557626	.2889963	.3994676
#3	2.920803	.2916325	.1987674	9.383630	.2980794	.4001683

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169831BS Acquired: 9/29/2025 15:04:08 Type: Unk
Method: 6010-200.7 NEW(v227) 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	.6970932	.1892150	.8395714	5.691772	F 4.146294	.1894478
Stddev	.0019910	.0018562	.0048099	.016153	.012144	.0013370
%RSD	.2856142	.9810058	.5728958	.2837952	.2928785	.7057285
#1	.6973344	.1892050	.8343991	5.693236	4.147533	.1904964
#2	.6949926	.1910762	.8439098	5.674936	4.133578	.1899047
#3	.6989526	.1873638	.8404055	5.707143	4.157770	.1879422

Elem	Sr4077
Units	ppm
Avg	.1852304
Stddev	.0004764
%RSD	.2572069
#1	.1857361
#2	.1847899
#3	.1851653

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6778.524	90637.99	8291.162	5113.117	7987.473
Stddev	6.753	204.01	111.972	6.835	8.643
%RSD	.0996193	.2250876	1.350501	.1336820	.1082100
#1	6785.382	90485.10	8215.018	5105.867	7995.249
#2	6771.882	90559.24	8419.729	5114.040	7978.167
#3	6778.308	90869.65	8238.739	5119.444	7989.002

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169862BL Acquired: 9/29/2025 15:08:08 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.0013243**	**-.000684**	**.0010206**	**-.000767**	**.0002340**	**.0057305**
Stddev	.0009122	.002940	.0002540	.000856	.0012344	.0071585
%RSD	68.88804	430.0128	24.88778	111.6218	527.5956	124.9190
#1	.0023566	.002643	.0013043	-.000708	-.000645	-.000576
#2	.0009896	-.001763	.0009433	.000058	-.000298	.004256
#3	.0006266	-.002931	.0008143	-.001652	.001645	.013512

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012418**	**.0001010**	**.0000287**	**-.002632**	**.0001668**	**.0000787**
Stddev	.0016665	.0000825	.0001115	.017129	.0003008	.0001621
%RSD	134.2031	81.68681	388.3988	650.6682	180.3664	206.0118
#1	.0031502	.0001723	-.000100	.013913	.0003451	.0002473
#2	.0000734	.0001198	.000103	-.001521	-.000181	.0000645
#3	.0005018	.0000107	.000083	-.020290	.000336	-.000076

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000136**	**-.000523**	**.0001859**	**-.011231**	**-.000186**	**-.000606**
Stddev	.000227	.006176	.0002336	.016128	.000129	.000523
%RSD	167.2849	1181.194	125.6342	143.6094	69.56238	86.32112
#1	.000061	.003523	-.000078	.006670	-.000257	-.001154
#2	-.000384	.002540	.000272	-.015732	-.000037	-.000551
#3	-.000085	-.007632	.000364	-.024630	-.000265	-.000112

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0536533**	**-.000076**	**-.000309**	**.0454288**	**-.001682**	**-.000015**
Stddev	.0153718	.001191	.000275	.0171497	.000455	.000177
%RSD	28.65021	1567.065	89.13085	37.75083	27.05443	1171.136
#1	.0437082	-.000285	-.000627	.0260647	-.001706	.000067
#2	.0713582	.001206	-.000140	.0587007	-.002125	.000107
#3	.0458934	-.001148	-.000160	.0515209	-.001216	-.000219

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169862BL Acquired: 9/29/2025 15:08:08 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.0180769**	**-.000625**	**-.002120**	**.0001812**	F **-.011926**	**-.006792**
Stddev	.0004378	.001745	.010312	.0009577	.002719	.001878
%RSD	2.421946	279.3544	486.3198	528.6239	22.79680	27.64425
#1	.0182975	.000758	-.005068	-.000796	-.013806	-.006104
#2	.0175727	-.002585	-.010637	.000222	-.013163	-.008917
#3	.0183605	-.000046	.009344	.001118	-.008809	-.005356

Elem	Sr4077
Units	ppm
Avg	**.0000547**
Stddev	.0000613
%RSD	112.0035
#1	.0001236
#2	.0000343
#3	.0000062

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6604.066**	**94441.86**	**8518.892**	**5266.863**	**7750.358**
Stddev	15.156	63.61	51.819	18.481	14.034
%RSD	.2294882	.0673503	.6082781	.3508855	.1810733
#1	6586.812	94383.81	8461.323	5279.646	7734.169
#2	6615.226	94431.93	8533.551	5275.269	7757.846
#3	6610.159	94509.85	8561.801	5245.673	7759.061

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169862BS Acquired: 9/29/2025 15:17:12 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.6964409**	**2.048192**	**.8516746**	**1.797492**	**.8430924**	**1.706879**
Stddev	.0009665	.037289	.0042286	.011139	.0062929	.013515
%RSD	.1387751	1.820577	.4965009	.6196876	.7464088	.7917741
#1	.6971714	2.006937	.8467938	1.785022	.8360601	1.707491
#2	.6968063	2.079497	.8542342	1.806456	.8481933	1.693069
#3	.6953450	2.058142	.8539959	1.800997	.8450237	1.720077

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1664608**	**.1750434**	**.1729020**	**.8782511**	**.3478748**	**.1721048**
Stddev	.0023446	.0027259	.0011082	.0179836	.0040863	.0010407
%RSD	1.408489	1.557276	.6409568	2.047661	1.174640	.6046778
#1	.1690021	.1730695	.1716318	.8990068	.3480234	.1709272
#2	.1643818	.1739071	.1736716	.8673149	.3437162	.1729008
#3	.1659985	.1781537	.1734026	.8684317	.3518847	.1724864

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2677324**	**2.529186**	**.1718438**	**1.742850**	**.4334405**	**.0656379**
Stddev	.0020718	.048884	.0019843	.007738	.0029164	.0010092
%RSD	.7738214	1.932795	1.154689	.4440085	.6728549	1.537449
#1	.2653420	2.584956	.1734365	1.734361	.4301979	.0662608
#2	.2690093	2.508841	.1696210	1.749511	.4358489	.0644736
#3	.2688459	2.493759	.1724740	1.744677	.4342748	.0661793

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.618771**	**.2605422**	**.1769176**	**8.592957**	**.2618487**	**.4215780**
Stddev	.006670	.0048327	.0034665	.080680	.0042310	.0021505
%RSD	.2546991	1.854857	1.959388	.9389109	1.615809	.5101116
#1	2.622975	.2607872	.1760405	8.683260	.2590922	.4191008
#2	2.611080	.2652477	.1739739	8.527973	.2597337	.4229659
#3	2.622257	.2555917	.1807384	8.567638	.2667202	.4226672

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169862BS Acquired: 9/29/2025 15:17:12 Type: Unk
Method: 6010-200.7 NEW(v227) 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	.7330769	.1956932	.8818301	5.154334	F -.010812	.1663341
Stddev	.0067908	.0012958	.0062477	.045900	.002775	.0017582
%RSD	.9263477	.6621624	.7084919	.8905131	25.66580	1.057029
#1	.7256042	.1945881	.8792179	5.106872	-.012500	.1659548
#2	.7388711	.1953722	.8773124	5.198494	-.012327	.1682510
#3	.7347554	.1971194	.8889599	5.157635	-.007609	.1647966

Elem	Sr4077
Units	ppm
Avg	.1649856
Stddev	.0008579
%RSD	.5200089
#1	.1653754
#2	.1640019
#3	.1655794

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6705.134	92289.04	8369.504	5187.414	7872.238
Stddev	12.691	734.97	64.972	57.533	27.909
%RSD	.1892704	.7963770	.7762915	1.109085	.3545248
#1	6718.901	91735.43	8417.428	5191.725	7903.182
#2	6693.902	93122.91	8395.530	5242.670	7848.970
#3	6702.599	92008.79	8295.554	5127.846	7864.564

Sample Name: PB169865BL Acquired: 9/29/2025 15:21:12 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**-.000440**	**-.000935**	**.0009661**	**-.001869**	**-.000107**	**.0001117**
Stddev	.001333	.000863	.0003522	.002034	.000733	.0121881
%RSD	303.2274	92.24818	36.45644	108.8427	683.9335	10907.18
#1	.001078	-.001184	.0013704	.000418	-.000887	-.002924
#2	-.000973	.000025	.0008022	-.003477	-.000002	.013531
#3	-.001423	-.001646	.0007257	-.002547	.000567	-.010272

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000829**	**.0001574**	**.0000606**	**.0044500**	**-.000034**	**-.000008**
Stddev	.000517	.0000743	.0001342	.0057952	.000493	.000074
%RSD	62.41344	47.16174	221.4869	130.2298	1447.234	878.3081
#1	-.000888	.0000784	.0002043	-.001703	.000415	-.000088
#2	-.001314	.0001682	.0000390	.009804	-.000562	.000058
#3	-.000285	.0002257	-.000062	.005249	.000045	.000005

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000345**	**-.000771**	**.0000067**	**-.028466**	**.0001420**	**-.000226**
Stddev	.000773	.000369	.0004250	.028620	.0002781	.000536
%RSD	224.0848	47.92350	6321.272	100.5404	195.8776	237.7533
#1	-.001162	-.001170	.0004324	.004118	.0003972	-.000298
#2	.000375	-.000700	.0000054	-.049537	.0001830	-.000722
#3	-.000248	-.000442	-.000418	-.039981	-.000154	.000343

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0081179**	**-.002953**	**-.000546**	**-.094968**	**-.002422**	**-.000290**
Stddev	.0083563	.001774	.000209	.017099	.000473	.000486
%RSD	102.9364	60.08339	38.20498	18.00466	19.51180	167.4107
#1	-.000442	-.004902	-.000308	-.113967	-.001877	-.000709
#2	.016255	-.002524	-.000637	-.080815	-.002711	-.000405
#3	.008541	-.001432	-.000695	-.090123	-.002679	.000243

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169865BL Acquired: 9/29/2025 15:21:12 Type: Unk
Method: 6010-200.7 NEW(v227) 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	.0172916	-.003391	.0007087	.0020394	F -.013408	-.005353
Stddev	.0003200	.000916	.0097203	.0012334	.001557	.001789
%RSD	1.850681	27.00707	1371.595	60.47961	11.61486	33.42405
#1	.0171407	-.002881	.0034669	.0034280	-.015121	-.006871
#2	.0170750	-.002844	.0087518	.0010707	-.013025	-.003380
#3	.0176592	-.004448	-.010093	.0016196	-.012077	-.005807

Elem	Sr4077
Units	ppm
Avg	-.000062
Stddev	.000085
%RSD	137.1467
#1	-.000106
#2	.000036
#3	-.000116

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7055.123	97602.35	8565.542	5364.034	8590.456
Stddev	6.388	199.78	18.674	27.293	21.002
%RSD	.0905502	.2046879	.2180171	.5088073	.2444766
#1	7062.331	97830.34	8546.404	5385.295	8609.688
#2	7052.878	97457.86	8566.508	5373.551	8593.632
#3	7050.161	97518.87	8583.715	5333.258	8568.047

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169865BS Acquired: 9/29/2025 15:29:39 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.6793591**	**2.082262**	**.8265457**	**1.749479**	**.8615881**	**1.696063**
Stddev	.0024975	.036571	.0008322	.004254	.0021639	.013945
%RSD	.3676247	1.756305	.1006877	.2431311	.2511469	.8222231
#1	.6812649	2.124488	.8273876	1.753237	.8637947	1.693401
#2	.6765317	2.060766	.8265259	1.744861	.8594697	1.711148
#3	.6802806	2.061531	.8257235	1.750338	.8614998	1.683640

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1666141**	**.1639696**	**.1680712**	**.8637865**	**.3368075**	**.1673856**
Stddev	.0020530	.0008063	.0001679	.0062051	.0006560	.0003226
%RSD	1.232179	.4917406	.0999105	.7183612	.1947622	.1927040
#1	.1679427	.1638583	.1682360	.8709215	.3373442	.1676322
#2	.1676502	.1632248	.1680773	.8607862	.3370019	.1670205
#3	.1642496	.1648258	.1679003	.8596517	.3360762	.1675039

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2607727**	**2.467188**	**.1695357**	**1.728569**	**.4211151**	**.0619634**
Stddev	.0006306	.020798	.0011291	.046603	.0003292	.0003405
%RSD	.2418392	.8429794	.6659944	2.696044	.0781773	.5494420
#1	.2614878	2.467336	.1693105	1.675394	.4214024	.0620746
#2	.2602957	2.487912	.1685361	1.748007	.4207559	.0615812
#3	.2605348	2.446317	.1707604	1.762306	.4211869	.0622343

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.508327**	**.2517990**	**.1681676**	**8.238899**	**.2439895**	**.4332147**
Stddev	.006582	.0014851	.0005427	.068374	.0021878	.0010535
%RSD	.2624141	.5898029	.3227351	.8298975	.8966829	.2431733
#1	2.514760	.2530446	.1684151	8.298156	.2418378	.4330703
#2	2.508616	.2501554	.1685426	8.254453	.2439190	.4322409
#3	2.501605	.2521969	.1675453	8.164087	.2462118	.4343329

Sample Name: PB169865BS Acquired: 9/29/2025 15:29:39 Type: Unk
Method: 6010-200.7 NEW(v227) 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	.7549058	.2014500	.8975414	5.025317	F -.011372	.1611326
Stddev	.0021657	.0005796	.0096175	.011896	.001118	.0015314
%RSD	.2868890	.2877184	1.071540	.2367289	9.829906	.9503716
#1	.7553306	.2020998	.9084829	5.012381	-.012337	.1602823
#2	.7525591	.2012638	.8904248	5.027781	-.011633	.1602150
#3	.7568276	.2009863	.8937165	5.035788	-.010147	.1629004

Elem	Sr4077
Units	ppm
Avg	.1632682
Stddev	.0008865
%RSD	.5429934
#1	.1642911
#2	.1627917
#3	.1627219

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6674.931	95460.80	8622.733	5232.969	7849.855
Stddev	11.001	415.05	29.290	19.158	3.959
%RSD	.1648097	.4347907	.3396794	.3660952	.0504327
#1	6666.323	95115.92	8611.499	5220.761	7847.567
#2	6671.146	95345.03	8655.977	5223.097	7847.573
#3	6687.325	95921.45	8600.724	5255.050	7854.427

Sample Name: Q3200-01 Acquired: 9/29/2025 15:33:41 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.0494091**	**-.036110**	**.3681080**	**-.000488**	**-.007958**	**146.2071**	**1.000076**
Stddev	.0020118	.004925	.0021783	.003648	.000936	.2964	.009241
%RSD	4.071819	13.63872	.5917487	747.8543	11.76035	.2027394	.9240725
#1	.0510636	-.031069	.3692692	-.002637	-.007635	146.4858	1.010631
#2	.0471696	-.036351	.3694596	-.002551	-.009012	145.8957	.993438
#3	.0499941	-.040911	.3655951	.003724	-.007226	146.2397	.996160

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0147850**	**.0045998**	**61.12021**	**.3023473**	**.1287174**	**.7889649**	**262.4619**
Stddev	.0002468	.0003240	.23147	.0007571	.0002576	.0013743	2.3274
%RSD	1.669234	7.044469	.3787171	.2503980	.2000943	.1741937	.8867529
#1	.0147151	.0043892	61.38137	.3028232	.1284887	.7892854	263.4034
#2	.0145806	.0044373	60.94039	.3027444	.1289964	.7874587	264.1711
#3	.0150592	.0049729	61.03887	.3014743	.1286672	.7901507	259.8113

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.827393**	**55.68317**	**.2706524**	**.0078751**	**10.12503**	**.3702178**	**.7591860**
Stddev	.023725	.16861	.0002411	.0012238	.09367	.0026891	.0019633
%RSD	.8391127	.3028026	.0890844	15.53998	.9251539	.7263656	.2586094
#1	2.854100	55.77863	.2704989	.0086586	10.13785	.3671723	.7590023
#2	2.808753	55.48849	.2705279	.0085017	10.21163	.3712162	.7612348
#3	2.819327	55.78240	.2709303	.0064649	10.02560	.3722650	.7573210

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.54405**	**.1726531**	**.0037348**	**.0909618**	**4.237848**	**4.002915**	**6.321763**
Stddev	.12733	.0101255	.0004260	.0002595	.021306	.063471	.011151
%RSD	.6866184	5.864633	11.40724	.2853367	.5027490	1.585609	.1763873
#1	18.57769	.1754586	.0042220	.0907142	4.261970	4.036415	6.334318
#2	18.65117	.1810801	.0034322	.0912318	4.221597	4.042616	6.317961
#3	18.40328	.1614208	.0035502	.0909393	4.229978	3.929712	6.313011

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3200-01 Acquired: 9/29/2025 15:33:41 Type: Unk
Method: 6010-200.7 NEW(v227) 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	1.144311	.2266394	-.062841
Stddev	.005058	.0017418	.002740
%RSD	.4420415	.7685528	4.360873
#1	1.144809	.2274341	-.061828
#2	1.139022	.2246419	-.065944
#3	1.149102	.2278422	-.060751

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7377.141	105358.7	10217.54	5733.876	7296.063
Stddev	4.058	423.5	66.93	4.918	8.220
%RSD	.0550084	.4020066	.6550015	.0857656	.1126611
#1	7375.515	105364.3	10183.40	5732.855	7295.627
#2	7374.149	104932.4	10294.65	5729.549	7288.070
#3	7381.760	105779.5	10174.58	5739.224	7304.492

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3206-01 Acquired: 9/29/2025 15:37:45 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.0951154**	**-.026463**	**.3298953**	**.0035440**	**-.009569**	**145.1712**	**.4722680**
Stddev	.0016142	.001644	.0011435	.0013582	.001681	.4492	.0012421
%RSD	1.697051	6.210633	.3466348	38.32267	17.56627	.3094326	.2630112
#1	.0969569	-.027634	.3287955	.0021426	-.008601	144.8517	.4708583
#2	.0944445	-.027170	.3310781	.0048543	-.008595	144.9771	.4732018
#3	.0939449	-.024584	.3298123	.0036350	-.011510	145.6848	.4727440

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0136661**	**.0030205**	**67.25058**	**.1884727**	**.0991214**	**.5095520**	**247.5234**
Stddev	.0000287	.0000714	.10585	.0010311	.0002435	.0011099	.5516
%RSD	.2098481	2.363758	.1573966	.5470676	.2456573	.2178114	.2228385
#1	.0136991	.0031028	67.15027	.1872923	.0990513	.5106048	247.5048
#2	.0136516	.0029840	67.24026	.1889285	.0993923	.5083928	248.0840
#3	.0136476	.0029748	67.36122	.1891973	.0989206	.5096584	246.9813

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.786792**	**49.64422**	**.1798024**	**.0074617**	**7.166085**	**.3640613**	**.6232272**
Stddev	.010899	.09692	.0007024	.0006589	.038669	.0017096	.0010488
%RSD	.3910854	.1952331	.3906636	8.830294	.5396149	.4695799	.1682793
#1	2.781438	49.57992	.1804264	.0069958	7.130653	.3624887	.6243198
#2	2.799332	49.59705	.1799391	.0082156	7.160270	.3658809	.6222286
#3	2.779605	49.75570	.1790417	.0071738	7.207333	.3638143	.6231332

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.10376**	**.1230402**	**.0044015**	**.0308166**	**2.105917**	**4.396158**	**4.757055**
Stddev	.07625	.0022580	.0002061	.0005812	.007699	.004391	.004026
%RSD	.7546899	1.835139	4.683106	1.886079	.3655762	.0998738	.0846255
#1	10.02463	.1215829	.0045654	.0310354	2.097105	4.394911	4.760736
#2	10.17677	.1256412	.0044691	.0301578	2.111342	4.401037	4.752757
#3	10.10989	.1218966	.0041701	.0312568	2.109304	4.392526	4.757673

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3206-01 Acquired: 9/29/2025 15:37:45 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**2.059603**	**.1672062**	**-.014728**
Stddev	.004845	.0016445	.000419
%RSD	.2352546	.9835288	2.846662
#1	2.063978	.1654288	-.015170
#2	2.054396	.1686739	-.014680
#3	2.060436	.1675158	-.014335

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7008.894**	**97482.10**	**9600.433**	**5421.390**	**7293.624**
Stddev	1.943	91.94	18.743	27.374	1.748
%RSD	.0277161	.0943122	.1952297	.5049291	.0239703
#1	7006.654	97587.47	9621.121	5438.584	7292.369
#2	7009.918	97418.23	9595.594	5435.762	7295.621
#3	7010.110	97440.60	9584.585	5389.823	7292.883

Sample Name: Q3208-07 Acquired: 9/29/2025 15:41:47 Type: Unk
Method: 6010-200.7 NEW(v227) 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	.0992135	-.062365	9.223951	.0069422	-.001678	157.5802	1.257374
Stddev	.0005166	.002541	.007739	.0016511	.002038	.4466	.006730
%RSD	.5207214	4.074391	.0839024	23.78405	121.5050	.2834116	.5352333
#1	.0989050	-.061021	9.231652	.0066474	-.000341	157.1886	1.262746
#2	.0989255	-.060778	9.216175	.0054583	-.000668	157.4854	1.249825
#3	.0998099	-.065296	9.224025	.0087209	-.004024	158.0666	1.259551

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0209408	.0170341	57.91852	.5601730	.1948878	1.599396	427.9915
Stddev	.0002906	.0001069	.12988	.0012588	.0004958	.003111	1.2320
%RSD	1.387623	.6273861	.2242483	.2247093	.2544084	.1945285	.2878458
#1	.0210672	.0169231	57.93863	.5593290	.1954558	1.601561	427.4303
#2	.0206084	.0171363	57.77976	.5595702	.1946656	1.595830	429.4041
#3	.0211467	.0170428	58.03718	.5616198	.1945419	1.600795	427.1401

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.049290	52.56954	.3991615	.0132125	26.41614	.7650037	4.997316
Stddev	.026509	.17191	.0008851	.0004171	.19033	.0030741	.023157
%RSD	.3760450	.3270094	.2217457	3.157117	.7205067	.4018387	.4633875
#1	7.072837	52.37233	.4001775	.0128308	26.23031	.7684525	4.987152
#2	7.020580	52.64855	.3985574	.0131490	26.61067	.7640065	4.980979
#3	7.054454	52.68774	.3987496	.0136578	26.40744	.7625519	5.023817

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.45738	.4682192	.0200196	.1626973	7.716507	3.578140	9.569934
Stddev	.03435	.0069751	.0003511	.0009604	.017919	.014676	.028293
%RSD	.2998218	1.489703	1.753683	.5902780	.2322138	.4101690	.2956453
#1	11.42193	.4709889	.0204068	.1637964	7.717568	3.564534	9.564114
#2	11.45969	.4733840	.0199299	.1620204	7.698081	3.593693	9.600684
#3	11.49051	.4602847	.0197220	.1622751	7.733871	3.576194	9.545003

Sample Name: Q3208-07 Acquired: 9/29/2025 15:41:47 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**8.204235**	**.2077482**	**-.151249**
Stddev	.034678	.0013780	.002133
%RSD	.4226859	.6633174	1.410309
#1	8.168059	.2082286	-.149723
#2	8.237191	.2061943	-.153686
#3	8.207456	.2088217	-.150337

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7632.811**	**104001.9**	**10414.20**	**5725.837**	**7289.246**
Stddev	8.039	82.8	68.14	28.074	3.025
%RSD	.1053202	.0796009	.6543298	.4903036	.0415008
#1	7634.557	104082.6	10367.56	5736.370	7286.770
#2	7639.833	103917.2	10492.40	5747.122	7292.618
#3	7624.043	104006.0	10382.63	5694.020	7288.350

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01 Acquired: 9/29/2025 15:45:46 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**.0707027**	**-.045564**	**2.718635**	**-.001176**	**-.001871**	**117.8962**	**1.162475**
Stddev	.0028592	.002520	.001972	.003003	.000975	.1663	.008229
%RSD	4.043920	5.529624	.0725212	255.2806	52.08222	.1410873	.7078503
#1	.0703367	-.048006	2.716732	-.001971	-.002528	117.8661	1.166854
#2	.0737273	-.042974	2.718504	.002144	-.000751	118.0756	1.152983
#3	.0680442	-.045713	2.720668	-.003702	-.002334	117.7470	1.167588

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0166889**	**.0141008**	**65.68976**	**.4506090**	**.1432142**	**1.193471**	**302.6300**
Stddev	.0000925	.0003574	.01422	.0023369	.0005920	.002718	3.6873
%RSD	.5543681	2.534841	.0216507	.5186002	.4133949	.2277330	1.218420
#1	.0165948	.0137234	65.70617	.4503393	.1425658	1.192231	304.4845
#2	.0166921	.0144342	65.68211	.4484187	.1437260	1.196588	298.3836
#3	.0167797	.0141449	65.68100	.4530690	.1433510	1.191595	305.0218

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.499112**	**50.68437**	**.3529447**	**.0075949**	**5.521764**	**.5327959**	**3.753712**
Stddev	.025425	.08155	.0005311	.0016647	.030802	.0044821	.006169
%RSD	.7266175	.1608933	.1504688	21.91853	.5578280	.8412500	.1643570
#1	3.510392	50.60885	.3523754	.0091074	5.528294	.5276369	3.758325
#2	3.469998	50.77084	.3530319	.0058113	5.488221	.5357336	3.746704
#3	3.516945	50.67343	.3534267	.0078658	5.548778	.5350171	3.756108

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.649824**	**.1707911**	**.0149063**	**.0897546**	**6.395715**	**9.525005**	**8.882536**
Stddev	.113045	.0124677	.0006032	.0004361	.018407	.027289	.031503
%RSD	1.171474	7.299967	4.046452	.4858756	.2878060	.2865017	.3546602
#1	9.736648	.1794985	.0142267	.0900741	6.410481	9.532682	8.859336
#2	9.522000	.1565087	.0153780	.0892577	6.375092	9.547634	8.869871
#3	9.690823	.1763661	.0151142	.0899318	6.401572	9.494700	8.918400

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01 Acquired: 9/29/2025 15:45:46 Type: Unk
Method: 6010-200.7 NEW(v227) 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	**9.371850**	**.1288008**	**-.006870**
Stddev	.034317	.0017825	.001664
%RSD	.3661681	1.383894	24.22233
#1	9.353502	.1297335	-.007655
#2	9.350608	.1267456	-.004959
#3	9.411440	.1299235	-.007996

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7769.615**	**106980.6**	**10533.20**	**5843.350**	**7446.619**
Stddev	8.676	421.8	33.61	23.344	8.723
%RSD	.1116703	.3942533	.3191029	.3994969	.1171439
#1	7764.829	106731.1	10557.20	5836.763	7448.340
#2	7779.631	107467.6	10494.78	5869.280	7454.353
#3	7764.386	106743.1	10547.60	5824.007	7437.164

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV03 Acquired: 9/29/2025 15:53:31 Type: Unk
Method: 6010-200.7 NEW(v228) 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	**4.957471**	**4.558703**	**4.832063**	**5.029458**	**4.974328**	**9.742790**	**9.446635**
Stddev	.004201	.077476	.003240	.011682	.003859	.037510	.120232
%RSD	.0847476	1.699520	.0670625	.2322659	.0775786	.3850032	1.272748
#1	4.962100	4.644037	4.831703	5.042491	4.970932	9.786101	9.433118
#2	4.956411	4.539299	4.829018	5.025953	4.978525	9.720865	9.573054
#3	4.953900	4.492773	4.835469	5.019931	4.973529	9.721403	9.333733

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2350114**	**2.439198**	**24.10446**	**.9824252**	**2.424797**	**1.227051**	**4.893144**
Stddev	.0010444	.001782	.03603	.0035498	.002356	.001490	.043467
%RSD	.4444156	.0730705	.1494841	.3613273	.0971812	.1214520	.8883161
#1	.2339985	2.440375	24.09830	.9796774	2.426714	1.228412	4.871543
#2	.2349509	2.437147	24.14318	.9864331	2.422166	1.227282	4.943179
#3	.2360847	2.440071	24.07191	.9811650	2.425511	1.225459	4.864709

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.371413**	**24.16060**	**2.426770**	**1.210024**	**24.06731**	**2.423090**	**2.422492**
Stddev	.017041	.09215	.001635	.001962	.15552	.004661	.002167
%RSD	.7185990	.3813947	.0673873	.1621840	.6461957	.1923773	.0894392
#1	2.358824	24.10124	2.428346	1.207774	23.99042	2.422565	2.424993
#2	2.390805	24.11380	2.425082	1.211384	24.24630	2.427991	2.421247
#3	2.364611	24.26675	2.426883	1.210913	23.96521	2.418712	2.421235

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.04808**	**4.704883**	**4.978623**	**4.910818**	**4.769200**	**4.927265**	**4.996443**
Stddev	.26263	.014629	.002875	.009688	.019299	.045250	.013573
%RSD	1.092089	.3109328	.0577479	.1972778	.4046507	.9183589	.2716501
#1	23.90934	4.711404	4.979927	4.917739	4.754242	4.890320	5.000069
#2	24.35098	4.688128	4.980615	4.899747	4.790984	4.977735	5.007835
#3	23.88392	4.715117	4.975327	4.914970	4.762374	4.913738	4.981426

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV03 Acquired: 9/29/2025 15:53:31 Type: Unk
Method: 6010-200.7 NEW(v228) 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	**4.952423**	**4.622434**	**4.733899**
Stddev	.018217	.030967	.043636
%RSD	.3678338	.6699211	.9217720
#1	4.970209	4.604966	4.686548
#2	4.953256	4.658188	4.772491
#3	4.933804	4.604148	4.742658

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6455.485**	**90089.02**	**8466.053**	**4998.533**	**7390.665**
Stddev	6.358	339.35	17.829	26.849	6.322
%RSD	.0984966	.3766788	.2105947	.5371387	.0855393
#1	6454.020	90171.10	8447.803	4990.896	7384.187
#2	6449.987	89716.16	8466.928	4976.331	7390.989
#3	6462.448	90379.79	8483.429	5028.374	7396.818

Sample Name: CCB03 Acquired: 9/29/2025 15:57:38 Type: Unk
Method: 6010-200.7 NEW(v228) 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	**-.000958**	**.0078820**	**-.000474**	**.0013074**	**-.000921**	**.0075339**	**.0010070**
Stddev	.000507	.0015693	.001152	.0016714	.001557	.0076978	.0010103
%RSD	52.85338	19.90953	243.2044	127.8396	168.9787	102.1753	100.3265
#1	-.000921	.0068033	-.001647	.0031440	-.001543	.0097367	.0020151
#2	-.001483	.0096822	-.000431	-.000125	.000850	-.001025	-.000005
#3	-.000471	.0071603	.000656	.000903	-.002071	.013890	.001011

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000759**	**.0000590**	**.0045788**	**.0000092**	**-.000115**	**-.000434**	**.0008701**
Stddev	.0000661	.0000305	.0056644	.0002340	.000124	.000139	.0126051
%RSD	87.08989	51.64055	123.7090	2530.131	108.0550	31.90530	1448.766
#1	.0000633	.0000605	-.001947	.0000109	.000020	-.000399	-.012119
#2	.0001473	.0000886	.008228	-.000226	-.000141	-.000317	.013053
#3	.0000170	.0000278	.007455	.000242	-.000224	-.000587	.001676

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000329**	**-.013200**	**.0001490**	**-.000489**	**.0130832**	**.0002133**	**-.000352**
Stddev	.000377	.015292	.0001258	.000457	.0116642	.0007177	.000431
%RSD	114.5579	115.8503	84.41172	93.43434	89.15389	336.4510	122.5492
#1	-.000031	-.012663	.0000343	-.000613	.0064762	-.000521	.000137
#2	-.000752	.001816	.0001293	.000017	.0062224	.000249	-.000515
#3	-.000204	-.028754	.0002835	-.000871	.0265511	.000913	-.000677

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007048**	**.0006589**	**.0002407**	**.0171269**	**-.000337**	**.0130084**	**.0010143**
Stddev	.035221	.0006724	.0001108	.0003873	.001713	.0089921	.0007971
%RSD	499.7024	102.0636	46.03914	2.261140	508.1106	69.12562	78.58554
#1	.033244	-.000114	.0001163	.0168077	.000091	.0059067	.0007516
#2	-.031987	.001110	.0002767	.0175577	.001121	.0099993	.0003817
#3	-.022402	.000980	.0003290	.0170152	-.002224	.0231192	.0019096

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB03 Acquired: 9/29/2025 15:57:38 Type: Unk
Method: 6010-200.7 NEW(v228) 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	-.009097	-.006220	.0002603
Stddev	.000924	.000695	.0002579
%RSD	10.15491	11.18064	99.07848
#1	-.009172	-.007004	.0005579
#2	-.008138	-.005979	.0001034
#3	-.009981	-.005677	.0001195

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6849.955	94661.40	8819.310	5214.291	8218.006
Stddev	11.850	298.25	13.801	28.777	18.429
%RSD	.1729998	.3150721	.1564915	.5518924	.2242530
#1	6851.439	94424.75	8831.607	5191.167	8211.228
#2	6837.433	94996.41	8804.383	5246.519	8203.926
#3	6860.994	94563.05	8821.942	5205.187	8238.865

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01DUP Acquired: 9/29/2025 16:02:50 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0749082**	**-.046516**	**2.784183**	**.0009761**	**-.000071**	**118.8974**
Stddev	.0015819	.003730	.006314	.0013362	.001666	.2112
%RSD	2.111781	8.018622	.2267805	136.8867	2340.318	.1776572
#1	.0766180	-.046384	2.780635	-.000456	.001081	119.0024
#2	.0734966	-.050310	2.780441	.001195	-.001981	119.0356
#3	.0746101	-.042854	2.791473	.002189	.000686	118.6543

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.239108**	**.0179425**	**.0144699**	**67.11039**	**.4928748**	**.1458960**
Stddev	.008078	.0001631	.0002092	.08313	.0010135	.0005085
%RSD	.6518970	.9088520	1.445808	.1238716	.2056219	.3485202
#1	1.246764	.0178331	.0143266	67.20453	.4919448	.1462940
#2	1.230666	.0181300	.0147099	67.07953	.4939550	.1453232
#3	1.239893	.0178645	.0143731	67.04709	.4927246	.1460710

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.259355**	**328.1787**	**4.245980**	**49.60366**	**.3741002**	**.0077743**
Stddev	.002079	2.9848	.022760	.05451	.0011263	.0009276
%RSD	.1650890	.9094940	.5360387	.1098970	.3010827	11.93159
#1	1.257820	329.1857	4.269148	49.59606	.3740833	.0077660
#2	1.261721	324.8206	4.223651	49.66158	.3729824	.0068509
#3	1.258525	330.5296	4.245143	49.55335	.3752350	.0087061

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.750143**	**.5554596**	**4.048165**	**10.01819**	**.1693169**	**.0181654**
Stddev	.028127	.0023790	.009179	.07279	.0148774	.0004518
%RSD	.4891465	.4283000	.2267328	.7265648	8.786718	2.487319
#1	5.748882	.5544747	4.048807	10.00865	.1686779	.0179108
#2	5.722668	.5537312	4.038682	9.95064	.1547693	.0186870
#3	5.778879	.5581730	4.057005	10.09527	.1845035	.0178982

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01DUP Acquired: 9/29/2025 16:02:50 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0885355	6.275370	3.610840	8.726763	F 10.04331	.1293191
Stddev	.0006402	.013576	.038243	.010727	.01224	.0018033
%RSD	.7230452	.2163384	1.059105	.1229191	.1218757	1.394423
#1	.0882812	6.290642	3.608362	8.731900	10.04620	.1273071
#2	.0892637	6.264672	3.650262	8.714433	10.02989	.1307894
#3	.0880616	6.270795	3.573897	8.733954	10.05385	.1298610

Elem	Sr4077
Units	ppm
Avg	-.001496
Stddev	.001999
%RSD	133.5661
#1	-.000629
#2	-.000078
#3	-.003782

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7873.865	103698.6	10329.31	5739.559	7536.685
Stddev	15.154	360.7	34.09	16.838	10.684
%RSD	.1924595	.3478544	.3299938	.2933747	.1417598
#1	7857.215	103703.0	10322.67	5739.901	7524.393
#2	7877.528	104057.1	10299.03	5756.224	7543.743
#3	7886.851	103335.7	10366.23	5722.553	7541.918

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01LX5 Acquired: 9/29/2025 16:06:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0133566**	**-.020856**	**.5665665**	**-.001020**	**-.000703**	**27.41900**	**.2683251**
Stddev	.0002565	.001185	.0009870	.001148	.000533	.00816	.0002485
%RSD	1.920577	5.683785	.1742085	112.5684	75.91254	.0297430	.0926041
#1	.0130606	-.019951	.5670101	-.001062	-.000774	27.42026	.2685635
#2	.0135141	-.022197	.5654355	-.002146	-.001197	27.41029	.2683441
#3	.0134952	-.020418	.5672539	.000149	-.000137	27.42645	.2680676

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0040878**	**.0021561**	**15.68935**	**.1050225**	**.0285951**	**.2905049**	**68.79728**
Stddev	.0000539	.0000897	.03465	.0004101	.0000702	.0008532	.25138
%RSD	1.317657	4.160549	.2208370	.3904595	.2455076	.2936980	.3653933
#1	.0041476	.0020564	15.71491	.1046542	.0286352	.2903181	68.53578
#2	.0040430	.0022303	15.70323	.1049488	.0285140	.2897605	69.03714
#3	.0040729	.0021816	15.64992	.1054644	.0286360	.2914360	68.81893

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8491712**	**12.12180**	**.0722447**	**.0012772**	**1.182923**	**.1274719**	**.8707882**
Stddev	.0024549	.08905	.0004907	.0005317	.012703	.0039596	.0033100
%RSD	.2890899	.7346164	.6792577	41.62758	1.073854	3.106243	.3801108
#1	.8517046	12.19860	.0716802	.0017930	1.168639	.1289093	.8684810
#2	.8490058	12.14261	.0725698	.0013077	1.187174	.1305121	.8745807
#3	.8468032	12.02419	.0724841	.0007309	1.192954	.1229944	.8693030

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.080467**	**.0289127**	**.0029445**	**.0179884**	**1.427854**	**.8421053**	**1.805644**
Stddev	.046196	.0010559	.0002708	.0003415	.004163	.0169596	.001810
%RSD	2.220449	3.652022	9.196546	1.898686	.2915616	2.013955	.1002259
#1	2.027762	.0278915	.0028308	.0176729	1.431750	.8602323	1.806397
#2	2.099704	.0300002	.0027491	.0183511	1.428343	.8394593	1.803579
#3	2.113936	.0288465	.0032536	.0179413	1.423468	.8266241	1.806955

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01LX5 Acquired: 9/29/2025 16:06:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	1.889799	.0271118	.0009402
Stddev	.010003	.0022515	.0004851
%RSD	.5293331	8.304452	51.59521
#1	1.878648	.0253460	.0014968
#2	1.892767	.0296472	.0007167
#3	1.897983	.0263422	.0006071

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6978.789	98735.05	9119.525	5419.516	7842.521
Stddev	16.032	492.61	19.468	23.579	15.061
%RSD	.2297194	.4989239	.2134709	.4350688	.1920385
#1	6966.886	99297.92	9097.103	5442.771	7831.410
#2	6997.018	98524.69	9132.122	5420.151	7859.662
#3	6972.462	98382.54	9129.351	5395.626	7836.490

Sample Name: Q3208-01MS Acquired: 9/29/2025 16:10:56 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.7476042**	**1.823409**	**3.786242**	**1.644081**	**.2827017**	**132.9423**
Stddev	.0030251	.028293	.004594	.010243	.0019389	.3519
%RSD	.4046444	1.551676	.1213315	.6230395	.6858482	.2647047
#1	.7443212	1.791966	3.790238	1.634642	.2818573	132.8904
#2	.7482123	1.846813	3.781223	1.642627	.2813282	133.3173
#3	.7502791	1.831450	3.787264	1.654973	.2849196	132.6192

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.385163**	**.1817353**	**.2122943**	**66.83651**	**.7741138**	**.3529537**
Stddev	.005414	.0003238	.0001443	.20355	.0020615	.0005420
%RSD	.3908620	.1781993	.0679907	.3045423	.2663065	.1535500
#1	1.378912	.1814345	.2123148	66.84477	.7739753	.3535173
#2	1.388216	.1820781	.2121408	67.03579	.7762411	.3529077
#3	1.388361	.1816933	.2124273	66.62895	.7721250	.3524363

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.497055**	**284.5834**	**4.249265**	**50.91980**	**.8533954**	**.0641235**
Stddev	.001000	.9119	.027432	.21127	.0009003	.0002306
%RSD	.0667815	.3204198	.6455616	.4149081	.1055019	.3596828
#1	1.498093	283.5307	4.218195	50.96411	.8537684	.0638605
#2	1.496098	285.0900	4.259463	51.10541	.8540494	.0642914
#3	1.496975	285.1295	4.270137	50.68990	.8523686	.0642185

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.525834**	**.7956137**	**4.109673**	**17.41744**	**.2493790**	**.3613087**
Stddev	.013955	.0059310	.010575	.03874	.0097430	.0002785
%RSD	.1854286	.7454615	.2573171	.2224105	3.906897	.0770781
#1	7.515555	.7891322	4.118052	17.37347	.2415118	.3609871
#2	7.541720	.8007700	4.097791	17.43225	.2463479	.3614668
#3	7.520225	.7969390	4.113176	17.44658	.2602772	.3614721

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01MS Acquired: 9/29/2025 16:10:56 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.7806306	6.374743	3.948200	F 14.61376	F 10.43584	.2985772
Stddev	.0016532	.023030	.032917	.04638	.05203	.0035838
%RSD	.2117734	.3612709	.8337327	.3173879	.4985727	1.200280
#1	.7789001	6.352596	3.984253	14.56525	10.37982	.2964692
#2	.7821937	6.398565	3.940600	14.65767	10.48264	.3027151
#3	.7807980	6.373069	3.919748	14.61835	10.44506	.2965473

Elem	Sr4077
Units	ppm
Avg	.1815972
Stddev	.0014877
%RSD	.8192381
#1	.1800558
#2	.1817109
#3	.1830247

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7818.689	112243.6	10085.80	6029.624	7471.815
Stddev	2.291	417.3	48.61	21.863	9.012
%RSD	.0292969	.3718221	.4819704	.3625995	.1206198
#1	7816.507	112306.6	10124.61	6048.723	7462.151
#2	7818.485	111798.3	10031.28	6034.371	7473.306
#3	7821.074	112625.9	10101.52	6005.776	7479.990

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01MSD Acquired: 9/29/2025 16:14:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.7442109**	**1.751132**	**3.725003**	**1.651391**	**.2795911**	**131.3482**
Stddev	.0015775	.050120	.003602	.006183	.0015672	.2465
%RSD	.2119689	2.862150	.0966979	.3744390	.5605356	.1876885
#1	.7460006	1.698496	3.722388	1.647391	.2780476	131.4354
#2	.7430226	1.756616	3.729112	1.658513	.2811810	131.0699
#3	.7436094	1.798285	3.723509	1.648268	.2795448	131.5392

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.419471**	**.1675636**	**.2089767**	**68.26751**	**.7749314**	**.3456105**
Stddev	.004145	.0002584	.0003130	.08060	.0024302	.0005179
%RSD	.2920448	.1542235	.1497689	.1180578	.3136058	.1498363
#1	1.424181	.1673494	.2086219	68.31575	.7763480	.3450215
#2	1.416378	.1674907	.2090946	68.17446	.7721253	.3459941
#3	1.417853	.1678506	.2092136	68.31230	.7763210	.3458161

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.464709**	**312.8709**	**3.986819**	**49.99070**	**.8429043**	**.0765777**
Stddev	.003351	.7736	.002528	.10933	.0005258	.0002783
%RSD	.2287650	.2472589	.0634016	.2187090	.0623847	.3634676
#1	1.461040	313.5462	3.987263	49.91106	.8435067	.0767273
#2	1.465479	313.0397	3.989096	49.94568	.8425371	.0767492
#3	1.467607	312.0268	3.984099	50.11536	.8426692	.0762565

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.360238**	**.7901500**	**4.061239**	**19.43822**	**.3967099**	**.3631746**
Stddev	.016047	.0043543	.010589	.08527	.0068347	.0007922
%RSD	.1919499	.5510789	.2607306	.4386806	1.722859	.2181370
#1	8.376778	.7882941	4.069895	19.53668	.4042401	.3624339
#2	8.344733	.7870311	4.049432	19.38787	.3908989	.3630800
#3	8.359203	.7951248	4.064391	19.39012	.3949906	.3640098

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01MSD Acquired: 9/29/2025 16:14:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.7956587	6.427698	4.371984	F 14.63452	9.743639	.3010013
Stddev	.0012035	.011554	.019520	.06612	.038587	.0023708
%RSD	.1512576	.1797461	.4464832	.4517935	.3960266	.7876230
#1	.7942693	6.438344	4.382639	14.55818	9.701379	.2987637
#2	.7963812	6.415412	4.349455	14.67222	9.776999	.3007543
#3	.7963254	6.429336	4.383858	14.67316	9.752539	.3034859

Elem	Sr4077
Units	ppm
Avg	.1701625
Stddev	.0005515
%RSD	.3240911
#1	.1704872
#2	.1695258
#3	.1704746

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7840.796	109657.7	11010.84	5947.573	7490.972
Stddev	15.633	273.8	43.57	35.259	16.667
%RSD	.1993824	.2496986	.3957149	.5928363	.2224968
#1	7858.809	109594.3	11028.03	5919.583	7509.789
#2	7830.766	109957.7	11043.20	5987.173	7478.065
#3	7832.813	109421.2	10961.30	5935.962	7485.061

Sample Name: Q3208-01A Acquired: 9/29/2025 16:18:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.9289606**	**2.384964**	**3.843771**	**2.166142**	**.9059078**	**115.5140**
Stddev	.0068037	.032417	.038615	.010893	.0077650	.0848
%RSD	.7324043	1.359209	1.004615	.5028975	.8571512	.0734145
#1	.9265223	2.391264	3.827014	2.162637	.8995853	115.6003
#2	.9237121	2.413768	3.816365	2.157431	.9035631	115.5111
#3	.9366476	2.349860	3.887934	2.178356	.9145749	115.4307

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.347750**	**.2065375**	**.2554796**	**64.83749**	**.8455598**	**.3873127**
Stddev	.007348	.0005792	.0026584	.18650	.0024099	.0040201
%RSD	.5451793	.2804524	1.040556	.2876388	.2850070	1.037951
#1	1.356087	.2066579	.2542534	65.05168	.8450001	.3846065
#2	1.342216	.2059076	.2536555	64.74967	.8482002	.3853995
#3	1.344949	.2070472	.2585298	64.71110	.8434789	.3919321

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.477993**	**304.5595**	**3.643949**	**51.15049**	**.9561036**	**.0916356**
Stddev	.012176	1.3447	.013132	.06070	.0096661	.0003409
%RSD	.8237953	.4415323	.3603698	.1186640	1.010987	.3720217
#1	1.470885	305.6683	3.658751	51.08042	.9515522	.0913574
#2	1.471042	304.9466	3.633699	51.18401	.9495534	.0920159
#3	1.492052	303.0637	3.639397	51.18704	.9672052	.0915335

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.533715**	**.8289514**	**3.819510**	**20.47129**	**.4719101**	**.4777328**
Stddev	.021509	.0037282	.007725	.05998	.0090181	.0029708
%RSD	.2520418	.4497433	.2022478	.2929727	1.910981	.6218586
#1	8.551206	.8289922	3.814361	20.54045	.4737184	.4762688
#2	8.540238	.8252030	3.815777	20.43967	.4798871	.4757782
#3	8.509700	.8326590	3.828393	20.43374	.4621249	.4811515

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-01A Acquired: 9/29/2025 16:18:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.9995034	6.151345	4.580432	F 15.91704	9.268065	.3333792
Stddev	.0094803	.022842	.037812	.18937	.053246	.0019256
%RSD	.9485022	.3713336	.8255084	1.189735	.5745103	.5776028
#1	.9954022	6.177364	4.619054	15.87942	9.251608	.3355381
#2	.9927642	6.142081	4.578756	15.74931	9.224991	.3327603
#3	1.010344	6.134591	4.543486	16.12240	9.327597	.3318391

Elem	Sr4077
Units	ppm
Avg	.1886297
Stddev	.0024621
%RSD	1.305252
#1	.1905503
#2	.1858541
#3	.1894848

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7695.508	108547.5	10842.03	5958.071	7390.320
Stddev	43.842	319.0	14.72	17.304	61.284
%RSD	.5697087	.2938945	.1357585	.2904237	.8292503
#1	7723.899	108490.8	10826.08	5956.375	7421.773
#2	7717.612	108260.7	10855.09	5941.678	7429.492
#3	7645.014	108891.1	10844.92	5976.160	7319.696

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169840TB Acquired: 9/29/2025 16:22:42 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.004080**	**-.018818**	**.0000146**	**.0025837**	**.0005993**	**.1061379**
Stddev	.000357	.002786	.0005968	.0002559	.0022255	.0182903
%RSD	8.748119	14.80295	4094.795	9.904897	371.3209	17.23257
#1	-.004323	-.019749	.0005623	.0022984	-.000718	.0990531
#2	-.003670	-.021019	-.000622	.0027930	.003169	.1269107
#3	-.004248	-.015686	.000103	.0026598	-.000653	.0924498

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0441426**	**-.000115**	**.0003385**	**43.44715**	**.0018577**	**.0000013**
Stddev	.0018593	.000031	.0000767	.87580	.0002663	.0001934
%RSD	4.212016	27.27903	22.67077	2.015791	14.33393	14809.22
#1	.0458039	-.000151	.0002912	44.45325	.0019531	-.000222
#2	.0421342	-.000096	.0004271	43.03276	.0015568	.000106
#3	.0444897	-.000097	.0002973	42.85545	.0020631	.000120

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018588**	**.0574668**	**1.142218**	**5.341769**	**.0013032**	**-.000484**
Stddev	.0003881	.0183304	.022672	.093619	.0001120	.000474
%RSD	20.87711	31.89731	1.984943	1.752589	8.591280	97.86279
#1	.0016185	.0385882	1.168306	5.449871	.0012384	-.000852
#2	.0016514	.0751947	1.131075	5.287874	.0014324	-.000651
#3	.0023065	.0586175	1.127274	5.287562	.0012387	.000050

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.835027**	**.0019315**	**.0194806**	**2.989565**	**.0195394**	**.0008510**
Stddev	.091063	.0032721	.0001544	.034211	.0003099	.0002669
%RSD	.9259008	169.4123	.7924166	1.144334	1.585827	31.36010
#1	9.931864	.0056882	.0196327	3.016724	.0191863	.0009305
#2	9.822095	.0004027	.0193241	3.000828	.0197659	.0005534
#3	9.751121	-.000296	.0194849	2.951143	.0196661	.0010690

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169840TB Acquired: 9/29/2025 16:22:42 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.000160	-.002417	.8141571	.0209155	F 26.72586	-.027275
Stddev	.000802	.001001	.0163333	.0011498	.15822	.000989
%RSD	501.6702	41.40752	2.006154	5.497446	.5920233	3.627164
#1	-.000984	-.003059	.8309452	.0213340	26.90616	-.027744
#2	.000619	-.002928	.8132059	.0217975	26.61012	-.026138
#3	-.000114	-.001264	.7983203	.0196150	26.66131	-.027943

Elem	Sr4077
Units	ppm
Avg	.0902479
Stddev	.0021297
%RSD	2.359853
#1	.0926987
#2	.0891977
#3	.0888472

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6711.804	95245.25	8936.982	5239.854	7877.835
Stddev	10.260	481.12	161.110	29.071	15.448
%RSD	.1528691	.5051332	1.802735	.5548001	.1960991
#1	6700.512	94690.07	8751.799	5206.433	7860.025
#2	6714.345	95540.12	9044.964	5253.848	7887.602
#3	6720.556	95505.57	9014.183	5259.282	7885.879

Sample Name: Q3181-03 Acquired: 9/29/2025 16:26:58 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.003154**	**-.018321**	**-.000053**	**.0014480**	**-.000918**	**.0224481**	**.0421228**
Stddev	.000609	.000082	.000793	.0033646	.002062	.0110451	.0018529
%RSD	19.31909	.4461536	1491.982	232.3637	224.6316	49.20279	4.398826
#1	-.003849	-.018409	-.000248	-.002351	-.001965	.0348780	.0442184
#2	-.002899	-.018307	-.000730	.004051	-.002245	.0187061	.0407013
#3	-.002713	-.018248	.000819	.002644	.001457	.0137601	.0414488

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000087**	**.0000329**	**139.2037**	**.0018822**	**.0006004**	**.0032492**	**.0240578**
Stddev	.000053	.0000783	.6064	.0004973	.0000598	.0001581	.0044824
%RSD	60.61518	237.8260	.4356493	26.42173	9.968634	4.865095	18.63179
#1	-.000061	.0001211	139.7098	.0016067	.0006614	.0033497	.0260004
#2	-.000148	.0000062	138.5315	.0015836	.0005417	.0030670	.0272411
#3	-.000053	-.000029	139.3698	.0024563	.0005980	.0033309	.0189318

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0186235**	**2.431170**	**.0033583**	**-.000591**	**279.7165**	**.0038086**	**.0039015**
Stddev	.0010349	.007561	.0001231	.000611	1.9013	.0009860	.0002256
%RSD	5.556873	.3110183	3.664078	103.3911	.6797347	25.88804	5.782553
#1	.0192422	2.433546	.0034511	.000040	281.9119	.0027527	.0041597
#2	.0174288	2.422706	.0032187	-.001180	278.6312	.0047052	.0038029
#3	.0191995	2.437257	.0034051	-.000634	278.6063	.0039680	.0037420

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.144140**	**.0270305**	**.0054565**	**.0012186**	**-.006031**	**2.415140**	**.0256837**
Stddev	.051662	.0004644	.0004282	.0012291	.002436	.005790	.0010872
%RSD	1.246628	1.718098	7.847388	100.8628	40.39347	.2397225	4.233018
#1	4.147183	.0272073	.0052070	-.000053	-.008152	2.408479	.0262080
#2	4.091024	.0273804	.0059509	.001308	-.006570	2.418962	.0264094
#3	4.194214	.0265036	.0052116	.002400	-.003370	2.417980	.0244337

Sample Name: Q3181-03 Acquired: 9/29/2025 16:26:58 Type: Unk
Method: 6010-200.7 NEW(v230) 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	9.526997	-.032127	.5858515
Stddev	.066623	.003658	.0023990
%RSD	.6993086	11.38767	.4094857
#1	9.598132	-.036339	.5846792
#2	9.516798	-.029749	.5842641
#3	9.466062	-.030291	.5886112

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6468.585	91869.83	8654.407	5021.887	7324.540
Stddev	15.424	174.93	48.075	39.520	23.776
%RSD	.2384479	.1904084	.5554977	.7869564	.3246013
#1	6455.182	91752.57	8622.461	5060.291	7304.829
#2	6465.129	91786.03	8631.064	4981.338	7317.846
#3	6485.444	92070.90	8709.697	5024.030	7350.945

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3181-07 Acquired: 9/29/2025 16:31:23 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.000612**	**-.018155**	**.0007840**	**.0016631**	**.0015990**	**.0140650**	**.0331087**
Stddev	.002118	.000084	.0020783	.0009545	.0012829	.0077039	.0002888
%RSD	345.7981	.4616491	265.0866	57.39672	80.22816	54.77384	.8723841
#1	-.002998	-.018209	-.001240	.0015256	.0004202	.0130308	.0334311
#2	.001047	-.018058	.000680	.0007847	.0014116	.0222337	.0330217
#3	.000114	-.018198	.002912	.0026789	.0029653	.0069303	.0328734

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000039**	**-.000072**	**122.1528**	**.0016411**	**.0001316**	**.0021617**	**.0409511**
Stddev	.000063	.000048	.3319	.0001336	.0002883	.0000603	.0006105
%RSD	162.5004	66.61018	.2717403	8.141678	219.1298	2.790198	1.490785
#1	-.000110	-.000017	122.0210	.0017273	.0000824	.0020935	.0411840
#2	.000009	-.000095	121.9070	.0017088	-.000129	.0022080	.0402584
#3	-.000015	-.000103	122.5304	.0014872	.000441	.0021835	.0414108

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0159169**	**2.025522**	**.0027625**	**-.000614**	**256.6108**	**.0031403**	**.0021551**
Stddev	.0003991	.004343	.0000950	.000290	1.6442	.0013562	.0003440
%RSD	2.507343	.2144369	3.440053	47.21083	.6407249	43.18563	15.96107
#1	.0154756	2.025302	.0027200	-.000354	257.5884	.0016486	.0019894
#2	.0162526	2.021293	.0026960	-.000927	257.5313	.0034736	.0019254
#3	.0160224	2.029972	.0028713	-.000562	254.7125	.0042988	.0025506

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.877332**	**.0224421**	**.0046908**	**-.001953**	**-.003187**	**2.031459**	**.0237563**
Stddev	.041781	.0006769	.0001933	.000799	.001198	.019951	.0008721
%RSD	1.077561	3.016017	4.119966	40.92715	37.58597	.9821043	3.671107
#1	3.848744	.0220463	.0049109	-.001208	-.003147	2.032955	.0228005
#2	3.925282	.0220563	.0045488	-.002798	-.002010	2.050620	.0245088
#3	3.857972	.0232237	.0046127	-.001854	-.004405	2.010802	.0239597

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3181-07 Acquired: 9/29/2025 16:31:23 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**8.358148**	**-.030544**	**.5005296**
Stddev	.014428	.002118	.0022246
%RSD	.1726187	6.934387	.4444490
#1	8.354663	-.032097	.4982390
#2	8.345782	-.028131	.5006679
#3	8.373999	-.031404	.5026818

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6389.290**	**89066.23**	**8654.315**	**4919.755**	**7194.082**
Stddev	9.005	266.46	87.660	27.271	1.243
%RSD	.1409389	.2991710	1.012904	.5543226	.0172732
#1	6395.681	88771.94	8632.583	4945.460	7192.792
#2	6378.991	89291.14	8750.797	4922.657	7194.183
#3	6393.197	89135.60	8579.566	4891.149	7195.271

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3181-11 Acquired: 9/29/2025 16:35:48 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.001926**	**-.017739**	**.0011282**	**-.000820**	**.0000415**	**.1468244**
Stddev	.001712	.001473	.0008034	.003135	.0016664	.0123694
%RSD	88.86291	8.302733	71.20871	382.2504	4015.248	8.424633
#1	-.000645	-.017575	.0002005	-.004085	-.001881	.1373360
#2	-.001263	-.019287	.0015929	.002167	.000929	.1608141
#3	-.003870	-.016355	.0015911	-.000543	.001077	.1423230

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0500867**	**-.000027**	**-.000114**	**210.2476**	**.0010645**	**.0005838**
Stddev	.0005602	.000057	.000053	.6319	.0001201	.0002388
%RSD	1.118471	207.5034	46.55600	.3005351	11.28229	40.90931
#1	.0496002	-.000022	-.000085	209.6134	.0009294	.0007594
#2	.0506992	.000026	-.000175	210.8771	.0011589	.0006802
#3	.0499607	-.000087	-.000081	210.2524	.0011053	.0003118

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0092450**	**.2048261**	**.0003882**	**.4042391**	**.0040987**	**-.000877**
Stddev	.0002325	.0073107	.0006439	.0120702	.0002913	.000116
%RSD	2.514340	3.569220	165.8784	2.985898	7.106878	13.23951
#1	.0089824	.2021431	.0004055	.3982912	.0044163	-.000750
#2	.0093283	.2130993	-.000264	.4181289	.0040359	-.000903
#3	.0094243	.1992360	.001023	.3962972	.0038440	-.000978

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**410.1285**	**.0036483**	**.0025415**	**8.400271**	**.0336373**	**.0091271**
Stddev	5.8763	.0013060	.0000606	.105941	.0002375	.0006210
%RSD	1.432786	35.79851	2.384879	1.261166	.7061294	6.803623
#1	412.8756	.0050976	.0024996	8.492424	.0337294	.0086574
#2	414.1280	.0032849	.0025138	8.423870	.0338150	.0098311
#3	403.3818	.0025625	.0026110	8.284521	.0333676	.0088927

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3181-11 Acquired: 9/29/2025 16:35:48 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.006675	-.006935	2.251776	.0125370	F 18.15241	-.040458
Stddev	.000434	.001420	.022340	.0008836	.09235	.003872
%RSD	6.497197	20.48036	.9920949	7.047641	.5087205	9.571538
#1	-.006759	-.008569	2.277381	.0119171	18.15340	-.035994
#2	-.007060	-.006233	2.236261	.0121452	18.24425	-.042461
#3	-.006205	-.006001	2.241686	.0135487	18.05957	-.042918

Elem	Sr4077
Units	ppm
Avg	1.020689
Stddev	.005084
%RSD	.4981140
#1	1.019900
#2	1.026121
#3	1.016045

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6241.911	88792.00	8653.056	4838.086	6977.050
Stddev	4.021	511.61	29.549	33.478	11.104
%RSD	.0644137	.5761945	.3414887	.6919635	.1591483
#1	6246.552	88511.72	8686.528	4843.539	6989.564
#2	6239.687	88481.77	8642.052	4802.216	6968.376
#3	6239.494	89382.51	8630.587	4868.502	6973.211

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3188-05 Acquired: 9/29/2025 16:40:13 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.000233**	**-.030123**	**.0073418**	**.0087336**	**.0041684**	**.0495498**	**.1242038**
Stddev	.001839	.000582	.0015090	.0018699	.0005466	.0066180	.0023320
%RSD	787.7421	1.930455	20.55321	21.41012	13.11181	13.35634	1.877563
#1	-.002306	-.030364	.0063997	.0076341	.0041910	.0448776	.1222406
#2	.001204	-.030545	.0090822	.0076741	.0036109	.0571229	.1267815
#3	.000401	-.029460	.0065434	.0108926	.0047032	.0466488	.1235893

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000054**	**.0013955**	**2.354973**	**.0022896**	**.0005868**	**.0376001**	**.1063204**
Stddev	.000066	.0000729	.011558	.0001264	.0001051	.0008341	.0061631
%RSD	121.3555	5.225071	.4908076	5.521533	17.90601	2.218335	5.796759
#1	.000022	.0013140	2.364847	.0023303	.0006904	.0377738	.1049842
#2	-.000087	.0014180	2.342259	.0021478	.0005895	.0366928	.1009350
#3	-.000098	.0014545	2.357814	.0023906	.0004803	.0383337	.1130421

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0216128**	**.1664240**	**.0077070**	**-.000598**	**253.7443**	**.0003304**	**2.246501**
Stddev	.0000755	.0283504	.0002138	.000498	1.6836	.0020045	.007754
%RSD	.3492293	17.03505	2.773634	83.28302	.6634881	606.6736	.3451385
#1	.0216649	.1473564	.0079293	-.000894	254.0897	.0000995	2.248313
#2	.0215262	.1529129	.0076887	-.000023	251.9148	-.001549	2.253188
#3	.0216472	.1990027	.0075029	-.000878	255.2283	.002440	2.238002

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9231104**	**2.456872**	**.0040563**	**.0103885**	**-.001073**	**.0792210**	**.1412054**
Stddev	.0114672	.018042	.0000858	.0001564	.001924	.0184223	.0024790
%RSD	1.242235	.7343605	2.115801	1.505726	179.3729	23.25426	1.755628
#1	.9358802	2.438623	.0041201	.0105509	-.002010	.0651741	.1391697
#2	.9197582	2.457293	.0040900	.0102388	.001140	.0724099	.1404804
#3	.9136929	2.474700	.0039587	.0103759	-.002348	.1000789	.1439661

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3188-05 Acquired: 9/29/2025 16:40:13 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.5822373	-.014518	.0168336
Stddev	.0013549	.001092	.0001383
%RSD	.2327093	7.522065	.8217042
#1	.5837897	-.015259	.0167298
#2	.5812929	-.013264	.0167803
#3	.5816293	-.015032	.0169906

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6593.831	88436.81	7843.332	4932.281	7594.602
Stddev	12.601	328.25	29.858	30.319	7.690
%RSD	.1910981	.3711658	.3806831	.6147008	.1012520
#1	6599.500	88096.39	7872.482	4912.979	7600.649
#2	6579.391	88462.69	7844.701	4916.638	7585.948
#3	6602.600	88751.35	7812.812	4967.227	7597.209

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV04 Acquired: 9/29/2025 16:44:35 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.869596**	**4.747680**	**4.779710**	**4.927837**	**4.889766**	**9.696568**	**9.523362**
Stddev	.004803	.100409	.002514	.004299	.003613	.028755	.079950
%RSD	.0986225	2.114897	.0525955	.0872340	.0738984	.2965452	.8395141
#1	4.865087	4.860325	4.776819	4.932411	4.889215	9.695023	9.581765
#2	4.874646	4.667584	4.780934	4.927218	4.893623	9.726063	9.556080
#3	4.869054	4.715131	4.781377	4.923881	4.886460	9.668616	9.432243

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2308309**	**2.407173**	**24.03002**	**.9686510**	**2.393623**	**1.206647**	**4.817242**
Stddev	.0013637	.000430	.08911	.0021007	.002250	.002652	.032021
%RSD	.5908000	.0178579	.3708304	.2168665	.0939838	.2198020	.6647194
#1	.2323968	2.406974	24.13113	.9703554	2.391134	1.204313	4.787748
#2	.2301919	2.406878	23.99603	.9692936	2.394223	1.206096	4.851301
#3	.2299039	2.407666	23.96291	.9663041	2.395512	1.209531	4.812677

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.382383**	**24.18370**	**2.393880**	**1.187001**	**24.31671**	**2.408932**	**2.377724**
Stddev	.009608	.03057	.002588	.000265	.21654	.005917	.003292
%RSD	.4033042	.1263982	.1081035	.0223563	.8905093	.2456208	.1384705
#1	2.393041	24.14861	2.391933	1.187286	24.48819	2.413578	2.373923
#2	2.379722	24.19791	2.392891	1.186761	24.38856	2.410947	2.379709
#3	2.374385	24.20456	2.396817	1.186957	24.07337	2.402271	2.379538

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.06043**	**4.637879**	**4.919329**	**4.853305**	**4.773169**	**4.813742**	**4.928424**
Stddev	.10090	.016846	.001785	.002499	.022561	.037537	.009877
%RSD	.4026425	.3632260	.0362811	.0514896	.4726600	.7797816	.2004046
#1	25.15787	4.657060	4.920680	4.853182	4.797860	4.776332	4.933920
#2	25.06705	4.625484	4.917306	4.855863	4.768016	4.851404	4.934329
#3	24.95639	4.631094	4.920002	4.850870	4.753629	4.813490	4.917021

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV04 Acquired: 9/29/2025 16:44:35 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.877440**	**4.691370**	**4.783586**
Stddev	.014139	.025829	.074462
%RSD	.2898782	.5505574	1.556621
#1	4.891411	4.719658	4.697623
#2	4.877771	4.685412	4.828118
#3	4.863139	4.669042	4.825017

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6557.831**	**91836.11**	**8558.442**	**5086.190**	**7490.292**
Stddev	8.920	120.05	29.180	6.519	8.796
%RSD	.1360268	.1307260	.3409461	.1281661	.1174305
#1	6561.618	91854.86	8524.752	5079.104	7493.544
#2	6564.234	91707.79	8575.746	5091.933	7496.999
#3	6547.642	91945.69	8574.828	5087.532	7480.333

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB04 Acquired: 9/29/2025 16:48:44 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000309**	**-.014547**	**.0008835**	**-.001706**	**-.001454**	**.0045656**
Stddev	.0012608	.000527	.0007909	.001610	.001061	.0132293
%RSD	4075.749	3.625792	89.51381	94.39123	73.01037	289.7584
#1	-.001360	-.013956	.0006391	.000132	-.000240	.0196387
#2	.000354	-.014972	.0002437	-.002868	-.002205	-.000823
#3	.001099	-.014712	.0017678	-.002381	-.001916	-.005119

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001407**	**.0000787**	**.0000951**	**.0107485**	**.0000347**	**.0001027**
Stddev	.002083	.0000643	.0000904	.0070511	.0000772	.0001139
%RSD	148.0306	81.72099	94.97959	65.60067	222.6409	110.8404
#1	-.003664	.0001255	.0001627	.0031023	.0000706	.0002333
#2	-.001002	.0001052	-.000008	.0169944	-.000054	.0000243
#3	.000443	.0000054	.000130	.0121488	.000087	.0000505

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000578**	**.0069617**	**.0004819**	**-.009739**	**.0003465**	**-.000396**
Stddev	.0001557	.0040609	.0004130	.010897	.0000519	.000211
%RSD	269.1335	58.33283	85.69666	111.8898	14.97653	53.20071
#1	.0001607	.0037464	.0000339	-.018787	.0003564	-.000351
#2	-.000121	.0115253	.0005644	-.012787	.0002904	-.000626
#3	.000134	.0056134	.0008474	.002357	.0003927	-.000212

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4334714**	**.0020184**	**.0000580**	**.5668065**	**-.000129**	**.0002204**
Stddev	.0259015	.0026210	.0001966	.0247799	.000672	.0003495
%RSD	5.975372	129.8543	339.0096	4.371839	522.0657	158.5558
#1	.4256753	-.000939	-.000027	.5715178	.000244	.0001657
#2	.4623756	.004055	.000283	.5888925	-.000905	-.000098
#3	.4123635	.002939	-.000082	.5400092	.000274	.000594

Sample Name: CCB04 Acquired: 9/29/2025 16:48:44 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0176109	-.001023	.0115022	.0007654	-.001262	F .0206755
Stddev	.0005020	.001680	.0160901	.0016877	.004159	.0009210
%RSD	2.850306	164.1900	139.8867	220.5084	329.4654	4.454649
#1	.0181525	.000630	-.006446	.0008188	-.002426	.0207312
#2	.0171612	-.000972	.016317	-.000948	.003354	.0197279
#3	.0175191	-.002728	.024635	.002426	-.004715	.0215674

Elem	Sr4077
Units	ppm
Avg	.0004414
Stddev	.0000728
%RSD	16.49880
#1	.0005161
#2	.0003706
#3	.0004376

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6794.471	94524.63	8263.574	5255.495	8080.412
Stddev	5.112	223.58	13.816	29.444	7.995
%RSD	.0752348	.2365261	.1671898	.5602513	.0989470
#1	6795.641	94766.68	8251.453	5269.663	8089.291
#2	6798.896	94325.86	8278.617	5221.645	8078.163
#3	6788.876	94481.34	8260.652	5275.176	8073.782

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-01 Acquired: 9/29/2025 16:53:03 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.1510885**	**-.019680**	**.0010527**	**.0055617**	**.0015173**	**.0200808**
Stddev	.0005503	.000269	.0011804	.0010872	.0016770	.0108582
%RSD	.3642386	1.368113	112.1367	19.54802	110.5234	54.07252
#1	.1504531	-.019932	.0003860	.0043681	.0033297	.0268559
#2	.1514002	-.019396	.0003564	.0064954	.0012015	.0258297
#3	.1514122	-.019711	.0024156	.0058215	.0000207	.0075568

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0273219**	**.0000417**	**.0006135**	**33.88355**	**.0025278**	**.0029097**
Stddev	.0010605	.0000345	.0001189	.03732	.0004086	.0001031
%RSD	3.881562	82.73292	19.37575	.1101440	16.16427	3.542708
#1	.0262643	.0000019	.0006773	33.92079	.0023978	.0030215
#2	.0273161	.0000635	.0004764	33.84615	.0029855	.0028889
#3	.0283853	.0000595	.0006869	33.88371	.0021999	.0028185

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010078**	**.2683666**	**.1513943**	**6.902637**	**.0261089**	**-.000339**
Stddev	.0004352	.0026384	.0002335	.009702	.0003578	.000636
%RSD	43.18535	.9831277	.1542083	.1405486	1.370467	187.5223
#1	.0005565	.2655502	.1515085	6.891881	.0264259	.000131
#2	.0014250	.2707808	.1511257	6.910726	.0257209	-.000086
#3	.0010418	.2687688	.1515487	6.905303	.0261799	-.001063

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**419.1000**	**.0015992**	**.7879065**	**18.80355**	**.0812213**	**.0032370**
Stddev	.6404	.0024748	.0004165	.02814	.0016570	.0002102
%RSD	.1528125	154.7538	.0528556	.1496668	2.040067	6.492975
#1	418.8948	-.000802	.7874562	18.81789	.0829869	.0031076
#2	418.5873	.001458	.7879857	18.77113	.0797001	.0034795
#3	419.8179	.004141	.7882777	18.82164	.0809770	.0031239

Sample Name: Q3196-01 Acquired: 9/29/2025 16:53:03 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.004572	-.000929	2.785788	9.153354	F 99.09422	.0254333
Stddev	.000696	.001096	.015089	.032875	.41129	.0020815
%RSD	15.21751	117.9680	.5416588	.3591601	.4150481	8.184214
#1	-.004869	-.002022	2.773377	9.180216	99.06325	.0233804
#2	-.005070	.000170	2.781402	9.116694	98.69929	.0253772
#3	-.003777	-.000934	2.802584	9.163153	99.52012	.0275423

Elem	Sr4077
Units	ppm
Avg	.3535392
Stddev	.0011612
%RSD	.3284461
#1	.3541783
#2	.3521988
#3	.3542404

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6466.121	88212.06	8160.106	4915.767	7308.038
Stddev	27.402	45.29	18.414	14.282	29.156
%RSD	.4237707	.0513372	.2256630	.2905370	.3989643
#1	6435.646	88160.78	8161.110	4901.520	7275.391
#2	6488.729	88228.88	8141.211	4915.698	7331.484
#3	6473.987	88246.54	8177.998	4930.084	7317.238

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-02 Acquired: 9/29/2025 16:57:24 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0001765**	**-.022427**	**.0016413**	**.0043357**	**.0178124**	**.3492422**
Stddev	.0029317	.001706	.0014282	.0021398	.0024971	.0151973
%RSD	1660.977	7.605341	87.01480	49.35179	14.01879	4.351500
#1	-.002924	-.020459	.0025914	.0019113	.0206904	.3664938
#2	.000550	-.023366	-.000001	.0059606	.0165262	.3433987
#3	.002904	-.023458	.002334	.0051352	.0162207	.3378339

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0283076**	**-.000004**	**.0014233**	**28.91866**	**.0069229**	**.0059745**
Stddev	.0010903	.000012	.0000712	.46439	.0004813	.0001884
%RSD	3.851465	282.0934	5.004767	1.605834	6.952594	3.154084
#1	.0286646	-.000003	.0013458	28.61576	.0073226	.0057574
#2	.0270836	-.000017	.0014382	28.68692	.0063886	.0060711
#3	.0291747	.000007	.0014860	29.45331	.0070576	.0060951

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9323932**	**.6166016**	**.2267865**	**2.911895**	**.1989662**	**-.000104**
Stddev	.0102531	.0196983	.0038042	.085480	.0022785	.000760
%RSD	1.099654	3.194658	1.677440	2.935533	1.145153	732.9361
#1	.9294488	.6393471	.2230926	2.837797	.1977165	.000718
#2	.9437963	.6051539	.2265746	2.892472	.2015961	-.000781
#3	.9239344	.6053039	.2306922	3.005414	.1975860	-.000248

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**486.9262**	**.0007158**	**4.659347**	**7.265891**	**.1177084**	**.0051510**
Stddev	11.6243	.0036528	.046899	.096861	.0022837	.0001061
%RSD	2.387284	510.3136	1.006554	1.333085	1.940124	2.058835
#1	487.8632	.0024485	4.708168	7.234822	.1167800	.0051681
#2	474.8617	.0031798	4.614641	7.188378	.1160351	.0050374
#3	498.0536	-.003481	4.655233	7.374474	.1203101	.0052474

Sample Name: Q3196-02 Acquired: 9/29/2025 16:57:24 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0011320	.0075281	.7408960	F 36.87157	F 265.3084	.1594338
Stddev	.0002517	.0016690	.0214959	.47336	3.8986	.0055746
%RSD	22.23530	22.17075	2.901332	1.283819	1.469469	3.496511
#1	.0013286	.0065572	.7622490	36.70284	263.8906	.1557354
#2	.0008483	.0065717	.7192601	37.40618	269.7175	.1567204
#3	.0012191	.0094553	.7411790	36.50568	262.3170	.1658457

Elem	Sr4077
Units	ppm
Avg	.0836800
Stddev	.0014955
%RSD	1.787115
#1	.0825308
#2	.0831384
#3	.0853708

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6319.290	89576.09	7974.819	4911.320	7084.980
Stddev	66.887	962.67	121.307	29.828	84.548
%RSD	1.058459	1.074696	1.521122	.6073232	1.193338
#1	6319.377	89208.04	8064.536	4894.317	7076.630
#2	6252.360	90668.49	8023.120	4945.761	7004.918
#3	6386.134	88851.75	7836.803	4893.882	7173.394

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-03 Acquired: 9/29/2025 17:01:43 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.003041**	**-.019224**	**.0001118**	**.0043249**	**.0040361**	**.0869216**
Stddev	.001099	.002089	.0005068	.0016106	.0011913	.0090766
%RSD	36.12162	10.86457	453.2631	37.24109	29.51731	10.44234
#1	-.003601	-.017612	.0003318	.0045025	.0047187	.0821597
#2	-.001776	-.018477	.0004715	.0058394	.0026605	.0812168
#3	-.003748	-.021584	-.000468	.0026328	.0047291	.0973882

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0171573**	**.0000338**	**.0008379**	**28.82131**	**.0028453**	**.0013457**
Stddev	.0002862	.0000830	.0000695	.17156	.0005502	.0002465
%RSD	1.668103	245.9036	8.299796	.5952649	19.33885	18.31907
#1	.0168871	.0000761	.0008794	28.69404	.0022316	.0013194
#2	.0171276	.0000871	.0008767	29.01642	.0030097	.0016044
#3	.0174572	-.000062	.0007576	28.75347	.0032946	.0011134

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011312**	**.1036764**	**.0649936**	**1.120022**	**.0108092**	**-.000687**
Stddev	.0007529	.0162120	.0005745	.014607	.0002735	.000276
%RSD	66.55440	15.63709	.8838716	1.304170	2.530453	40.21921
#1	.0018623	.0855721	.0643487	1.105509	.0111241	-.000369
#2	.0011728	.1086050	.0654503	1.134721	.0106308	-.000821
#3	.0003584	.1168521	.0651819	1.119837	.0106728	-.000869

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**400.4730**	**.0031792**	**6.545406**	**2.578562**	**.5791648**	**.0005858**
Stddev	.8163	.0025083	.003455	.029973	.0103082	.0001516
%RSD	.2038445	78.89696	.0527917	1.162395	1.779834	25.87024
#1	400.5118	.0060420	6.544122	2.595330	.5687155	.0006432
#2	401.2692	.0013677	6.542777	2.543957	.5893257	.0004140
#3	399.6379	.0021278	6.549320	2.596398	.5794533	.0007003

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-03 Acquired: 9/29/2025 17:01:43 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.005172	-.001827	.1498232	F 15.99424	F 84.96376	.0054962
Stddev	.000393	.001131	.0069567	.05274	.55453	.0002128
%RSD	7.595718	61.89344	4.643285	.3297547	.6526696	3.871659
#1	-.005280	-.003129	.1494876	16.04278	85.56301	.0054906
#2	-.004737	-.001270	.1430404	16.00181	84.85954	.0052862
#3	-.005501	-.001083	.1569417	15.93811	84.46874	.0057117

Elem	Sr4077
Units	ppm
Avg	.0512386
Stddev	.0004050
%RSD	.7903268
#1	.0508742
#2	.0516746
#3	.0511672

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6550.143	87860.79	8520.333	4901.065	7414.791
Stddev	4.138	379.25	100.426	31.875	8.701
%RSD	.0631738	.4316534	1.178667	.6503690	.1173441
#1	6550.218	87426.45	8606.766	4870.047	7410.278
#2	6554.243	88029.48	8410.165	4933.733	7424.821
#3	6545.968	88126.42	8544.068	4899.416	7409.274

Sample Name: Q3196-04 Acquired: 9/29/2025 17:06:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0155907**	**-.023760**	**.0015942**	**.0044815**	**.0025974**	**.1322550**
Stddev	.0022465	.001987	.0004020	.0008590	.0022793	.0147052
%RSD	14.40894	8.363873	25.21848	19.16712	87.75356	11.11882
#1	.0139518	-.024113	.0015002	.0054629	.0050810	.1235608
#2	.0146688	-.021620	.0012476	.0038663	.0021099	.1492334
#3	.0181514	-.025547	.0020350	.0041153	.0006013	.1239708

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0421459**	**.0003431**	**.0009402**	**44.11768**	**.0041810**	**.0084519**
Stddev	.0010079	.0000369	.0001297	.15647	.0003223	.0002500
%RSD	2.391416	10.76523	13.79718	.3546580	7.708883	2.957646
#1	.0427126	.0003856	.0008317	43.93910	.0044556	.0083330
#2	.0409822	.0003187	.0010839	44.23071	.0042613	.0087391
#3	.0427429	.0003249	.0009050	44.18324	.0038262	.0082836

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0858706**	**11.49670**	**.9036866**	**6.424970**	**.2015360**	**-.000083**
Stddev	.0000909	.03932	.0033056	.054487	.0003689	.000964
%RSD	.1059018	.3419822	.3657863	.8480566	.1830274	1163.016
#1	.0859551	11.48590	.9000146	6.362316	.2019371	.001024
#2	.0858823	11.46390	.9046202	6.461272	.2014597	-.000539
#3	.0857743	11.54028	.9064249	6.451321	.2012113	-.000734

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**360.4253**	**.0035491**	**1.265895**	**28.31455**	**.1105306**	**.0316262**
Stddev	2.8428	.0005383	.005708	.05558	.0001085	.0003021
%RSD	.7887252	15.16781	.4509385	.1962894	.0981251	.9551902
#1	362.2963	.0038744	1.272011	28.30307	.1104225	.0318664
#2	357.1540	.0038451	1.260708	28.26562	.1106394	.0317252
#3	361.8255	.0029277	1.264967	28.37498	.1105298	.0312871

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-04 Acquired: 9/29/2025 17:06:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.004963	-.002734	3.786201	.3360937	F 50.18614	-.000720
Stddev	.000516	.001654	.017151	.0036547	.13719	.000967
%RSD	10.39293	60.47510	.4529828	1.087408	.2733654	134.3427
#1	-.004744	-.000827	3.803938	.3402714	50.24166	-.000255
#2	-.004592	-.003615	3.769703	.3345217	50.02990	-.001832
#3	-.005552	-.003761	3.784961	.3334881	50.28688	-.000073

Elem	Sr4077
Units	ppm
Avg	.3276630
Stddev	.0021038
%RSD	.6420668
#1	.3252785
#2	.3284531
#3	.3292573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6492.132	90895.47	7957.275	4983.938	7337.400
Stddev	15.905	166.78	46.113	28.510	17.344
%RSD	.2449831	.1834831	.5795052	.5720343	.2363840
#1	6480.745	90830.16	8000.902	4956.219	7318.491
#2	6485.348	90771.23	7909.025	4982.416	7341.141
#3	6510.304	91085.02	7961.900	5013.178	7352.570

Sample Name: Q3196-05 Acquired: 9/29/2025 17:10:25 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0077088	-.028999	-.001866	.0071456	.0079039	.0564975
Stddev	.0001087	.000464	.001027	.0010169	.0014327	.0136236
%RSD	1.409476	1.598645	55.03304	14.23091	18.12671	24.11361
#1	.0078082	-.029265	-.002515	.0073384	.0095583	.0468974
#2	.0075928	-.029269	-.000682	.0060462	.0070733	.0720902
#3	.0077256	-.028464	-.002401	.0080524	.0070802	.0505049

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0624981	.0000270	.0008981	16.26292	.0045494	.0006364
Stddev	.0001295	.0000468	.0001146	.05156	.0002618	.0002162
%RSD	.2071457	173.2470	12.76534	.3170253	5.753848	33.96382
#1	.0626476	-.000006	.0009892	16.20524	.0047575	.0008839
#2	.0624232	.000081	.0009359	16.30453	.0046352	.0004847
#3	.0624235	.000006	.0007694	16.27899	.0042555	.0005406

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029166	.5174418	.0484960	6.249475	.0092848	-.000878
Stddev	.0001706	.0036035	.0003241	.027631	.0000449	.000356
%RSD	5.848530	.6964053	.6683194	.4421359	.4832260	40.50088
#1	.0029789	.5174066	.0482825	6.222845	.0093171	-.000743
#2	.0027236	.5210628	.0488689	6.278009	.0092336	-.000610
#3	.0030473	.5138560	.0483365	6.247570	.0093038	-.001282

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	535.0415	-.001585	13.78363	1.772947	F 30.70913	.0028249
Stddev	1.8206	.004167	.14406	.013244	.15721	.0002664
%RSD	.3402731	262.9510	1.045164	.7470068	.5119426	9.431767
#1	536.9656	-.006093	13.87936	1.761508	30.52776	.0031326
#2	534.8128	-.000787	13.61795	1.769878	30.79308	.0026727
#3	533.3460	.002125	13.85359	1.787457	30.80655	.0026695

Sample Name: Q3196-05 Acquired: 9/29/2025 17:10:25 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0033861	-.001449	.1345762	F 14.99707	F 27.81083	.3628968
Stddev	.0012574	.001812	.0085028	.01945	.07733	.0014256
%RSD	37.13587	125.0699	6.318238	.1297094	.2780741	.3928457
#1	.0020523	-.002847	.1257171	14.99825	27.88185	.3616021
#2	.0035559	.000598	.1426712	15.01590	27.82220	.3644246
#3	.0045500	-.002098	.1353403	14.97705	27.72844	.3626637

Elem	Sr4077
Units	ppm
Avg	.0197847
Stddev	.0001385
%RSD	.7001489
#1	.0196251
#2	.0198548
#3	.0198741

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6392.259	85862.36	7878.743	4789.138	7225.674
Stddev	15.661	116.57	31.238	11.374	15.217
%RSD	.2450000	.1357685	.3964845	.2374876	.2106004
#1	6409.434	85882.96	7914.074	4777.057	7242.459
#2	6378.769	85967.26	7867.371	4799.639	7212.781
#3	6388.574	85736.85	7854.784	4790.717	7221.780

Sample Name: Q3208-06 Acquired: 9/29/2025 17:14:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.001198**	**-.018144**	**.0118613**	**.0026677**	**-.000473**	**.4841375**	**.1563471**
Stddev	.001788	.001911	.0007572	.0019752	.000375	.0050440	.0023020
%RSD	149.2039	10.53228	6.383995	74.04234	79.15170	1.041851	1.472333
#1	-.000699	-.020285	.0111149	.0047841	-.000056	.4808917	.1577149
#2	-.003183	-.017533	.0126289	.0008733	-.000781	.4899485	.1576370
#3	.000287	-.016613	.0118400	.0023456	-.000582	.4815722	.1536895

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000939**	**.0005033**	**14.51927**	**.0022683**	**.0002624**	**.0090821**	**.5361798**
Stddev	.0000139	.0000186	.12478	.0001854	.0002613	.0004200	.0033590
%RSD	14.74995	3.700097	.8593983	8.173489	99.56900	4.624626	.6264618
#1	.0000911	.0004843	14.59012	.0023366	.0003989	.0089255	.5392560
#2	.0001089	.0005215	14.59249	.0024098	-.000039	.0095579	.5366875
#3	.0000816	.0005042	14.37519	.0020584	.000427	.0087629	.5325959

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0424158**	**3.171126**	**.0030502**	**-.000375**	**323.8091**	**.0007068**	**.2019401**
Stddev	.0006741	.038452	.0003994	.000356	2.2034	.0024776	.0006138
%RSD	1.589180	1.212579	13.09287	95.08895	.6804699	350.5353	.3039469
#1	.0431499	3.195649	.0025906	-.000786	321.3094	-.001895	.2024368
#2	.0418248	3.190920	.0033129	-.000168	325.4696	.000977	.2012539
#3	.0422725	3.126809	.0032470	-.000170	324.6483	.003038	.2021296

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7678756**	**.0567430**	**.0005293**	**-.005176**	**.0154251**	**1.138430**	**.1031605**
Stddev	.0350502	.0027324	.0002725	.001179	.0004367	.021256	.0047904
%RSD	4.564572	4.815394	51.49616	22.78857	2.831357	1.867096	4.643610
#1	.7515960	.0596189	.0008259	-.006476	.0150590	1.114247	.1086794
#2	.8081051	.0564288	.0002899	-.004876	.0159085	1.154152	.1007229
#3	.7439256	.0541812	.0004719	-.004175	.0153078	1.146890	.1000791

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-06 Acquired: 9/29/2025 17:14:52 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.2665984	-.018379	.0610656
Stddev	.0009068	.001557	.0005819
%RSD	.3401280	8.470515	.9528600
#1	.2662360	-.017540	.0616484
#2	.2676303	-.020175	.0610637
#3	.2659288	-.017421	.0604847

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6553.573	90377.46	8290.801	5018.404	7370.578
Stddev	24.271	137.09	69.946	22.806	28.085
%RSD	.3703547	.1516813	.8436625	.4544502	.3810381
#1	6533.906	90312.98	8217.047	5021.972	7348.779
#2	6546.114	90284.51	8299.171	5039.216	7360.683
#3	6580.698	90534.90	8356.186	4994.024	7402.270

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-06 Acquired: 9/29/2025 17:19:16 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0006042**	**-.017911**	**.0014287**	**.0012496**	**.0019356**	**.0274130**	**.0479394**
Stddev	.0014624	.002020	.0008030	.0013428	.0015361	.0098597	.0018153
%RSD	242.0462	11.28012	56.20921	107.4563	79.36047	35.96725	3.786593
#1	.0008834	-.019939	.0005396	.0013692	.0032495	.0183371	.0499754
#2	-.000978	-.017895	.0016451	.0025286	.0023106	.0379037	.0464900
#3	.001907	-.015899	.0021013	-.000149	.0002467	.0259982	.0473527

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000038**	**-.000039**	**12.09157**	**.0011711**	**-.000254**	**.0008144**	**.0833800**
Stddev	.000023	.000068	.10032	.0000569	.000290	.0002089	.0095477
%RSD	61.39677	175.9775	.8296699	4.861315	114.0608	25.64598	11.45079
#1	-.000056	-.000099	12.20698	.0011194	-.000529	.0005732	.0787105
#2	-.000012	.000035	12.02519	.0012321	-.000283	.0009349	.0943637
#3	-.000046	-.000052	12.04255	.0011617	.000049	.0009350	.0770658

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0262670**	**1.088697**	**.0031546**	**-.000734**	**32.16418**	**.0019078**	**.0341361**
Stddev	.0005739	.031766	.0003646	.000214	.19630	.0008879	.0002247
%RSD	2.185006	2.917793	11.55614	29.21271	.6103186	46.53804	.6582699
#1	.0268906	1.057416	.0028672	-.000981	31.94305	.0026545	.0342896
#2	.0261492	1.087748	.0035646	-.000597	32.23162	.0021428	.0342406
#3	.0257610	1.120926	.0030319	-.000623	32.31788	.0009261	.0338782

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.104325**	**.0672204**	**.0213150**	**-.004316**	**-.001357**	**4.585570**	**.7260734**
Stddev	.032920	.0003666	.0003006	.000123	.002357	.029627	.0039745
%RSD	1.060472	.5453674	1.410271	2.840566	173.6808	.6460950	.5474013
#1	3.090193	.0671969	.0212133	-.004355	.001361	4.575607	.7219266
#2	3.141952	.0668661	.0210783	-.004179	-.002846	4.562209	.7264440
#3	3.080830	.0675982	.0216532	-.004415	-.002586	4.618895	.7298497

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-06 Acquired: 9/29/2025 17:19:16 Type: Unk
Method: 6010-200.7 NEW(v230) 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	1.733009	-.006895	.1093375
Stddev	.006875	.000954	.0012184
%RSD	.3967271	13.83024	1.114321
#1	1.731844	-.007547	.1107433
#2	1.726791	-.007339	.1085879
#3	1.740393	-.005801	.1086812

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6895.869	90210.72	9024.839	5111.258	8135.589
Stddev	32.436	106.47	95.750	11.113	26.297
%RSD	.4703706	.1180188	1.060963	.2174143	.3232318
#1	6928.249	90327.49	8914.294	5116.630	8157.379
#2	6863.377	90185.63	9078.399	5098.480	8106.379
#3	6895.981	90119.03	9081.823	5118.664	8143.009

Sample Name: Q3196-07 Acquired: 9/29/2025 17:23:34 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.001171**	**-.017259**	**.0006071**	**.0002690**	**.0006274**	**.0172262**	**.0089587**
Stddev	.000617	.001120	.0010719	.0042153	.0011324	.0107383	.0017210
%RSD	52.68883	6.488187	176.5730	1566.782	180.4948	62.33731	19.21045
#1	-.001826	-.017669	.0002681	.0030570	.0002638	.0054150	.0105694
#2	-.001087	-.018117	-.000254	.0023303	-.000279	.0198631	.0091615
#3	-.000601	-.015993	.001808	-.004580	.001897	.0264004	.0071454

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000062**	**-.000055**	**7.947398**	**.0006590**	**-.000273**	**.0004714**	**.0328541**
Stddev	.000081	.000087	.044328	.0003892	.000296	.0005356	.0030330
%RSD	130.9791	158.3065	.5577629	59.06139	108.3046	113.6340	9.231600
#1	-.000132	.000006	7.914973	.0006955	-.000613	.0007679	.0294984
#2	.000027	-.000154	7.997909	.0010288	-.000072	.0007932	.0353997
#3	-.000080	-.000017	7.929312	.0002529	-.000135	-.000147	.0336644

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0064428**	**.7679531**	**.0015046**	**-.001320**	**19.63352**	**.0018206**	**.0097731**
Stddev	.0004014	.0440057	.0000816	.000384	.22252	.0007897	.0005487
%RSD	6.230908	5.730262	5.420727	29.05599	1.133388	43.37577	5.614617
#1	.0067151	.7183961	.0015949	-.001494	19.37937	.0024781	.0093535
#2	.0059817	.8024569	.0014825	-.001585	19.72783	.0009447	.0095718
#3	.0066315	.7830063	.0014364	-.000880	19.79336	.0020390	.0103941

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.095816**	**.0411281**	**.0142012**	**-.001760**	**-.002240**	**2.529553**	**.3836407**
Stddev	.056036	.0004064	.0003401	.000544	.000442	.040135	.0027172
%RSD	2.673691	.9880997	2.395129	30.89456	19.73584	1.586639	.7082662
#1	2.076140	.0415955	.0140632	-.001180	-.001807	2.483213	.3867372
#2	2.052271	.0409304	.0139517	-.002258	-.002691	2.553274	.3816546
#3	2.159035	.0408583	.0145886	-.001842	-.002222	2.552171	.3825302

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3196-07 Acquired: 9/29/2025 17:23:34 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.8636336	-.008641	.0711257
Stddev	.0038002	.000378	.0004543
%RSD	.4400271	4.377141	.6387894
#1	.8675005	-.008734	.0706634
#2	.8634966	-.008224	.0715716
#3	.8599037	-.008963	.0711420

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6806.281	93342.53	8475.063	5233.869	8007.159
Stddev	19.535	720.73	33.169	9.888	23.867
%RSD	.2870215	.7721301	.3913750	.1889322	.2980678
#1	6785.018	94174.46	8476.630	5239.405	7980.489
#2	6810.388	92945.49	8441.138	5222.452	8014.480
#3	6823.436	92907.63	8507.421	5239.749	8026.508

Sample Name: Q3196-09 Acquired: 9/29/2025 17:27:50 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0145256**	**-.017534**	**.0079466**	**-.000463**	**.0187913**	**.0349872**	**.1053992**
Stddev	.0023786	.000937	.0004706	.000885	.0019276	.0034214	.0007675
%RSD	16.37536	5.343649	5.922606	191.1366	10.25810	9.779135	.7282008
#1	.0117814	-.017695	.0074707	.000156	.0210169	.0388714	.1061227
#2	.0159961	-.018380	.0079572	-.001477	.0177101	.0324197	.1045941
#3	.0157995	-.016527	.0084118	-.000068	.0176470	.0336706	.1054807

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001027**	**.0026030**	**10.43569**	**.0008281**	**-.000070**	**.0046024**	**2.568350**
Stddev	.0000914	.0000158	.10896	.0003639	.000092	.0002992	.016765
%RSD	88.96429	.6055381	1.044129	43.94581	130.5288	6.501159	.6527568
#1	.0000105	.0026077	10.53946	.0012402	-.000085	.0042647	2.583271
#2	.0001044	.0026158	10.44541	.0006929	-.000154	.0047080	2.571571
#3	.0001932	.0025854	10.32219	.0005511	.000028	.0048345	2.550208

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1009154**	**.8845800**	**.0005902**	**-.000940**	**5.263820**	**.0028082**	**2.507597**
Stddev	.0020191	.0320261	.0003703	.000704	.038447	.0039033	.010496
%RSD	2.000836	3.620483	62.73070	74.89753	.7303971	138.9959	.4185504
#1	.1031016	.9131882	.0009978	-.000866	5.236394	.0028632	2.495914
#2	.1005242	.8905700	.0004983	-.001679	5.307766	.0066836	2.516228
#3	.0991205	.8499819	.0002746	-.000276	5.247300	-.001122	2.510649

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.842201**	**.7964460**	**.0099528**	**.0027641**	**.0000236**	**.5129951**	**.5280640**
Stddev	.040477	.0049996	.0000869	.0002002	.0002808	.0124587	.0025727
%RSD	2.197216	.6277396	.8732377	7.242837	1187.342	2.428614	.4871844
#1	1.804283	.8021996	.0098869	.0025335	.0002766	.4986137	.5281287
#2	1.884826	.7931595	.0100513	.0028939	.0000729	.5198690	.5306038
#3	1.837493	.7939789	.0099202	.0028649	-.000279	.5205026	.5254597

Sample Name: Q3196-09 Acquired: 9/29/2025 17:27:50 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.082871**	**-.015769**	**.0110164**
Stddev	.025467	.001179	.0001151
%RSD	.6237503	7.477411	1.044574
#1	4.079251	-.014883	.0110214
#2	4.109954	-.017107	.0111289
#3	4.059407	-.015318	.0108989

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6959.743**	**96620.98**	**8890.105**	**5336.284**	**8257.815**
Stddev	10.500	766.88	54.241	68.349	9.206
%RSD	.1508710	.7937043	.6101269	1.280835	.1114809
#1	6950.141	97266.75	8863.055	5394.033	8249.045
#2	6958.133	95773.36	8854.709	5260.822	8256.998
#3	6970.955	96822.83	8952.552	5353.996	8267.402

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12 Acquired: 9/29/2025 17:32:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.000562**	**-.019200**	**.0578401**	**.0015907**	**.0007689**	**1.112612**	**.1439717**
Stddev	.001502	.002014	.0001674	.0010704	.0015693	.007581	.0020540
%RSD	267.0546	10.48992	.2894581	67.28892	204.0889	.6813751	1.426655
#1	.001024	-.016921	.0576918	.0012758	-.000281	1.103908	.1425165
#2	-.001962	-.020743	.0580217	.0007131	.002573	1.116152	.1430773
#3	-.000748	-.019936	.0578068	.0027832	.000015	1.117775	.1463212

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000930**	**.0004577**	**6.639331**	**.0029055**	**.0002094**	**.0142821**	**.8869498**
Stddev	.0000200	.0000565	.029345	.0003504	.0001639	.0002101	.0121976
%RSD	21.49879	12.34613	.4419944	12.05984	78.29504	1.470763	1.375226
#1	.0000715	.0005199	6.667513	.0029850	.0003946	.0141465	.8789341
#2	.0000965	.0004438	6.608946	.0032093	.0001507	.0141757	.9009872
#3	.0001111	.0004095	6.641534	.0025222	.0000828	.0145240	.8809280

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0497416**	**.8310551**	**.0030692**	**-.001050**	**288.4727**	**.0018685**	**.1478900**
Stddev	.0007007	.0509489	.0002514	.000744	2.3944	.0015692	.0013525
%RSD	1.408612	6.130633	8.189856	70.81835	.8300300	83.98533	.9145578
#1	.0503901	.7943315	.0031182	-.001192	290.2592	.0036631	.1490760
#2	.0498361	.8892205	.0027969	-.000246	289.4070	.0011880	.1481770
#3	.0489984	.8096132	.0032924	-.001713	285.7520	.0007543	.1464170

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5827412**	**.0261232**	**.0008252**	**-.004567**	**.0236693**	**1.554436**	**.0536688**
Stddev	.0169793	.0010581	.0001588	.000503	.0026208	.018591	.0016438
%RSD	2.913696	4.050270	19.23987	11.01507	11.07245	1.195965	3.062810
#1	.5733298	.0269087	.0006630	-.005147	.0206946	1.552140	.0555571
#2	.5725518	.0265409	.0008323	-.004282	.0246752	1.574068	.0528918
#3	.6023421	.0249201	.0009802	-.004270	.0256381	1.537100	.0525577

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12 Acquired: 9/29/2025 17:32:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.2264327	-.016131	.0402585
Stddev	.0007355	.000541	.0001221
%RSD	.3247973	3.350796	.3032821
#1	.2267198	-.015514	.0403432
#2	.2255970	-.016520	.0401185
#3	.2269813	-.016360	.0403137

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6958.240	97010.78	8640.599	5295.875	7979.755
Stddev	13.378	462.32	35.198	37.663	16.291
%RSD	.1922567	.4765707	.4073529	.7111818	.2041508
#1	6952.541	96640.65	8641.690	5269.748	7969.283
#2	6948.657	96862.67	8675.238	5278.829	7971.457
#3	6973.524	97529.01	8604.868	5339.048	7998.524

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV05 Acquired: 9/29/2025 17:36:29 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.906194**	**4.687097**	**4.792674**	**4.979830**	**4.924411**	**9.623407**	**9.290479**
Stddev	.012963	.189062	.010500	.009971	.006247	.005230	.098826
%RSD	.2642139	4.033669	.2190772	.2002286	.1268538	.0543512	1.063739
#1	4.891239	4.519875	4.780639	4.969227	4.917729	9.624560	9.358621
#2	4.914213	4.649167	4.799963	4.981245	4.930104	9.627965	9.335681
#3	4.913130	4.892248	4.797419	4.989018	4.925401	9.617696	9.177136

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2361419**	**2.414113**	**23.79694**	**.9876526**	**2.401164**	**1.213597**	**4.918191**
Stddev	.0009212	.003867	.02319	.0026407	.004068	.000751	.015782
%RSD	.3901043	.1601976	.0974544	.2673722	.1694159	.0619147	.3208968
#1	.2368967	2.410649	23.81390	.9847101	2.398341	1.213025	4.915219
#2	.2364136	2.413405	23.80642	.9898165	2.399324	1.213318	4.904106
#3	.2351154	2.418286	23.77051	.9884312	2.405827	1.214448	4.935249

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.356654**	**23.87721**	**2.402346**	**1.231197**	**25.06452**	**2.400250**	**2.441288**
Stddev	.003875	.10332	.002831	.001376	.11920	.009524	.004478
%RSD	.1644412	.4326956	.1178530	.1117423	.4755879	.3967734	.1834176
#1	2.358274	23.86200	2.400735	1.232780	25.19258	2.389302	2.444756
#2	2.359456	23.98729	2.400688	1.230290	25.04420	2.404825	2.436233
#3	2.352231	23.78235	2.405615	1.230520	24.95678	2.406622	2.442876

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.23912**	**4.737678**	**4.936017**	**4.867098**	**4.728339**	**4.903874**	**4.978598**
Stddev	.12282	.013149	.005865	.006489	.009514	.026006	.027052
%RSD	.4680821	.2775334	.1188285	.1333299	.2012128	.5303161	.5433569
#1	26.32006	4.747432	4.929265	4.861884	4.735974	4.880487	4.960323
#2	26.29951	4.742876	4.939849	4.865044	4.731362	4.899256	4.965797
#3	26.09780	4.722724	4.938938	4.874366	4.717681	4.931880	5.009675

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV05 Acquired: 9/29/2025 17:36:29 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**5.035789**	**4.640517**	**4.664110**
Stddev	.022601	.008063	.011628
%RSD	.4488042	.1737536	.2493171
#1	5.011802	4.643969	4.673484
#2	5.038878	4.646280	4.667749
#3	5.056687	4.631303	4.651097

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6590.118**	**88471.48**	**8473.208**	**4990.667**	**7531.499**
Stddev	1.092	156.68	42.964	13.493	6.234
%RSD	.0165770	.1770930	.5070597	.2703737	.0827728
#1	6589.486	88450.99	8443.967	4997.736	7533.307
#2	6591.380	88326.06	8453.120	4975.108	7536.628
#3	6589.490	88637.40	8522.537	4999.158	7524.560

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB05 Acquired: 9/29/2025 17:40:38 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000504**	**-.011227**	**.0012640**	**.0015098**	**-.000867**	**.0077895**
Stddev	.002601	.001367	.0007932	.0008379	.000967	.0074625
%RSD	515.8631	12.17269	62.74980	55.49723	111.4397	95.80172
#1	.002087	-.009779	.0005028	.0021920	-.001300	.0161351
#2	-.003115	-.011409	.0012036	.0005745	-.001542	.0017586
#3	-.000484	-.012494	.0020857	.0017628	.000240	.0054749

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000154**	**.0000689**	**.0002644**	**.0015867**	**-.000086**	**.0001101**
Stddev	.0004012	.0000258	.0001262	.0081568	.000510	.0001092
%RSD	2597.193	37.39885	47.73564	514.0752	591.1171	99.23476
#1	.0001204	.0000453	.0004060	.0106664	-.000518	-.000009
#2	.0003537	.0000651	.0001638	-.005122	.000477	.000206
#3	-.000428	.0000964	.0002233	-.000784	-.000218	.000133

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000055**	**.0005561**	**.0000651**	**.0112428**	**.0005258**	**.0000164**
Stddev	.000541	.0030622	.0004361	.0042085	.0000816	.0003115
%RSD	986.5422	550.6510	669.8824	37.43292	15.51551	1904.268
#1	.000057	-.001514	.0000978	.0070047	.0004566	.0003208
#2	-.000643	-.000891	-.000386	.0154211	.0006157	.0000300
#3	.000422	.004074	.000484	.0113026	.0005050	-.000302

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9857613**	**.0000534**	**.0004212**	F **1.043689**	**.0029877**	**.0008014**
Stddev	.0567499	.0014696	.0001934	.056834	.0015886	.0003161
%RSD	5.756962	2754.313	45.92100	5.445468	53.16994	39.43941
#1	1.021864	-.001263	.0003892	1.082290	.0038511	.0011663
#2	1.015071	.001639	.0002458	1.070352	.0039577	.0006254
#3	.920350	-.000216	.0006286	.978426	.0011544	.0006125

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB05 Acquired: 9/29/2025 17:40:38 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0182602	-.001104	.0011523	.0030622	F .0420276	F .0207066
Stddev	.0005954	.000367	.0067772	.0010741	.0048224	.0021677
%RSD	3.260677	33.21527	588.1582	35.07458	11.47442	10.46841
#1	.0177043	-.001339	-.006104	.0030988	.0472734	.0231788
#2	.0188885	-.001293	.002242	.0019703	.0410225	.0191317
#3	.0181880	-.000682	.007318	.0041175	.0377870	.0198093

Elem	Sr4077
Units	ppm
Avg	.0005041
Stddev	.0002295
%RSD	45.51779
#1	.0002533
#2	.0005556
#3	.0007034

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6816.518	96636.63	8677.570	5344.377	8071.177
Stddev	24.121	175.64	38.874	37.649	27.311
%RSD	.3538656	.1817546	.4479826	.7044530	.3383746
#1	6840.333	96484.54	8660.977	5343.463	8095.048
#2	6817.120	96596.49	8721.987	5307.193	8077.089
#3	6792.102	96828.87	8649.746	5382.474	8041.394

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12DUP Acquired: 9/29/2025 17:44:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.001264**	**-.016274**	**.0664839**	**.0041209**	**.0006951**	**2.973985**	**.1694850**
Stddev	.001379	.003257	.0016802	.0005191	.0013486	.029615	.0028226
%RSD	109.0807	20.01523	2.527281	12.59641	194.0108	.9958089	1.665367
#1	-.001316	-.016421	.0676230	.0036226	.0022167	2.953717	.1664505
#2	.000140	-.019454	.0672744	.0046585	.0002209	3.007972	.1720321
#3	-.002616	-.012945	.0645542	.0040815	-.000352	2.960266	.1699723

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001383**	**.0007101**	**7.442666**	**.0036131**	**.0006327**	**.0173292**	**1.571211**
Stddev	.0000734	.0000768	.053440	.0000458	.0003014	.0006129	.020663
%RSD	53.10717	10.82190	.7180253	1.267521	47.62792	3.536774	1.315096
#1	.0001601	.0007695	7.380959	.0036655	.0004185	.0179149	1.579850
#2	.0000564	.0007375	7.473698	.0035805	.0009773	.0166923	1.586151
#3	.0001984	.0006233	7.473340	.0035933	.0005024	.0173804	1.547630

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0565598**	**1.028239**	**.0035828**	**-.000581**	**337.6214**	**.0061079**	**.1740714**
Stddev	.0005716	.036473	.0002777	.000308	11.6735	.0017593	.0012312
%RSD	1.010681	3.547114	7.749745	53.05543	3.457573	28.80428	.7072861
#1	.0559294	1.010503	.0036464	-.000696	326.7891	.0081305	.1744409
#2	.0567056	1.004026	.0032789	-.000815	349.9850	.0049320	.1750756
#3	.0570444	1.070187	.0038232	-.000232	336.0903	.0052612	.1726978

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.100444**	**.0301027**	**.0003081**	**-.004195**	**.0695525**	**5.233922**	**.0666874**
Stddev	.020425	.0009444	.0001292	.000729	.0017387	.088159	.0015535
%RSD	1.856099	3.137223	41.92431	17.37730	2.499866	1.684373	2.329578
#1	1.114210	.0290848	.0001887	-.003917	.0715100	5.317052	.0654693
#2	1.110145	.0309505	.0002904	-.005022	.0689602	5.243240	.0684369
#3	1.076976	.0302729	.0004452	-.003646	.0681873	5.141474	.0661560

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12DUP Acquired: 9/29/2025 17:44:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.2567006	-.013807	.0452942
Stddev	.0034300	.001757	.0005994
%RSD	1.336181	12.72707	1.323402
#1	.2527728	-.014408	.0447532
#2	.2591048	-.015185	.0451910
#3	.2582243	-.011828	.0459386

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6682.442	91739.20	8782.401	5123.685	7551.688
Stddev	16.274	747.53	75.653	36.944	9.414
%RSD	.2435360	.8148450	.8614111	.7210391	.1246644
#1	6669.555	91432.33	8869.744	5093.290	7546.053
#2	6677.041	91193.93	8740.045	5112.961	7546.455
#3	6700.730	92591.33	8737.413	5164.805	7562.556

Sample Name: Q3208-12LX5 Acquired: 9/29/2025 17:49:21 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0010194**	**-.015874**	**.0125007**	**-.000018**	**-.001345**	**.2317930**	**.0268234**
Stddev	.0033842	.000631	.0016416	.001774	.001833	.0041011	.0011067
%RSD	331.9881	3.972838	13.13198	9913.206	136.2878	1.769301	4.125950
#1	.0030098	-.016423	.0126708	.001732	.000660	.2319062	.0265908
#2	-.002888	-.015185	.0107807	-.001815	-.001760	.2276365	.0258514
#3	.002936	-.016013	.0140507	.000030	-.002935	.2358364	.0280279

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000291**	**.0000463**	**1.348424**	**.0002509**	**.0001155**	**.0027222**	**.1816371**
Stddev	.0000537	.0000704	.005378	.0000747	.0001744	.0000386	.0093475
%RSD	184.3697	152.0759	.3988553	29.77513	151.0198	1.416535	5.146249
#1	-.000004	.0001208	1.342613	.0002600	.0001416	.0027591	.1730714
#2	.000091	-.000019	1.353227	.0001721	-.000071	.0027253	.1802325
#3	.000000	.000037	1.349432	.0003206	.000275	.0026821	.1916074

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0108274**	**.1411959**	**.0007850**	**-.000718**	**59.68482**	**.0031306**	**.0306329**
Stddev	.0005336	.0326473	.0002759	.000146	.54900	.0056239	.0003946
%RSD	4.928313	23.12196	35.14109	20.36041	.9198377	179.6453	1.288270
#1	.0109855	.1624116	.0010479	-.000701	59.06634	-.003355	.0303876
#2	.0102326	.1575744	.0004978	-.000581	60.11455	.006095	.0310881
#3	.0112641	.1036017	.0008093	-.000872	59.87357	.006652	.0304229

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.204495**	**.0052088**	**-.000045**	**.0133825**	**.0037855**	**.3172583**	**.0133180**
Stddev	.046124	.0008343	.000351	.0007284	.0014956	.0067514	.0013681
%RSD	3.829357	16.01679	778.1242	5.442764	39.50944	2.128038	10.27248
#1	1.154276	.0059882	-.000332	.0125495	.0055124	.3213893	.0129246
#2	1.244966	.0053093	.000346	.0138995	.0029366	.3209184	.0148397
#3	1.214244	.0043288	-.000150	.0136984	.0029075	.3094672	.0121897

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12LX5 Acquired: 9/29/2025 17:49:21 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0573235	.0298535	.0079457		
Stddev	.0010709	.0025870	.0001526		
%RSD	1.868175	8.665523	1.920371		
#1	.0561724	.0318608	.0077943		
#2	.0575080	.0307658	.0080995		
#3	.0582903	.0269340	.0079433		

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6800.561	93362.84	8505.274	5206.431	7861.356
Stddev	5.856	803.93	73.978	41.663	2.855
%RSD	.0861138	.8610834	.8697890	.8002184	.0363198
#1	6794.908	94105.15	8483.138	5237.903	7859.509
#2	6800.174	93474.43	8587.793	5222.207	7859.915
#3	6806.601	92508.94	8444.891	5159.185	7864.645

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12MS Acquired: 9/29/2025 17:53:40 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.8120996**	**1.812178**	**1.052044**	**2.036901**	**.7857230**	**6.346667**	**.4281430**
Stddev	.0014218	.038150	.002967	.010758	.0040275	.013748	.0025272
%RSD	.1750717	2.105213	.2820534	.5281619	.5125897	.2166249	.5902664
#1	.8112293	1.856217	1.055262	2.046980	.7822170	6.362412	.4269279
#2	.8137403	1.789232	1.049416	2.025573	.7848301	6.340556	.4264528
#3	.8113292	1.791084	1.051453	2.038151	.7901221	6.337033	.4310482

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1843825**	**.2012992**	**11.14046**	**.4112250**	**.2036273**	**.3159670**	**5.224194**
Stddev	.0009836	.0004972	.03341	.0020939	.0006846	.0008372	.026545
%RSD	.5334546	.2469869	.2998635	.5091937	.3362131	.2649563	.5081118
#1	.1851826	.2017987	11.17896	.4111048	.2042697	.3169184	5.216095
#2	.1832844	.2008044	11.12334	.4133765	.2029071	.3153432	5.253845
#3	.1846806	.2012945	11.11909	.4091938	.2037050	.3156393	5.202643

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2827143**	**3.395391**	**.5090710**	**.0727115**	**463.3859**	**.3114699**	**.4419756**
Stddev	.0025621	.021642	.0011780	.0002661	4.3376	.0020675	.0016825
%RSD	.9062605	.6373954	.2314086	.3660342	.9360653	.6637994	.3806669
#1	.2840801	3.420381	.5102692	.0726108	465.3691	.3137912	.4423070
#2	.2797586	3.382825	.5090294	.0730134	466.3774	.3098261	.4434676
#3	.2843041	3.382967	.5079143	.0725105	458.4112	.3107924	.4401521

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.93685**	**.3037955**	**.4337249**	**.6958061**	**.2891791**	**8.179167**	**6.210574**
Stddev	.05212	.0009254	.0002886	.0005867	.0013402	.067751	.058445
%RSD	.4366127	.3046195	.0665436	.0843181	.4634345	.8283387	.9410639
#1	11.89909	.3041968	.4339645	.6956209	.2904975	8.152844	6.267620
#2	11.91516	.3027372	.4334045	.6964630	.2892215	8.256129	6.213279
#3	11.99631	.3044525	.4338057	.6953343	.2878182	8.128527	6.150823

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12MS Acquired: 9/29/2025 17:53:40 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.4939411	.1854845	.2527970
Stddev	.0064195	.0018199	.0015243
%RSD	1.299650	.9811352	.6029596
#1	.5006744	.1855443	.2538617
#2	.4932589	.1836355	.2510509
#3	.4878899	.1872738	.2534783

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6600.320	91627.16	8638.594	5086.580	7388.103
Stddev	8.319	114.46	64.369	42.152	14.853
%RSD	.1260413	.1249165	.7451337	.8286894	.2010331
#1	6592.166	91704.20	8588.809	5054.167	7371.011
#2	6608.795	91495.64	8711.282	5071.341	7397.875
#3	6600.000	91681.63	8615.690	5134.232	7395.422

Sample Name: Q3208-12MSD Acquired: 9/29/2025 17:57:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.7198939**	**1.641247**	**.9059977**	**1.798361**	**.6892507**	**3.247318**	**.3094805**
Stddev	.0029689	.066584	.0012930	.007643	.0013771	.015419	.0008923
%RSD	.4124122	4.056944	.1427097	.4249848	.1997966	.4748264	.2883358
#1	.7165472	1.630547	.9065273	1.793754	.6882309	3.261999	.3094522
#2	.7209235	1.580660	.9045240	1.794145	.6887041	3.248700	.3086027
#3	.7222109	1.712533	.9069417	1.807183	.6908172	3.231254	.3103867

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1621376**	**.1767641**	**7.011001**	**.3619023**	**.1787684**	**.2747741**	**3.701223**
Stddev	.0010133	.0001599	.021434	.0005843	.0005788	.0002060	.023655
%RSD	.6249763	.0904360	.3057227	.1614477	.3237614	.0749653	.6391039
#1	.1625772	.1765807	7.034343	.3624637	.1789237	.2746656	3.687539
#2	.1609787	.1768735	7.006458	.3612975	.1781279	.2750116	3.728537
#3	.1628569	.1768382	6.992203	.3619457	.1792537	.2746450	3.687593

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2230000**	**2.511868**	**.4469579**	**.0634456**	**282.8553**	**.2692695**	**.3222309**
Stddev	.0015396	.010334	.0007676	.0002305	.9370	.0038204	.0003678
%RSD	.6904097	.4114132	.1717485	.3633128	.3312474	1.418790	.1141289
#1	.2244888	2.509896	.4460791	.0634969	283.5130	.2677036	.3219185
#2	.2214141	2.502661	.4472971	.0636461	281.7825	.2664809	.3221380
#3	.2230970	2.523045	.4474976	.0631938	283.2703	.2736240	.3226362

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.584224**	**.2553408**	**.3832860**	**.5926188**	**.1958379**	**2.900933**	**5.396867**
Stddev	.096602	.0029433	.0009013	.0012928	.0031059	.013542	.021832
%RSD	1.007922	1.152680	.2351632	.2181496	1.585976	.4668055	.4045293
#1	9.528825	.2571278	.3825989	.5924301	.1992567	2.900589	5.393037
#2	9.695769	.2519437	.3829526	.5914308	.1950671	2.914643	5.377204
#3	9.528078	.2569508	.3843066	.5939956	.1931900	2.887567	5.420361

Sample Name: Q3208-12MSD Acquired: 9/29/2025 17:57:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.2261532	.1550254	.2060222
Stddev	.0049955	.0014146	.0008043
%RSD	2.208887	.9125027	.3903988
#1	.2246461	.1535168	.2069493
#2	.2220848	.1563221	.2056055
#3	.2317287	.1552373	.2055116

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6684.970	93018.88	8824.121	5191.367	7560.024
Stddev	5.955	424.59	53.719	28.346	11.974
%RSD	.0890736	.4564518	.6087742	.5460247	.1583883
#1	6680.152	92973.86	8762.257	5170.440	7548.341
#2	6683.130	92618.61	8858.982	5180.034	7559.461
#3	6691.627	93464.19	8851.123	5223.626	7572.269

Sample Name: Q3208-12A Acquired: 9/29/2025 18:01:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.6633487**	**1.489867**	**.8460876**	**1.676663**	**.6641492**	**5.939063**	**.2769775**
Stddev	.0297701	.128108	.0348285	.081289	.0296107	.044787	.0051265
%RSD	4.487853	8.598613	4.116417	4.848232	4.458435	.7541006	1.850870
#1	.6322807	1.369939	.8103951	1.591935	.6351455	5.888236	.2722288
#2	.6661411	1.474832	.8478851	1.684045	.6629705	5.956209	.2762911
#3	.6916242	1.624828	.8799825	1.754008	.6943316	5.972743	.2824126

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1345282**	**.1634038**	**7.252595**	**.2955656**	**.1647363**	**.2577407**	**4.071978**
Stddev	.0050627	.0074597	.020675	.0085541	.0076808	.0108871	.057450
%RSD	3.763273	4.565171	.2850769	2.894144	4.662493	4.224051	1.410874
#1	.1289997	.1558852	7.232633	.2874777	.1569412	.2464424	4.050702
#2	.1356473	.1635232	7.273916	.2946990	.1649702	.2586161	4.028200
#3	.1389377	.1708031	7.251235	.3045200	.1722975	.2681637	4.137031

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1796590**	**2.357034**	**.4139430**	**.0534626**	**309.9694**	**.2046077**	**.3113938**
Stddev	.0043463	.047216	.0188681	.0013285	4.2825	.0114487	.0045114
%RSD	2.419197	2.003196	4.558137	2.484923	1.381575	5.595458	1.448771
#1	.1752526	2.311722	.3944462	.0525372	312.3948	.1981677	.3070922
#2	.1797818	2.353432	.4152705	.0528658	312.4886	.1978292	.3109999
#3	.1839426	2.405947	.4321123	.0549849	305.0247	.2178261	.3160892

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.100145**	**.2221616**	**.3512938**	**.5887869**	**.2422793**	**9.248153**	**5.030344**
Stddev	.162192	.0078985	.0169686	.0289764	.0039249	.109603	.253164
%RSD	2.002332	3.555297	4.830318	4.921378	1.619991	1.185139	5.032735
#1	7.997116	.2138363	.3341306	.5579767	.2388639	9.373437	4.767580
#2	8.016216	.2230986	.3516899	.5928924	.2414071	9.201028	5.050784
#3	8.287103	.2295497	.3680609	.6154916	.2465669	9.169994	5.272669

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3208-12A Acquired: 9/29/2025 18:01:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.2289151	.1127738	.1626023
Stddev	.0024940	.0068534	.0050232
%RSD	1.089494	6.077140	3.089236
#1	.2260511	.1064078	.1576999
#2	.2300861	.1118854	.1623688
#3	.2306081	.1200280	.1677381

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6614.502	89376.14	8615.457	5015.774	7462.365
Stddev	9.949	336.87	69.481	21.173	12.099
%RSD	.1504045	.3769098	.8064734	.4221365	.1621379
#1	6603.021	88989.55	8687.073	4993.270	7448.554
#2	6620.560	89606.72	8548.328	5035.301	7467.441
#3	6619.926	89532.17	8610.970	5018.752	7471.099

Sample Name: PB169818TB Acquired: 9/29/2025 18:06:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.003021**	**-.016679**	**.0019958**	**.0022743**	**.0006235**	**.0153599**
Stddev	.003114	.001002	.0005885	.0024521	.0022776	.0084635
%RSD	103.0691	6.007673	29.48930	107.8174	365.2834	55.10141
#1	.000539	-.015878	.0024932	-.000085	-.001780	.0064901
#2	-.004363	-.016357	.0021480	.004810	.000901	.0233482
#3	-.005240	-.017802	.0013461	.002098	.002750	.0162413

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000846**	**-.000057**	**-.000034**	**.0304015**	**.0012674**	**-.000251**
Stddev	.002442	.000026	.000070	.0079933	.0003112	.000230
%RSD	288.5927	45.60287	208.5550	26.29242	24.55007	91.86115
#1	.001954	-.000028	-.000098	.0367988	.0009668	.000015
#2	-.002532	-.000062	-.000045	.0329648	.0012474	-.000367
#3	-.001961	-.000079	.000042	.0214410	.0015881	-.000400

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000274**	**.0137195**	**.0043595**	**-.004524**	**.0004830**	**-.000653**
Stddev	.000482	.0023654	.0002335	.030701	.0002680	.000520
%RSD	175.4907	17.24085	5.355543	678.5607	55.48351	79.50820
#1	.000281	.0133108	.0041726	.024476	.0003596	-.001204
#2	-.000530	.0162626	.0042848	-.036682	.0007904	-.000585
#3	-.000575	.0115851	.0046212	-.001368	.0002989	-.000172

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0827238**	**-.000302**	**.0010950**	**-.158661**	**-.000360**	**.0006947**
Stddev	.0061395	.001105	.0001286	.002372	.000570	.0001842
%RSD	7.421689	366.3668	11.74083	1.494873	158.4904	26.51330
#1	.0821823	.000471	.0012342	-.160646	-.001005	.0005133
#2	.0768730	-.001567	.0009807	-.156034	-.000151	.0006892
#3	.0891161	.000192	.0010701	-.159301	.000077	.0008816

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: PB169818TB Acquired: 9/29/2025 18:06:05 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.003697	-.000568	.0102946	.0069989	F 16.00788	-.016202
Stddev	.000447	.001268	.0046387	.0006507	.13560	.001252
%RSD	12.09291	223.1091	45.05947	9.297780	.8471088	7.727054
#1	-.003607	-.002027	.0150088	.0067590	15.97565	-.017630
#2	-.004182	.000051	.0101397	.0077355	16.15669	-.015292
#3	-.003301	.000271	.0057353	.0065021	15.89129	-.015684

Elem	Sr4077
Units	ppm
Avg	-.000057
Stddev	.000099
%RSD	173.3593
#1	-.000148
#2	.000049
#3	-.000073

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7227.505	100403.8	9044.104	5504.070	8746.138
Stddev	14.389	130.9	28.396	24.493	10.239
%RSD	.1990853	.1303757	.3139692	.4449984	.1170705
#1	7219.709	100500.3	9012.525	5499.133	8736.318
#2	7244.110	100456.2	9067.534	5530.656	8756.750
#3	7218.697	100254.8	9052.253	5482.423	8745.345

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3177-01 Acquired: 9/29/2025 18:10:23 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.002833**	**-.035449**	**-.001746**	**.0005000**	**.0022519**	**4.303230**
Stddev	.001710	.002143	.000492	.0011839	.0014137	.006891
%RSD	60.36543	6.044375	28.19967	236.7877	62.77794	.1601398
#1	-.004764	-.032982	-.001467	-.000546	.0038391	4.310967
#2	-.002224	-.036517	-.002314	.001785	.0011279	4.300969
#3	-.001510	-.036848	-.001456	.000261	.0017888	4.297753

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3276011**	**-.001743**	**.0571331**	**201.4086**	**.0121192**	**.0064236**
Stddev	.0029482	.000053	.0001318	.6264	.0001133	.0001362
%RSD	.8999212	3.059910	.2306115	.3110276	.9349124	2.120923
#1	.3290287	-.001750	.0569946	201.7322	.0120490	.0064509
#2	.3295637	-.001793	.0571478	201.8070	.0120587	.0065442
#3	.3242109	-.001687	.0572569	200.6865	.0122499	.0062758

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000852**	**.4328226**	**21.12153**	**24.07101**	**.0141192**	**-.000330**
Stddev	.0003986	.0083088	.14140	.04793	.0001590	.000112
%RSD	467.9322	1.919676	.6694540	.1991388	1.126004	33.93240
#1	.0004681	.4296499	21.16953	24.10328	.0139739	-.000460
#2	-.000328	.4422503	21.23268	24.09381	.0140948	-.000262
#3	.000115	.4265677	20.96238	24.01593	.0142890	-.000269

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.72048**	**-.003165**	**.1219654**	**18.97711**	**.0959016**	**.0005649**
Stddev	.08458	.000638	.0010349	.19501	.0009640	.0000627
%RSD	.7889188	20.15749	.8485221	1.027614	1.005151	11.10335
#1	10.62300	-.003862	.1217581	18.75909	.0967542	.0005523
#2	10.77428	-.003021	.1230883	19.13490	.0960949	.0006330
#3	10.76418	-.002611	.1210499	19.03735	.0948556	.0005095

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3177-01 Acquired: 9/29/2025 18:10:23 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.005970	-.008774	4.325985	.0450868	F 141.7140	-.047704
Stddev	.000849	.000843	.027558	.0024599	1.2290	.001961
%RSD	14.21585	9.609968	.6370257	5.455955	.8672331	4.109855
#1	-.005299	-.008410	4.296860	.0479229	142.8445	-.047458
#2	-.005688	-.009737	4.329447	.0435331	141.8918	-.045878
#3	-.006925	-.008173	4.351648	.0438043	140.4058	-.049776

Elem	Sr4077
Units	ppm
Avg	.4319289
Stddev	.0025048
%RSD	.5799046
#1	.4319855
#2	.4344049
#3	.4293963

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6646.632	91438.77	8592.095	5104.474	7644.201
Stddev	8.194	244.94	70.817	5.243	11.573
%RSD	.1232842	.2678715	.8242081	.1027131	.1514016
#1	6638.171	91498.87	8520.471	5110.445	7638.563
#2	6654.530	91169.38	8593.738	5100.625	7657.513
#3	6647.196	91648.07	8662.076	5102.351	7636.527

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3177-02 Acquired: 9/29/2025 18:14:34 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.004708**	**-.024049**	**.0013573**	**-.002196**	**.0035543**	**3.436224**
Stddev	.001650	.001131	.0009309	.001796	.0030051	.010456
%RSD	35.04045	4.703196	68.58378	81.76173	84.54865	.3042867
#1	-.002819	-.025174	.0015612	-.004264	.0029305	3.424544
#2	-.005867	-.022912	.0021694	-.001302	.0068224	3.439417
#3	-.005437	-.024062	.0003414	-.001024	.0009101	3.444711

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2539654**	**-.000783**	**.0008058**	**265.3522**	**.0070192**	**.0005136**
Stddev	.0020287	.000086	.0000524	.6262	.0004073	.0000932
%RSD	.7988021	10.95201	6.499974	.2359703	5.802425	18.14457
#1	.2517042	-.000865	.0007582	264.6406	.0065611	.0006171
#2	.2556258	-.000791	.0008619	265.5973	.0071563	.0004363
#3	.2545662	-.000694	.0007972	265.8188	.0073403	.0004874

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0085217**	**.0977562**	**10.01441**	**35.57157**	**.0087616**	**-.000609**
Stddev	.0007421	.0026728	.04724	.14130	.0003027	.000359
%RSD	8.708109	2.734170	.4717527	.3972184	3.454546	58.85753
#1	.0083258	.1008400	9.96398	35.46868	.0091111	-.000910
#2	.0078972	.0963202	10.05765	35.51336	.0085866	-.000706
#3	.0093421	.0961082	10.02159	35.73267	.0085871	-.000212

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.24867**	**-.001479**	**.1193044**	**21.87360**	**.1249379**	**.0007757**
Stddev	.02062	.004527	.0007140	.13070	.0009103	.0001733
%RSD	.1268914	306.1219	.5984791	.5975044	.7286228	22.34302
#1	16.22886	-.006472	.1200041	21.83080	.1251146	.0009349
#2	16.27001	-.000321	.1193322	22.02033	.1257470	.0008011
#3	16.24713	.002357	.1185769	21.76966	.1239522	.0005911

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3177-02 Acquired: 9/29/2025 18:14:34 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.005998	-.009807	5.445615	.0538685	F 181.3828	-.059198
Stddev	.000426	.002794	.028943	.0007751	.4785	.000649
%RSD	7.109425	28.49153	.5314874	1.438920	.2638283	1.095879
#1	-.005756	-.010384	5.448161	.0530908	181.5871	-.058754
#2	-.005748	-.006769	5.473200	.0546410	181.7253	-.058896
#3	-.006491	-.012267	5.415483	.0538736	180.8360	-.059942

Elem	Sr4077
Units	ppm
Avg	.5710083
Stddev	.0015650
%RSD	.2740789
#1	.5693894
#2	.5725132
#3	.5711223

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6500.443	91301.20	8323.968	5061.203	7430.546
Stddev	10.675	237.46	25.660	24.824	12.105
%RSD	.1642163	.2600814	.3082647	.4904844	.1629133
#1	6500.774	91419.66	8353.156	5074.036	7440.493
#2	6510.948	91027.82	8304.958	5032.589	7434.077
#3	6489.606	91456.13	8313.791	5076.983	7417.067

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3177-03 Acquired: 9/29/2025 18:18:46 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.004988**	**-.027785**	**.0017806**	**-.000663**	**.0042309**	**4.448573**
Stddev	.003628	.002129	.0005613	.001175	.0012142	.005694
%RSD	72.72504	7.663539	31.52101	177.0508	28.69853	.1279932
#1	-.006973	-.029648	.0019881	.000645	.0047062	4.454685
#2	-.007191	-.028243	.0011451	-.001628	.0051354	4.443418
#3	-.000801	-.025464	.0022084	-.001007	.0028509	4.447616

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2971927**	**-.000690**	**.0013562**	**267.3065**	**.0080066**	**.0038279**
Stddev	.0018707	.000082	.0000591	.5722	.0007627	.0001585
%RSD	.6294570	11.86341	4.356091	.2140457	9.526493	4.141810
#1	.2957090	-.000774	.0013042	266.6493	.0079986	.0039956
#2	.2965749	-.000611	.0014204	267.5764	.0087733	.0036805
#3	.2992941	-.000686	.0013440	267.6937	.0072479	.0038075

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0149673**	**.1803157**	**11.48387**	**29.70785**	**.0111865**	**-.000812**
Stddev	.0001965	.0057703	.02231	.13256	.0001228	.000039
%RSD	1.312688	3.200128	.1942300	.4462024	1.097540	4.787493
#1	.0151559	.1801336	11.48522	29.64269	.0113256	-.000779
#2	.0147638	.1746386	11.46093	29.86038	.0110931	-.000802
#3	.0149823	.1861750	11.50548	29.62049	.0111409	-.000854

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.36085**	**-.003180**	**.3743623**	**15.65721**	**.2249553**	**.0002823**
Stddev	.02552	.002024	.0006566	.06095	.0002975	.0003434
%RSD	.1777000	63.63807	.1753926	.3892883	.1322573	121.6442
#1	14.35132	-.002329	.3743703	15.71286	.2251794	-.000114
#2	14.38976	-.005490	.3737017	15.66671	.2246178	.000468
#3	14.34146	-.001721	.3750149	15.59207	.2250688	.000493

Sample Name: Q3177-03 Acquired: 9/29/2025 18:18:46 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.006332	-.011344	6.114686	.0967695	F 171.8938	-.055772
Stddev	.000911	.001346	.038818	.0036291	1.5638	.001179
%RSD	14.39220	11.86297	.6348343	3.750269	.9097679	2.114825
#1	-.007384	-.012768	6.101600	.0937888	170.5552	-.056744
#2	-.005840	-.011171	6.158357	.0957088	171.5136	-.054460
#3	-.005772	-.010094	6.084103	.1008107	173.6127	-.056112

Elem	Sr4077
Units	ppm
Avg	.5997071
Stddev	.0018661
%RSD	.3111638
#1	.5992477
#2	.5981136
#3	.6017600

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6745.965	93750.16	8375.612	5201.314	7783.932
Stddev	8.686	467.38	30.182	35.375	9.506
%RSD	.1287618	.4985412	.3603566	.6801190	.1221267
#1	6738.395	93548.93	8400.820	5172.900	7783.788
#2	6755.448	93417.10	8342.166	5190.106	7793.510
#3	6744.051	94284.46	8383.850	5240.935	7774.499

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01 Acquired: 9/29/2025 18:22:55 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.002820**	**-.024252**	**.0020605**	**-.000947**	**.0006422**	**.5656002**
Stddev	.001341	.001997	.0005664	.002471	.0025755	.0059027
%RSD	47.56248	8.235119	27.49046	260.8301	401.0198	1.043621
#1	-.001272	-.023851	.0023413	.001029	-.001416	.5701891
#2	-.003623	-.026419	.0014085	-.000153	-.000188	.5589413
#3	-.003567	-.022485	.0024317	-.003718	.003531	.5676703

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2603739**	**-.000770**	**.0019065**	**303.4244**	**.0077369**	**.0009770**
Stddev	.0015334	.000067	.0001748	.5101	.0003786	.0001373
%RSD	.5889204	8.672705	9.167835	.1681143	4.893570	14.05259
#1	.2586052	-.000709	.0017077	302.9156	.0081609	.0011250
#2	.2611872	-.000759	.0019757	303.4220	.0076174	.0009523
#3	.2613293	-.000842	.0020361	303.9358	.0074326	.0008538

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0086372**	**.1022516**	**7.877774**	**36.94018**	**.0045204**	**-.000459**
Stddev	.0003504	.0077135	.018514	.08496	.0001145	.000475
%RSD	4.057185	7.543626	.2350211	.2299838	2.532126	103.6019
#1	.0082725	.1049761	7.858757	36.85663	.0046398	.000013
#2	.0089714	.1082331	7.878825	37.02647	.0044116	-.000938
#3	.0086677	.0935456	7.895741	36.93743	.0045100	-.000451

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.98582**	**-.000573**	**.1289956**	**22.30916**	**.1838146**	**.0011109**
Stddev	.07054	.001400	.0007059	.06823	.0013598	.0003610
%RSD	.5885415	244.1142	.5472273	.3058204	.7397465	32.49973
#1	11.91046	-.000121	.1288647	22.26058	.1851931	.0010817
#2	11.99671	.000544	.1283644	22.27973	.1824744	.0014856
#3	12.05028	-.002143	.1297579	22.38716	.1837762	.0007653

Sample Name: Q3179-01 Acquired: 9/29/2025 18:22:55 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.006787	-.013261	5.535822	.1022177	F 197.6591	-.066106
Stddev	.001143	.001327	.029856	.0013166	.4585	.002315
%RSD	16.84239	10.00841	.5393182	1.288010	.2319886	3.501927
#1	-.006311	-.012910	5.510531	.1009365	197.4813	-.068100
#2	-.005959	-.012145	5.528179	.1021495	197.3161	-.066651
#3	-.008091	-.014729	5.568756	.1035670	198.1799	-.063567

Elem	Sr4077
Units	ppm
Avg	.6256926
Stddev	.0019144
%RSD	.3059716
#1	.6235001
#2	.6265446
#3	.6270332

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6551.948	93053.88	8462.402	5062.683	7543.612
Stddev	12.962	331.67	45.600	22.782	6.886
%RSD	.1978368	.3564251	.5388554	.4499970	.0912825
#1	6537.513	92677.02	8415.211	5036.740	7536.291
#2	6562.593	93183.29	8465.771	5071.883	7544.586
#3	6555.736	93301.34	8506.225	5079.426	7549.959

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV06 Acquired: 9/29/2025 18:27:07 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.721668**	**4.697927**	**4.717220**	**4.745187**	**4.779316**	**9.716759**	**9.591928**
Stddev	.008255	.129736	.004068	.004096	.009499	.050903	.109886
%RSD	.1748256	2.761551	.0862269	.0863213	.1987461	.5238707	1.145605
#1	4.731197	4.548514	4.721312	4.749416	4.790035	9.666875	9.534013
#2	4.716695	4.763240	4.717172	4.744905	4.775973	9.714777	9.523114
#3	4.717112	4.782026	4.713177	4.741238	4.771942	9.768624	9.718656

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2357476**	**2.369962**	**24.23964**	**.9544603**	**2.376401**	**1.189049**	**4.612911**
Stddev	.0007012	.001536	.05273	.0043448	.003637	.002912	.015104
%RSD	.2974249	.0647906	.2175393	.4552129	.1530473	.2448795	.3274209
#1	.2349388	2.371727	24.21174	.9593786	2.380596	1.192362	4.627186
#2	.2361837	2.368933	24.20672	.9528588	2.374482	1.186893	4.614450
#3	.2361204	2.369226	24.30046	.9511436	2.374126	1.187893	4.597097

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.425954**	**24.15972**	**2.363428**	**1.159701**	**22.60341**	**2.431215**	**2.343389**
Stddev	.004729	.10440	.003313	.003481	.18136	.006508	.011632
%RSD	.1949311	.4321431	.1401899	.3001772	.8023393	.2676739	.4963952
#1	2.420568	24.08490	2.367168	1.163423	22.81148	2.424851	2.353908
#2	2.427869	24.11528	2.362261	1.159152	22.51984	2.430936	2.330896
#3	2.429425	24.27900	2.360858	1.156526	22.47890	2.437858	2.345364

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.71178**	**4.805132**	**4.957990**	**4.784656**	**4.846374**	**4.521787**	**4.629209**
Stddev	.07410	.016375	.008239	.010909	.005440	.037774	.006508
%RSD	.3125061	.3407739	.1661776	.2279999	.1122555	.8353848	.1405941
#1	23.79039	4.786326	4.966540	4.796984	4.840666	4.562417	4.624622
#2	23.70175	4.812838	4.950102	4.776250	4.846955	4.487732	4.626347
#3	23.64321	4.816232	4.957327	4.780735	4.851500	4.515212	4.636658

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV06 Acquired: 9/29/2025 18:27:07 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.805039**	**4.715317**	**4.767811**
Stddev	.016022	.004500	.034207
%RSD	.3334430	.0954294	.7174469
#1	4.822298	4.710273	4.730684
#2	4.802180	4.716761	4.798048
#3	4.790639	4.718918	4.774702

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6962.598**	**98371.96**	**8572.523**	**5383.175**	**8022.401**
Stddev	6.599	317.02	14.430	39.566	4.933
%RSD	.0947765	.3222705	.1683268	.7349950	.0614937
#1	6955.100	98005.95	8584.188	5338.118	8016.885
#2	6967.521	98549.38	8576.995	5412.250	8023.928
#3	6965.173	98560.55	8556.387	5399.158	8026.390

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB06 Acquired: 9/29/2025 18:31:16 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009203**	**-.014443**	**-.000192**	**.0007863**	**-.000098**	**.0040107**
Stddev	.0009521	.001467	.000789	.0019283	.001746	.0021994
%RSD	103.4587	10.15390	411.9812	245.2493	1788.654	54.83821
#1	.0013063	-.012802	-.000785	.0017023	.001772	.0023637
#2	.0016188	-.014900	.000704	.0020859	-.001687	.0065084
#3	-.000164	-.015626	-.000495	-.001429	-.000378	.0031600

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008419**	**.0001012**	**.0000716**	**.0066802**	**.0002789**	**-.000017**
Stddev	.0015418	.0000248	.0001090	.0028191	.0003959	.000142
%RSD	183.1454	24.46408	152.3908	42.20069	141.9316	816.5795
#1	.0020795	.0000727	.0001918	.0095385	.0007350	-.000129
#2	-.000885	.0001166	-.000021	.0066000	.0000773	.000143
#3	.001331	.0001144	.000044	.0039020	.0000244	-.000066

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000381**	**-.003369**	**.0007811**	**.0039982**	**.0002743**	**-.000914**
Stddev	.000233	.005075	.0007704	.0093729	.0002113	.000268
%RSD	61.14031	150.6287	98.62209	234.4286	77.03821	29.35317
#1	-.000637	-.008694	.0007011	.0142094	.0000577	-.000778
#2	-.000322	-.002826	.0015884	-.004214	.0002852	-.001223
#3	-.000183	.001412	.0000539	.001999	.0004798	-.000740

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7303885**	**.0006922**	**-.000036**	**.5997905**	**-.000231**	**.0001651**
Stddev	.0137169	.0016582	.000231	.0153460	.000812	.0002915
%RSD	1.878028	239.5404	644.3967	2.558564	351.5694	176.6047
#1	.7237981	.0014048	.000139	.5822094	.000627	.0004902
#2	.7461568	-.001203	-.000297	.6104990	-.000332	-.000073
#3	.7212106	.001875	.000050	.6066631	-.000987	.000078

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB06 Acquired: 9/29/2025 18:31:16 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0182169	-.002009	.0095913	.0032027	F .0750124	F .0116731
Stddev	.0007952	.001327	.0067564	.0007470	.0065959	.0020898
%RSD	4.364947	66.03623	70.44320	23.32338	8.793045	17.90269
#1	.0178232	-.003165	.0169460	.0037595	.0818081	.0130875
#2	.0191321	-.000560	.0036601	.0034949	.0745929	.0126590
#3	.0176955	-.002302	.0081677	.0023538	.0686364	.0092727

Elem	Sr4077
Units	ppm
Avg	.0004719
Stddev	.0001704
%RSD	36.11290
#1	.0005960
#2	.0002776
#3	.0005421

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6813.760	95027.45	8968.809	5332.410	8029.833
Stddev	8.084	153.01	12.258	10.711	12.051
%RSD	.1186448	.1610168	.1366769	.2008620	.1500813
#1	6810.342	95184.90	8974.914	5323.543	8021.310
#2	6807.947	94879.30	8954.697	5344.310	8024.569
#3	6822.992	95018.16	8976.815	5329.376	8043.621

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01DUP Acquired: 9/29/2025 18:35:36 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**-.004956**	**-.022704**	**.0026591**	**-.002296**	**.0005052**	**.5876997**
Stddev	.002437	.002346	.0006351	.000718	.0011095	.0186209
%RSD	49.17408	10.33413	23.88479	31.28217	219.5993	3.168435
#1	-.002162	-.020013	.0022659	-.002985	-.000541	.5751651
#2	-.006062	-.024321	.0023197	-.001552	.000389	.6090964
#3	-.006645	-.023777	.0033918	-.002351	.001668	.5788375

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2629128**	**-.000698**	**.0020844**	**299.9886**	**.0050022**	**.0011716**
Stddev	.0005375	.000047	.0000267	.9760	.0002444	.0004137
%RSD	.2044362	6.799837	1.279400	.3253440	4.886135	35.31266
#1	.2634792	-.000655	.0021095	299.5172	.0047480	.0016387
#2	.2624099	-.000690	.0020564	299.3378	.0050232	.0010250
#3	.2628492	-.000749	.0020874	301.1108	.0052355	.0008512

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0089596**	**.0844138**	**7.803800**	**36.37785**	**.0043924**	**-.000935**
Stddev	.0006528	.0089118	.015735	.05893	.0002796	.000204
%RSD	7.285492	10.55730	.2016263	.1620021	6.366257	21.84823
#1	.0086348	.0809825	7.787150	36.31715	.0047150	-.000990
#2	.0085329	.0777276	7.805827	36.38156	.0042185	-.001106
#3	.0097110	.0945312	7.818423	36.43484	.0042438	-.000709

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.43611**	**-.000540**	**.1283698**	**23.43118**	**.1799672**	**.0008447**
Stddev	.13401	.001442	.0008283	.22205	.0012982	.0003342
%RSD	1.077578	267.1744	.6452287	.9476717	.7213317	39.56574
#1	12.29952	.000356	.1281685	23.22485	.1804312	.0011879
#2	12.44144	-.002204	.1276607	23.40252	.1809696	.0005202
#3	12.56738	.000228	.1292801	23.66617	.1785008	.0008260

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01DUP Acquired: 9/29/2025 18:35:36 Type: Unk
Method: 6010-200.7 NEW(v230) 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	-.006756	-.010920	5.778012	.1052899	F 199.5401	-.062072
Stddev	.000663	.001551	.025783	.0007134	1.3034	.001355
%RSD	9.810860	14.20712	.4462221	.6775199	.6531935	2.182289
#1	-.006058	-.009170	5.751293	.1060161	200.2159	-.062600
#2	-.007377	-.011464	5.780002	.1045901	198.0376	-.060533
#3	-.006834	-.012126	5.802743	.1052635	200.3667	-.063083

Elem	Sr4077
Units	ppm
Avg	.6262183
Stddev	.0026570
%RSD	.4242983
#1	.6233031
#2	.6268474
#3	.6285043

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6492.097	91164.50	8762.915	5050.162	7441.709
Stddev	5.174	468.34	22.149	23.116	8.450
%RSD	.0796936	.5137345	.2527620	.4577242	.1135521
#1	6489.467	91410.83	8746.309	5056.373	7435.939
#2	6498.057	91458.28	8788.063	5069.539	7451.409
#3	6488.766	90624.40	8754.372	5024.576	7437.780

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01LX5 Acquired: 9/29/2025 18:39:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0000546**	**-.016798**	**-.000593**	**-.000690**	**-.000405**	**.1236294**
Stddev	.0005650	.001451	.001227	.001358	.001438	.0036817
%RSD	1034.342	8.637157	206.8678	196.8220	354.7870	2.977993
#1	.0006438	-.015601	-.001872	.000867	-.001462	.1194502
#2	.0000029	-.016380	-.000482	-.001633	-.000987	.1263940
#3	-.000483	-.018411	.000575	-.001304	.001233	.1250440

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0513055**	**-.000062**	**.0003696**	**61.12614**	**.0011598**	**-.000009**
Stddev	.0015369	.000037	.0000312	.06752	.0004146	.000159
%RSD	2.995599	60.02645	8.430547	.1104663	35.74786	1685.005
#1	.0530644	-.000045	.0003835	61.04956	.0012211	.000018
#2	.0502214	-.000104	.0003339	61.15172	.0015403	-.000181
#3	.0506308	-.000036	.0003914	61.17714	.0007179	.000134

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015373**	**.0101877**	**1.615104**	**7.484586**	**.0010992**	**-.000566**
Stddev	.0002119	.0052196	.008705	.055217	.0003967	.000676
%RSD	13.78667	51.23425	.5389476	.7377368	36.08670	119.4271
#1	.0015863	.0161222	1.605234	7.437286	.0012529	-.000976
#2	.0017204	.0063092	1.618394	7.545261	.0013961	-.000936
#3	.0013051	.0081317	1.621683	7.471210	.0006487	.000214

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.698711**	**.0023739**	**.0245386**	**4.692017**	**.0356818**	**.0002809**
Stddev	.032534	.0025938	.0002224	.056291	.0006699	.0002458
%RSD	1.205535	109.2620	.9063359	1.199726	1.877514	87.48820
#1	2.666015	-.000421	.0247844	4.635607	.0351268	.0005598
#2	2.699040	.002838	.0244803	4.692254	.0364260	.0000957
#3	2.731080	.004704	.0243512	4.748189	.0354926	.0001873

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01LX5 Acquired: 9/29/2025 18:39:47 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.0121368	-.003405	1.091351	.0221423	F 39.60687	-.006846
Stddev	.0006801	.002321	.011451	.0018046	.10368	.001903
%RSD	5.603602	68.17589	1.049281	8.149848	.2617673	27.79512
#1	.0125678	-.000725	1.078629	.0200696	39.68662	-.004979
#2	.0113527	-.004710	1.094589	.0229934	39.48967	-.006776
#3	.0124898	-.004780	1.100835	.0233639	39.64431	-.008783

Elem	Sr4077
Units	ppm
Avg	.1262701
Stddev	.0003625
%RSD	.2870825
#1	.1258727
#2	.1265826
#3	.1263549

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6867.833	99350.83	9013.615	5455.815	8011.266
Stddev	5.728	362.30	41.728	33.345	9.498
%RSD	.0834020	.3646649	.4629403	.6111838	.1185620
#1	6874.430	99751.10	9010.779	5482.372	8021.989
#2	6864.127	99045.35	8973.378	5418.392	8007.898
#3	6864.941	99256.05	9056.689	5466.681	8003.911

Sample Name: Q3179-02 Acquired: 9/29/2025 18:44:04 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.7639707**	**1.663207**	**.8880609**	**1.904882**	**.7800112**	**2.444595**
Stddev	.0031821	.052726	.0001587	.002916	.0029140	.005952
%RSD	.4165143	3.170150	.0178705	.1530812	.3735836	.2434918
#1	.7603674	1.627870	.8881417	1.902858	.7819501	2.438103
#2	.7663952	1.637940	.8878780	1.903563	.7814234	2.449794
#3	.7651494	1.723812	.8881629	1.908224	.7766602	2.445889

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4424406**	**.1833037**	**.1828596**	**294.8817**	**.3829074**	**.1868188**
Stddev	.0030611	.0013700	.0002924	.4263	.0008209	.0002010
%RSD	.6918735	.7473897	.1599124	.1445584	.2143722	.1075734
#1	.4444300	.1819261	.1825224	294.4581	.3819968	.1865895
#2	.4439761	.1846660	.1830437	295.3107	.3835905	.1869025
#3	.4389156	.1833189	.1830126	294.8762	.3831348	.1869643

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2859567**	**2.791787**	**7.826195**	**37.61346**	**.4641391**	**.0685380**
Stddev	.0001231	.017566	.013962	.29308	.0006325	.0005251
%RSD	.0430452	.6292115	.1784066	.7792008	.1362831	.7661957
#1	.2858286	2.802160	7.811287	37.39485	.4635876	.0686624
#2	.2859673	2.771505	7.838965	37.94649	.4648296	.0679618
#3	.2860741	2.801695	7.828334	37.49902	.4640002	.0689897

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.07285**	**.2823297**	**.3181667**	**30.15228**	**.4525622**	**.4162320**
Stddev	.08436	.0010913	.0011094	.20267	.0034726	.0006409
%RSD	.5994691	.3865380	.3486874	.6721550	.7673188	.1539683
#1	14.16658	.2819372	.3172842	30.32969	.4497042	.4156729
#2	14.00300	.2814889	.3194122	29.93140	.4564270	.4160918
#3	14.04897	.2835630	.3178038	30.19574	.4515555	.4169314

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-02 Acquired: 9/29/2025 18:44:04 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.6652971	.1757308	5.987266	5.647956	F 192.6487	.1282174
Stddev	.0032339	.0017583	.012702	.028491	1.3506	.0011139
%RSD	.4860839	1.000582	.2121534	.5044417	.7010437	.8687442
#1	.6627901	.1746523	5.999315	5.626685	191.6753	.1271101
#2	.6641538	.1777598	5.973999	5.636856	192.0802	.1293377
#3	.6689473	.1747802	5.988484	5.680326	194.1905	.1282043

Elem	Sr4077
Units	ppm
Avg	.7941914
Stddev	.0006278
%RSD	.0790429
#1	.7948975
#2	.7936963
#3	.7939805

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6736.508	95350.23	8424.780	5167.688	7791.430
Stddev	16.575	42.05	62.525	9.520	15.420
%RSD	.2460547	.0441051	.7421520	.1842259	.1979131
#1	6718.266	95361.61	8490.119	5156.927	7785.572
#2	6750.645	95385.42	8365.512	5175.014	7808.921
#3	6740.614	95303.65	8418.709	5171.123	7779.798

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-03 Acquired: 9/29/2025 18:48:00 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.7804100**	**1.781011**	**.9036649**	**1.941787**	**.7919877**	**2.469458**
Stddev	.0055636	.012225	.0033573	.005419	.0046368	.006959
%RSD	.7129018	.6864244	.3715237	.2790583	.5854620	.2818172
#1	.7760274	1.786668	.9011772	1.939036	.7929801	2.473601
#2	.7785336	1.766982	.9023338	1.938295	.7960480	2.461424
#3	.7866692	1.789383	.9074836	1.948029	.7869351	2.473350

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4444685**	**.1872451**	**.1857032**	**297.1422**	**.3870660**	**.1896553**
Stddev	.0004776	.0008121	.0002340	.2917	.0014396	.0005440
%RSD	.1074612	.4337265	.1260030	.0981638	.3719153	.2868143
#1	.4441291	.1880686	.1855713	297.3066	.3872545	.1890532
#2	.4442615	.1864448	.1855649	297.3146	.3855415	.1898015
#3	.4450146	.1872220	.1859733	296.8054	.3884021	.1901113

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2908986**	**2.810988**	**7.906392**	**37.84590**	**.4710953**	**.0626606**
Stddev	.0007442	.021110	.021955	.08190	.0006017	.0000645
%RSD	.2558316	.7509959	.2776807	.2164021	.1277158	.1030152
#1	.2911163	2.786709	7.887556	37.93929	.4706514	.0627253
#2	.2900698	2.825003	7.930503	37.78630	.4708544	.0625962
#3	.2915097	2.821254	7.901116	37.81211	.4717801	.0626602

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.12065**	**.2893830**	**.3222695**	**30.21121**	**.4608823**	**.4222580**
Stddev	.08662	.0040908	.0011656	.25793	.0027457	.0008628
%RSD	.6134124	1.413638	.3616843	.8537552	.5957541	.2043307
#1	14.02527	.2875480	.3212866	29.92970	.4614972	.4213840
#2	14.19440	.2940701	.3235572	30.43618	.4578813	.4222808
#3	14.14229	.2865310	.3219646	30.26775	.4632685	.4231091

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-03 Acquired: 9/29/2025 18:48:00 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.6778778	.1797100	6.011140	5.786070	F 197.2145	.1293923
Stddev	.0025592	.0022179	.021804	.015328	.5986	.0022589
%RSD	.3775323	1.234134	.3627191	.2649128	.3035283	1.745788
#1	.6757670	.1787102	5.986216	5.771800	196.9116	.1267843
#2	.6771422	.1822517	6.020518	5.784137	196.8278	.1307347
#3	.6807243	.1781679	6.026685	5.802273	197.9040	.1306579

Elem	Sr4077
Units	ppm
Avg	.7994396
Stddev	.0026974
%RSD	.3374061
#1	.7970015
#2	.8023372
#3	.7989801

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6671.276	95562.69	8371.330	5192.660	7700.415
Stddev	6.037	370.30	46.418	11.875	8.229
%RSD	.0904909	.3874900	.5544915	.2286900	.1068648
#1	6668.448	95737.52	8332.097	5189.006	7702.549
#2	6678.208	95813.21	8422.573	5183.041	7707.367
#3	6667.174	95137.35	8359.320	5205.932	7691.330

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01A Acquired: 9/29/2025 18:51:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.8110288**	**1.837194**	**.9361547**	**2.012666**	**.8284668**	**2.562809**
Stddev	.0026768	.016556	.0012681	.004574	.0032060	.008333
%RSD	.3300551	.9011356	.1354609	.2272403	.3869826	.3251502
#1	.8134547	1.821204	.9373122	2.010460	.8248914	2.556525
#2	.8081570	1.854263	.9363528	2.009614	.8294235	2.572262
#3	.8114747	1.836114	.9347992	2.017925	.8310856	2.559641

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4518905**	**.1827282**	**.1926042**	**297.6404**	**.4020327**	**.1949147**
Stddev	.0039801	.0004661	.0005218	1.1400	.0017275	.0003967
%RSD	.8807627	.2550563	.2708966	.3830074	.4296853	.2035265
#1	.4494691	.1825733	.1923153	296.6768	.4002088	.1950871
#2	.4497183	.1832520	.1922908	297.3454	.4022455	.1944609
#3	.4564840	.1823594	.1932065	298.8988	.4036440	.1951960

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2996949**	**3.110034**	**7.921909**	**37.99108**	**.4866679**	**.0668815**
Stddev	.0003079	.026015	.049919	.18520	.0019014	.0005820
%RSD	.1027334	.8364753	.6301439	.4874776	.3906890	.8702370
#1	.2994560	3.083695	7.892412	37.82813	.4860623	.0662123
#2	.2995865	3.110694	7.893769	37.95263	.4851431	.0671620
#3	.3000424	3.135712	7.979545	38.19248	.4887983	.0672701

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.12507**	**.2986972**	**.3323820**	**32.84434**	**.4447967**	**.4355817**
Stddev	.11815	.0023145	.0009253	.30776	.0015007	.0008316
%RSD	.7811824	.7748674	.2783843	.9370335	.3373990	.1909071
#1	15.01897	.2998646	.3326736	32.62365	.4437607	.4347391
#2	15.10383	.3001956	.3313461	32.71345	.4465177	.4356042
#3	15.25240	.2960315	.3331265	33.19591	.4441116	.4364017

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3179-01A Acquired: 9/29/2025 18:51:57 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.7042374	.1831169	6.593549	6.014062	F 198.5674	.1339248
Stddev	.0016716	.0024783	.035413	.013308	.1798	.0024656
%RSD	.2373574	1.353402	.5370882	.2212738	.0905603	1.841039
#1	.7038893	.1814631	6.560904	6.000969	198.5162	.1360313
#2	.7027673	.1819212	6.588545	6.013644	198.4187	.1345302
#3	.7060556	.1859664	6.631199	6.027574	198.7673	.1312128

Elem	Sr4077
Units	ppm
Avg	.8104196
Stddev	.0050721
%RSD	.6258605
#1	.8065876
#2	.8084998
#3	.8161713

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6611.609	92046.14	8726.764	5061.466	7626.434
Stddev	6.354	485.22	27.085	43.549	5.560
%RSD	.0961026	.5271455	.3103656	.8604110	.0729009
#1	6618.021	92543.60	8757.570	5084.749	7630.422
#2	6605.314	92020.67	8716.033	5088.425	7620.083
#3	6611.491	91574.17	8706.688	5011.224	7628.797

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3191-01DLX5 Acquired: 9/29/2025 18:55:54 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**.0005632**	**-.016318**	**.0112247**	**.0020716**	**-.000042**	**.0025984**	**-.003182**
Stddev	.0014187	.000735	.0003252	.0009482	.001476	.0181664	.001874
%RSD	251.8868	4.506448	2.897129	45.77105	3501.622	699.1410	58.90939
#1	.0004967	-.015835	.0115495	.0009775	-.001708	.0107679	-.004927
#2	-.000821	-.015955	.0108991	.0025828	.001101	.0152457	-.003418
#3	.002014	-.017164	.0112254	.0026545	.000481	-.018218	-.001200

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000485**	**.0000121**	**.1027544**	**-.000257**	**-.000217**	**.0149653**	**.0257113**
Stddev	.0000344	.0000329	.0113934	.000144	.000137	.0002351	.0028412
%RSD	70.97678	272.3823	11.08794	55.87294	63.12408	1.571091	11.05024
#1	.0000750	.0000223	.1115042	-.000409	-.000077	.0149117	.0256565
#2	.0000096	-.000025	.1068878	-.000123	-.000225	.0152226	.0228979
#3	.0000609	.000039	.0898713	-.000240	-.000351	.0147616	.0285794

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018148**	**.0029383**	**.0001550**	**-.000109**	**.4294204**	**.0008663**	**.0469467**
Stddev	.0006575	.0181106	.0001615	.000603	.0080406	.0010325	.0004000
%RSD	36.23004	616.3551	104.2096	554.8932	1.872424	119.1795	.8520343
#1	.0020556	.0236385	.0000297	-.000754	.4290449	.0014282	.0468621
#2	.0023180	-.004838	.0003373	.000441	.4215741	-.000325	.0473822
#3	.0010709	-.009985	.0000979	-.000013	.4376421	.001496	.0465958

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3491903**	**.0507234**	**.0479618**	**.0137062**	**-.000568**	**.0107167**	**.2069993**
Stddev	.0712909	.0008014	.0006986	.0002291	.001364	.0094952	.0014025
%RSD	20.41607	1.579979	1.456613	1.671282	239.9956	88.60194	.6775259
#1	.3052845	.0504728	.0487217	.0139008	.000887	.0131129	.2085910
#2	.3108389	.0516202	.0478161	.0137640	-.001818	.0002529	.2064621
#3	.4314475	.0500772	.0473474	.0134537	-.000775	.0187842	.2059448

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: Q3191-01DLX5 Acquired: 9/29/2025 18:55:54 Type: Unk
Method: 6010-200.7 NEW(v230) 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	.8238560	.0013816	.0000514
Stddev	.0262080	.0002659	.0000751
%RSD	3.181143	19.24831	145.9507
#1	.8507628	.0011304	.0001206
#2	.8223974	.0016601	.0000621
#3	.7984077	.0013543	-.000028

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6977.028	98524.32	9471.123	5466.968	8211.511
Stddev	9.658	365.04	6.828	24.487	5.270
%RSD	.1384288	.3705113	.0720968	.4479105	.0641768
#1	6986.910	98104.36	9467.236	5448.151	8217.243
#2	6976.565	98702.97	9467.126	5494.654	8210.413
#3	6967.610	98765.64	9479.007	5458.100	8206.876

Sample Name: CCV07 Acquired: 9/29/2025 19:00:13 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.815806**	**4.538414**	**4.734623**	**4.872278**	**4.865715**	**9.617118**	**9.365601**
Stddev	.002650	.030007	.004035	.006464	.001332	.031297	.053135
%RSD	.0550253	.6611827	.0852293	.1326709	.0273783	.3254328	.5673369
#1	4.818834	4.552731	4.729995	4.879308	4.867158	9.581472	9.414257
#2	4.813914	4.503929	4.737410	4.866590	4.865455	9.640093	9.308904
#3	4.814668	4.558581	4.736463	4.870937	4.864532	9.629789	9.373644

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2323923**	**2.386524**	**23.91044**	**.9632268**	**2.389423**	**1.205414**	**4.781080**
Stddev	.0014717	.001181	.08541	.0019278	.001175	.001332	.043721
%RSD	.6332966	.0494987	.3572033	.2001428	.0491541	.1104604	.9144612
#1	.2307235	2.385524	23.82999	.9646483	2.388106	1.206952	4.827269
#2	.2329484	2.386221	24.00007	.9610325	2.390360	1.204626	4.775634
#3	.2335049	2.387827	23.90125	.9639998	2.389804	1.204665	4.740337

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.378605**	**23.80503**	**2.387761**	**1.194330**	**23.34041**	**2.403964**	**2.398065**
Stddev	.014127	.03669	.000927	.001198	.08791	.003815	.009745
%RSD	.5939003	.1541438	.0388377	.1003216	.3766326	.1586829	.4063851
#1	2.371854	23.76858	2.388779	1.195706	23.41892	2.401454	2.401391
#2	2.394841	23.80453	2.387538	1.193770	23.35687	2.408354	2.405712
#3	2.369121	23.84197	2.386965	1.193515	23.24543	2.402084	2.387092

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.76671**	**4.722056**	**4.928012**	**4.791307**	**4.786004**	**4.721106**	**4.819696**
Stddev	.15147	.031016	.004369	.008963	.017074	.009761	.011014
%RSD	.6373094	.6568320	.0886657	.1870590	.3567411	.2067464	.2285259
#1	23.86784	4.686261	4.931449	4.801471	4.778415	4.730313	4.820755
#2	23.83972	4.740967	4.923094	4.784538	4.805557	4.722131	4.808190
#3	23.59256	4.738939	4.929492	4.787912	4.774041	4.710873	4.830142

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCV07 Acquired: 9/29/2025 19:00:13 Type: Unk
Method: 6010-200.7 NEW(v230) 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	**4.873945**	**4.623641**	**4.732818**
Stddev	.019004	.027474	.046850
%RSD	.3899148	.5942067	.9899027
#1	4.895550	4.609445	4.689548
#2	4.866471	4.655309	4.782573
#3	4.859814	4.606170	4.726334

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6797.302**	**94608.05**	**8716.703**	**5236.960**	**7794.707**
Stddev	7.868	193.25	50.757	3.640	6.153
%RSD	.1157547	.2042591	.5822963	.0695047	.0789432
#1	6805.847	94390.89	8773.201	5232.764	7801.453
#2	6795.703	94761.06	8701.952	5238.849	7793.265
#3	6790.356	94672.20	8674.955	5239.268	7789.402

Reviewed By:jaswal
On:10/1/2025 3:33:25 PM
Inst Id :P4
LB :LB137351

Sample Name: CCB07 Acquired: 9/29/2025 19:04:24 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000985**	**-.013605**	**-.000211**	**.0007184**	**-.000421**	**.0115434**
Stddev	.002327	.001794	.000416	.0008381	.001312	.0020526
%RSD	236.1431	13.18714	197.7055	116.6752	311.6011	17.78127
#1	.000060	-.013675	-.000572	-.000109	-.001595	.0115804
#2	-.003652	-.011777	-.000305	.001567	.000996	.0094726
#3	.000636	-.015363	.000245	.000697	-.000664	.0135773

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002722**	**.0001044**	**.0001639**	**.0070323**	**.0000115**	**.0002218**
Stddev	.000849	.0000804	.0000578	.0108839	.0006216	.0000746
%RSD	31.18034	76.98634	35.26573	154.7686	5399.063	33.64969
#1	-.001919	.0001845	.0001049	.0191820	.0004520	.0003033
#2	-.003610	.0000237	.0001664	-.001826	.0002820	.0001569
#3	-.002636	.0001050	.0002204	.003741	-.000699	.0002050

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000265**	**.0058439**	**.0007483**	**-.010789**	**.0001287**	**-.000615**
Stddev	.000395	.0025808	.0002300	.016081	.0002154	.000449
%RSD	148.8806	44.16222	30.72980	149.0564	167.3937	72.98502
#1	-.000473	.0086358	.0008931	-.015772	-.000115	-.001134
#2	.000190	.0053505	.0008686	.007194	.000294	-.000354
#3	-.000513	.0035454	.0004832	-.023788	.000207	-.000358

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1834444**	**-.001980**	**-.000090**	**.2127899**	**.0006563**	**.0005289**
Stddev	.0029816	.003925	.000172	.0310161	.0003302	.0003604
%RSD	1.625325	198.2703	191.3836	14.57593	50.30661	68.13958
#1	.1817598	.002480	.000039	.1993673	.0002786	.0002565
#2	.1816864	-.003509	-.000024	.1907457	.0008004	.0003926
#3	.1868869	-.004909	-.000286	.2482566	.0008900	.0009375

Sample Name: CCB07 Acquired: 9/29/2025 19:04:24 Type: Unk
Method: 6010-200.7 NEW(v230) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0180563	-.000637	.0039387	.0023939	F .0486048	.0006499
Stddev	.0001444	.001321	.0073494	.0018066	.0014116	.0017183
%RSD	.7994574	207.4588	186.5969	75.46854	2.904234	264.4093
#1	.0182091	-.000510	.0010117	.0004622	.0496799	-.000318
#2	.0179223	-.002017	-.001496	.0040419	.0491283	-.000366
#3	.0180376	.000616	.012301	.0026774	.0470063	.002634

Elem	Sr4077
Units	ppm
Avg	.0006717
Stddev	.0002260
%RSD	33.64323
#1	.0009275
#2	.0005885
#3	.0004991

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6845.928	97725.07	8456.563	5443.325	8046.816
Stddev	3.292	169.95	91.028	13.844	5.638
%RSD	.0480799	.1739019	1.076423	.2543309	.0700604
#1	6843.482	97830.90	8539.150	5456.117	8047.100
#2	6844.632	97529.04	8471.578	5428.627	8052.307
#3	6849.670	97815.26	8358.960	5445.233	8041.042

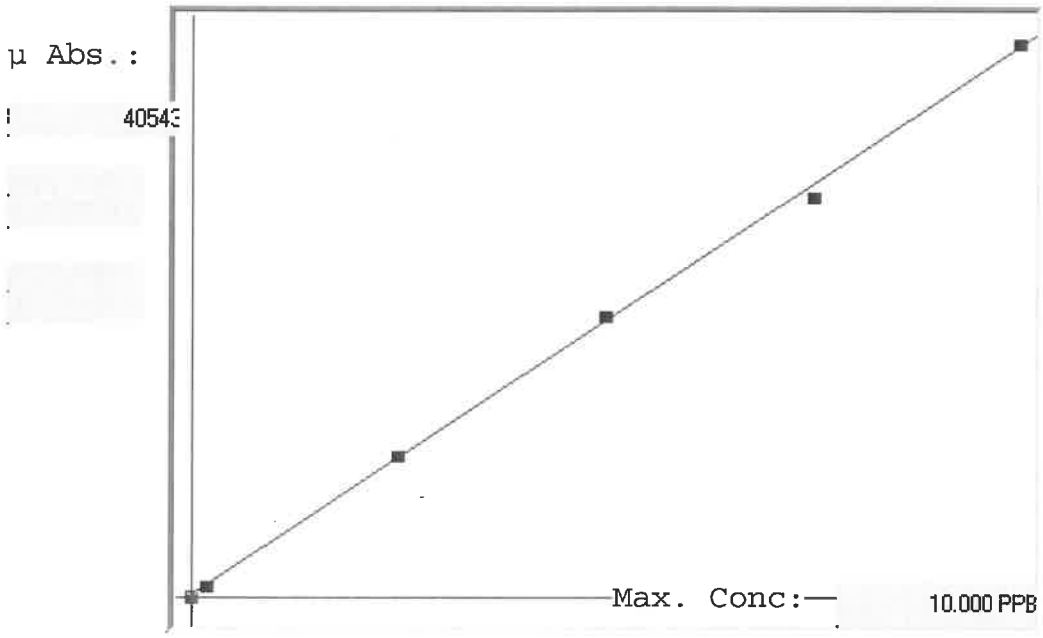
Reviewed By:jaswal
On:9/29/2025 8:59:20 PM
Inst Id :CV1
LB :LB137307

LB137307

7470A

INSTRUMENT-ID:CV1

Linear



A= 0.0000e+000

B= 2.4935e-004

C= -4.1363e-002

Rho= 0.9995962

Accept=Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.0	0.000	-0.030	-0.030	44	0.000	44	0			
0.2	0.200	0.172	-0.028	854	0.0 %	854	0			
2.5	2.500	2.577	0.077	10500	0.0 %	10500	0			
5.0	5.000	5.115	0.115	20679	0.0 %	20679				
7.5	7.500	7.299	-0.201	29437	0.0 %	29437				
10.0	10.000	10.068	0.068	40543	0.0 %	40543				

Reviewed By:jaswal
On:9/29/2025 8:59:20 PM
Inst Id :CV1
LB :LB137307

LB137307 INSTRUMENT ID:CV1

Method: 7470A Operator: Admin Date of Analysis: 25 Sep 2025 14:26:47

Type	Sample ID	Extended ID	Conc	µ Abs	Units	Type	Stnd Conc	Method	Date
S	0.0 - 1	S0	-	44	PPB	Std	0.0000	7470A	25 Sep 2025 14:33:13
S	0.2 - 1	S0.2	-	854	PPB	Std	0.2000	7470A	25 Sep 2025 14:35:30
S	2.5 - 1	S2.5	-	10500	PPB	Std	2.5000	7470A	25 Sep 2025 14:37:47
S	5.0 - 1	S5.0	-	20679	PPB	Std	5.0000	7470A	25 Sep 2025 14:40:04
S	7.5 - 1	S7.5	-	29437	PPB	Std	7.5000	7470A	25 Sep 2025 14:42:22
S	10.0 - 1	S10.0	-	40543	PPB	Std	10.0000	7470A	25 Sep 2025 14:49:13
U	ICV47 - 1	ICV47	3.8603	15647	PPB	SMPL		7470A	25 Sep 2025 14:52:19
U	ICB47 - 1	ICB47	-0.0867	-182	PPB	SMPL		7470A	25 Sep 2025 14:54:33
U	CCV42 - 1	CCV42	5.0330	20350	PPB	SMPL		7470A	25 Sep 2025 14:58:45
U	CCB42 - 1	CCB42	-0.1005	-237	PPB	SMPL		7470A	25 Sep 2025 15:01:00
U	CRA - 1	CRA	0.1546	786	PPB	SMPL		7470A	25 Sep 2025 15:03:19
U	HighStd - 1	HighStd	9.8330	39600	PPB	SMPL		7470A	25 Sep 2025 15:05:34
U	ChkStd - 1	ChkStd	7.0173	28308	PPB	SMPL		7470A	25 Sep 2025 15:07:49
U	PB169846BL - 1	PBW	-0.0296	47	PPB	SMPL		7470A	25 Sep 2025 15:12:59
U	PB169846BS - 1	LCSW	4.1423	16778	PPB	SMPL		7470A	25 Sep 2025 15:17:46
U	Q3168-04 - 1	ARS20-0010-Oily Soil-Sludge	-0.0855	-177	PPB	SMPL		7470A	25 Sep 2025 15:20:02
U	Q3168-04DUP - 1	ARS20-0010-Oily Soil-SludgeDUP	-0.0389	10	PPB	SMPL		7470A	25 Sep 2025 15:22:22
U	Q3168-04MS - 1	ARS20-0010-Oily Soil-SludgeMS	4.5659	18477	PPB	SMPL		7470A	25 Sep 2025 15:24:39
U	Q3168-04MSD - 1	ARS20-0010-Oily Soil-SludgeMSD	4.3460	17595	PPB	SMPL		7470A	25 Sep 2025 15:26:56
U	Q3170-02 - 1	MOD-25-0271	0.0579	398	PPB	SMPL		7470A	25 Sep 2025 15:29:14
U	CCV43 - 1	CCV43	4.8858	19760	PPB	SMPL		7470A	25 Sep 2025 15:31:32
U	CCB43 - 1	CCB43	-0.0962	-220	PPB	SMPL		7470A	25 Sep 2025 15:33:47
U	PB169847BL - 1	PBW	-0.0306	43	PPB	SMPL		7470A	25 Sep 2025 15:36:06
U	PB169847BS - 1	LCSW	4.3213	17496	PPB	SMPL		7470A	25 Sep 2025 15:38:21
U	Q3177-01 - 1	EME-TS12-01	-0.0915	-201	PPB	SMPL		7470A	25 Sep 2025 15:40:37
U	Q3177-02 - 1	EME-TS13-01	-0.0414	0	PPB	SMPL		7470A	25 Sep 2025 15:42:56
U	Q3177-02 - 1	EME-TS13-01	-0.0436	-9	PPB	SMPL		7470A	25 Sep 2025 15:45:44
U	Q3177-03 - 1	EME-TS14-02	-0.0321	37	PPB	SMPL		7470A	25 Sep 2025 15:48:07
U	Q3179-01 - 1	EME-TS14-01	-0.0371	17	PPB	SMPL		7470A	25 Sep 2025 15:50:24
U	Q3179-01DUP - 1	EME-TS14-01DUP	-0.0326	35	PPB	SMPL		7470A	25 Sep 2025 15:52:40
U	Q3179-02 - 1	EME-TS14-01MS	4.4213	17897	PPB	SMPL		7470A	25 Sep 2025 15:54:57
U	Q3179-03 - 1	EME-TS14-01MSD	3.9707	16090	PPB	SMPL		7470A	25 Sep 2025 15:57:14
U	CCV44 - 1	CCV44	4.7741	19312	PPB	SMPL		7470A	25 Sep 2025 15:59:32
U	CCB44 - 1	CCB44	-0.0937	-210	PPB	SMPL		7470A	25 Sep 2025 16:01:57
U	PB169816TB - 1	PB169816TB	-0.0406	3	PPB	SMPL		7470A	25 Sep 2025 16:04:15
U	PB169847TB - 1	PB169847TB	-0.0394	8	PPB	SMPL		7470A	25 Sep 2025 16:06:31
U	Q3168-04LX5 - 1		-0.0306	43	PPB	SMPL		7470A	25 Sep 2025 16:08:53
U	Q3168-04A - 1		3.7154	15066	PPB	SMPL		7470A	25 Sep 2025 16:11:09
U	Q3179-01LX5 - 1		-0.0685	-109	PPB	SMPL		7470A	25 Sep 2025 16:13:24
U	Q3179-01A - 1		3.7201	15085	PPB	SMPL		7470A	25 Sep 2025 16:15:56
U	CCV45 - 1	CCV45	4.8741	19713	PPB	SMPL		7470A	25 Sep 2025 16:21:02
U	CCB45 - 1	CCB45	-0.1139	-291	PPB	SMPL		7470A	25 Sep 2025 16:23:18

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169831

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

Block ID: 1. HOT BLOCK #1 2. N/A

Start Digest Date: 09/25/2025 **Time :** 12:30 **Temp :** 96 °C

End Digest Date: 09/25/2025 **Time :** 15:31 **Temp :** 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SPS.

Supervisor Signature: JPP

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6180
LFS-2	0.25	M6181
Sulfur	0.2	M5816
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP85156
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
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
09/25/25 16:31	SPS metals	JPP / Met lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169831

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB169831BL	PBW831	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	1
PB169831BS	LCS831	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181,M5816	2
PB169831TB	LEB831	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	3
Q3177-01	EME-TS12-01	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	4
Q3177-02	EME-TS13-01	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	5
Q3177-03	EME-TS14-02	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	6
Q3179-01	EME-TS14-01	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	7
Q3179-01DUP	EME-TS14-01DUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	8
Q3179-02	EME-TS14-01MS	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181,M5816	9
Q3179-03	EME-TS14-01MSD	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181,M5816	10

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

PB169818

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	P
PB169818TB	LEB818	15	N/A	2000	N/A	N/A	N/A	4.24	1.5	T-
Q3177-01	EME-TS12-01	11	100.02	2000	N/A	N/A	N/A	7.2	1.0	T-
Q3177-02	EME-TS13-01	12	100.03	2000	N/A	N/A	N/A	7.6	1.5	T-
Q3177-03	EME-TS14-02	13	100.02	2000	N/A	N/A	N/A	7.2	1.5	T-2
Q3179-01	EME-TS14-01	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2
Q3179-02	EME-TS14-01MS	14	100.02	2000	N/A	N/A	N/A	7.6	1.5	T-2
Q3179-03	EME-TS14-01MSD	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB169847

SOP ID : M7470A-Mercury-20

SDG No : NA

Matrix : WATER

Pippete ID: HG A

Balance ID : N/A

Filter paper ID : NA

pH Strip ID : M6069

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 09/25/2025 **Time :** 12:15 **Temp :** 94 °C

End Digest Date: 09/25/2025 **Time :** 14:15 **Temp :** 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature:

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP87346
CCV	30mL	MP87348
CRA	30mL	MP87350
Blank Spike	0.48mL	MP87339
Matrix Spike	0.48mL	MP87339

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4(1:2)	2.25mL	MP87071
KMnO4 (5%)	4.5mL	MP87072
K2S2O8 (5%)	2.4mL	MP87073
Hydroxylamine HCL (12%)	1.8mL	MP87149
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	MP87341
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP87340
2.5 ppb	S2.5	30mL	MP87342
5.0 ppb	S5.0	30mL	MP87343
7.5 ppb	S7.5	30mL	MP87344
10.0 ppb	S10.0	30mL	MP87345
ICV	ICV	30mL	MP87346
ICB	ICB	30mL	MP87347
CCV	CCV	30mL	MP87348
CCB	CCB	30mL	MP87349
CRI	CRI	30mL	MP87350
CHK STD	CHK STD	30mL	MP87351

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
9/25/25 14:40	DS - Dig. Lab	DS - Metals Lab
	Preparation Group	**Analysis Group**

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB169847

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
PB169847BL	PBW847	30	30	<2	N/A	3-9
PB169847BS	LCS847	30	30	<2	N/A	20
PB169847TB	LEB847	30	30	<2	MP87339	21
Q3177-01	EME-TS12-01	30	30	<2	N/A	22
Q3177-02	EME-TS13-01	30	30	<2	N/A	23
Q3177-03	EME-TS14-02	30	30	<2	N/A	24
Q3179-01	EME-TS14-01	30	30	<2	N/A	25
Q3179-01DUP	EME-TS14-01DUP	30	30	<2	N/A	26
Q3179-02	EME-TS14-01MS	30	30	<2	MP87339	27
Q3179-03	EME-TS14-01MSD	30	30	<2	MP87339	28

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

PB169818

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB169818TB	LEB818	15	N/A	2000	N/A	N/A	N/A	4.24	1.5	T-2
Q3177-01	EME-TS12-01	11	100.02	2000	N/A	N/A	N/A	7.2	1.0	T-2
Q3177-02	EME-TS13-01	12	100.03	2000	N/A	N/A	N/A	7.6	1.5	T-2
Q3177-03	EME-TS14-02	13	100.02	2000	N/A	N/A	N/A	7.2	1.5	T-2
Q3179-01	EME-TS14-01	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2
Q3179-02	EME-TS14-01MS	14	100.02	2000	N/A	N/A	N/A	7.6	1.5	T-2
Q3179-03	EME-TS14-01MSD	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2

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 # LB137307

Review By	mohan	Review On	9/29/2025 10:07:18 AM
Supervise By	jaswal	Supervise On	9/29/2025 8:59:20 PM

STD. NAME	STD REF.#
ICAL Standard	MP87341,MP87340,MP87342,MP87343,MP87344,MP873145
ICV Standard	MP87346
CCV Standard	MP87348
ICSA Standard	
CRI Standard	MP87350
LCS Standard	
Chk Standard	MP87347,MP87349,MP87351,MP87353

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	09/25/25 14:33		mohan	OK
2	S0.2	S0.2	CAL2	09/25/25 14:35		mohan	OK
3	S2.5	S2.5	CAL3	09/25/25 14:37		mohan	OK
4	S5	S5	CAL4	09/25/25 14:40		mohan	OK
5	S7.5	S7.5	CAL5	09/25/25 14:42		mohan	OK
6	S10	S10	CAL6	09/25/25 14:49		mohan	OK
7	ICV47	ICV47	ICV	09/25/25 14:52		mohan	OK
8	ICB47	ICB47	ICB	09/25/25 14:54		mohan	OK
9	CCV42	CCV42	CCV	09/25/25 14:58		mohan	OK
10	CCB42	CCB42	CCB	09/25/25 15:01		mohan	OK
11	CRA	CRA	CRDL	09/25/25 15:03		mohan	OK
12	HighStd	HighStd	HIGH STD	09/25/25 15:05		mohan	OK
13	ChkStd	ChkStd	SAM	09/25/25 15:07		mohan	OK
14	PB169846BL	PB169846BL	MB	09/25/25 15:12		mohan	OK
15	PB169846BS	PB169846BS	LCS	09/25/25 15:17		mohan	OK
16	Q3168-04	ARS20-0010-Oily Soil	SAM	09/25/25 15:20		mohan	OK
17	Q3168-04DUP	ARS20-0010-Oily Soil	DUP	09/25/25 15:22		mohan	OK
18	Q3168-04MS	ARS20-0010-Oily Soil	MS	09/25/25 15:24		mohan	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 # LB137307

Review By	mohan	Review On	9/29/2025 10:07:18 AM
Supervise By	jaswal	Supervise On	9/29/2025 8:59:20 PM

STD. NAME	STD REF.#
ICAL Standard	MP87341,MP87340,MP87342,MP87343,MP87344,MP873145
ICV Standard	MP87346
CCV Standard	MP87348
ICSA Standard	
CRI Standard	MP87350
LCS Standard	
Chk Standard	MP87347,MP87349,MP87351,MP87353

19	Q3168-04MSD	ARS20-0010-Oily Soil	MSD	09/25/25 15:26		mohan	OK
20	Q3170-02	MOD-25-0271	SAM	09/25/25 15:29		mohan	OK
21	CCV43	CCV43	CCV	09/25/25 15:31		mohan	OK
22	CCB43	CCB43	CCB	09/25/25 15:33		mohan	OK
23	PB169847BL	PB169847BL	MB	09/25/25 15:36		mohan	OK
24	PB169847BS	PB169847BS	LCS	09/25/25 15:38		mohan	OK
25	Q3177-01	EME-TS12-01	SAM	09/25/25 15:40		mohan	OK
26	Q3177-02	EME-TS13-01	SAM	09/25/25 15:42	Not Use	mohan	Not Ok
27	Q3177-02RE	EME-TS13-01RE	SAM	09/25/25 15:45		mohan	OK
28	Q3177-03	EME-TS14-02	SAM	09/25/25 15:48		mohan	OK
29	Q3179-01	EME-TS14-01	SAM	09/25/25 15:50		mohan	OK
30	Q3179-01DUP	EME-TS14-01DUP	DUP	09/25/25 15:52		mohan	OK
31	Q3179-02	EME-TS14-01MS	MS	09/25/25 15:54		mohan	OK
32	Q3179-03	EME-TS14-01MSD	MSD	09/25/25 15:57		mohan	OK
33	CCV44	CCV44	CCV	09/25/25 15:59		mohan	OK
34	CCB44	CCB44	CCB	09/25/25 16:01		mohan	OK
35	PB169816TB	PB169816TB	MB	09/25/25 16:04		mohan	OK
36	PB169847TB	PB169847TB	MB	09/25/25 16:06		mohan	OK
37	Q3168-04L	ARS20-0010-Oily Soil	SD	09/25/25 16:08		mohan	OK
38	Q3168-04A	ARS20-0010-Oily Soil	PS	09/25/25 16:11		mohan	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 # LB137307

Review By	mohan	Review On	9/29/2025 10:07:18 AM
Supervise By	jaswal	Supervise On	9/29/2025 8:59:20 PM

STD. NAME	STD REF.#
ICAL Standard	MP87341,MP87340,MP87342,MP87343,MP87344,MP873145
ICV Standard	MP87346
CCV Standard	MP87348
ICSA Standard	
CRI Standard	MP87350
LCS Standard	
Chk Standard	MP87347,MP87349,MP87351,MP87353

39	Q3179-01L	EME-TS14-01L	SD	09/25/25 16:13		mohan	OK
40	Q3179-01A	EME-TS14-01A	PS	09/25/25 16:15		mohan	OK
41	CCV45	CCV45	CCV	09/25/25 16:21		mohan	OK
42	CCB45	CCB45	CCB	09/25/25 16:23		mohan	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 # LB137351

Review By	Janvi	Review On	10/1/2025 11:48:34 AM
Supervise By	jaswal	Supervise On	10/1/2025 3:33:25 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87404,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87405
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	09/29/25 12:11		Jaswal	OK
2	S1	S1	CAL2	09/29/25 12:16		Jaswal	OK
3	S2	S2	CAL3	09/29/25 12:20		Jaswal	OK
4	S3	S3	CAL4	09/29/25 12:24		Jaswal	OK
5	S4	S4	CAL5	09/29/25 12:28		Jaswal	OK
6	S5	S5	CAL6	09/29/25 12:32		Jaswal	OK
7	ICV01	ICV01	ICV	09/29/25 12:55		Jaswal	OK
8	LLICV01	LLICV01	LLICV	09/29/25 12:59		Jaswal	OK
9	ICB01	ICB01	ICB	09/29/25 13:03		Jaswal	OK
10	CRI01	CRI01	CRDL	09/29/25 13:08		Jaswal	OK
11	ICSA01	ICSA01	ICSA	09/29/25 13:13		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	09/29/25 13:17		Jaswal	OK
13	ICSADL	ICSADL	ICSA	09/29/25 13:21		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	09/29/25 13:25		Jaswal	OK
15	CCV01	CCV01	CCV	09/29/25 13:42		Jaswal	OK
16	CCB01	CCB01	CCB	09/29/25 13:46		Jaswal	OK
17	LR-1	LR-1	HIGH STD	09/29/25 13:50		Jaswal	OK
18	LR-2	LR-2	HIGH STD	09/29/25 13:55		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 # LB137351

Review By	Janvi	Review On	10/1/2025 11:48:34 AM
Supervise By	jaswal	Supervise On	10/1/2025 3:33:25 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87404,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87405
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

19	Q3209-01	PL-02-092525	SAM	09/29/25 14:04		Jaswal	OK
20	LR-3	LR-3	HIGH STD	09/29/25 14:08		Jaswal	OK
21	Q3212-01	EO-03-092525	SAM	09/29/25 14:13		Jaswal	OK
22	Q3146-03	MECHANIC-ST-PAINT	SAM	09/29/25 14:17		Jaswal	OK
23	Q3183-10	WC-1	SAM	09/29/25 14:21		Jaswal	OK
24	Q3183-11	WC-4	SAM	09/29/25 14:26		Jaswal	OK
25	Q3183-12	WC-3	SAM	09/29/25 14:30		Jaswal	OK
26	Q3210-01	SG-1	SAM	09/29/25 14:35		Jaswal	OK
27	CCV02	CCV02	CCV	09/29/25 14:51		Jaswal	OK
28	CCB02	CCB02	CCB	09/29/25 14:55		Jaswal	OK
29	PB169831BL	PB169831BL	MB	09/29/25 14:59		Jaswal	OK
30	PB169831BS	PB169831BS	LCS	09/29/25 15:04		Jaswal	OK
31	PB169862BL	PB169862BL	MB	09/29/25 15:08		Jaswal	OK
32	PB169862BS	PB169862BS	LCS	09/29/25 15:17		Jaswal	OK
33	PB169865BL	PB169865BL	MB	09/29/25 15:21		Jaswal	OK
34	PB169865BS	PB169865BS	LCS	09/29/25 15:29		Jaswal	OK
35	Q3200-01	ETGI-367	SAM	09/29/25 15:33		Jaswal	OK
36	Q3206-01	TR-06-092525	SAM	09/29/25 15:37		Jaswal	OK
37	Q3208-07	SU-ESM-COMP-02	SAM	09/29/25 15:41		Jaswal	OK
38	Q3208-01	SU-ESM-COMP-01	SAM	09/29/25 15:45		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 # LB137351

Review By	Janvi	Review On	10/1/2025 11:48:34 AM
Supervise By	jaswal	Supervise On	10/1/2025 3:33:25 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87404,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87405
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

39	CCV03	CCV03	CCV	09/29/25 15:53		Jaswal	OK
40	CCB03	CCB03	CCB	09/29/25 15:57		Jaswal	OK
41	Q3208-01DUP	SU-ESM-COMP-01DU	DUP	09/29/25 16:02		Jaswal	OK
42	Q3208-01L	SU-ESM-COMP-01L	SD	09/29/25 16:06		Jaswal	OK
43	Q3208-01MS	SU-ESM-COMP-01MS	MS	09/29/25 16:10		Jaswal	OK
44	Q3208-01MSD	SU-ESM-COMP-01MS	MSD	09/29/25 16:14		Jaswal	OK
45	Q3208-01A	SU-ESM-COMP-01A	PS	09/29/25 16:18	0.1 ML OF M6008 AND M6017 IN 10ML OF SAMPLE.	Jaswal	OK
46	PB169840TB	PB169840TB	MB	09/29/25 16:22		Jaswal	OK
47	Q3181-03	WC-A3-01-C	SAM	09/29/25 16:26		Jaswal	OK
48	Q3181-07	WC-A3-02-C	SAM	09/29/25 16:31		Jaswal	OK
49	Q3181-11	WC-A3-03-C	SAM	09/29/25 16:35		Jaswal	OK
50	Q3188-05	4135	SAM	09/29/25 16:40		Jaswal	OK
51	CCV04	CCV04	CCV	09/29/25 16:44		Jaswal	OK
52	CCB04	CCB04	CCB	09/29/25 16:48		Jaswal	OK
53	Q3196-01	FMC-9-24-25-1	SAM	09/29/25 16:53		Jaswal	OK
54	Q3196-02	FMC-9-24-25-2	SAM	09/29/25 16:57		Jaswal	OK
55	Q3196-03	FMC-9-24-25-3	SAM	09/29/25 17:01		Jaswal	OK
56	Q3196-04	FMC-9-24-25-4	SAM	09/29/25 17:06		Jaswal	OK
57	Q3196-05	FMC-9-24-25-5	SAM	09/29/25 17:10		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 # LB137351

Review By	Janvi	Review On	10/1/2025 11:48:34 AM
Supervise By	jaswal	Supervise On	10/1/2025 3:33:25 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87404,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87405
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

58	Q3208-06	SU-ESM-COMP-01	SAM	09/29/25 17:14		Jaswal	OK
59	Q3196-06	TOTE-FMC-9-24-25-1	SAM	09/29/25 17:19		Jaswal	OK
60	Q3196-07	TOTE-FMC-9-24-25-2	SAM	09/29/25 17:23		Jaswal	OK
61	Q3196-09	FMC-9-24-25-DRUM-	SAM	09/29/25 17:27		Jaswal	OK
62	Q3208-12	SU-ESM-COMP-02	SAM	09/29/25 17:32		Jaswal	OK
63	CCV05	CCV05	CCV	09/29/25 17:36		Jaswal	OK
64	CCB05	CCB05	CCB	09/29/25 17:40		Jaswal	OK
65	Q3208-12DUP	SU-ESM-COMP-02DU	DUP	09/29/25 17:44		Jaswal	OK
66	Q3208-12L	SU-ESM-COMP-02L	SD	09/29/25 17:49		Jaswal	OK
67	Q3208-12MS	SU-ESM-COMP-02MS	MS	09/29/25 17:53		Jaswal	OK
68	Q3208-12MSD	SU-ESM-COMP-02MS	MSD	09/29/25 17:57		Jaswal	OK
69	Q3208-12A	SU-ESM-COMP-02A	PS	09/29/25 18:01	0.1 ML OF M6008 AND M6017 IN 10ML OF SAMPLE.	Jaswal	OK
70	PB169831TB	PB169831TB	MB	09/29/25 18:06		Jaswal	OK
71	Q3177-01	EME-TS12-01	SAM	09/29/25 18:10		Jaswal	OK
72	Q3177-02	EME-TS13-01	SAM	09/29/25 18:14		Jaswal	OK
73	Q3177-03	EME-TS14-02	SAM	09/29/25 18:18		Jaswal	OK
74	Q3179-01	EME-TS14-01	SAM	09/29/25 18:22		Jaswal	OK
75	CCV06	CCV06	CCV	09/29/25 18:27		Jaswal	OK
76	CCB06	CCB06	CCB	09/29/25 18:31		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 # LB137351

Review By	Janvi	Review On	10/1/2025 11:48:34 AM
Supervise By	jaswal	Supervise On	10/1/2025 3:33:25 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87404,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87405
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

77	Q3179-01DUP	EME-TS14-01DUP	DUP	09/29/25 18:35		Jaswal	OK
78	Q3179-01L	EME-TS14-01L	SD	09/29/25 18:39		Jaswal	OK
79	Q3179-02	EME-TS14-01MS	MS	09/29/25 18:44		Jaswal	OK
80	Q3179-03	EME-TS14-01MSD	MSD	09/29/25 18:48		Jaswal	OK
81	Q3179-01A	EME-TS14-01A	PS	09/29/25 18:51		Jaswal	OK
82	Q3191-01DL	459DL	SAM	09/29/25 18:55	Straight 5X	Jaswal	OK
83	CCV07	CCV07	CCV	09/29/25 19:00		Jaswal	OK
84	CCB07	CCB07	CCB	09/29/25 19:04		Jaswal	OK

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

PB169818

SOP ID : M1312-SPLP-10

SDG No : N/A

Weigh By : JP

Balance ID : WC SC-7

pH Meter ID : WC PH METER-1

Extraction By : JP

Filter By : JP

Pippete ID : WC

Tumbler ID : T-2

TCLP Filter ID : 40819719

Start Prep Date : 09/24/2025 **Time :** 14:30

End Prep Date : 09/25/2025 **Time :** 08:10

Combination Ratio : 20

ZHE Cleaning Batch : N/A 40

Initial Room Temperature: 24 °C

Final Room Temperature: 22 °C

TCLP Technician Signature : JP

Supervisor By : JZ

Standared Name	MLS USED	STD REF. # FROM LOG
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

Chemical Used	ML/SAMPLE U	Lot Number
SPLP FLUID	WP114530	N/A
N/A	N/A	N/A
HNO3-TCLP,1N	N/A	WP114528
pH Strips	N/A	W1931,W1934,W3171,W3172
pH Strips	W1940,W1941,W1942	W3166,W1938,W1939,
1 Liter Amber	N/A	90924-08
120ml Plastic bottle	N/A	2738
1:1 HNO3	N/A	MP86978

Extraction Conformance/Non-Conformance Comments:

TUMBLER T-2 checked,30 rpm. Matrix spikes are added after fiftration and before preservation.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
09/25/25 10:00	JP / T-2 RM	SKJ. RJ / T-2
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

PB169818

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB169818TB	LEB818	15	N/A	2000	N/A	N/A	N/A	4.24	1.5	T-2
Q3177-01	EME-TS12-01	11	100.02	2000	N/A	N/A	N/A	7.2	1.0	T-2
Q3177-02	EME-TS13-01	12	100.03	2000	N/A	N/A	N/A	7.6	1.5	T-2
Q3177-03	EME-TS14-02	13	100.02	2000	N/A	N/A	N/A	7.2	1.5	T-2
Q3179-01	EME-TS14-01	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2
Q3179-02	EME-TS14-01MS	14	100.02	2000	N/A	N/A	N/A	7.6	1.5	T-2
Q3179-03	EME-TS14-01MSD	14	100.02	2000	N/A	N/A	N/A	7.6	1.0	T-2

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
PB169818TB	LEB818	N/A	N/A	N/A	N/A	N/A	N/A
Q3177-01	EME-TS12-01	N/A	N/A	N/A	N/A	100	N/A
Q3177-02	EME-TS13-01	N/A	N/A	N/A	N/A	100	N/A
Q3177-03	EME-TS14-02	N/A	N/A	N/A	N/A	100	N/A
Q3179-01	EME-TS14-01	N/A	N/A	N/A	N/A	100	N/A
Q3179-02	EME-TS14-01MS	N/A	N/A	N/A	N/A	100	N/A
Q3179-03	EME-TS14-01MSD	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

SPLP Fluid Determination

PB169818

Hot Block ID : WC S-1 / WC S-2

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
PB169818TB	LEB818	N/A	N/A	N/A	N/A	#1	4.24
Q3177-01	EME-TS12-01	N/A	N/A	N/A	N/A	#1	4.24
Q3177-02	EME-TS13-01	N/A	N/A	N/A	N/A	#1	4.24
Q3177-03	EME-TS14-02	N/A	N/A	N/A	N/A	#1	4.24
Q3179-01	EME-TS14-01	N/A	N/A	N/A	N/A	#1	4.24
Q3179-02	EME-TS14-01MS	N/A	N/A	N/A	N/A	#1	4.24
Q3179-03	EME-TS14-01MSD	N/A	N/A	N/A	N/A	#1	4.24

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

Prep Standard - Chemical Standard Summary

Order ID : Q3179

Test : SPLP ICP Metals,SPLP Mercury

Prepbatch ID : PB169831,PB169847,

Sequence ID/Qc Batch ID: LB137307,LB137351,

Standard ID :
MP85156,MP87031,MP87032,MP87033,MP87034,MP87035,MP87036,MP87038,MP87040,MP87042,MP87043,MP87044,MP87045,MP87046,MP87049,MP87071,MP87072,MP87073,MP87149,MP873145,MP87339,MP87340,MP87341,MP87342,MP87343,MP87344,MP87346,MP87347,MP87348,MP87349,MP87350,MP87351,MP87353,MP87404,MP87405,

Chemical ID :
M4397,M4916,M5062,M5467,M5658,M5748,M5751,M5798,M5799,M5800,M5801,M5814,M5816,M5817,M5820,M5882,M5884,M5923,M5962,M5969,M5970,M5971,M5979,M5985,M5998,M6019,M6021,M6023,M6026,M6027,M6028,M6030,M6032,M6058,M6077,M6128,M6137,M6138,M6140,M6142,M6144,M6145,M6151,M6157,M6158,M6159,M6160,M6161,M6163,M6164,M6165,M6171,M6174,M6176,M6177,M6178,M6179,M6180,M6181,M6182,M6184,M6187,M6196,M6200,W3112,

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
170	1:1HCL	MP85156	04/07/2025	10/08/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 04/07/2025

FROM 1250.00000ml of M6151 + 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)	MP87031	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6187 = Final Quantity: 2500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP87032	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5971 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6160 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP87031 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP87033	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP87034	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of MP87032 + 75.00000ml of MP87031 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP87035	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 16.00000ml of MP87032 + 184.00000ml of MP87031 = Final Quantity: 200.000 ml

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

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	MP87036	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5971 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6160 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5979 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M5969 + 88.29000ml of MP87031 = 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	MP87038	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 2.00000ml of MP87036 + 98.00000ml of MP87031 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP87040	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of M6182 + 225.00000ml of MP87031 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP87042	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP87043	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6187 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP87044	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4225	LR-1	MP87045	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 11.50000ml of M6138 + 11.50000ml of M6144 + 11.50000ml of M6171 + 15.50000ml of MP87031 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4226	LR-2	MP87046	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 13.50000ml of M6140 + 9.00000ml of M6142 + 9.50000ml of M6159 + 18.00000ml of MP87031 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4227	LR-3	MP87049	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 1.15000ml of M6026 + 1.25000ml of M5658 + 1.25000ml of M5748 + 1.50000ml of M6145 + 2.50000ml of M5751 + 2.50000ml of M6128 + 39.85000ml of MP87031 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3965	2:1 H2SO4 : HNO3	MP87071	09/04/2025	11/07/2025	Mohan Bera	None	None	Sarabjit Jaswal 09/04/2025

FROM 1600.00000ml of M6157 + 800.00000ml of M6187 = Final Quantity: 3200.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP87072	09/04/2025	03/04/2026	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 09/04/2025

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
66	POTASSIUM PERSULFATE SOLUTION 5 %	MP87073	09/04/2025	03/05/2026	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 09/04/2025

FROM 100.00000ml of M4397 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP87149	09/09/2025	02/03/2026	Mohan Bera	METALS_SCALE_2 (M SC-2)	None	Sarabjit Jaswal 09/10/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M5884 + 240.00000ml of M6196 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP87339	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 1.00000ml of M6187 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP87340	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 247.30000ml of W3112 + 0.20000ml of MP87339 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP87341	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP87342	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 245.00000ml of W3112 + 2.50000ml of MP87339 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP87343	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 242.50000ml of W3112 + 5.00000ml of MP87339 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP87344	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 240.00000ml of W3112 + 7.50000ml of MP87339 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP87346	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6161 + 2.50000ml of M6187 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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

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)	MP87347	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 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)	MP87348	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6187 + 10.00000ml of MP87339 = Final Quantity: 500.000 ml

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

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)	MP87349	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6187 = 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)	MP87350	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 247.30000ml of W3112 + 0.20000ml of MP87339 = Final Quantity: 250.000 ml

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

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)	MP87351	09/25/2025	09/26/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 09/29/2025

FROM 2.50000ml of M6187 + 240.50000ml of W3112 + 7.00000ml of MP87339 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP87353	09/25/2025	09/26/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 09/29/2025

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6200 = Final Quantity: 500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4163	NEW ICV-060925	MP87404	09/22/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 10/02/2025

FROM 0.02000ml of M5817 + 0.20000ml of M5923 + 0.20000ml of M6019 + 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.18000ml of MP87031 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP87405	09/22/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 10/02/2025

FROM 0.01000ml of M5817 + 0.10000ml of M5970 + 0.10000ml of M6077 + 0.10000ml of M6176 + 10.00000ml of M6182 + 10.00000ml of M6184 + 79.69000ml of MP87031 = Final Quantity: 100.000 ml

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3238-05 / Potassium Persulfate (2.5kg)	0000227540	09/24/2025	08/16/2019 / RICHARD	07/17/2019 / RICHARD	M4397

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 #
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.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

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

CHEMICAL RECEIPT LOG BOOK

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	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

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

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.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

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

CHEMICAL RECEIPT LOG BOOK

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.	57116 / S, 10000 PPM, 125 ml	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

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-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Lithium, Li, 100 ml, 1000 PPM	102423	10/24/2026	02/20/2024 / Jaswal	01/10/2024 / Jaswal	M5923

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

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 #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	06/06/2025 / Janvi	07/01/2024 / Jaswal	M5971

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

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

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSR1-1 / Strontium, 125 ml, 1000 PPM	U2-SR730227	03/03/2028	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6019

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.	57182 / Pb, 10000 PPM, 125 ml	110923	11/09/2026	12/05/2024 / janvi	08/05/2024 / Jaswal	M6026

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

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

CHEMICAL RECEIPT LOG BOOK

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

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	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.	58025 / Mn, 1000 PPM, 500 ml	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

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

CHEMICAL RECEIPT LOG BOOK

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

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	121824	12/18/2027	04/17/2025 / Janvi	01/13/2025 / Jaswal	M6138

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

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

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	24i1262013	11/07/2025	05/07/2025 / RUPESH	02/18/2025 / Mohan	M6157

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	10/09/2025	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 #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	03/24/2025 / kareem	10/18/2024 / kareem	M6160

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV 5 0415	12/31/2025	05/01/2025 / mohan	03/30/2024 / mohan	M6161

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

CHEMICAL RECEIPT LOG BOOK

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

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 / janvi	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

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

CHEMICAL RECEIPT LOG BOOK

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	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	01/28/2026	08/29/2025 / Sagar	08/08/2025 / Sagar	M6187

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	H330-500 / HYDROXYLAMINE HYDROCHLORIDE ACS 500G	243373	02/03/2026	09/04/2025 / mohan	08/04/2025 / mohan	M6196

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)	24D1562005	02/10/2026	09/11/2025 / Sagar	08/25/2025 / Sagar	M6200

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

ThermoFisher SCIENTIFIC

M5882 M3

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 – 0120633

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	T142	Quality Test / Release Date	08/17/2023
Lot Number	232820		
Description	STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination)		
Country of Origin	United States	Suggested Retest Date	Aug/2028
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear crystals
ASSAY	%	Inclusive Between 98 - 103	100.65
CALCIUM	%	<= 0.005	0.0017
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	%	<= 0.003	0.0011
LEAD (Pb)	%	<= 0.01	0.0006
MERCURY (Hg)	ppm	<= 0.05	<0.05
POTASSIUM (K)	%	<= 0.005	0.0001
SODIUM (Na)	%	<= 0.01	<0.01
SOLUBILITY IN HCL	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	PASS/FAIL	= P.T. (ABOUT 0.003%)	P.T. (ABOUT 0.003%)

Harout Sahagian - Quality Control Supervisor - 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.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6032

R 8/5/24

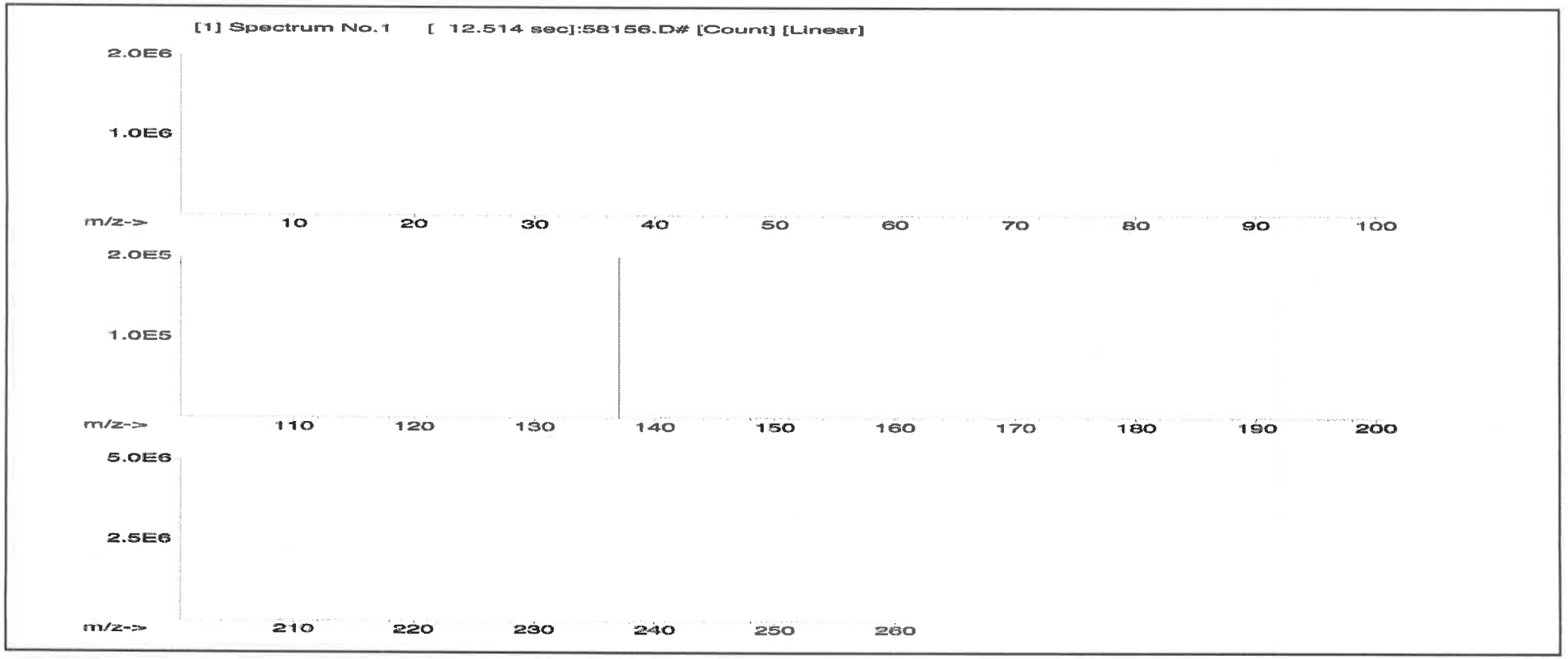
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Absolute Standards, Inc.
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	<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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6028

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

R 8/15/24

CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

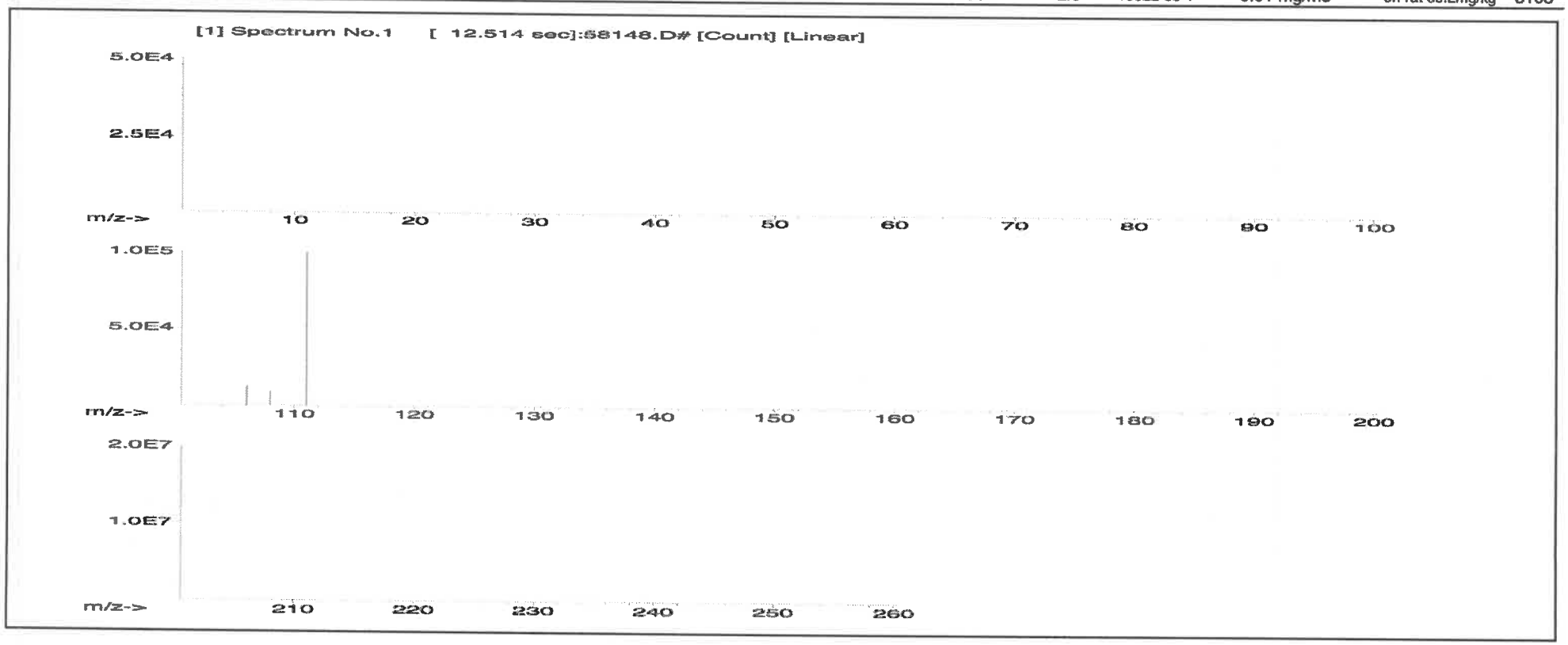
Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.100	Flask 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



Absolute Standards, Inc.
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	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.
* 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

M6026

R: 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

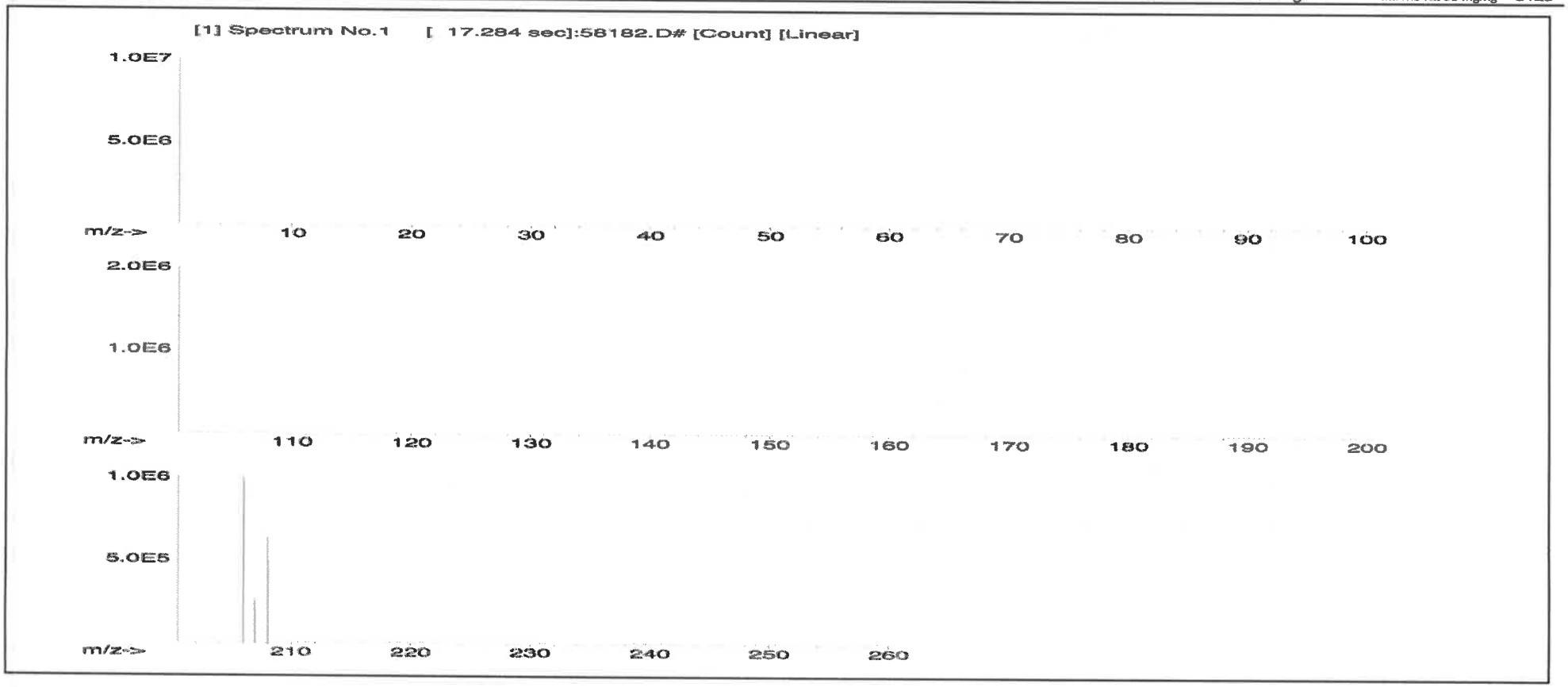
Part Number: 57182
Lot Number: 110923
Description: Lead (Pb)

Expiration Date: 110926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Formulated By:	Lawence Barry	110923
Reviewed By:	Pedro L. Rentas	110923

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	10000	99.999	0.10	62.5	32.0006	32.0040	**10001.1**	**20.0**	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128



Absolute Standards, Inc.
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	<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).

Potassium Permanganate
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination

avantor™ | J.T.Baker®

M4397
Supplied – 07.17.19
Opened – 08.16.19
exp – 09.24.25

Material No.: 3227-05
Batch No.: 0000227540
Manufactured Date: 2018/09/26
Retest Date: 2025/09/24
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
ACS - Assay ($KMnO_4$)	>= 99.0 %	99.0
ACS - Insoluble Matter	<= 0.2 %	< 0.1
ACS - Chloride and Chlorate (as Cl)	<= 0.005 %	0.005
ACS - Sulfate (SO_4)	<= 0.02 %	0.02
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	0.004

For Laboratory, Research or Manufacturing Use

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

RS
08.16.19

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

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

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/4}$$

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.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

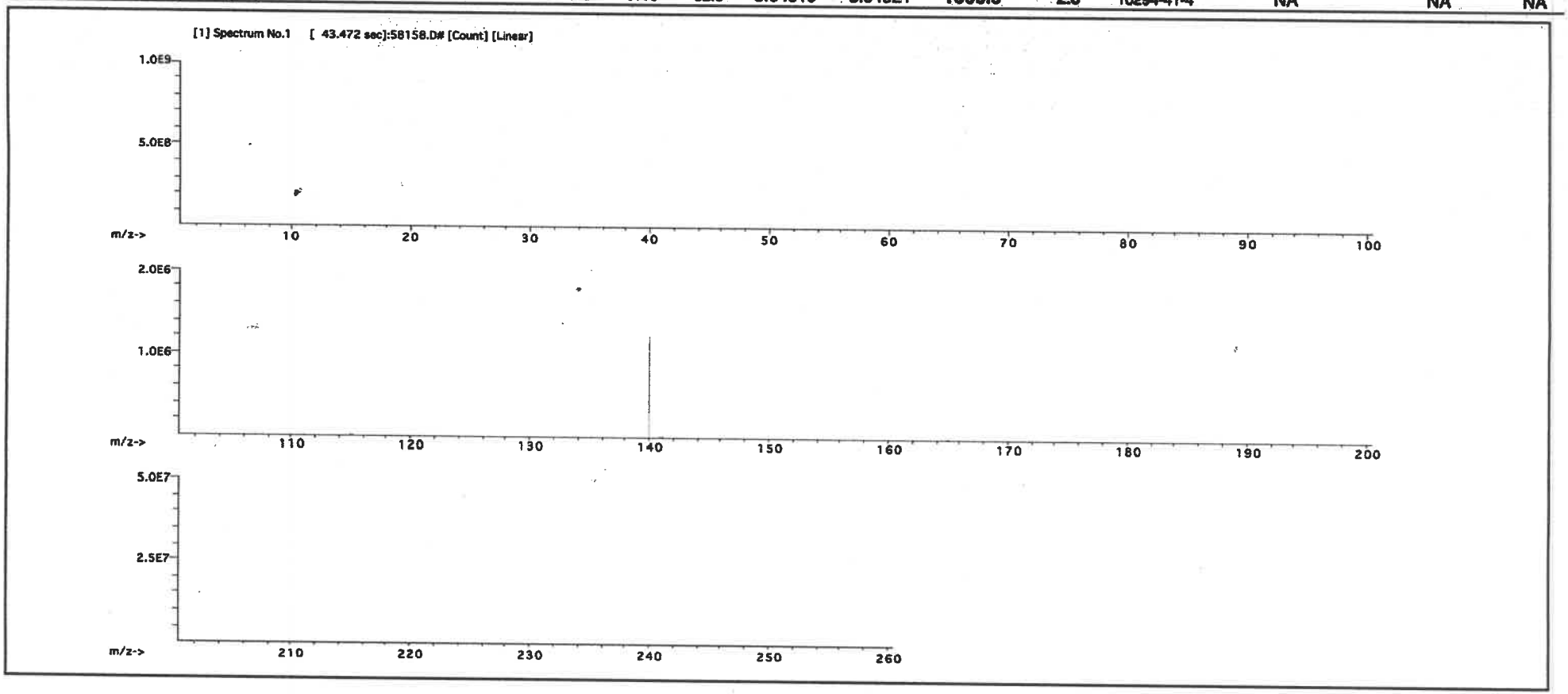
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	57058		**Lot #**	
Lot Number:	020623	**Solvent:**	21110221	Nitric Acid
Description:	Cerium (Ce)			
		2%	20.0 (mL)	Nitric Acid
Expiration Date:	020626			
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):	1000.12	0.058	Flask 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.
* 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

M5658 R ! 8/25/23

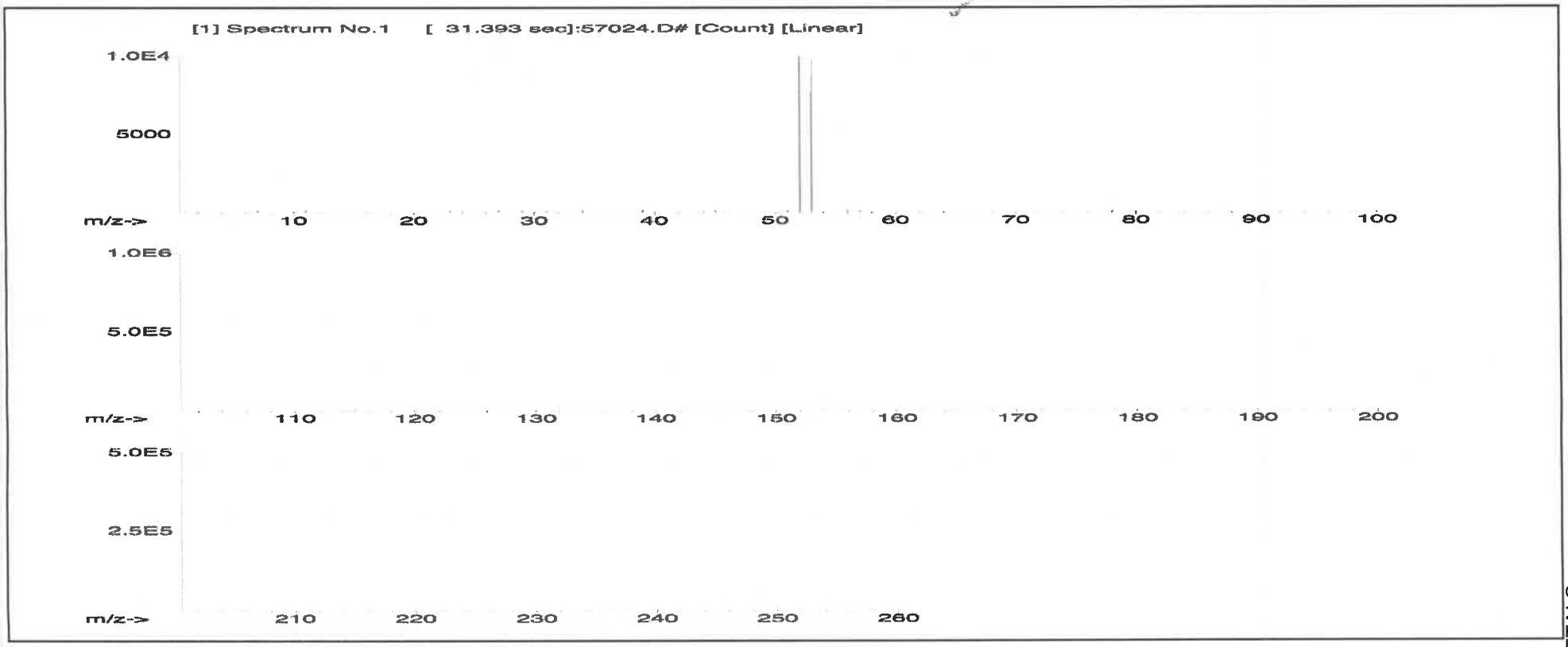
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Absolute Standards, Inc.
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	<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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 12/20/23 M5748

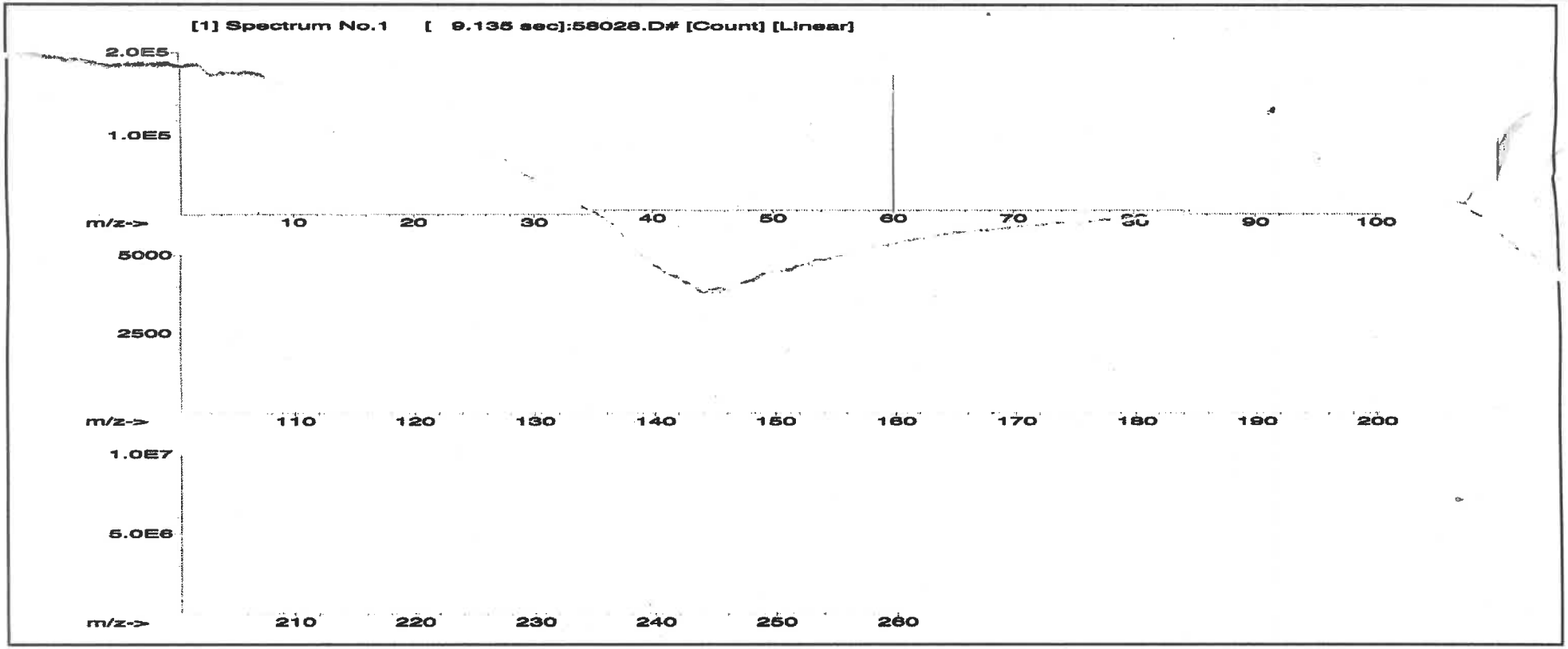
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Absolute Standards, Inc.
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 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.

* 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

R: 8/25/23 M5751

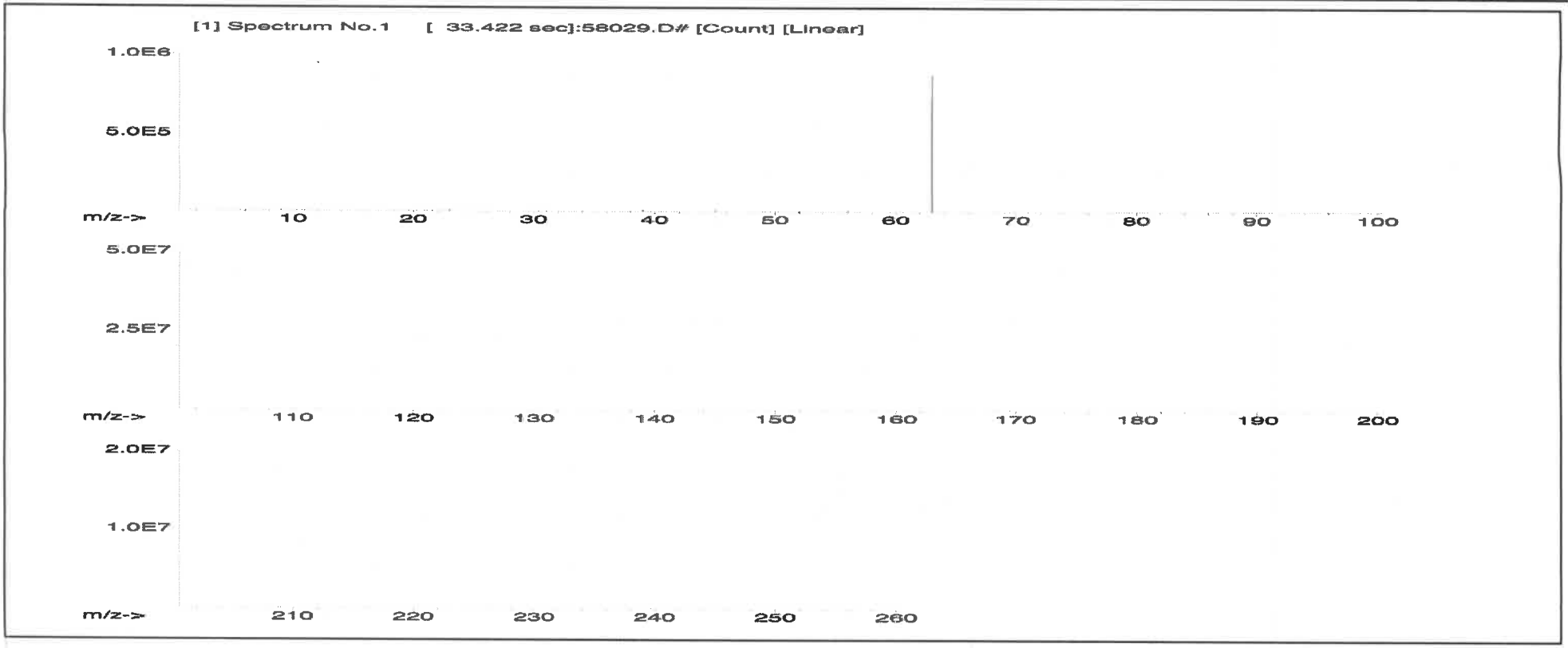
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58029**	21110221	Nitric Acid	
Lot Number:	**071723**			
Description:	**Copper (Cu)**	2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	071726			
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	071723
Reviewed By:	Pedro L. Rentas	071723

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	022723	0.1000	200.0	0.084	1000	10000.5	**1000.0**	**2.2**	10031-43-3	1 mg/m3	orl-rat 794 mg/kg	3114



Absolute Standards, Inc.
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	<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.
* 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

R: 02/09/24 M5798

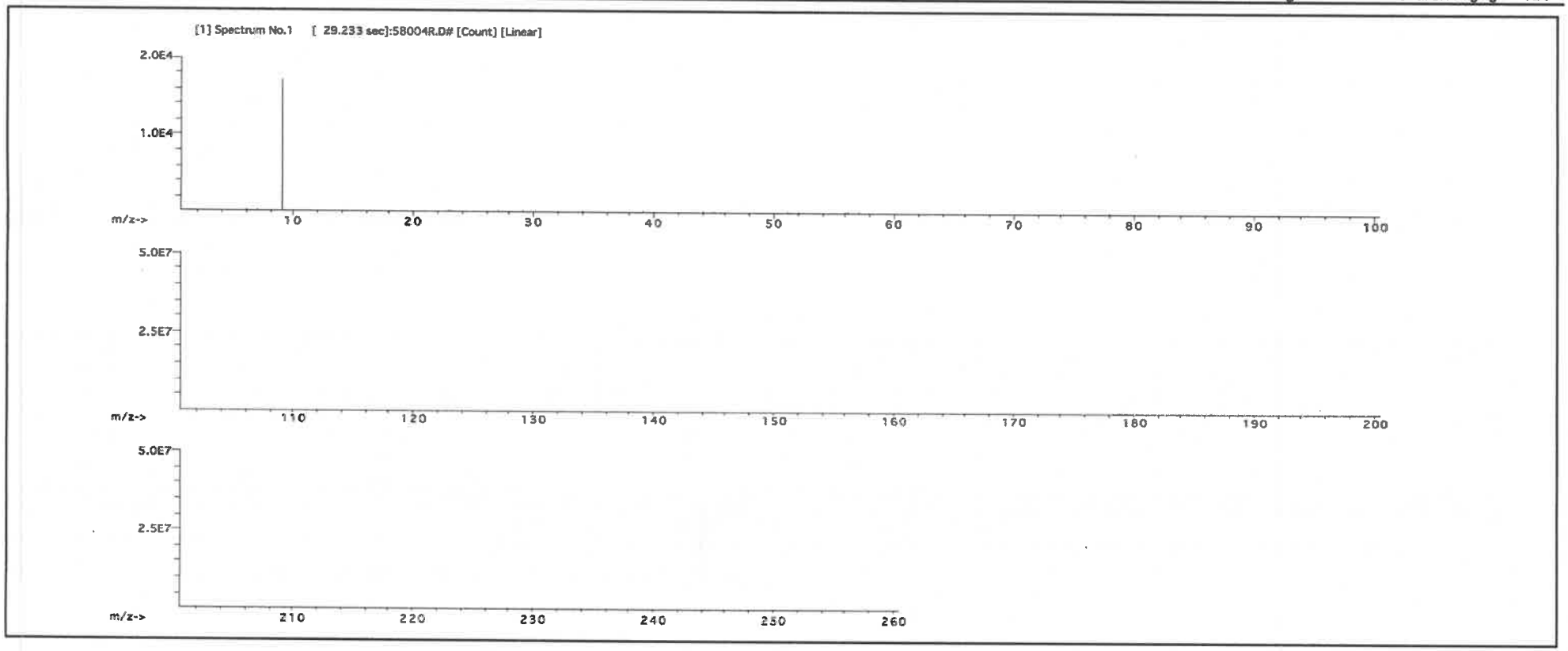
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Q33179-METALS

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.

* 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

R? 02/09/24 IV15799

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

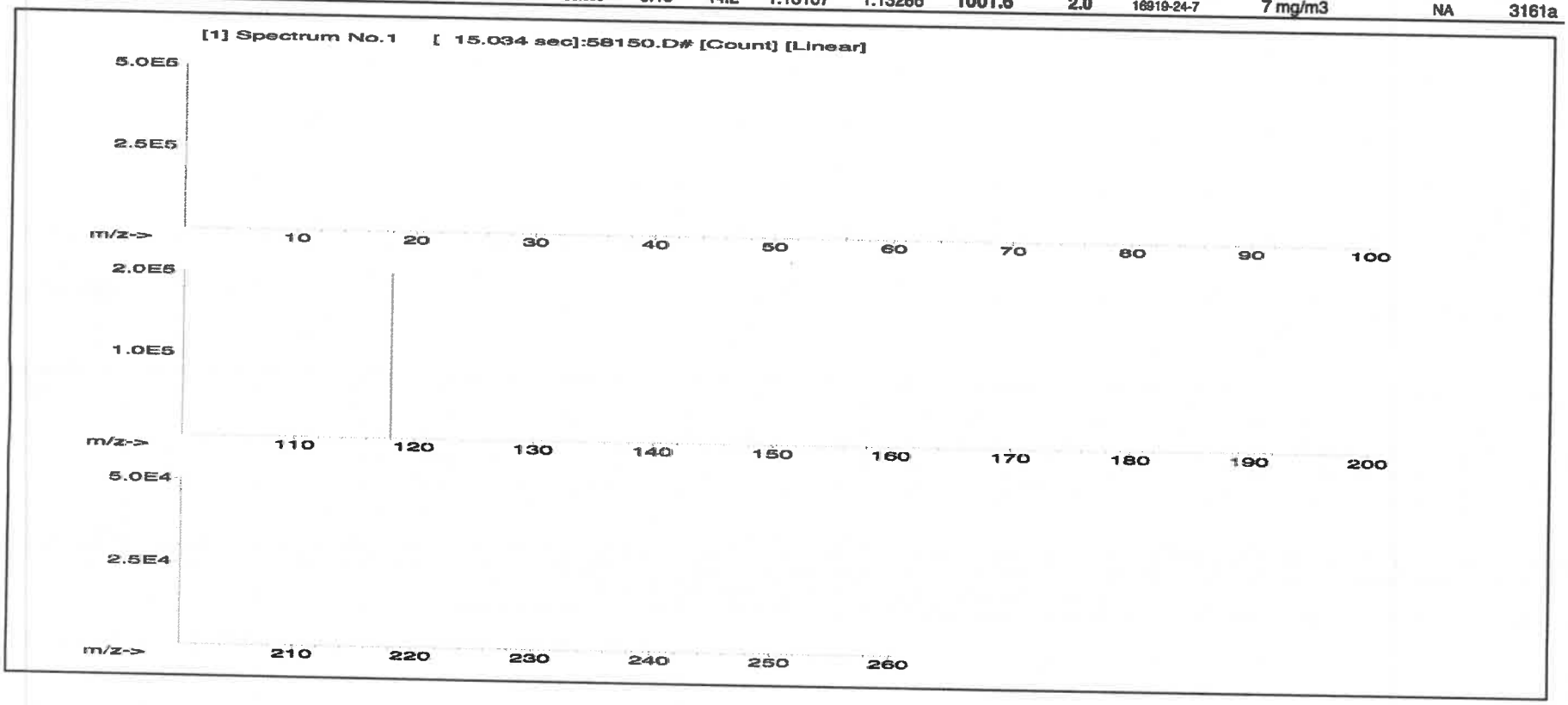
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	Lot #	
Solvents:	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



Absolute Standards, Inc.
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	<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.
* 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

R: 02/09/24 IM5800 BH

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

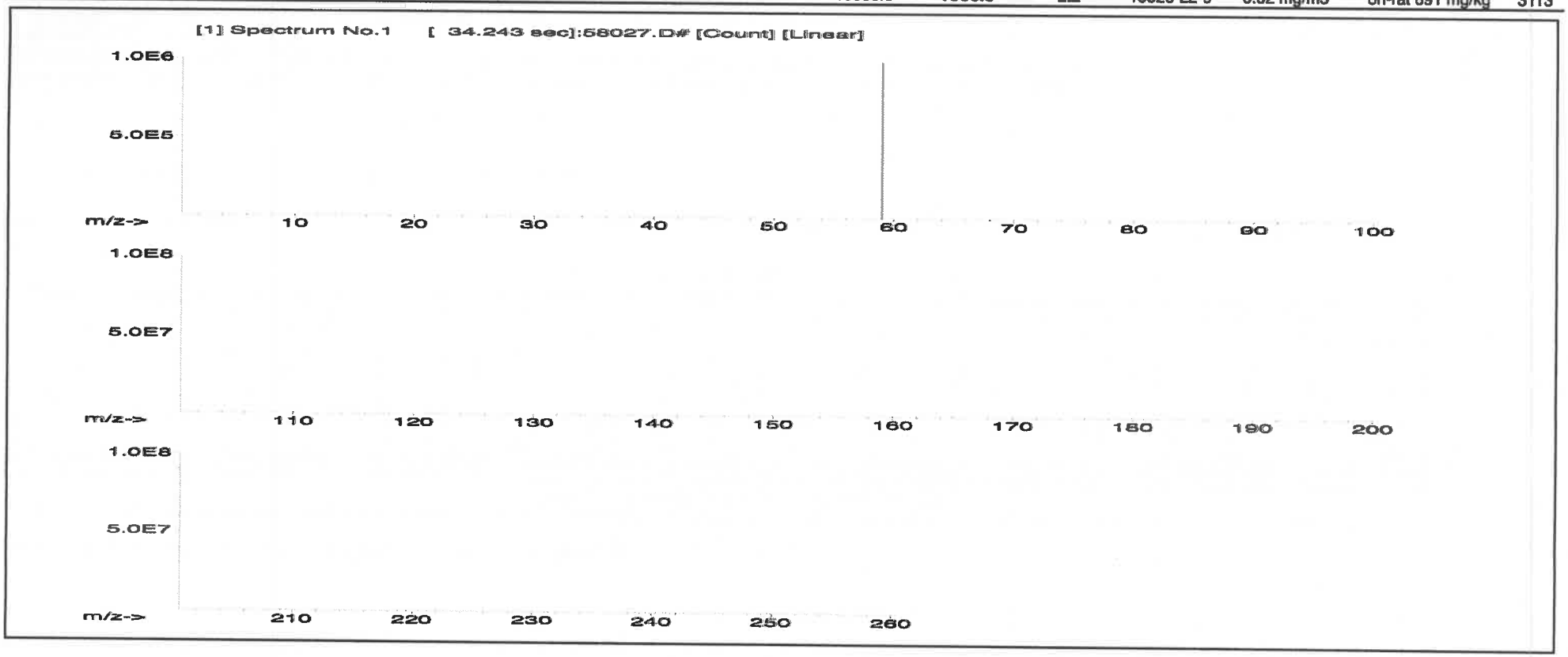
CERTIFIED WEIGHT REPORT:

		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



Absolute Standards, Inc.
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 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.

* 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

R: 02/09/24 M5801 BH

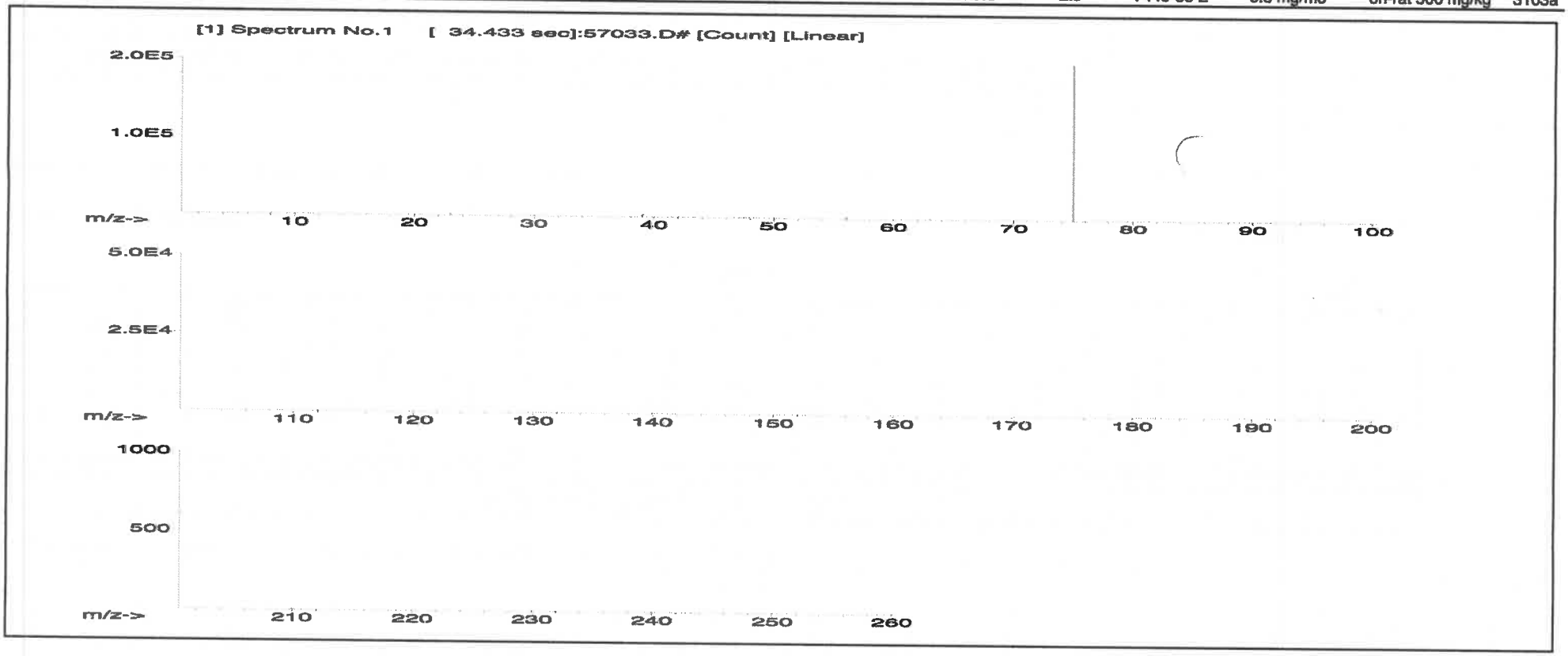
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**				
Lot Number:	**111323**	24002546	Nitric Acid		
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



Absolute Standards, Inc.
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	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.

* 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

A: 02/09/24 M.5814

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

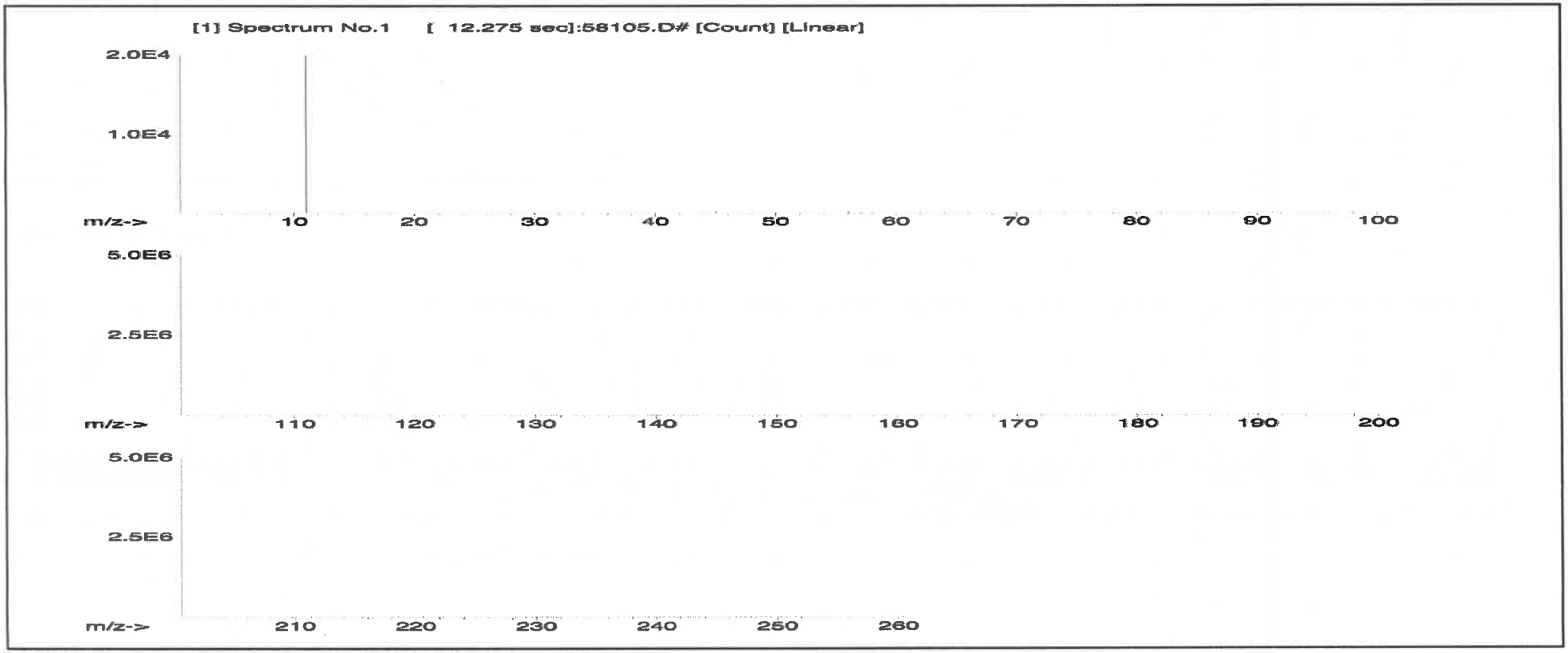
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

	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



Absolute Standards, Inc.
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 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:

* 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

R: 02/09/24 M5816

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

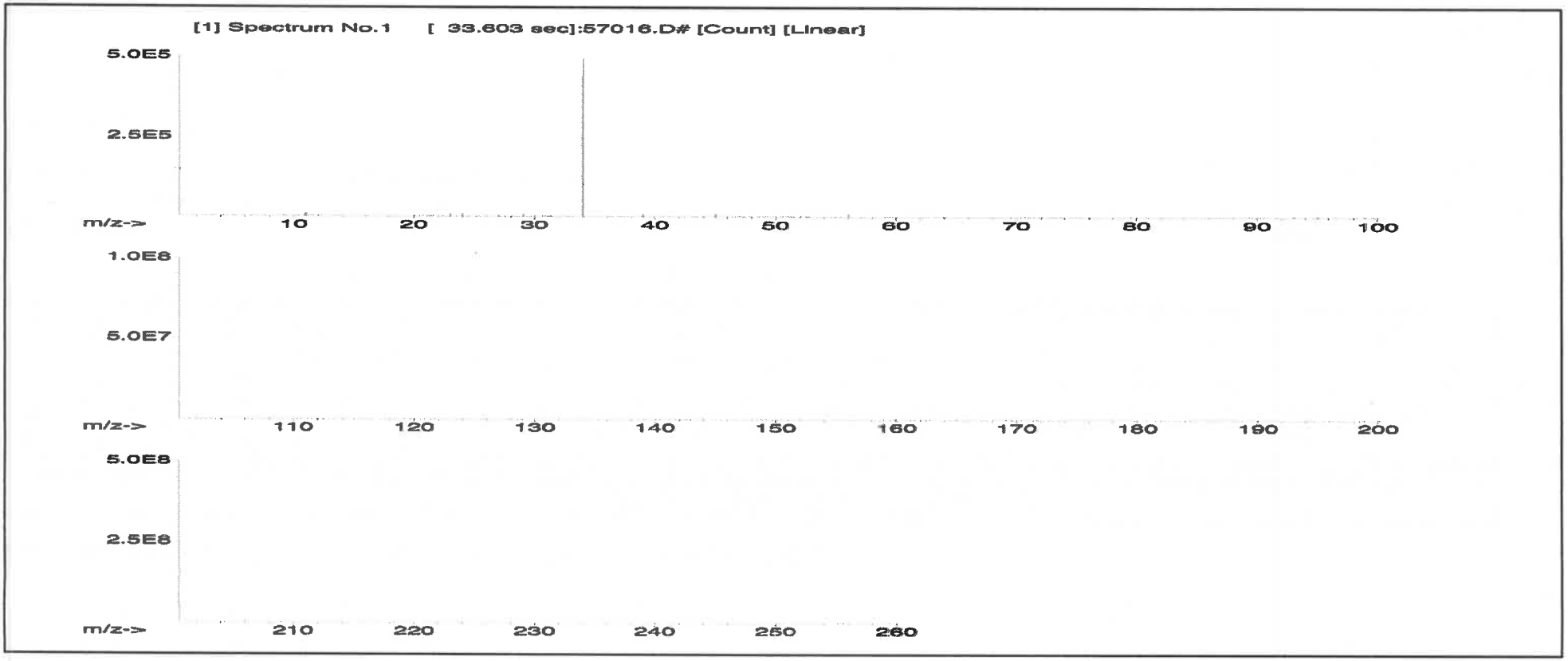
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

	Lot #	
Solvent:	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



Absolute Standards, Inc.
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	<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.

* 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

R: 02/09/24 M5817

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

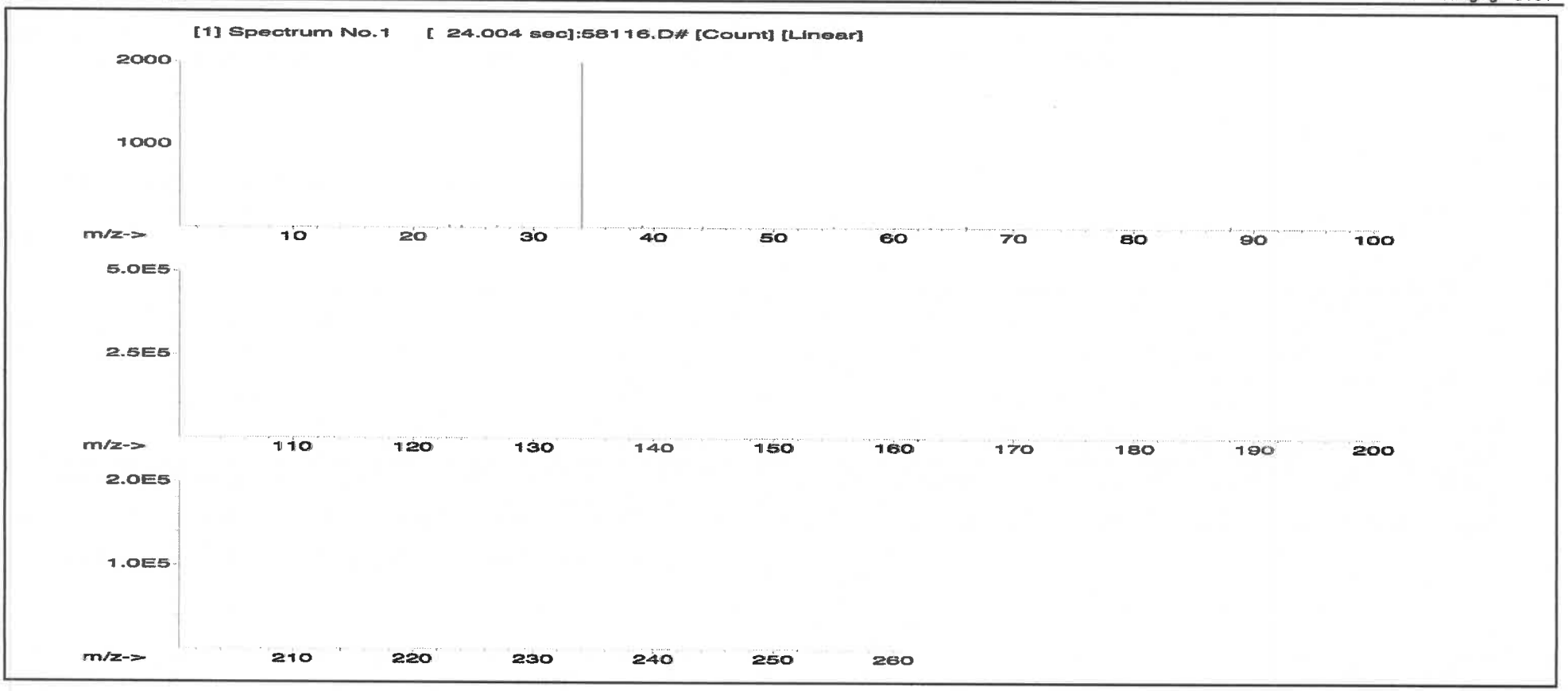
CERTIFIED WEIGHT REPORT:

Part Number:	**57116**			
Lot Number:	**071123**	**Solvent:**	071123	ASTM Type 1 Water
Description:	**Sulfur (S)**			
Expiration Date:	071126			
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):	1999.48	0.058	Flask Uncertainty	

Lot #

Formulated By:	Lawrence Barry	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 sulfate (S)	IN117	SLBR7225V	10000	99.9	0.10	24.3	82.4675	82.4682	**10000.1**	**20.0**	7783-20-2	NA	ori-rat 4250mg/kg	3181



Absolute Standards, Inc.
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	<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:

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

R: 02/09/24 M5820

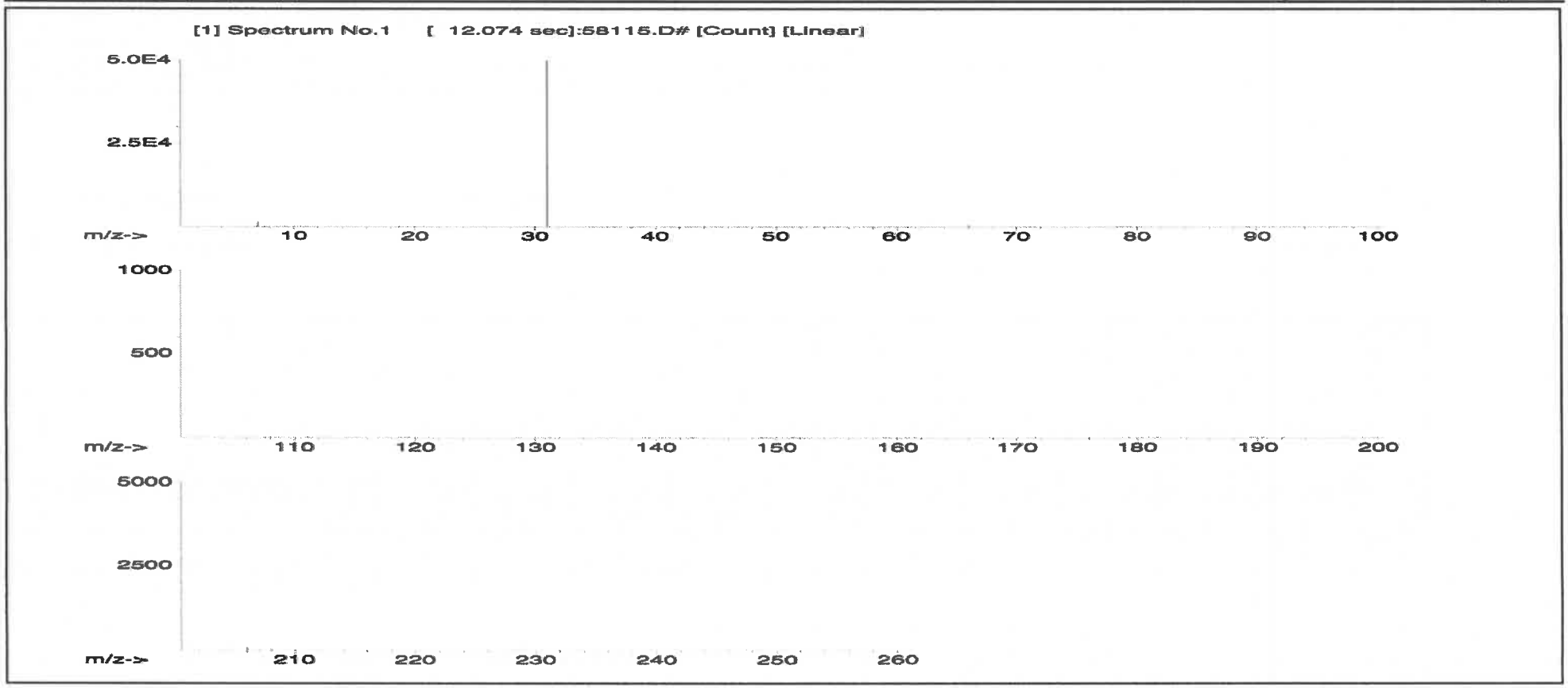
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Absolute Standards, Inc.
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	<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.

* 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).

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

MF884
MB

avantor™ | J.T.Baker®

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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5923 R: 01/10/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57003
Lot Number: 102423
Description: Lithium (Li)

Expiration Date: 102426
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

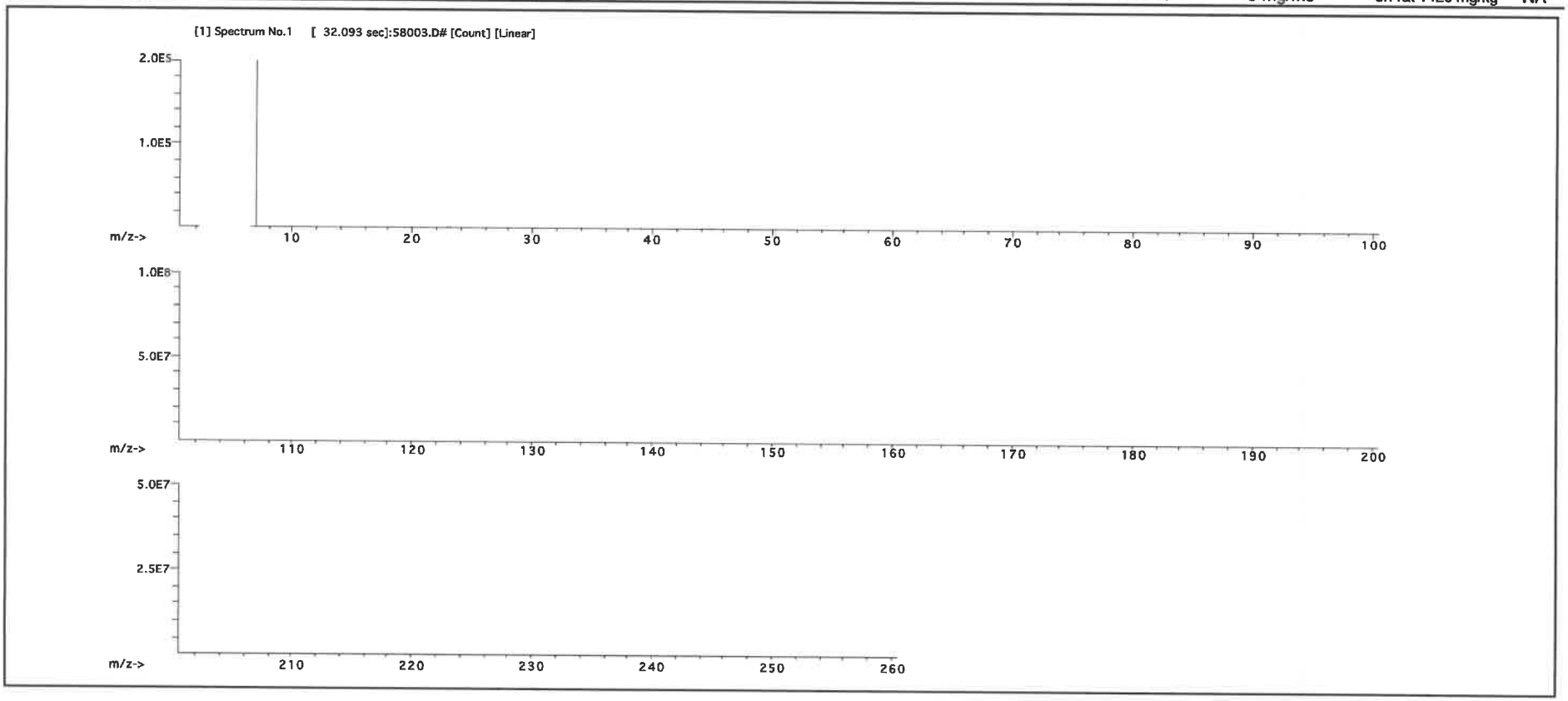
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Formulated By:	Lawrence Barry	102423
Reviewed By:	Pedro L. Rentas	102423

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. Lithium nitrate (Li)	IN019	LIZ042018A1	1000	99.999	0.10	10.0	20.0004	20.0006	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



Absolute Standards, Inc.
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	T	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.
* 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

M5962 R! 06/14/24.

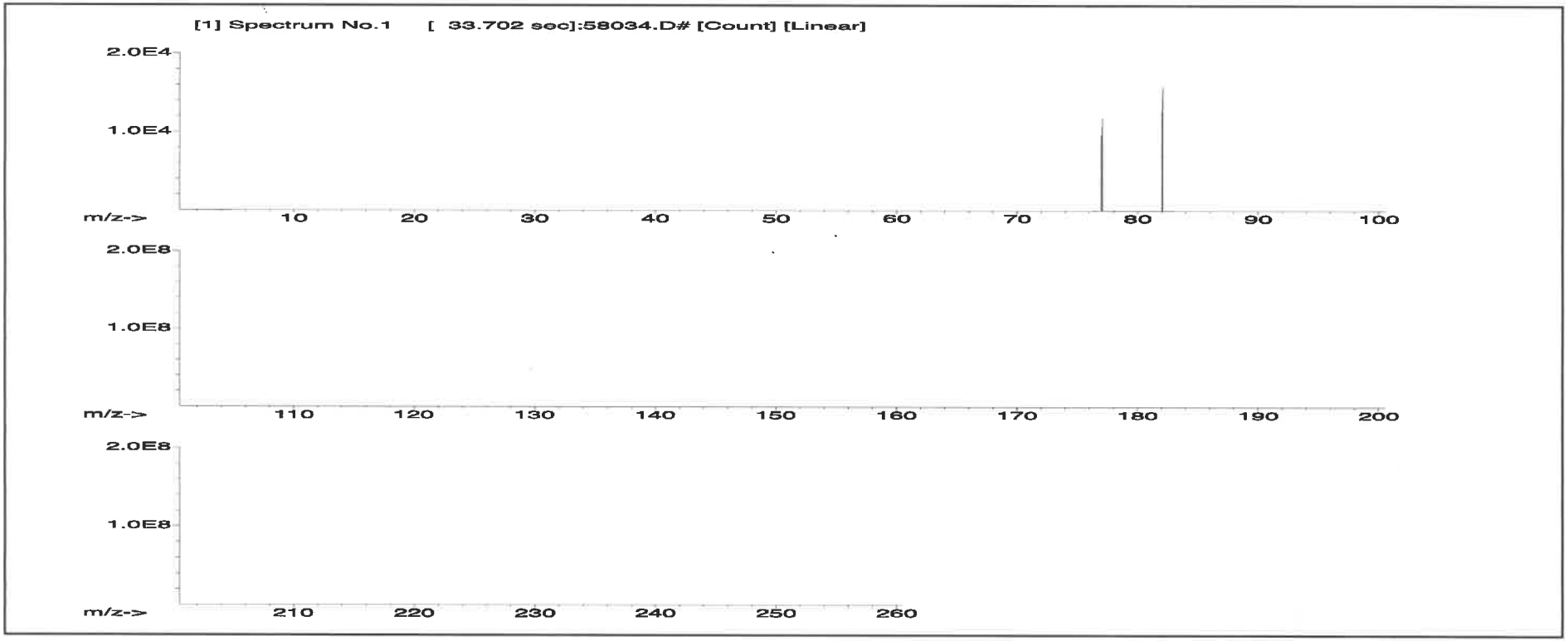
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



Absolute Standards, Inc.
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	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

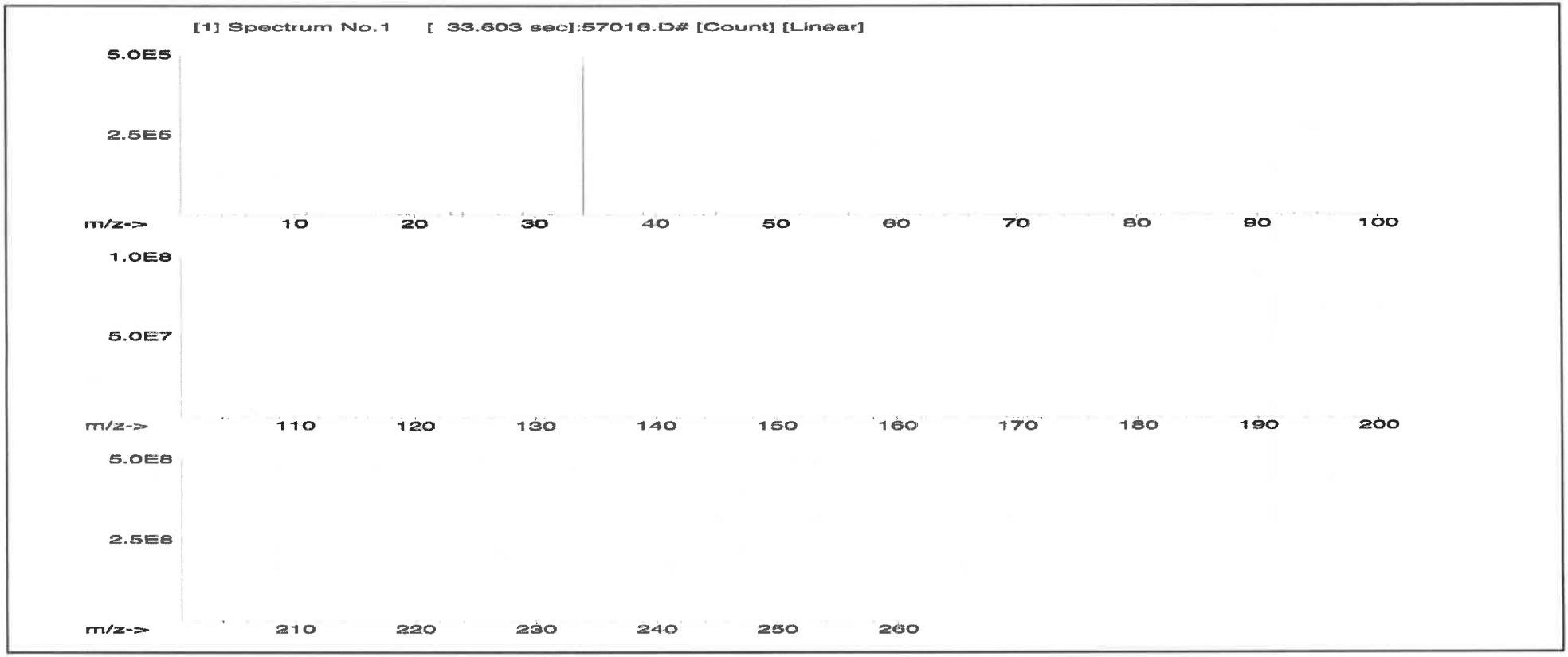
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57016**		**Solvent:**	Lot # 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		

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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57003**	24002546	Nitric Acid		
Lot Number:	**062124**				
Description:	**Lithium (Li)**	2.0%	5.0 (mL)	Nitric Acid	
Expiration Date:	062127				
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):	250.11	0.016	Flask Uncertainty		

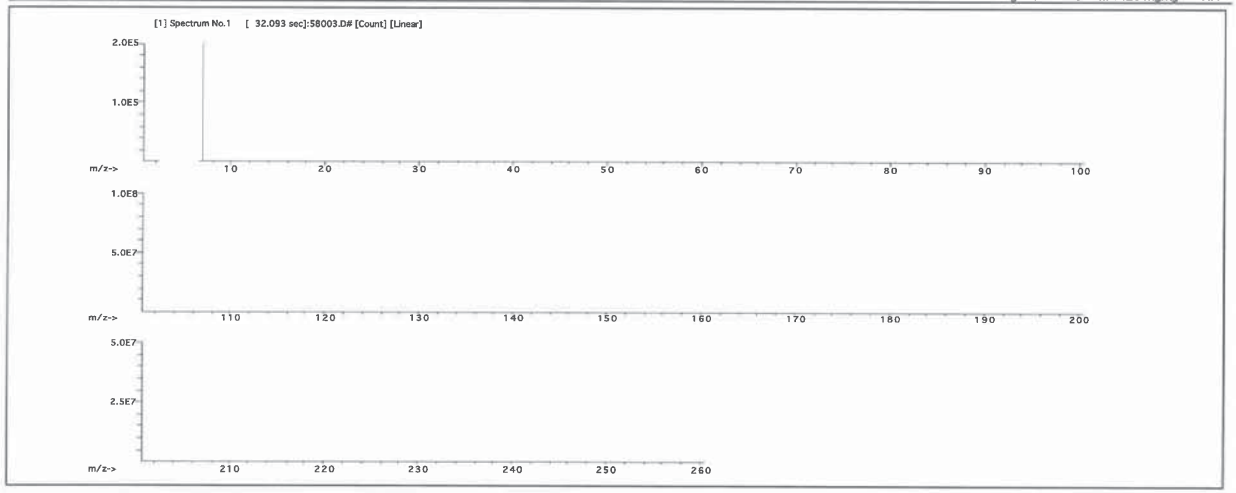
Giovanni Esposito

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



Absolute Standards, Inc.
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	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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57003**	24002546	Nitric Acid		
Lot Number:	**062124**				
Description:	**Lithium (Li)**	2.0%	5.0 (mL)	Nitric Acid	
Expiration Date:	062127				
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):	250.11	0.016	Flask Uncertainty		

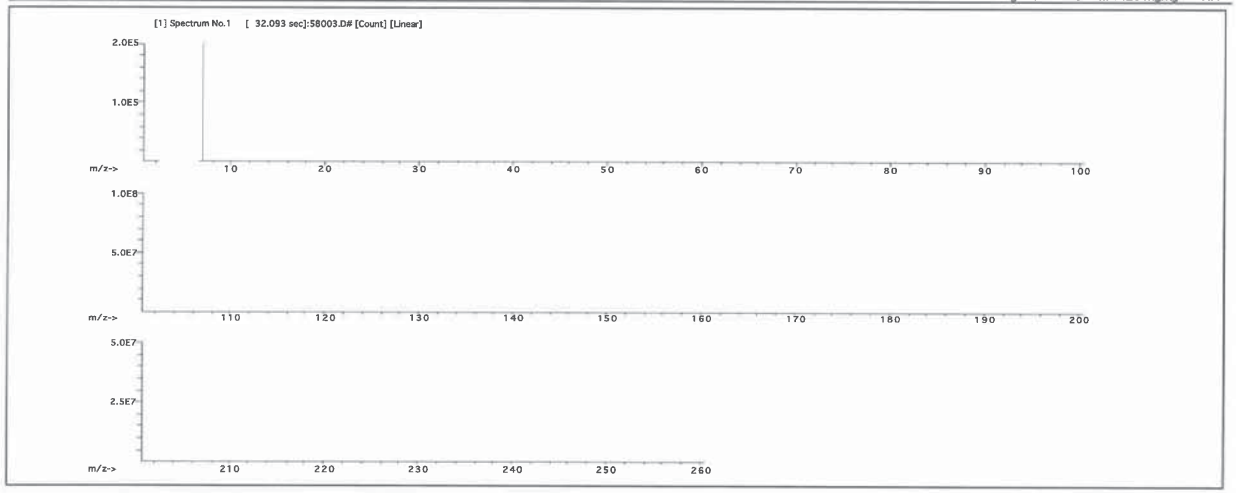
Giovanni Esposito

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



Absolute Standards, Inc.
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	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

Refine your results. Redefine your industry.

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

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:	CGTI1
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 ($\pm$) = $u_{CRM/RM} = k\,(u^2_{Char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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 ($\pm$) = $u_{CRM/RM} = k\,(u^2_{Char\,a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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	<	0.000536	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=2 (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

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

MS985
R: 6/14/24

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 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

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

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

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

R: 2/22/24
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

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

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

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

R! 08/22/24 M6058, M6059

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:	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

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

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

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

M6074
M6075
M6076
M6077

EXP.: 9/6/2029

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:	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

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 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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

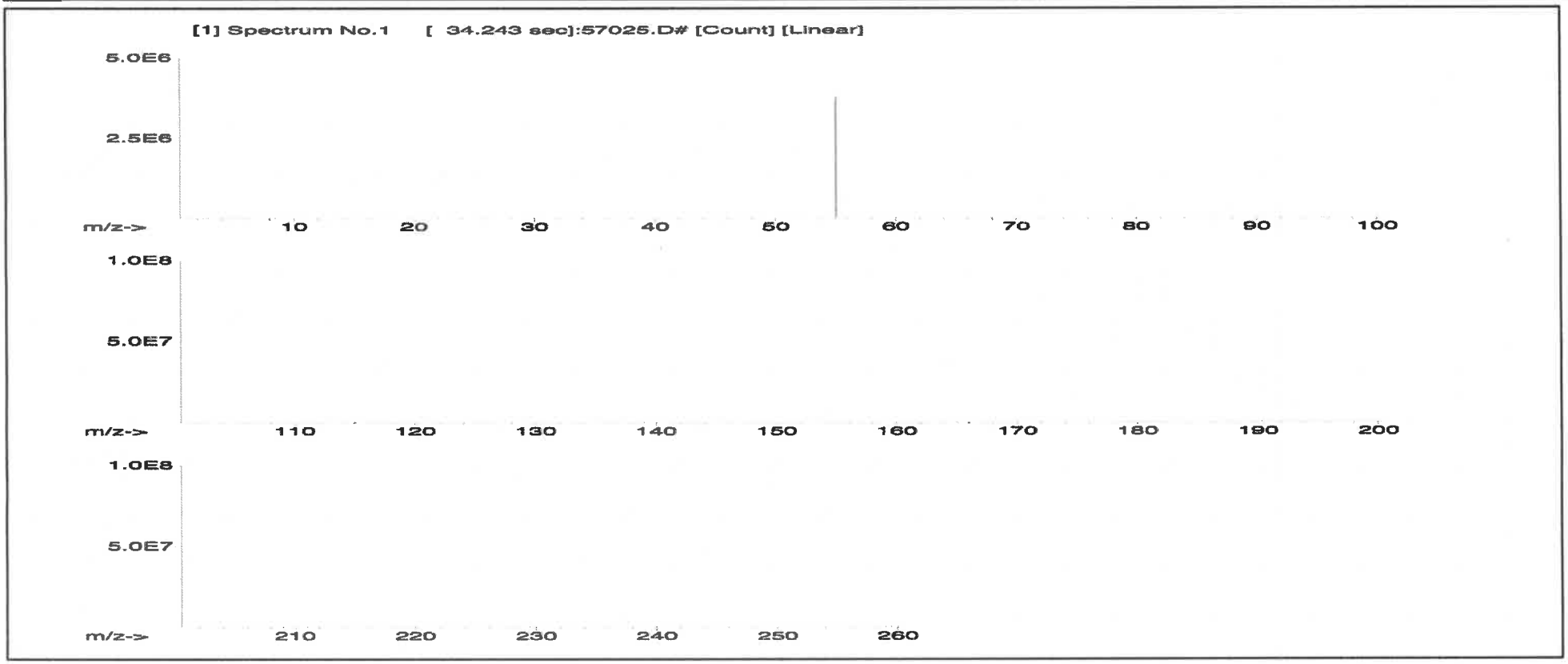
CERTIFIED WEIGHT REPORT:

R->1/13/25
M6128

Part Number:	**58025**	**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**101124**			
Description:	**Manganese (Mn)**	2%	80.0 (mL)	Nitric Acid
Expiration Date:	101127			
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):	4000.2	0.10	Flask 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



Absolute Standards, Inc.
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	<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).

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

M6137 R→10/3/24

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:	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

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

M6138
R->1/13/25

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 121824
Description: Calcium (Ca)

Expiration Date: 121827
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

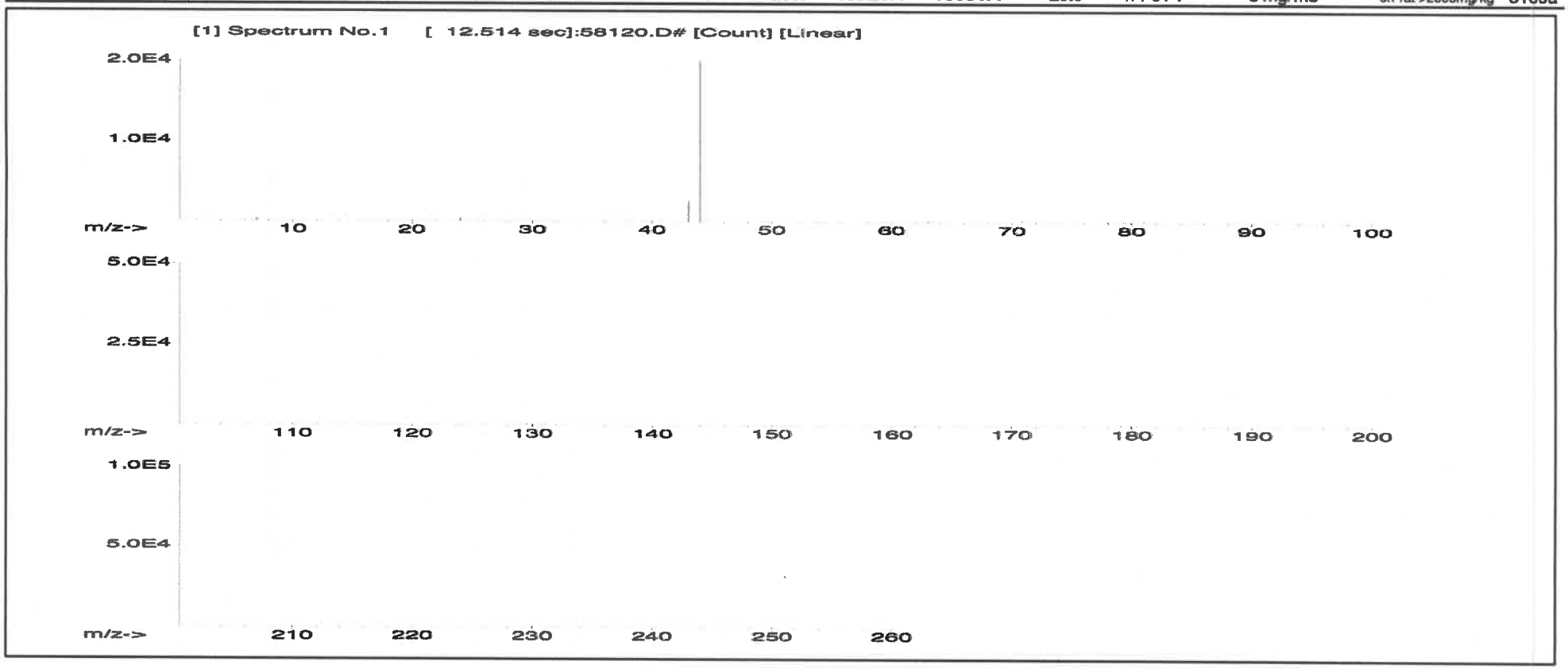
		Lot #		
Solvent:	24012496	Nitric Acid		
2%	80.0 (mL)	Nitric Acid		

5E-05 Balance Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	121824
Reviewed By:	Pedro L. Rentas	121824

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	100.2677	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



Absolute Standards, Inc.
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	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).

Part # **58120** Lot # **121824**

Printed: 1/10/2025, 4:48:14 PM

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:

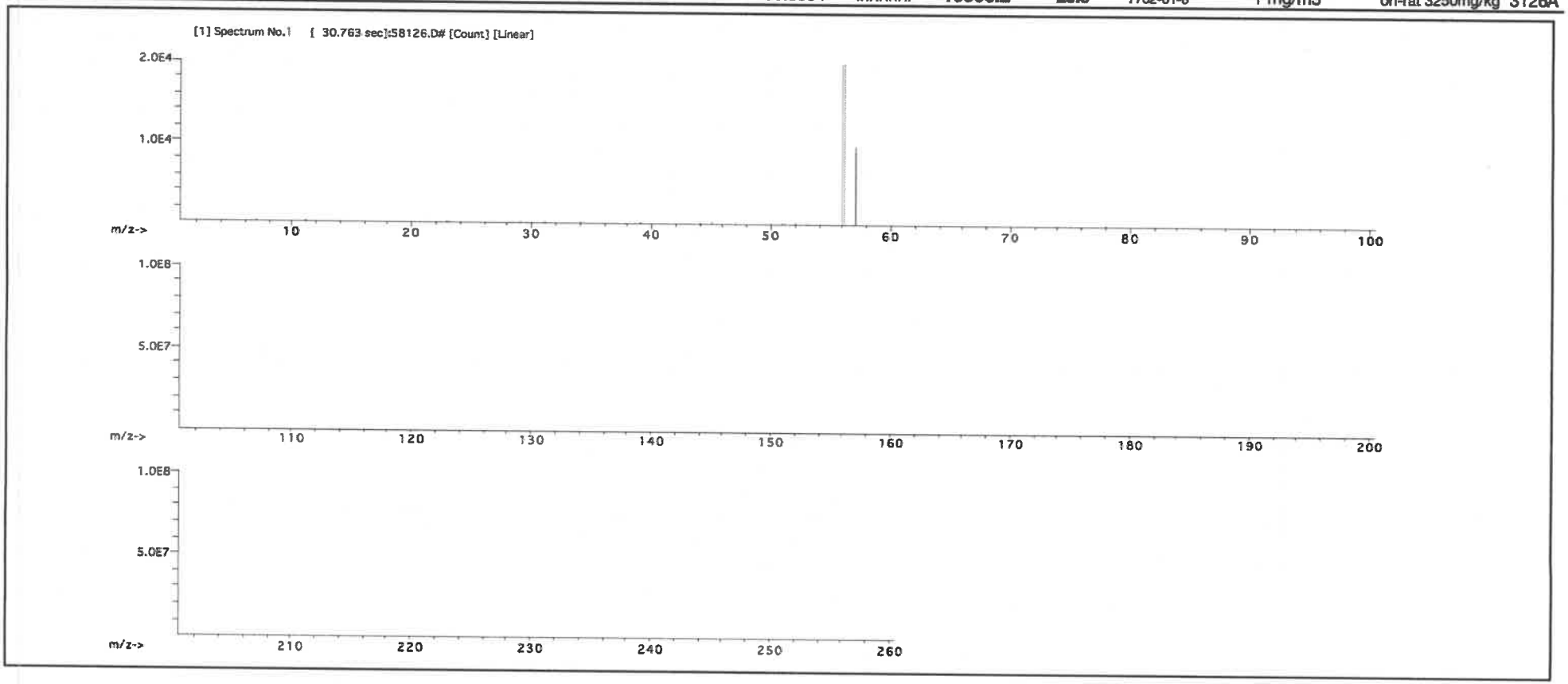
Part Number: 58126 R->1|B|2S
Lot Number: 011025
Description: Iron (Fe) M6140
Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	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



Absolute Standards, Inc.
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	<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).

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

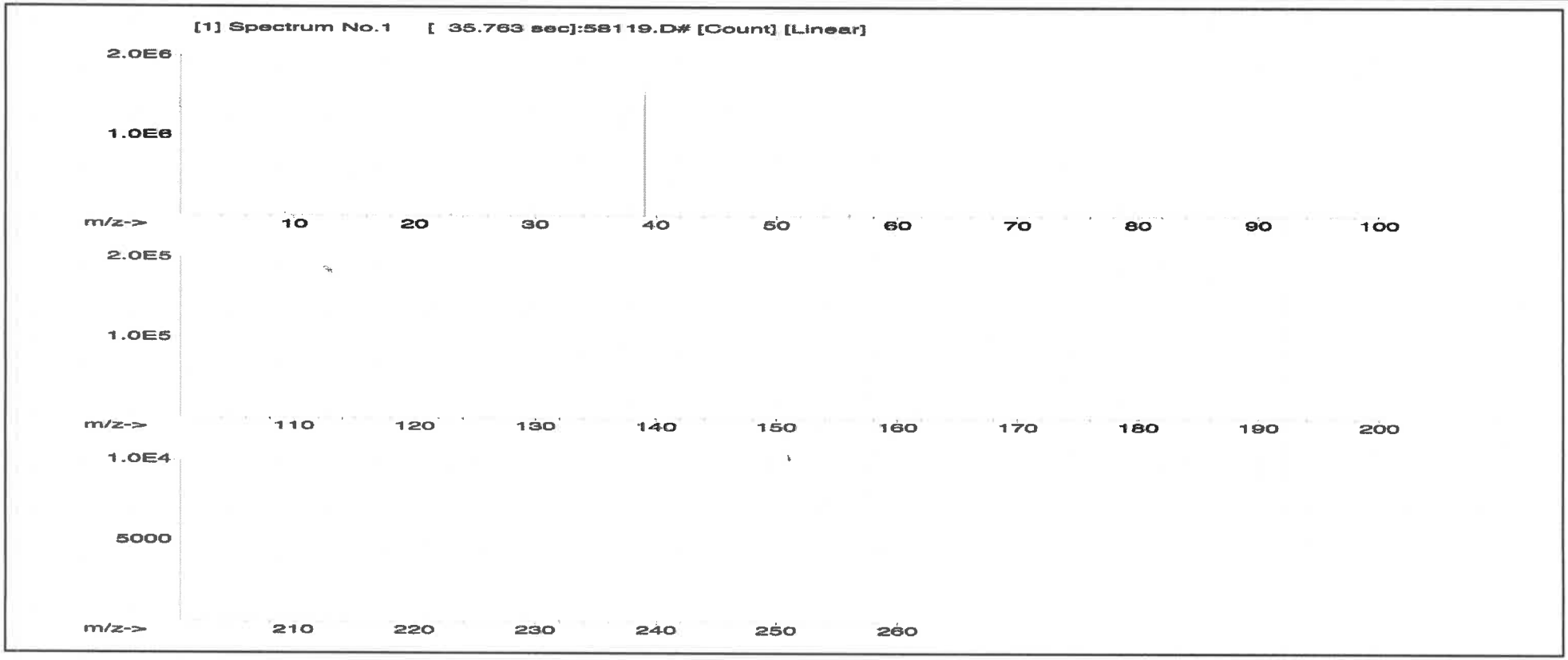
Part Number:	**57119**		**Lot #**		
Lot Number:	**103024**	**Solvent:**	24002546	Nitric Acid	
Description:	**Potassium (K)**	2%	80.0 (mL)	Nitric Acid	
Expiration Date:	103027				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance 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



Absolute Standards, Inc.
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	<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:

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

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

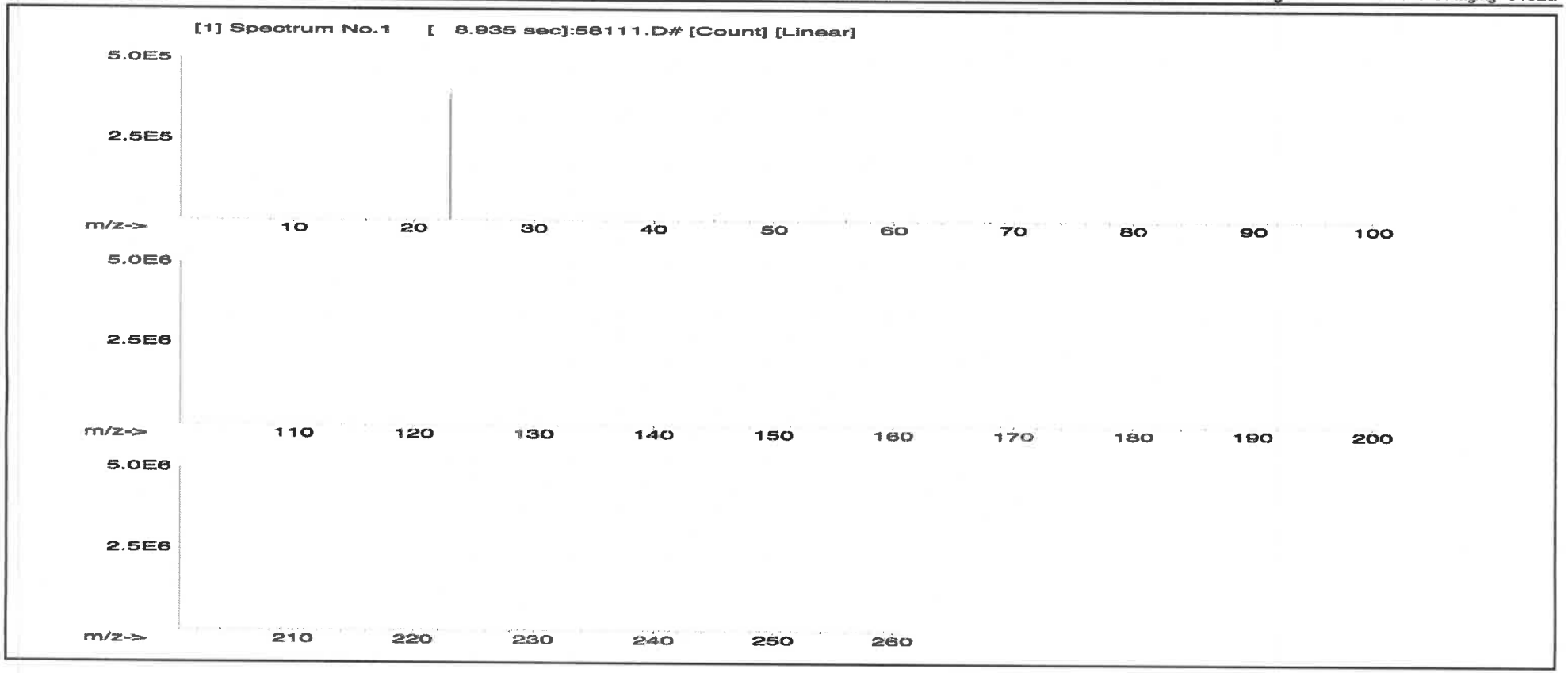
R->1/13/25

M6144

Part Number:	**58111**		**Lot #**		
Lot Number:	**072424**	**Solvent:**	24002546	Nitric Acid	
Description:	**Sodium (Na)**				
		2%	80.0 (mL)	Nitric Acid	
Expiration Date:	072427				
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):	4000.2	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



Absolute Standards, Inc.
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	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).
* 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

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)

R → 1/13/25

M6145

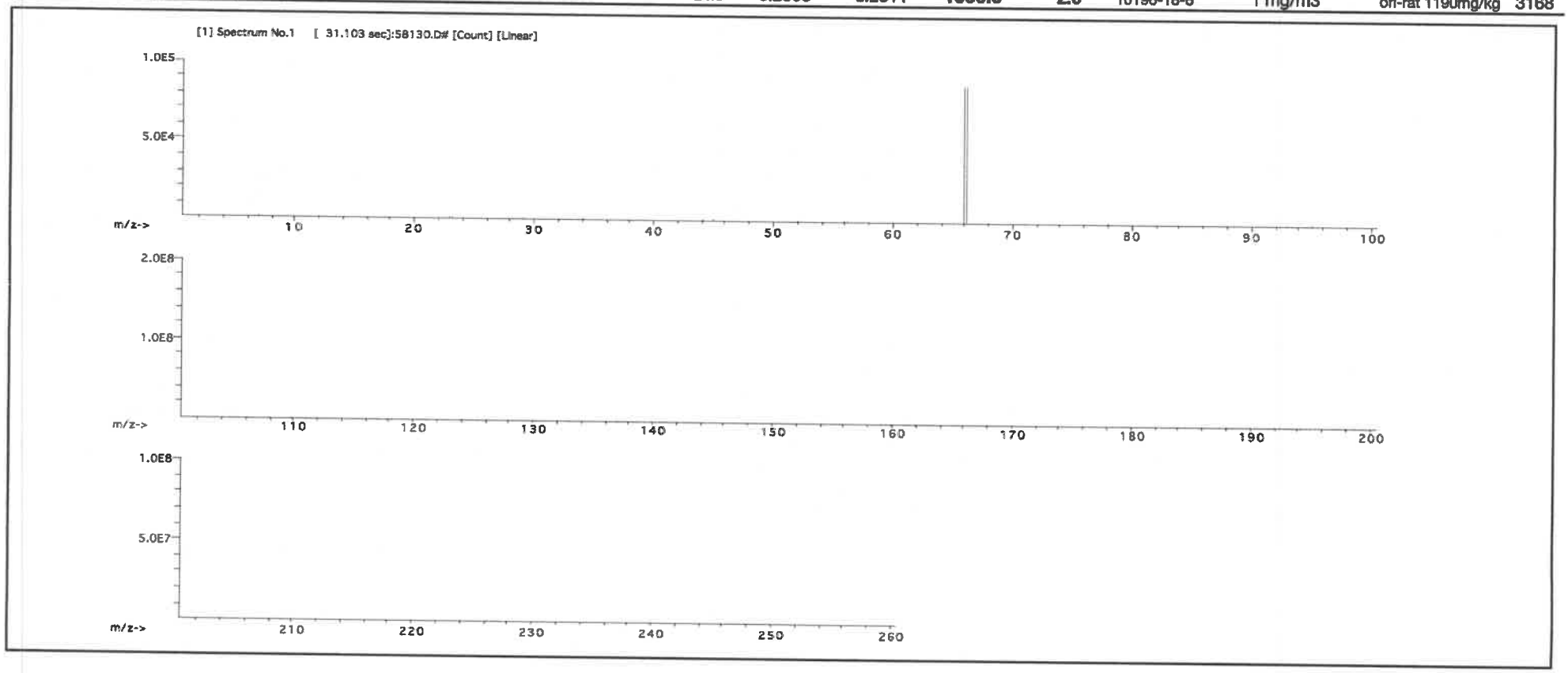
Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

		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



Absolute Standards, Inc.
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	<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.

* 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).

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

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M615 MB

avantor™ | J.T.Baker

Material No.: 9673-33
Batch No.: 24I1262013
Manufactured Date: 2024-08-07
Retest Date:2029-08-06
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H_2SO_4)	95.0 – 98.0 %	96.2 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	<1 ppm
ACS – Substances Reducing Permanganate(as SO2)	<= 2 ppm	<2 ppm
Ammonium (NH_4)	<= 1 ppm	<1 ppm
Chloride (Cl)	<= 0.1 ppm	<0.1 ppm
Nitrate (NO_3)	<= 0.2 ppm	0.1 ppm
Phosphate (PO_4)	<= 0.5 ppm	<0.1 ppm
Trace Impurities – Aluminum (Al)	<= 30.0 ppb	<5.0 ppb
Arsenic & Antimony (as As)	<= 4.0 ppb	<2.0 ppb
Trace Impurities – Boron (B)	<= 10.0 ppb	<5.0 ppb
Trace Impurities – Cadmium (Cd)	<= 2.0 ppb	<1.0 ppb
Trace Impurities – Chromium (Cr)	<= 6.0 ppb	<1.0 ppb
Trace Impurities – Cobalt (Co)	<= 0.5 ppb	<0.3 ppb
Trace Impurities – Copper (Cu)	<= 1.0 ppb	<1.0 ppb
Trace Impurities – Gold (Au)	<= 10.0 ppb	<5.0 ppb
Heavy Metals (as Pb)	<= 500.0 ppb	<100.0 ppb
Trace Impurities – Iron (Fe)	<= 50.0 ppb	<1.0 ppb
Trace Impurities – Lead (Pb)	<= 0.5 ppb	<0.5 ppb
Trace Impurities – Magnesium (Mg)	<= 7.0 ppb	<1.0 ppb
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	<1.0 ppb
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	<0.1 ppb
Trace Impurities – Nickel (Ni)	<= 2.0 ppb	<0.3 ppb
Trace Impurities – Potassium (K)	<= 500.0 ppb	<10.0 ppb
Trace Impurities – Selenium (Se)	<= 50.0 ppb	7.2 ppb
Trace Impurities – Silicon (Si)	<= 100.0 ppb	12.8 ppb
Trace Impurities – Silver (Ag)	<= 1.0 ppb	<1.0 ppb

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker

Material No.: 9673-33
Batch No.: 24I1262013

Test	Specification	Result
Trace Impurities - Sodium (Na)	<= 500.0 ppb	<5.0 ppb
Trace Impurities - Strontium (Sr)	<= 5.0 ppb	<1.0 ppb
Trace Impurities - Tin (Sn)	<= 5.0 ppb	1.1 ppb
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	<1.0 ppb

For Laboratory,Research,or Manufacturing Use

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

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, Biosciences Production

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-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.

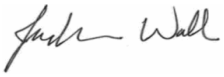
12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor

Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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-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

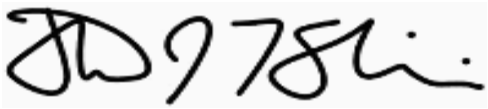
- Sealed TCT Bag Open Date: _____

- 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

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

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.

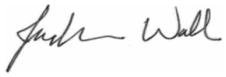
12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor

Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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)

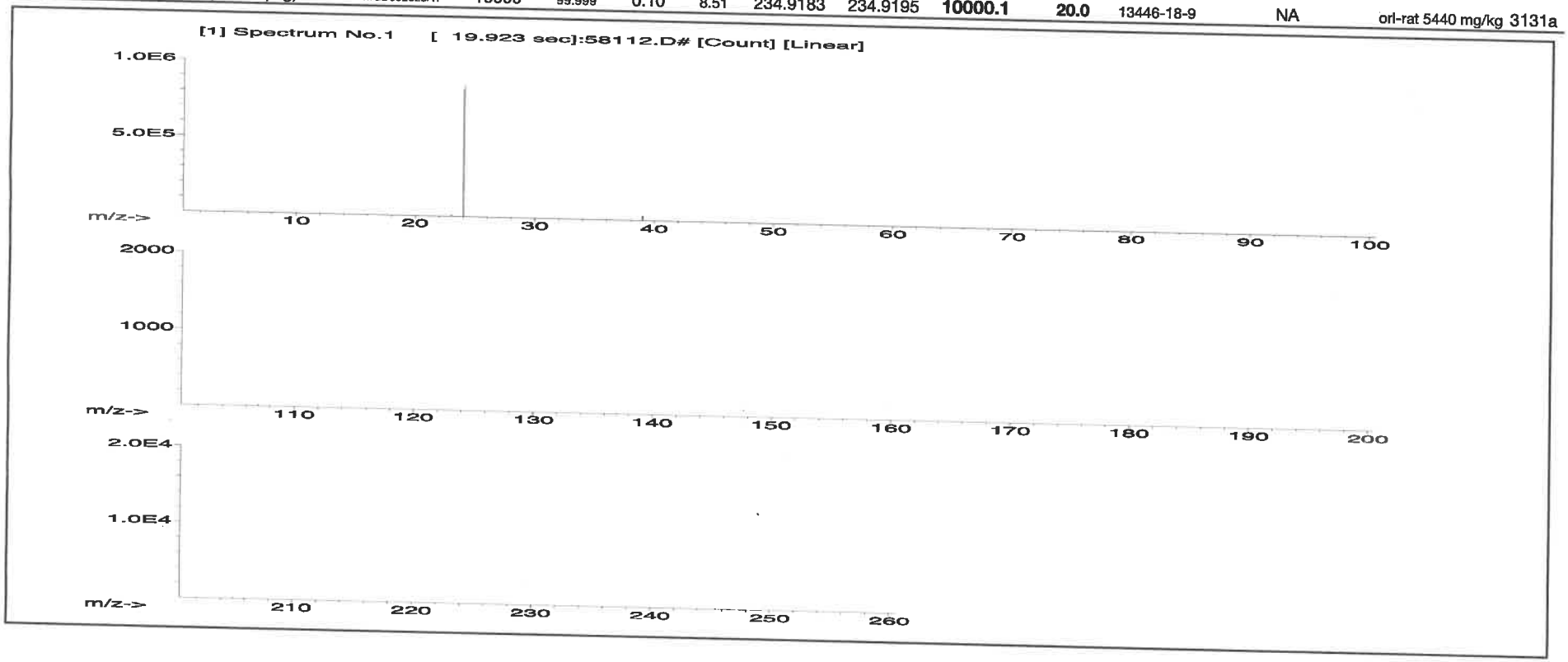
Expiration Date: 011528
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	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



Absolute Standards, Inc.
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
Christiansburg, VA 24073 USA
inorganicventures.com

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

M6174
R->5/5/24

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:	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

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

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.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

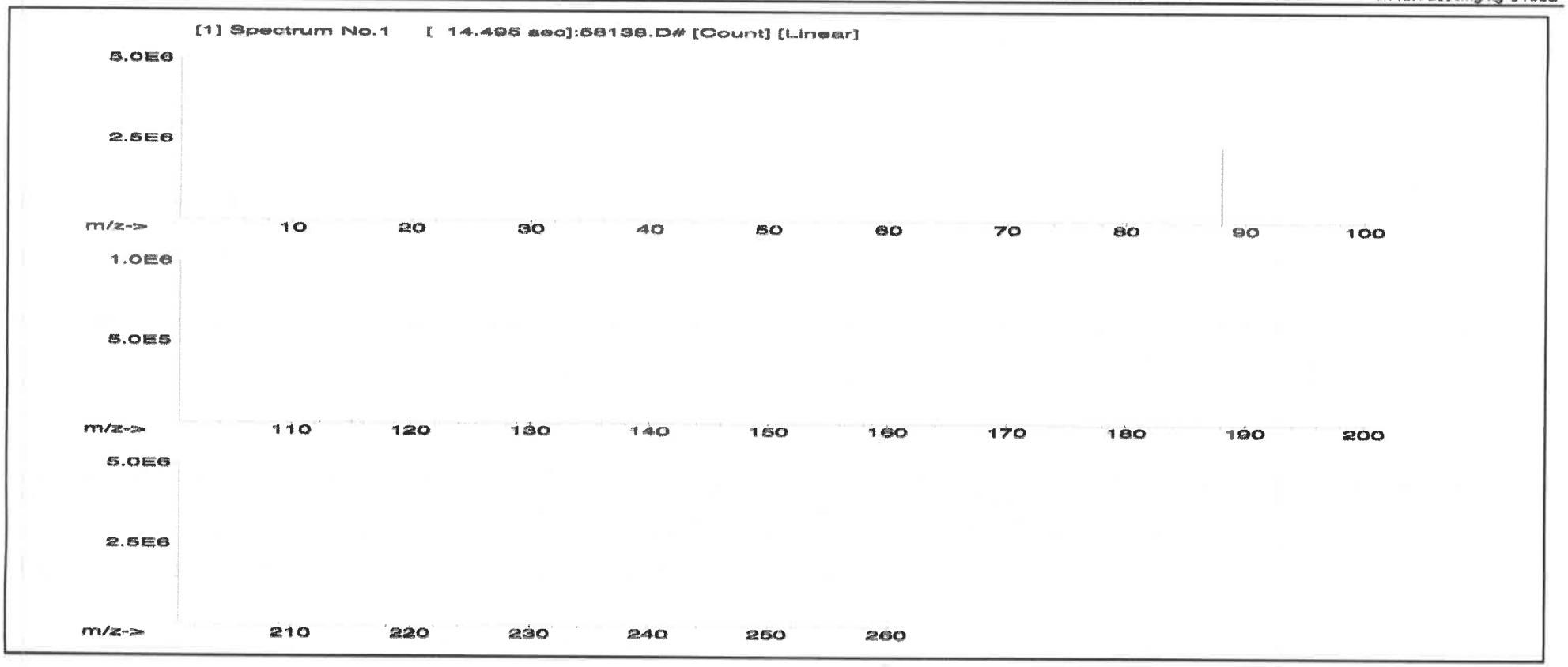
R->8/6/29

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



Absolute Standards, Inc.
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	<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).

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→ 8/6/25
M6177

Part Number: 57042
Lot Number: 080525
Description: Molybdenum (Mo)

Expiration Date: 080528
Recommended Storage: Ambient (15 - 30 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 1999.41 0.058 Flask Uncertainty

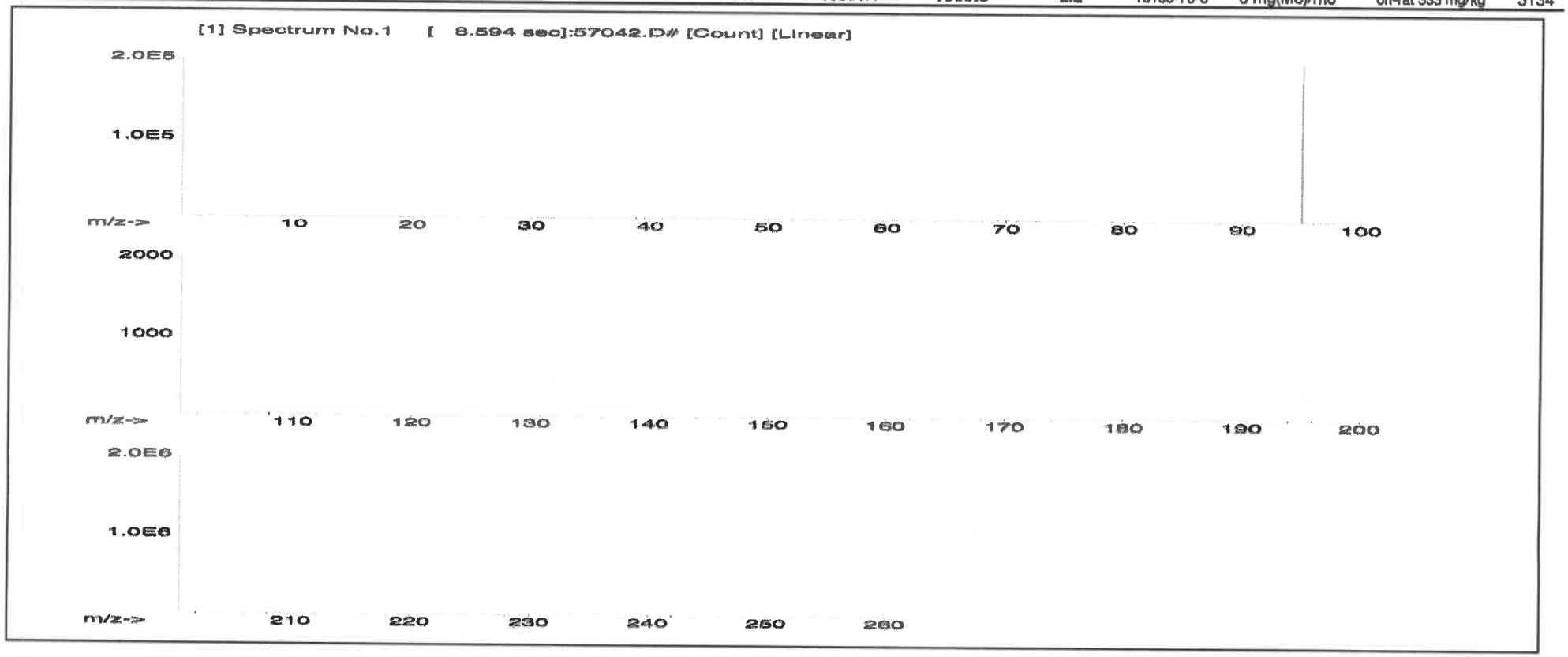
Lot #	Solvent:		
MKBQ8597V	Ammonium hydroxide		
080525	ASTM Type 1 Water		
0.5%	10.0 (mL)	Ammonium hydroxide	

5E-05 Balance 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



Absolute Standards, Inc.
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	<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

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>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		

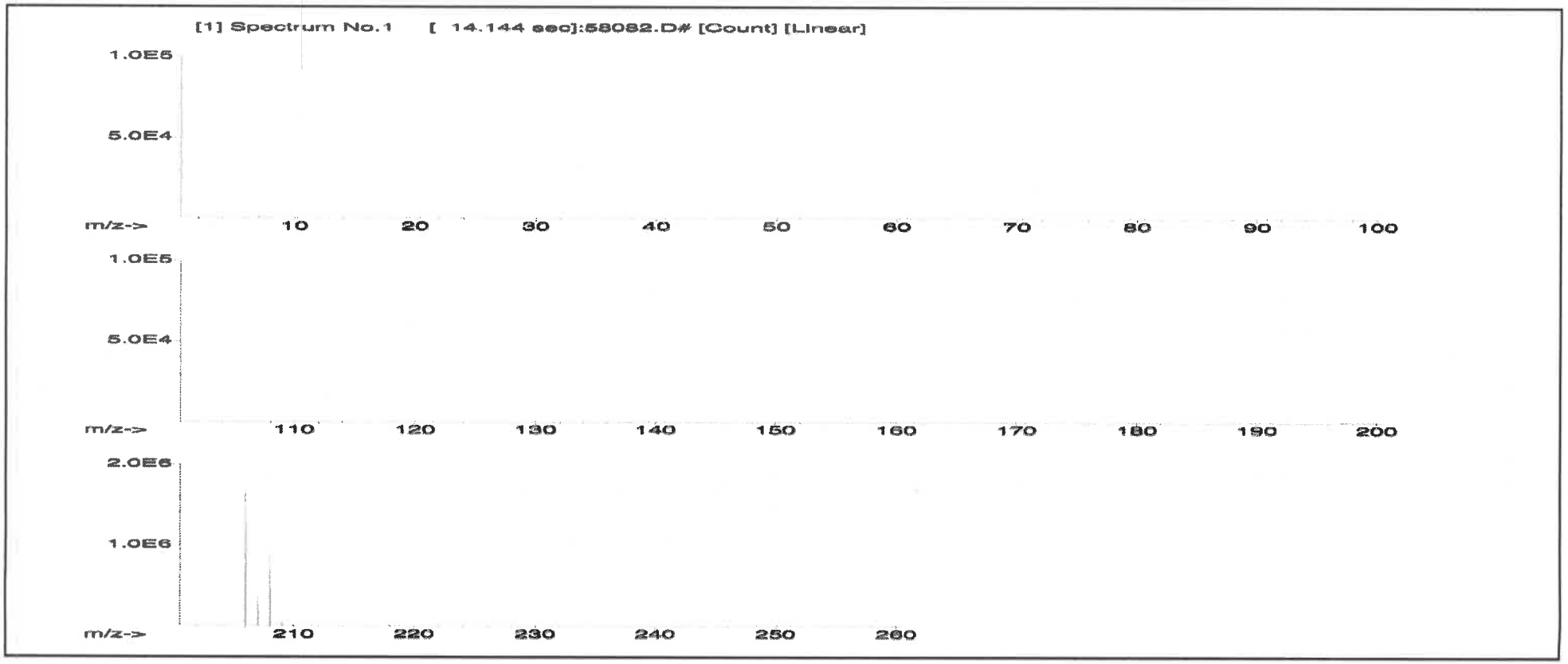
Giovanni Esposito

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



Absolute Standards, Inc.
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	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).

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

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

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

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

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:	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

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

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

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

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

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{½}$ 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

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 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.

Nitric Acid 69%
CMOS

M6187
R.D :- 08/08/25

avantor™ | J.T.Baker®

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 >>>

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

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

M6200
R.0 → 08/25/25

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 24D1562005
Manufactured Date: 2024-03-18
Retest Date: 2029-03-17
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.6 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.192
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	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	2.2 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	31.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	0.2 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	< 0.2 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	3 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

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 24D1562005

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.2 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	0.2 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 1.0 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	< 0.3 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.0 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.4 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	< 0.1 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.: 24D1562005

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

Jamie Croak
Director Quality Operations, Bioscience Production

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6027

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

R1 8/05/24

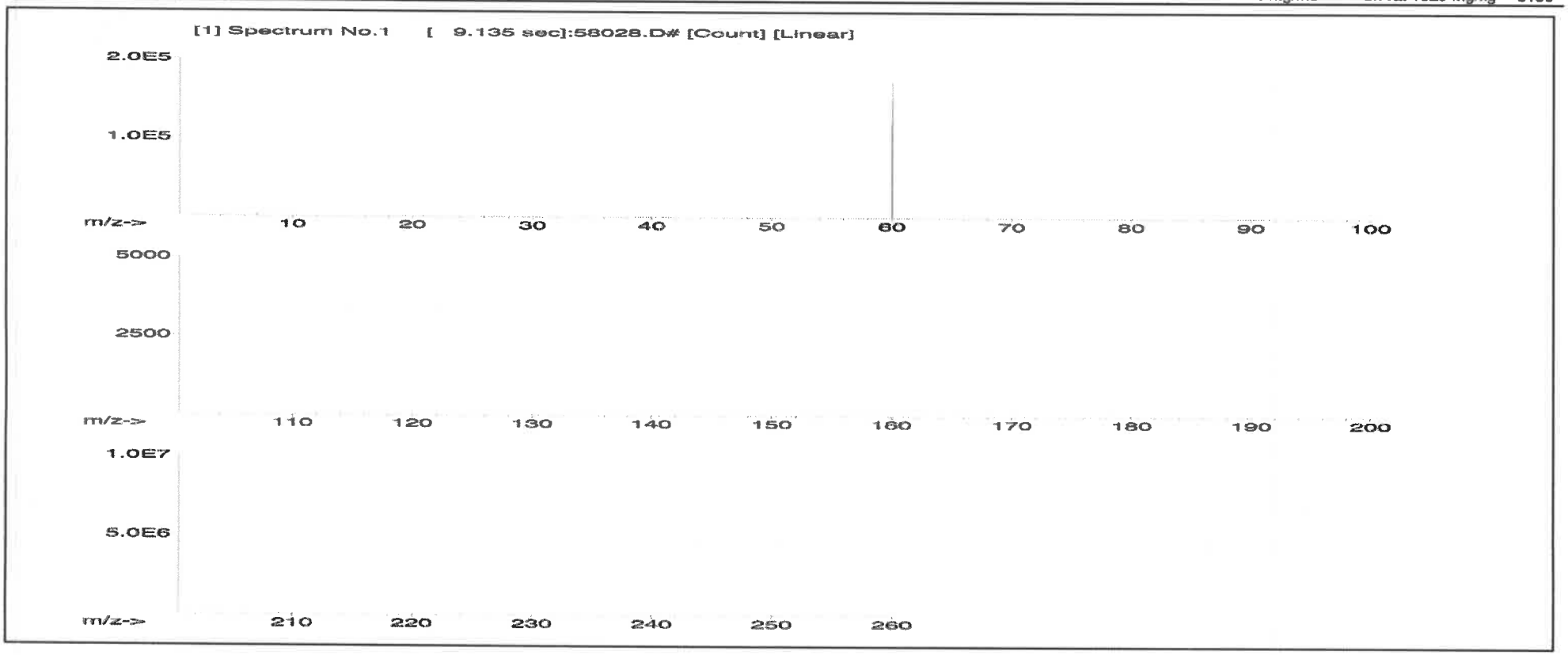
CERTIFIED WEIGHT REPORT:

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



Absolute Standards, Inc.
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	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.

* 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

M6030

R: 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

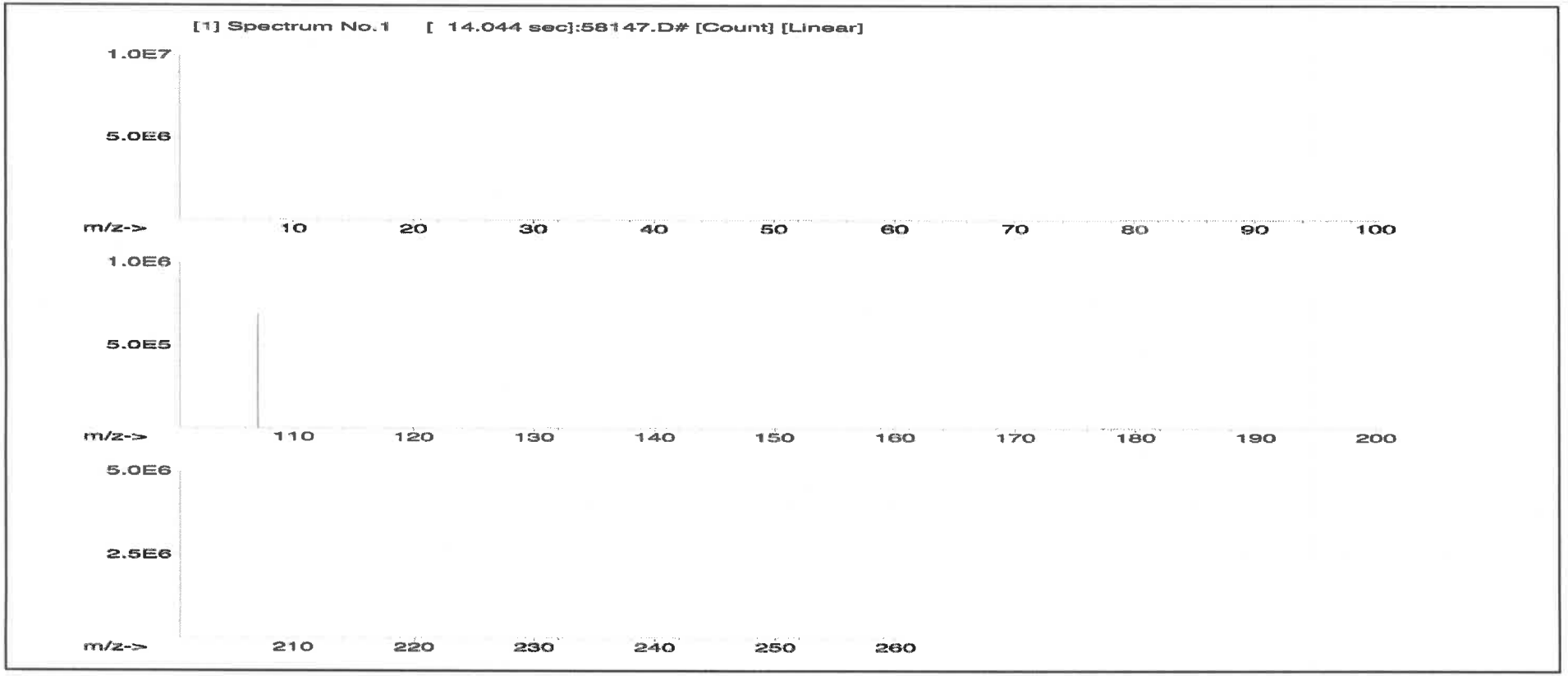
Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

		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



Absolute Standards, Inc.
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	<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:

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).

opened: 3/24/25

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: M6160

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 ± 0.058 Flask Uncertainty

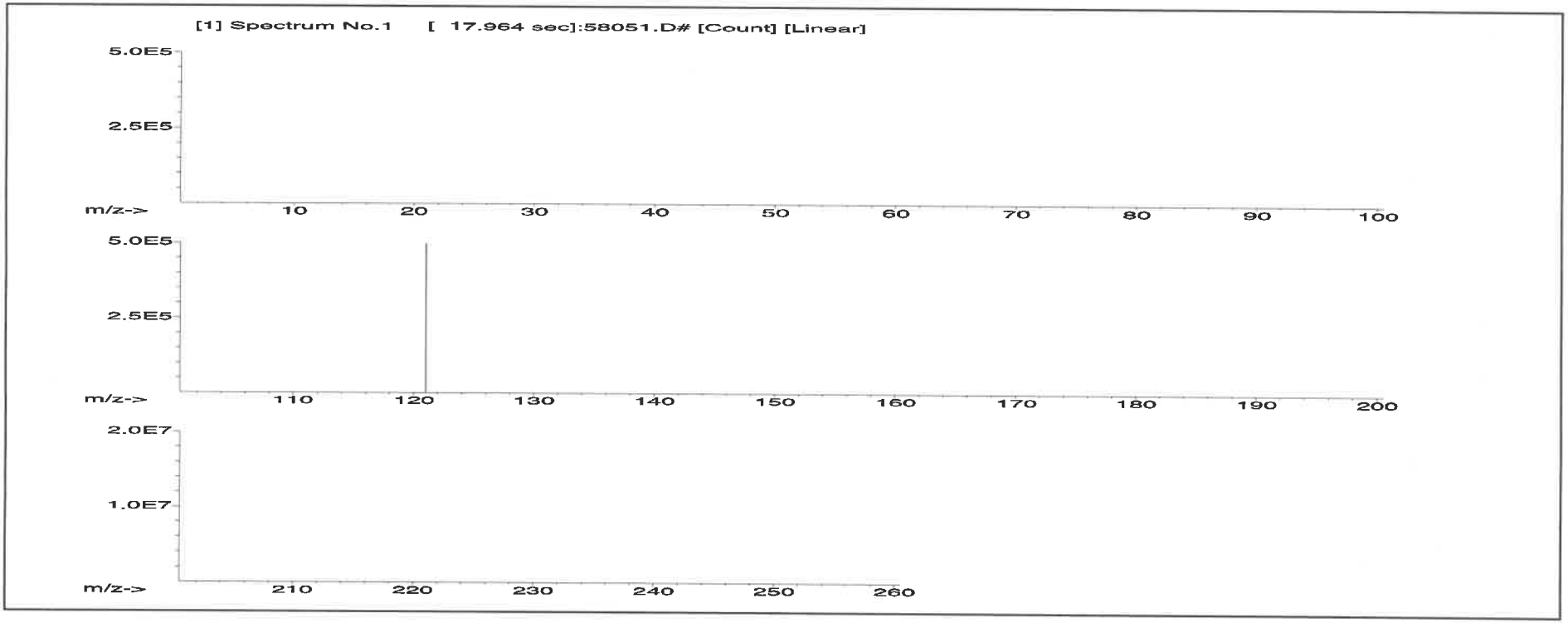
Lot #	Solvent:		
24002546	Nitric Acid		
2.0%	40.0 (mL)	Nitric Acid	

5E-05 Balance 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



Absolute Standards, Inc.
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	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).

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

R: 8/5/24 M6019

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 885.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	U2-SR730227
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Strontium
Starting Material:	SrCO3
Starting Material Lot#:	M2-2192
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**998 ± 4 µg/mL** ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	**1001 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**1001 ± 2 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	<	0.001980	M	Eu	<	0.000495	O	Na		0.000200	M	Se	<	0.013862	O	Zn		0.000143
O	Al		0.000370	O	Fe		0.000410	M	Nb	<	0.000495	i	Si	<		M	Zr	<	0.000495
M	As	<	0.000495	M	Ga	<	0.000495	M	Nd	<	0.000495	M	Sm	<	0.000495				
M	Au	<	0.000989	M	Gd	<	0.000495	O	Ni	<	0.007631	M	Sn	<	0.000990				
M	B	<	0.039606	M	Ge	<	0.000495	M	Os	<	0.000494	s	Sr	<					
M	Ba		0.006486	M	Hf	<	0.000495	i	P	<		M	Ta	<	0.000495				
M	Be	<	0.000990	M	Hg	<	0.000989	M	Pb	<	0.002970	M	Tb	<	0.000495				
M	Bi	<	0.000495	M	Ho	<	0.000495	M	Pd	<	0.003957	M	Te	<	0.027724				
O	Ca		0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd		0.001339	M	Ir	<	0.000494	M	Pt	<	0.002970	M	Ti	<	0.005940				
M	Ce	<	0.004950	O	K	<	0.008184	M	Rb	<	0.002970	M	Tl	<	0.000495				
M	Co	<	0.000495	M	La	<	0.000495	M	Re	<	0.000495	M	Tm	<	0.000495				
O	Cr	<	0.003207	O	Li	<	0.000884	O	Rh	<	0.012829	M	U	<	0.001485				
M	Cs	<	0.000990	M	Lu	<	0.002970	M	Ru	<	0.000989	M	V	<	0.001980				
M	Cu		0.000099	O	Mg		0.000064	i	S	<		M	W	<	0.003960				
M	Dy	<	0.000495	O	Mn		0.000066	M	Sb	<	0.014852	O	Y	<	0.000995				
M	Er	<	0.000495	M	Mo	<	0.001980	M	Sc	<	0.001980	M	Yb	<	0.000495				

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 - 87.62 +2 6 $Sr(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (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 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

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

March 03, 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

- **March 03, 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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6023

R ! 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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		

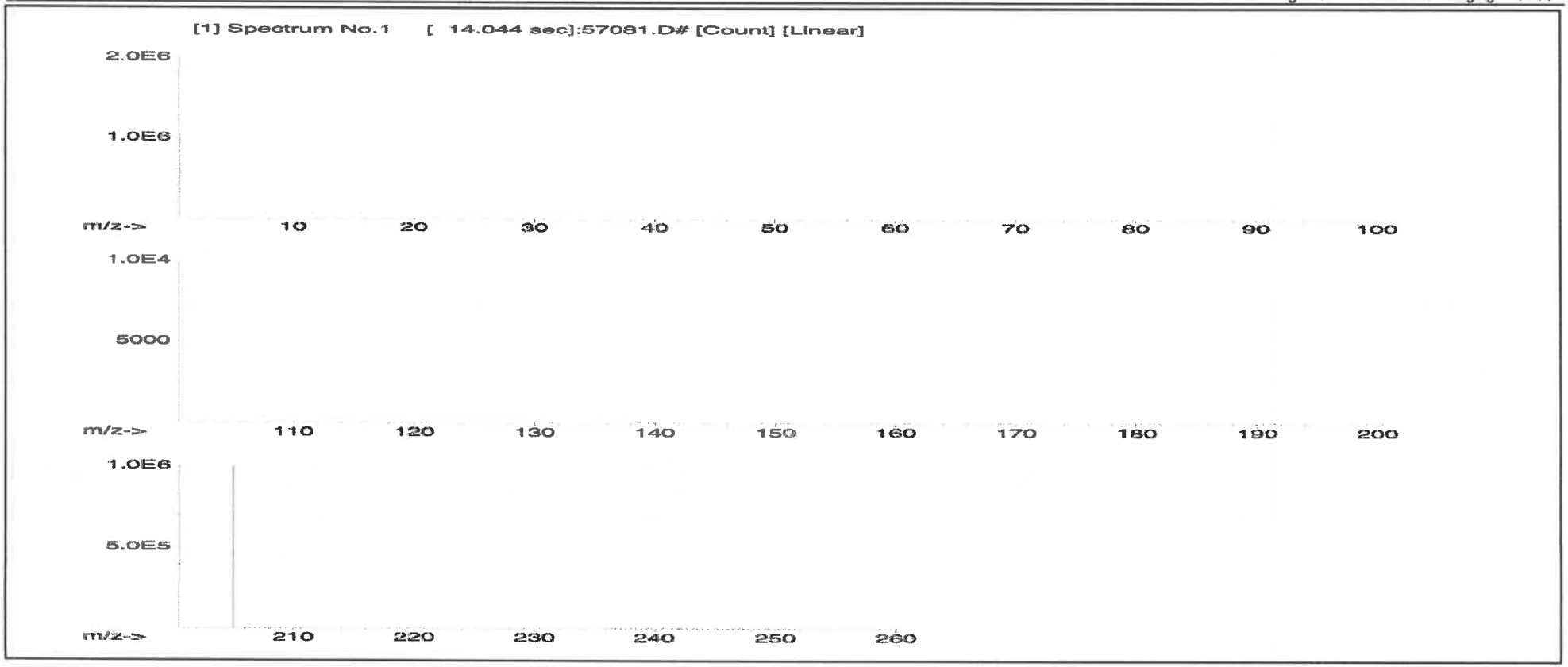
Aleah O'Brady

Formulated By:	Aleah O'Brady	062724

Pedro Rentas

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



Absolute Standards, Inc.
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	<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.
* 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

M6021

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Rc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**	24002546	Nitric Acid	
Lot Number:	**062424**			
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	

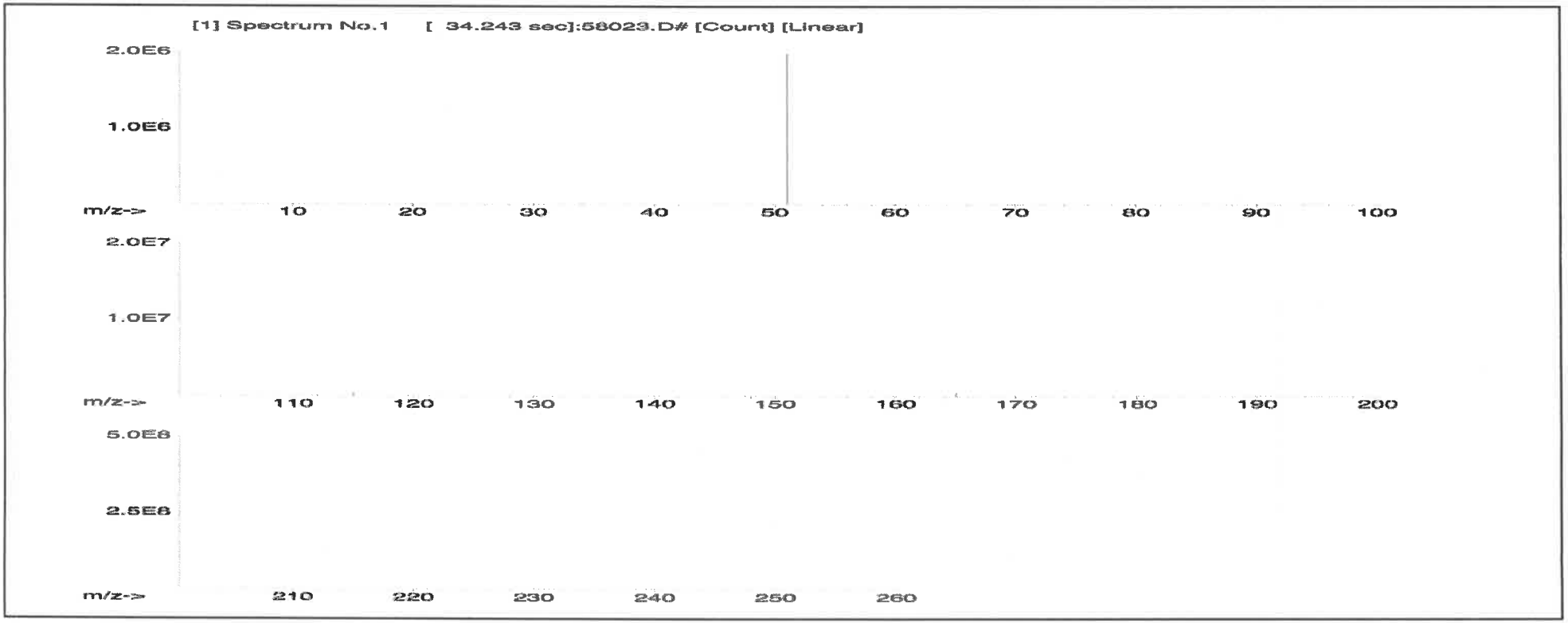
Aleah O'Brady

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
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	<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

Q3179
~~Q3176~~
3178

USEPA

DateShipped: 9/23/2025

CarrierName: Hand-Delivered

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #:

Contact Name: Leticia Campiglia

Contact Phone: 732-570-4993

No: 2-092325-0004-0049-02

Cooler #: 2 of 2

Lab: Alliance Technical Group LLC (non-CLP)

Lab Phone: 908-789-8900

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
7	EME-TS14-01	TAL VOCs,	Soil	9/23/2025	12:45	9	5 g Encore sampler	4 C	Y
2	EME-TS14-01	EPH	Soil	9/23/2025	12:45	2	4 oz glass jar	4 C	Y
6	EME-TS14-01	SPLP VOCs	Soil	9/23/2025	12:45	9	5 g Encore sampler	4 C	Y
4	EME-TS14-01	SPLP SVOCs, Pesticides, PCBs	Soil	9/23/2025	12:45	4	8 oz amber glass jar	4 C	Y
5	EME-TS14-01	SPLP EPH	Soil	9/23/2025	12:45	2	4 oz glass jar	4 C	Y
1	EME-TS14-01	TAL Metals + Hg and Cn	Soil	9/23/2025	12:45	2	8 oz clear glass jar	4 C	Y
	EME-TS14-01	SPLP Metals + Hg and Cn	Soil	9/23/2025	12:45	2	8 oz clear glass jar	4 C	Y
	EME-TS14-01	Percent Moisture	Soil	9/23/2025	12:45	2	4 oz jar w/ septum	4 C	Y
	EME-TS14-01	TAL SVOCs, PCBs, Pesticides	Soil	9/23/2025	12:45	4	8 oz amber glass jar	4 C	Y

9/23/25

Special Instructions: RFP # 916. Please email results to leticia.campiglia@westonsolutions.com, smita.sumbaly@westonsolutions.com, ronan.clynch@westonsolutions.com and michael.lang@westonsolutions.com.
7 day preliminary TAT.

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples	START V1 Weston	9/23/25 1700		9-23-25 1700	1.3°C IR Gun #1 Custody seals intact Temp. Blk present

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312