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

DATA PACKAGE

METALS

PROJECT NAME : RAYMARK SUPERFUND SITE

NOBIS GROUP

585 Middlesex Street

Lowell, MA - 01851

Phone No: 978-683-0891

ORDER ID : Q2638

ATTENTION : Adam Roy

Laboratory Certification ID # 20012

Table Of Contents for Q2638

1) METALS DATA 2
2) Signature Page 4
3) Case Narrative 5
4) Qualifier Page 7
5) Conformance/Non Conformance 8
6) QA Checklist 10
7) Chronicle 11
8) Hit Summary 13
9) Sample Data 17
- 9.1) OU4-TS-31-071725 18
- 9.2) OU4-TS-32-071725 19
- 9.3) OU4-TS-33-071725 20
- 9.4) OU4-TS-34-071725 21
- 9.5) OU4-TS-35-071725 22
- 9.6) OU4-TS-36-071725 23
- 9.7) OU4-TS-37-071725 24

10) METALS CALIBRATION DATA 25
- 10.1) Initial and Continuing Calibration Verification 26
- 10.2) CRDL Standard For AA & ICP 34
- 10.3) Initial and Continuing Calibration Blank Summary 35
- 10.4) Preparation Blank Summary 41
- 10.5) Interference Check Sample 43

11) METALS QC DATA 45
- 11.1) Matrix Spike Summary 46
- 11.2) Post Digest Spike Summary 50
- 11.3) Duplicate Sample Summary 51
- 11.4) Laboratory Control Sample Summary 55
- 11.5) ICP Serial Dilutions 57

12) METALS PREPARATION & INSTRUMENT DATA 59
- 12.1) ICP Interelement Correction Factors 60

13) PREPARATION & ANALYTICAL SUMMARY 65
- 13.1) Sample Preparation Summary 66
- 13.2) Analysis Run Log 68

14) METALS RAW DATA 70
- 14.1) METALS RAW DATA - ANALYTICAL 71

14.2) LB136562 71
14.3) LB136551 217
14.4) METALS RAW DATA - PREP 219
14.4.1) PB168917 219
14.4.2) PB168931 222
15) Percent Solid 225
16) Analytical Runlogs 229
17) Standard Prep Logs 235
18) Shipping Document 397
18.1) Chain Of Custody 398
18.2) Lab Certificate 399
18.3) Internal COC 400

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

Cover Page

Order ID : Q2638

Project ID : Raymark Superfund Site

Client : Nobis Group

Lab Sample Number	Client Sample Number
Q2638-01	OU4-TS-31-071725
Q2638-02	OU4-TS-31-071725
Q2638-03	OU4-TS-32-071725
Q2638-04	OU4-TS-32-071725
Q2638-05	OU4-TS-33-071725
Q2638-06	OU4-TS-33-071725
Q2638-07	OU4-TS-34-071725
Q2638-08	OU4-TS-34-071725
Q2638-09	OU4-TS-35-071725
Q2638-10	OU4-TS-35-071725
Q2638-11	OU4-TS-36-071725
Q2638-12	OU4-TS-36-071725
Q2638-13	OU4-TS-37-071725
Q2638-14	OU4-TS-37-071725

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 : **APPROVED**
By Sohil Jodhani, QA/QC Director at 9:45 am, Jul 30, 2025

Date: 7/25/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

CASE NARRATIVE

Nobis Group
Project Name: Raymark Superfund Site
Project # N/A
Order ID # Q2638
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
14 Solid samples were received on 07/18/2025.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Herbicide Group1, Mercury, Metals Group6, Metals ICP-TAL, METALS-TAL, PCB, Pesticide-TCL, SPLP Extraction, SPLP Mercury, SPLP MetalGroup3, SVOCMS Group3 and VOCMS Group3. This data package contains results for Mercury,Metals ICP-TAL.

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

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all compounds.
The Duplicate (OU4-TS-37-071725DUP) analysis met criteria for all compounds except for Cadmium due to sample matrix interference.
The Matrix Spike (OU4-TS-37-071725MS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium and Selenium due to Chemical Interference during Digestion process.
The Matrix Spike Duplicate (OU4-TS-37-071725MSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Cobalt, Selenium and Silver 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 (OU4-TS-37-071725L) met criteria for all compounds except for Calcium, Chromium, Copper, Magnesium and Manganese due to sample matrix interference.

E. Additional Comments:
The Post Digest Spike (OU4-TS-37-071725A) analysis met criteria for all compounds except for Arsenic, Beryllium, Chromium and Silver due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

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

Signature_ **APPROVED**
By Sohil Jodhani, QA/QC Director at 9:45 am, Jul 30, 2025

Alliance TECHNICAL GROUP
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: Q2638 MATRIX: Solid

METHOD: 6010D,7471B

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.		✓	
	The Serial Dilution (OU4-TS-37-071725L) met criteria for all compounds except for Calcium, Chromium, Copper, Magnesium and Manganese due to sample matrix interference.			
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Matrix Spike (OU4-TS-37-071725MS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium and Selenium due to Chemical Interference during Digestion process. The Matrix Spike Duplicate (OU4-TS-37-071725MSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Cobalt, Selenium and Silver due to Chemical Interference during Digestion process.			
7.	Sample Duplicate Analysis Met QC Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Duplicate (OU4-TS-37-071725DUP) analysis met criteria for all compounds except for Cadmium due to sample matrix interference.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY (CONTINUED)

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

ADDITIONAL COMMENTS: The Post Digest Spike (OU4-TS-37-071725A) analysis met criteria for all compounds except for Arsenic, Beryllium, Chromium and Silver due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

QA REVIEW

APPROVED
By Sohil Jodhani, QA/QC Director at 9:46 am, Jul 30, 2025

Date

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2638

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

QA Review Signature: SOHIL JODHANI **Date:** 07/25/2025

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

LAB CHRONICLE

OrderID:	Q2638	**OrderDate:**	7/18/2025 10:07:00 AM
Client:	Nobis Group	**Project:**	Raymark Superfund Site
Contact:	Adam Roy	**Location:**	O21,VOA Lab

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2638-01	**OU4-TS-31-071725**	**SOIL**			**07/17/25**			**07/18/25**
			Mercury	7471B		07/18/25	07/21/25	
			Metals ICP-TAL	6010D		07/18/25	07/21/25	
Q2638-02	**OU4-TS-31-071725**	**Water**			**07/17/25**			**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25	
			SPLP MetalGroup3	6020B		07/21/25	07/22/25	
Q2638-03	**OU4-TS-32-071725**	**SOIL**			**07/17/25**			**07/18/25**
			Mercury	7471B		07/18/25	07/21/25	
			Metals ICP-TAL	6010D		07/18/25	07/21/25	
Q2638-04	**OU4-TS-32-071725**	**Water**			**07/17/25**			**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25	
			SPLP MetalGroup3	6020B		07/21/25	07/22/25	
			SPLP MetalGroup3	6020B		07/21/25	07/24/25	
Q2638-05	**OU4-TS-33-071725**	**SOIL**			**07/17/25**			**07/18/25**
			Mercury	7471B		07/18/25	07/21/25	
			Metals ICP-TAL	6010D		07/18/25	07/21/25	
Q2638-06	**OU4-TS-33-071725**	**Water**			**07/17/25**			**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25	
			SPLP MetalGroup3	6020B		07/21/25	07/22/25	
			SPLP MetalGroup3	6020B		07/21/25	07/24/25	
Q2638-07	**OU4-TS-34-071725**	**SOIL**			**07/17/25**			**07/18/25**
			Mercury	7471B		07/18/25	07/21/25	
			Metals ICP-TAL	6010D		07/18/25	07/21/25	
Q2638-08	**OU4-TS-34-071725**	**Water**			**07/17/25**			**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25	

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

LAB CHRONICLE

			SPLP MetalGroup3	6020B		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/24/25
Q2638-09	**OU4-TS-35-071725**	**SOIL**			**07/17/25**		**07/18/25**
			Mercury	7471B		07/18/25	07/21/25
			Metals ICP-TAL	6010D		07/18/25	07/21/25
Q2638-10	**OU4-TS-35-071725**	**Water**			**07/17/25**		**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/24/25
Q2638-11	**OU4-TS-36-071725**	**SOIL**			**07/17/25**		**07/18/25**
			Mercury	7471B		07/18/25	07/21/25
			Metals ICP-TAL	6010D		07/18/25	07/21/25
Q2638-12	**OU4-TS-36-071725**	**Water**			**07/17/25**		**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/24/25
Q2638-13	**OU4-TS-37-071725**	**SOIL**			**07/17/25**		**07/18/25**
			Mercury	7471B		07/18/25	07/21/25
			Metals ICP-TAL	6010D		07/18/25	07/21/25
Q2638-14	**OU4-TS-37-071725**	**Water**			**07/17/25**		**07/18/25**
			SPLP Mercury	7470A		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/22/25
			SPLP MetalGroup3	6020B		07/21/25	07/24/25

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

Hit Summary Sheet
SW-846

SDG No.: Q2638 **Order ID:** Q2638

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : OU4-TS-31-071725									
Q2638-01	OU4-TS-31-071725	SOIL	Aluminum	14200		1.15	5.47	6.83	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Arsenic	18.1		0.26	1.09	1.37	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Barium	104		1.00	1.71	6.83	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Beryllium	0.72		0.034	0.10	0.41	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Cadmium	0.59		0.033	0.10	0.41	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Calcium	5850		15.2	34.2	137	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Chromium	19.4		0.064	0.17	0.68	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Cobalt	14.0		0.14	0.51	2.05	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Copper	60.0		0.30	1.09	1.37	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Iron	22700		5.45	5.47	6.83	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Lead	26.5		0.18	0.66	0.82	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Magnesium	5140		16.4	34.2	137	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Manganese	444		0.19	0.34	1.37	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Mercury	0.030		0.011	0.016	0.020	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Nickel	25.3		0.18	0.68	2.73	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Potassium	4990		37.8	109	137	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Silver	5.09		0.16	0.34	0.68	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Sodium	240		24.3	109	137	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Thallium	1.61	J	0.31	1.37	2.73	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Vanadium	33.3		0.34	1.37	2.73	mg/Kg
Q2638-01	OU4-TS-31-071725	SOIL	Zinc	82.2		0.31	0.68	2.73	mg/Kg
Client ID : OU4-TS-32-071725									
Q2638-03	OU4-TS-32-071725	SOIL	Aluminum	11900		1.13	5.39	6.74	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Arsenic	18.5		0.26	1.08	1.35	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Barium	90.7		0.98	1.68	6.74	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Beryllium	0.62		0.034	0.10	0.40	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Cadmium	0.45		0.032	0.10	0.40	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Calcium	6240		15.0	33.7	135	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Chromium	17.3		0.063	0.17	0.67	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Cobalt	11.5		0.14	0.51	2.02	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Copper	55.4		0.30	1.08	1.35	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Iron	19900		5.38	5.39	6.74	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Lead	24.5		0.18	0.65	0.81	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Magnesium	4620		16.2	33.7	135	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Manganese	401		0.19	0.34	1.35	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Mercury	0.071		0.011	0.015	0.019	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Nickel	21.4		0.18	0.67	2.69	mg/Kg

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

Hit Summary Sheet
SW-846

SDG No.: Q2638 **Order ID:** Q2638

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q2638-03	OU4-TS-32-071725	SOIL	Potassium	4450		37.3	108	135	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Silver	4.51		0.16	0.34	0.67	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Sodium	246		24.0	108	135	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Thallium	1.39	J	0.31	1.35	2.69	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Vanadium	29.8		0.34	1.35	2.69	mg/Kg
Q2638-03	OU4-TS-32-071725	SOIL	Zinc	77.3		0.31	0.67	2.69	mg/Kg
Client ID :	**OU4-TS-33-071725**								
Q2638-05	OU4-TS-33-071725	SOIL	Aluminum	13800		1.16	5.54	6.93	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Arsenic	22.1		0.26	1.11	1.39	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Barium	107		1.01	1.73	6.93	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Beryllium	0.74		0.035	0.10	0.42	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Cadmium	0.71		0.033	0.10	0.42	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Calcium	5450		15.4	34.7	139	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Chromium	19.0		0.065	0.17	0.69	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Cobalt	13.8		0.14	0.52	2.08	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Copper	62.3		0.31	1.11	1.39	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Iron	21500		5.53	5.54	6.93	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Lead	33.0		0.18	0.67	0.83	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Magnesium	5040		16.6	34.7	139	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Manganese	471		0.19	0.35	1.39	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Mercury	0.067		0.011	0.015	0.019	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Nickel	24.5		0.18	0.69	2.77	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Potassium	4710		38.4	111	139	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Silver	4.66		0.17	0.35	0.69	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Sodium	217		24.7	111	139	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Thallium	1.47	J	0.32	1.39	2.77	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Vanadium	33.3		0.35	1.39	2.77	mg/Kg
Q2638-05	OU4-TS-33-071725	SOIL	Zinc	81.3		0.32	0.69	2.77	mg/Kg
Client ID :	**OU4-TS-34-071725**								
Q2638-07	OU4-TS-34-071725	SOIL	Aluminum	12300		1.01	4.79	5.98	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Arsenic	18.3		0.23	0.96	1.20	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Barium	88.3		0.87	1.50	5.98	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Beryllium	0.67		0.030	0.090	0.36	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Cadmium	0.56		0.029	0.090	0.36	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Calcium	5530		13.3	29.9	120	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Chromium	17.3		0.056	0.15	0.60	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Cobalt	12.6		0.12	0.45	1.79	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Copper	56.7		0.26	0.96	1.20	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Iron	20000		4.77	4.79	5.98	mg/Kg

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

Hit Summary Sheet
SW-846

SDG No.: Q2638 **Order ID:** Q2638

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q2638-07	OU4-TS-34-071725	SOIL	Lead	24.8		0.16	0.57	0.72	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Magnesium	4620		14.4	29.9	120	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Manganese	416		0.17	0.30	1.20	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Mercury	0.069		0.011	0.015	0.019	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Nickel	22.3		0.16	0.60	2.39	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Potassium	4350		33.1	95.7	120	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Silver	4.43		0.14	0.30	0.60	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Sodium	209		21.3	95.7	120	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Thallium	1.41	J	0.28	1.20	2.39	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Vanadium	30.3		0.30	1.20	2.39	mg/Kg
Q2638-07	OU4-TS-34-071725	SOIL	Zinc	74.2		0.28	0.60	2.39	mg/Kg
Client ID :	**OU4-TS-35-071725**								
Q2638-09	OU4-TS-35-071725	SOIL	Aluminum	11600		0.91	4.35	5.44	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Arsenic	9.83		0.21	0.87	1.09	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Barium	84.0		0.80	1.36	5.44	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Beryllium	0.62		0.027	0.082	0.33	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Cadmium	0.61		0.026	0.082	0.33	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Calcium	2740		12.1	27.2	109	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Chromium	23.9		0.051	0.14	0.54	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Cobalt	13.3		0.11	0.41	1.63	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Copper	71.1		0.24	0.87	1.09	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Iron	21800		4.34	4.35	5.44	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Lead	26.8		0.14	0.52	0.65	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Magnesium	5180		13.1	27.2	109	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Manganese	357		0.15	0.27	1.09	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Mercury	0.068		0.0090	0.014	0.017	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Nickel	22.7		0.14	0.54	2.18	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Potassium	4350		30.1	87.1	109	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Silver	4.92		0.13	0.27	0.54	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Sodium	93.0	J	19.4	87.1	109	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Thallium	1.16	J	0.25	1.09	2.18	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Vanadium	33.2		0.27	1.09	2.18	mg/Kg
Q2638-09	OU4-TS-35-071725	SOIL	Zinc	82.9		0.25	0.54	2.18	mg/Kg
Client ID :	**OU4-TS-36-071725**								
Q2638-11	OU4-TS-36-071725	SOIL	Aluminum	11400		0.85	4.05	5.07	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Arsenic	9.50		0.19	0.81	1.01	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Barium	81.3		0.74	1.27	5.07	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Beryllium	0.60		0.025	0.076	0.30	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Cadmium	0.57		0.024	0.076	0.30	mg/Kg

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

Hit Summary Sheet
SW-846

SDG No.: Q2638 **Order ID:** Q2638

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q2638-11	OU4-TS-36-071725	SOIL	Calcium	2710		11.2	25.3	101	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Chromium	23.0		0.048	0.13	0.51	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Cobalt	13.0		0.10	0.38	1.52	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Copper	67.9		0.22	0.81	1.01	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Iron	20600		4.04	4.05	5.07	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Lead	26.4		0.13	0.49	0.61	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Magnesium	5000		12.2	25.3	101	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Manganese	344		0.14	0.25	1.01	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Mercury	0.062		0.0080	0.012	0.014	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Nickel	22.1		0.13	0.51	2.03	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Potassium	4140		28.1	81.1	101	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Silver	4.61		0.12	0.25	0.51	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Sodium	84.6	J	18.0	81.1	101	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Thallium	1.24	J	0.23	1.01	2.03	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Vanadium	32.1		0.25	1.01	2.03	mg/Kg
Q2638-11	OU4-TS-36-071725	SOIL	Zinc	78.8		0.23	0.51	2.03	mg/Kg
Client ID :	**OU4-TS-37-071725**								
Q2638-13	OU4-TS-37-071725	SOIL	Aluminum	11300		0.93	4.42	5.52	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Arsenic	9.62		0.21	0.88	1.10	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Barium	79.6		0.81	1.38	5.52	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Beryllium	0.61		0.028	0.083	0.33	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Cadmium	0.53		0.027	0.083	0.33	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Calcium	2620		12.3	27.6	110	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Chromium	22.8		0.052	0.14	0.55	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Cobalt	12.8		0.11	0.41	1.66	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Copper	69.1		0.24	0.88	1.10	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Iron	20400		4.41	4.42	5.52	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Lead	27.8		0.14	0.53	0.66	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Magnesium	4960		13.3	27.6	110	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Manganese	343		0.16	0.28	1.10	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Mercury	0.049		0.010	0.014	0.017	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Nickel	22.1		0.14	0.55	2.21	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Potassium	4010		30.6	88.4	110	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Silver	4.56		0.13	0.28	0.55	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Sodium	78.3	J	19.7	88.4	110	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Thallium	1.26	J	0.25	1.10	2.21	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Vanadium	31.4		0.28	1.10	2.21	mg/Kg
Q2638-13	OU4-TS-37-071725	SOIL	Zinc	79.7		0.25	0.55	2.21	mg/Kg

SAMPLE DATA

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-31-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	68.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	14200		1	1.15	5.47	6.83	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-36-0	Antimony	0.85	UN	1	0.30	0.85	3.42	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-38-2	Arsenic	18.1	N	1	0.26	1.09	1.37	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-39-3	Barium	104		1	1.00	1.71	6.83	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-41-7	Beryllium	0.72	N	1	0.034	0.10	0.41	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-43-9	Cadmium	0.59	*	1	0.033	0.10	0.41	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-70-2	Calcium	5850		1	15.2	34.2	137	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-47-3	Chromium	19.4	N	1	0.064	0.17	0.68	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-48-4	Cobalt	14.0	N	1	0.14	0.51	2.05	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-50-8	Copper	60.0		1	0.30	1.09	1.37	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7439-89-6	Iron	22700		1	5.45	5.47	6.83	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7439-92-1	Lead	26.5		1	0.18	0.66	0.82	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7439-95-4	Magnesium	5140		1	16.4	34.2	137	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7439-96-5	Manganese	444		1	0.19	0.34	1.37	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7439-97-6	Mercury	0.030		1	0.011	0.016	0.020	mg/Kg	07/18/25 15:50	07/21/25 12:33	7471B	
7440-02-0	Nickel	25.3		1	0.18	0.68	2.73	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-09-7	Potassium	4990		1	37.8	109	137	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7782-49-2	Selenium	1.09	UN	1	0.36	1.09	1.37	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-22-4	Silver	5.09	N	1	0.16	0.34	0.68	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-23-5	Sodium	240		1	24.3	109	137	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-28-0	Thallium	1.61	J	1	0.31	1.37	2.73	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-62-2	Vanadium	33.3		1	0.34	1.37	2.73	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050
7440-66-6	Zinc	82.2		1	0.31	0.68	2.73	mg/Kg	07/18/25 14:50	07/21/25 15:31	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-32-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	65.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	11900		1	1.13	5.39	6.74	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-36-0	Antimony	0.84	UN	1	0.30	0.84	3.37	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-38-2	Arsenic	18.5	N	1	0.26	1.08	1.35	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-39-3	Barium	90.7		1	0.98	1.68	6.74	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-41-7	Beryllium	0.62	N	1	0.034	0.10	0.40	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-43-9	Cadmium	0.45	*	1	0.032	0.10	0.40	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-70-2	Calcium	6240		1	15.0	33.7	135	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-47-3	Chromium	17.3	N	1	0.063	0.17	0.67	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-48-4	Cobalt	11.5	N	1	0.14	0.51	2.02	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-50-8	Copper	55.4		1	0.30	1.08	1.35	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7439-89-6	Iron	19900		1	5.38	5.39	6.74	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7439-92-1	Lead	24.5		1	0.18	0.65	0.81	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7439-95-4	Magnesium	4620		1	16.2	33.7	135	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7439-96-5	Manganese	401		1	0.19	0.34	1.35	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7439-97-6	Mercury	0.071		1	0.011	0.015	0.019	mg/Kg	07/18/25 15:50	07/21/25 12:35	7471B	
7440-02-0	Nickel	21.4		1	0.18	0.67	2.69	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-09-7	Potassium	4450		1	37.3	108	135	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7782-49-2	Selenium	1.08	UN	1	0.35	1.08	1.35	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-22-4	Silver	4.51	N	1	0.16	0.34	0.67	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-23-5	Sodium	246		1	24.0	108	135	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-28-0	Thallium	1.39	J	1	0.31	1.35	2.69	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-62-2	Vanadium	29.8		1	0.34	1.35	2.69	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050
7440-66-6	Zinc	77.3		1	0.31	0.67	2.69	mg/Kg	07/18/25 14:50	07/21/25 15:39	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-33-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-05	Matrix:	SOIL
Level (low/med):	low	% Solid:	64.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	13800		1	1.16	5.54	6.93	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-36-0	Antimony	0.87	UN	1	0.31	0.87	3.47	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-38-2	Arsenic	22.1	N	1	0.26	1.11	1.39	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-39-3	Barium	107		1	1.01	1.73	6.93	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-41-7	Beryllium	0.74	N	1	0.035	0.10	0.42	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-43-9	Cadmium	0.71	*	1	0.033	0.10	0.42	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-70-2	Calcium	5450		1	15.4	34.7	139	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-47-3	Chromium	19.0	N	1	0.065	0.17	0.69	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-48-4	Cobalt	13.8	N	1	0.14	0.52	2.08	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-50-8	Copper	62.3		1	0.31	1.11	1.39	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7439-89-6	Iron	21500		1	5.53	5.54	6.93	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7439-92-1	Lead	33.0		1	0.18	0.67	0.83	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7439-95-4	Magnesium	5040		1	16.6	34.7	139	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7439-96-5	Manganese	471		1	0.19	0.35	1.39	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7439-97-6	Mercury	0.067		1	0.011	0.015	0.019	mg/Kg	07/18/25 15:50	07/21/25 12:37	7471B	
7440-02-0	Nickel	24.5		1	0.18	0.69	2.77	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-09-7	Potassium	4710		1	38.4	111	139	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7782-49-2	Selenium	1.11	UN	1	0.36	1.11	1.39	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-22-4	Silver	4.66	N	1	0.17	0.35	0.69	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-23-5	Sodium	217		1	24.7	111	139	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-28-0	Thallium	1.47	J	1	0.32	1.39	2.77	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-62-2	Vanadium	33.3		1	0.35	1.39	2.77	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050
7440-66-6	Zinc	81.3		1	0.32	0.69	2.77	mg/Kg	07/18/25 14:50	07/21/25 15:55	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-34-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-07	Matrix:	SOIL
Level (low/med):	low	% Solid:	68.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	12300		1	1.01	4.79	5.98	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-36-0	Antimony	0.75	UN	1	0.26	0.75	2.99	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-38-2	Arsenic	18.3	N	1	0.23	0.96	1.20	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-39-3	Barium	88.3		1	0.87	1.50	5.98	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-41-7	Beryllium	0.67	N	1	0.030	0.090	0.36	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-43-9	Cadmium	0.56	*	1	0.029	0.090	0.36	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-70-2	Calcium	5530		1	13.3	29.9	120	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-47-3	Chromium	17.3	N	1	0.056	0.15	0.60	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-48-4	Cobalt	12.6	N	1	0.12	0.45	1.79	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-50-8	Copper	56.7		1	0.26	0.96	1.20	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7439-89-6	Iron	20000		1	4.77	4.79	5.98	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7439-92-1	Lead	24.8		1	0.16	0.57	0.72	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7439-95-4	Magnesium	4620		1	14.4	29.9	120	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7439-96-5	Manganese	416		1	0.17	0.30	1.20	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7439-97-6	Mercury	0.069		1	0.011	0.015	0.019	mg/Kg	07/18/25 15:50	07/21/25 12:40	7471B	
7440-02-0	Nickel	22.3		1	0.16	0.60	2.39	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-09-7	Potassium	4350		1	33.1	95.7	120	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7782-49-2	Selenium	0.96	UN	1	0.31	0.96	1.20	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-22-4	Silver	4.43	N	1	0.14	0.30	0.60	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-23-5	Sodium	209		1	21.3	95.7	120	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-28-0	Thallium	1.41	J	1	0.28	1.20	2.39	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-62-2	Vanadium	30.3		1	0.30	1.20	2.39	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050
7440-66-6	Zinc	74.2		1	0.28	0.60	2.39	mg/Kg	07/18/25 14:50	07/21/25 16:00	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-35-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	82.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	11600		1	0.91	4.35	5.44	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-36-0	Antimony	0.68	UN	1	0.24	0.68	2.72	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-38-2	Arsenic	9.83	N	1	0.21	0.87	1.09	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-39-3	Barium	84.0		1	0.80	1.36	5.44	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-41-7	Beryllium	0.62	N	1	0.027	0.082	0.33	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-43-9	Cadmium	0.61	*	1	0.026	0.082	0.33	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-70-2	Calcium	2740		1	12.1	27.2	109	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-47-3	Chromium	23.9	N	1	0.051	0.14	0.54	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-48-4	Cobalt	13.3	N	1	0.11	0.41	1.63	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-50-8	Copper	71.1		1	0.24	0.87	1.09	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7439-89-6	Iron	21800		1	4.34	4.35	5.44	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7439-92-1	Lead	26.8		1	0.14	0.52	0.65	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7439-95-4	Magnesium	5180		1	13.1	27.2	109	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7439-96-5	Manganese	357		1	0.15	0.27	1.09	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7439-97-6	Mercury	0.068		1	0.0090	0.014	0.017	mg/Kg	07/18/25 15:50	07/21/25 12:42	7471B	
7440-02-0	Nickel	22.7		1	0.14	0.54	2.18	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-09-7	Potassium	4350		1	30.1	87.1	109	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7782-49-2	Selenium	0.87	UN	1	0.28	0.87	1.09	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-22-4	Silver	4.92	N	1	0.13	0.27	0.54	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-23-5	Sodium	93.0	J	1	19.4	87.1	109	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-28-0	Thallium	1.16	J	1	0.25	1.09	2.18	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-62-2	Vanadium	33.2		1	0.27	1.09	2.18	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050
7440-66-6	Zinc	82.9		1	0.25	0.54	2.18	mg/Kg	07/18/25 14:50	07/21/25 16:04	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-36-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	81.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	11400		1	0.85	4.05	5.07	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-36-0	Antimony	0.63	UN	1	0.22	0.63	2.53	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-38-2	Arsenic	9.50	N	1	0.19	0.81	1.01	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-39-3	Barium	81.3		1	0.74	1.27	5.07	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-41-7	Beryllium	0.60	N	1	0.025	0.076	0.30	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-43-9	Cadmium	0.57	*	1	0.024	0.076	0.30	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-70-2	Calcium	2710		1	11.2	25.3	101	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-47-3	Chromium	23.0	N	1	0.048	0.13	0.51	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-48-4	Cobalt	13.0	N	1	0.10	0.38	1.52	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-50-8	Copper	67.9		1	0.22	0.81	1.01	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7439-89-6	Iron	20600		1	4.04	4.05	5.07	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7439-92-1	Lead	26.4		1	0.13	0.49	0.61	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7439-95-4	Magnesium	5000		1	12.2	25.3	101	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7439-96-5	Manganese	344		1	0.14	0.25	1.01	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7439-97-6	Mercury	0.062		1	0.0080	0.012	0.014	mg/Kg	07/18/25 15:50	07/21/25 12:44	7471B	
7440-02-0	Nickel	22.1		1	0.13	0.51	2.03	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-09-7	Potassium	4140		1	28.1	81.1	101	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7782-49-2	Selenium	0.81	UN	1	0.26	0.81	1.01	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-22-4	Silver	4.61	N	1	0.12	0.25	0.51	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-23-5	Sodium	84.6	J	1	18.0	81.1	101	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-28-0	Thallium	1.24	J	1	0.23	1.01	2.03	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-62-2	Vanadium	32.1		1	0.25	1.01	2.03	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050
7440-66-6	Zinc	78.8		1	0.23	0.51	2.03	mg/Kg	07/18/25 14:50	07/21/25 16:08	6010D	SW3050

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

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	07/17/25
Project:	Raymark Superfund Site	Date Received:	07/18/25
Client Sample ID:	OU4-TS-37-071725	SDG No.:	Q2638
Lab Sample ID:	Q2638-13	Matrix:	SOIL
Level (low/med):	low	% Solid:	81.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	11300		1	0.93	4.42	5.52	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-36-0	Antimony	0.69	UN	1	0.24	0.69	2.76	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-38-2	Arsenic	9.62	N	1	0.21	0.88	1.10	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-39-3	Barium	79.6		1	0.81	1.38	5.52	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-41-7	Beryllium	0.61	N	1	0.028	0.083	0.33	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-43-9	Cadmium	0.53	*	1	0.027	0.083	0.33	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-70-2	Calcium	2620		1	12.3	27.6	110	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-47-3	Chromium	22.8	N	1	0.052	0.14	0.55	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-48-4	Cobalt	12.8	N	1	0.11	0.41	1.66	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-50-8	Copper	69.1		1	0.24	0.88	1.10	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7439-89-6	Iron	20400		1	4.41	4.42	5.52	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7439-92-1	Lead	27.8		1	0.14	0.53	0.66	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7439-95-4	Magnesium	4960		1	13.3	27.6	110	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7439-96-5	Manganese	343		1	0.16	0.28	1.10	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7439-97-6	Mercury	0.049		1	0.010	0.014	0.017	mg/Kg	07/18/25 15:50	07/21/25 12:47	7471B	
7440-02-0	Nickel	22.1		1	0.14	0.55	2.21	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-09-7	Potassium	4010		1	30.6	88.4	110	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7782-49-2	Selenium	0.88	UN	1	0.29	0.88	1.10	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-22-4	Silver	4.56	N	1	0.13	0.28	0.55	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-23-5	Sodium	78.3	J	1	19.7	88.4	110	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-28-0	Thallium	1.26	J	1	0.25	1.10	2.21	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-62-2	Vanadium	31.4		1	0.28	1.10	2.21	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050
7440-66-6	Zinc	79.7		1	0.25	0.55	2.21	mg/Kg	07/18/25 14:50	07/21/25 16:12	6010D	SW3050

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

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

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

METAL CALIBRATION DATA

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group
SDG No.: Q2638
Contract: NOBI03
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
ICV34	Mercury	3.76	4.0	94	90 - 110	CV	07/21/2025	11:44	LB136551

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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
CCV28	Mercury	4.91	5.0	98	90 - 110	CV	07/21/2025	11:49	LB136551
CCV29	Mercury	5.02	5.0	100	90 - 110	CV	07/21/2025	12:28	LB136551
CCV30	Mercury	5.18	5.0	104	90 - 110	CV	07/21/2025	12:56	LB136551
CCV31	Mercury	5.11	5.0	102	90 - 110	CV	07/21/2025	13:09	LB136551

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	7970	8000	100	90 - 110	P	07/21/2025	12:33	LB136562
	Antimony	4210	4000	105	90 - 110	P	07/21/2025	12:33	LB136562
	Arsenic	3850	4000	96	90 - 110	P	07/21/2025	12:33	LB136562
	Barium	8000	8000	100	90 - 110	P	07/21/2025	12:33	LB136562
	Beryllium	198	200	99	90 - 110	P	07/21/2025	12:33	LB136562
	Cadmium	1890	2000	95	90 - 110	P	07/21/2025	12:33	LB136562
	Calcium	20000	20000	100	90 - 110	P	07/21/2025	12:33	LB136562
	Chromium	788	800	98	90 - 110	P	07/21/2025	12:33	LB136562
	Cobalt	1980	2000	99	90 - 110	P	07/21/2025	12:33	LB136562
	Copper	1010	1000	101	90 - 110	P	07/21/2025	12:33	LB136562
	Iron	4070	4000	102	90 - 110	P	07/21/2025	12:33	LB136562
	Lead	3890	4000	97	90 - 110	P	07/21/2025	12:33	LB136562
	Magnesium	19900	20000	99	90 - 110	P	07/21/2025	12:33	LB136562
	Manganese	2000	2000	100	90 - 110	P	07/21/2025	12:33	LB136562
	Nickel	1980	2000	99	90 - 110	P	07/21/2025	12:33	LB136562
	Potassium	19800	20000	99	90 - 110	P	07/21/2025	12:33	LB136562
	Selenium	3940	4000	98	90 - 110	P	07/21/2025	12:33	LB136562
	Silver	1090	1000	109	90 - 110	P	07/21/2025	12:33	LB136562
	Sodium	19400	20000	97	90 - 110	P	07/21/2025	12:33	LB136562
	Thallium	3810	4000	95	90 - 110	P	07/21/2025	12:33	LB136562
	Vanadium	2020	2000	101	90 - 110	P	07/21/2025	12:33	LB136562
	Zinc	2000	2000	100	90 - 110	P	07/21/2025	12:33	LB136562

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	108	100	108	80 - 120	P	07/21/2025	12:55	LB136562
	Antimony	57.5	50.0	115	80 - 120	P	07/21/2025	12:55	LB136562
	Arsenic	22.9	20.0	115	80 - 120	P	07/21/2025	12:55	LB136562
	Barium	106	100	106	80 - 120	P	07/21/2025	12:55	LB136562
	Beryllium	6.25	6.0	104	80 - 120	P	07/21/2025	12:55	LB136562
	Cadmium	5.82	6.0	97	80 - 120	P	07/21/2025	12:55	LB136562
	Calcium	2160	2000	108	80 - 120	P	07/21/2025	12:55	LB136562
	Chromium	9.88	10.0	99	80 - 120	P	07/21/2025	12:55	LB136562
	Cobalt	30.9	30.0	103	80 - 120	P	07/21/2025	12:55	LB136562
	Copper	21.9	20.0	109	80 - 120	P	07/21/2025	12:55	LB136562
	Iron	118	100	118	80 - 120	P	07/21/2025	12:55	LB136562
	Lead	11.9	12.0	100	80 - 120	P	07/21/2025	12:55	LB136562
	Magnesium	2250	2000	112	80 - 120	P	07/21/2025	12:55	LB136562
	Manganese	22.8	20.0	114	80 - 120	P	07/21/2025	12:55	LB136562
	Nickel	41.8	40.0	105	80 - 120	P	07/21/2025	12:55	LB136562
	Potassium	1740	2000	87	80 - 120	P	07/21/2025	12:55	LB136562
	Selenium	23.2	20.0	116	80 - 120	P	07/21/2025	12:55	LB136562
	Silver	10.2	10.0	102	80 - 120	P	07/21/2025	12:55	LB136562
	Sodium	1620	2000	81	80 - 120	P	07/21/2025	12:55	LB136562
	Thallium	45.9	40.0	115	80 - 120	P	07/21/2025	12:55	LB136562
	Vanadium	35.5	40.0	89	80 - 120	P	07/21/2025	12:55	LB136562
	Zinc	44.2	40.0	111	80 - 120	P	07/21/2025	12:55	LB136562

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

Metals

- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	9920	10000	99	90 - 110	P	07/21/2025	13:36	LB136562
	Antimony	4970	5000	100	90 - 110	P	07/21/2025	13:36	LB136562
	Arsenic	4990	5000	100	90 - 110	P	07/21/2025	13:36	LB136562
	Barium	10100	10000	101	90 - 110	P	07/21/2025	13:36	LB136562
	Beryllium	239	250	96	90 - 110	P	07/21/2025	13:36	LB136562
	Cadmium	2440	2500	98	90 - 110	P	07/21/2025	13:36	LB136562
	Calcium	25400	25000	102	90 - 110	P	07/21/2025	13:36	LB136562
	Chromium	947	1000	95	90 - 110	P	07/21/2025	13:36	LB136562
	Cobalt	2410	2500	96	90 - 110	P	07/21/2025	13:36	LB136562
	Copper	1230	1250	98	90 - 110	P	07/21/2025	13:36	LB136562
	Iron	4920	5000	98	90 - 110	P	07/21/2025	13:36	LB136562
	Lead	4870	5000	98	90 - 110	P	07/21/2025	13:36	LB136562
	Magnesium	24500	25000	98	90 - 110	P	07/21/2025	13:36	LB136562
	Manganese	2500	2500	100	90 - 110	P	07/21/2025	13:36	LB136562
	Nickel	2420	2500	97	90 - 110	P	07/21/2025	13:36	LB136562
	Potassium	24700	25000	99	90 - 110	P	07/21/2025	13:36	LB136562
	Selenium	5060	5000	101	90 - 110	P	07/21/2025	13:36	LB136562
	Silver	1230	1250	98	90 - 110	P	07/21/2025	13:36	LB136562
	Sodium	24000	25000	96	90 - 110	P	07/21/2025	13:36	LB136562
	Thallium	5090	5000	102	90 - 110	P	07/21/2025	13:36	LB136562
	Vanadium	2450	2500	98	90 - 110	P	07/21/2025	13:36	LB136562
	Zinc	2490	2500	100	90 - 110	P	07/21/2025	13:36	LB136562
CCV02	Aluminum	9840	10000	98	90 - 110	P	07/21/2025	14:46	LB136562
	Antimony	5030	5000	100	90 - 110	P	07/21/2025	14:46	LB136562
	Arsenic	4990	5000	100	90 - 110	P	07/21/2025	14:46	LB136562
	Barium	10200	10000	102	90 - 110	P	07/21/2025	14:46	LB136562
	Beryllium	244	250	98	90 - 110	P	07/21/2025	14:46	LB136562
	Cadmium	2400	2500	96	90 - 110	P	07/21/2025	14:46	LB136562
	Calcium	25500	25000	102	90 - 110	P	07/21/2025	14:46	LB136562
	Chromium	944	1000	94	90 - 110	P	07/21/2025	14:46	LB136562
	Cobalt	2390	2500	96	90 - 110	P	07/21/2025	14:46	LB136562
	Copper	1220	1250	98	90 - 110	P	07/21/2025	14:46	LB136562
	Iron	4830	5000	96	90 - 110	P	07/21/2025	14:46	LB136562
	Lead	4830	5000	96	90 - 110	P	07/21/2025	14:46	LB136562

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

Metals

- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	24000	25000	96	90 - 110	P	07/21/2025	14:46	LB136562
	Manganese	2490	2500	100	90 - 110	P	07/21/2025	14:46	LB136562
	Nickel	2400	2500	96	90 - 110	P	07/21/2025	14:46	LB136562
	Potassium	24700	25000	99	90 - 110	P	07/21/2025	14:46	LB136562
	Selenium	5100	5000	102	90 - 110	P	07/21/2025	14:46	LB136562
	Silver	1220	1250	98	90 - 110	P	07/21/2025	14:46	LB136562
	Sodium	23100	25000	92	90 - 110	P	07/21/2025	14:46	LB136562
	Thallium	5440	5000	109	90 - 110	P	07/21/2025	14:46	LB136562
	Vanadium	2420	2500	97	90 - 110	P	07/21/2025	14:46	LB136562
	Zinc	2470	2500	99	90 - 110	P	07/21/2025	14:46	LB136562
CCV03	Aluminum	9580	10000	96	90 - 110	P	07/21/2025	15:47	LB136562
	Antimony	4870	5000	98	90 - 110	P	07/21/2025	15:47	LB136562
	Arsenic	4870	5000	98	90 - 110	P	07/21/2025	15:47	LB136562
	Barium	9930	10000	99	90 - 110	P	07/21/2025	15:47	LB136562
	Beryllium	234	250	94	90 - 110	P	07/21/2025	15:47	LB136562
	Cadmium	2370	2500	95	90 - 110	P	07/21/2025	15:47	LB136562
	Calcium	24700	25000	99	90 - 110	P	07/21/2025	15:47	LB136562
	Chromium	917	1000	92	90 - 110	P	07/21/2025	15:47	LB136562
	Cobalt	2340	2500	94	90 - 110	P	07/21/2025	15:47	LB136562
	Copper	1190	1250	96	90 - 110	P	07/21/2025	15:47	LB136562
	Iron	4840	5000	97	90 - 110	P	07/21/2025	15:47	LB136562
	Lead	4730	5000	95	90 - 110	P	07/21/2025	15:47	LB136562
	Magnesium	23400	25000	94	90 - 110	P	07/21/2025	15:47	LB136562
	Manganese	2410	2500	97	90 - 110	P	07/21/2025	15:47	LB136562
	Nickel	2360	2500	94	90 - 110	P	07/21/2025	15:47	LB136562
	Potassium	24400	25000	98	90 - 110	P	07/21/2025	15:47	LB136562
	Selenium	4940	5000	99	90 - 110	P	07/21/2025	15:47	LB136562
	Silver	1210	1250	97	90 - 110	P	07/21/2025	15:47	LB136562
	Sodium	23400	25000	94	90 - 110	P	07/21/2025	15:47	LB136562
	Thallium	4700	5000	94	90 - 110	P	07/21/2025	15:47	LB136562
	Vanadium	2350	2500	94	90 - 110	P	07/21/2025	15:47	LB136562
	Zinc	2440	2500	98	90 - 110	P	07/21/2025	15:47	LB136562
CCV04	Aluminum	9970	10000	100	90 - 110	P	07/21/2025	16:50	LB136562
	Antimony	5140	5000	103	90 - 110	P	07/21/2025	16:50	LB136562

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

Metals

- 2a -
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	5160	5000	103	90 - 110	P	07/21/2025	16:50	LB136562
	Barium	10400	10000	104	90 - 110	P	07/21/2025	16:50	LB136562
	Beryllium	246	250	98	90 - 110	P	07/21/2025	16:50	LB136562
	Cadmium	2470	2500	99	90 - 110	P	07/21/2025	16:50	LB136562
	Calcium	25800	25000	103	90 - 110	P	07/21/2025	16:50	LB136562
	Chromium	947	1000	95	90 - 110	P	07/21/2025	16:50	LB136562
	Cobalt	2450	2500	98	90 - 110	P	07/21/2025	16:50	LB136562
	Copper	1250	1250	100	90 - 110	P	07/21/2025	16:50	LB136562
	Iron	4970	5000	100	90 - 110	P	07/21/2025	16:50	LB136562
	Lead	4950	5000	99	90 - 110	P	07/21/2025	16:50	LB136562
	Magnesium	24300	25000	97	90 - 110	P	07/21/2025	16:50	LB136562
	Manganese	2540	2500	102	90 - 110	P	07/21/2025	16:50	LB136562
	Nickel	2470	2500	99	90 - 110	P	07/21/2025	16:50	LB136562
	Potassium	25400	25000	102	90 - 110	P	07/21/2025	16:50	LB136562
	Selenium	5280	5000	106	90 - 110	P	07/21/2025	16:50	LB136562
	Silver	1250	1250	100	90 - 110	P	07/21/2025	16:50	LB136562
	Sodium	23400	25000	94	90 - 110	P	07/21/2025	16:50	LB136562
	Thallium	5450	5000	109	90 - 110	P	07/21/2025	16:50	LB136562
	Vanadium	2440	2500	98	90 - 110	P	07/21/2025	16:50	LB136562
	Zinc	2530	2500	101	90 - 110	P	07/21/2025	16:50	LB136562
CCV05	Aluminum	9440	10000	94	90 - 110	P	07/21/2025	17:27	LB136562
	Antimony	4870	5000	97	90 - 110	P	07/21/2025	17:27	LB136562
	Arsenic	4730	5000	95	90 - 110	P	07/21/2025	17:27	LB136562
	Barium	9820	10000	98	90 - 110	P	07/21/2025	17:27	LB136562
	Beryllium	237	250	95	90 - 110	P	07/21/2025	17:27	LB136562
	Cadmium	2270	2500	91	90 - 110	P	07/21/2025	17:27	LB136562
	Calcium	24300	25000	97	90 - 110	P	07/21/2025	17:27	LB136562
	Chromium	913	1000	91	90 - 110	P	07/21/2025	17:27	LB136562
	Cobalt	2310	2500	92	90 - 110	P	07/21/2025	17:27	LB136562
	Copper	1170	1250	94	90 - 110	P	07/21/2025	17:27	LB136562
	Iron	4630	5000	93	90 - 110	P	07/21/2025	17:27	LB136562
	Lead	4570	5000	91	90 - 110	P	07/21/2025	17:27	LB136562
	Magnesium	23100	25000	92	90 - 110	P	07/21/2025	17:27	LB136562
	Manganese	2410	2500	96	90 - 110	P	07/21/2025	17:27	LB136562

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	2320	2500	93	90 - 110	P	07/21/2025	17:27	LB136562
	Potassium	23800	25000	95	90 - 110	P	07/21/2025	17:27	LB136562
	Selenium	4840	5000	97	90 - 110	P	07/21/2025	17:27	LB136562
	Silver	1200	1250	96	90 - 110	P	07/21/2025	17:27	LB136562
	Sodium	22900	25000	92	90 - 110	P	07/21/2025	17:27	LB136562
	Thallium	5390	5000	108	90 - 110	P	07/21/2025	17:27	LB136562
	Vanadium	2320	2500	93	90 - 110	P	07/21/2025	17:27	LB136562
	Zinc	2430	2500	97	90 - 110	P	07/21/2025	17:27	LB136562

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

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	0.24	0.2	119	70 - 130	CV	07/21/2025	11:59	LB136551
CRI01	Aluminum	107	100	107	65 - 135	P	07/21/2025	13:08	LB136562
	Antimony	54.0	50.0	108	65 - 135	P	07/21/2025	13:08	LB136562
	Arsenic	21.3	20.0	106	65 - 135	P	07/21/2025	13:08	LB136562
	Barium	105	100	105	65 - 135	P	07/21/2025	13:08	LB136562
	Beryllium	6.18	6.0	103	65 - 135	P	07/21/2025	13:08	LB136562
	Cadmium	5.89	6.0	98	65 - 135	P	07/21/2025	13:08	LB136562
	Calcium	2140	2000	107	65 - 135	P	07/21/2025	13:08	LB136562
	Chromium	9.92	10.0	99	65 - 135	P	07/21/2025	13:08	LB136562
	Cobalt	30.8	30.0	102	65 - 135	P	07/21/2025	13:08	LB136562
	Copper	21.8	20.0	109	65 - 135	P	07/21/2025	13:08	LB136562
	Iron	122	100	122	65 - 135	P	07/21/2025	13:08	LB136562
	Lead	12.0	12.0	100	65 - 135	P	07/21/2025	13:08	LB136562
	Magnesium	2220	2000	111	65 - 135	P	07/21/2025	13:08	LB136562
	Manganese	22.8	20.0	114	65 - 135	P	07/21/2025	13:08	LB136562
	Nickel	42.2	40.0	106	65 - 135	P	07/21/2025	13:08	LB136562
	Potassium	1710	2000	85	65 - 135	P	07/21/2025	13:08	LB136562
	Selenium	22.6	20.0	113	65 - 135	P	07/21/2025	13:08	LB136562
	Silver	10.1	10.0	100	65 - 135	P	07/21/2025	13:08	LB136562
	Sodium	1570	2000	79	65 - 135	P	07/21/2025	13:08	LB136562
	Thallium	46.8	40.0	117	65 - 135	P	07/21/2025	13:08	LB136562
	Vanadium	39.0	40.0	97	65 - 135	P	07/21/2025	13:08	LB136562
	Zinc	44.0	40.0	110	65 - 135	P	07/21/2025	13:08	LB136562

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB34	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	07/21/2025	11:47	LB136551

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB28	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	07/21/2025	11:51	LB136551
CCB29	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	07/21/2025	12:31	LB136551
CCB30	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	07/21/2025	12:58	LB136551
CCB31	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	07/21/2025	13:12	LB136551

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	13:04	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	13:04	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	13:04	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	13:04	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	13:04	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	13:04	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	13:04	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	13:04	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	13:04	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	13:04	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	13:04	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	13:04	LB136562
	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	13:04	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	13:04	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	13:04	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	13:04	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	13:04	LB136562
	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	13:04	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	13:04	LB136562
	Thallium	4.38	+/-20	U	20.0	40.0	P	07/21/2025	13:04	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	13:04	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	13:04	LB136562

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	13:55	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	13:55	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	13:55	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	13:55	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	13:55	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	13:55	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	13:55	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	13:55	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	13:55	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	13:55	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	13:55	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	13:55	LB136562
	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	13:55	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	13:55	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	13:55	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	13:55	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	13:55	LB136562
	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	13:55	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	13:55	LB136562
	Thallium	4.38	+/-20	U	20.0	40.0	P	07/21/2025	13:55	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	13:55	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	13:55	LB136562
CCB02	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	14:51	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	14:51	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	14:51	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	14:51	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	14:51	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	14:51	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	14:51	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	14:51	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	14:51	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	14:51	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	14:51	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	14:51	LB136562
	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	14:51	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	14:51	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	14:51	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	14:51	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	14:51	LB136562

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	14:51	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	14:51	LB136562
	Thallium	4.38	+/-20	U	20.0	40.0	P	07/21/2025	14:51	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	14:51	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	14:51	LB136562
CCB03	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	15:51	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	15:51	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	15:51	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	15:51	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	15:51	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	15:51	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	15:51	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	15:51	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	15:51	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	15:51	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	15:51	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	15:51	LB136562
	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	15:51	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	15:51	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	15:51	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	15:51	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	15:51	LB136562
	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	15:51	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	15:51	LB136562
	Thallium	8.57	+/-20	J	20.0	40.0	P	07/21/2025	15:51	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	15:51	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	15:51	LB136562
CCB04	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	16:56	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	16:56	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	16:56	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	16:56	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	16:56	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	16:56	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	16:56	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	16:56	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	16:56	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	16:56	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	16:56	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	16:56	LB136562

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	16:56	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	16:56	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	16:56	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	16:56	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	16:56	LB136562
	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	16:56	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	16:56	LB136562
	Thallium	7.38	+/-20	J	20.0	40.0	P	07/21/2025	16:56	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	16:56	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	16:56	LB136562
CCB05	Aluminum	11.3	+/-50	U	80.0	100	P	07/21/2025	17:31	LB136562
	Antimony	6.76	+/-25	U	12.5	50.0	P	07/21/2025	17:31	LB136562
	Arsenic	5.12	+/-10	U	15.0	20.0	P	07/21/2025	17:31	LB136562
	Barium	14.6	+/-50	U	25.0	100	P	07/21/2025	17:31	LB136562
	Beryllium	0.56	+/-3	U	1.50	6.00	P	07/21/2025	17:31	LB136562
	Cadmium	0.50	+/-3	U	1.50	6.00	P	07/21/2025	17:31	LB136562
	Calcium	234	+/-1000	U	500	2000	P	07/21/2025	17:31	LB136562
	Chromium	2.12	+/-5	U	5.00	10.0	P	07/21/2025	17:31	LB136562
	Cobalt	2.26	+/-15	U	7.50	30.0	P	07/21/2025	17:31	LB136562
	Copper	4.60	+/-10	U	16.0	20.0	P	07/21/2025	17:31	LB136562
	Iron	23.4	+/-50	U	80.0	100	P	07/21/2025	17:31	LB136562
	Lead	2.30	+/-6	U	9.60	12.0	P	07/21/2025	17:31	LB136562
	Magnesium	244	+/-1000	U	500	2000	P	07/21/2025	17:31	LB136562
	Manganese	5.94	+/-10	U	15.0	20.0	P	07/21/2025	17:31	LB136562
	Nickel	3.06	+/-20	U	10.0	40.0	P	07/21/2025	17:31	LB136562
	Potassium	918	+/-1000	U	1600	2000	P	07/21/2025	17:31	LB136562
	Selenium	9.64	+/-10	U	16.0	20.0	P	07/21/2025	17:31	LB136562
	Silver	1.62	+/-5	U	5.00	10.0	P	07/21/2025	17:31	LB136562
	Sodium	868	+/-1000	U	1000	2000	P	07/21/2025	17:31	LB136562
	Thallium	4.38	+/-20	U	20.0	40.0	P	07/21/2025	17:31	LB136562
	Vanadium	6.26	+/-20	U	20.0	40.0	P	07/21/2025	17:31	LB136562
	Zinc	16.7	+/-20	U	15.0	40.0	P	07/21/2025	17:31	LB136562

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB168931BL		**SOLID**		**Batch Number:**		**PB168931**		**Prep Date:**	**07/18/2025**	
	Mercury	0.0070	<0.013	U	0.010	0.013	CV	07/21/2025	12:06	LB136551

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB168917BL		**SOLID**		**Batch Number:**		**PB168917**		**Prep Date:**	**07/18/2025**	
	Aluminum	0.84	<2.5	U	4.00	5.00	P	07/21/2025	15:19	LB136562
	Antimony	0.22	<1.25	U	0.63	2.50	P	07/21/2025	15:19	LB136562
	Arsenic	0.19	<0.5	U	0.80	1.00	P	07/21/2025	15:19	LB136562
	Barium	0.73	<2.5	U	1.25	5.00	P	07/21/2025	15:19	LB136562
	Beryllium	0.025	<0.15	U	0.075	0.30	P	07/21/2025	15:19	LB136562
	Cadmium	0.024	<0.15	U	0.075	0.30	P	07/21/2025	15:19	LB136562
	Calcium	11.1	<50	U	25.0	100	P	07/21/2025	15:19	LB136562
	Chromium	0.047	<0.25	U	0.13	0.50	P	07/21/2025	15:19	LB136562
	Cobalt	0.10	<0.75	U	0.38	1.50	P	07/21/2025	15:19	LB136562
	Copper	0.22	<0.5	U	0.80	1.00	P	07/21/2025	15:19	LB136562
	Iron	3.99	<2.5	U	4.00	5.00	P	07/21/2025	15:19	LB136562
	Lead	0.13	<0.3	U	0.48	0.60	P	07/21/2025	15:19	LB136562
	Magnesium	12.0	<50	U	25.0	100	P	07/21/2025	15:19	LB136562
	Manganese	0.14	<0.5	U	0.25	1.00	P	07/21/2025	15:19	LB136562
	Nickel	0.13	<1	U	0.50	2.00	P	07/21/2025	15:19	LB136562
	Potassium	27.7	<50	U	80.0	100	P	07/21/2025	15:19	LB136562
	Selenium	0.26	<0.5	U	0.80	1.00	P	07/21/2025	15:19	LB136562
	Silver	0.12	<0.25	U	0.25	0.50	P	07/21/2025	15:19	LB136562
	Sodium	17.8	<50	U	80.0	100	P	07/21/2025	15:19	LB136562
	Thallium	0.39	<1	J	1.00	2.00	P	07/21/2025	15:19	LB136562
	Vanadium	0.25	<1	U	1.00	2.00	P	07/21/2025	15:19	LB136562
	Zinc	0.23	<1	U	0.50	2.00	P	07/21/2025	15:19	LB136562

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	258000	255000	101	216000	294000	07/21/2025	13:13	LB136562
	Antimony	-3.12			-50	50	07/21/2025	13:13	LB136562
	Arsenic	11.0			-20	20	07/21/2025	13:13	LB136562
	Barium	4.41	6.0	74	-94	106	07/21/2025	13:13	LB136562
	Beryllium	0.67			-6	6	07/21/2025	13:13	LB136562
	Cadmium	-1.46	1.0	146	-5	7	07/21/2025	13:13	LB136562
	Calcium	246000	245000	100	208000	282000	07/21/2025	13:13	LB136562
	Chromium	56.3	52.0	108	42	62	07/21/2025	13:13	LB136562
	Cobalt	2.27			-30	30	07/21/2025	13:13	LB136562
	Copper	12.2	2.0	610	-18	22	07/21/2025	13:13	LB136562
	Iron	100000	101000	99	85600	116500	07/21/2025	13:13	LB136562
	Lead	-7.52			-12	12	07/21/2025	13:13	LB136562
	Magnesium	256000	255000	100	216000	294000	07/21/2025	13:13	LB136562
	Manganese	8.38	7.0	120	-13	27	07/21/2025	13:13	LB136562
	Nickel	5.64	2.0	282	-38	42	07/21/2025	13:13	LB136562
	Potassium	-167			0	0	07/21/2025	13:13	LB136562
	Selenium	-6.02			-20	20	07/21/2025	13:13	LB136562
	Silver	-0.16			-10	10	07/21/2025	13:13	LB136562
	Sodium	-265			0	0	07/21/2025	13:13	LB136562
	Thallium	7.66			-40	40	07/21/2025	13:13	LB136562
	Vanadium	4.46			-40	40	07/21/2025	13:13	LB136562
	Zinc	2.18			-40	40	07/21/2025	13:13	LB136562
ICSAB01	Aluminum	259000	247000	105	209000	285000	07/21/2025	13:24	LB136562
	Antimony	600	618	97	525	711	07/21/2025	13:24	LB136562
	Arsenic	106	104	102	88.4	120	07/21/2025	13:24	LB136562
	Barium	503	537	94	437	637	07/21/2025	13:24	LB136562
	Beryllium	480	495	97	420	570	07/21/2025	13:24	LB136562
	Cadmium	927	972	95	826	1120	07/21/2025	13:24	LB136562
	Calcium	247000	235000	105	199000	271000	07/21/2025	13:24	LB136562
	Chromium	524	542	97	460	624	07/21/2025	13:24	LB136562
	Cobalt	488	476	102	404	548	07/21/2025	13:24	LB136562
	Copper	470	511	92	434	588	07/21/2025	13:24	LB136562
	Iron	102000	99300	103	84400	114500	07/21/2025	13:24	LB136562
	Lead	37.7	49.0	77	37	61	07/21/2025	13:24	LB136562
	Magnesium	257000	248000	104	210000	286000	07/21/2025	13:24	LB136562
	Manganese	494	507	97	430	584	07/21/2025	13:24	LB136562
	Nickel	966	954	101	810	1100	07/21/2025	13:24	LB136562
	Potassium	-362			0	0	07/21/2025	13:24	LB136562
	Selenium	42.0	46.0	91	26	66	07/21/2025	13:24	LB136562
	Silver	210	201	104	170	232	07/21/2025	13:24	LB136562
	Sodium	-281			0	0	07/21/2025	13:24	LB136562
	Thallium	102	108	94	68	148	07/21/2025	13:24	LB136562

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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	480	491	98	417	565	07/21/2025	13:24	LB136562
	Zinc	1020	952	107	809	1095	07/21/2025	13:24	LB136562

METAL QC DATA

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q2638

contract: NOBI03 **lab code:** ACE

matrix: Solid **sample id:** Q2621-01 **client id:** TR-05-07162025MS

Percent Solids for Sample: 94.1 **Spiked ID:** Q2621-01MS **Percent Solids for Spike Sample:** 94.1

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.27		0.027		0.28	85		CV

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q2638

contract: NOBI03 **lab code:** ACE

matrix: Solid **sample id:** Q2621-01 **client id:** TR-05-07162025MSD

Percent Solids for Sample: 94.1 **Spiked ID:** Q2621-01MSD **Percent Solids for Spike Sample:** 94.1

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.27		0.027		0.28	87		CV

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q2638

contract: NOBI03 **lab code:** ACE

matrix: Solid **sample id:** Q2638-13 **client id:** OU4-TS-37-071725MS

Percent Solids for Sample: 81.2 **Spiked ID:** Q2638-13MS **Percent Solids for Spike Sample:** 81.2

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	13200		11300		110	1722		P
Antimony	mg/Kg	79 - 114	10.0		2.76	U	44.2	23	N	P
Arsenic	mg/Kg	82 - 111	41.7		9.62		44.2	73	N	P
Barium	mg/Kg	83 - 113	99.6		79.6		11.0	182		P
Beryllium	mg/Kg	83 - 113	8.42		0.61		11.0	71	N	P
Cadmium	mg/Kg	82 - 113	10.5		0.53		11.0	90		P
Calcium	mg/Kg	81 - 116	3030		2620		55.2	742		P
Chromium	mg/Kg	85 - 113	40.7		22.8		22.1	81	N	P
Cobalt	mg/Kg	85 - 112	24.5		12.8		11.0	107		P
Copper	mg/Kg	81 - 117	85.7		69.1		16.6	100		P
Iron	mg/Kg	81 - 118	22800		20400		170	1406		P
Lead	mg/Kg	81 - 112	74.9		27.8		55.2	85		P
Magnesium	mg/Kg	78 - 115	5680		4960		110	658		P
Manganese	mg/Kg	84 - 114	392		343		11.0	443		P
Nickel	mg/Kg	83 - 113	50.1		22.1		27.6	102		P
Potassium	mg/Kg	81 - 116	4920		4010		550	166		P
Selenium	mg/Kg	78 - 111	75.2		1.10	U	110	68	N	P
Silver	mg/Kg	82 - 112	8.02		4.56		4.1	84		P
Sodium	mg/Kg	83 - 118	226		78.3	J	170	87		P
Thallium	mg/Kg	83 - 111	104		1.26	J	110	94		P
Vanadium	mg/Kg	82 - 114	47.7		31.4		16.6	98		P
Zinc	mg/Kg	82 - 113	94.3		79.7		11.0	133		P

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q2638

contract: NOBI03 **lab code:** ACE

matrix: Solid **sample id:** Q2638-13 **client id:** OU4-TS-37-071725MSD

Percent Solids for Sample: 81.2 **Spiked ID:** Q2638-13MSD **Percent Solids for Spike Sample:** 81.2

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	12400		11300		98.9	1074		P
Antimony	mg/Kg	79 - 114	9.17		2.76	U	39.6	23	N	P
Arsenic	mg/Kg	82 - 111	40.2		9.62		39.6	77	N	P
Barium	mg/Kg	83 - 113	94.4		79.6		9.9	149		P
Beryllium	mg/Kg	83 - 113	8.32		0.61		9.9	78	N	P
Cadmium	mg/Kg	82 - 113	10.4		0.53		9.9	100		P
Calcium	mg/Kg	81 - 116	2870		2620		49.5	520		P
Chromium	mg/Kg	85 - 113	39.4		22.8		19.8	84	N	P
Cobalt	mg/Kg	85 - 112	24.1		12.8		9.9	115	N	P
Copper	mg/Kg	81 - 117	83.2		69.1		14.8	95		P
Iron	mg/Kg	81 - 118	21500		20400		150	739		P
Lead	mg/Kg	81 - 112	73.2		27.8		49.5	92		P
Magnesium	mg/Kg	78 - 115	5450		4960		98.9	502		P
Manganese	mg/Kg	84 - 114	379		343		9.9	356		P
Nickel	mg/Kg	83 - 113	49.4		22.1		24.7	111		P
Potassium	mg/Kg	81 - 116	4710		4010		490	143		P
Selenium	mg/Kg	78 - 111	73.1		1.10	U	98.9	74	N	P
Silver	mg/Kg	82 - 112	7.56		4.56		3.7	81	N	P
Sodium	mg/Kg	83 - 118	215		78.3	J	150	91		P
Thallium	mg/Kg	83 - 111	102		1.26	J	98.9	102		P
Vanadium	mg/Kg	82 - 114	45.3		31.4		14.8	94		P
Zinc	mg/Kg	82 - 113	91.8		79.7		9.9	123		P

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

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Matrix: Solid **Level:** LOW **Client ID:** OU4-TS-37-071725A

Sample ID: Q2638-13 **Spiked ID:** Q2638-13A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	79 - 114	37.5		2.76	U	44.2	85		P
Arsenic	mg/Kg	82 - 111	45.3		9.62		44.2	81	N	P
Beryllium	mg/Kg	83 - 113	9.66		0.61		11.0	82	N	P
Chromium	mg/Kg	85 - 113	40.1		22.8		22.1	78	N	P
Cobalt	mg/Kg	85 - 112	24.0		12.8		11.0	102		P
Selenium	mg/Kg	78 - 111	87.3		1.10	U	110	79		P
Silver	mg/Kg	82 - 112	7.74		4.56		4.10	78	N	P

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

Metals

- 6 -
DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2621-01 **Client ID:** TR-05-07162025DUP

Percent Solids for Sample: 94.1 **Duplicate ID** Q2621-01DUP **Percent Solids for Spike Sample:** 94.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.027		0.024		12		CV

"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: Nobis Group **Level:** LOW **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2621-01MS **Client ID:** TR-05-07162025MSD

Percent Solids for Sample: 94.1 **Duplicate ID** Q2621-01MSD **Percent Solids for Spike Sample:** 94.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.27		0.27		2		CV

"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: Nobis Group **Level:** LOW **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2638-13 **Client ID:** OU4-TS-37-071725DUP

Percent Solids for Sample: 81.2 **Duplicate ID** Q2638-13DUP **Percent Solids for Spike Sample:** 81.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	11300		12300		8		P
Antimony	mg/Kg	20	2.76	U	2.56	U			P
Arsenic	mg/Kg	20	9.62		10.3		6		P
Barium	mg/Kg	20	79.6		87.8		10		P
Beryllium	mg/Kg	20	0.61		0.66		9		P
Cadmium	mg/Kg	20	0.53		0.72		31	*	P
Calcium	mg/Kg	20	2620		3040		15		P
Chromium	mg/Kg	20	22.8		25.3		10		P
Cobalt	mg/Kg	20	12.8		14.3		11		P
Copper	mg/Kg	20	69.1		74.8		8		P
Iron	mg/Kg	20	20400		22600		10		P
Lead	mg/Kg	20	27.8		29.4		6		P
Magnesium	mg/Kg	20	4960		5380		8		P
Manganese	mg/Kg	20	343		373		8		P
Nickel	mg/Kg	20	22.1		25.0		12		P
Potassium	mg/Kg	20	4010		4470		11		P
Selenium	mg/Kg	20	1.10	U	1.02	U			P
Silver	mg/Kg	20	4.56		5.13		12		P
Sodium	mg/Kg	20	78.3	J	94.7	J	19		P
Thallium	mg/Kg	20	1.26	J	1.28	J	2		P
Vanadium	mg/Kg	20	31.4		34.4		9		P
Zinc	mg/Kg	20	79.7		86.1		8		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: Nobis Group **Level:** LOW **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Matrix: Solid **Sample ID:** Q2638-13MS **Client ID:** OU4-TS-37-071725MSD

Percent Solids for Sample: 81.2 **Duplicate ID** Q2638-13MSD **Percent Solids for Spike Sample:** 81.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	13200		12400		6		P
Antimony	mg/Kg	20	10.0		9.17		9		P
Arsenic	mg/Kg	20	41.7		40.2		4		P
Barium	mg/Kg	20	99.6		94.4		5		P
Beryllium	mg/Kg	20	8.42		8.32		1		P
Cadmium	mg/Kg	20	10.5		10.4		1		P
Calcium	mg/Kg	20	3030		2870		5		P
Chromium	mg/Kg	20	40.7		39.4		3		P
Cobalt	mg/Kg	20	24.5		24.1		2		P
Copper	mg/Kg	20	85.7		83.2		3		P
Iron	mg/Kg	20	22800		21500		6		P
Lead	mg/Kg	20	74.9		73.2		2		P
Magnesium	mg/Kg	20	5680		5450		4		P
Manganese	mg/Kg	20	392		379		3		P
Nickel	mg/Kg	20	50.1		49.4		1		P
Potassium	mg/Kg	20	4920		4710		4		P
Selenium	mg/Kg	20	75.2		73.1		3		P
Silver	mg/Kg	20	8.02		7.56		6		P
Sodium	mg/Kg	20	226		215		5		P
Thallium	mg/Kg	20	104		102		2		P
Vanadium	mg/Kg	20	47.7		45.3		5		P
Zinc	mg/Kg	20	94.3		91.8		3		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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168917BS							
Aluminum	mg/Kg	100	103		103	74 - 119	P
Antimony	mg/Kg	40.0	42.0		105	79 - 114	P
Arsenic	mg/Kg	40.0	39.0		98	82 - 111	P
Barium	mg/Kg	10.0	10.6		106	83 - 113	P
Beryllium	mg/Kg	10.0	10.6		106	83 - 113	P
Cadmium	mg/Kg	10.0	9.45		94	82 - 113	P
Calcium	mg/Kg	50.0	56.7	J	113	81 - 116	P
Chromium	mg/Kg	20.0	19.8		99	85 - 113	P
Cobalt	mg/Kg	10.0	10.0		100	85 - 112	P
Copper	mg/Kg	15.0	15.7		105	81 - 117	P
Iron	mg/Kg	150	153		102	81 - 118	P
Lead	mg/Kg	50.0	47.3		95	81 - 112	P
Magnesium	mg/Kg	100	103		103	78 - 115	P
Manganese	mg/Kg	10.0	10.6		106	84 - 114	P
Nickel	mg/Kg	25.0	25.3		101	83 - 113	P
Potassium	mg/Kg	500	497		99	81 - 116	P
Selenium	mg/Kg	100	101		101	78 - 111	P
Silver	mg/Kg	3.8	3.74		98	82 - 112	P
Sodium	mg/Kg	150	130		87	83 - 118	P
Thallium	mg/Kg	100	108		108	83 - 111	P
Vanadium	mg/Kg	15.0	15.0		100	82 - 114	P
Zinc	mg/Kg	10.0	10.7		107	82 - 113	P

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168931BS							
Mercury	mg/Kg	0.27	0.23		86	80 - 124	CV

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

TR-05-07162025L

Lab Name: Alliance **Contract:** NOBI03

Lab Code: ACE **Lb No.:** lb136551 **Lab Sample ID :** Q2621-01L **SDG No.:** Q2638

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

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Mercury	0.027		0.068	U	100.0		CV

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

OU4-TS-37-071725L

Lab Name: Alliance **Contract:** NOBI03

Lab Code: ACE **Lb No.:** lb136562 **Lab Sample ID :** Q2638-13L **SDG No.:** Q2638

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

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	11300		13200		17		P
Antimony	2.76	U	13.8	U			P
Arsenic	9.62		11.1		15		P
Barium	79.6		94.7		19		P
Beryllium	0.61		0.67	J	11		P
Cadmium	0.53		1.66	U	100.0		P
Calcium	2620		3170		21		P
Chromium	22.8		27.6		21		P
Cobalt	12.8		12.4		3		P
Copper	69.1		85.2		23		P
Iron	20400		24400		19		P
Lead	27.8		27.4		1		P
Magnesium	4960		6050		22		P
Manganese	343		422		23		P
Nickel	22.1		21.8		1		P
Potassium	4010		4560		14		P
Selenium	1.10	U	5.52	U			P
Silver	4.56		5.32		17		P
Sodium	78.3	J	552	U	100.0		P
Thallium	1.26	J	2.94	J	133		P
Vanadium	31.4		36.9		18		P
Zinc	79.7		94.2		18		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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **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: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB168917**						
PB168917BL	PB168917BL	MB	SOLID	07/18/2025	2.00	100.0	100.00
PB168917BS	PB168917BS	LCS	SOLID	07/18/2025	2.00	100.0	100.00
Q2638-01	OU4-TS-31-071725	SAM	SOLID	07/18/2025	2.14	100.0	68.40
Q2638-03	OU4-TS-32-071725	SAM	SOLID	07/18/2025	2.28	100.0	65.10
Q2638-05	OU4-TS-33-071725	SAM	SOLID	07/18/2025	2.23	100.0	64.70
Q2638-07	OU4-TS-34-071725	SAM	SOLID	07/18/2025	2.44	100.0	68.50
Q2638-09	OU4-TS-35-071725	SAM	SOLID	07/18/2025	2.23	100.0	82.40
Q2638-11	OU4-TS-36-071725	SAM	SOLID	07/18/2025	2.41	100.0	81.90
Q2638-13	OU4-TS-37-071725	SAM	SOLID	07/18/2025	2.23	100.0	81.20
Q2638-13DUP	OU4-TS-37-071725DUP	DUP	SOLID	07/18/2025	2.41	100.0	81.20
Q2638-13MS	OU4-TS-37-071725MS	MS	SOLID	07/18/2025	2.23	100.0	81.20
Q2638-13MSD	OU4-TS-37-071725MSD	MSD	SOLID	07/18/2025	2.49	100.0	81.20

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Nobis Group **SDG No.:** Q2638

Contract: NOBI03 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB168931**						
PB168931BL	PB168931BL	MB	SOLID	07/18/2025	0.56	35.0	100.00
PB168931BS	PB168931BS	LCS	SOLID	07/18/2025	0.52	35.0	100.00
Q2621-01DUP	TR-05-07162025DUP	DUP	SOLID	07/18/2025	0.53	35.0	94.10
Q2621-01MS	TR-05-07162025MS	MS	SOLID	07/18/2025	0.53	35.0	94.10
Q2621-01MSD	TR-05-07162025MSD	MSD	SOLID	07/18/2025	0.53	35.0	94.10
Q2638-01	OU4-TS-31-071725	SAM	SOLID	07/18/2025	0.52	35.0	68.40
Q2638-03	OU4-TS-32-071725	SAM	SOLID	07/18/2025	0.57	35.0	65.10
Q2638-05	OU4-TS-33-071725	SAM	SOLID	07/18/2025	0.56	35.0	64.70
Q2638-07	OU4-TS-34-071725	SAM	SOLID	07/18/2025	0.54	35.0	68.50
Q2638-09	OU4-TS-35-071725	SAM	SOLID	07/18/2025	0.50	35.0	82.40
Q2638-11	OU4-TS-36-071725	SAM	SOLID	07/18/2025	0.59	35.0	81.90
Q2638-13	OU4-TS-37-071725	SAM	SOLID	07/18/2025	0.50	35.0	81.20

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

Lab code: ACE **Sdg no.:** Q2638

Instrument id number: **Method:** **Run number:** LB136551

Start date: 07/21/2025 **End date:** 07/21/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1129	HG
S0.2	S0.2	1	1132	HG
S2.5	S2.5	1	1134	HG
S5	S5	1	1136	HG
S7.5	S7.5	1	1139	HG
S10	S10	1	1141	HG
ICV34	ICV34	1	1144	HG
ICB34	ICB34	1	1147	HG
CCV28	CCV28	1	1149	HG
CCB28	CCB28	1	1151	HG
CRA	CRA	1	1159	HG
PB168931BL	PB168931BL	1	1206	HG
PB168931BS	PB168931BS	1	1208	HG
Q2621-01DUP	TR-05-07162025DUP	1	1219	HG
Q2621-01MS	TR-05-07162025MS	1	1221	HG
Q2621-01MSD	TR-05-07162025MSD	1	1223	HG
CCV29	CCV29	1	1228	HG
CCB29	CCB29	1	1231	HG
Q2638-01	OU4-TS-31-071725	1	1233	HG
Q2638-03	OU4-TS-32-071725	1	1235	HG
Q2638-05	OU4-TS-33-071725	1	1237	HG
Q2638-07	OU4-TS-34-071725	1	1240	HG
Q2638-09	OU4-TS-35-071725	1	1242	HG
Q2638-11	OU4-TS-36-071725	1	1244	HG
Q2638-13	OU4-TS-37-071725	1	1247	HG
CCV30	CCV30	1	1256	HG
CCB30	CCB30	1	1258	HG
Q2621-01L	TR-05-07162025L	5	1305	HG
CCV31	CCV31	1	1309	HG
CCB31	CCB31	1	1312	HG

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

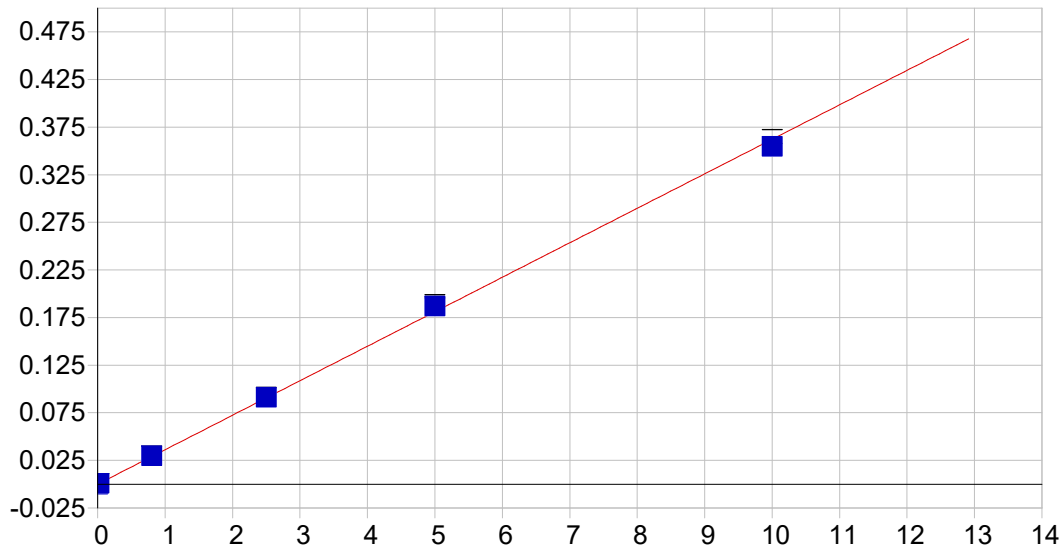
Lab code: ACE **Sdg no.:** Q2638

Instrument id number: **Method:** **Run number:** LB136562

Start date: 07/21/2025 **End date:** 07/21/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1128	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	1133	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	1137	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	1141	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	1145	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	1149	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	1233	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	1255	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	1304	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	1324	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	1336	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	1355	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	1446	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	1451	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB168917BL	PB168917BL	1	1519	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-01	OU4-TS-31-071725	1	1531	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-03	OU4-TS-32-071725	1	1539	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	1547	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	1551	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-05	OU4-TS-33-071725	1	1555	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-07	OU4-TS-34-071725	1	1600	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-09	OU4-TS-35-071725	1	1604	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-11	OU4-TS-36-071725	1	1608	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13	OU4-TS-37-071725	1	1612	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13DUP	OU4-TS-37-071725DUP	1	1616	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13L	OU4-TS-37-071725L	5	1621	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13MS	OU4-TS-37-071725MS	1	1625	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13MSD	OU4-TS-37-071725MSD	1	1629	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2638-13A	OU4-TS-37-071725A	1	1633	Ag,As,Be,Co,Cr,Sb,Se
CCV04	CCV04	1	1650	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	1656	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB168917BS	PB168917BS	1	1707	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	1727	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	1731	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

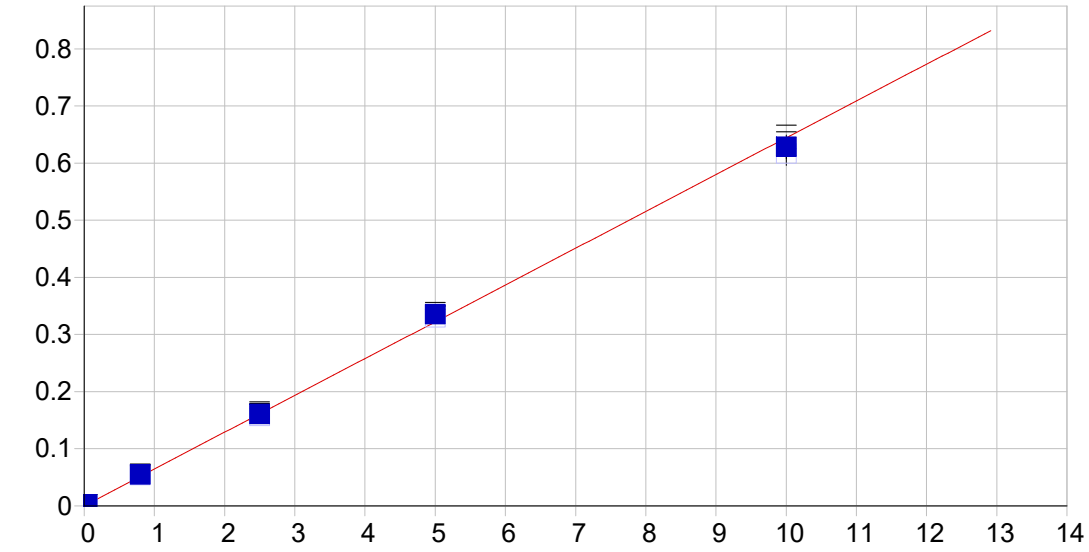


As 189.042 {479}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000015	Re-Slope:	1.000000
A1 (Gain):	0.036224	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999723	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.003280		
Predicted MQL:	0.010932		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00002	.000	1
S1	.02000	.02110	.001	5.48	.00075	.000	1
S3	2.5000	2.5167	.017	.666	.09105	.000	1
S4	5.0000	5.1629	.163	3.26	.18681	.002	1
S5	10.000	9.7980	-.202	-2.02	.35452	.007	1
S2	.80000	.82135	.021	2.67	.02971	.000	1

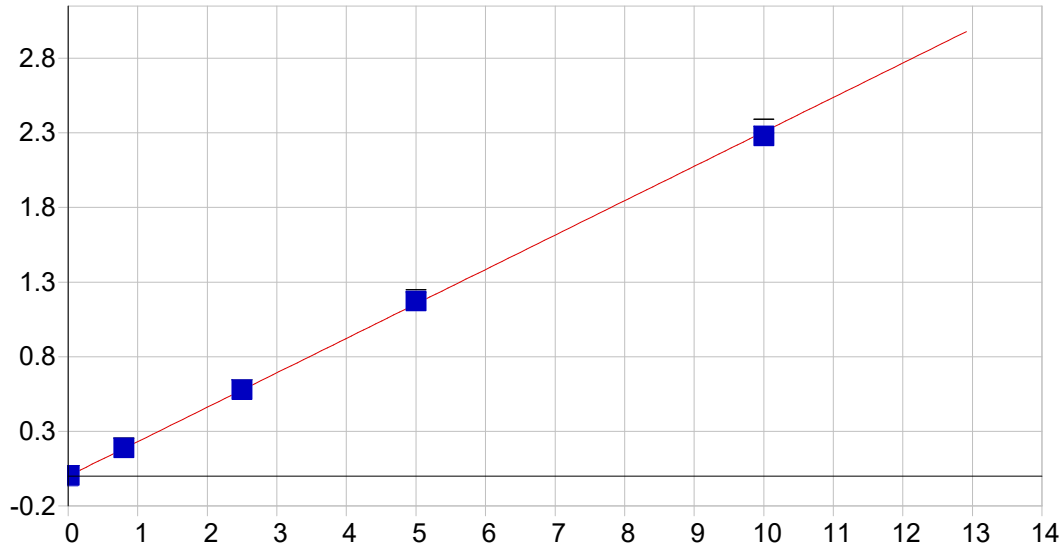


Tl 190.856 {477}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000169	Re-Slope:	1.000000
A1 (Gain):	0.064417	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999496	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.002317		
Predicted MQL:	0.007724		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00017	.000	1
S1	.04000	.04217	.002	5.44	.00272	.000	1
S3	2.5000	2.4890	-.011	-.442	.15754	.004	1
S4	5.0000	5.2074	.207	4.15	.32970	.003	1
S5	10.000	9.7531	-.247	-2.47	.61660	.021	1
S2	.80000	.84849	.048	6.06	.05388	.001	1

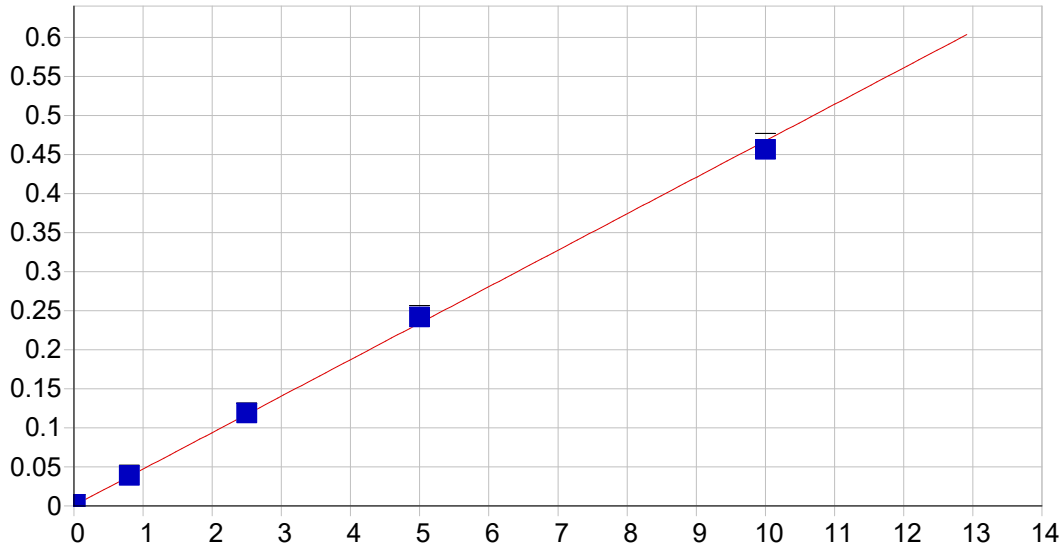


Pb 220.353 {453}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000062	Re-Slope:	1.000000
A1 (Gain):	0.230695	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999907	Status:	OK.
Std Error of Est:	0.000057		
Predicted MDL:	0.001388		
Predicted MQL:	0.004627		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00006	.000	1
S1	.01200	.01255	.001	4.61	.00278	.000	1
S3	2.5000	2.5122	.012	.490	.57891	.001	1
S4	5.0000	5.0868	.087	1.74	1.1723	.010	1
S5	10.000	9.8822	-.118	-1.18	2.2773	.046	1
S2	.80000	.81817	.018	2.27	.18849	.001	1

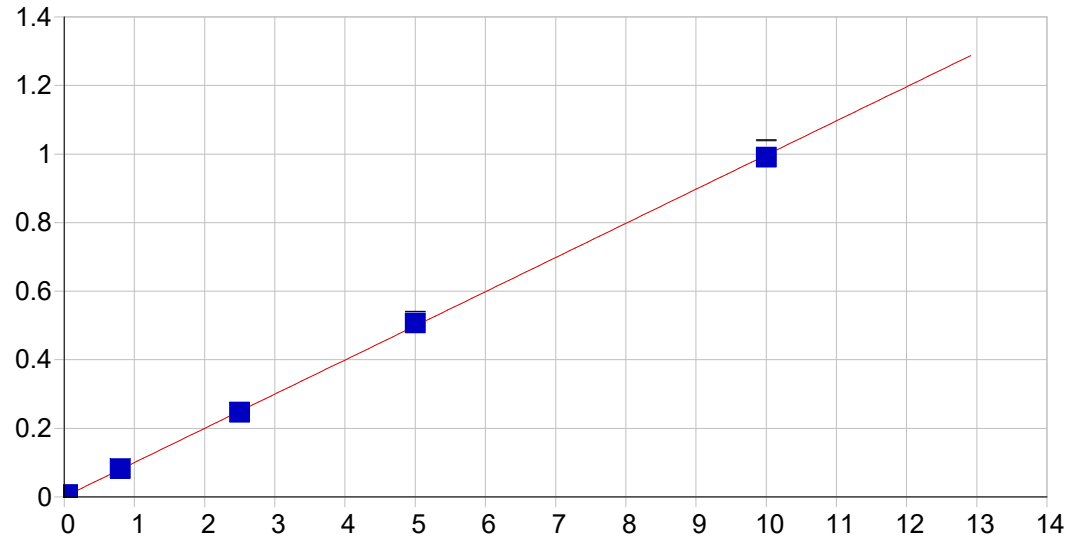


Se 196.090 {472}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000456	Re-Slope:	1.000000
A1 (Gain):	0.046700	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999629	Status:	OK.
Std Error of Est:	0.000030		
Predicted MDL:	0.004290		
Predicted MQL:	0.014301		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00046	.000	1
S1	.02000	.02477	.005	23.9	.00161	.000	1
S3	2.5000	2.5341	.034	1.36	.11877	.000	1
S4	5.0000	5.1683	.168	3.37	.24175	.002	1
S5	10.000	9.7666	-.233	-2.33	.45642	.008	1
S2	.80000	.82627	.026	3.28	.03903	.000	1

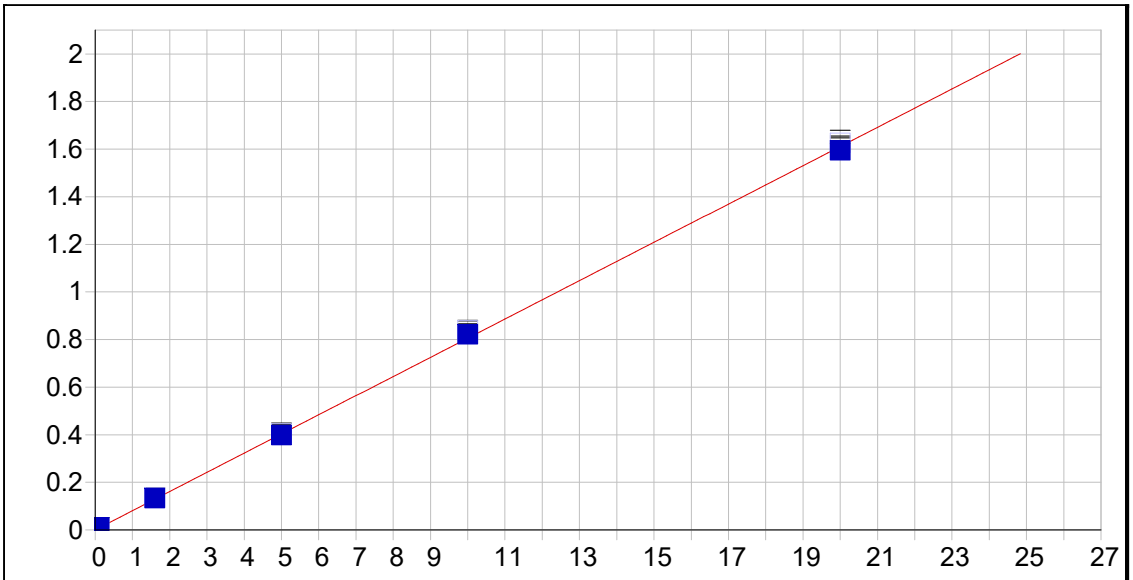


Sb 206.833 {463}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000647	Re-Slope:	1.000000
A1 (Gain):	0.099639	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999905	Status:	OK.
Std Error of Est:	0.000051		
Predicted MDL:	0.002078		
Predicted MQL:	0.006926		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00065	.000	1
S1	.05000	.05564	.006	11.3	.00620	.000	1
S3	2.5000	2.4639	-.036	-1.44	.24683	.001	1
S4	5.0000	5.0809	.081	1.62	.50826	.004	1
S5	10.000	9.9291	-.071	-.709	.99268	.020	1
S2	.80000	.82046	.020	2.56	.08261	.000	1

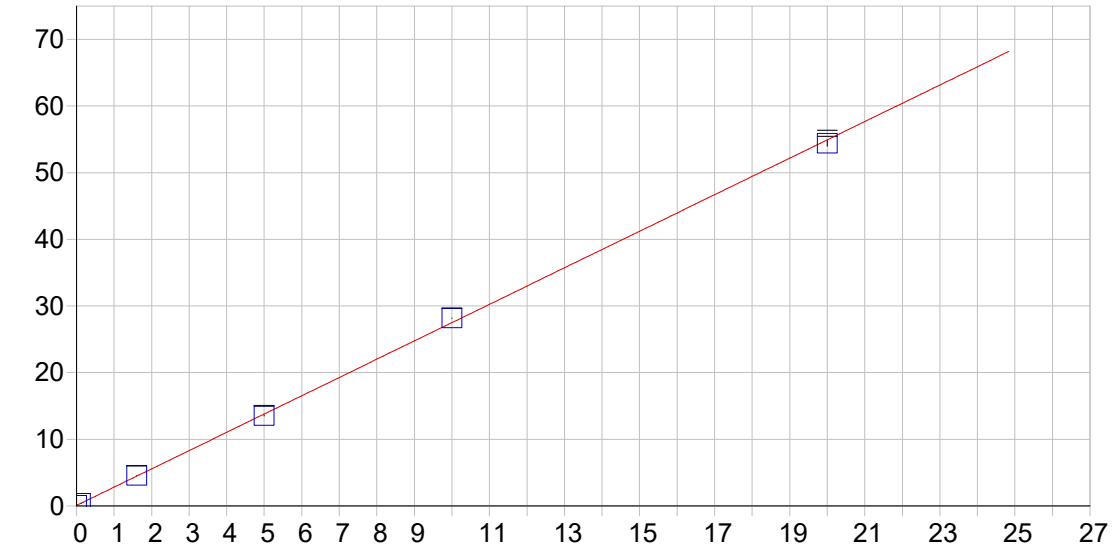


Al 396.152 { 85}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000320	Re-Slope:	1.000000
A1 (Gain):	0.080536	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999804	Status:	OK.
Std Error of Est:	0.000120		
Predicted MDL:	0.012425		
Predicted MQL:	0.041418		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00032	.000	1
S1	.10000	.12467	.025	24.7	.01099	.001	1
S3	5.0000	4.9303	-.070	-1.39	.40520	.002	1
S4	10.000	10.205	.205	2.05	.83782	.002	1
S5	20.000	19.790	-.210	-1.05	1.6254	.012	1
S2	1.6000	1.6484	.048	3.02	.13557	.001	1

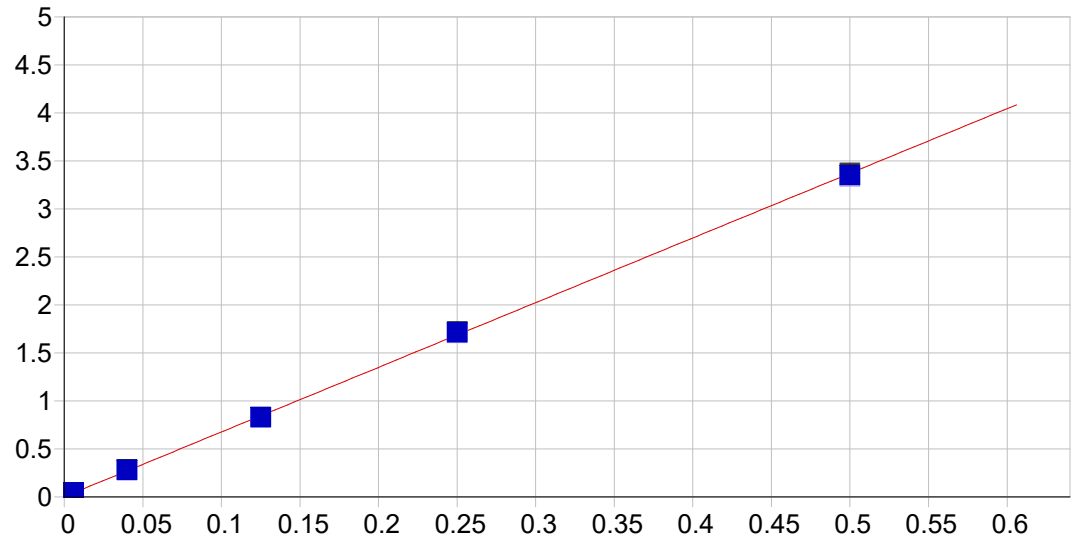


Ba 493.409 { 68}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.074545	Re-Slope:	1.000000
A1 (Gain):	2.742629	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999857	Status:	OK.
Std Error of Est:	0.003440		
Predicted MDL:	0.000904		
Predicted MQL:	0.003013		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.07452	.003	1
S1	.10000	.10747	.007	7.47	.36930	.002	1
S3	5.0000	4.9050	-.095	-1.90	13.527	.040	1
S4	10.000	10.244	.244	2.44	28.171	.025	1
S5	20.000	19.816	-.184	-.921	54.422	.452	1
S2	1.6000	1.6273	.027	1.71	4.5377	.011	1

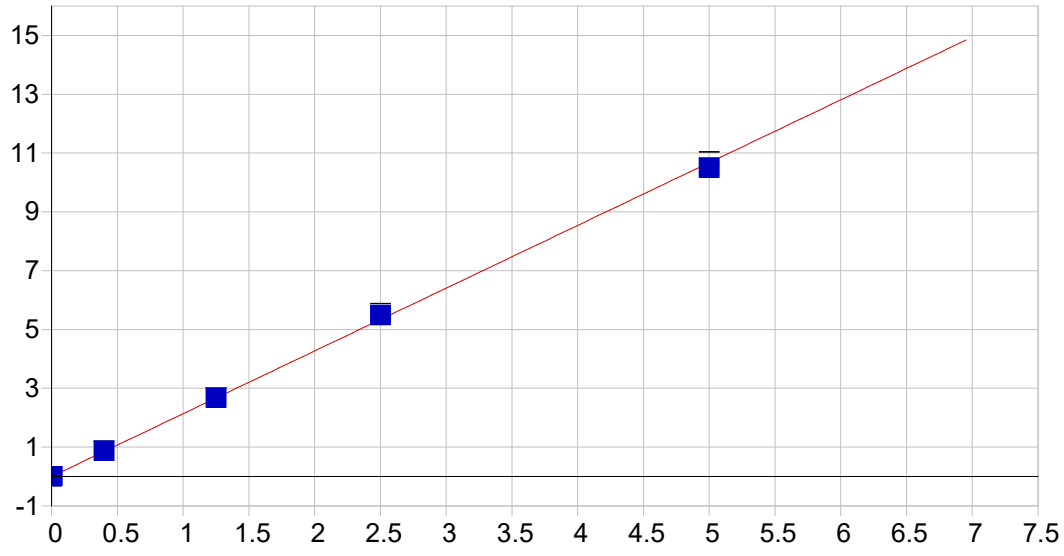


Be 234.861 {144}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002333	Re-Slope:	1.000000
A1 (Gain):	6.737600	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999884	Status:	OK.
Std Error of Est:	0.000294		
Predicted MDL:	0.000076		
Predicted MQL:	0.000254		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00233	.000	1
S1	.00600	.00653	.001	8.76	.04600	.000	1
S3	.12500	.12265	-.002	-1.88	.82492	.002	1
S4	.25000	.25407	.004	1.63	1.7066	.007	1
S5	.50000	.49662	-.003	-.676	3.3333	.024	1
S2	.04000	.04114	.001	2.84	.27829	.003	1

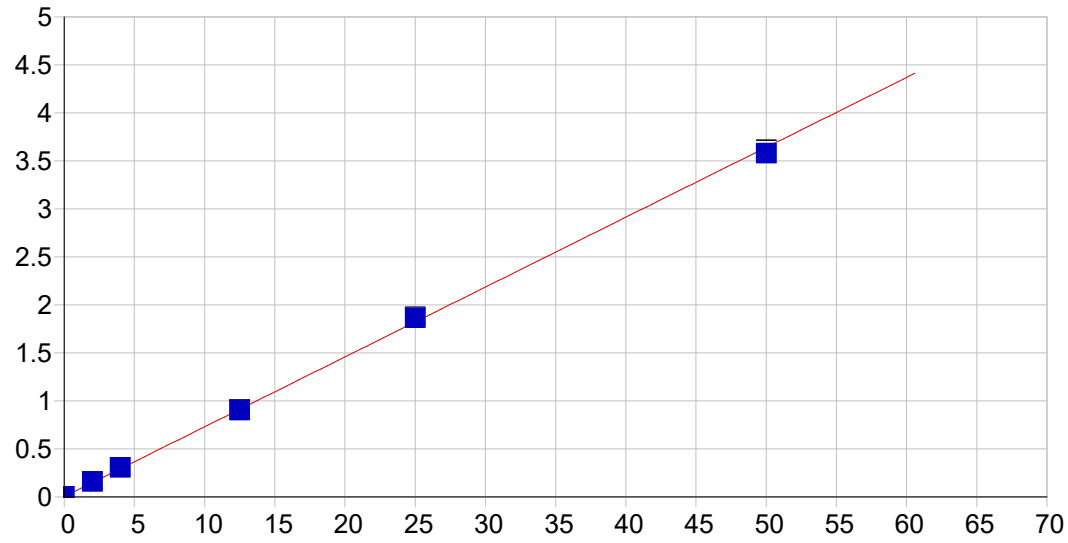


Cd 226.502 {449}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000717	Re-Slope:	1.000000
A1 (Gain):	2.135385	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999808	Status:	OK.
Std Error of Est:	0.000380		
Predicted MDL:	0.000115		
Predicted MQL:	0.000384		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00072	.000	1
S1	.00600	.00625	.000	4.11	.01267	.000	1
S3	1.2500	1.2531	.003	.249	2.6770	.008	1
S4	2.5000	2.5719	.072	2.88	5.4951	.052	1
S5	5.0000	4.9183	-.082	-1.63	10.509	.200	1
S2	.40000	.40647	.006	1.62	.86784	.002	1

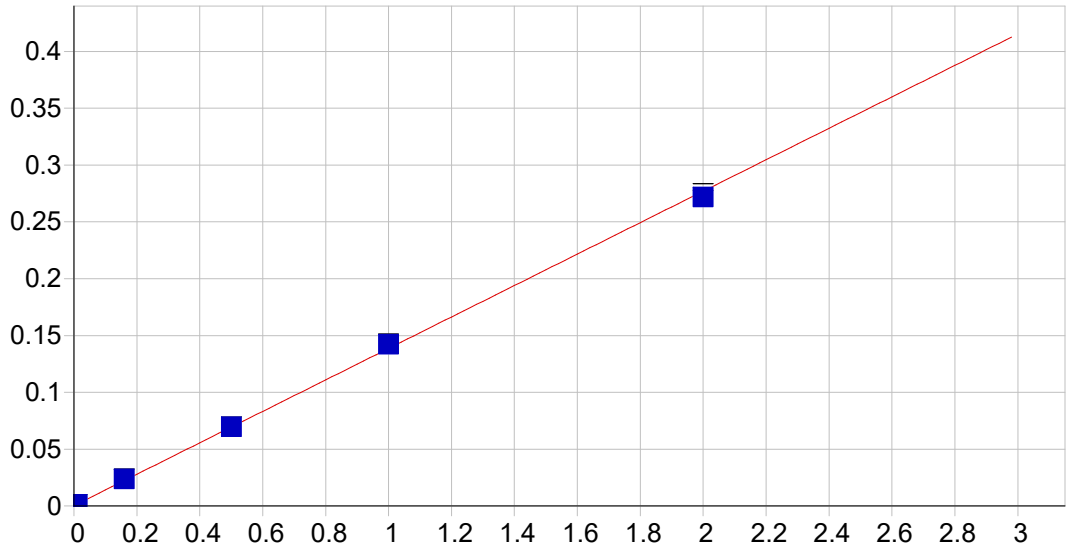


Ca 373.690 { 90}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002990	Re-Slope:	1.000000
A1 (Gain):	0.072765	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999734	Status:	OK.
Std Error of Est:	0.000888		
Predicted MDL:	0.011452		
Predicted MQL:	0.038173		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00024	-.000	.000	.00297	.001	1
S2	4.0000	4.1705	.170	4.26	.30645	.001	1
S3	12.500	12.379	-.121	-.965	.90378	.006	1
S4	25.000	25.612	.612	2.45	1.8667	.007	1
S5	50.000	49.178	-.822	-1.64	3.5815	.034	1
S1	2.0000	2.1598	.160	7.99	.16015	.000	1

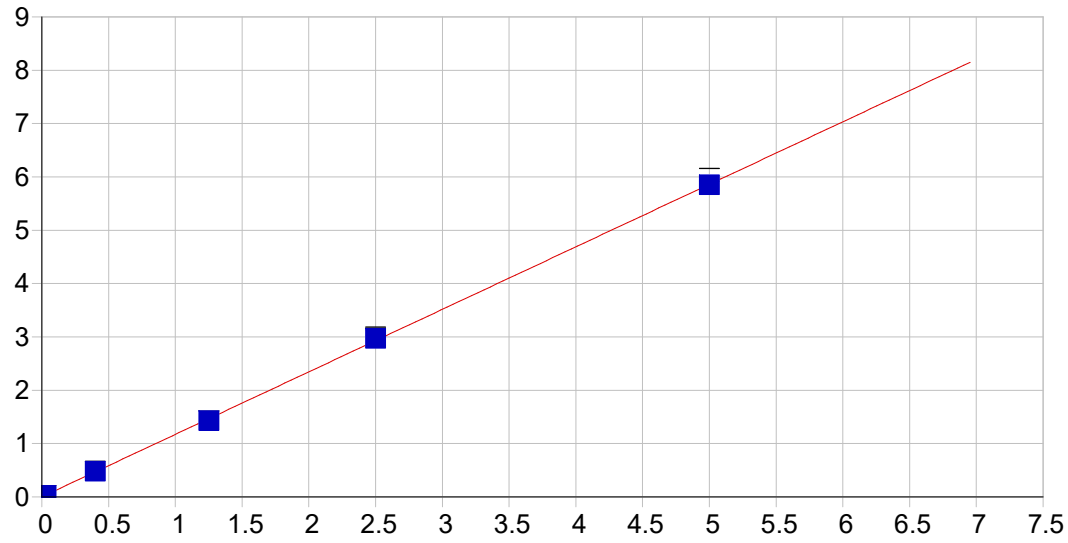


Cr 267.716 {126}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000182	Re-Slope:	1.000000
A1 (Gain):	0.138426	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999724	Status:	OK.
Std Error of Est:	0.000024		
Predicted MDL:	0.000528		
Predicted MQL:	0.001760		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00018	.000	1
S1	.01000	.01075	.001	7.48	.00167	.000	1
S3	.50000	.50035	.000	.070	.06947	.000	1
S4	1.0000	1.0269	.027	2.69	.14239	.000	1
S5	2.0000	1.9626	-.037	-1.87	.27197	.003	1
S2	.16000	.16938	.009	5.86	.02364	.000	1

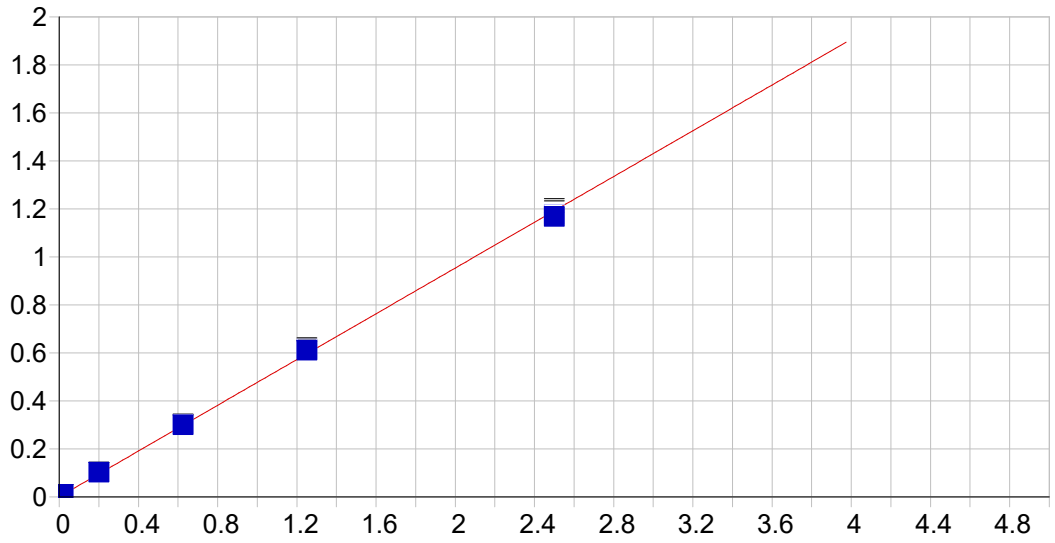


Co 228.616 {448}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000209	Re-Slope:	1.000000
A1 (Gain):	1.172155	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999908	Status:	OK.
Std Error of Est:	0.000324		
Predicted MDL:	0.000208		
Predicted MQL:	0.000692		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00021	.000	1
S1	.03000	.03271	.003	9.02	.03840	.000	1
S3	1.2500	1.2175	-.033	-2.60	1.4297	.003	1
S4	2.5000	2.5321	.032	1.28	2.9732	.028	1
S5	5.0000	4.9894	-.011	-.211	5.8585	.120	1
S2	.40000	.40833	.008	2.08	.47963	.002	1

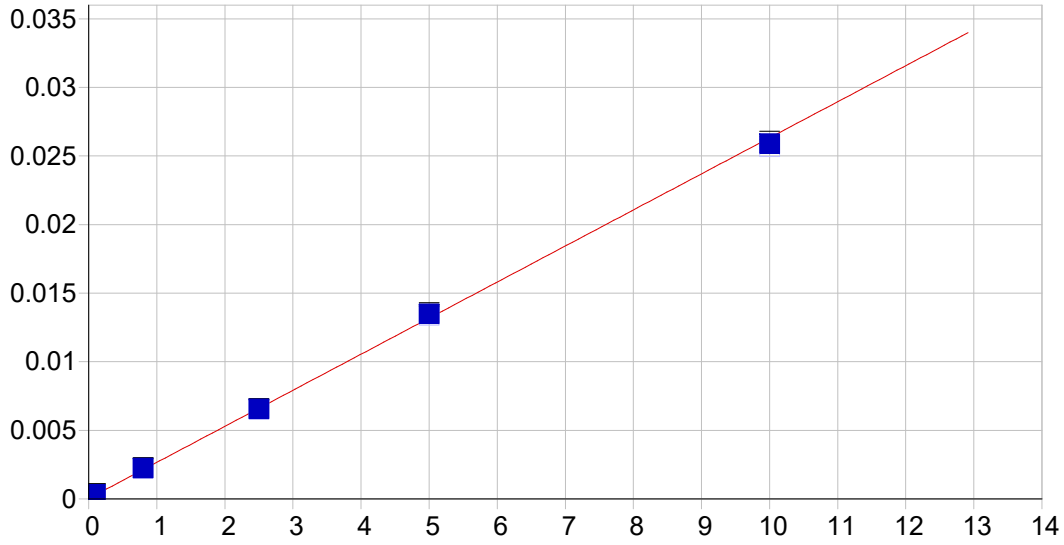


Cu 224.700 {450}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000731	Re-Slope:	1.000000
A1 (Gain):	0.476557	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999674	Status:	OK.
Std Error of Est:	0.000144		
Predicted MDL:	0.000608		
Predicted MQL:	0.002026		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00073	.000	1
S1	.02000	.02290	.003	14.5	.01175	.000	1
S3	.62500	.62891	.004	.626	.30293	.001	1
S4	1.2500	1.2810	.031	2.48	.61617	.005	1
S5	2.5000	2.4494	-.051	-2.02	1.1780	.023	1
S2	.20000	.21273	.013	6.37	.10291	.000	1

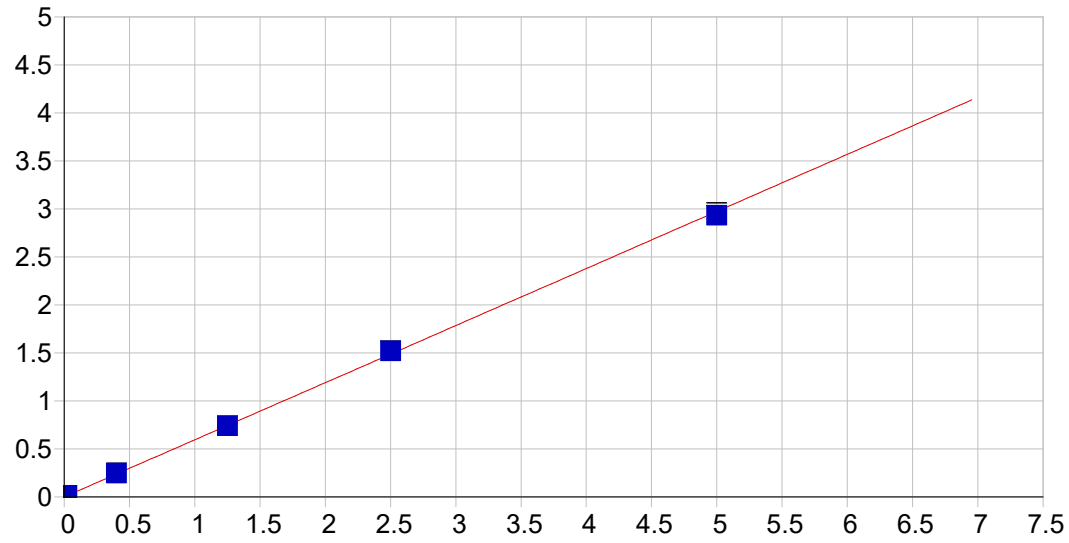


Fe 240.488 {140}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000031	Re-Slope:	1.000000
A1 (Gain):	0.002630	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999676	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.009905		
Predicted MQL:	0.033018		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00003	.000	1
S1	.10000	.12007	.020	20.1	.00034	.000	1
S3	2.5000	2.4847	-.015	-.610	.00651	.000	1
S4	5.0000	5.1189	.119	2.38	.01338	.000	1
S5	10.000	9.8357	-.164	-1.64	.02567	.000	1
S2	.80000	.84071	.041	5.09	.00222	.000	1

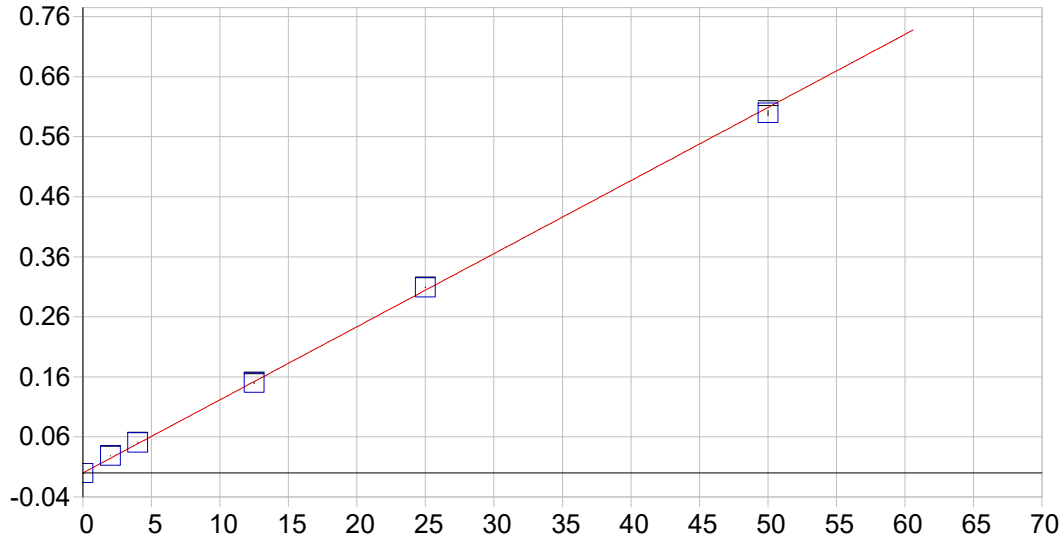


Mn 257.610 {131}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000349	Re-Slope:	1.000000
A1 (Gain):	0.594687	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999813	Status:	OK.
Std Error of Est:	0.000191		
Predicted MDL:	0.000537		
Predicted MQL:	0.001788		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00035	.000	1
S1	.02000	.02292	.003	14.6	.01399	.000	1
S3	1.2500	1.2429	-.007	-.572	.73961	.004	1
S4	2.5000	2.5566	.057	2.26	1.5210	.003	1
S5	5.0000	4.9307	-.069	-1.39	2.9331	.026	1
S2	.40000	.41696	.017	4.24	.24836	.001	1

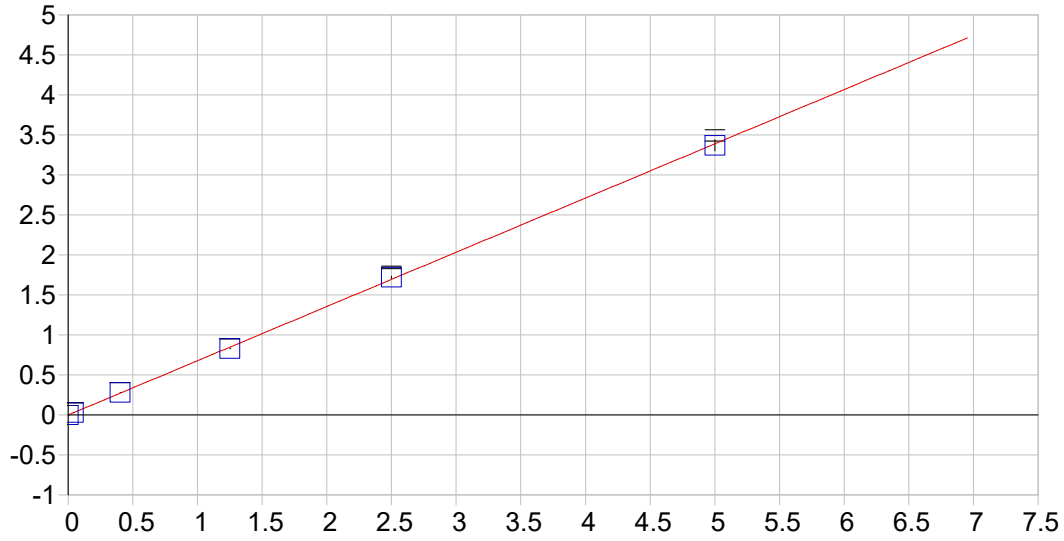


Mg 279.079 {121}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000044	Re-Slope:	1.000000
A1 (Gain):	0.012174	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999519	Status:	OK.
Std Error of Est:	0.000200		
Predicted MDL:	0.029919		
Predicted MQL:	0.099730		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00041	-.000	.000	-.00005	.000	1
S2	4.0000	4.1706	.171	4.27	.05073	.000	1
S3	12.500	12.338	-.162	-1.30	.15016	.001	1
S4	25.000	25.400	.400	1.60	.30918	.001	1
S5	50.000	49.238	-.762	-1.52	.59938	.004	1
S1	2.0000	2.3535	.354	17.7	.02861	.000	1

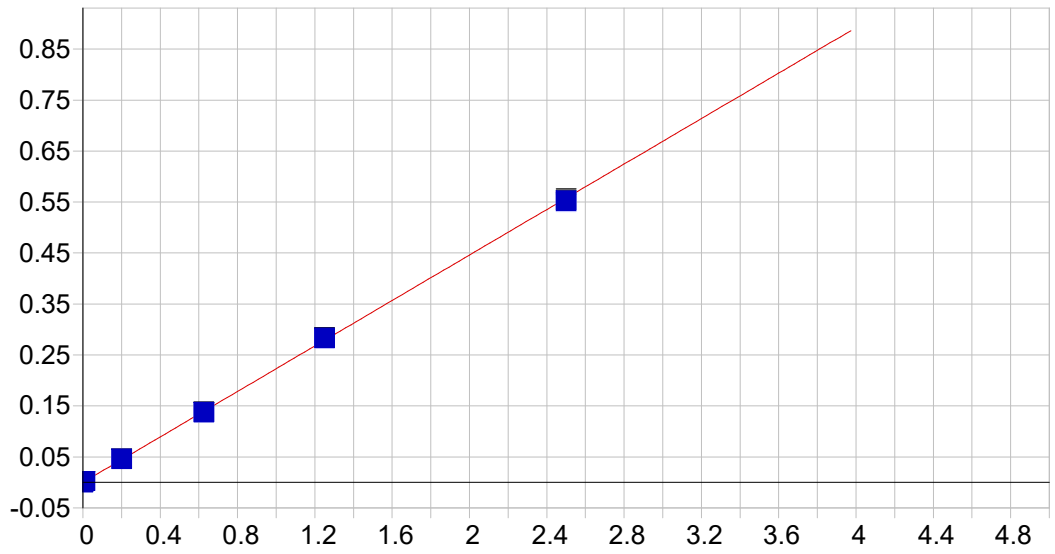


Ni 231.604 {446}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000600	Re-Slope:	1.000000
A1 (Gain):	0.677848	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999882	Status:	OK.
Std Error of Est:	0.000244		
Predicted MDL:	0.000382		
Predicted MQL:	0.001273		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00060	.000	1
S1	.04000	.04388	.004	9.70	.02914	.000	1
S3	1.2500	1.2225	-.028	-2.20	.82805	.002	1
S4	2.5000	2.5399	.040	1.60	1.7211	.017	1
S5	5.0000	4.9714	-.029	-.572	3.3692	.070	1
S2	.40000	.41236	.012	3.09	.27891	.000	1

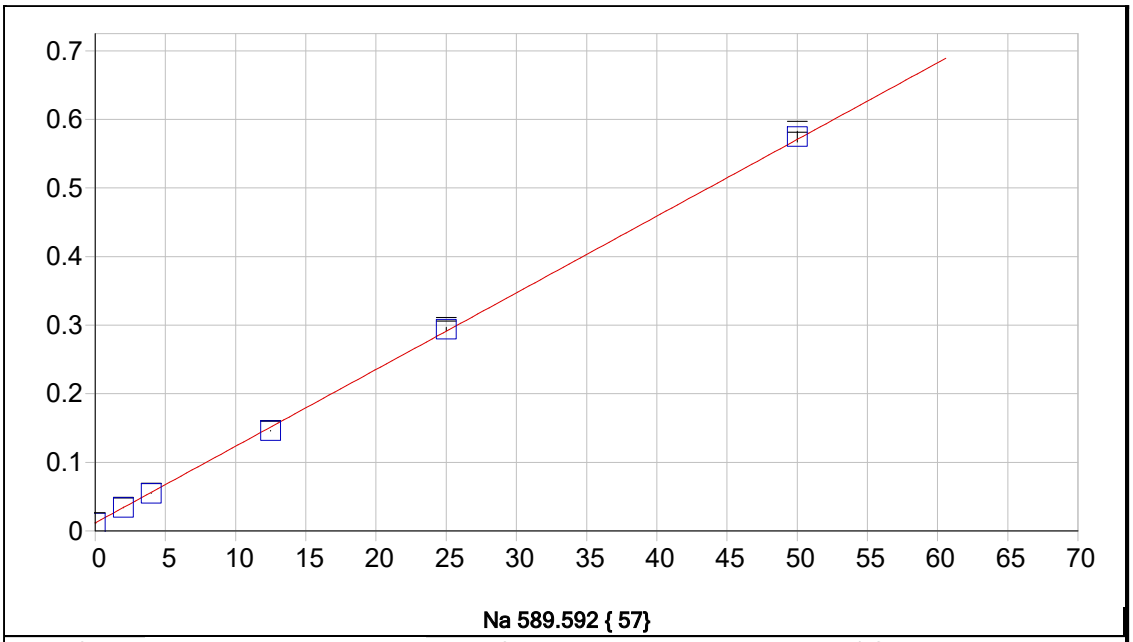


Ag 328.068 {103}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000036	Re-Slope:	1.000000
A1 (Gain):	0.223027	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999895	Status:	OK.
Std Error of Est:	0.000027		
Predicted MDL:	0.000580		
Predicted MQL:	0.001932		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00004	.000	1
S1	.01000	.01084	.001	8.40	.00243	.000	1
S3	.62500	.61800	-.007	-1.12	.13719	.000	1
S4	1.2500	1.2710	.021	1.68	.28214	.000	1
S5	2.5000	2.4780	-.022	-.881	.54999	.004	1
S2	.20000	.20721	.007	3.61	.04603	.000	1

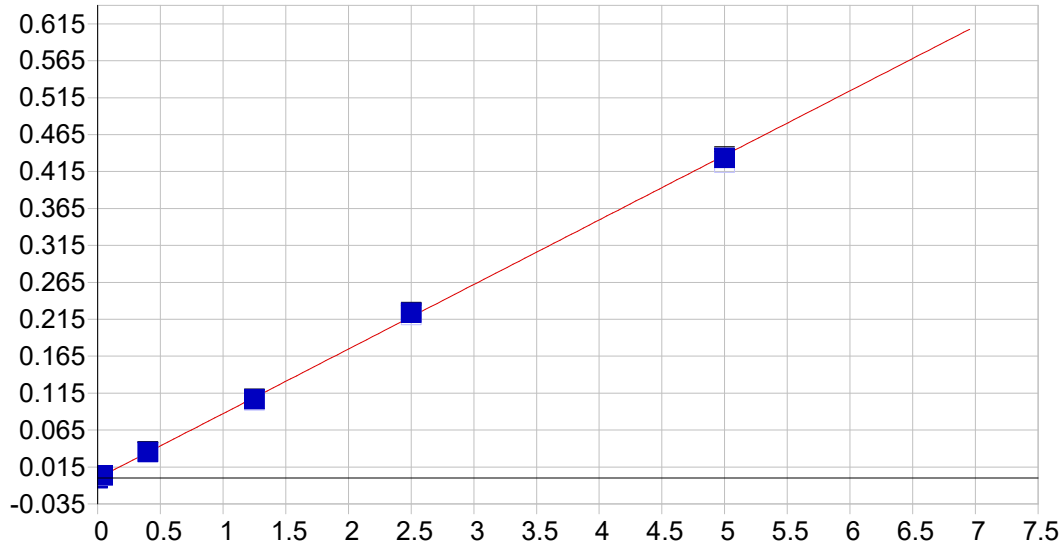


Na 589.592 { 57}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.011676	Re-Slope:	1.000000
A1 (Gain):	0.011180	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999840	Status:	OK.
Std Error of Est:	0.000106		
Predicted MDL:	0.017015		
Predicted MQL:	0.056717		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00012	.000	.000	.01168	.000	1
S2	4.0000	3.8495	-.151	-3.76	.05471	.000	1
S3	12.500	12.016	-.484	-3.87	.14601	.000	1
S4	25.000	25.263	.263	1.05	.29410	.003	1
S5	50.000	50.374	.374	.749	.57484	.008	1
S1	2.0000	1.9976	-.002	-.120	.03401	.000	1

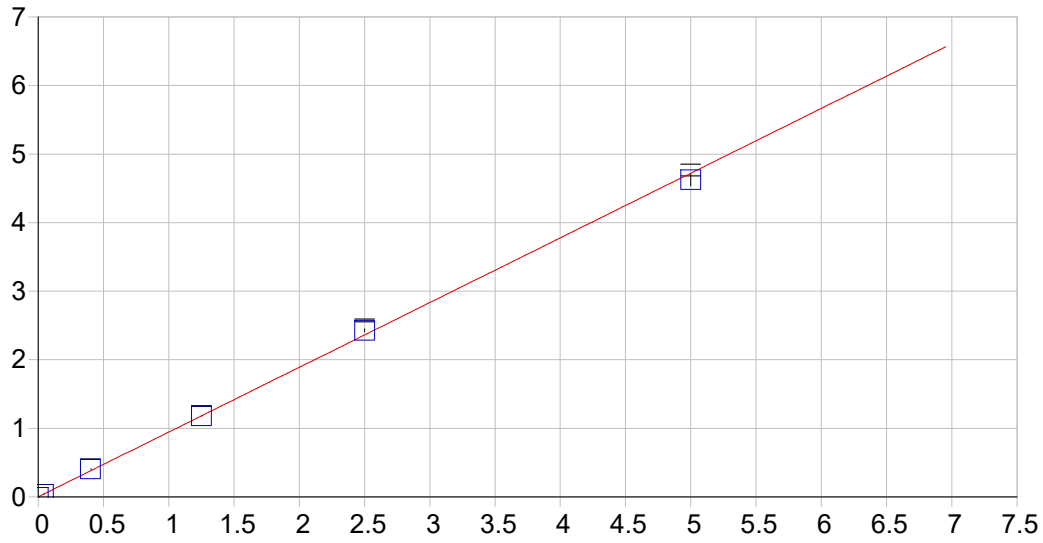


V 292.402 {115}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000200	Re-Slope:	1.000000
A1 (Gain):	0.087417	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999843	Status:	OK.
Std Error of Est:	0.000036		
Predicted MDL:	0.004331		
Predicted MQL:	0.014437		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00020	.000	1
S1	.04000	.04187	.002	4.69	.00333	.000	1
S3	1.2500	1.2209	-.029	-2.33	.10494	.001	1
S4	2.5000	2.5623	.062	2.49	.22060	.001	1
S5	5.0000	4.9579	-.042	-.843	.42683	.002	1
S2	.40000	.40712	.007	1.78	.03488	.000	1

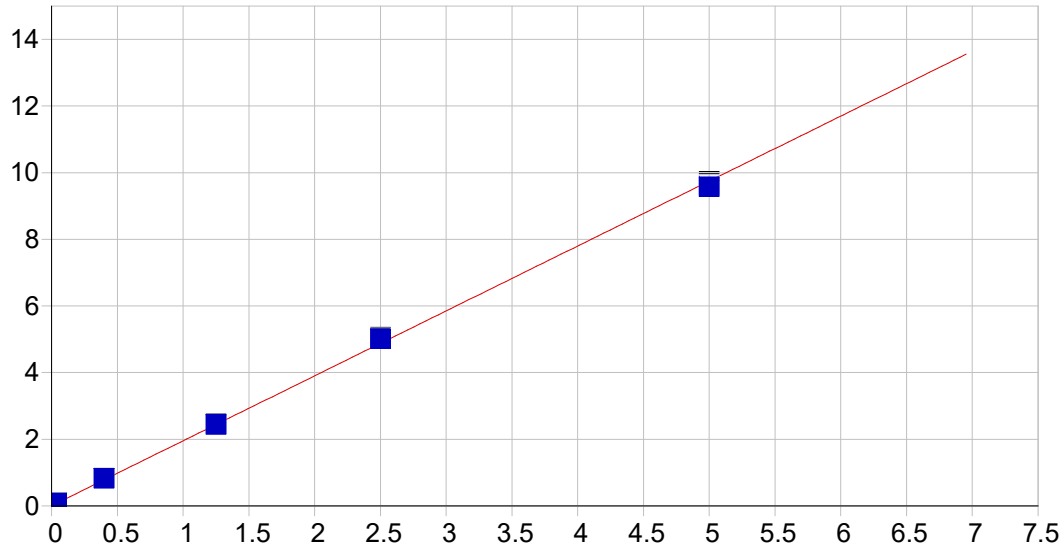


Zn 206.200 {464}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001780	Re-Slope:	1.000000
A1 (Gain):	0.943965	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999630	Status:	OK.
Std Error of Est:	0.000603		
Predicted MDL:	0.000189		
Predicted MQL:	0.000629		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00177	.000	1
S1	.04000	.04485	.005	12.1	.04411	.000	1
S3	1.2500	1.2503	.000	.026	1.1820	.004	1
S4	2.5000	2.5710	.071	2.84	2.4287	.020	1
S5	5.0000	4.8955	-.105	-2.09	4.6229	.087	1
S2	.40000	.42835	.028	7.09	.40612	.001	1

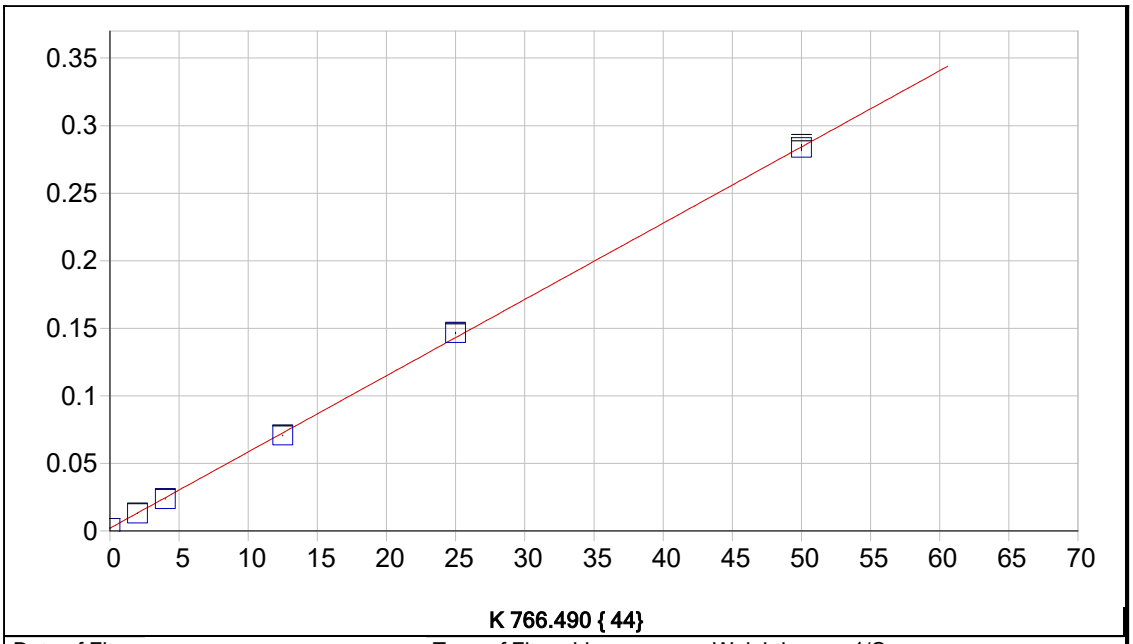


Zn 213.856 {158}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005069	Re-Slope:	1.000000
A1 (Gain):	1.948783	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999736	Status:	OK.
Std Error of Est:	0.001057		
Predicted MDL:	0.000308		
Predicted MQL:	0.001028		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00506	.000	1
S1	.04000	.04411	.004	10.3	.09157	.000	1
S3	1.2500	1.2474	-.003	-.206	2.4530	.008	1
S4	2.5000	2.5686	.069	2.74	5.0446	.016	1
S5	5.0000	4.9100	-.090	-1.80	9.6414	.096	1
S2	.40000	.41982	.020	4.95	.82862	.002	1

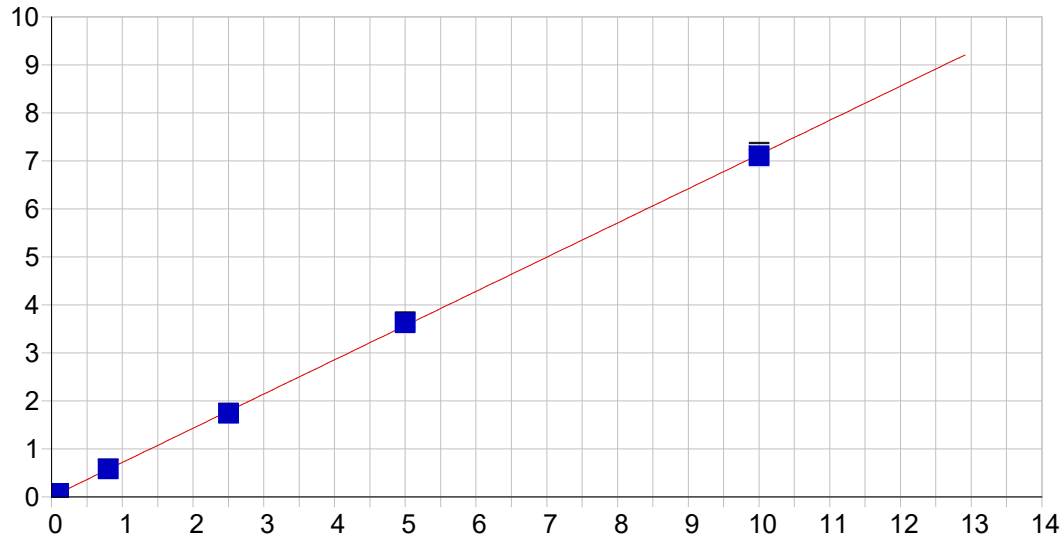


K 766.490 { 44}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002036	Re-Slope:	1.000000
A1 (Gain):	0.005644	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999838	Status:	OK.
Std Error of Est:	0.000054		
Predicted MDL:	0.039232		
Predicted MQL:	0.130772		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00013	.000	.000	.00204	.000	1
S2	4.0000	3.8394	-.161	-4.01	.02370	.000	1
S3	12.500	12.178	-.322	-2.57	.07077	.000	1
S4	25.000	25.602	.602	2.41	.14652	.001	1
S5	50.000	49.926	-.074	-.148	.28380	.002	1
S1	2.0000	1.9543	-.046	-2.29	.01307	.000	1

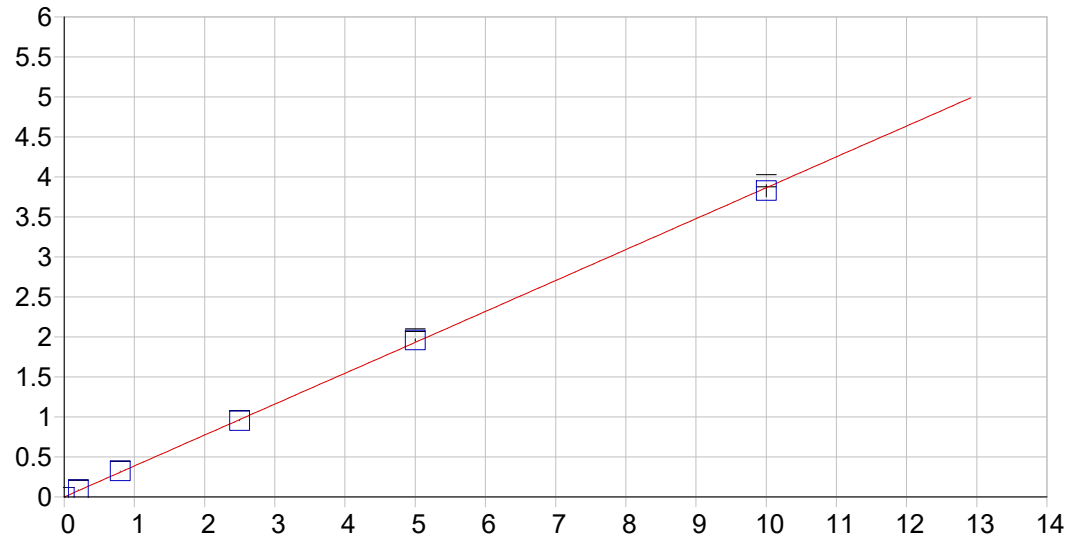


B 249.678 {135}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004284	Re-Slope:	1.000000
A1 (Gain):	0.712832	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999898	Status:	OK.
Std Error of Est:	0.000533		
Predicted MDL:	0.000884		
Predicted MQL:	0.002948		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00428	.000	1
S1	.10000	.10714	.007	7.14	.08024	.001	1
S3	2.5000	2.4362	-.064	-2.55	1.7344	.005	1
S4	5.0000	5.0847	.085	1.69	3.6160	.015	1
S5	10.000	9.9660	-.034	-.340	7.0827	.072	1
S2	.80000	.80601	.006	.751	.57678	.004	1

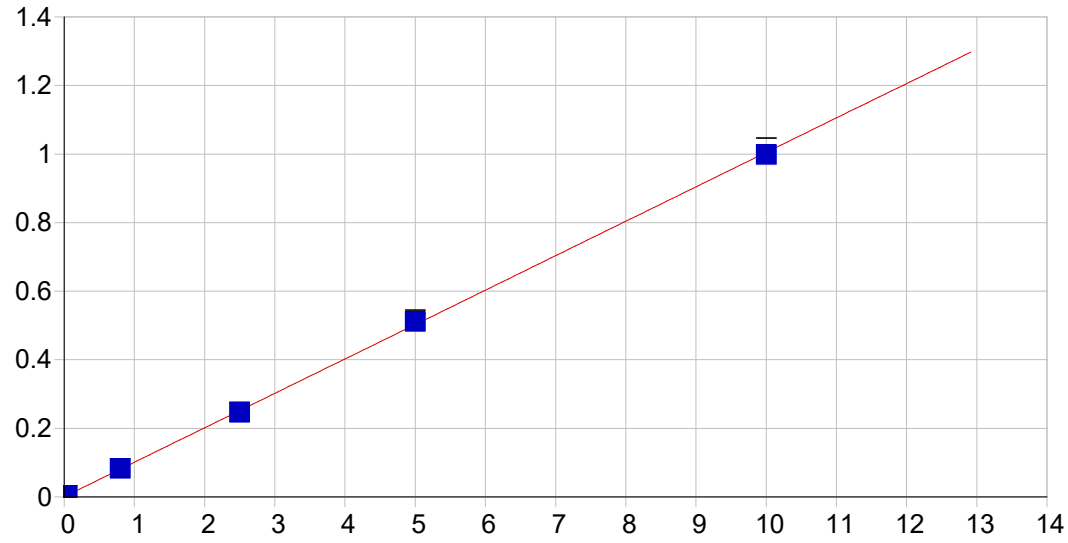


Mo 202.030 {467}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000462	Re-Slope:	1.000000
A1 (Gain):	0.386318	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999838	Status:	OK.
Std Error of Est:	0.000517		
Predicted MDL:	0.000452		
Predicted MQL:	0.001506		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00045	.000	1
S1	.20000	.22179	.022	10.9	.08614	.001	1
S3	2.5000	2.4661	-.034	-1.36	.95315	.001	1
S4	5.0000	5.0699	.070	1.40	1.9591	.016	1
S5	10.000	9.9094	-.091	-.906	3.8286	.075	1
S2	.80000	.83287	.033	4.11	.32222	.001	1

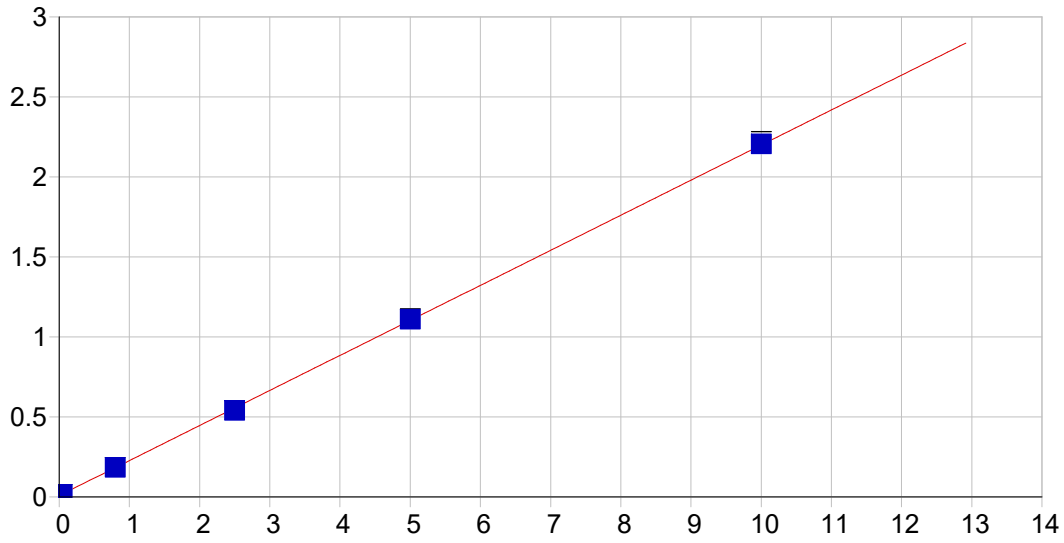


Sn 189.989 {478}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000618	Re-Slope:	1.000000
A1 (Gain):	0.100417	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999899	Status:	OK.
Std Error of Est:	0.000047		
Predicted MDL:	0.001044		
Predicted MQL:	0.003481		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00062	.000	1
S1	.04000	.04260	.003	6.50	.00489	.000	1
S3	2.5000	2.4517	-.048	-1.93	.24656	.001	1
S4	5.0000	5.0893	.089	1.79	.51116	.005	1
S5	10.000	9.9350	-.065	-.650	.99724	.020	1
S2	.80000	.82131	.021	2.66	.08301	.000	1

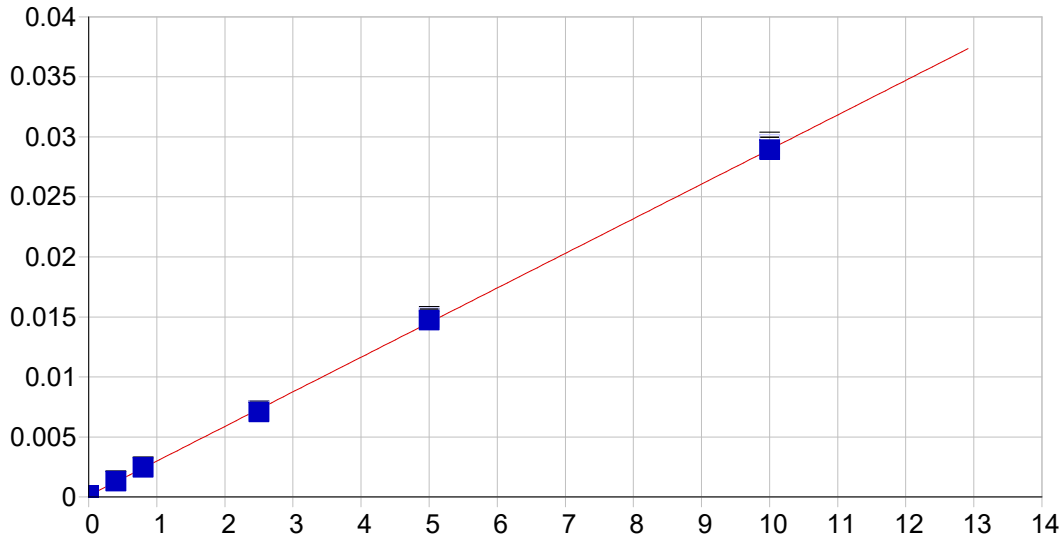


Ti 336.121 {100}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.008090	Re-Slope:	1.000000
A1 (Gain):	0.219045	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999933	Status:	OK.
Std Error of Est:	0.000084		
Predicted MDL:	0.002257		
Predicted MQL:	0.007522		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00809	.001	1
S1	.04000	.04198	.002	4.94	.01728	.000	1
S3	2.5000	2.4292	-.071	-2.83	.53999	.001	1
S4	5.0000	5.0345	.035	.691	1.1105	.002	1
S5	10.000	10.032	.032	.317	2.2047	.016	1
S2	.80000	.80262	.003	.327	.18384	.000	1

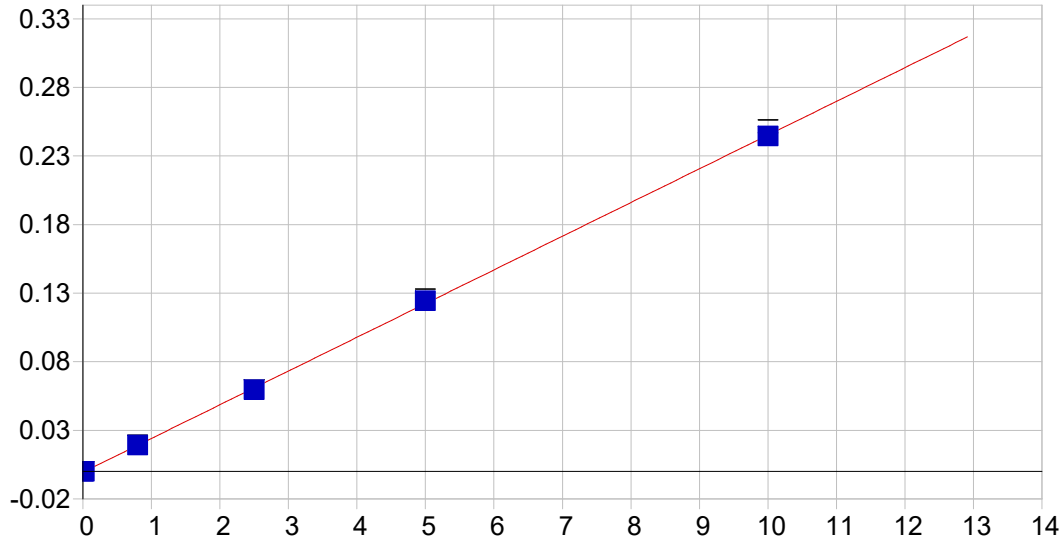


Si 288.158 {117}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000103	Re-Slope:	1.000000
A1 (Gain):	0.002884	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999884	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.015422		
Predicted MQL:	0.051406		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00010	.000	1
S1	.40000	.41345	.013	3.36	.00130	.000	1
S3	2.5000	2.4146	-.085	-3.42	.00718	.000	1
S4	5.0000	5.0679	.068	1.36	.01494	.000	1
S5	10.000	9.9925	-.007	-.075	.02936	.000	1
S2	.80000	.81163	.012	1.45	.00248	.000	1

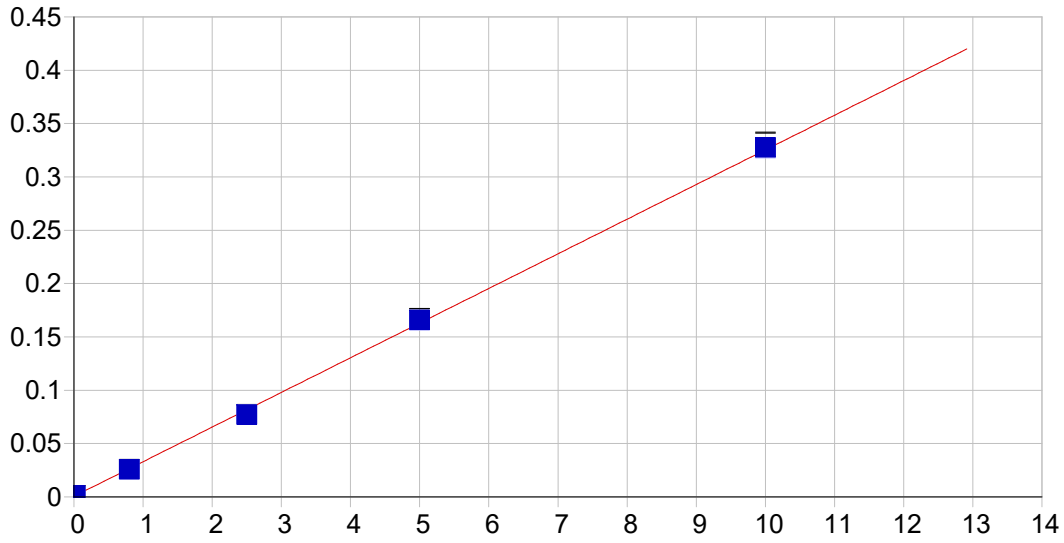


P 177.495 {490}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000502	Re-Slope:	1.000000
A1 (Gain):	0.024576	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999926	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.003220		
Predicted MQL:	0.010733		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00050	.000	1
S1	.02000	.01972	-.000	-1.39	-.00002	.000	1
S3	2.5000	2.4470	-.053	-2.12	.05963	.000	1
S4	5.0000	5.0864	.086	1.73	.12448	.001	1
S5	10.000	9.9678	-.032	-.322	.24443	.005	1
S2	.80000	.79898	-.001	-.127	.01913	.000	1

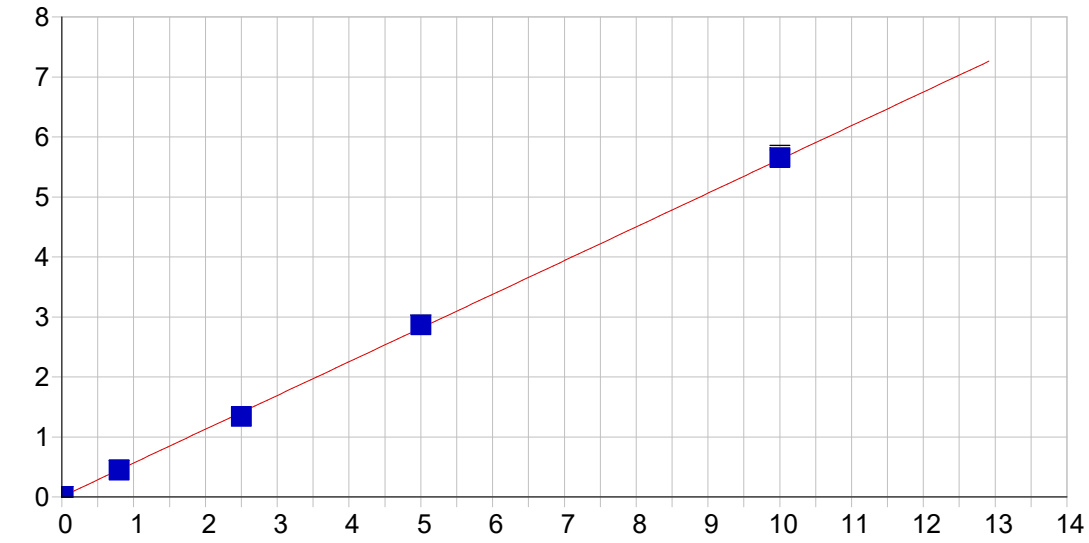


S 182.034 {485}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000527	Re-Slope:	1.000000
A1 (Gain):	0.032480	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999712	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.003150		
Predicted MQL:	0.010500		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00053	.000	1
S1	.02000	.02196	.002	9.81	.00121	.000	1
S3	2.5000	2.3620	-.138	-5.52	.07703	.000	1
S4	5.0000	5.0902	.090	1.80	.16543	.002	1
S5	10.000	10.068	.068	.677	.32668	.005	1
S2	.80000	.77825	-.022	-2.72	.02574	.000	1

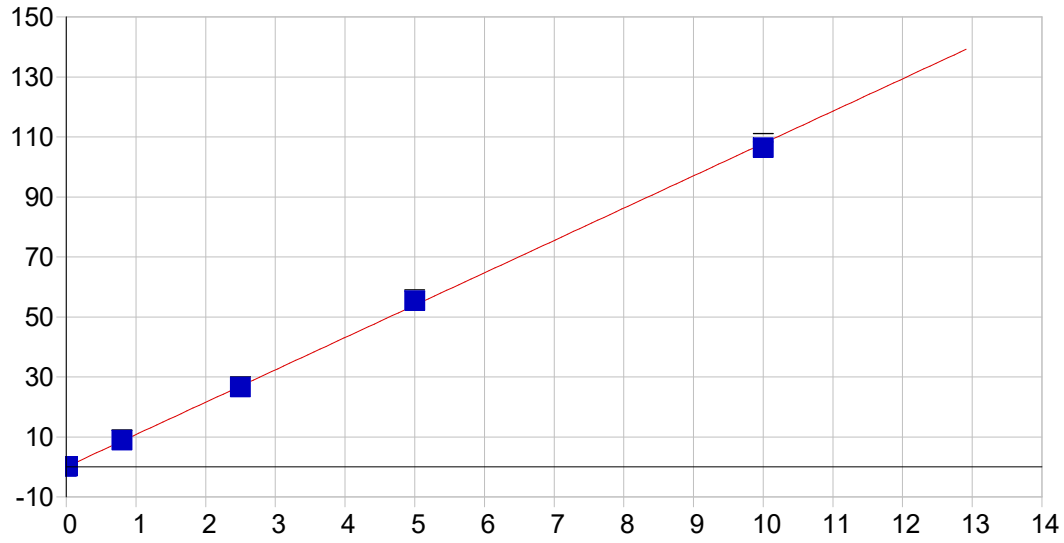


Li 670.784 { 50}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003773	Re-Slope:	1.000000
A1 (Gain):	0.562054	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999752	Status:	OK.
Std Error of Est:	0.000293		
Predicted MDL:	0.003575		
Predicted MQL:	0.011917		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00378	.003	1
S5	10.000	10.055	.055	.547	5.6579	.037	1
S4	5.0000	5.0914	.091	1.83	2.8668	.008	1
S3	2.5000	2.3712	-.129	-5.15	1.3372	.003	1
S1	.02000	.01803	-.002	-9.83	.01409	.000	1
S2	.80000	.78471	-.015	-1.91	.44505	.002	1

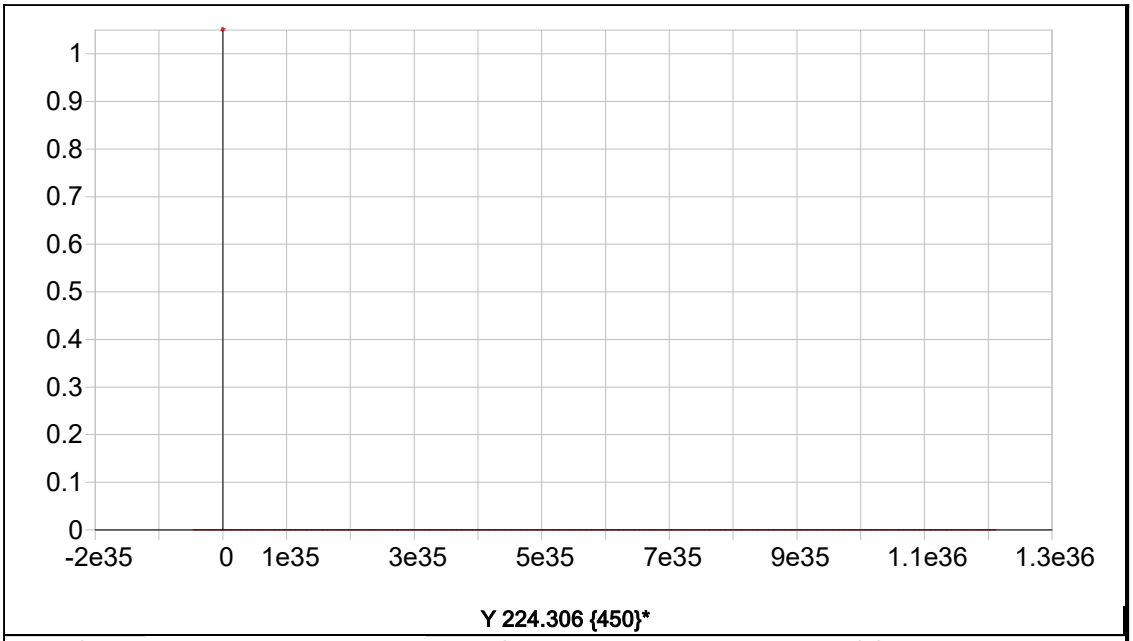


Sr 407.771 { 83}

Date of Fit:	7/21/2025 11:50:31	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000436	Re-Slope:	1.000000
A1 (Gain):	10.780321	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999812	Status:	OK.
Std Error of Est:	0.004903		
Predicted MDL:	0.000098		
Predicted MQL:	0.000326		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00041	.001	1
S1	.02000	.02160	.002	8.00	.23433	.001	1
S3	2.5000	2.4660	-.034	-1.36	26.610	.202	1
S4	5.0000	5.1361	.136	2.72	55.421	.239	1
S5	10.000	9.8694	-.131	-1.31	106.50	1.36	1
S2	.80000	.82685	.027	3.36	8.9225	.022	1

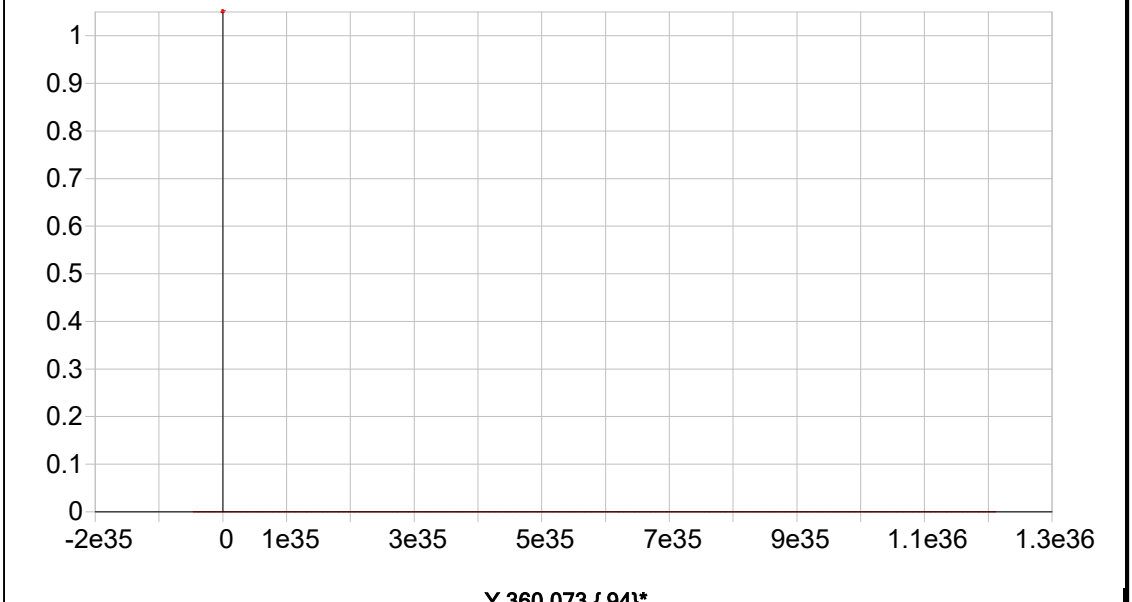


Y 224.306 {450}*

Date of Fit:	7/21/2025 11:50:31	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



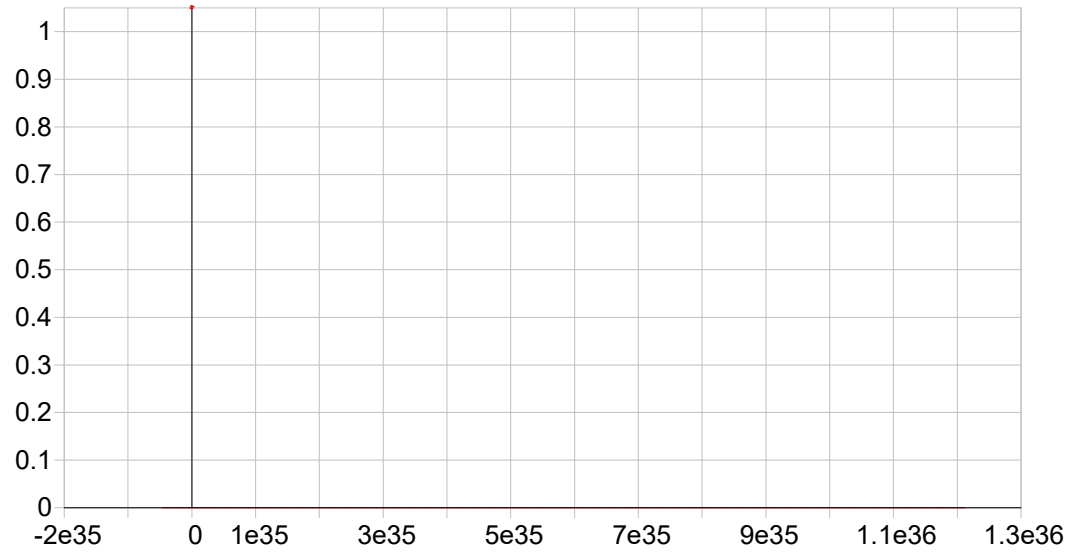
Y 360.073 { 94}*

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					

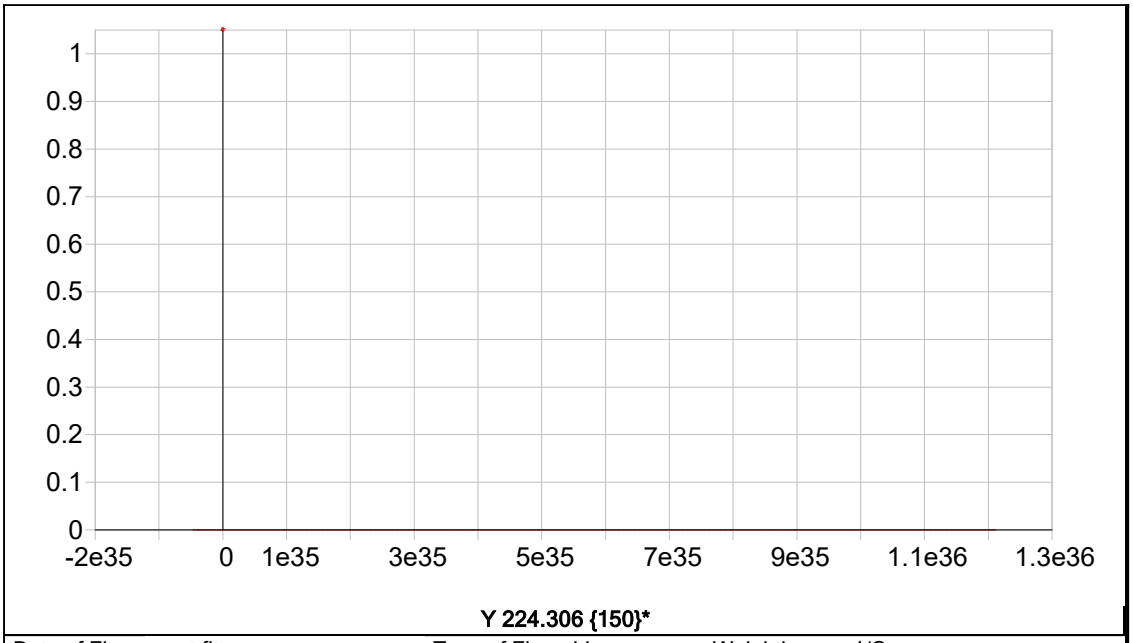
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



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

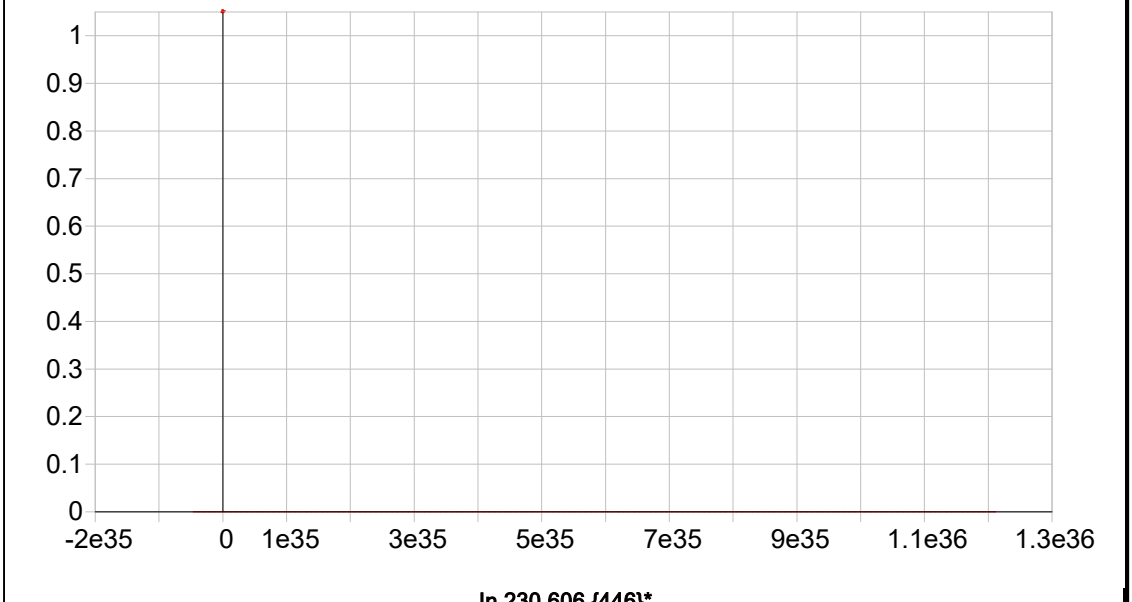


Y 224.306 {150}*

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:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S0 Acquired: 7/21/2025 11:28:53 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**-.00002**	**.00017**	**-.00006**	**.00046**	**.00065**	**.00032**	**.07452**	**.00233**
Stddev	.00011	.00003	.00019	.00016	.00011	.00032	.00295	.00032
%RSD	698.31	15.578	307.64	35.152	16.479	99.536	3.9589	13.733
#1	-.00012	.00014	-.00023	.00040	.00068	.00053	.07281	.00216
#2	-.00001	.00018	.00015	.00033	.00073	-.00005	.07283	.00270
#3	.00009	.00019	-.00011	.00064	.00053	.00047	.07793	.00213

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	**-.00072**	**.00297**	**.00018**	**.00021**	**.00073**	**.00003**	**.00035**	**-.00005**
Stddev	.00025	.00056	.00002	.00010	.00025	.00001	.00014	.00023
%RSD	34.838	18.716	11.827	46.571	34.426	35.774	41.743	464.93
#1	-.00092	.00338	.00020	.00012	.00099	.00004	.00030	-.00018
#2	-.00080	.00234	.00016	.00019	.00071	.00002	.00051	.00021
#3	-.00044	.00319	.00019	.00031	.00049	.00004	.00023	-.00018

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	**-.00060**	**.00004**	**.01168**	**-.00020**	**.00506**	**.00204**	**.00428**	**.00045**
Stddev	.00026	.00007	.00022	.00037	.00043	.00017	.00048	.00010
%RSD	43.224	187.87	1.9038	182.69	8.4845	8.4298	11.228	23.165
#1	-.00071	.00008	.01183	-.00058	.00459	.00214	.00435	.00052
#2	-.00031	.00007	.01178	-.00017	.00513	.00213	.00377	.00033
#3	-.00080	-.00004	.01142	.00015	.00544	.00184	.00472	.00050

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	**.00062**	**.00809**	**.00010**	**-.00050**	**.00053**	**.00378**	**.00041**
Stddev	.00002	.00051	.00003	.00008	.00011	.00305	.00100
%RSD	3.2813	6.3089	24.705	16.030	20.011	80.824	243.88
#1	.00062	.00856	.00011	-.00059	.00052	.00034	-.00036
#2	.00064	.00754	.00013	-.00048	.00064	.00482	.00004
#3	.00060	.00817	.00008	-.00043	.00043	.00616	.00155

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S0 Acquired: 7/21/2025 11:28:53 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**5163.4**	**81457.**	**7961.3**	**4430.4**	**6091.3**
Stddev	27.8	146.	25.4	15.0	43.2
%RSD	.53782	.17980	.31852	.33812	.70938
#1	5177.9	81327.	7990.4	4428.5	6114.7
#2	5180.9	81428.	7943.8	4416.5	6117.7
#3	5131.4	81615.	7949.7	4446.2	6041.4

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S1 Acquired: 7/21/2025 11:33:18 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**.00075**	**.00272**	**.00278**	**.00161**	**.00620**	**.01099**	**.36930**	**.04600**
Stddev	.00004	.00007	.00004	.00010	.00006	.00125	.00220	.00022
%RSD	4.8825	2.5327	1.4615	6.4278	1.0421	11.390	.59442	.48803
#1	.00079	.00280	.00273	.00150	.00628	.01030	.37141	.04600
#2	.00073	.00270	.00281	.00164	.00616	.01243	.36703	.04577
#3	.00072	.00266	.00280	.00170	.00617	.01023	.36946	.04622

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	**.01267**	**.16015**	**.00167**	**.03840**	**.01175**	**.00034**	**.01399**	**.02861**
Stddev	.00004	.00050	.00001	.00035	.00029	.00003	.00009	.00038
%RSD	.29902	.31165	.82767	.90747	2.4281	8.2114	.65267	1.3386
#1	.01269	.16022	.00168	.03814	.01146	.00033	.01405	.02850
#2	.01262	.15961	.00166	.03826	.01203	.00038	.01402	.02829
#3	.01269	.16060	.00168	.03880	.01175	.00032	.01388	.02903

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	**.02914**	**.00243**	**.03401**	**.00333**	**.09157**	**.01307**	**.08024**	**.08614**
Stddev	.00025	.00002	.00029	.00024	.00001	.00019	.00094	.00058
%RSD	.84137	.70351	.84465	7.1948	.01113	1.4819	1.1753	.66851
#1	.02886	.00244	.03414	.00341	.09157	.01285	.07963	.08573
#2	.02924	.00241	.03421	.00352	.09159	.01323	.07975	.08590
#3	.02933	.00245	.03368	.00306	.09157	.01312	.08132	.08680

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	**.00489**	**.01728**	**.00130**	**-.00002**	**.00121**	**.01409**	**.23433**
Stddev	.00006	.00026	.00003	.00007	.00010	.00037	.00101
%RSD	1.1945	1.5068	2.0062	414.04	8.5221	2.6228	.43287
#1	.00485	.01728	.00127	.00005	.00121	.01429	.23322
#2	.00496	.01702	.00132	-.00001	.00111	.01366	.23521
#3	.00487	.01754	.00129	-.00009	.00132	.01432	.23455

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S1 Acquired: 7/21/2025 11:33:18 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**5102.9**	**80272.**	**7793.6**	**4357.3**	**5952.3**
Stddev	6.4	110.	61.4	16.4	6.9
%RSD	.12464	.13642	.78786	.37716	.11539
#1	5104.1	80398.	7808.4	4350.4	5960.0
#2	5108.6	80222.	7846.3	4345.4	5950.2
#3	5096.0	80197.	7726.2	4376.0	5946.8

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S2 Acquired: 7/21/2025 11:37:35 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**.02971**	**.05388**	**.18849**	**.03903**	**.08261**	**.13557**	**4.5377**	**.27829**
Stddev	.00021	.00121	.00053	.00017	.00029	.00081	.0107	.00262
%RSD	.70891	2.2439	.28008	.42372	.34867	.59662	.23570	.94286
#1	.02947	.05457	.18789	.03894	.08236	.13628	4.5416	.28024
#2	.02987	.05459	.18870	.03922	.08255	.13469	4.5459	.27934
#3	.02978	.05248	.18889	.03893	.08293	.13574	4.5256	.27531

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	**.86784**	**.30645**	**.02364**	**.47963**	**.10291**	**.00222**	**.24836**	**.05073**
Stddev	.00232	.00129	.00008	.00165	.00042	.00003	.00052	.00016
%RSD	.26751	.41957	.33687	.34404	.41279	1.3933	.20788	.30710
#1	.86544	.30606	.02355	.47783	.10246	.00220	.24859	.05088
#2	.86803	.30789	.02367	.47998	.10295	.00222	.24872	.05057
#3	.87007	.30541	.02370	.48107	.10331	.00226	.24777	.05073

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	**.27891**	**.04603**	**.05471**	**.03488**	**.82862**	**.02370**	**.57678**	**.32222**
Stddev	.00043	.00008	.00035	.00040	.00184	.00017	.00397	.00074
%RSD	.15548	.17471	.63608	1.1360	.22203	.69788	.68867	.22883
#1	.27841	.04606	.05440	.03442	.82748	.02355	.58052	.32141
#2	.27917	.04594	.05509	.03508	.82765	.02388	.57720	.32237
#3	.27916	.04610	.05464	.03513	.83074	.02368	.57261	.32287

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	**.08301**	**.18384**	**.00248**	**.01913**	**.02574**	**.44505**	**8.9225**
Stddev	.00025	.00047	.00003	.00005	.00003	.00156	.0224
%RSD	.30476	.25730	1.2272	.24084	.11799	.35048	.25145
#1	.08299	.18350	.00249	.01908	.02576	.44620	8.9414
#2	.08277	.18438	.00244	.01913	.02574	.44567	8.9283
#3	.08327	.18363	.00250	.01917	.02570	.44327	8.8977

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S2 Acquired: 7/21/2025 11:37:35 Type: Cal
Method: 6010-200.7 NEW(v47) 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	5078.0	80019.	7685.7	4336.7	5859.1
Stddev	14.1	218.	58.0	34.0	19.0
%RSD	.27777	.27270	.75401	.78364	.32364
#1	5094.3	80005.	7619.4	4353.9	5880.6
#2	5071.0	80243.	7711.3	4358.6	5845.0
#3	5068.8	79807.	7726.5	4297.5	5851.5

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S3 Acquired: 7/21/2025 11:41:39 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**.09105**	**.15754**	**.57891**	**.11877**	**.24683**	**.40520**	**13.527**	**.82492**
Stddev	.00028	.00424	.00058	.00009	.00071	.00156	.040	.00244
%RSD	.31277	2.6943	.09991	.07821	.28931	.38534	.29856	.29531
#1	.09132	.16213	.57876	.11870	.24683	.40422	13.555	.82483
#2	.09075	.15673	.57841	.11872	.24612	.40437	13.481	.82741
#3	.09108	.15376	.57954	.11887	.24754	.40700	13.546	.82254

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	**2.6770**	**.90378**	**.06947**	**1.4297**	**.30293**	**.00651**	**.73961**	**.15016**
Stddev	.0076	.00596	.00040	.0030	.00102	.00002	.00365	.00130
%RSD	.28459	.65978	.57045	.20778	.33695	.31716	.49299	.86890
#1	2.6809	.90961	.06966	1.4296	.30222	.00649	.74295	.15118
#2	2.6682	.89769	.06974	1.4268	.30247	.00653	.73572	.14869
#3	2.6819	.90403	.06902	1.4328	.30410	.00651	.74015	.15059

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	**.82805**	**.13719**	**.14601**	**.10494**	**2.4530**	**.07077**	**1.7344**	**.95315**
Stddev	.00154	.00014	.00038	.00068	.0078	.00034	.0049	.00121
%RSD	.18609	.10514	.25764	.64787	.31730	.48571	.28421	.12732
#1	.82841	.13710	.14644	.10495	2.4545	.07109	1.7325	.95322
#2	.82635	.13736	.14583	.10561	2.4445	.07080	1.7308	.95190
#3	.82937	.13711	.14576	.10425	2.4599	.07041	1.7400	.95432

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	**.24656**	**.53999**	**.00718**	**.05963**	**.07703**	**1.3372**	**26.610**
Stddev	.00098	.00071	.00003	.00018	.00020	.0028	.202
%RSD	.39738	.13101	.42800	.30727	.26473	.21153	.75839
#1	.24710	.54080	.00715	.05971	.07723	1.3392	26.824
#2	.24542	.53957	.00721	.05942	.07682	1.3340	26.423
#3	.24714	.53959	.00717	.05975	.07704	1.3385	26.585

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S3 Acquired: 7/21/2025 11:41:39 Type: Cal
Method: 6010-200.7 NEW(v47) 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	5135.0	81013.	7814.9	4352.8	5854.1
Stddev	18.1	381.	46.4	27.7	19.9
%RSD	.35171	.47070	.59361	.63608	.34059
#1	5141.8	80573.	7770.5	4336.5	5855.0
#2	5148.6	81228.	7863.1	4384.8	5873.6
#3	5114.5	81239.	7811.2	4337.1	5833.7

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S4 Acquired: 7/21/2025 11:45:44 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**.18681**	**.32970**	**1.1723**	**.24175**	**.50826**	**.83782**	**28.171**	**1.7066**
Stddev	.00172	.00335	.0096	.00184	.00404	.00163	.025	.0070
%RSD	.92270	1.0160	.82082	.76138	.79543	.19467	.08699	.41206
#1	.18840	.33306	1.1802	.24372	.51243	.83597	28.197	1.7085
#2	.18705	.32636	1.1749	.24145	.50797	.83847	28.148	1.7125
#3	.18498	.32968	1.1616	.24008	.50436	.83903	28.168	1.6988

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	**5.4951**	**1.8667**	**.14239**	**2.9732**	**.61617**	**.01338**	**1.5210**	**.30918**
Stddev	.0516	.0069	.00019	.0277	.00508	.00008	.0027	.00073
%RSD	.93915	.37185	.13084	.93244	.82477	.59970	.17527	.23757
#1	5.5364	1.8730	.14260	2.9959	.62123	.01347	1.5224	.30834
#2	5.5115	1.8678	.14232	2.9814	.61621	.01332	1.5227	.30973
#3	5.4372	1.8592	.14225	2.9423	.61107	.01335	1.5179	.30945

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	**1.7211**	**.28214**	**.29410**	**.22060**	**5.0446**	**.14652**	**3.6160**	**1.9591**
Stddev	.0169	.00023	.00257	.00053	.0158	.00053	.0154	.0162
%RSD	.98117	.08051	.87390	.24145	.31236	.35968	.42591	.82440
#1	1.7355	.28238	.29703	.22036	5.0526	.14696	3.6072	1.9744
#2	1.7252	.28212	.29303	.22023	5.0265	.14594	3.6338	1.9605
#3	1.7025	.28193	.29224	.22121	5.0549	.14667	3.6070	1.9422

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	**.51116**	**1.1105**	**.01494**	**.12448**	**.16543**	**2.8668**	**55.421**
Stddev	.00473	.0023	.00009	.00122	.00165	.0080	.239
%RSD	.92444	.21102	.62296	.98332	.99730	.27874	.43066
#1	.51551	1.1132	.01494	.12546	.16706	2.8746	55.205
#2	.51185	1.1093	.01484	.12488	.16549	2.8673	55.677
#3	.50613	1.1089	.01503	.12311	.16376	2.8586	55.382

Sample Name: S4 Acquired: 7/21/2025 11:45:44 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**4978.9**	**79410.**	**7593.2**	**4236.7**	**5564.0**
Stddev	41.4	78.	35.7	6.6	52.4
%RSD	.83165	.09814	.46991	.15565	.94102
#1	4940.4	79321.	7610.0	4230.6	5520.8
#2	4973.8	79443.	7552.3	4243.7	5548.9
#3	5022.7	79467.	7617.5	4235.9	5622.2

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S5 Acquired: 7/21/2025 11:49:56 Type: Cal
Method: 6010-200.7 NEW(v47) 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	**.35452**	**.61660**	**2.2773**	**.45642**	**.99268**	**1.6254**	**54.422**	**3.3333**
Stddev	.00720	.02067	.0463	.00771	.01996	.0120	.452	.0236
%RSD	2.0303	3.3529	2.0328	1.6886	2.0107	.73734	.82978	.70812
#1	.34624	.62476	2.2264	.44754	.96989	1.6142	54.612	3.3101
#2	.35929	.59309	2.3169	.46133	1.0071	1.6240	54.747	3.3573
#3	.35803	.63194	2.2888	.46039	1.0011	1.6380	53.906	3.3324

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	**10.509**	**3.5815**	**.27197**	**5.8585**	**1.1780**	**.02567**	**2.9331**	**.59938**
Stddev	.200	.0335	.00294	.1198	.0233	.00018	.0259	.00378
%RSD	1.9053	.93657	1.0806	2.0450	1.9786	.70546	.88208	.63057
#1	10.287	3.5450	.27521	5.7248	1.1522	.02580	2.9093	.59548
#2	10.677	3.5883	.27121	5.9559	1.1976	.02546	2.9295	.59964
#3	10.563	3.6110	.26949	5.8950	1.1842	.02575	2.9606	.60302

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.3692**	**.54999**	**.57484**	**.42683**	**9.6414**	**.28380**	**7.0827**	**3.8286**
Stddev	.0701	.00374	.00779	.00191	.0961	.00229	.0723	.0746
%RSD	2.0810	.67961	1.3556	.44827	.99681	.80643	1.0205	1.9496
#1	3.2914	.55291	.58196	.42667	9.7434	.28616	7.0065	3.7442
#2	3.4275	.55128	.56651	.42500	9.6282	.28159	7.1503	3.8858
#3	3.3888	.54578	.57606	.42882	9.5526	.28365	7.0912	3.8559

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	**.99724**	**2.2047**	**.02936**	**.24443**	**.32668**	**5.6579**	**106.50**
Stddev	.01981	.0157	.00022	.00468	.00526	.0367	1.36
%RSD	1.9867	.71381	.74011	1.9136	1.6095	.64783	1.2737
#1	.97506	2.1905	.02949	.23930	.32061	5.6427	105.59
#2	1.0132	2.2019	.02911	.24845	.32990	5.6312	108.06
#3	1.0035	2.2216	.02948	.24554	.32952	5.6997	105.86

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: S5 Acquired: 7/21/2025 11:49:56 Type: Cal
Method: 6010-200.7 NEW(v47) 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	5047.9	81197.	7716.5	4258.4	5551.7
Stddev	105.6	623.	46.1	35.9	116.1
%RSD	2.0917	.76712	.59752	.84222	2.0906
#1	5161.2	80486.	7769.0	4218.7	5675.7
#2	4952.2	81460.	7682.6	4267.9	5445.7
#3	5030.2	81645.	7697.8	4288.5	5533.5

Sample Name: ICV01 Acquired: 7/21/2025 12:33:18 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**3.854444**	**3.808082**	**3.889683**	**3.941894**	**4.208681**	**7.967427**
Stddev	.008072	.045008	.005017	.013076	.008965	.022331
%RSD	.2094265	1.181895	.1289840	.3317120	.2130226	.2802814
#1	3.845283	3.834594	3.892673	3.934975	4.202716	7.946622
#2	3.857533	3.756115	3.883891	3.933731	4.204337	7.991022
#3	3.860515	3.833536	3.892486	3.956975	4.218991	7.964636

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.997850**	**.1975475**	**1.891826**	**20.02426**	**.7876247**	**1.980859**
Stddev	.081517	.0012718	.004236	.08654	.0013349	.004689
%RSD	1.019231	.6437792	.2239082	.4321951	.1694851	.2367152
#1	7.949817	.1960790	1.893141	19.95998	.7889400	1.981888
#2	8.091970	.1982856	1.887089	20.12266	.7862710	1.975740
#3	7.951762	.1982779	1.895249	19.99013	.7876630	1.984947

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.013356**	**4.070937**	**1.995628**	**19.85773**	**1.982076**	**1.086030**
Stddev	.001172	.017299	.007600	.05780	.003979	.000816
%RSD	.1156938	.4249452	.3808441	.2910796	.2007705	.0751570
#1	1.013857	4.078128	1.991143	19.79602	1.981904	1.086965
#2	1.012016	4.051203	2.004403	19.91060	1.978185	1.085660
#3	1.014194	4.083482	1.991337	19.86659	1.986139	1.085463

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.41982**	**2.023949**	**2.001479**	**19.83754**	F **.0014905**	F **-.000266**
Stddev	.19446	.004785	.001710	.09052	.0005059	.000184
%RSD	1.001338	.2364075	.0854496	.4562845	33.94298	69.08281
#1	19.58981	2.026774	2.003337	19.94170	.0020747	-.000270
#2	19.20778	2.026649	1.999971	19.79289	.0011991	-.000448
#3	19.46187	2.018425	2.001128	19.77801	.0011977	-.000080

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: ICV01 Acquired: 7/21/2025 12:33:18 Type: Unk
Method: 6010-200.7 NEW(v47) 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	F .0001536	F -.002066	F -.046437	F .0039163	F .0062864	F -.004529
Stddev	.0006318	.001309	.001091	.0034967	.0010642	.002935
%RSD	411.2573	63.37216	2.350410	89.28506	16.92868	64.79740
#1	-.000047	-.000605	-.047298	.0013390	.0067606	-.004293
#2	-.000354	-.002458	-.046804	.0025134	.0050675	-.001720
#3	.000861	-.003134	-.045210	.0078965	.0070310	-.007575

Elem	Sr4077
Units	ppm
Avg	F -.003692
Stddev	.000107
%RSD	2.905158
#1	-.003686
#2	-.003587
#3	-.003802

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5132.583	82492.98	7992.913	4344.535	5827.817
Stddev	1.501	207.52	32.331	4.948	7.782
%RSD	.0292361	.2515632	.4045005	.1138922	.1335391
#1	5131.705	82272.34	8024.373	4339.116	5818.925
#2	5134.315	82684.25	7959.775	4345.679	5833.389
#3	5131.727	82522.34	7994.590	4348.812	5831.136

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: LLICV01 Acquired: 7/21/2025 12:55:37 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0229342**	**.0459096**	**.0119402**	**.0231816**	**.0575159**	**.1080663**
Stddev	.0020998	.0007128	.0016975	.0031472	.0009499	.0109638
%RSD	9.155720	1.552564	14.21681	13.57625	1.651558	10.14542
#1	.0205748	.0455313	.0123223	.0247749	.0567924	.1054192
#2	.0245975	.0454657	.0100843	.0252135	.0585916	.0986684
#3	.0236304	.0467318	.0134142	.0195564	.0571636	.1201112

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1061343**	**.0062479**	**.0058231**	**2.163193**	**.0098750**	**.0308581**
Stddev	.0005877	.0000911	.0000663	.011045	.0001234	.0000752
%RSD	.5537268	1.457858	1.138240	.5106052	1.249851	.2438168
#1	.1062573	.0062108	.0058531	2.160719	.0097821	.0307979
#2	.1054948	.0063517	.0057471	2.175266	.0100151	.0309424
#3	.1066508	.0061812	.0058691	2.153594	.0098279	.0308338

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0218834**	**.1177555**	**.0227961**	**2.247448**	**.0418468**	**.0101501**
Stddev	.0007676	.0036301	.0005475	.040910	.0001860	.0003763
%RSD	3.507888	3.082721	2.401571	1.820304	.4443891	3.707255
#1	.0209988	.1182295	.0225857	2.247116	.0416339	.0105724
#2	.0222766	.1139117	.0234175	2.288524	.0419772	.0100276
#3	.0223747	.1211253	.0223850	2.206705	.0419294	.0098504

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.615833**	**.0355124**	**.0442435**	**1.741657**	**.1052334**	**.2179168**
Stddev	.013314	.0024795	.0006319	.021460	.0008042	.0006117
%RSD	.8239554	6.982039	1.428269	1.232157	.7642049	.2807046
#1	1.622489	.0383748	.0435609	1.761961	.1053552	.2176496
#2	1.624507	.0340264	.0448081	1.719203	.1059698	.2186166
#3	1.600504	.0341360	.0443614	1.743808	.1043753	.2174841

Sample Name: LLICV01 Acquired: 7/21/2025 12:55:37 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0395556	.0466402	.3630333	.0201467	F .0146696	F .0139525
Stddev	.0006451	.0007140	.0036895	.0006140	.0013079	.0017323
%RSD	1.630761	1.530944	1.016309	3.047814	8.915606	12.41584
#1	.0402666	.0469814	.3665362	.0208321	.0153446	.0120787
#2	.0393925	.0471196	.3633820	.0199611	.0155021	.0142834
#3	.0390078	.0458195	.3591819	.0196469	.0131621	.0154956

Elem	Sr4077
Units	ppm
Avg	.0214961
Stddev	.0001036
%RSD	.4818559
#1	.0215968
#2	.0215017
#3	.0213898

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5254.852	85019.01	8025.670	4435.074	6235.664
Stddev	10.867	330.05	53.745	15.885	22.249
%RSD	.2068033	.3882028	.6696657	.3581759	.3567958
#1	5267.400	84858.90	8011.447	4428.769	6261.039
#2	5248.492	84799.56	7980.467	4423.309	6226.456
#3	5248.664	85398.57	8085.096	4453.144	6219.498

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: ICB01 Acquired: 7/21/2025 13:04:28 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0030083**	**-.000981**	**-.000970**	**.0026624**	**.0019184**	**-.005008**	**.0003038**
Stddev	.0008047	.000597	.001224	.0016836	.0023661	.013425	.0010016
%RSD	26.74924	60.83784	126.2844	63.23578	123.3412	268.0680	329.6879
#1	.0036336	-.000975	-.002283	.0036882	.0021032	-.019912	-.000775
#2	.0021004	-.001582	-.000767	.0007194	.0041866	.006134	.000483
#3	.0032908	-.000388	.000141	.0035797	-.000535	-.001245	.001204

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000063**	**.0000685**	**.0463878**	**.0001899**	**.0001546**	**-.000182**	**.0050005**
Stddev	.000034	.0000900	.0117553	.0005197	.0001685	.000353	.0063018
%RSD	54.27850	131.5316	25.34127	273.6499	108.9303	193.6507	126.0234
#1	-.000038	-.000023	.0349723	-.000272	.0002491	-.000512	-.001044
#2	-.000049	.000156	.0584556	.000089	-.000040	-.000223	.004514
#3	-.000102	.000072	.0457356	.000753	.000255	.000189	.011531

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001456**	**.0151423**	**.0001634**	**.0002370**	**-.471556**	**-.000047**	**.0004405**
Stddev	.0003464	.0286807	.0001076	.0005007	.007926	.001034	.0002982
%RSD	237.9174	189.4080	65.85621	211.2569	1.680887	2209.337	67.68825
#1	-.000227	.0028456	.0002873	.0007486	-.465646	-.001078	.0007715
#2	.000459	-.005340	.0001084	.0002144	-.468460	.000990	.0001929
#3	.000205	.047921	.0000944	-.000252	-.480563	-.000052	.0003571

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.328654**	**-.002367**	**-.000091**	**.0022004**	**.0062373**	**-.008679**	**.0012766**
Stddev	.035400	.000326	.000193	.0012202	.0020936	.011586	.0028850
%RSD	10.77130	13.77248	213.3862	55.45357	33.56550	133.4872	226.0011
#1	-.294964	-.002103	.000106	.0008059	.0046508	-.000985	.0030889
#2	-.325451	-.002266	-.000096	.0027231	.0086102	-.003049	.0027912
#3	-.365547	-.002731	-.000281	.0030721	.0054509	-.022004	-.002050

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: ICB01 Acquired: 7/21/2025 13:04:28 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.005609**	**-.007633**	**.0000131**
Stddev	.001096	.001795	.0000974
%RSD	19.54089	23.51227	741.7083
#1	-.004870	-.007160	-.000084
#2	-.005088	-.009617	.000013
#3	-.006868	-.006122	.000111

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5355.893**	**86388.89**	**8057.077**	**4519.170**	**6365.764**
Stddev	13.107	359.28	72.975	13.264	23.429
%RSD	.2447137	.4158871	.9057262	.2935100	.3680517
#1	5346.647	86702.85	8141.213	4513.367	6348.767
#2	5370.892	86466.75	8019.047	4534.347	6392.490
#3	5350.139	85997.06	8010.972	4509.796	6356.033

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CRI01 Acquired: 7/21/2025 13:08:48 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0212786**	**.0467703**	**.0119625**	**.0226192**	**.0539799**	**.1073545**
Stddev	.0020098	.0021140	.0003570	.0018354	.0021238	.0106177
%RSD	9.445381	4.519909	2.984779	8.114423	3.934332	9.890278
#1	.0225040	.0451491	.0120775	.0229570	.0564312	.0990874
#2	.0223727	.0460005	.0115621	.0206383	.0528131	.1193287
#3	.0189591	.0491613	.0122478	.0242622	.0526953	.1036473

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1050593**	**.0061823**	**.0058922**	**2.141333**	**.0099243**	**.0307592**
Stddev	.0012841	.0001724	.0000992	.006822	.0002497	.0001614
%RSD	1.222293	2.788578	1.684116	.3185813	2.515986	.5248293
#1	.1042060	.0062863	.0058837	2.138209	.0098238	.0305851
#2	.1065361	.0059833	.0059954	2.136632	.0097406	.0307884
#3	.1044357	.0062772	.0057975	2.149157	.0102086	.0309040

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0218293**	**.1224923**	**.0228068**	**2.220860**	**.0421884**	**.0100501**
Stddev	.0006049	.0064897	.0003639	.016849	.0003249	.0007547
%RSD	2.771087	5.298048	1.595559	.7586764	.7702053	7.509663
#1	.0221206	.1190232	.0224061	2.230397	.0422701	.0097935
#2	.0211338	.1299793	.0231167	2.201405	.0424647	.0094571
#3	.0222334	.1184745	.0228977	2.230777	.0418304	.0108997

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.572167**	**.0389535**	**.0439649**	**1.705616**	**.1027725**	**.2163359**
Stddev	.009032	.0008227	.0003229	.025378	.0005626	.0003760
%RSD	.5745119	2.111999	.7343377	1.487935	.5473820	.1738105
#1	1.565917	.0397057	.0435935	1.681946	.1034221	.2165329
#2	1.568060	.0390798	.0441233	1.702488	.1024453	.2165725
#3	1.582523	.0380749	.0441780	1.732413	.1024502	.2159023

Sample Name: CRI01 Acquired: 7/21/2025 13:08:48 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0391868	.0460614	.3766065	.0178850	.0150988	F .0106998
Stddev	.0005966	.0025024	.0028851	.0025966	.0019606	.0015970
%RSD	1.522399	5.432737	.7660756	14.51827	12.98502	14.92570
#1	.0398732	.0489002	.3735332	.0207506	.0131075	.0112556
#2	.0387938	.0441755	.3792567	.0172161	.0170272	.0088992
#3	.0388932	.0451083	.3770297	.0156883	.0151617	.0119447

Elem	Sr4077
Units	ppm
Avg	.0213904
Stddev	.0000819
%RSD	.3829698
#1	.0213628
#2	.0213259
#3	.0214826

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5289.053	85468.03	8130.947	4467.837	6241.694
Stddev	3.521	490.68	27.833	30.377	3.802
%RSD	.0665790	.5741046	.3423039	.6799145	.0609169
#1	5288.833	85859.45	8117.653	4490.775	6242.606
#2	5285.647	85627.09	8162.934	4479.351	6244.957
#3	5292.679	84917.56	8112.255	4433.386	6237.518

Sample Name: ICSA01 Acquired: 7/21/2025 13:13:06 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0109984**	**.0076562**	**-.007524**	**-.006022**	**-.003115**	**257.5484**
Stddev	.0044934	.0028308	.001247	.003116	.000507	4.0275
%RSD	40.85544	36.97414	16.56937	51.74536	16.28534	1.563767
#1	.0117742	.0052644	-.007501	-.002769	-.002545	261.4025
#2	.0150533	.0107816	-.006289	-.008981	-.003516	253.3675
#3	.0061675	.0069225	-.008782	-.006316	-.003285	257.8752

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0044121**	**.0006693**	**-.001463**	**245.8916**	**.0562718**	**.0022678**
Stddev	.0007501	.0000748	.000099	.7641	.0004841	.0002137
%RSD	17.00054	11.18138	6.737499	.3107368	.8603192	9.421167
#1	.0052759	.0007151	-.001388	246.7241	.0565059	.0020441
#2	.0040352	.0005829	-.001575	245.2223	.0565943	.0024698
#3	.0039253	.0007098	-.001426	245.7284	.0557151	.0022896

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0121988**	**100.4447**	**.0083831**	**256.0402**	**.0056385**	**-.000159**
Stddev	.0018587	.8999	.0002378	.6673	.0001755	.000412
%RSD	15.23630	.8958876	2.837102	.2606151	3.111966	259.2317
#1	.0143394	99.4091	.0082054	256.8095	.0054596	.000015
#2	.0112633	100.8884	.0082906	255.6187	.0058103	-.000630
#3	.0109938	101.0365	.0086533	255.6923	.0056456	.000138

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.265483**	**.0044624**	**.0021767**	**-.166588**	**.0407940**	**.0007680**
Stddev	.013195	.0056930	.0004621	.029097	.0039198	.0002694
%RSD	4.970311	127.5763	21.23017	17.46636	9.608748	35.07408
#1	-.275520	-.002001	.0026621	-.195511	.0363241	.0010621
#2	-.250536	.006658	.0021259	-.137320	.0424125	.0007089
#3	-.270392	.008731	.0017421	-.166933	.0436454	.0005331

Sample Name: ICSA01 Acquired: 7/21/2025 13:13:06 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002961	.0034716	.0142564	.0032315	-.007925	F .0513011
Stddev	.001224	.0019213	.0186338	.0048942	.002919	.0011023
%RSD	41.35089	55.34318	130.7044	151.4521	36.83384	2.148660
#1	-.002372	.0012621	-.004455	.0086437	-.005311	.0523823
#2	-.002142	.0047497	.014414	.0019344	-.007390	.0501788
#3	-.004368	.0044030	.032811	-.000883	-.011075	.0513423

Elem	Sr4077
Units	ppm
Avg	.0071187
Stddev	.0007949
%RSD	11.16653
#1	.0080109
#2	.0064859
#3	.0068592

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4802.067	77609.72	7685.631	4037.923	5219.565
Stddev	16.507	248.87	61.625	22.706	11.441
%RSD	.3437509	.3206660	.8018153	.5623191	.2192002
#1	4810.542	77888.36	7614.500	4016.157	5217.458
#2	4812.616	77531.26	7722.872	4061.465	5231.913
#3	4783.044	77409.53	7719.522	4036.148	5209.323

Sample Name: ICSAB01 Acquired: 7/21/2025 13:24:02 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1063302**	**.1015846**	**.0377126**	**.0420017**	**.6000570**	**258.7819**
Stddev	.0013010	.0037370	.0030315	.0099075	.0025527	2.5448
%RSD	1.223565	3.678743	8.038308	23.58829	.4254048	.9833812
#1	.1067715	.1054366	.0351511	.0327410	.5971157	259.3964
#2	.1048659	.0979743	.0410595	.0408151	.6016940	260.9632
#3	.1073532	.1013428	.0369273	.0524490	.6013612	255.9861

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5029832**	**.4796250**	**.9266490**	**247.2286**	**.5244245**	**.4881262**
Stddev	.0005278	.0044546	.0034296	1.4878	.0013888	.0011947
%RSD	.1049403	.9287601	.3701102	.6017712	.2648185	.2447471
#1	.5024478	.4789182	.9303941	247.8786	.5234773	.4894760
#2	.5029987	.4843907	.9236616	248.2807	.5260188	.4876979
#3	.5035031	.4755660	.9258912	245.5265	.5237776	.4872047

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4698357**	**102.2030**	**.4936412**	**257.0998**	**.9657885**	**.2098243**
Stddev	.0023859	.3390	.0003654	1.5619	.0044609	.0008592
%RSD	.5078247	.3316625	.0740207	.6075030	.4618946	.4094978
#1	.4725868	102.5886	.4934846	258.0665	.9708897	.2094402
#2	.4685872	102.0685	.4940588	257.9350	.9626189	.2108086
#3	.4683330	101.9519	.4933802	255.2979	.9638569	.2092241

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.281196**	**.4802240**	**1.021035**	**-.361827**	F **.0531998**	F **-.000223**
Stddev	.005808	.0024291	.001189	.030962	.0021050	.000698
%RSD	2.065589	.5058201	.1164142	8.557068	3.956752	313.3654
#1	-.275147	.4776130	1.020195	-.332162	.0547429	-.000307
#2	-.286729	.4824169	1.020515	-.393940	.0508019	-.000875
#3	-.281712	.4806422	1.022395	-.359379	.0540546	.000513

Sample Name: ICSAB01 Acquired: 7/21/2025 13:24:02 Type: Unk
Method: 6010-200.7 NEW(v47) 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	F -.002642	F -.001183	F .0067164	F .0036569	F -.013804	F .0455696
Stddev	.000832	.001651	.0164650	.0013154	.001957	.0024221
%RSD	31.49688	139.5518	245.1469	35.96951	14.18024	5.315100
#1	-.002944	-.001706	-.010853	.0041912	-.015485	.0469033
#2	-.003282	.000666	.021792	.0021585	-.011655	.0470317
#3	-.001701	-.002509	.009210	.0046210	-.014273	.0427738

Elem	Sr4077
Units	ppm
Avg	F .0056408
Stddev	.0002760
%RSD	4.892197
#1	.0058198
#2	.0057795
#3	.0053230

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4764.560	76602.86	7723.925	4010.540	5196.023
Stddev	13.700	243.22	39.833	20.782	10.662
%RSD	.2875447	.3175070	.5157045	.5181757	.2052016
#1	4756.533	76797.76	7746.812	4012.959	5187.829
#2	4780.379	76680.55	7677.930	4030.007	5208.078
#3	4756.767	76330.29	7747.033	3988.655	5192.162

Sample Name: ICSADLX20 Acquired: 7/21/2025 13:28:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0002291**	**.0000629**	**-.001734**	**.0019205**	**.0002154**	**12.44394**	**.0021665**
Stddev	.0000977	.0011170	.000312	.0046956	.0023451	.02511	.0002718
%RSD	42.66178	1776.039	17.98799	244.5008	1088.817	.2017718	12.54723
#1	.0001718	.0013469	-.001436	.0055107	-.002455	12.47163	.0018551
#2	.0003419	-.000473	-.002058	.0036441	.001162	12.42264	.0022880
#3	.0001735	-.000685	-.001707	-.003393	.001939	12.43756	.0023563

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000779**	**-.000018**	**12.68216**	**.0023659**	**.0001024**	**.0008727**	**4.926121**
Stddev	.0000888	.000044	.06181	.0002114	.0001874	.0003200	.039992
%RSD	114.0616	245.3237	.4873462	8.937057	182.9204	36.67126	.8118268
#1	-.000002	-.000014	12.74282	.0025681	-.000069	.0012051	4.965420
#2	.000173	.000024	12.68441	.0023831	.000073	.0008461	4.927474
#3	.000062	-.000064	12.61927	.0021463	.000303	.0005668	4.885471

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005707**	**12.72090**	**.0001569**	**-.000062**	**-.495093**	**.0034841**	**-.000638**
Stddev	.0003305	.05940	.0002496	.000403	.010930	.0031626	.000255
%RSD	57.91415	.4669730	159.0725	652.5755	2.207685	90.77271	39.97888
#1	.0006383	12.74597	.0004448	-.000438	-.502903	.0003015	-.000396
#2	.0002116	12.65308	.0000237	.000363	-.482602	.0035244	-.000613
#3	.0008621	12.76367	.0000022	-.000110	-.499774	.0066264	-.000905

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.502447**	**-.001376**	**-.000138**	**-.000605**	**.0054041**	**-.006807**	**-.002510**
Stddev	.024242	.000754	.000334	.000498	.0006434	.010248	.002996
%RSD	4.824792	54.82828	241.9830	82.24339	11.90639	150.5610	119.3585
#1	-.493259	-.002240	-.000519	-.000467	.0048010	-.002823	.000485
#2	-.484142	-.000849	.000102	-.001157	.0060815	-.018449	-.002508
#3	-.529940	-.001038	.000003	-.000191	.0053298	.000851	-.005508

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: ICSADLX20 Acquired: 7/21/2025 13:28:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.007312**	**-.007267**	**.0003112**
Stddev	.001564	.004224	.0000711
%RSD	21.38178	58.11666	22.85966
#1	-.006201	-.008742	.0002319
#2	-.009100	-.010556	.0003695
#3	-.006636	-.002504	.0003320

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5254.923**	**82995.63**	**7774.260**	**4362.793**	**6211.591**
Stddev	9.270	178.51	13.397	21.774	13.139
%RSD	.1764091	.2150841	.1723237	.4990922	.2115314
#1	5261.806	83150.81	7782.322	4386.117	6215.282
#2	5258.580	82800.54	7781.661	4359.263	6222.491
#3	5244.382	83035.53	7758.795	4342.999	6197.001

Sample Name: ICSABDLX20 Acquired: 7/21/2025 13:32:42 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0049834**	**.0047115**	**.0004478**	**.0035326**	**.0298916**	**11.72822**	**.0253062**
Stddev	.0006920	.0017342	.0007974	.0033413	.0007753	.01669	.0007430
%RSD	13.88606	36.80743	178.0758	94.58537	2.593714	.1422767	2.936224
#1	.0051542	.0027095	.0003715	.0029706	.0290772	11.74685	.0245496
#2	.0042220	.0056749	-.000309	.0071193	.0299769	11.71463	.0260349
#3	.0055740	.0057502	.001281	.0005079	.0306208	11.72318	.0253341

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0236542**	**.0432329**	**11.98780**	**.0250771**	**.0228648**	**.0238740**	**4.652115**
Stddev	.0001468	.0002181	.01771	.0002990	.0001282	.0001746	.013197
%RSD	.6204211	.5043752	.1477362	1.192349	.5606028	.7313961	.2836843
#1	.0235484	.0432892	12.00776	.0254197	.0227978	.0236724	4.667351
#2	.0235925	.0429922	11.97395	.0249431	.0227841	.0239731	4.644733
#3	.0238217	.0434173	11.98170	.0248686	.0230126	.0239765	4.644260

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0245868**	**11.97417**	**.0458447**	**.0094940**	**-.520188**	**.0220474**	**.0472245**
Stddev	.0004351	.05935	.0000744	.0003250	.008017	.0057396	.0005519
%RSD	1.769811	.4956600	.1624061	3.422882	1.541265	26.03287	1.168616
#1	.0247318	11.90688	.0458630	.0098634	-.510955	.0163784	.0472758
#2	.0240977	12.01906	.0457628	.0092521	-.525390	.0219089	.0466488
#3	.0249310	11.99657	.0459083	.0093665	-.524219	.0278550	.0477489

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.465946**	**-.002280**	**.0001678**	**-.000470**	**.0053945**	**-.005928**	**-.000174**
Stddev	.019624	.000793	.0000890	.000403	.0014523	.004962	.001426
%RSD	4.211577	34.78909	53.07094	85.80876	26.92117	83.70488	817.7553
#1	-.474740	-.002746	.0002066	-.000069	.0066569	-.000223	.000688
#2	-.479634	-.001364	.0002309	-.000875	.0057192	-.008325	-.001821
#3	-.443463	-.002729	.0000659	-.000466	.0038074	-.009238	.000610

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: ICSABDLX20 Acquired: 7/21/2025 13:32:42 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.007413**	**-.008534**	**.0003632**
Stddev	.000770	.003629	.0000500
%RSD	10.38541	42.52859	13.75701
#1	-.007998	-.005908	.0003090
#2	-.007701	-.012676	.0003730
#3	-.006541	-.007019	.0004075

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5276.076**	**84505.10**	**7918.179**	**4409.380**	**6202.414**
Stddev	13.652	159.00	26.042	13.121	14.392
%RSD	.2587592	.1881594	.3288838	.2975802	.2320355
#1	5275.680	84682.50	7934.858	4423.074	6195.305
#2	5289.923	84375.43	7888.171	4408.150	6218.977
#3	5262.627	84457.38	7931.508	4396.918	6192.961

Sample Name: CCV01 Acquired: 7/21/2025 13:36:55 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.991829**	**5.087310**	**4.873572**	**5.062152**	**4.972849**	**9.919608**	**10.05725**
Stddev	.042739	.084246	.040432	.057123	.046174	.026484	.05246
%RSD	.8561811	1.655997	.8296150	1.128438	.9285217	.2669858	.5216272
#1	5.040396	5.181896	4.920099	5.127980	5.018798	9.928677	10.00069
#2	4.959958	5.059703	4.846974	5.025623	4.926453	9.940366	10.06676
#3	4.975134	5.020332	4.853642	5.032854	4.973297	9.889781	10.10431

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2392190**	**2.438805**	**25.43796**	**.9468767**	**2.412812**	**1.225512**	**4.924759**
Stddev	.0024100	.020295	.06652	.0030918	.020344	.009540	.020509
%RSD	1.007428	.8321771	.2614997	.3265266	.8431660	.7784149	.4164448
#1	.2394162	2.462209	25.43976	.9465048	2.436274	1.235983	4.946656
#2	.2415244	2.426059	25.50356	.9439877	2.400081	1.217315	4.906000
#3	.2367166	2.428148	25.37055	.9501377	2.402079	1.223238	4.921621

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.499860**	**24.50622**	**2.423050**	**1.229440**	**24.03990**	**2.445557**	**2.487891**
Stddev	.007243	.04755	.019436	.000787	.25575	.021754	.006876
%RSD	.2897395	.1940390	.8021502	.0640230	1.063856	.8895325	.2763705
#1	2.505093	24.55863	2.445483	1.230109	24.15061	2.467473	2.494792
#2	2.502893	24.49418	2.411235	1.228573	23.74745	2.445230	2.481041
#3	2.491593	24.46584	2.412432	1.229638	24.22165	2.423969	2.487838

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.66100**	**5.005249**	**4.979912**	**4.888925**	**4.874942**	**4.716629**	**4.743406**
Stddev	.15098	.038041	.045668	.040109	.019052	.030204	.047651
%RSD	.6122414	.7600282	.9170490	.8204057	.3908214	.6403665	1.004573
#1	24.57868	5.018975	5.030184	4.934979	4.893680	4.710083	4.796752
#2	24.56907	5.034522	4.940987	4.870139	4.875555	4.690235	4.728403
#3	24.83525	4.962249	4.968564	4.861657	4.855590	4.749569	4.705062

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV01 Acquired: 7/21/2025 13:36:55 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.897458**	**4.854125**	**5.015364**
Stddev	.061513	.018013	.061791
%RSD	1.256016	.3710948	1.232027
#1	4.968431	4.871659	4.987492
#2	4.859527	4.855048	5.086181
#3	4.864417	4.835668	4.972419

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5216.420**	**84632.85**	**7973.565**	**4360.284**	**5873.416**
Stddev	36.795	70.65	66.936	11.089	41.558
%RSD	.7053781	.0834749	.8394753	.2543141	.7075543
#1	5175.809	84711.57	7953.646	4348.473	5825.688
#2	5247.541	84612.00	7918.849	4370.471	5901.585
#3	5225.910	84574.97	8048.199	4361.907	5892.976

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB01 Acquired: 7/21/2025 13:55:45 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.001863**	**.0084127**	**-.001196**	**.0040966**	**.0001861**	**-.001310**	**-.000328**
Stddev	.000400	.0007795	.001430	.0008952	.0002894	.010475	.000528
%RSD	21.49143	9.266284	119.6202	21.85279	155.5149	799.6576	161.0006
#1	-.001762	.0091016	-.002772	.0033642	-.000141	-.012082	.000254
#2	-.001523	.0085700	-.000835	.0050945	.000289	-.000687	-.000463
#3	-.002304	.0075665	.000020	.0038310	.000410	.008840	-.000775

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000058**	**.0001009**	**.0367302**	**-.000011**	**-.000067**	**-.000355**	**-.000457**
Stddev	.000042	.0000820	.0006133	.000118	.000102	.000197	.003793
%RSD	71.33463	81.30620	1.669825	1086.040	152.6492	55.59557	830.4589
#1	-.000062	.0001541	.0366043	-.000078	-.000159	-.000575	-.004826
#2	-.000098	.0001422	.0361896	.000125	.000042	-.000194	.001456
#3	-.000015	.0000064	.0373968	-.000080	-.000083	-.000296	.002000

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001529**	**.0248464**	**.0001949**	**.0001740**	**-.581980**	**-.001528**	**-.000642**
Stddev	.0004364	.0137587	.0001268	.0002881	.022477	.003791	.000058
%RSD	285.4775	55.37490	65.08372	165.6018	3.862104	248.1225	8.978558
#1	.0000103	.0401922	.0002205	.0004510	-.560713	-.001489	-.000704
#2	.0006428	.0136127	.0003070	.0001949	-.579730	.002243	-.000590
#3	-.000194	.0207341	.0000572	-.000124	-.605497	-.005338	-.000630

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.414544**	**.0050727**	**-.000039**	**.0011934**	**.0074661**	**-.003271**	**-.001029**
Stddev	.030641	.0007718	.000304	.0004983	.0016287	.008819	.004180
%RSD	7.391555	15.21571	781.5145	41.75058	21.81448	269.5863	406.1612
#1	-.445390	.0054480	-.000319	.0015190	.0077157	-.011044	-.001136
#2	-.384111	.0055851	.000284	.0006198	.0057270	.006312	.003203
#3	-.414133	.0041849	-.000082	.0014415	.0089556	-.005082	-.005155

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB01 Acquired: 7/21/2025 13:55:45 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.005989	-.009398	.0000264
Stddev	.001233	.001384	.0000693
%RSD	20.58245	14.72517	262.1552
#1	-.007309	-.007867	.0000047
#2	-.004868	-.009769	-.000029
#3	-.005790	-.010559	.000104

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5315.937	86037.73	8001.502	4429.082	6357.598
Stddev	3.804	289.38	23.658	15.434	9.329
%RSD	.0715629	.3363372	.2956662	.3484768	.1467438
#1	5311.620	86369.57	8001.193	4433.377	6356.785
#2	5317.390	85837.86	7978.000	4441.913	6348.702
#3	5318.801	85905.77	8025.312	4411.954	6367.307

Sample Name: Q2606-01 Acquired: 7/21/2025 14:00:03 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.002711**	**.0062630**	**-.002375**	**.0059295**	**.0021819**	**.2901343**
Stddev	.000584	.0009188	.000579	.0030486	.0011758	.0072846
%RSD	21.53031	14.66965	24.37662	51.41429	53.88739	2.510776
#1	-.002492	.0069283	-.001811	.0039300	.0019804	.2964311
#2	-.003373	.0052147	-.002968	.0044202	.0011199	.2821559
#3	-.002269	.0066460	-.002346	.0094384	.0034454	.2918159

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1479735**	**-.000205**	**-.000051**	**110.9222**	**.0160063**	**.0019755**
Stddev	.0000926	.000107	.000120	.3628	.0004183	.0002404
%RSD	.0625978	52.16041	235.4724	.3270787	2.613281	12.16927
#1	.1479532	-.000089	-.000179	110.8022	.0155864	.0018123
#2	.1480746	-.000226	.000060	111.3298	.0160096	.0018627
#3	.1478927	-.000299	-.000034	110.6346	.0164229	.0022516

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011822**	**.0756458**	**.0069653**	**33.32182**	**.0212929**	**-.000092**
Stddev	.0005990	.0016124	.0002569	.12831	.0002023	.000572
%RSD	50.67369	2.131506	3.687672	.3850748	.9501676	619.7692
#1	.0017606	.0746372	.0069314	33.20630	.0212993	-.000614
#2	.0012214	.0775054	.0067270	33.45993	.0214919	.000519
#3	.0005644	.0747947	.0072374	33.29924	.0210874	-.000182

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**342.2974**	**.0022746**	**.0674867**	**21.79365**	**.3824690**	**.0136260**
Stddev	4.0422	.0015550	.0003282	.12474	.0035177	.0004048
%RSD	1.180911	68.36331	.4862994	.5723564	.9197398	2.970814
#1	337.9064	.0039954	.0672467	21.66812	.3845531	.0133901
#2	345.8637	.0009702	.0678607	21.79526	.3844463	.0133945
#3	343.1221	.0018583	.0673527	21.91758	.3784075	.0140935

Sample Name: Q2606-01 Acquired: 7/21/2025 14:00:03 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.007265	.0050147	11.48559	.0629302	F 37.56103	.0103089
Stddev	.000822	.0021714	.09333	.0008959	.11354	.0039229
%RSD	11.31575	43.29974	.8125875	1.423652	.3022765	38.05405
#1	-.007050	.0031794	11.39037	.0628281	37.45592	.0058708
#2	-.006571	.0074117	11.48948	.0638728	37.68145	.0117422
#3	-.008173	.0044530	11.57691	.0620897	37.54571	.0133136

Elem	Sr4077
Units	ppm
Avg	1.163872
Stddev	.003696
%RSD	.3175372
#1	1.160416
#2	1.167768
#3	1.163431

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4870.776	80486.91	7545.842	4125.860	5407.165
Stddev	16.371	272.34	70.187	9.013	6.491
%RSD	.3361101	.3383690	.9301363	.2184600	.1200370
#1	4881.911	80489.51	7505.501	4117.097	5410.862
#2	4878.438	80213.28	7505.139	4125.378	5410.963
#3	4851.978	80757.94	7626.886	4135.104	5399.670

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2606-01DUP Acquired: 7/21/2025 14:04:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.004118**	**.0074815**	**-.002005**	**.0064459**	**.0014361**	**.3026177**
Stddev	.001763	.0008932	.001918	.0033168	.0021046	.0081090
%RSD	42.82060	11.93946	95.64891	51.45570	146.5546	2.679623
#1	-.005765	.0079910	-.000118	.0076571	.0028671	.2972677
#2	-.004331	.0080034	-.001945	.0026938	.0024216	.2986377
#3	-.002258	.0064501	-.003953	.0089870	-.000980	.3119477

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1462871**	**-.000217**	**.0000198**	**110.8316**	**.0085511**	**.0017083**
Stddev	.0007053	.000043	.0000453	.3772	.0003487	.0000219
%RSD	.4821510	19.67190	228.3781	.3403510	4.078267	1.281395
#1	.1458575	-.000205	-.000023	110.4994	.0087038	.0017023
#2	.1459027	-.000264	.000067	110.7538	.0081520	.0016901
#3	.1471011	-.000181	.000016	111.2417	.0087974	.0017326

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012839**	**.0632273**	**.0054065**	**33.39373**	**.0163346**	**-.000016**
Stddev	.0004437	.0095148	.0004090	.02960	.0001860	.000313
%RSD	34.55681	15.04854	7.564949	.0886306	1.138871	1973.851
#1	.0010511	.0580259	.0052373	33.36200	.0164817	-.000072
#2	.0010050	.0742089	.0051092	33.39862	.0163965	-.000297
#3	.0017955	.0574470	.0058729	33.42058	.0161255	.000322

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**357.5876**	**.0038514**	**.0658716**	**22.73511**	**.3665119**	**.0128279**
Stddev	2.6283	.0008707	.0005699	.13350	.0026336	.0002393
%RSD	.7350154	22.60748	.8651553	.5871876	.7185512	1.865382
#1	354.6743	.0032478	.0661670	22.60498	.3685586	.0125521
#2	359.7807	.0034569	.0652147	22.72862	.3635408	.0129794
#3	358.3079	.0048496	.0662333	22.87174	.3674365	.0129524

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2606-01DUP Acquired: 7/21/2025 14:04:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.006913	.0036246	12.04442	.0625970	F 37.91793	.0118517
Stddev	.000512	.0012602	.05193	.0013301	.14072	.0025876
%RSD	7.399405	34.76845	.4311152	2.124837	.3711081	21.83314
#1	-.007454	.0033086	11.99563	.0622817	37.94438	.0092972
#2	-.006848	.0050128	12.03863	.0614529	37.76586	.0144711
#3	-.006437	.0025525	12.09900	.0640564	38.04354	.0117867

Elem	Sr4077
Units	ppm
Avg	1.164934
Stddev	.006625
%RSD	.5686997
#1	1.159657
#2	1.162776
#3	1.172369

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4846.212	80838.49	7941.776	4108.475	5379.424
Stddev	12.841	67.33	20.576	1.334	13.270
%RSD	.2649765	.0832939	.2590813	.0324609	.2466857
#1	4857.176	80790.51	7921.283	4107.747	5378.391
#2	4832.085	80915.46	7962.433	4110.015	5366.701
#3	4849.376	80809.49	7941.611	4107.665	5393.181

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2606-01LX5 Acquired: 7/21/2025 14:08:47 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0003514**	**.0079202**	**-.001200**	**.0018354**	**.0021929**	**.0625474**	**.0294317**
Stddev	.0009947	.0011793	.001589	.0031348	.0015801	.0042512	.0011080
%RSD	283.0835	14.88967	132.4565	170.8002	72.05550	6.796771	3.764768
#1	-.000428	.0070204	-.000382	.0047817	.0038896	.0666695	.0305011
#2	.001472	.0074849	-.000186	.0021835	.0007634	.0581779	.0282887
#3	.000010	.0092552	-.003031	-.001459	.0019257	.0627948	.0295054

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000073**	**.0000229**	**22.73152**	**.0027541**	**.0003297**	**.0005464**	**.0218226**
Stddev	.000048	.0000609	.09096	.0002220	.0001420	.0002949	.0008618
%RSD	65.11119	266.3794	.4001328	8.058936	43.07034	53.97585	3.949078
#1	-.000026	-.000047	22.81709	.0027587	.0001663	.0008632	.0213753
#2	-.000122	.000049	22.74148	.0025299	.0004230	.0002798	.0212765
#3	-.000071	.000067	22.63599	.0029738	.0003999	.0004962	.0228161

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018559**	**6.862864**	**.0042890**	**.0000795**	**65.43755**	**.0012191**	**.0126141**
Stddev	.0001943	.047030	.0001886	.0005307	.04959	.0063744	.0001595
%RSD	10.47098	.6852895	4.397664	667.0883	.0757831	522.8971	1.264324
#1	.0020447	6.915634	.0042586	.0001586	65.49065	.0082477	.0124301
#2	.0016564	6.847585	.0044910	.0005662	65.42955	-.004188	.0127105
#3	.0018666	6.825374	.0041174	-.000486	65.39244	-.000402	.0127019

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.331778**	**.0817179**	**.0027525**	**-.001530**	**.0051316**	**2.369961**	**.0103117**
Stddev	.044656	.0005264	.0003179	.000721	.0006652	.014340	.0041088
%RSD	1.030890	.6441792	11.54963	47.13216	12.96306	.6050533	39.84576
#1	4.371051	.0822693	.0030365	-.001607	.0050027	2.366772	.0088293
#2	4.341080	.0816635	.0024091	-.002209	.0058518	2.385626	.0149560
#3	4.283204	.0812207	.0028121	-.000773	.0045402	2.357485	.0071498

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2606-01LX5 Acquired: 7/21/2025 14:08:47 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.287085	-.002287	.2320848
Stddev	.081125	.001547	.0008270
%RSD	1.113275	67.66760	.3563283
#1	7.380749	-.002628	.2329685
#2	7.238950	-.003634	.2319564
#3	7.241557	-.000597	.2313295

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5228.738	84458.06	8096.834	4373.631	6008.863
Stddev	4.381	256.97	65.498	9.392	10.554
%RSD	.0837922	.3042580	.8089320	.2147449	.1756356
#1	5226.210	84185.75	8022.345	4366.539	5997.471
#2	5226.206	84492.14	8122.743	4370.071	6010.812
#3	5233.797	84696.29	8145.414	4384.282	6018.307

Sample Name: Q2606-01MS Acquired: 7/21/2025 14:13:05 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8115714**	**1.876961**	**.9042357**	**2.025860**	**.8556104**	**2.331104**
Stddev	.0034385	.010073	.0032357	.007008	.0038704	.009737
%RSD	.4236864	.5366651	.3578402	.3459164	.4523577	.4176891
#1	.8122814	1.885191	.9014450	2.017972	.8517856	2.341111
#2	.8078333	1.865728	.9034796	2.028243	.8555208	2.330539
#3	.8145995	1.879965	.9077825	2.031366	.8595249	2.321662

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3519026**	**.1895291**	**.1897754**	**111.0665**	**.3871072**	**.2022895**
Stddev	.0028784	.0011111	.0006723	.6169	.0019025	.0005577
%RSD	.8179421	.5862324	.3542731	.5554731	.4914530	.2756671
#1	.3549907	.1900507	.1894892	111.6600	.3891163	.2020628
#2	.3514231	.1902835	.1892935	111.1110	.3853333	.2018808
#3	.3492942	.1882532	.1905434	110.4285	.3868721	.2029247

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2987787**	**3.145139**	**.2093490**	**35.37546**	**.5133181**	**.0695177**
Stddev	.0009256	.026676	.0012167	.11268	.0017227	.0002824
%RSD	.3098041	.8481628	.5812009	.3185221	.3355993	.4062176
#1	.2977115	3.123124	.2095515	35.28880	.5137803	.0692936
#2	.2992612	3.137489	.2104519	35.33474	.5114115	.0694245
#3	.2993634	3.174804	.2080438	35.50283	.5147626	.0698349

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**360.4924**	**.3100706**	**.2812124**	**33.31710**	**.6416506**	**.4523152**
Stddev	2.3117	.0010987	.0010129	.19562	.0005683	.0004910
%RSD	.6412534	.3543320	.3601818	.5871567	.0885754	.1085592
#1	359.4784	.3089820	.2821735	33.49085	.6415589	.4518000
#2	363.1378	.3100509	.2813090	33.10522	.6411337	.4527778
#3	358.8611	.3111790	.2801547	33.35524	.6422593	.4523679

Sample Name: Q2606-01MS Acquired: 7/21/2025 14:13:05 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7089819	.2004210	12.86846	5.945853	F 37.31863	.2057384
Stddev	.0036915	.0013877	.06875	.032165	.09899	.0020681
%RSD	.5206760	.6923885	.5342773	.5409671	.2652549	1.005222
#1	.7093991	.2000607	12.93190	5.977157	37.28365	.2077960
#2	.7050996	.2019533	12.79541	5.912891	37.24188	.2036599
#3	.7124472	.1992490	12.87808	5.947510	37.43036	.2057593

Elem	Sr4077
Units	ppm
Avg	1.361760
Stddev	.003697
%RSD	.2715118
#1	1.365440
#2	1.361794
#3	1.358046

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4884.155	81166.49	7909.089	4112.656	5438.309
Stddev	3.556	366.64	31.942	10.420	7.834
%RSD	.0728039	.4517191	.4038648	.2533735	.1440611
#1	4888.237	80745.45	7884.284	4102.146	5437.212
#2	4882.498	81415.39	7897.853	4112.838	5446.634
#3	4881.730	81338.62	7945.131	4122.984	5431.080

Sample Name: Q2606-01MSD Acquired: 7/21/2025 14:17:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.7965759**	**1.738950**	**.8966909**	**1.990687**	**.8462589**	**2.278682**
Stddev	.0020549	.016000	.0007063	.001804	.0027135	.007219
%RSD	.2579642	.9201151	.0787655	.0906267	.3206490	.3168111
#1	.7944521	1.720674	.8962148	1.991838	.8470473	2.286505
#2	.7967215	1.745743	.8975024	1.988608	.8432385	2.272278
#3	.7985541	1.750433	.8963556	1.991615	.8484909	2.277264

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3404228**	**.1839207**	**.1869583**	**105.9853**	**.3846004**	**.1994627**
Stddev	.0019811	.0015150	.0003059	.7731	.0026301	.0004245
%RSD	.5819534	.8237150	.1636097	.7294450	.6838465	.2128355
#1	.3412843	.1847039	.1866333	106.0180	.3875215	.1989725
#2	.3418273	.1848838	.1870012	106.7414	.3824203	.1997121
#3	.3381568	.1821745	.1872405	105.1963	.3838595	.1997034

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2926283**	**3.147058**	**.2043818**	**33.61628**	**.5056881**	**.0673221**
Stddev	.0003128	.022784	.0010742	.10929	.0012956	.0001635
%RSD	.1068846	.7239933	.5256037	.3251095	.2562104	.2428789
#1	.2929668	3.123998	.2043768	33.58684	.5042602	.0671570
#2	.2923500	3.147620	.2054585	33.73727	.5060156	.0673251
#3	.2925680	3.169557	.2033101	33.52472	.5067886	.0674840

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**344.1174**	**.3020102**	**.2745689**	**32.80460**	**.6059329**	**.4438551**
Stddev	3.7674	.0002546	.0005518	.08926	.0038846	.0001377
%RSD	1.094791	.0842935	.2009653	.2720828	.6411004	.0310357
#1	345.0352	.3020903	.2748154	32.87641	.6058894	.4437118
#2	347.3411	.3017252	.2749546	32.70467	.6098391	.4439866
#3	339.9759	.3022150	.2739369	32.83272	.6020701	.4438668

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2606-01MSD Acquired: 7/21/2025 14:17:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7008667	.1977716	12.59609	5.916128	F 35.61932	.2027455
Stddev	.0015977	.0015093	.06515	.006957	.07495	.0025338
%RSD	.2279667	.7631567	.5171945	.1175983	.2104273	1.249723
#1	.6998128	.1960309	12.56085	5.924138	35.53597	.1998625
#2	.7027050	.1985689	12.55616	5.912645	35.64084	.2037554
#3	.7000822	.1987151	12.67127	5.911599	35.68116	.2046186

Elem	Sr4077
Units	ppm
Avg	1.305584
Stddev	.005120
%RSD	.3921950
#1	1.305591
#2	1.310700
#3	1.300460

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4927.298	81066.06	8122.869	4160.732	5478.424
Stddev	9.502	112.96	53.609	14.216	6.788
%RSD	.1928420	.1393402	.6599740	.3416710	.1239115
#1	4920.305	80946.85	8108.155	4160.174	5474.470
#2	4938.116	81079.81	8078.154	4146.804	5486.262
#3	4923.472	81171.51	8182.299	4175.219	5474.539

Sample Name: Q2606-01A Acquired: 7/21/2025 14:21:19 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8018279**	**1.745578**	**.8953418**	**2.006702**	**.8515435**	**2.290490**
Stddev	.0004105	.034277	.0018906	.004207	.0033123	.014191
%RSD	.0511906	1.963640	.2111617	.2096320	.3889798	.6195515
#1	.8013605	1.773473	.8940306	2.006272	.8539362	2.306174
#2	.8021295	1.755948	.8975090	2.002727	.8477630	2.286758
#3	.8019938	1.707314	.8944857	2.011107	.8529313	2.278539

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3436678**	**.1839161**	**.1874738**	**107.4355**	**.3834738**	**.1994076**
Stddev	.0015693	.0012618	.0002678	.4930	.0025161	.0003188
%RSD	.4566393	.6860450	.1428274	.4588432	.6561401	.1598661
#1	.3453675	.1853010	.1872011	107.8489	.3820234	.1992288
#2	.3433620	.1836153	.1877364	107.5676	.3863792	.1997756
#3	.3422739	.1828319	.1874838	106.8899	.3820188	.1992183

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2942535**	**3.167920**	**.2056132**	**34.17182**	**.5062374**	**.0685034**
Stddev	.0003814	.032814	.0010290	.13704	.0012270	.0004491
%RSD	.1296146	1.035813	.5004463	.4010461	.2423783	.6556437
#1	.2938475	3.131463	.2064457	34.32746	.5048207	.0689829
#2	.2943090	3.195087	.2059311	34.06925	.5069645	.0680926
#3	.2946042	3.177210	.2044628	34.11874	.5069269	.0684347

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**348.8332**	**.3038870**	**.2781606**	**33.20400**	**.6130886**	**.4486830**
Stddev	2.3690	.0022038	.0010216	.28214	.0065621	.0010754
%RSD	.6791214	.7252209	.3672703	.8497257	1.070332	.2396898
#1	349.9968	.3030680	.2778576	32.88438	.6206646	.4479807
#2	346.1075	.3063831	.2792995	33.41846	.6094214	.4481472
#3	350.3955	.3022100	.2773249	33.30917	.6091799	.4499211

Sample Name: Q2606-01A Acquired: 7/21/2025 14:21:19 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7015415	.1979064	12.71458	5.883999	F 36.06133	.2020400
Stddev	.0024153	.0025672	.13286	.016118	.06121	.0018893
%RSD	.3442895	1.297197	1.044953	.2739294	.1697364	.9351035
#1	.6987572	.1963361	12.56188	5.902606	36.08719	.1999026
#2	.7030730	.1965140	12.80376	5.875032	36.10537	.2034868
#3	.7027945	.2008690	12.77810	5.874358	35.99144	.2027307

Elem	Sr4077
Units	ppm
Avg	1.320519
Stddev	.002712
%RSD	.2053729
#1	1.322525
#2	1.321598
#3	1.317433

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4945.726	81716.66	8161.016	4141.241	5508.482
Stddev	9.696	409.80	56.135	13.641	11.263
%RSD	.1960565	.5014935	.6878424	.3293904	.2044707
#1	4956.071	82146.50	8098.968	4143.537	5518.906
#2	4936.844	81330.38	8175.802	4126.598	5496.534
#3	4944.263	81673.11	8208.277	4153.589	5510.005

Sample Name: Q2564-09 Acquired: 7/21/2025 14:25:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.004546**	**.0073046**	**.0161640**	**.0045986**	**.0002106**	**.0639723**	**.1514645**
Stddev	.001993	.0009166	.0004278	.0028877	.0007425	.0068270	.0013492
%RSD	43.84480	12.54748	2.646657	62.79600	352.4878	10.67178	.8907973
#1	-.002258	.0080718	.0166580	.0036789	.0008623	.0619178	.1499394
#2	-.005476	.0075525	.0159186	.0078342	-.000598	.0715906	.1525029
#3	-.005906	.0062897	.0159154	.0022828	.000367	.0584085	.1519511

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000194**	**.0001649**	**20.94344**	**.0000510**	**.0001632**	**.0023436**	**.0256736**
Stddev	.000091	.0000063	.07365	.0003245	.0002643	.0005913	.0050780
%RSD	46.72728	3.809940	.3516389	636.3903	161.9591	25.22953	19.77918
#1	-.000298	.0001649	20.96618	-.000323	.0003435	.0017887	.0248683
#2	-.000151	.0001586	21.00304	.000252	.0002862	.0029656	.0311061
#3	-.000133	.0001711	20.86111	.000224	-.000140	.0022765	.0210463

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0466191**	**4.318780**	**.0009428**	**.0001041**	**291.5712**	**.0005320**	**.1408013**
Stddev	.0004112	.032897	.0003867	.0003230	5.4688	.0025792	.0003406
%RSD	.8821418	.7617186	41.01934	310.1214	1.875631	484.7696	.2418920
#1	.0462948	4.286042	.0009680	.0002132	286.6333	.0006868	.1411871
#2	.0464808	4.351833	.0005440	.0003584	297.4491	.0030303	.1405420
#3	.0470816	4.318466	.0013162	-.000259	290.6313	-.002121	.1406751

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.523771**	**.0414540**	**.0010534**	**-.004862**	**.0070290**	**.3975225**	**.0270257**
Stddev	.042343	.0007430	.0001893	.000223	.0023820	.0120268	.0007677
%RSD	2.778832	1.792357	17.96779	4.588964	33.88860	3.025441	2.840713
#1	1.481461	.0406061	.0012691	-.004648	.0043340	.3873904	.0261508
#2	1.566147	.0419910	.0009762	-.005093	.0079003	.3943635	.0273393
#3	1.523705	.0417650	.0009150	-.004843	.0088526	.4108135	.0275869

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2564-09 Acquired: 7/21/2025 14:25:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	1.131052	-.007470	.0983565
Stddev	.006575	.000541	.0004675
%RSD	.5812799	7.239998	.4753121
#1	1.135555	-.007339	.0983252
#2	1.123507	-.008065	.0988389
#3	1.134094	-.007008	.0979054

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5100.179	84421.42	8350.402	4326.017	5729.120
Stddev	17.305	163.08	22.410	18.087	11.650
%RSD	.3392948	.1931680	.2683648	.4181014	.2033451
#1	5110.566	84374.46	8376.018	4311.299	5732.439
#2	5109.768	84286.97	8340.764	4320.542	5738.750
#3	5080.203	84602.82	8334.424	4346.209	5716.171

Sample Name: Q2621-01 Acquired: 7/21/2025 14:29:50 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0879934**	**.0187298**	**.2501156**	**-.023273**	**-.013369**	**147.5467**	**.5067465**
Stddev	.0017711	.0013777	.0018094	.002857	.001203	.1422	.0008157
%RSD	2.012734	7.355585	.7234342	12.27516	8.995425	.0963681	.1609782
#1	.0893726	.0203199	.2490129	-.020576	-.013964	147.6332	.5060417
#2	.0859961	.0178921	.2491301	-.026267	-.011985	147.3826	.5065578
#3	.0886115	.0179775	.2522039	-.022977	-.014158	147.6244	.5076401

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0071301**	**-.001966**	**50.77024**	**.2353250**	**.0940880**	**.5099540**	**248.7083**
Stddev	.0002310	.000192	.26931	.0010018	.0001852	.0011669	1.4739
%RSD	3.239519	9.752618	.5304540	.4257091	.1968287	.2288142	.5926087
#1	.0073903	-.001779	51.06525	.2345917	.0939583	.5100668	247.7618
#2	.0069491	-.002162	50.53755	.2364664	.0940056	.5087349	250.4064
#3	.0070510	-.001958	50.70791	.2349168	.0943001	.5110604	247.9566

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.241186**	**32.84892**	**.1564131**	**.0530458**	**5.049682**	**.4190247**	**.4462710**
Stddev	.006008	.06479	.0001955	.0006373	.072440	.0005032	.0020085
%RSD	.2680726	.1972254	.1249582	1.201332	1.434538	.1200828	.4500542
#1	2.247713	32.92351	.1561886	.0528282	5.035586	.4187209	.4472159
#2	2.235888	32.80666	.1565046	.0537634	5.128133	.4196055	.4476327
#3	2.239956	32.81659	.1565459	.0525458	4.985326	.4187476	.4439643

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.319830**	**.1050031**	**.0036852**	**.0320792**	**1.973067**	**3.578014**	**4.044231**
Stddev	.048503	.0075057	.0004671	.0002596	.003259	.039926	.022851
%RSD	.5204298	7.148048	12.67444	.8091656	.1651920	1.115883	.5650263
#1	9.279756	.0977275	.0041366	.0318646	1.973615	3.541234	4.019627
#2	9.373751	.1127194	.0037153	.0320054	1.969568	3.620478	4.064789
#3	9.305984	.1045622	.0032039	.0323678	1.976017	3.572331	4.048276

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2621-01 Acquired: 7/21/2025 14:29:50 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**2.738077**	**.1789045**	**-.014289**
Stddev	.017369	.0020718	.001617
%RSD	.6343628	1.158049	11.31358
#1	2.719153	.1811927	-.013425
#2	2.741785	.1771560	-.016154
#3	2.753293	.1783647	-.013287

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5530.678**	**91549.90**	**9049.925**	**4703.382**	**5612.946**
Stddev	13.238	421.31	65.152	26.414	6.432
%RSD	.2393528	.4602003	.7199203	.5616045	.1145837
#1	5541.558	91464.02	8975.757	4692.515	5618.872
#2	5534.536	91178.14	9097.925	4684.134	5613.860
#3	5515.940	92007.54	9076.093	4733.496	5606.106

Sample Name: PB168914BL Acquired: 7/21/2025 14:33:52 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0015977**	**.0083136**	**-.000353**	**.0018766**	**.0017656**	**.0050755**	**-.000099**
Stddev	.0010927	.0013257	.000197	.0011224	.0019203	.0129284	.000808
%RSD	68.39060	15.94658	55.68317	59.81031	108.7616	254.7226	819.3102
#1	.0019385	.0088038	-.000185	.0011369	.0039827	-.009824	.000778
#2	.0024793	.0093244	-.000305	.0031680	.0006906	.011715	-.000812
#3	.0003752	.0068126	-.000570	.0013248	.0006236	.013335	-.000263

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000011**	**.0000041**	**.0079904**	**.0008308**	**.0002172**	**.0003075**	**.0209984**
Stddev	.000046	.0000126	.0048003	.0002821	.0000394	.0003398	.0061873
%RSD	404.2251	308.3258	60.07572	33.95295	18.11582	110.5329	29.46542
#1	-.000063	.0000158	.0129172	.0011250	.0002233	.0003801	.0234591
#2	.000027	.0000055	.0033275	.0008049	.0002533	-.000063	.0255767
#3	.000001	-.000009	.0077266	.0005626	.0001752	.000605	.0139593

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003596**	**-.021133**	**.0007186**	**.0002585**	**.0044475**	**.0008000**	**.0003588**
Stddev	.0004355	.016414	.0001767	.0005047	.0199870	.0026989	.0001373
%RSD	121.0929	77.67123	24.58608	195.2307	449.3965	337.3507	38.27651
#1	.0006771	-.032732	.0007161	.0002211	.0106919	-.002100	.0003325
#2	-.000137	-.002352	.0008965	-.000226	.0205668	.003239	.0005074
#3	.000539	-.028316	.0005431	.000781	-.017916	.001261	.0002366

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1165300**	**-.000325**	**-.000137**	**.0005898**	**.0075893**	**-.003585**	**.0016013**
Stddev	.0428047	.000165	.000436	.0005767	.0003535	.009136	.0010433
%RSD	36.73281	50.75537	318.4033	97.78118	4.657514	254.8438	65.15276
#1	.1015009	-.000276	.000271	-.000072	.0072358	-.004492	.0010513
#2	.1648225	-.000509	-.000595	.000861	.0075894	-.012234	.0028044
#3	.0832666	-.000191	-.000087	.000981	.0079428	.005971	.0009481

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: PB168914BL Acquired: 7/21/2025 14:33:52 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.0020533	-.004031	-.000015
Stddev	.0020818	.002747	.000104
%RSD	101.3901	68.14276	711.5970
#1	.0006816	-.005354	-.000045
#2	.0044487	-.005867	-.000099
#3	.0010295	-.000873	.000101

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5319.056	85494.43	7904.685	4446.820	6387.589
Stddev	15.170	313.42	10.774	9.049	16.557
%RSD	.2851956	.3665997	.1362937	.2034869	.2592131
#1	5303.725	85659.18	7905.198	4457.100	6375.859
#2	5334.059	85132.99	7915.193	4440.061	6406.529
#3	5319.384	85691.11	7893.664	4443.300	6380.379

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: PB168914BS Acquired: 7/21/2025 14:38:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8115127**	**1.903845**	**.9858325**	**2.061960**	**.8569270**	**2.149467**
Stddev	.0029323	.038431	.0030276	.006379	.0021815	.000809
%RSD	.3613315	2.018580	.3071120	.3093724	.2545684	.0376351
#1	.8116719	1.874829	.9830049	2.056115	.8583835	2.148788
#2	.8143621	1.889276	.9854658	2.061000	.8544189	2.150362
#3	.8085041	1.947430	.9890267	2.068764	.8579785	2.149252

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2187614**	**.2141605**	**.1972597**	**1.158292**	**.4113890**	**.2082992**
Stddev	.0006076	.0017926	.0007779	.004271	.0003826	.0005861
%RSD	.2777630	.8370171	.3943472	.3687187	.0929973	.2813803
#1	.2192487	.2156266	.1964445	1.161755	.4112826	.2076903
#2	.2189549	.2146929	.1973407	1.159601	.4118136	.2083478
#3	.2180806	.2121621	.1979940	1.153520	.4110709	.2088595

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3288899**	**3.165481**	**.2205563**	**2.138474**	**.5273848**	**.0759693**
Stddev	.0008064	.019411	.0005663	.021708	.0016400	.0004177
%RSD	.2451900	.6132080	.2567484	1.015115	.3109725	.5498626
#1	.3279713	3.143149	.2211993	2.143305	.5257791	.0760767
#2	.3292171	3.174980	.2203377	2.114758	.5273182	.0763227
#3	.3294813	3.178313	.2201319	2.157360	.5290571	.0755083

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.739399**	**.3165298**	**.2200873**	**10.31714**	**.3309344**	**.4331962**
Stddev	.025182	.0063797	.0003546	.03148	.0024436	.0008352
%RSD	.9192622	2.015518	.1611351	.3050784	.7384064	.1928115
#1	2.726268	.3196244	.2199483	10.28573	.3336441	.4322430
#2	2.723496	.3207720	.2198232	10.34868	.3302612	.4338000
#3	2.768433	.3091930	.2204904	10.31701	.3288979	.4335455

Sample Name: PB168914BS Acquired: 7/21/2025 14:38:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.7228039**	**.2127738**	**.8502403**	**5.889025**	F **-.001018**	**.1989159**
Stddev	.0035085	.0018237	.0130248	.026494	.002117	.0039552
%RSD	.4854012	.8571110	1.531896	.4498807	207.9050	1.988378
#1	.7217841	.2110356	.8486300	5.861898	.001065	.2029045
#2	.7199183	.2146725	.8380956	5.890340	-.003167	.1988482
#3	.7267094	.2126135	.8639955	5.914836	-.000952	.1949950

Elem	Sr4077
Units	ppm
Avg	**.2171682**
Stddev	.0004002
%RSD	.1842732
#1	.2168159
#2	.2170854
#3	.2176033

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5278.727**	**85701.82**	**7899.483**	**4427.430**	**6204.771**
Stddev	16.232	45.33	48.557	8.767	23.973
%RSD	.3075023	.0528884	.6146903	.1980145	.3863692
#1	5294.949	85675.60	7852.864	4425.206	6228.798
#2	5278.749	85675.70	7895.813	4437.095	6204.664
#3	5262.485	85754.16	7949.771	4419.990	6180.852

Sample Name: CCV02 Acquired: 7/21/2025 14:46:52 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**4.985469**	**4.914414**	**4.825247**	**5.103235**	**5.026953**	**9.835860**	**10.22135**
Stddev	.009156	.207953	.003093	.013914	.007567	.043053	.02173
%RSD	.1836440	4.231485	.0640985	.2726489	.1505343	.4377181	.2126139
#1	4.995935	5.083307	4.828367	5.116504	5.026704	9.834026	10.23115
#2	4.981526	4.977786	4.822182	5.104445	5.019513	9.879801	10.19644
#3	4.978945	4.682147	4.825192	5.088755	5.034641	9.793753	10.23646

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2440335**	**2.401880**	**25.51526**	**.9439799**	**2.392230**	**1.218820**	**4.827446**
Stddev	.0011443	.001280	.04994	.0023116	.000459	.000543	.032931
%RSD	.4689055	.0533088	.1957118	.2448736	.0191889	.0445130	.6821534
#1	.2452955	2.402098	25.56913	.9415087	2.391806	1.219414	4.799278
#2	.2430635	2.403037	25.47052	.9443418	2.392717	1.218351	4.863651
#3	.2437416	2.400504	25.50613	.9460892	2.392166	1.218695	4.819410

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.489218**	**24.00979**	**2.400906**	**1.220209**	**23.10741**	**2.424303**	**2.473003**
Stddev	.007121	.07713	.000511	.001600	.12044	.014667	.009557
%RSD	.2860553	.3212568	.0212721	.1310975	.5212266	.6050061	.3864478
#1	2.495821	24.04808	2.401346	1.218688	22.96890	2.432883	2.473662
#2	2.490160	24.06028	2.400346	1.221877	23.18746	2.432659	2.482214
#3	2.481673	23.92100	2.401024	1.220061	23.16588	2.407368	2.463134

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.71475**	**5.043178**	**4.983342**	**4.830028**	**4.813279**	**4.627787**	**4.756581**
Stddev	.15757	.028773	.005305	.006059	.013431	.043725	.022904
%RSD	.6375640	.5705388	.1064542	.1254409	.2790424	.9448363	.4815275
#1	24.53354	5.076356	4.986630	4.836222	4.812829	4.577349	4.772586
#2	24.81950	5.028109	4.986175	4.824114	4.826929	4.654968	4.766813
#3	24.79123	5.025068	4.977222	4.829747	4.800078	4.651045	4.730345

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV02 Acquired: 7/21/2025 14:46:52 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.858280**	**4.859583**	**5.118119**
Stddev	.024203	.024674	.008050
%RSD	.4981705	.5077488	.1572807
#1	4.878843	4.870534	5.126735
#2	4.864388	4.876887	5.110791
#3	4.831608	4.831328	5.116830

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5133.044**	**82137.03**	**7621.942**	**4269.076**	**5828.132**
Stddev	8.017	428.13	22.496	13.244	7.836
%RSD	.1561822	.5212352	.2951520	.3102247	.1344500
#1	5124.569	82619.96	7603.392	4276.461	5820.161
#2	5134.058	81987.06	7646.966	4253.786	5828.409
#3	5140.506	81804.06	7615.469	4276.980	5835.826

Sample Name: CCB02 Acquired: 7/21/2025 14:51:04 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.001391**	**.0087419**	**-.000478**	**.0032418**	**.0003799**	**.0030027**	**-.001035**
Stddev	.002811	.0019483	.001105	.0039508	.0006809	.0067275	.000429
%RSD	202.0978	22.28711	231.1899	121.8696	179.2013	224.0510	41.49838
#1	.001845	.0108469	.000648	.0076974	.0008734	.0081913	-.000566
#2	-.002794	.0083769	-.001560	.0001656	-.000397	-.004598	-.001130
#3	-.003224	.0070019	-.000521	.0018625	.000663	.005415	-.001408

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000043**	**.0000976**	**.0446952**	**.0000154**	**.0000706**	**-.000392**	**.0002904**
Stddev	.000005	.0000583	.0027953	.0001420	.0001712	.000305	.0060258
%RSD	10.75775	59.72829	6.254234	925.1477	242.5622	77.79934	2074.651
#1	-.000039	.0000993	.0416566	.0001406	.0002417	-.000290	-.003140
#2	-.000042	.0000385	.0471574	.0000444	-.000101	-.000151	-.003237
#3	-.000049	.0001551	.0452716	-.000139	.000071	-.000734	.007248

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003083**	**.0096496**	**.0003574**	**.0001847**	**-.444091**	**-.001452**	**-.000225**
Stddev	.0005203	.0186879	.0003552	.0003881	.000709	.001169	.000193
%RSD	168.7495	193.6659	99.38096	210.1293	.1596247	80.50261	85.67496
#1	.0008579	.0172358	.0003796	-.000020	-.443581	-.000158	-.000395
#2	-.000177	-.011639	.0007010	.000632	-.444900	-.002431	-.000015
#3	.000244	.023351	-.000008	-.000058	-.443790	-.001766	-.000266

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.224755**	**.0071749**	**.0009450**	**.0006527**	**.0069594**	**-.006207**	**-.000790**
Stddev	.042240	.0003604	.0001165	.0008930	.0003186	.011252	.000903
%RSD	18.79371	5.022859	12.32228	136.8100	4.577288	181.2734	114.3189
#1	-.184322	.0075910	.0008561	-.000374	.0067165	-.014565	-.001823
#2	-.221348	.0069648	.0010768	.001080	.0073201	-.010644	-.000394
#3	-.268596	.0069689	.0009022	.001252	.0068417	.006587	-.000152

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB02 Acquired: 7/21/2025 14:51:04 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.004319	-.004935	.0003553
Stddev	.004413	.000527	.0000581
%RSD	102.1771	10.68065	16.34594
#1	-.001698	-.005524	.0003439
#2	-.001845	-.004771	.0003038
#3	-.009414	-.004509	.0004183

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5219.391	86347.84	7669.423	4455.618	6228.509
Stddev	21.052	252.86	10.273	8.014	19.818
%RSD	.4033447	.2928378	.1339537	.1798558	.3181763
#1	5234.659	86284.60	7657.679	4453.838	6230.107
#2	5228.139	86132.60	7676.742	4448.643	6247.480
#3	5195.375	86626.31	7673.848	4464.372	6207.941

Sample Name: Q2635-01 Acquired: 7/21/2025 14:55:24 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1984745**	**.0142100**	**3.872688**	**-.030041**	**.0049616**	**71.14493**	**3.349263**
Stddev	.0034280	.0013506	.011420	.002371	.0016297	.06920	.002488
%RSD	1.727181	9.504273	.2948970	7.891024	32.84587	.0972681	.0742755
#1	.1983752	.0140272	3.867434	-.030959	.0049559	71.08326	3.348716
#2	.1950973	.0156427	3.864841	-.027349	.0033348	71.13177	3.347095
#3	.2019511	.0129602	3.885790	-.031816	.0065941	71.21977	3.351979

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0056569**	**.0042461**	**251.2724**	**.3321180**	**.0966373**	**1.672345**	**247.3344**
Stddev	.0001544	.0000885	.7921	.0012065	.0005789	.007404	.7669
%RSD	2.728796	2.083258	.3152185	.3632831	.5990367	.4427301	.3100513
#1	.0058346	.0043478	251.3507	.3310745	.0966053	1.669368	246.6618
#2	.0055802	.0042024	250.4442	.3334391	.0960750	1.666893	248.1695
#3	.0055560	.0041879	252.0225	.3318402	.0972315	1.680774	247.1721

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.354125**	**41.60672**	**.3080622**	**.0596528**	**4.586453**	**.2880579**	**3.627729**
Stddev	.004529	.03825	.0011620	.0005481	.043630	.0043654	.005327
%RSD	.1350394	.0919438	.3771851	.9188019	.9512812	1.515472	.1468449
#1	3.356642	41.58402	.3076020	.0592791	4.549816	.2928263	3.624997
#2	3.348896	41.65089	.3072009	.0602820	4.634719	.2842580	3.633868
#3	3.356836	41.58526	.3093838	.0593972	4.574824	.2870895	3.624322

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.118357**	**.6776517**	**.0096930**	**.4429558**	**3.736141**	**2.952783**	**4.995379**
Stddev	.071920	.0034772	.0001340	.0018226	.007848	.025361	.021719
%RSD	.7887386	.5131267	1.382102	.4114604	.2100593	.8588846	.4347841
#1	9.035392	.6745173	.0098429	.4408545	3.744686	2.929843	4.976523
#2	9.156650	.6813920	.0096513	.4441084	3.729255	2.948488	4.990487
#3	9.163028	.6770457	.0095849	.4439044	3.734483	2.980016	5.019127

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01 Acquired: 7/21/2025 14:55:24 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**12.01986**	**.2111070**	**.2083367**
Stddev	.02892	.0006276	.0016320
%RSD	.2406144	.2972684	.7833327
#1	12.05315	.2104134	.2094362
#2	12.00550	.2116355	.2064616
#3	12.00093	.2112720	.2091124

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5454.131**	**89385.00**	**8957.964**	**4572.709**	**5422.379**
Stddev	18.229	224.08	16.790	24.326	14.216
%RSD	.3342297	.2506919	.1874258	.5319929	.2621643
#1	5468.817	89556.97	8945.048	4600.798	5431.760
#2	5459.847	89131.59	8976.943	4558.496	5429.354
#3	5433.729	89466.46	8951.901	4558.833	5406.024

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01DUP Acquired: 7/21/2025 14:59:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1591818**	**.0147617**	**1.396321**	**-.027735**	**-.005802**	**83.51236**	**2.720900**
Stddev	.0050871	.0019619	.003788	.001380	.000911	.10058	.004562
%RSD	3.195806	13.29053	.2712714	4.975186	15.70965	.1204417	.1676782
#1	.1630274	.0126105	1.398410	-.027994	-.006855	83.47624	2.718443
#2	.1534135	.0164524	1.391948	-.028967	-.005291	83.62602	2.726164
#3	.1611044	.0152222	1.398603	-.026244	-.005261	83.43483	2.718093

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0058490**	**.0022338**	**184.0291**	**.2255938**	**.1141765**	**1.511425**	**239.8271**
Stddev	.0001243	.0001301	.2839	.0014157	.0001114	.004968	1.1097
%RSD	2.124236	5.823574	.1542448	.6275497	.0975902	.3286752	.4627281
#1	.0057069	.0021921	184.2365	.2250087	.1141975	1.513905	241.0612
#2	.0059037	.0023796	184.1452	.2245644	.1140561	1.505705	239.5091
#3	.0059366	.0021296	183.7056	.2272083	.1142760	1.514664	238.9111

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.357511**	**57.84412**	**.2900126**	**.0557592**	**3.597854**	**.2904444**	**2.425638**
Stddev	.005501	.09809	.0010350	.0008956	.019129	.0048802	.005843
%RSD	.1638540	.1695748	.3568957	1.606261	.5316869	1.680238	.2409038
#1	3.361913	57.82609	.2901000	.0567884	3.609946	.2849456	2.424710
#2	3.359276	57.94998	.2889367	.0553332	3.575800	.2921268	2.431890
#3	3.351344	57.75630	.2910012	.0551561	3.607817	.2942608	2.420315

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.12928**	**.3110642**	**.0043810**	**.2266386**	**3.239543**	**1.902063**	**6.671497**
Stddev	.04297	.0045820	.0003531	.0020022	.002658	.011633	.009798
%RSD	.4242585	1.473005	8.060364	.8834365	.0820419	.6115944	.1468572
#1	10.17251	.3160579	.0039844	.2288968	3.240792	1.907386	6.680493
#2	10.12876	.3070534	.0046614	.2250802	3.241345	1.910081	6.661058
#3	10.08657	.3100815	.0044970	.2259388	3.236490	1.888721	6.672940

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01DUP Acquired: 7/21/2025 14:59:25 Type: Unk
Method: 6010-200.7 NEW(v47) 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	9.388929	.2171425	.1522717
Stddev	.036485	.0009587	.0012483
%RSD	.3886002	.4415167	.8198069
#1	9.430894	.2182156	.1510986
#2	9.371173	.2163703	.1535837
#3	9.364722	.2168415	.1521328

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5413.479	89741.39	8562.072	4581.489	5385.519
Stddev	9.034	166.93	22.460	18.287	11.194
%RSD	.1668827	.1860168	.2623205	.3991593	.2078572
#1	5408.242	89563.88	8587.895	4580.018	5383.150
#2	5423.910	89765.06	8547.079	4563.982	5397.707
#3	5408.283	89895.22	8551.242	4600.468	5375.698

Sample Name: Q2635-01LX5 Acquired: 7/21/2025 15:03:28 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0422778**	**.0101173**	**.8055414**	**-.005743**	**.0013546**	**15.99285**	**.7533144**
Stddev	.0027833	.0007972	.0025679	.002540	.0032382	.05318	.0014429
%RSD	6.583313	7.879209	.3187742	44.23053	239.0535	.3325535	.1915386
#1	.0454717	.0109598	.8026991	-.002842	.0047293	16.05359	.7549734
#2	.0403712	.0093749	.8076939	-.006821	-.001727	15.95464	.7523522
#3	.0409906	.0100172	.8062313	-.007568	.001062	15.97032	.7526175

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012083**	**.0001062**	**57.96725**	**.0773990**	**.0193944**	**.3866271**	**56.11166**
Stddev	.0000093	.0000734	.23574	.0019008	.0002580	.0023334	.94233
%RSD	.7720091	69.16973	.4066819	2.455883	1.330270	.6035197	1.679383
#1	.0012190	.0001279	57.98138	.0772223	.0191309	.3840391	56.20320
#2	.0012043	.0000243	58.19561	.0793820	.0196465	.3885701	57.00487
#3	.0012017	.0001663	57.72476	.0755926	.0194057	.3872723	55.12690

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7891005**	**9.779053**	**.0622875**	**.0136650**	**.6568656**	**.0640594**	**.8420600**
Stddev	.0031935	.069319	.0005568	.0006785	.0259922	.0030516	.0178750
%RSD	.4047023	.7088547	.8938931	4.965499	3.957005	4.763719	2.122772
#1	.7923419	9.858859	.0616451	.0136279	.6596601	.0605359	.8373228
#2	.7890025	9.744485	.0625856	.0143614	.6813476	.0658509	.8618265
#3	.7859571	9.733815	.0626317	.0130058	.6295890	.0657914	.8270308

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.805313**	**.1564668**	**.0019034**	**.0874484**	**.8568716**	**.6426830**	**.9930647**
Stddev	.061580	.0027615	.0004511	.0014962	.0048815	.0125237	.0067576
%RSD	3.411026	1.764918	23.69961	1.710986	.5696917	1.948652	.6804845
#1	1.856029	.1589923	.0014852	.0864406	.8625082	.6362210	.9855727
#2	1.823117	.1568901	.0023814	.0867370	.8540834	.6571177	.9986998
#3	1.736793	.1535181	.0018436	.0891676	.8540232	.6347102	.9949215

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01LX5 Acquired: 7/21/2025 15:03:28 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**2.344834**	**.0413331**	**.0479007**
Stddev	.008590	.0019441	.0009159
%RSD	.3663346	4.703380	1.912131
#1	2.337329	.0435737	.0481808
#2	2.354203	.0400935	.0468774
#3	2.342968	.0403323	.0486438

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5337.117**	**85089.07**	**8193.301**	**4390.061**	**6051.685**
Stddev	33.058	1408.73	32.316	70.019	29.372
%RSD	.6194034	1.655591	.3944218	1.594936	.4853588
#1	5375.245	85284.82	8213.018	4408.269	6085.364
#2	5319.641	83592.70	8156.006	4312.737	6038.312
#3	5316.465	86389.68	8210.880	4449.177	6031.379

Sample Name: Q2635-01MS Acquired: 7/21/2025 15:07:35 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.9041531**	**1.842950**	**2.351905**	**1.673981**	**.3757951**	**81.71376**	**3.109227**
Stddev	.0047497	.085689	.006795	.010342	.0005490	.27868	.006928
%RSD	.5253217	4.649534	.2888983	.6178375	.1460926	.3410413	.2228338
#1	.8987978	1.744410	2.358513	1.662280	.3751903	82.03225	3.116387
#2	.9058059	1.884478	2.352265	1.677766	.3759329	81.59432	3.108740
#3	.9078556	1.899963	2.344938	1.681898	.3762621	81.51471	3.102555

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1795796**	**.1963964**	**429.4337**	**.5999257**	**.3013260**	**1.579952**	**245.8991**
Stddev	.0009941	.0002666	3.6061	.0040763	.0004118	.001694	.5170
%RSD	.5535946	.1357269	.8397274	.6794584	.1366577	.1072071	.2102417
#1	.1797994	.1966352	428.8918	.6008052	.3016242	1.581691	245.4085
#2	.1784940	.1961088	426.1292	.5954814	.3014976	1.579857	245.8497
#3	.1804455	.1964453	433.2800	.6034903	.3008562	1.578308	246.4389

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.338095**	**178.2970**	**.7838210**	**.1282678**	**8.228362**	**.5601683**	**2.968081**
Stddev	.006219	.7269	.0021326	.0009883	.024403	.0026825	.008193
%RSD	.1862969	.4076748	.2720839	.7705051	.2965776	.4788786	.2760491
#1	3.345258	179.0733	.7851926	.1275446	8.214155	.5595822	2.964470
#2	3.334961	177.6325	.7849065	.1278650	8.214390	.5630954	2.962314
#3	3.334067	178.1853	.7813640	.1293939	8.256540	.5578273	2.977460

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.19831**	**.8748857**	**.3806497**	**.8337481**	**3.681221**	**2.514443**	**11.26728**
Stddev	.04202	.0015245	.0002611	.0011783	.009009	.024150	.01755
%RSD	.2188483	.1742483	.0685916	.1413292	.2447232	.9604695	.1557584
#1	19.15021	.8763936	.3809237	.8343793	3.691498	2.500288	11.28748
#2	19.21684	.8749181	.3804038	.8323886	3.677479	2.500713	11.25856
#3	19.22787	.8733452	.3806217	.8344763	3.674687	2.542329	11.25580

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01MS Acquired: 7/21/2025 15:07:35 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	15.26380	.4230237	.4841745
Stddev	.07769	.0038926	.0021583
%RSD	.5089787	.9201860	.4457729
#1	15.17481	.4247781	.4861084
#2	15.29849	.4257304	.4845689
#3	15.31811	.4185627	.4818462

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5242.261	86334.46	8661.867	4372.759	5127.823
Stddev	14.021	200.24	37.036	6.696	17.238
%RSD	.2674683	.2319337	.4275724	.1531350	.3361609
#1	5228.788	86353.56	8621.968	4365.073	5113.540
#2	5241.222	86524.46	8695.146	4375.873	5122.959
#3	5256.773	86125.35	8668.486	4377.331	5146.970

Sample Name: Q2635-01MSD Acquired: 7/21/2025 15:11:41 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8946509**	**1.795125**	**2.476516**	**1.624539**	**.3455660**	**86.19293**	**3.441874**
Stddev	.0042394	.009110	.015246	.008077	.0033136	.48804	.015428
%RSD	.4738660	.5075016	.6156300	.4972054	.9589018	.5662123	.4482428
#1	.8975057	1.805158	2.482230	1.626692	.3454817	86.50694	3.449490
#2	.8897796	1.792845	2.459238	1.615604	.3422953	86.44118	3.452014
#3	.8966674	1.787370	2.488080	1.631323	.3489210	85.63068	3.424120

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1792590**	**.1928129**	**371.4137**	**.6594665**	**.3042790**	**1.548404**	**280.6630**
Stddev	.0018435	.0015385	1.8178	.0164618	.0011555	.010375	4.9496
%RSD	1.028425	.7979390	.4894329	2.496226	.3797603	.6700263	1.763546
#1	.1780869	.1933896	369.8361	.6562033	.3047518	1.549886	280.0705
#2	.1813840	.1910693	373.4016	.6773155	.3029620	1.537368	285.8822
#3	.1783062	.1939798	371.0034	.6448807	.3051231	1.557958	276.0363

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.359123**	**41.23091**	**.7612894**	**.1332017**	**7.547755**	**.5899619**	**3.070584**
Stddev	.019662	.20997	.0042245	.0020029	.149098	.0019659	.074799
%RSD	.5853299	.5092617	.5549110	1.503659	1.975398	.3332299	2.435990
#1	3.360618	41.34720	.7639029	.1329226	7.540807	.5896026	3.043191
#2	3.377994	41.35701	.7564157	.1353295	7.700206	.5920827	3.155219
#3	3.338756	40.98852	.7635496	.1313530	7.402253	.5882004	3.013344

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**20.04459**	**.6650132**	**.3760597**	**.8781333**	**3.497276**	**2.812919**	**11.34942**
Stddev	.37111	.0109750	.0019824	.0044922	.019437	.080468	.06870
%RSD	1.851433	1.650339	.5271622	.5115600	.5557887	2.860645	.6052882
#1	19.98888	.6706627	.3765856	.8792222	3.512761	2.810194	11.36922
#2	20.44041	.6720126	.3738673	.8731968	3.503604	2.894714	11.27300
#3	19.70449	.6523644	.3777261	.8819810	3.475463	2.733848	11.40604

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01MSD Acquired: 7/21/2025 15:11:41 Type: Unk
Method: 6010-200.7 NEW(v47) 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	11.48875	.4261231	.4689532
Stddev	.05585	.0047653	.0014426
%RSD	.4861323	1.118291	.3076210
#1	11.52532	.4244244	.4699937
#2	11.42446	.4315050	.4673064
#3	11.51646	.4224399	.4695595

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5411.331	88602.73	8893.042	4538.998	5277.626
Stddev	19.056	1772.86	59.055	85.047	22.136
%RSD	.3521539	2.000904	.6640531	1.873687	.4194253
#1	5409.293	88848.79	8887.745	4563.404	5267.295
#2	5431.324	86719.70	8836.815	4444.416	5303.038
#3	5393.376	90239.70	8954.567	4609.172	5262.544

Sample Name: Q2635-01A Acquired: 7/21/2025 15:15:44 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.9424305**	**1.835440**	**4.769676**	**1.798566**	**.7852261**	**72.13536**	**3.478354**
Stddev	.0065222	.063965	.062166	.020501	.0092753	.96145	.045496
%RSD	.6920569	3.484973	1.303349	1.139828	1.181233	1.332845	1.307968
#1	.9393680	1.868557	4.716625	1.788572	.7784939	72.87750	3.516118
#2	.9380032	1.761708	4.754324	1.784980	.7813782	72.47937	3.491099
#3	.9499203	1.876057	4.838079	1.822147	.7958061	71.04923	3.427845

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1827829**	**.2017920**	**245.2630**	**.6870492**	**.3047386**	**1.926178**	**246.9092**
Stddev	.0032613	.0030196	3.4105	.0084377	.0038822	.023124	1.5502
%RSD	1.784268	1.496366	1.390542	1.228107	1.273936	1.200518	.6278383
#1	.1851727	.1992655	248.3524	.6922613	.3013092	1.908306	248.2081
#2	.1841086	.2009743	245.8332	.6915719	.3039533	1.917933	247.3265
#3	.1790675	.2051362	241.6033	.6773143	.3089534	1.952294	245.1931

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.469478**	**42.65239**	**.8273151**	**.1282864**	**7.761271**	**.5577813**	**3.768119**
Stddev	.042468	.57138	.0117681	.0009389	.031552	.0071130	.027848
%RSD	1.224041	1.339611	1.422448	.7318558	.4065357	1.275225	.7390444
#1	3.504690	43.08856	.8177277	.1285882	7.778658	.5589494	3.795232
#2	3.481428	42.86302	.8237691	.1290373	7.780306	.5642380	3.769534
#3	3.422315	42.00560	.8404485	.1272338	7.724850	.5501567	3.739590

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.46137**	**.9115953**	**.4022621**	**1.166847**	**3.882818**	**4.318362**	**11.22451**
Stddev	.13634	.0059869	.0039052	.014194	.046162	.038628	.11652
%RSD	.7005629	.6567478	.9707978	1.216423	1.188880	.8945142	1.038128
#1	19.57307	.9160102	.3989508	1.157238	3.912494	4.332218	11.14417
#2	19.50160	.9139948	.4012670	1.160154	3.906327	4.348152	11.17120
#3	19.30945	.9047809	.4065686	1.183150	3.829634	4.274717	11.35815

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2635-01A Acquired: 7/21/2025 15:15:44 Type: Unk
Method: 6010-200.7 NEW(v47) 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	11.99840	.3943517	.3923669
Stddev	.15180	.0039415	.0060117
%RSD	1.265191	.9994926	1.532158
#1	11.94193	.3968515	.3976415
#2	11.88293	.3963954	.3936377
#3	12.17034	.3898080	.3858214

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5379.043	89201.93	9010.122	4553.174	5339.448
Stddev	48.930	570.10	126.363	23.597	58.551
%RSD	.9096331	.6391153	1.402454	.5182486	1.096573
#1	5420.635	88643.12	8894.812	4526.017	5390.640
#2	5391.363	89179.98	8990.349	4568.677	5352.098
#3	5325.131	89782.69	9145.206	4564.827	5275.606

Sample Name: PB168917BL Acquired: 7/21/2025 15:19:40 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0004356**	**.0077644**	**-.000642**	**-.000511**	**.0006545**	**.0103786**	**-.000530**
Stddev	.0014022	.0018516	.000900	.001274	.0023368	.0010635	.000490
%RSD	321.8910	23.84743	140.1118	249.1656	357.0208	10.24673	92.53326
#1	.0008938	.0098628	-.000681	-.001585	-.001690	.0115823	-.000576
#2	.0015514	.0070703	.000276	.000897	.000670	.0099870	-.000996
#3	-.001138	.0063602	-.001522	-.000847	.002983	.0095664	-.000018

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000028**	**-.000009**	**.0216855**	**.0001969**	**-.000014**	**-.000015**	**.0381703**
Stddev	.000032	.000057	.0036825	.0001803	.000092	.000353	.0072390
%RSD	112.6017	614.7562	16.98137	91.55901	651.2088	2353.017	18.96486
#1	-.000015	.000056	.0175276	.0001663	-.000023	.000305	.0360089
#2	-.000005	-.000050	.0229935	.0003906	-.000102	-.000393	.0462438
#3	-.000064	-.000034	.0245355	.0000339	.000082	.000043	.0322583

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007076**	**.0090440**	**.0007732**	**.0002982**	**-.369756**	**.0003444**	**.0002973**
Stddev	.0006992	.0281874	.0002440	.0005660	.026220	.0007770	.0002410
%RSD	98.81294	311.6700	31.55251	189.7847	7.091219	225.6142	81.03475
#1	.0001192	.0375997	.0005364	-.000033	-.347797	.0000449	.0002733
#2	.0005230	.0082924	.0007595	-.000024	-.362684	.0012266	.0005494
#3	.0014805	-.018760	.0010238	.000952	-.398787	-.000238	.0000693

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.160042**	**.0013742**	**-.000055**	**.0021674**	**.0066377**	**.0062159**	**.0026770**
Stddev	.018422	.0005373	.000283	.0006080	.0009172	.0116065	.0012203
%RSD	11.51066	39.09821	513.7049	28.05055	13.81785	186.7214	45.58483
#1	-.166294	.0007629	-.000145	.0019735	.0073123	.0113511	.0028180
#2	-.139307	.0017714	.000262	.0028487	.0055934	.0143691	.0013923
#3	-.174523	.0015883	-.000282	.0016801	.0070075	-.007072	.0038207

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: PB168917BL Acquired: 7/21/2025 15:19:40 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.002791	-.004847	-.000046		
Stddev	.002362	.002495	.000075		
%RSD	84.61824	51.46339	161.3609		
#1	-.002508	-.007236	-.000131		
#2	-.000584	-.002259	-.000016		
#3	-.005282	-.005047	.000009		

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5271.283	86924.20	7955.796	4451.023	6266.086
Stddev	23.798	905.24	77.028	44.016	35.252
%RSD	.4514557	1.041417	.9682001	.9888933	.5625919
#1	5246.736	87240.78	8025.117	4491.682	6233.159
#2	5294.252	85903.18	7872.873	4404.283	6303.276
#3	5272.860	87628.64	7969.398	4457.104	6261.823

Sample Name: Q2638-01 Acquired: 7/21/2025 15:31:11 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.2647761	.0235090	.3872718	-.030845	-.011026	207.9362	1.523987
Stddev	.0014527	.0024427	.0024804	.002832	.000397	1.8153	.000908
%RSD	.5486563	10.39045	.6404777	9.181946	3.601193	.8729927	.0595530
#1	.2633365	.0206885	.3872729	-.032226	-.010596	205.9252	1.523694
#2	.2662416	.0248995	.3847908	-.027587	-.011379	209.4536	1.523262
#3	.2647503	.0249389	.3897516	-.032722	-.011103	208.4297	1.525005

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0105396	.0086026	85.57998	.2841376	.2045925	.8779680	332.1549
Stddev	.0000518	.0002702	.37522	.0017308	.0009904	.0030070	2.8873
%RSD	.4914631	3.141188	.4384459	.6091592	.4840852	.3425014	.8692487
#1	.0105722	.0085869	85.26075	.2846551	.2043725	.8796872	334.3121
#2	.0105668	.0083406	85.48589	.2855508	.2037305	.8744958	333.2777
#3	.0104799	.0088804	85.99329	.2822071	.2056743	.8797210	328.8749

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.501117	75.18725	.3696628	.0745089	3.514954	.4878144	1.203085
Stddev	.014476	.48106	.0013628	.0012710	.048093	.0041901	.002964
%RSD	.2226710	.6398215	.3686555	1.705766	1.368252	.8589533	.2463404
#1	6.486237	74.78150	.3691859	.0747663	3.563128	.4926522	1.204865
#2	6.501962	75.06157	.3686026	.0756314	3.514792	.4853340	1.199664
#3	6.515152	75.71868	.3712000	.0731289	3.466942	.4854570	1.204725

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	73.08234	.2012910	.0164287	.0387208	13.21663	3.073554	15.13007
Stddev	.79756	.0145140	.0004383	.0014076	.03015	.024301	.07574
%RSD	1.091313	7.210473	2.667717	3.635268	.2281136	.7906462	.5005842
#1	73.69074	.2139793	.0159235	.0386925	13.20109	3.077125	15.12390
#2	73.37686	.2044290	.0166557	.0373275	13.19742	3.095872	15.05760
#3	72.17940	.1854646	.0167068	.0401423	13.25138	3.047665	15.20870

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-01 Acquired: 7/21/2025 15:31:11 Type: Unk
Method: 6010-200.7 NEW(v47) 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	13.25991	.4562346	.0565840
Stddev	.06650	.0014052	.0027827
%RSD	.5015066	.3080045	4.917785
#1	13.33535	.4546982	.0545605
#2	13.20979	.4574548	.0554341
#3	13.23460	.4565508	.0597573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6061.814	100752.5	10344.99	5108.426	5311.004
Stddev	8.035	291.7	105.70	13.039	6.074
%RSD	.1325541	.2894753	1.021740	.2552414	.1143628
#1	6069.365	100466.3	10424.89	5094.146	5317.990
#2	6053.369	100741.8	10384.95	5119.698	5308.056
#3	6062.709	101049.4	10225.14	5111.434	5306.967

Sample Name: Q2638-03 Acquired: 7/21/2025 15:39:24 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.2745156**	**.0206546**	**.3638501**	**-.026398**	**-.011728**	**176.1918**	**1.346940**
Stddev	.0048460	.0023499	.0005376	.005971	.000685	.7876	.006445
%RSD	1.765294	11.37727	.1477497	22.61845	5.841646	.4470078	.4784927
#1	.2692496	.0179414	.3642950	-.032166	-.011008	176.8425	1.350559
#2	.2755098	.0219782	.3640025	-.020243	-.012371	176.4166	1.350763
#3	.2787874	.0220442	.3632527	-.026785	-.011804	175.3162	1.339499

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0091670**	**.0066843**	**92.56981**	**.2563334**	**.1714282**	**.8216543**	**295.9959**
Stddev	.0000427	.0003169	.39095	.0010922	.0002087	.0006563	1.5218
%RSD	.4656910	4.741652	.4223258	.4260975	.1217406	.0798731	.5141237
#1	.0092155	.0067643	92.70824	.2560101	.1716517	.8217305	295.3269
#2	.0091351	.0069536	92.87271	.2554393	.1712384	.8209633	294.9231
#3	.0091504	.0063351	92.12849	.2575508	.1713945	.8222692	297.7375

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.947938**	**68.57780**	**.3175757**	**.0668776**	**3.646281**	**.4418998**	**1.146650**
Stddev	.025676	.38816	.0001021	.0003376	.022802	.0036826	.003327
%RSD	.4316819	.5660072	.0321604	.5048720	.6253522	.8333611	.2901405
#1	5.961068	68.60396	.3175185	.0664924	3.631921	.4446128	1.149280
#2	5.964395	68.95222	.3175149	.0671224	3.634349	.4433790	1.142910
#3	5.918352	68.17723	.3176936	.0670180	3.672574	.4377075	1.147760

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.07331**	**.1829170**	**.0150856**	**.0343670**	**11.48464**	**3.677511**	**14.35089**
Stddev	.17223	.0108691	.0003124	.0007285	.05437	.040374	.03733
%RSD	.2606673	5.942095	2.071056	2.119721	.4733749	1.097865	.2600964
#1	65.95862	.1805891	.0147316	.0339896	11.53179	3.655236	14.32649
#2	65.98995	.1734005	.0153227	.0352067	11.49695	3.653182	14.33233
#3	66.27136	.1947615	.0152025	.0339046	11.42517	3.724116	14.39386

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-03 Acquired: 7/21/2025 15:39:24 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**15.08120**	**.4125596**	**.1016241**
Stddev	.07116	.0011930	.0033132
%RSD	.4718403	.2891621	3.260257
#1	15.15478	.4116029	.1037170
#2	15.01274	.4121796	.1033511
#3	15.07609	.4138963	.0978041

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5918.081**	**98797.49**	**10064.42**	**5017.797**	**5315.898**
Stddev	2.683	119.34	81.18	8.294	4.063
%RSD	.0453287	.1207964	.8066200	.1652864	.0764360
#1	5917.738	98934.95	10046.56	5014.443	5318.628
#2	5915.586	98737.14	9993.66	5011.706	5311.228
#3	5920.918	98720.37	10153.05	5027.243	5317.836

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV03 Acquired: 7/21/2025 15:47:26 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**4.874226**	**4.700352**	**4.729599**	**4.940811**	**4.873386**	**9.576679**	**9.934261**
Stddev	.008498	.092896	.021396	.003519	.015379	.023890	.090786
%RSD	.1743505	1.976366	.4523906	.0712295	.3155707	.2494557	.9138696
#1	4.866808	4.781979	4.727426	4.937540	4.864129	9.586050	9.984209
#2	4.872372	4.719808	4.709372	4.944535	4.864889	9.594462	9.829468
#3	4.883499	4.599269	4.751999	4.940359	4.891138	9.549524	9.989105

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2342789**	**2.365074**	**24.68135**	**.9170800**	**2.342967**	**1.194978**	**4.843269**
Stddev	.0008163	.008360	.10535	.0047646	.010072	.003745	.023154
%RSD	.3484539	.3534952	.4268381	.5195411	.4298740	.3133611	.4780717
#1	.2349371	2.362707	24.72483	.9124522	2.340847	1.192310	4.817357
#2	.2333654	2.358152	24.75800	.9168174	2.334124	1.193366	4.861930
#3	.2345340	2.374363	24.56122	.9219705	2.353930	1.199259	4.850521

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.414552**	**23.43848**	**2.358594**	**1.208133**	**23.42506**	**2.348840**	**2.437942**
Stddev	.009292	.09456	.010965	.002047	.19144	.014891	.015964
%RSD	.3848240	.4034341	.4648864	.1694557	.8172508	.6339588	.6548089
#1	2.407107	23.33391	2.355777	1.208333	23.21606	2.335499	2.433358
#2	2.424965	23.51797	2.349313	1.210073	23.59192	2.364904	2.455697
#3	2.411583	23.46357	2.370693	1.205993	23.46721	2.346118	2.424772

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.40880**	**4.892666**	**4.878963**	**4.749635**	**4.699436**	**4.622115**	**4.682133**
Stddev	.24025	.045707	.011628	.011498	.022903	.035415	.008928
%RSD	.9842908	.9342008	.2383312	.2420784	.4873488	.7662167	.1906841
#1	24.15034	4.945252	4.871617	4.741561	4.676484	4.581296	4.679727
#2	24.62532	4.870268	4.872901	4.744545	4.722289	4.640365	4.674655
#3	24.45075	4.862477	4.892369	4.762799	4.699534	4.644682	4.692018

Sample Name: CCV03 Acquired: 7/21/2025 15:47:26 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**4.722576**	**4.686621**	**4.932883**
Stddev	.005254	.022292	.069491
%RSD	.1112507	.4756515	1.408736
#1	4.727942	4.668175	4.998156
#2	4.717442	4.711392	4.940665
#3	4.722346	4.680297	4.859828

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5131.125**	**82417.15**	**7888.106**	**4259.390**	**5807.450**
Stddev	6.122	351.29	27.866	30.125	11.439
%RSD	.1193151	.4262292	.3532668	.7072613	.1969733
#1	5128.347	82799.71	7857.187	4267.324	5800.033
#2	5138.144	82109.08	7895.851	4226.091	5820.624
#3	5126.884	82342.67	7911.280	4284.753	5801.693

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB03 Acquired: 7/21/2025 15:51:36 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.000150**	**.0085714**	**-.000362**	**.0009095**	**-.000237**	**-.003791**	**-.000272**
Stddev	.001939	.0016257	.000980	.0026843	.001101	.001313	.001009
%RSD	1292.665	18.96685	270.8315	295.1404	465.5087	34.64802	371.2963
#1	-.000685	.0073059	-.000649	.0038967	-.000969	-.004371	-.001418
#2	.002001	.0080033	-.001166	-.001301	.001030	-.004714	.000116
#3	-.001766	.0104049	.000730	.000132	-.000771	-.002287	.000486

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000052**	**.0001140**	**.0496316**	**-.000357**	**-.000038**	**-.000050**	**-.003462**
Stddev	.000054	.0000453	.0045390	.000369	.000079	.000357	.006989
%RSD	103.4725	39.71160	9.145392	103.4367	208.9485	708.0605	201.8945
#1	-.000060	.0001515	.0536884	.000034	-.000056	.000058	-.011260
#2	-.000102	.0000637	.0447293	-.000405	-.000106	.000240	-.001361
#3	.000005	.0001268	.0504770	-.000700	.000049	-.000449	.002236

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000726**	**.0202447**	**-.000068**	**.0000141**	**-.519826**	**.0004726**	**-.000437**
Stddev	.0000976	.0029136	.000410	.0005439	.025020	.0003972	.000162
%RSD	134.4543	14.39169	599.7966	3854.709	4.813203	84.04219	37.03986
#1	-.000009	.0189191	.000327	.0001572	-.490979	.0008977	-.000367
#2	.000046	.0235854	-.000492	-.000587	-.532875	.0001109	-.000323
#3	.000181	.0182297	-.000040	.000472	-.535625	.0004093	-.000623

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.323445**	**.0032133**	**.0006502**	**.0006932**	**.0080122**	**.0024755**	**-.001581**
Stddev	.031969	.0001646	.0003832	.0001759	.0010618	.0115158	.002301
%RSD	9.883930	5.121466	58.93466	25.37516	13.25229	465.1871	145.5497
#1	-.288414	.0031281	.0010010	.0005141	.0087573	.0085580	-.000251
#2	-.351042	.0034030	.0007084	.0006997	.0067964	.0096746	-.004237
#3	-.330877	.0031087	.0002413	.0008657	.0084830	-.010806	-.000254

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB03 Acquired: 7/21/2025 15:51:36 Type: Unk
Method: 6010-200.7 NEW(v47) 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	-.005581	-.006884	.0000088
Stddev	.002444	.001730	.0000460
%RSD	43.78544	25.12965	523.8555
#1	-.008198	-.007785	.0000020
#2	-.003358	-.007977	-.000033
#3	-.005187	-.004889	.000058

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5259.154	85093.56	7718.051	4423.966	6276.878
Stddev	16.147	52.61	43.226	1.046	18.227
%RSD	.3070195	.0618252	.5600660	.0236446	.2903877
#1	5260.704	85128.96	7767.327	4423.985	6282.195
#2	5274.469	85033.11	7686.524	4425.002	6291.856
#3	5242.288	85118.62	7700.304	4422.910	6256.584

Sample Name: Q2638-05 Acquired: 7/21/2025 15:55:55 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.3187295**	**.0212122**	**.4755552**	**-.034744**	**-.012925**	**199.4340**	**1.546408**
Stddev	.0033309	.0047344	.0054434	.003212	.000614	3.5187	.021197
%RSD	1.045039	22.31932	1.144632	9.246103	4.754348	1.764366	1.370693
#1	.3158132	.0235436	.4731728	-.036759	-.013011	196.9880	1.523571
#2	.3223593	.0243289	.4717093	-.031039	-.013491	197.8474	1.565451
#3	.3180160	.0157642	.4817836	-.036434	-.012272	203.4667	1.550203

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0107130**	**.0102237**	**78.68383**	**.2738690**	**.1994883**	**.8984245**	**309.8100**
Stddev	.0001420	.0003414	.75970	.0020933	.0016989	.0053593	.8818
%RSD	1.324987	3.339329	.9655082	.7643321	.8516297	.5965246	.2846253
#1	.0105509	.0100427	77.91750	.2753813	.1997014	.8979305	309.2648
#2	.0108151	.0100110	79.43672	.2714799	.1976930	.8933292	310.8274
#3	.0107731	.0106175	78.69728	.2747458	.2010707	.9040137	309.3379

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.799539**	**72.65166**	**.3533479**	**.0672575**	**3.127330**	**.4810686**	**1.172452**
Stddev	.082297	.96036	.0027017	.0007079	.020891	.0048230	.008036
%RSD	1.210338	1.321876	.7645931	1.052489	.6679992	1.002567	.6853920
#1	6.714908	71.58840	.3526644	.0664703	3.109763	.4757041	1.181727
#2	6.879286	73.45607	.3510536	.0678418	3.150430	.4850463	1.167581
#3	6.804423	72.91052	.3563257	.0674603	3.121795	.4824554	1.168048

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.95704**	**.0847374**	**.0191877**	**.0407656**	**12.92440**	**2.750042**	**15.11612**
Stddev	.27321	.0009713	.0005680	.0022953	.20360	.021972	.07427
%RSD	.4020387	1.146256	2.960214	5.630501	1.575335	.7989682	.4913224
#1	67.92754	.0849771	.0185442	.0381340	12.70837	2.730021	15.11902
#2	68.24381	.0855664	.0193998	.0423542	13.11274	2.773548	15.04045
#3	67.69978	.0836687	.0196192	.0418087	12.95210	2.746557	15.18890

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-05 Acquired: 7/21/2025 15:55:55 Type: Unk
Method: 6010-200.7 NEW(v47) 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	13.37029	.4674972	.0553421
Stddev	.06657	.0074159	.0039521
%RSD	.4978598	1.586294	7.141165
#1	13.35149	.4605166	.0509607
#2	13.31514	.4752826	.0586380
#3	13.44423	.4666924	.0564276

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6192.469	103828.3	9900.776	5230.944	5390.201
Stddev	32.571	541.0	34.829	26.017	33.459
%RSD	.5259845	.5210192	.3517779	.4973732	.6207458
#1	6207.043	103217.6	9940.077	5201.060	5404.551
#2	6215.209	104247.3	9873.735	5243.216	5414.091
#3	6155.156	104020.1	9888.516	5248.555	5351.960

Sample Name: Q2638-07 Acquired: 7/21/2025 16:00:06 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.3059538**	**.0235070**	**.4145727**	**-.034307**	**-.011285**	**205.2644**	**1.475334**
Stddev	.0019823	.0024781	.0006805	.001122	.000314	2.6398	.004834
%RSD	.6479173	10.54207	.1641508	3.270390	2.782542	1.286065	.3276212
#1	.3041873	.0207286	.4151694	-.033424	-.011640	202.5612	1.471570
#2	.3080977	.0254891	.4138315	-.033929	-.011044	205.3960	1.473646
#3	.3055764	.0243033	.4147171	-.035570	-.011170	207.8360	1.480785

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0111213**	**.0094364**	**92.46514**	**.2888767**	**.2107761**	**.9480759**	**333.8455**
Stddev	.0002062	.0001893	.41688	.0006846	.0009535	.0017563	.5623
%RSD	1.854359	2.006289	.4508462	.2370045	.4523745	.1852530	.1684428
#1	.0112997	.0095892	91.99301	.2896601	.2110873	.9488169	333.7201
#2	.0108955	.0094954	92.61994	.2885771	.2097059	.9460705	333.3564
#3	.0111689	.0092246	92.78247	.2883930	.2115351	.9493403	334.4599

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.946418**	**77.24642**	**.3720619**	**.0740209**	**3.488039**	**.5060012**	**1.240658**
Stddev	.031179	.30460	.0010189	.0003478	.010079	.0049540	.004253
%RSD	.4488449	.3943206	.2738393	.4698996	.2889695	.9790510	.3427819
#1	6.919569	77.02720	.3717674	.0743227	3.496194	.5114321	1.244129
#2	6.939070	77.11783	.3712228	.0740994	3.476770	.5048418	1.241929
#3	6.980614	77.59422	.3731956	.0736405	3.491153	.5017297	1.235914

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**72.69368**	**.1843749**	**.0167346**	**.0428272**	**13.27376**	**3.259156**	**16.17532**
Stddev	.13796	.0047087	.0003926	.0005710	.04900	.015523	.06036
%RSD	.1897871	2.553868	2.346257	1.333360	.3691238	.4762801	.3731864
#1	72.68937	.1858681	.0164524	.0421693	13.23251	3.275901	16.23722
#2	72.83375	.1791007	.0171830	.0431946	13.26084	3.256320	16.17213
#3	72.55793	.1881559	.0165684	.0431177	13.32792	3.245247	16.11661

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-07 Acquired: 7/21/2025 16:00:06 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**14.98317**	**.4756481**	**.0692997**
Stddev	.06200	.0018512	.0008041
%RSD	.4137927	.3891921	1.160297
#1	15.04663	.4749692	.0683716
#2	14.92274	.4742322	.0697868
#3	14.98014	.4777429	.0697408

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6220.493**	**101482.4**	**10178.66**	**5193.164**	**5317.821**
Stddev	8.800	111.8	44.86	8.388	11.192
%RSD	.1414731	.1101207	.4407599	.1615160	.2104601
#1	6211.310	101504.5	10214.19	5183.593	5309.894
#2	6228.853	101581.4	10193.54	5196.664	5330.624
#3	6221.315	101361.2	10128.24	5199.235	5312.946

Sample Name: Q2638-09 Acquired: 7/21/2025 16:04:17 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1805651**	**.0212991**	**.4932957**	**-.045984**	**-.017702**	**213.7565**	**1.543491**
Stddev	.0029856	.0029836	.0006310	.006992	.000902	2.8923	.004318
%RSD	1.653501	14.00796	.1279146	15.20454	5.095570	1.353068	.2797712
#1	.1830459	.0190509	.4927944	-.054047	-.016675	216.9243	1.543104
#2	.1772515	.0246839	.4930883	-.041596	-.018068	211.2566	1.539379
#3	.1813979	.0201625	.4940042	-.042309	-.018364	213.0885	1.547990

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0113411**	**.0111168**	**50.29702**	**.4386122**	**.2442195**	**1.306096**	**401.0489**
Stddev	.0000977	.0000859	.30838	.0041157	.0005528	.004162	.2713
%RSD	.8612595	.7730562	.6131197	.9383465	.2263377	.3186404	.0676494
#1	.0112338	.0111065	50.17941	.4341380	.2438653	1.303789	401.0020
#2	.0114249	.0110364	50.06476	.4394619	.2439367	1.303598	401.3406
#3	.0113645	.0112074	50.64691	.4422368	.2448564	1.310900	400.8041

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.553137**	**95.22801**	**.4168242**	**.0904076**	**1.708192**	**.6099876**	**1.523256**
Stddev	.024164	.22647	.0015893	.0002741	.006634	.0076796	.003501
%RSD	.3687329	.2378220	.3812891	.3031512	.3883581	1.258980	.2298575
#1	6.545370	95.34980	.4160141	.0906323	1.700924	.6136277	1.527203
#2	6.533812	94.96670	.4158032	.0904881	1.709730	.6011647	1.522042
#3	6.580229	95.36753	.4186554	.0901022	1.713922	.6151703	1.520524

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**79.93414**	**.1239123**	**.0139392**	**.0702687**	**16.78232**	**3.164315**	**16.68100**
Stddev	.19912	.0073914	.0002115	.0012326	.04320	.009760	.05390
%RSD	.2491060	5.965061	1.517555	1.754121	.2573969	.3084550	.3231154
#1	79.71443	.1270181	.0136949	.0709823	16.81177	3.153245	16.64078
#2	79.98530	.1292442	.0140611	.0688454	16.73273	3.171684	16.65997
#3	80.10269	.1154748	.0140616	.0709783	16.80244	3.168015	16.74224

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-09 Acquired: 7/21/2025 16:04:17 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**9.451521**	**.6022108**	**-.176687**
Stddev	.076064	.0040680	.000943
%RSD	.8047785	.6755067	.5339696
#1	9.436595	.6037324	-.177210
#2	9.384026	.5976013	-.177253
#3	9.533941	.6052985	-.175598

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6134.301**	**99761.65**	**10102.71**	**5103.623**	**5342.215**
Stddev	11.594	169.21	36.61	30.547	11.929
%RSD	.1889958	.1696117	.3623964	.5985265	.2233025
#1	6132.120	99918.67	10117.86	5070.216	5344.749
#2	6146.831	99582.45	10129.31	5110.523	5352.673
#3	6123.954	99783.82	10060.95	5130.128	5329.222

Sample Name: Q2638-11 Acquired: 7/21/2025 16:08:27 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1874838**	**.0243789**	**.5220567**	**-.037290**	**-.014272**	**225.2085**	**1.604222**
Stddev	.0025434	.0003396	.0004109	.005336	.000359	4.3375	.007594
%RSD	1.356618	1.393232	.0787057	14.30822	2.512878	1.925975	.4733993
#1	.1874955	.0240446	.5222365	-.039643	-.014673	220.5387	1.598175
#2	.1849345	.0243685	.5223470	-.041045	-.013980	225.9756	1.601746
#3	.1900213	.0247237	.5215865	-.031183	-.014164	229.1112	1.612745

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0118666**	**.0113439**	**53.43043**	**.4534540**	**.2568787**	**1.340473**	**407.2092**
Stddev	.0002606	.0001597	.34850	.0014306	.0005812	.003814	1.8709
%RSD	2.196058	1.407804	.6522432	.3154939	.2262421	.2845144	.4594542
#1	.0119305	.0112257	53.31122	.4531063	.2570315	1.336301	405.2276
#2	.0115800	.0112804	53.15718	.4550264	.2573683	1.341339	408.9452
#3	.0120893	.0115256	53.82289	.4522292	.2562365	1.343780	407.4547

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.780561**	**98.71066**	**.4370723**	**.0910439**	**1.669767**	**.6331226**	**1.555184**
Stddev	.032189	.26527	.0011925	.0012853	.017139	.0084479	.005973
%RSD	.4747217	.2687336	.2728450	1.411718	1.026443	1.334331	.3840724
#1	6.760443	98.58775	.4356960	.0896666	1.651479	.6235961	1.562052
#2	6.763554	98.52914	.4377229	.0922113	1.685462	.6397030	1.551198
#3	6.817686	99.01509	.4377980	.0912538	1.672360	.6360687	1.552303

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**81.65888**	**.0953869**	**.0123873**	**.0756574**	**17.08511**	**3.157432**	**17.49652**
Stddev	.43768	.0151935	.0006291	.0013740	.05978	.033233	.03177
%RSD	.5359829	15.92825	5.078379	1.816083	.3498706	1.052541	.1815965
#1	81.31526	.0802059	.0120273	.0740734	17.03526	3.119529	17.48240
#2	82.15164	.1105928	.0131136	.0763707	17.06868	3.181578	17.53291
#3	81.50976	.0953620	.0120209	.0765281	17.15138	3.171188	17.47426

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-11 Acquired: 7/21/2025 16:08:27 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**10.05838**	**.6219921**	**-.173252**
Stddev	.06781	.0019063	.002166
%RSD	.6741739	.3064862	1.250360
#1	10.04548	.6202703	-.171870
#2	10.13171	.6240407	-.175748
#3	9.99794	.6216653	-.172136

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6203.044**	**101659.4**	**10090.53**	**5190.600**	**5333.959**
Stddev	20.409	173.8	59.05	13.968	13.678
%RSD	.3290214	.1709906	.5851882	.2690957	.2564340
#1	6220.656	101765.1	10074.78	5186.675	5348.324
#2	6207.799	101458.8	10155.86	5206.110	5332.460
#3	6180.677	101754.3	10040.95	5179.014	5321.092

Sample Name: Q2638-13 Acquired: 7/21/2025 16:12:39 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.1741516**	**.0228865**	**.5034887**	**-.039757**	**-.016080**	**204.8712**	**1.442160**
Stddev	.0022735	.0019578	.0020212	.002858	.002732	1.5361	.004320
%RSD	1.305473	8.554507	.4014379	7.187512	16.99128	.7497836	.2995672
#1	.1742543	.0226509	.5057948	-.037688	-.014439	204.0541	1.441209
#2	.1718284	.0249515	.5020246	-.043017	-.014566	206.6432	1.438395
#3	.1763720	.0210572	.5026467	-.038564	-.019234	203.9164	1.446877

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0109500**	**.0095619**	**47.35946**	**.4121810**	**.2313504**	**1.250760**	**370.1057**
Stddev	.0000837	.0002738	.18037	.0018830	.0010458	.000649	3.0169
%RSD	.7640781	2.863903	.3808432	.4568486	.4520191	.0519206	.8151380
#1	.0109057	.0094900	47.48815	.4113788	.2316864	1.251367	369.2592
#2	.0108977	.0098645	47.15330	.4108320	.2301779	1.250837	367.6025
#3	.0110465	.0093312	47.43694	.4143324	.2321867	1.250075	373.4554

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.216634**	**89.78237**	**.3998148**	**.0825651**	**1.417248**	**.5677222**	**1.442385**
Stddev	.016005	.11908	.0013269	.0017813	.025762	.0013455	.003120
%RSD	.2574618	.1326287	.3318918	2.157491	1.817720	.2369992	.2163214
#1	6.217606	89.91964	.3998431	.0820315	1.401349	.5691626	1.445558
#2	6.200164	89.72066	.3984740	.0811116	1.403423	.5675063	1.442275
#3	6.232131	89.70682	.4011274	.0845523	1.446970	.5664978	1.439321

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**72.61164**	**.0865120**	**.0142483**	**.0643398**	**15.29971**	**2.322537**	**15.87917**
Stddev	.70340	.0113662	.0001736	.0005919	.01075	.023893	.05691
%RSD	.9687212	13.13827	1.218514	.9199682	.0702880	1.028741	.3584054
#1	72.33621	.0811026	.0141301	.0637287	15.29466	2.308650	15.88754
#2	72.08763	.0788609	.0141672	.0649105	15.29241	2.308835	15.81854
#3	73.41108	.0995726	.0144476	.0643801	15.31206	2.350126	15.93144

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13 Acquired: 7/21/2025 16:12:39 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**9.048011**	**.5571016**	**-.160425**
Stddev	.036014	.0026736	.002398
%RSD	.3980295	.4799200	1.494596
#1	9.048585	.5556127	-.159551
#2	9.011714	.5555039	-.158587
#3	9.083734	.5601882	-.163137

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5983.302**	**98448.25**	**9680.387**	**5041.039**	**5267.232**
Stddev	13.297	448.24	22.372	4.520	5.288
%RSD	.2222419	.4553029	.2311038	.0896563	.1003992
#1	5996.913	98610.54	9670.063	5036.338	5271.938
#2	5970.342	98792.74	9665.042	5045.352	5268.247
#3	5982.653	97941.47	9706.057	5041.427	5261.509

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13DUP Acquired: 7/21/2025 16:16:50 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.2005192**	**.0250761**	**.5755530**	**-.047840**	**-.015824**	**241.4782**
Stddev	.0007453	.0040366	.0020115	.004008	.002873	2.7922
%RSD	.3717082	16.09753	.3494813	8.378191	18.15591	1.156280
#1	.1996799	.0297360	.5734310	-.049723	-.012530	239.1728
#2	.2011040	.0228396	.5757964	-.050560	-.017814	244.5828
#3	.2007737	.0226528	.5774318	-.043237	-.017127	240.6791

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.717853**	**.0129114**	**.0141062**	**59.53754**	**.4947638**	**.2800560**
Stddev	.006116	.0001075	.0002656	.31056	.0004853	.0003504
%RSD	.3559999	.8326102	1.883176	.5216165	.0980815	.1251158
#1	1.710844	.0128530	.0139163	59.19391	.4942166	.2796692
#2	1.722102	.0128457	.0144098	59.79816	.4949329	.2803524
#3	1.720612	.0130354	.0139926	59.62054	.4951420	.2801462

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.463947**	**442.8412**	**7.297503**	**105.2047**	**.4885067**	**.1004651**
Stddev	.006428	2.4919	.026671	.0903	.0009148	.0006198
%RSD	.4390832	.5627045	.3654836	.0858029	.1872652	.6168873
#1	1.457856	443.0045	7.267422	105.1307	.4874518	.1005141
#2	1.470666	440.2716	7.318261	105.3053	.4890803	.0998223
#3	1.463319	445.2474	7.306827	105.1782	.4889882	.1010589

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.853208**	**.6724353**	**1.684492**	**87.52016**	**.1072978**	**.0146972**
Stddev	.020006	.0056914	.004996	.12890	.0138456	.0002608
%RSD	1.079513	.8463807	.2965853	.1472824	12.90394	1.774160
#1	1.855425	.6785905	1.690234	87.39176	.1094563	.0148422
#2	1.832186	.6713522	1.681141	87.51917	.0924996	.0148532
#3	1.872012	.6673634	1.682102	87.64955	.1199374	.0143962

Sample Name: Q2638-13DUP Acquired: 7/21/2025 16:16:50 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.0782893	18.40812	3.648194	F 19.26570	11.08392	.6681045
Stddev	.0023386	.00472	.038382	.03824	.01676	.0028935
%RSD	2.987065	.0256520	1.052080	.1985082	.1512164	.4330958
#1	.0783815	18.41232	3.651196	19.23561	11.08431	.6680299
#2	.0805803	18.40301	3.608400	19.30874	11.10048	.6652490
#3	.0759060	18.40904	3.684987	19.25275	11.06697	.6710346

Elem	Sr4077
Units	ppm
Avg	-.186589
Stddev	.002535
%RSD	1.358664
#1	-.187209
#2	-.183801
#3	-.188756

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6160.100	101217.2	10209.52	5169.698	5154.452
Stddev	11.994	347.5	56.80	2.918	8.422
%RSD	.1947086	.3433263	.5563498	.0564528	.1633885
#1	6164.844	101615.6	10273.29	5171.041	5157.256
#2	6146.460	101059.5	10164.35	5171.703	5144.986
#3	6168.997	100976.5	10190.92	5166.350	5161.114

Sample Name: Q2638-13LX5 Acquired: 7/21/2025 16:21:05 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.0401751**	**.0106479**	**.0992444**	**-.006496**	**-.006870**	**47.90588**	**.3429702**
Stddev	.0018554	.0009624	.0009576	.003949	.001198	.11910	.0008771
%RSD	4.618352	9.038328	.9649353	60.79915	17.44327	.2486203	.2557368
#1	.0400187	.0096278	.1003365	-.003102	-.008064	47.95053	.3438098
#2	.0384028	.0115397	.0988488	-.010830	-.005667	47.77090	.3420599
#3	.0421037	.0107762	.0985480	-.005554	-.006880	47.99621	.3430409

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0024273**	**.0004449**	**11.48775**	**.0999873**	**.0448243**	**.3084035**	**88.18478**
Stddev	.0000858	.0001349	.04354	.0005596	.0000463	.0009584	.38456
%RSD	3.533292	30.31213	.3790111	.5597073	.1033314	.3107651	.4360789
#1	.0024859	.0005997	11.49662	.1006030	.0448516	.3082546	87.82684
#2	.0024671	.0003533	11.44045	.0998496	.0448504	.3075282	88.59133
#3	.0023288	.0003816	11.52616	.0995094	.0447708	.3094276	88.13616

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.527209**	**21.91113**	**.0788411**	**.0192563**	**-.019968**	**.1336465**	**.3409748**
Stddev	.003073	.03187	.0001651	.0001077	.007195	.0018654	.0005206
%RSD	.2012459	.1454628	.2094212	.5590391	36.03285	1.395800	.1526912
#1	1.530199	21.94785	.0786625	.0191320	-.026982	.1320956	.3415055
#2	1.524059	21.89497	.0788727	.0193198	-.020317	.1357165	.3404648
#3	1.527369	21.89058	.0789881	.0193170	-.012605	.1331275	.3409540

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.50857**	**.0079419**	**.0029736**	**.0127235**	**3.580503**	**.7354625**	**3.038438**
Stddev	.07335	.0019179	.0002455	.0006482	.010792	.0102143	.006463
%RSD	.4443388	24.14920	8.254681	5.094411	.3014045	1.388827	.2127143
#1	16.43524	.0086117	.0030440	.0121600	3.586583	.7465588	3.034602
#2	16.58194	.0094352	.0027006	.0125787	3.568043	.7264522	3.034811
#3	16.50854	.0057790	.0031761	.0134319	3.586883	.7333766	3.045900

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13LX5 Acquired: 7/21/2025 16:21:05 Type: Unk
Method: 6010-200.7 NEW(v47) 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	1.726305	.1224834	-.038053
Stddev	.005346	.0030511	.000463
%RSD	.3096880	2.491027	1.215768
#1	1.723250	.1256465	-.037609
#2	1.732478	.1195582	-.038533
#3	1.723187	.1222455	-.038017

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5415.574	87200.56	8266.301	4523.571	5946.351
Stddev	3.480	189.68	46.482	14.551	6.984
%RSD	.0642537	.2175171	.5623105	.3216735	.1174516
#1	5414.430	87415.33	8240.380	4507.151	5949.005
#2	5419.481	87130.33	8319.963	4534.866	5951.619
#3	5412.809	87056.00	8238.558	4528.698	5938.429

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13MS Acquired: 7/21/2025 16:25:11 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.7555614**	**1.889436**	**1.356647**	**1.360869**	**.1811915**	**239.1711**
Stddev	.0025652	.049747	.002052	.003618	.0010413	.6928
%RSD	.3395152	2.632896	.1512516	.2658255	.5746931	.2896633
#1	.7542739	1.906440	1.357994	1.356761	.1822903	239.9694
#2	.7538949	1.833417	1.354286	1.363578	.1802193	238.8160
#3	.7585154	1.928452	1.357662	1.362267	.1810647	238.7278

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.803685**	**.1525206**	**.1894659**	**54.78006**	**.7369739**	**.4440619**
Stddev	.003455	.0005607	.0005256	.10724	.0010552	.0016612
%RSD	.1915592	.3676364	.2773881	.1957598	.1431800	.3740982
#1	1.799715	.1523020	.1897594	54.65863	.7381526	.4429202
#2	1.806014	.1531577	.1888592	54.86177	.7366517	.4432979
#3	1.805325	.1521021	.1897792	54.81979	.7361174	.4459677

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.552456**	**413.3774**	**7.099078**	**102.8962**	**.9079189**	**.1451434**
Stddev	.005225	.8176	.013027	.0902	.0029015	.0002225
%RSD	.3365426	.1977772	.1835019	.0876431	.3195767	.1532687
#1	1.547186	414.0041	7.084139	102.9400	.9070354	.1449506
#2	1.552548	412.4526	7.108073	102.9561	.9055618	.1453868
#3	1.557634	413.6756	7.105021	102.7925	.9111594	.1450929

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.085021**	**.8629636**	**1.708020**	**89.15465**	**.2874121**	**.3136758**
Stddev	.032996	.0047257	.012515	.13589	.0097869	.0009954
%RSD	.8077209	.5476082	.7327299	.1524155	3.405184	.3173259
#1	4.119854	.8675410	1.717583	89.08605	.2865528	.3137466
#2	4.054236	.8632475	1.712622	89.06674	.2780831	.3126469
#3	4.080973	.8581024	1.693856	89.31116	.2976003	.3146339

Sample Name: Q2638-13MS Acquired: 7/21/2025 16:25:11 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7190664	18.72010	4.136123	F 22.49201	9.880711	.7691264
Stddev	.0020585	.02738	.015444	.04058	.056669	.0021554
%RSD	.2862683	.1462417	.3733949	.1804329	.5735318	.2802401
#1	.7171319	18.69137	4.146186	22.49648	9.867292	.7706320
#2	.7212297	18.74588	4.143841	22.44938	9.831957	.7700899
#3	.7188376	18.72306	4.118341	22.53018	9.942886	.7666573

Elem	Sr4077
Units	ppm
Avg	-.017810
Stddev	.001526
%RSD	8.569583
#1	-.019268
#2	-.016224
#3	-.017937

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6112.831	100419.6	9889.789	5132.141	5216.939
Stddev	13.503	257.7	12.352	21.091	13.078
%RSD	.2209009	.2566657	.1249005	.4109612	.2506919
#1	6123.681	100128.9	9883.321	5109.387	5222.207
#2	6117.104	100620.2	9882.013	5136.000	5226.562
#3	6097.708	100509.7	9904.032	5151.037	5202.048

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13MSD Acquired: 7/21/2025 16:29:15 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8133479**	**2.062095**	**1.480372**	**1.477091**	**.1853953**	**250.2368**
Stddev	.0043358	.044840	.006407	.003377	.0046889	8.1201
%RSD	.5330850	2.174506	.4328066	.2286436	2.529126	3.244956
#1	.8084045	2.103737	1.481754	1.480357	.1890694	252.5750
#2	.8151329	2.067921	1.485974	1.477304	.1870024	256.9313
#3	.8165063	2.014626	1.473386	1.473613	.1801142	241.2042

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.909057**	**.1681848**	**.2101228**	**58.08507**	**.7962545**	**.4881439**
Stddev	.043145	.0039968	.0010648	1.60157	.0034688	.0006498
%RSD	2.260029	2.376434	.5067528	2.757287	.4356421	.1331178
#1	1.925336	.1685567	.2100968	58.72225	.7995021	.4888043
#2	1.941694	.1719826	.2112004	59.26999	.7926003	.4881223
#3	1.860141	.1640150	.2090712	56.26298	.7966612	.4875052

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.681489**	**435.6596**	**7.653590**	**110.2882**	**.9986962**	**.1528327**
Stddev	.004580	2.3437	.188718	2.6551	.0029049	.0009850
%RSD	.2723647	.5379653	2.465740	2.407400	.2908738	.6445005
#1	1.680899	438.3454	7.717975	111.1997	.9997809	.1539226
#2	1.686335	434.0291	7.801689	112.3675	1.000903	.1525693
#3	1.677233	434.6043	7.441105	107.2975	.995405	.1520062

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.341463**	**.9154099**	**1.855818**	**95.23134**	**.2630362**	**.3404867**
Stddev	.070160	.0207323	.007036	1.02912	.0284406	.0010878
%RSD	1.616050	2.264811	.3791097	1.080658	10.81244	.3194684
#1	4.395055	.9200003	1.863594	96.15871	.2682491	.3415911
#2	4.262052	.9334622	1.853966	94.12416	.2323497	.3404524
#3	4.367282	.8927671	1.849893	95.41116	.2885098	.3394164

Sample Name: Q2638-13MSD Acquired: 7/21/2025 16:29:15 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7806128	19.58892	4.470454	F 24.61422	11.08429	.8313504
Stddev	.0019107	.45646	.036673	.14972	.07146	.0130735
%RSD	.2447753	2.330190	.8203390	.6082793	.6446594	1.572567
#1	.7822437	19.73647	4.488070	24.67997	11.13615	.8381052
#2	.7810843	19.95335	4.428297	24.71982	11.11394	.8396646
#3	.7785105	19.07693	4.494995	24.44287	11.00278	.8162812

Elem	Sr4077
Units	ppm
Avg	-.014726
Stddev	.009225
%RSD	62.64183
#1	-.013652
#2	-.006085
#3	-.024441

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6174.994	100446.4	9807.480	5158.454	5166.639
Stddev	7.723	430.4	277.400	12.281	8.648
%RSD	.1250639	.4285184	2.828449	.2380766	.1673768
#1	6172.492	99998.9	9770.394	5150.309	5161.708
#2	6168.833	100857.4	9550.489	5152.474	5161.585
#3	6183.658	100482.9	10101.56	5172.580	5176.624

Sample Name: Q2638-13A Acquired: 7/21/2025 16:33:22 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.8202999**	**2.085717**	**1.436140**	**1.580287**	**.6794735**	**207.5797**
Stddev	.0019852	.028594	.007003	.004666	.0042330	.2397
%RSD	.2420063	1.370931	.4876177	.2952736	.6229848	.1154795
#1	.8180118	2.052743	1.440770	1.579773	.6842873	207.7602
#2	.8215634	2.103667	1.428084	1.575899	.6763325	207.6711
#3	.8213246	2.100742	1.439567	1.585189	.6778006	207.3077

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.635015**	**.1749328**	**.2050704**	**47.82160**	**.7262789**	**.4345677**
Stddev	.001621	.0005158	.0005866	.14745	.0023311	.0009734
%RSD	.0991689	.2948835	.2860388	.3083403	.3209700	.2240024
#1	1.636455	.1745275	.2052967	47.87669	.7237595	.4349063
#2	1.635332	.1755135	.2044044	47.65454	.7283594	.4334702
#3	1.633259	.1747574	.2055101	47.93359	.7267179	.4353267

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.477465**	**363.0589**	**6.432662**	**91.98295**	**.9075156**	**.1401854**
Stddev	.006156	.5380	.005756	.18829	.0023638	.0006024
%RSD	.4166756	.1481787	.0894754	.2047032	.2604713	.4297304
#1	1.481250	363.2939	6.439282	91.96142	.9084496	.1408804
#2	1.470362	363.4394	6.429860	92.18108	.9048274	.1398141
#3	1.480785	362.4434	6.428843	91.80635	.9092696	.1398616

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.916770**	**.8169202**	**1.607372**	**81.60778**	**.2825286**	**.3661003**
Stddev	.025920	.0042905	.005111	.05675	.0007524	.0007249
%RSD	.6617653	.5252041	.3179569	.0695440	.2663229	.1979971
#1	3.922541	.8185509	1.612843	81.67249	.2828490	.3665363
#2	3.939318	.8201562	1.606550	81.58441	.2830678	.3652635
#3	3.888451	.8120534	1.602721	81.56644	.2816690	.3665010

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2638-13A Acquired: 7/21/2025 16:33:22 Type: Unk
Method: 6010-200.7 NEW(v47) 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	.7948809	15.71596	3.838045	F 20.98883	8.923525	.7217300
Stddev	.0005456	.05465	.022839	.10603	.012356	.0038427
%RSD	.0686427	.3477244	.5950757	.5051510	.1384653	.5324291
#1	.7949523	15.70568	3.857965	21.04010	8.936895	.7207071
#2	.7943031	15.77501	3.843054	20.86692	8.912527	.7259807
#3	.7953874	15.66718	3.813118	21.05948	8.921153	.7185023

Elem	Sr4077
Units	ppm
Avg	.0207266
Stddev	.0004769
%RSD	2.301011
#1	.0210287
#2	.0201768
#3	.0209742

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6076.584	98817.79	9445.076	5064.036	5359.915
Stddev	17.502	127.03	17.020	15.916	15.568
%RSD	.2880172	.1285540	.1801989	.3142966	.2904471
#1	6067.671	98961.23	9455.212	5054.634	5355.310
#2	6096.748	98772.68	9454.591	5082.412	5377.266
#3	6065.333	98719.48	9425.427	5055.061	5347.170

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV04 Acquired: 7/21/2025 16:50:20 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.158410**	**5.449793**	**4.944999**	**5.278100**	**5.138462**	**9.971626**	**10.40734**
Stddev	.020516	.083864	.014042	.009599	.021786	.021589	.11434
%RSD	.3977145	1.538846	.2839597	.1818611	.4239712	.2165037	1.098692
#1	5.153174	5.353203	4.940166	5.276233	5.133207	9.961639	10.29314
#2	5.141020	5.504092	4.934011	5.269571	5.119784	9.996401	10.52183
#3	5.181037	5.492083	4.960818	5.288495	5.162394	9.956840	10.40704

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2456348**	**2.474484**	**25.84377**	**.9470909**	**2.453082**	**1.253833**	**4.974416**
Stddev	.0016727	.007867	.08879	.0014352	.006145	.002821	.045181
%RSD	.6809702	.3179402	.3435793	.1515331	.2505091	.2249896	.9082700
#1	.2438893	2.470199	25.78350	.9477590	2.451209	1.253032	5.018477
#2	.2472237	2.469690	25.94574	.9480702	2.448090	1.251499	4.928192
#3	.2457913	2.483564	25.80206	.9454435	2.459945	1.256968	4.976580

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.538951**	**24.32970**	**2.467741**	**1.248135**	**23.41607**	**2.443997**	**2.528740**
Stddev	.007748	.05538	.006859	.001545	.15869	.015285	.008351
%RSD	.3051775	.2276064	.2779636	.1237443	.6777020	.6253978	.3302365
#1	2.534455	24.27517	2.465651	1.249857	23.57224	2.437136	2.535211
#2	2.547898	24.32804	2.462169	1.246871	23.42098	2.461510	2.531695
#3	2.534501	24.38588	2.475402	1.247676	23.25497	2.433344	2.519313

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**25.44302**	**5.148288**	**5.118442**	**4.987735**	**4.903071**	**4.725255**	**4.807603**
Stddev	.15427	.034711	.012818	.011180	.012842	.022765	.015818
%RSD	.6063216	.6742339	.2504218	.2241476	.2619106	.4817742	.3290147
#1	25.61885	5.108618	5.111358	4.980958	4.899719	4.748055	4.822688
#2	25.37987	5.173083	5.110729	4.981607	4.917256	4.725186	4.791143
#3	25.33036	5.163164	5.133238	5.000639	4.892237	4.702525	4.808978

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV04 Acquired: 7/21/2025 16:50:20 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**5.048876**	**4.835532**	**5.181438**
Stddev	.020088	.016949	.009518
%RSD	.3978748	.3505133	.1836886
#1	5.046261	4.854355	5.191264
#2	5.030223	4.821479	5.172262
#3	5.070144	4.830762	5.180788

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5074.654**	**82691.91**	**7739.400**	**4241.111**	**5734.676**
Stddev	11.742	367.42	58.003	23.255	14.233
%RSD	.2313832	.4443217	.7494489	.5483154	.2481984
#1	5069.398	82474.17	7789.884	4222.979	5731.737
#2	5088.105	82485.45	7676.042	4233.026	5750.150
#3	5066.458	83116.12	7752.276	4267.329	5722.142

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB04 Acquired: 7/21/2025 16:56:43 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002852**	**.0073844**	**.0002668**	**.0027446**	**.0006322**	**-.002901**	**-.001209**
Stddev	.002506	.0004005	.0011332	.0043431	.0014070	.009707	.000865
%RSD	87.87074	5.422846	424.7619	158.2397	222.5470	334.5983	71.55806
#1	-.005583	.0069442	.0001136	.0032025	.0016760	.000232	-.001755
#2	-.002313	.0077270	.0014688	.0068406	.0011886	.004853	-.001659
#3	-.000659	.0074820	-.000782	-.001809	-.000968	-.013787	-.000212

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000151**	**.0000787**	**.0437924**	**.0001012**	**.0000757**	**.0004613**	**.0027323**
Stddev	.0000916	.0001541	.0046682	.0004291	.0000429	.0002903	.0069117
%RSD	605.4948	195.8909	10.65995	424.1635	56.69201	62.93296	252.9622
#1	.0001190	.0002549	.0446165	.0000127	.0001220	.0007955	-.000470
#2	-.000020	.0000116	.0479937	-.000277	.0000678	.0003181	-.001997
#3	-.000054	-.000031	.0387670	.000568	.0000373	.0002705	.010664

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000039**	**.0199069**	**-.000058**	**.0001757**	**-.470910**	**-.001954**	**-.000471**
Stddev	.0003318	.0087521	.000106	.0003054	.009982	.005558	.000264
%RSD	8576.515	43.96516	184.4112	173.7942	2.119696	284.4349	56.06273
#1	-.000058	.0210156	-.000014	.0001117	-.460142	-.002019	-.000644
#2	.000362	.0106533	.000020	.0005081	-.479855	-.007479	-.000602
#3	-.000292	.0280518	-.000178	-.000093	-.472732	.003636	-.000167

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.112296**	**.0055259**	**.0001804**	**.0014127**	**.0097324**	**.0075345**	**.0030067**
Stddev	.028547	.0011893	.0005314	.0004495	.0023724	.0043182	.0017070
%RSD	25.42118	21.52188	294.6293	31.81582	24.37674	57.31313	56.77257
#1	-.140572	.0068891	.0007148	.0018933	.0124717	.0030810	.0010359
#2	-.083486	.0047006	-.000348	.0013421	.0083404	.0117034	.0040200
#3	-.112830	.0049880	.000174	.0010027	.0083850	.0078189	.0039641

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB04 Acquired: 7/21/2025 16:56:43 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.007036**	**-.009180**	**.0001030**
Stddev	.001699	.001957	.0000675
%RSD	24.14282	21.31518	65.46798
#1	-.005229	-.008141	.0001395
#2	-.008600	-.007962	.0000252
#3	-.007277	-.011438	.0001444

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5290.946**	**85954.58**	**7547.812**	**4437.254**	**6335.138**
Stddev	10.608	453.96	7.811	10.398	2.164
%RSD	.2004983	.5281391	.1034928	.2343306	.0341663
#1	5279.116	86187.77	7539.052	4438.668	6333.733
#2	5294.108	86244.56	7550.333	4446.873	6334.051
#3	5299.613	85431.42	7554.052	4426.222	6337.631

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: PB168917BS Acquired: 7/21/2025 17:07:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.7803570**	**2.159026**	**.9467134**	**2.021410**	**.8402250**	**2.057535**
Stddev	.0032373	.028102	.0011040	.006623	.0026164	.007371
%RSD	.4148424	1.301612	.1166185	.3276638	.3113882	.3582327
#1	.7812950	2.191453	.9476596	2.021512	.8425030	2.049377
#2	.7767543	2.141745	.9455004	2.014736	.8373675	2.063714
#3	.7830217	2.143882	.9469800	2.027982	.8408044	2.059513

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2123758**	**.2112445**	**.1889096**	**1.133682**	**.3967059**	**.2000567**
Stddev	.0016500	.0018238	.0003831	.009843	.0011527	.0004255
%RSD	.7769166	.8633662	.2027951	.8682525	.2905786	.2126643
#1	.2131181	.2092543	.1890146	1.122455	.3958301	.2004595
#2	.2104851	.2128360	.1884849	1.140832	.3962756	.1996117
#3	.2135243	.2116430	.1892292	1.137757	.3980118	.2000989

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3142928**	**3.054870**	**.2127252**	**2.064113**	**.5055013**	**.0747885**
Stddev	.0009391	.004286	.0015737	.012712	.0011097	.0005031
%RSD	.2987978	.1402949	.7397805	.6158646	.2195219	.6727319
#1	.3140837	3.054670	.2110274	2.069775	.5055348	.0748762
#2	.3134759	3.050688	.2141350	2.049554	.5043753	.0742473
#3	.3153188	3.059252	.2130131	2.073011	.5065939	.0752420

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.608861**	**.3006973**	**.2148430**	**9.940881**	**.3300930**	**.4237736**
Stddev	.039467	.0036764	.0008227	.010121	.0018026	.0003944
%RSD	1.512786	1.222620	.3829263	.1018111	.5460881	.0930694
#1	2.652257	.3031955	.2157506	9.947938	.3280189	.4233200
#2	2.575114	.3024207	.2141462	9.929286	.3312813	.4240352
#3	2.599213	.2964758	.2146321	9.945420	.3309788	.4239657

Sample Name: PB168917BS Acquired: 7/21/2025 17:07:12 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**.7097370**	**.2049595**	**.8244920**	**5.553580**	F **-.004873**	**.1803701**
Stddev	.0015664	.0006090	.0069965	.012399	.001755	.0017870
%RSD	.2207054	.2971485	.8485768	.2232585	36.01461	.9907449
#1	.7093127	.2042578	.8207089	5.561918	-.002964	.1824319
#2	.7084264	.2052693	.8202015	5.539332	-.005239	.1792681
#3	.7114719	.2053513	.8325655	5.559491	-.006416	.1794103

Elem	Sr4077
Units	ppm
Avg	**.2085897**
Stddev	.0004893
%RSD	.2345904
#1	.2080863
#2	.2086191
#3	.2090636

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5284.410**	**84170.10**	**7693.809**	**4365.994**	**6217.619**
Stddev	9.687	128.27	40.322	17.034	14.687
%RSD	.1833130	.1523939	.5240781	.3901536	.2362172
#1	5279.329	84086.26	7736.252	4346.427	6210.285
#2	5295.581	84317.76	7656.012	4377.514	6234.529
#3	5278.321	84106.27	7689.164	4374.042	6208.043

Sample Name: Q2622-04 Acquired: 7/21/2025 17:11:21 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**-.003422**	**.0050594**	**.0191203**	**.0065921**	**.0011694**	**.0889890**	**.3301048**
Stddev	.003930	.0010798	.0002801	.0050044	.0022882	.0064279	.0007424
%RSD	114.8655	21.34138	1.464893	75.91495	195.6720	7.223264	.2249145
#1	-.005780	.0038408	.0194429	.0045017	-.000291	.0837959	.3309063
#2	.001115	.0058969	.0189792	.0029719	.003806	.0869929	.3299675
#3	-.005601	.0054405	.0189388	.0123029	-.000007	.0961781	.3294405

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000646**	**.0008517**	**32.07031**	**.0007635**	**.0030231**	**.0066406**	**.0271542**
Stddev	.0000525	.0000776	.15657	.0003461	.0001213	.0002173	.0055857
%RSD	81.26868	9.112633	.4882152	45.32606	4.013211	3.271709	20.57031
#1	.0001238	.0009275	31.92620	.0007392	.0030995	.0064116	.0231714
#2	.0000467	.0008552	32.04783	.0004302	.0028832	.0068438	.0335391
#3	.0000234	.0007724	32.23691	.0011211	.0030866	.0066663	.0247521

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3485320**	**15.14978**	**.0050808**	**-.000120**	**342.9327**	**.0013614**	**.7457890**
Stddev	.0017477	.11388	.0002376	.000343	6.6497	.0003414	.0038898
%RSD	.5014537	.7516727	4.676967	286.7858	1.939063	25.07860	.5215701
#1	.3466890	15.04498	.0049948	.000199	345.5665	.0016814	.7497694
#2	.3487416	15.13341	.0048982	-.000075	347.8620	.0010020	.7456010
#3	.3501655	15.27096	.0053495	-.000483	335.3696	.0014008	.7419966

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.599399**	**.3157127**	**.0003877**	**-.005568**	**.0058137**	**6.302468**	**.0820566**
Stddev	.047441	.0029238	.0002954	.000506	.0018190	.085970	.0019431
%RSD	.8472586	.9260810	76.19412	9.090683	31.28753	1.364064	2.368016
#1	5.652413	.3124148	.0000723	-.005036	.0063196	6.401006	.0831210
#2	5.584843	.3167366	.0006579	-.006043	.0073261	6.263616	.0798138
#3	5.560942	.3179869	.0004328	-.005626	.0037953	6.242783	.0832349

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: Q2622-04 Acquired: 7/21/2025 17:11:21 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**5.208859**	**-.000681**	**.1354524**
Stddev	.023956	.002325	.0001363
%RSD	.4598995	341.4120	.1006387
#1	5.211950	-.002498	.1355665
#2	5.231119	.001939	.1353015
#3	5.183508	-.001484	.1354892

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5061.455**	**81836.92**	**7696.259**	**4201.245**	**5656.883**
Stddev	17.954	503.36	57.792	15.751	20.297
%RSD	.3547145	.6150785	.7509084	.3749046	.3587973
#1	5058.931	81261.57	7742.107	4183.372	5659.580
#2	5044.897	82196.00	7715.328	4213.097	5635.372
#3	5080.537	82053.20	7631.342	4207.267	5675.696

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV05 Acquired: 7/21/2025 17:27:43 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**4.730600**	**5.394065**	**4.569371**	**4.840136**	**4.866520**	**9.438682**
Stddev	.041958	.080964	.026631	.040601	.047274	.148618
%RSD	.8869388	1.500976	.5828195	.8388475	.9714221	1.574568
#1	4.717432	5.341005	4.553598	4.822416	4.850240	9.502420
#2	4.696806	5.353934	4.554398	4.811406	4.829538	9.544799
#3	4.777562	5.487255	4.600119	4.886585	4.919784	9.268825

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.823073**	**.2371106**	**2.271832**	**24.29524**	**.9133986**	**2.312256**
Stddev	.286706	.0045115	.011733	.41961	.0331160	.016254
%RSD	2.918696	1.902721	.5164724	1.727128	3.625584	.7029530
#1	10.15271	.2411166	2.263909	24.53349	.9499665	2.301645
#2	9.63170	.2379918	2.266276	24.54149	.9047976	2.304154
#3	9.68481	.2322235	2.285312	23.81074	.8854316	2.330968

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.173144**	**4.632797**	**2.409575**	**23.05241**	**2.319062**	**1.204252**
Stddev	.010650	.142571	.043516	.40034	.015095	.041788
%RSD	.9078354	3.077428	1.805951	1.736647	.6508885	3.470040
#1	1.165876	4.781807	2.439813	23.21910	2.309391	1.251130
#2	1.168186	4.618899	2.429210	23.34246	2.311338	1.190719
#3	1.185369	4.497683	2.359702	22.59565	2.336455	1.170908

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.89922**	**2.316903**	**2.425431**	**23.75223**	**5.020987**	**4.841262**
Stddev	.86566	.040102	.081197	.85558	.086509	.046356
%RSD	3.780311	1.730825	3.347742	3.602086	1.722953	.9575121
#1	23.86321	2.329912	2.517392	24.69492	5.091193	4.813715
#2	22.64613	2.348885	2.395270	23.53686	5.047424	4.815291
#3	22.18830	2.271912	2.363630	23.02492	4.924344	4.894782

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCV05 Acquired: 7/21/2025 17:27:43 Type: Unk
Method: 6010-200.7 NEW(v47) 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	**4.687614**	**4.635605**	F **4.423193**	F **4.447793**	**4.693952**	**4.575984**
Stddev	.027888	.069601	.140422	.036714	.038582	.079765
%RSD	.5949384	1.501449	3.174682	.8254380	.8219574	1.743133
#1	4.665773	4.679891	4.571119	4.421432	4.674814	4.629332
#2	4.678041	4.671543	4.406737	4.432220	4.668681	4.614335
#3	4.719029	4.555381	4.291724	4.489726	4.738362	4.484287

Elem	Sr4077
Units	ppm
Avg	**4.909203**
Stddev	.080225
%RSD	1.634186
#1	4.977260
#2	4.929602
#3	4.820747

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5238.400**	**84054.05**	**7724.647**	**4276.086**	**5940.406**
Stddev	60.572	2869.26	135.225	125.892	59.106
%RSD	1.156299	3.413593	1.750564	2.944094	.9949908
#1	5279.512	80920.46	7634.093	4135.522	5981.330
#2	5266.848	84689.10	7659.761	4314.271	5967.247
#3	5168.842	86552.58	7880.086	4378.464	5872.642

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB05 Acquired: 7/21/2025 17:31:54 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000840**	**-.001470**	**-.001187**	**.0030000**	**.0003611**	**.0026342**	**-.001704**
Stddev	.001547	.000049	.000508	.0042015	.0014016	.0100113	.000814
%RSD	184.2113	3.308108	42.76457	140.0514	388.1963	380.0507	47.78103
#1	-.001171	-.001418	-.001015	.0006000	.0013520	-.005733	-.001703
#2	.000846	-.001515	-.001758	.0005486	-.001243	-.000090	-.002519
#3	-.002194	-.001476	-.000788	.0078514	.000974	.013726	-.000890

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000077**	**.0000831**	**.0522756**	**.0000177**	**.0001431**	**-.000020**	**.0012756**
Stddev	.000021	.0001045	.0076968	.0000098	.0000815	.000425	.0032712
%RSD	27.66210	125.6443	14.72357	55.51317	56.98001	2149.129	256.4386
#1	-.000065	.0001397	.0452988	.0000064	.0000582	.000052	-.001732
#2	-.000102	.0001471	.0509960	.0000230	.0002207	.000365	.000801
#3	-.000065	-.000037	.0605321	.0000237	.0001504	-.000476	.004758

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002532**	**.0186112**	**.0000583**	**.0000778**	**-.526959**	**-.001719**	**-.000563**
Stddev	.0002263	.0284316	.0001233	.0003715	.005764	.000882	.000154
%RSD	89.37752	152.7656	211.4442	477.5433	1.093746	51.30016	27.32673
#1	.0005036	.0083014	-.000011	-.000051	-.524118	-.001952	-.000528
#2	.0000634	.0507594	.000201	-.000212	-.523168	-.000744	-.000431
#3	.0001925	-.003227	-.000015	.000496	-.533592	-.002460	-.000732

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.098790**	**.0097085**	**.0012013**	**.0008777**	**.0082837**	**.0001862**	**-.001063**
Stddev	.024545	.0006288	.0000852	.0001844	.0003825	.0037355	.001171
%RSD	24.84617	6.476403	7.092873	21.01240	4.617668	2006.716	110.1195
#1	-.074761	.0104330	.0011744	.0010571	.0081945	.0038998	-.001574
#2	-.123821	.0093056	.0012967	.0008875	.0087030	.0002294	-.001893
#3	-.097787	.0093869	.0011328	.0006886	.0079537	-.003571	.000276

Reviewed By:jaswal
On:7/23/2025 3:42:09 PM
Inst Id :P4
LB :LB136562

Sample Name: CCB05 Acquired: 7/21/2025 17:31:54 Type: Unk
Method: 6010-200.7 NEW(v47) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.005719**	**-.008006**	**.0000703**
Stddev	.001188	.001658	.0000934
%RSD	20.78087	20.70944	132.7079
#1	-.006941	-.006345	.0001765
#2	-.004567	-.008013	.0000332
#3	-.005647	-.009661	.0000013

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5454.935**	**88637.93**	**7833.552**	**4550.911**	**6596.460**
Stddev	2.175	213.33	30.772	12.194	4.137
%RSD	.0398767	.2406792	.3928229	.2679459	.0627110
#1	5452.429	88510.82	7838.995	4543.637	6600.626
#2	5456.030	88518.76	7861.240	4544.107	6596.401
#3	5456.344	88884.23	7800.422	4564.989	6592.354

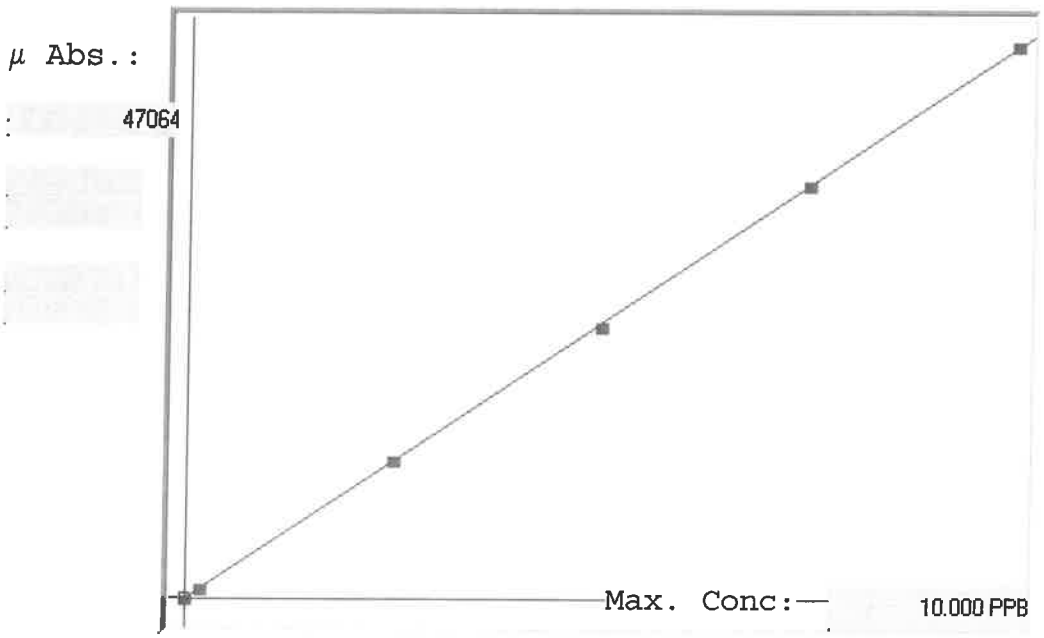
Reviewed By:jaswal
On:7/22/2025 11:01:14 PM
Inst Id :CV1
LB :LB136551

LB : 136551

INSTOMENT ID : CV1

7471B

Linear



A=	0.0000e+000
B=	2.1293e-004
C=	6.5051e-003
Rho=	0.9999671
Accept=	Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	%D
0.0	0.000	0.019	0.019	58	0.000	58					0
0.2	0.200	0.209	0.009	953	0.0 %	953					
2.5	2.500	2.505	0.005	11734	0.0 %	11734					
5.0	5.000	4.936	-0.064	23150	0.0 %	23150					
7.5	7.500	7.503	0.003	35204	0.0 %	35204					
10.0	10.000	10.028	0.028	47064	0.0 %	47064					

Reviewed By:jaswal
On:7/22/2025 11:01:14 PM
Inst Id :CV1
LB :LB136551

LB136551 INSTRUMENT ID: CV1

Method: 7471B Operator: Admin Date of Analysis: 21 Jul 2025 11:18:37

Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Type	Stnd Conc	Method	Date
S	0.0 - 1	50	-	58	PPB	Std	0.0000	7471B	21 Jul 2025 11:29:51
S	0.2 - 1	50.2	-	953	PPB	Std	0.2000	7471B	21 Jul 2025 11:32:08
S	2.5 - 1	52.5	-	11734	PPB	Std	2.5000	7471B	21 Jul 2025 11:34:26
S	5.0 - 1	55.0	-	23150	PPB	Std	5.0000	7471B	21 Jul 2025 11:36:43
S	7.5 - 1	57.5	-	35204	PPB	Std	7.5000	7471B	21 Jul 2025 11:39:01
S	10.0 - 1	510	-	47064	PPB	Std	10.0000	7471B	21 Jul 2025 11:41:20
U	ICV34 - 1	ICV34	3.7599	17627	PPB	SMPL		-7471B	21 Jul 2025 11:44:57
U	ICB34 - 1	ICB34	-0.0195	-122	PPB	SMPL		-7471B	21 Jul 2025 11:47:12
U	CCV28 - 1	CCV28	4.9074	23016	PPB	SMPL		-7471B	21 Jul 2025 11:49:30
U	CCB28 - 1	CCB28	-0.0261	-153	PPB	SMPL		-7471B	21 Jul 2025 11:51:45
U	CRA - 1	CRA	0.2378	1086	PPB	SMPL		-7471B	21 Jul 2025 11:59:26
U	HighStd - 1	HighStd	10.1931	47839	PPB	SMPL		-7471B	21 Jul 2025 12:01:40
U	ChkStd - 1	ChkStd	7.0218	32946	PPB	SMPL		-7471B	21 Jul 2025 12:03:56
U	PB168931BL - 1	PBS	-0.0354	-197	PPB	SMPL		-7471B	21 Jul 2025 12:06:22
U	PB168931BS - 1	LCSS	3.4592	16215	PPB	SMPL		-7471B	21 Jul 2025 12:08:44
U	Q2621-01 - 1	TR-05-07162025	0.3977	1837	PPB	SMPL		-7471B	21 Jul 2025 12:17:02
U	Q2621-01DUP - 1	TR-05-07162025DUP	0.3421	1576	PPB	SMPL		-7471B	21 Jul 2025 12:19:18
U	Q2621-01MS - 1	TR-05-07162025MS	3.7767	17706	PPB	SMPL		-7471B	21 Jul 2025 12:21:37
U	Q2621-01MSD - 1	TR-05-07162025MSD	3.8581	18088	PPB	SMPL		-7471B	21 Jul 2025 12:23:56
U	Q2635-01 - 1	RT2286	6.8690	32228	PPB	SMPL		-7471B	21 Jul 2025 12:26:15
U	CCV29 - 1	CCV29	5.0173	23532	PPB	SMPL		-7471B	21 Jul 2025 12:28:33
U	CCB29 - 1	CCB29	-0.0550	-289	PPB	SMPL		-7471B	21 Jul 2025 12:31:04
U	Q2638-01 - 1	OU4-TS-31-071725	0.3033	1394	PPB	SMPL		-7471B	21 Jul 2025 12:33:23
U	Q2638-03 - 1	OU4-TS-32-071725	0.7556	3518	PPB	SMPL		-7471B	21 Jul 2025 12:35:38
U	Q2638-05 - 1	OU4-TS-33-071725	0.6939	3228	PPB	SMPL		-7471B	21 Jul 2025 12:37:55
U	Q2638-07 - 1	OU4-TS-34-071725	0.7277	3387	PPB	SMPL		-7471B	21 Jul 2025 12:40:13
U	Q2638-09 - 1	OU4-TS-35-071725	0.7954	3705	PPB	SMPL		-7471B	21 Jul 2025 12:42:31
U	Q2638-11 - 1	OU4-TS-36-071725	0.8504	3963	PPB	SMPL		-7471B	21 Jul 2025 12:44:49
U	Q2638-13 - 1	OU4-TS-37-071725	0.5721	2656	PPB	SMPL		-7471B	21 Jul 2025 12:47:08
U	Q2651-01 - 1	MH 2-1	0.2337	1067	PPB	SMPL		-7471B	21 Jul 2025 12:49:27
U	Q2651-02 - 1	MH 6-5	0.2139	974	PPB	SMPL		-7471B	21 Jul 2025 12:51:46
U	Q2651-03 - 1	MH 7-6	0.1166	517	PPB	SMPL		-7471B	21 Jul 2025 12:54:03
U	CCV30 - 1	CCV30	5.1755	24275	PPB	SMPL		-7471B	21 Jul 2025 12:56:18
U	CCB30 - 1	CCB30	-0.0378	-208	PPB	SMPL		-7471B	21 Jul 2025 12:58:34
U	Q2651-04 - 1	MH 8-7	0.3376	1555	PPB	SMPL		-7471B	21 Jul 2025 13:00:52
U	Q2651-05 - 1	MH 9-8	0.2271	1036	PPB	SMPL		-7471B	21 Jul 2025 13:03:08
U	Q2621-01LX5 - 1		0.0697	297	PPB	SMPL		-7471B	21 Jul 2025 13:05:25
U	Q2621-01A - 1		3.8989	18280	PPB	SMPL		-7471B	21 Jul 2025 13:07:42
U	CCV31 - 1	CCV31	5.1059	23948	PPB	SMPL		-7471B	21 Jul 2025 13:09:58
U	CCB31 - 1	CCB31	-0.0208	-128	PPB	SMPL		-7471B	21 Jul 2025 13:12:17

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB168917

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pippete ID: ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

Block ID: 1. HOT BLOCK #5 2. N/A

Start Digest Date: 07/18/2025 **Time :** 14:50 **Temp :** 96 °C

End Digest Date: 07/18/2025 **Time :** 16:55 **Temp :** 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #5

Dig Technician Signature: SKS

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6007
LFS-2	1.00	M6015
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	5.00	M6158
1:1 HNO3	10.00	MP85156
30% H2O2	3.00	M6170
Conc. HCL	10.00	M6151
PTFE Boiling Stones	N/A	M5581
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#5 CELL#35 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
07/18/25 17:53	SKS metdig	
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB168917

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB168917BL	PBS917	N/A	2.00	100	Colorless	Colorless	Fine	N/A	N/A	1
PB168917BS	LCS917	N/A	2.00	100	Colorless	Colorless	Fine	N/A	M6007,M6015	2
Q2638-01	OU4-TS-31-071725	N/A	2.14	100	Brown	Yellow	Medium	N/A	N/A	3
Q2638-03	OU4-TS-32-071725	N/A	2.28	100	Brown	Yellow	Medium	N/A	N/A	4
Q2638-05	OU4-TS-33-071725	N/A	2.23	100	Brown	Yellow	Medium	N/A	N/A	5
Q2638-07	OU4-TS-34-071725	N/A	2.44	100	Brown	Yellow	Medium	N/A	N/A	6
Q2638-09	OU4-TS-35-071725	N/A	2.23	100	Brown	Yellow	Medium	N/A	N/A	7
Q2638-11	OU4-TS-36-071725	N/A	2.41	100	Brown	Yellow	Medium	N/A	N/A	8
Q2638-13	OU4-TS-37-071725	N/A	2.23	100	Brown	Yellow	Medium	N/A	N/A	9
Q2638-13MS	OU4-TS-37-071725MS	N/A	2.23	100	Brown	Yellow	Medium	N/A	M6007,M6015	11
Q2638-13MSD	OU4-TS-37-071725MSD	N/A	2.49	100	Brown	Yellow	Medium	N/A	M6007,M6015	12
Q2638-13DUP	OU4-TS-37-071725DUP	N/A	2.41	100	Brown	Yellow	Medium	N/A	N/A	10

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB168917 **WorkList ID :** 190825 **Department :** Digestion **Date :** 07-18-2025 14:04:16

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2638-01	OU4-TS-31-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-03	OU4-TS-32-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-05	OU4-TS-33-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-07	OU4-TS-34-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-09	OU4-TS-35-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-11	OU4-TS-36-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D
Q2638-13	OU4-TS-37-071725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	O21	07/17/2025	6010D

Date/Time 07/18/25 14:30
Raw Sample Received by: SLS metdio
Raw Sample Relinquished by: JD (SM)

Date/Time 07/18/25 15:30
Raw Sample Received by: JD (SM)
Raw Sample Relinquished by: SLS metdio

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB168931

SOP ID : M7471B-Mercury-19

SDG No : N/A

Matrix : SOIL

Pippete ID: HG A

Balance ID : M SC-3

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 07/18/2025 **Time :** 15:50 **Temp :** 94 °C

End Digest Date: 07/18/2025 **Time :** 16:20 **Temp :** 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: MB

Supervisor Signature: 12

Temp : 1. 94°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP86414
CCV	30mL	MP86416
CRA	30mL	MP86418
Blank Spike	0.48mL	MP86407
Matrix Spike	0.48mL	MP86407

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	1.5mL	MP86420
KMnO4 (5%)	4.5mL	MP85893
Hydroxylamine HCL (12%)	2.0mL	MP85895
PTFE Boiling Stones	----------	M5582
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP86408
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP86409
2.5 ppb	S2.5	30mL	MP86410
5.0 ppb	S5.0	30mL	MP86411
7.5 ppb	S7.5	30mL	MP86412
10.0 ppb	S10.0	30mL	MP86413
ICV	ICV	30mL	MP86414
ICB	ICB	30mL	MP86415
CCV	CCV	30mL	MP86416
CCB	CCB	30mL	MP86417
CRI	CRI	30mL	MP86418
CHK STD	CHK STD	30mL	MP86419

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
7/18/25 @ 17:10	MB - Dig. Lab	MB - metal cart
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB168931

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
PB168931BL	PBS931	0.56	35	NA	N/A	3-1
PB168931BS	LCS931	0.52	35	NA	MP86407	2
Q2621-01DUP	TR-05-07162025DUP	0.53	35	NA	N/A	4
Q2621-01MS	TR-05-07162025MS	0.53	35	NA	MP86407	5
Q2621-01MSD	TR-05-07162025MSD	0.53	35	NA	MP86407	6
Q2621-01	TR-05-07162025	0.55	35	NA	N/A	3
Q2635-01	RT2286	0.60	35	NA	N/A	7
Q2638-01	OU4-TS-31-071725	0.52	35	NA	N/A	8
Q2638-03	OU4-TS-32-071725	0.57	35	NA	N/A	9
Q2638-05	OU4-TS-33-071725	0.56	35	NA	N/A	10
Q2638-07	OU4-TS-34-071725	0.54	35	NA	N/A	11
Q2638-09	OU4-TS-35-071725	0.50	35	NA	N/A	12
Q2638-11	OU4-TS-36-071725	0.59	35	NA	N/A	13
Q2638-13	OU4-TS-37-071725	0.50	35	NA	N/A	14
Q2651-01	MH 2-1	0.57	35	NA	N/A	15
Q2651-02	MH 6-5	0.58	35	NA	N/A	16
Q2651-03	MH 7-6	0.52	35	NA	N/A	17
Q2651-04	MH 8-7	0.60	35	NA	N/A	18
Q2651-05	MH 9-8	0.59	35	NA	N/A	19

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 072125_7471 **WorkList ID :** 190835 **Department :** Digestion **Date :** 07-18-2025 08:18:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2621-01	TR-05-07162025	Solid	Mercury	Cool 4 deg C	PSEG05	D41	07/16/2025	7471B
Q2635-01	RT2286	Solid	Mercury	Cool 4 deg C	PSEG03	D31	07/17/2025	7471B
Q2638-01	OU4-TS-31-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-03	OU4-TS-32-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-05	OU4-TS-33-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-07	OU4-TS-34-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-09	OU4-TS-35-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-11	OU4-TS-36-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2638-13	OU4-TS-37-071725	Solid	Mercury	Cool 4 deg C	NOBI03	O21	07/17/2025	7471B
Q2651-01	MH 2-1	Solid	Mercury	Cool 4 deg C	EARTH03	O22	07/17/2025	7471B
Q2651-02	MH 6-5	Solid	Mercury	Cool 4 deg C	EARTH03	O22	07/17/2025	7471B
Q2651-03	MH 7-6	Solid	Mercury	Cool 4 deg C	EARTH03	O22	07/17/2025	7471B
Q2651-04	MH 8-7	Solid	Mercury	Cool 4 deg C	EARTH03	O22	07/17/2025	7471B
Q2651-05	MH 9-8	Solid	Mercury	Cool 4 deg C	EARTH03	O22	07/17/2025	7471B

Date/Time 7/18/25 @ 15:15
Raw Sample Received by: MB - DG. Lee
Raw Sample Relinquished by: MB - DG. Lee

Date/Time 7/18/25 @ 16:00
Raw Sample Received by: MB - DG. Lee
Raw Sample Relinquished by: MB - DG. Lee

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 7/21/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:15
In Date: 07/18/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:25
Out Date: 07/19/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID-OVEN

QC: LB136542

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2637-05	SVOC-GPC-BLANK	1	1.00	1.00	2.00	2.00	100.0	
Q2637-06	PEST-GPC-BLANK	2	1.00	1.00	2.00	2.00	100.0	
Q2637-07	PEST-GPC-BLANK-SPIKE	3	1.00	1.00	2.00	2.00	100.0	
Q2637-10	SVOC-GPC2-BLANK	4	1.00	1.00	2.00	2.00	100.0	
Q2637-11	PEST-GPC2-BLANK	5	1.00	1.00	2.00	2.00	100.0	
Q2637-12	PEST-GPC2-BLANK-SPIKE	6	1.00	1.00	2.00	2.00	100.0	
Q2638-01	OU4-TS-31-071725	7	1.15	10.44	11.59	8.29	68.4	
Q2638-03	OU4-TS-32-071725	8	1.14	10.41	11.55	7.92	65.1	
Q2638-05	OU4-TS-33-071725	9	1.12	10.69	11.81	8.04	64.7	
Q2638-07	OU4-TS-34-071725	10	1.18	10.81	11.99	8.58	68.5	
Q2638-09	OU4-TS-35-071725	11	1.18	10.24	11.42	9.62	82.4	
Q2638-11	OU4-TS-36-071725	12	1.16	10.22	11.38	9.53	81.9	
Q2638-13	OU4-TS-37-071725	13	1.14	10.27	11.41	9.48	81.2	
Q2639-01	OU4-TS-38-071725	14	1.16	10.58	11.74	9.69	80.6	
Q2639-03	OU4-TS-39-071725	15	1.12	10.64	11.76	9.74	81.0	
Q2639-05	OU4-TS-40-071725	16	1.16	10.23	11.39	9.42	80.7	
Q2639-07	OU4-TS-41-071725	17	1.18	10.20	11.38	9.54	82.0	
Q2639-09	OU4-TS-42-071725	18	1.19	10.34	11.53	7.42	60.3	
Q2639-11	OU4-TS-43-071725	19	1.19	10.67	11.86	7.38	58.0	
Q2639-13	OU4-TS-44-071725	20	1.12	10.87	11.99	8.18	64.9	
Q2641-01	P001-CONCRETE001-01	21	1.00	1.00	2.00	2.00	100.0	Concreate sample
Q2645-02	RW5B-CARBON-20250716	22	1.17	10.52	11.69	8.39	68.6	
Q2648-01	A3	23	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q2648-02	A4	24	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q2648-03	B2	25	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q2648-04	B3	26	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q2648-05	B4	27	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q2651-01	MH 2-1	28	1.18	10.67	11.85	11.26	94.5	

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 7/21/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:15
In Date: 07/18/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:25
Out Date: 07/19/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID-OVEN

QC: LB136542

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2651-02	MH 6-5	29	1.15	10.40	11.55	10.9	93.8	
Q2651-03	MH 7-6	30	1.12	10.20	11.32	10.7	93.9	
Q2651-04	MH 8-7	31	1.13	10.44	11.57	11.01	94.6	
Q2651-05	MH 9-8	32	1.13	10.27	11.4	10.67	92.9	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

WM 136542

WorkList Name : %1-071825 **WorkList ID :** 190813 **Department :** Wet-Chemistry **Date :** 07-18-2025 07:56:12

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2637-05	SVOC-GPC-BLANK	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2637-06	PEST-GPC-BLANK	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2637-07	PEST-GPC-BLANK-SPIKE	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2637-10	SVOC-GPC2-BLANK	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2637-11	PEST-GPC2-BLANK	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2637-12	PEST-GPC2-BLANK-SPIKE	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2638-01	OU4-TS-31-071725	Solid	Percent Solids	Cool 4 deg C	CHEM02	D31	07/11/2025	Chemtech -SO
Q2638-03	OU4-TS-32-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2638-05	OU4-TS-33-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2638-07	OU4-TS-34-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2638-09	OU4-TS-35-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2638-11	OU4-TS-36-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2638-13	OU4-TS-37-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2639-01	OU4-TS-38-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O21	07/17/2025	Chemtech -SO
Q2639-03	OU4-TS-39-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2639-05	OU4-TS-40-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2639-07	OU4-TS-41-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2639-09	OU4-TS-42-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2639-11	OU4-TS-43-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2639-13	OU4-TS-44-071725	Solid	Percent Solids	Cool 4 deg C	NOBI03	O13	07/17/2025	Chemtech -SO
Q2641-01	P001-CONCRETE001-01	Solid	Percent Solids	Cool 4 deg C	ROYF02	O22	07/16/2025	Chemtech -SO

Date/Time 07/18/25 15:30

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time 07/18/25 17:35

Raw Sample Received by:

Raw Sample Relinquished by:

WORKLIST(Hardcopy Internal Chain)

VB 136542

WorkList Name : %1-071825 **WorkList ID :** 190813 **Department :** Wet-Chemistry **Date :** 07-18-2025 07:56:12

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2645-02	RW5B-CARBON-20250716	Solid	Percent Solids	Cool 4 deg C	TETR06	O41	07/16/2025	Chemtech -SO
Q2648-01	A3	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	07/18/2025	Chemtech -SO
Q2648-02	A4	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	07/18/2025	Chemtech -SO
Q2648-03	B2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	07/18/2025	Chemtech -SO
Q2648-04	B3	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	07/18/2025	Chemtech -SO
Q2648-05	B4	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	07/18/2025	Chemtech -SO
Q2651-01	MH 2-1	Solid	Percent Solids	Cool 4 deg C	EARTH03	O22	07/17/2025	Chemtech -SO
Q2651-02	MH 6-5	Solid	Percent Solids	Cool 4 deg C	EARTH03	O22	07/17/2025	Chemtech -SO
Q2651-03	MH 7-6	Solid	Percent Solids	Cool 4 deg C	EARTH03	O22	07/17/2025	Chemtech -SO
Q2651-04	MH 8-7	Solid	Percent Solids	Cool 4 deg C	EARTH03	O22	07/17/2025	Chemtech -SO
Q2651-05	MH 9-8	Solid	Percent Solids	Cool 4 deg C	EARTH03	O22	07/17/2025	Chemtech -SO

Date/Time 07/18/25 15:00

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time 07/18/25 17:35

Raw Sample Received by:

Raw Sample Relinquished by:

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 # LB136551

Review By	MOHAN	Review On	7/22/2025 10:01:49 AM
Supervise By	jaswal	Supervise On	7/22/2025 11:01:14 PM

STD. NAME	STD REF.#
ICAL Standard	MP86408,MP86409,MP86410,MP86411,MP86412,MP86413
ICV Standard	MP86414
CCV Standard	MP86416
ICSA Standard	
CRI Standard	MP86418
LCS Standard	
Chk Standard	MP86415,MP86417,MP86419,MP86423

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	07/21/25 11:29		MOHAN	OK
2	S0.2	S0.2	CAL2	07/21/25 11:32		MOHAN	OK
3	S2.5	S2.5	CAL3	07/21/25 11:34		MOHAN	OK
4	S5	S5	CAL4	07/21/25 11:36		MOHAN	OK
5	S7.5	S7.5	CAL5	07/21/25 11:39		MOHAN	OK
6	S10	S10	CAL6	07/21/25 11:41		MOHAN	OK
7	ICV34	ICV34	ICV	07/21/25 11:44		MOHAN	OK
8	ICB34	ICB34	ICB	07/21/25 11:47		MOHAN	OK
9	CCV28	CCV28	CCV	07/21/25 11:49		MOHAN	OK
10	CCB28	CCB28	CCB	07/21/25 11:51		MOHAN	OK
11	CRA	CRA	CRDL	07/21/25 11:59		MOHAN	OK
12	HighStd	HighStd	HIGH STD	07/21/25 12:01		MOHAN	OK
13	ChkStd	ChkStd	SAM	07/21/25 12:03		MOHAN	OK
14	PB168931BL	PB168931BL	MB	07/21/25 12:06		MOHAN	OK
15	PB168931BS	PB168931BS	LCS	07/21/25 12:08		MOHAN	OK
16	Q2621-01	TR-05-07162025	SAM	07/21/25 12:17		MOHAN	OK
17	Q2621-01DUP	TR-05-07162025DUP	DUP	07/21/25 12:19		MOHAN	OK
18	Q2621-01MS	TR-05-07162025MS	MS	07/21/25 12:21		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 # LB136551

Review By	MOHAN	Review On	7/22/2025 10:01:49 AM
Supervise By	jaswal	Supervise On	7/22/2025 11:01:14 PM

STD. NAME	STD REF.#
ICAL Standard	MP86408,MP86409,MP86410,MP86411,MP86412,MP86413
ICV Standard	MP86414
CCV Standard	MP86416
ICSA Standard	
CRI Standard	MP86418
LCS Standard	
Chk Standard	MP86415,MP86417,MP86419,MP86423

19	Q2621-01MSD	TR-05-07162025MSD	MSD	07/21/25 12:23		MOHAN	OK
20	Q2635-01	RT2286	SAM	07/21/25 12:26		MOHAN	OK
21	CCV29	CCV29	CCV	07/21/25 12:28		MOHAN	OK
22	CCB29	CCB29	CCB	07/21/25 12:31		MOHAN	OK
23	Q2638-01	OU4-TS-31-071725	SAM	07/21/25 12:33		MOHAN	OK
24	Q2638-03	OU4-TS-32-071725	SAM	07/21/25 12:35		MOHAN	OK
25	Q2638-05	OU4-TS-33-071725	SAM	07/21/25 12:37		MOHAN	OK
26	Q2638-07	OU4-TS-34-071725	SAM	07/21/25 12:40		MOHAN	OK
27	Q2638-09	OU4-TS-35-071725	SAM	07/21/25 12:42		MOHAN	OK
28	Q2638-11	OU4-TS-36-071725	SAM	07/21/25 12:44		MOHAN	OK
29	Q2638-13	OU4-TS-37-071725	SAM	07/21/25 12:47		MOHAN	OK
30	Q2651-01	MH 2-1	SAM	07/21/25 12:49		MOHAN	OK
31	Q2651-02	MH 6-5	SAM	07/21/25 12:51		MOHAN	OK
32	Q2651-03	MH 7-6	SAM	07/21/25 12:54		MOHAN	OK
33	CCV30	CCV30	CCV	07/21/25 12:56		MOHAN	OK
34	CCB30	CCB30	CCB	07/21/25 12:58		MOHAN	OK
35	Q2651-04	MH 8-7	SAM	07/21/25 13:00		MOHAN	OK
36	Q2651-05	MH 9-8	SAM	07/21/25 13:03		MOHAN	OK
37	Q2621-01L	TR-05-07162025L	SD	07/21/25 13:05		MOHAN	OK
38	Q2621-01A	TR-05-07162025A	PS	07/21/25 13:07		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 # LB136551

Review By	MOHAN	Review On	7/22/2025 10:01:49 AM
Supervise By	jaswal	Supervise On	7/22/2025 11:01:14 PM

STD. NAME	STD REF.#
ICAL Standard	MP86408,MP86409,MP86410,MP86411,MP86412,MP86413
ICV Standard	MP86414
CCV Standard	MP86416
ICSA Standard	
CRI Standard	MP86418
LCS Standard	
Chk Standard	MP86415,MP86417,MP86419,MP86423

39	CCV31	CCV31	CCV	07/21/25 13:09		MOHAN	OK
40	CCB31	CCB31	CCB	07/21/25 13:12		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 # LB136562

Review By	Janvi	Review On	7/22/2025 10:29:36 AM
Supervise By	jaswal	Supervise On	7/23/2025 3:42:09 PM

STD. NAME	STD REF.#
ICAL Standard	MP86452,MP86453,MP86454,MP86455,MP86456,MP86458
ICV Standard	MP86459
CCV Standard	MP86462
ICSA Standard	MP86460,MP86461
CRI Standard	MP86458
LCS Standard	
Chk Standard	MP86463,MP86464

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	07/21/25 11:28		Jaswal	OK
2	S1	S1	CAL2	07/21/25 11:33		Jaswal	OK
3	S2	S2	CAL3	07/21/25 11:37		Jaswal	OK
4	S3	S3	CAL4	07/21/25 11:41		Jaswal	OK
5	S4	S4	CAL5	07/21/25 11:45		Jaswal	OK
6	S5	S5	CAL6	07/21/25 11:49		Jaswal	OK
7	ICV01	ICV01	ICV	07/21/25 12:33		Jaswal	OK
8	LLICV01	LLICV01	LLICV	07/21/25 12:55		Jaswal	OK
9	ICB01	ICB01	ICB	07/21/25 13:04		Jaswal	OK
10	CRI01	CRI01	CRDL	07/21/25 13:08		Jaswal	OK
11	ICSA01	ICSA01	ICSA	07/21/25 13:13		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	07/21/25 13:24		Jaswal	OK
13	ICSADL	ICSADL	ICSA	07/21/25 13:28		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	07/21/25 13:32		Jaswal	OK
15	CCV01	CCV01	CCV	07/21/25 13:36		Jaswal	OK
16	CCB01	CCB01	CCB	07/21/25 13:55		Jaswal	OK
17	Q2606-01	402	SAM	07/21/25 14:00	NOT USE	Jaswal	Not Ok
18	Q2606-01DUP	402DUP	DUP	07/21/25 14:04	NOT USE	Jaswal	Not 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 # LB136562

Review By	Janvi	Review On	7/22/2025 10:29:36 AM
Supervise By	jaswal	Supervise On	7/23/2025 3:42:09 PM

STD. NAME	STD REF.#
ICAL Standard	MP86452,MP86453,MP86454,MP86455,MP86456,MP86458
ICV Standard	MP86459
CCV Standard	MP86462
ICSA Standard	MP86460,MP86461
CRI Standard	MP86458
LCS Standard	
Chk Standard	MP86463,MP86464

19	Q2606-01L	402L	SD	07/21/25 14:08	NOT USE	Jaswal	Not Ok
20	Q2606-01MS	402MS	MS	07/21/25 14:13	NOT USE	Jaswal	Not Ok
21	Q2606-01MSD	402MSD	MSD	07/21/25 14:17	NOT USE	Jaswal	Not Ok
22	Q2606-01A	402A	PS	07/21/25 14:21	NOT USE	Jaswal	Not Ok
23	Q2564-09	ARS20-0039	SAM	07/21/25 14:25		Jaswal	OK
24	Q2621-01	TR-05-07162025	SAM	07/21/25 14:29		Jaswal	OK
25	PB168914BL	PB168914BL	MB	07/21/25 14:33		Jaswal	OK
26	PB168914BS	PB168914BS	LCS	07/21/25 14:38		Jaswal	OK
27	CCV02	CCV02	CCV	07/21/25 14:46		Jaswal	OK
28	CCB02	CCB02	CCB	07/21/25 14:51		Jaswal	OK
29	Q2635-01	RT2286	SAM	07/21/25 14:55		Jaswal	OK
30	Q2635-01DUP	RT2286DUP	DUP	07/21/25 14:59		Jaswal	OK
31	Q2635-01L	RT2286L	SD	07/21/25 15:03		Jaswal	OK
32	Q2635-01MS	RT2286MS	MS	07/21/25 15:07		Jaswal	OK
33	Q2635-01MSD	RT2286MSD	MSD	07/21/25 15:11		Jaswal	OK
34	Q2635-01A	RT2286A	PS	07/21/25 15:15	0.1ml of M6004,M6013 in 10ml sample.	Jaswal	OK
35	PB168917BL	PB168917BL	MB	07/21/25 15:19		Jaswal	OK
36	Q2638-01	OU4-TS-31-071725	SAM	07/21/25 15:31		Jaswal	OK
37	Q2638-03	OU4-TS-32-071725	SAM	07/21/25 15:39		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 # LB136562

Review By	Janvi	Review On	7/22/2025 10:29:36 AM
Supervise By	jaswal	Supervise On	7/23/2025 3:42:09 PM

STD. NAME	STD REF.#
ICAL Standard	MP86452,MP86453,MP86454,MP86455,MP86456,MP86458
ICV Standard	MP86459
CCV Standard	MP86462
ICSA Standard	MP86460,MP86461
CRI Standard	MP86458
LCS Standard	
Chk Standard	MP86463,MP86464

38	CCV03	CCV03	CCV	07/21/25 15:47		Jaswal	OK
39	CCB03	CCB03	CCB	07/21/25 15:51		Jaswal	OK
40	Q2638-05	OU4-TS-33-071725	SAM	07/21/25 15:55		Jaswal	OK
41	Q2638-07	OU4-TS-34-071725	SAM	07/21/25 16:00		Jaswal	OK
42	Q2638-09	OU4-TS-35-071725	SAM	07/21/25 16:04		Jaswal	OK
43	Q2638-11	OU4-TS-36-071725	SAM	07/21/25 16:08		Jaswal	OK
44	Q2638-13	OU4-TS-37-071725	SAM	07/21/25 16:12		Jaswal	OK
45	Q2638-13DUP	OU4-TS-37-071725DU	DUP	07/21/25 16:16		Jaswal	OK
46	Q2638-13L	OU4-TS-37-071725L	SD	07/21/25 16:21		Jaswal	OK
47	Q2638-13MS	OU4-TS-37-071725MS	MS	07/21/25 16:25		Jaswal	OK
48	Q2638-13MSD	OU4-TS-37-071725MS	MSD	07/21/25 16:29		Jaswal	OK
49	Q2638-13A	OU4-TS-37-071725A	PS	07/21/25 16:33	0.1ml of M6004,M6013 in 10ml sample.	Jaswal	OK
50	CCV04	CCV04	CCV	07/21/25 16:50		Jaswal	OK
51	CCB04	CCB04	CCB	07/21/25 16:56		Jaswal	OK
52	PB168917BS	PB168917BS	LCS	07/21/25 17:07		Jaswal	OK
53	Q2622-04	2819	SAM	07/21/25 17:11		Jaswal	OK
54	CCV05	CCV05	CCV	07/21/25 17:27		Jaswal	OK
55	CCB05	CCB05	CCB	07/21/25 17:31		Jaswal	OK

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

Prep Standard - Chemical Standard Summary

Order ID : Q2638

Test : Mercury,Metals ICP-TAL

Prepbatch ID : PB168917,PB168931,

Sequence ID/Qc Batch ID: LB136551,LB136562,

Standard ID :
MP85156,MP85893,MP85895,MP86407,MP86408,MP86409,MP86410,MP86411,MP86412,MP86413,MP86414,MP86415,MP86416,MP86417,MP86418,MP86419,MP86420,MP86423,MP86452,MP86453,MP86454,MP86455,MP86456,MP86457,MP86458,MP86459,MP86460,MP86461,MP86462,MP86463,MP86464,

Chemical ID :
M4371,M4916,M5062,M5467,M5470,M5499,M5581,M5582,M5658,M5747,M5748,M5751,M5798,M5799,M5800,M5801,M5811,M5814,M5816,M5820,M5882,M5884,M5942,M5962,M5970,M5984,M5985,M5996,M5997,M6007,M6015,M6021,M6023,M6028,M6030,M6032,M6077,M6127,M6128,M6137,M6142,M6144,M6145,M6146,M6151,M6152,M6155,M6158,M6159,M6161,M6162,M6163,M6164,M6165,M6170,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	08/18/2025	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
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP85893	06/05/2025	12/05/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 100.00000gram of M4916 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

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	MP85895	06/05/2025	08/08/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP86407	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 1.00000ml of M6162 + 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
1340	Hg 0.00 PPB STD	MP86408	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP86409	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86407 = 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	MP86410	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 245.00000ml of W3112 + 2.50000ml of MP86407 = 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	MP86411	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 242.50000ml of W3112 + 5.00000ml of MP86407 = 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	MP86412	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 240.00000ml of W3112 + 7.50000ml of MP86407 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP86413	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 237.50000ml of W3112 + 10.00000ml of MP86407 = 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
1346	Hg ICV SOLUTION	MP86414	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6161 + 2.50000ml of M6162 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP86415	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 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
1358	CCV (Hg 5.0 PPB SOLUTION)	MP86416	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6162 + 10.00000ml of MP86407 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP86417	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6162 = 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
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP86418	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86407 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP86419	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 2.50000ml of M6162 + 240.50000ml of W3112 + 7.50000ml of MP86407 = 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
887	AQUA REGIA FOR HG ON 7471A	MP86420	07/18/2025	07/19/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 07/18/2025

FROM 150.00000ml of M6151 + 50.00000ml of M6162 = Final Quantity: 200.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP86423	07/21/2025	07/22/2025	Mohan Bera	None	None	Sarabjit Jaswal 07/23/2025

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6151 = 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
902	ICP AES CAL BLK (SO/ICB/CCB)	MP86452	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP86453	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5470 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5970 + 5.00000ml of M5996 + 5.00000ml of M5997 + 5.00000ml of M6077 + 5.00000ml of M6146 + 455.00000ml of MP86452 = 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
910	ICP AES STD S4	MP86454	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 50.00000ml of MP86452 + 50.00000ml of MP86453 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP86455	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 25.00000ml of MP86453 + 75.00000ml of MP86452 = 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
3913	ICP AES STD S2	MP86456	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 16.00000ml of MP86453 + 184.00000ml of MP86452 = Final Quantity: 200.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP86457	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.05000ml of M6159 + 0.06000ml of M5747 + 0.10000ml of M5470 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5499 + 1.00000ml of M5942 + 1.00000ml of M6127 + 1.00000ml of M6142 + 1.00000ml of M6144 + 2.00000ml of M5816 + 89.29000ml of MP86452 = 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
2951	ICP AES S1/CRI WORK STD	MP86458	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 2.00000ml of MP86457 + 98.00000ml of MP86452 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4163	NEW ICV-060925	MP86459	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.80000ml of MP86452 = 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
904	ICP AES ICSA SOLN	MP86460	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 25.00000ml of M6152 + 225.00000ml of MP86452 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP86461	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 10.00000ml of M6152 + 10.00000ml of M6155 + 80.00000ml of MP86452 = 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
911	ICP AES CCV SOLN	MP86462	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 50.00000ml of MP86452 + 50.00000ml of MP86453 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP86463	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 1.00000ml of M5984 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6162 = 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
903	ICP AES RINSE SOLN	MP86464	07/18/2025	08/08/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/23/2025

FROM 200.00000ml of M6162 + 9800.00000ml of W3112 = Final Quantity: 10000.000 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-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000215387	06/25/2025	07/01/2019 / RICHARD	06/07/2019 / RICHARD	M4371

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3227-05 / Potassium Permanganate (2.5kg)	210800	03/31/2026	11/30/2022 / mohan	07/28/2021 / mohan	M4916

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	082922	08/29/2025	04/14/2025 / jaswal	03/16/2023 / jaswal	M5470

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	031523	03/15/2026	04/17/2025 / Janvi	03/17/2023 / bin	M5499

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 #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	03/20/2026	03/20/2025 / jaswal	06/12/2023 / jaswal	M5581

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	12/31/2025	06/17/2023 / Al-Terek	06/12/2023 / jaswal	M5582

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.	/ Lead (Pb) 1000PPM	100923	10/09/2026	05/20/2024 / Jaswal	12/20/2023 / jaswal	M5747

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

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.	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.	58126 / Fe, 10000 PPM, 500 ml	051523	05/15/2026	02/06/2025 / kareem	01/03/2024 / jaswal	M5811

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.	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 #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	06/18/2024 / Jaswal	02/22/2024 / Jaswal	M5942

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

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.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	08/05/2024 / kareem	06/14/2024 / Jaswal	M5984

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	05/07/2024 / JANVI	02/22/2024 / kareem	M5996

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	12/21/2027	02/03/2025 / JANVI	02/22/2024 / kareem	M5997

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	T2-MEB723367	05/27/2026	05/27/2025 / Janvi	05/14/2024 / Jaswal	M6007

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	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	03/17/2028	06/19/2025 / MOHAN	05/14/2024 / Jaswal	M6015

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.	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

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	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.	58112 / Mg, 10000 PPM, 500 ml	112124	11/21/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6127

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

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

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.	58030 / Zinc, Zn, 500 ml, 1000 PPM	121724	12/17/2027	02/04/2025 / jaswal	01/13/2025 / Jaswal	M6145

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	08/18/2025	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 #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	08/24/2025	02/24/2025 / kareem	04/20/2021 / kareem	M6152

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	08/24/2025	02/10/2025 / kareem	02/09/2024 / kareem	M6155

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	03/25/2029	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

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.	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 #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV 5 0415	07/31/2025	05/01/2025 / mohan	03/30/2024 / mohan	M6161

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	05/22/2029	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	06/01/2028	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	01/02/2030	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

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-2186-03 / Hydrogen Peroxide (cs/4x4L)	24D1961001	10/16/2025	06/25/2025 / jaswal	05/20/2025 / Sagar	M6170

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

R 8/5/24

CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**010924**				
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		

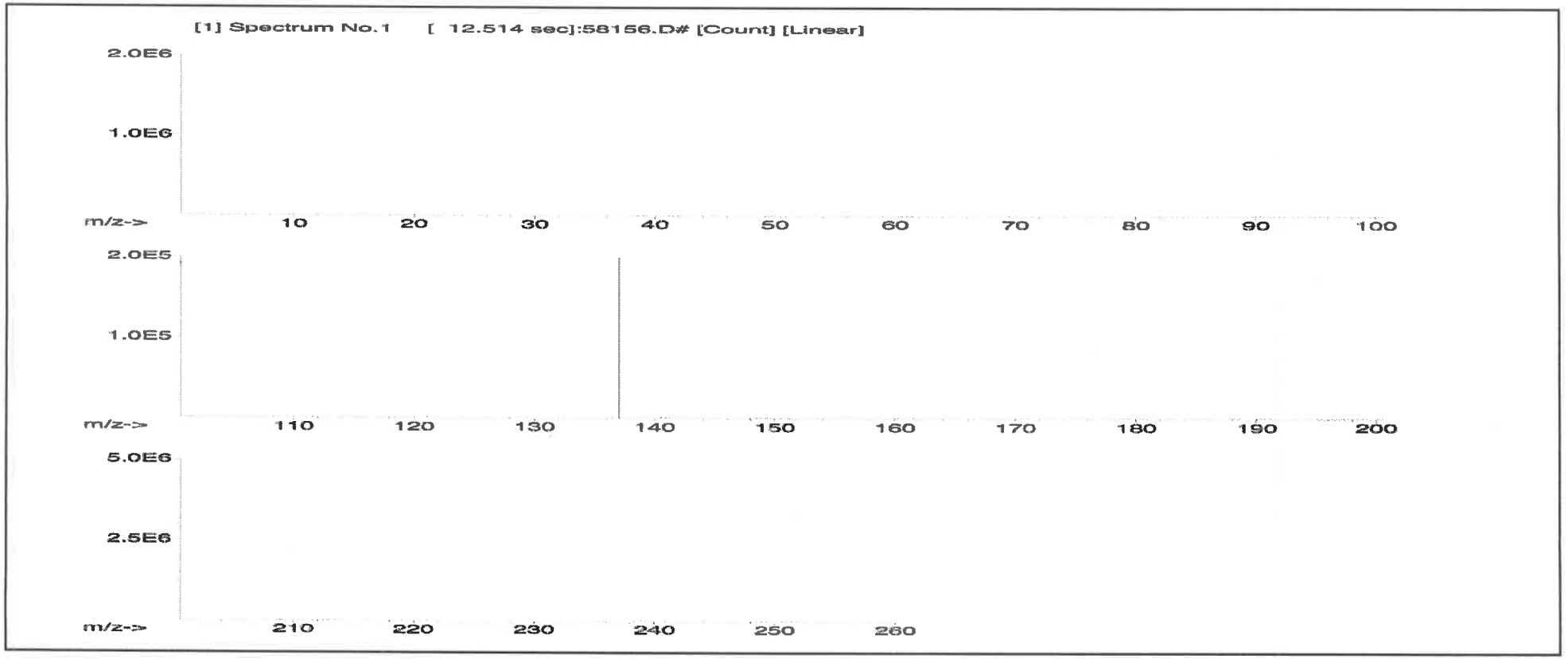
Giovanni Esposito

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



263 of 401
Q2638-METALS

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

R: 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

		Lot #	
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

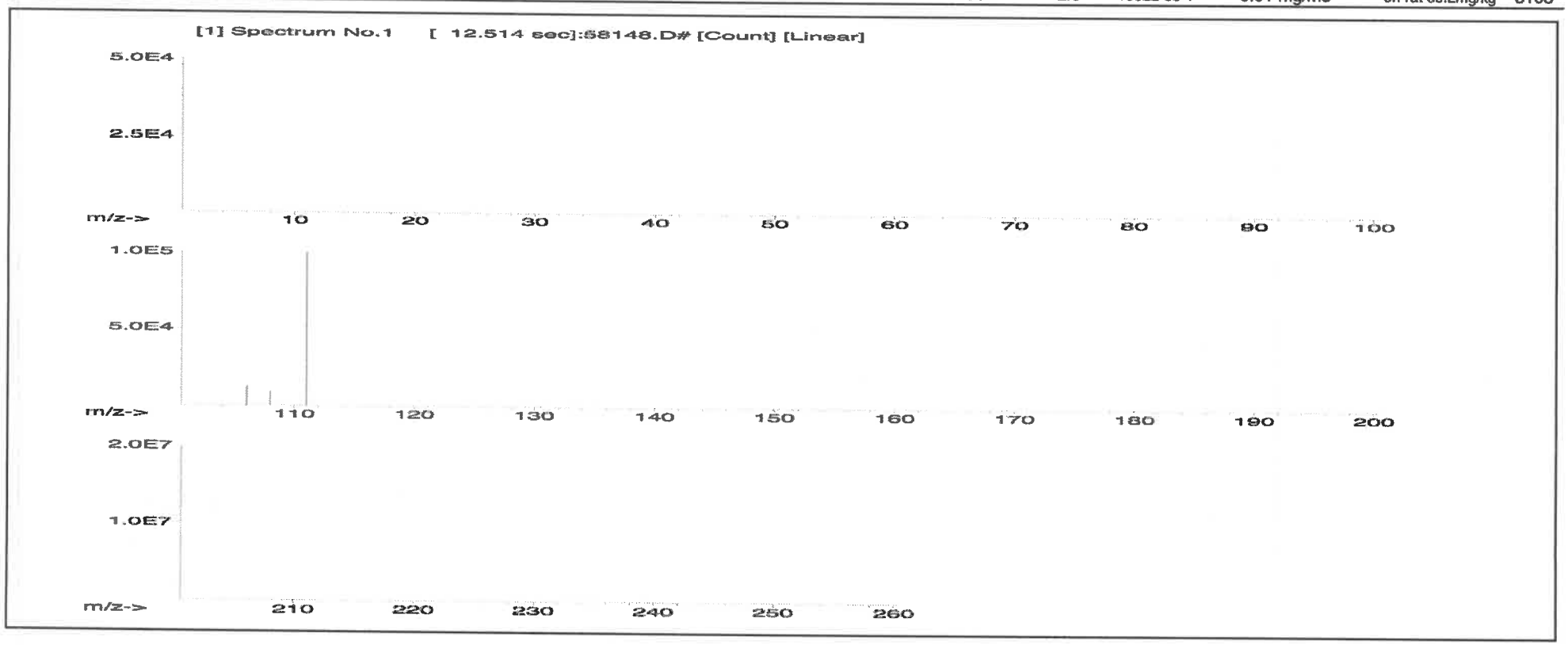
5E-05 Balance Uncertainty

Aleah O'Brady

Formulated By: Aleah O'Brady 070124

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

R : 01/03/24. M5810, M5811

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

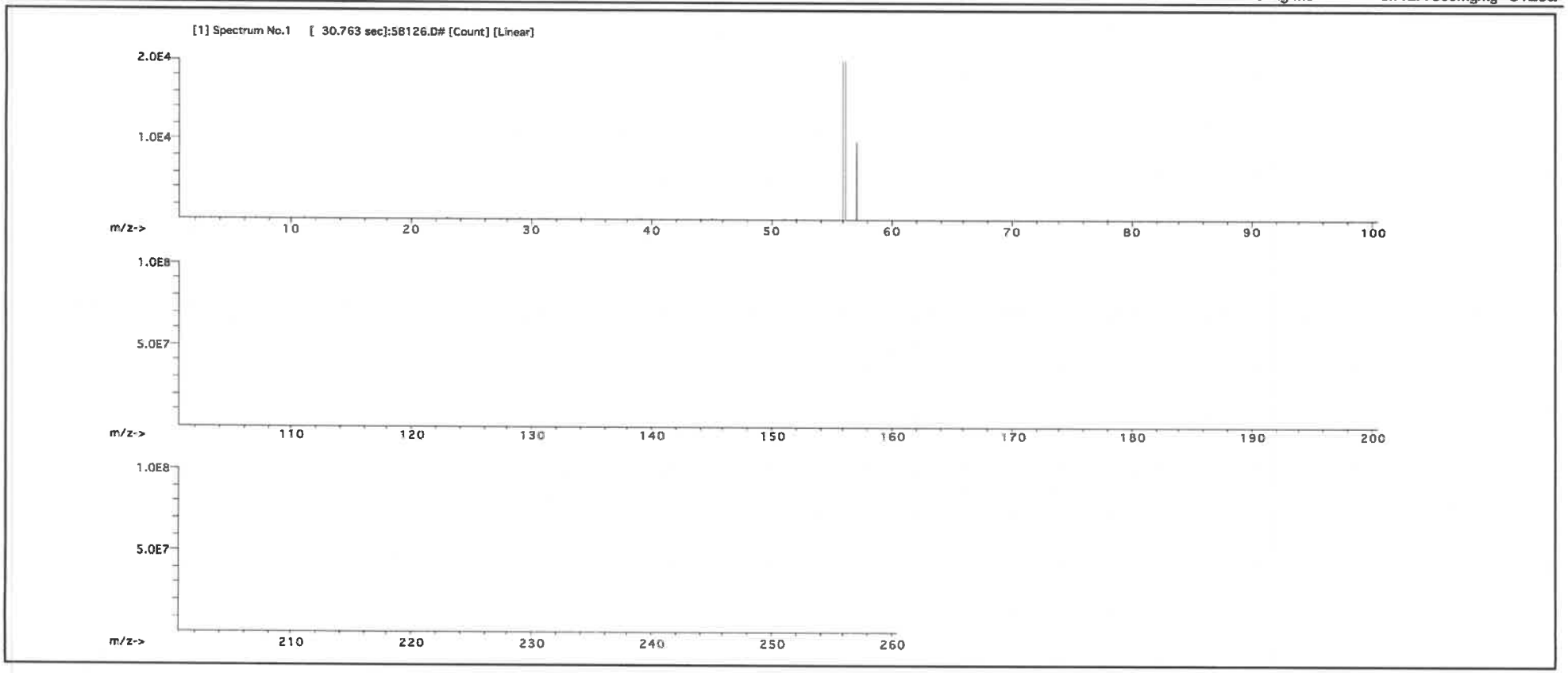
CERTIFIED WEIGHT REPORT:

Part Number:	**58126**		**Lot #**	
Lot Number:	**051523**	**Solvent:**	21110221	Nitric Acid
Description:	**Iron (Fe)**	5.0%	250.0 (mL)	Nitric Acid
Expiration Date:	051526			
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):	5000.1	0.12	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	051523
Reviewed By:	Pedro L. Rentas	051523

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 (Fe)	IN346	2302010-500	10000	99.995	0.10	100.0	50.0034	50.0111	**10001.5**	**20.0**	7439-89-6	5 mg/m3	orl-rat 7500mg/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	<0.10	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	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	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	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.10
B	<0.02	Cu	<0.10	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

RD:05/14/2024

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:	T2-MEB723367
Matrix:	5% (v/v) HNO3

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	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.13 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 µg/mL		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
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	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
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	Traceable to 3152A	S2-NA700842
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	IC 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

- 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**

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

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 30, 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

- **August 30, 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 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

RD:05/14/2024

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 863.01 ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-2
Lot Number:	U2-MEB731108
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 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO2	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 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
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO2	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	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:

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

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

March 17, 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 17, 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



M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec – 06.07.19

J.T.Baker® | avantor™

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrable Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH_4)	Passes Test	PT
Sulfur Compounds (as SO_4)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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 Number: 020623
Description: Cerium (Ce)

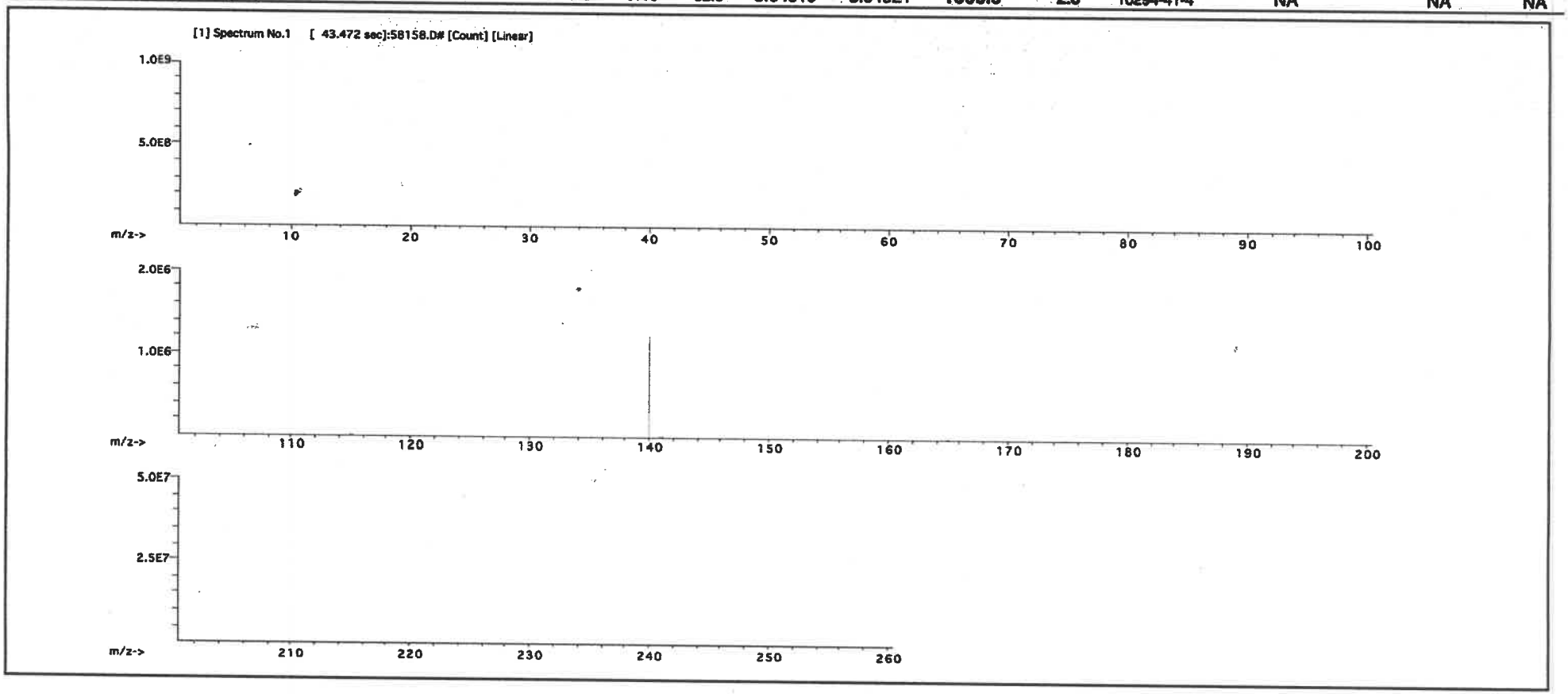
Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 1000.12 5E-05 Balance Uncertainty 0.058 Flask Uncertainty

	Lot #		
Solvent:	21110221	Nitric Acid	
2%	20.0 (mL)	Nitric Acid	

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).

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

M5493 - M5308
Rad on 4/14/23
MG

avantor™ | J.T.Baker®

Material No.: 3624-01
Batch No.: 0000281938
Manufactured Date: 2021-06-07
Retest Date: 2026-06-07
Revision No.: 2

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 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

JENSEN INERT PRODUCTS

MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER:	PCI SCIENTIFIC SUPPLY, INC
PURCHASE ORDER NO.	6054931
CATALOG NO.	BOI5021-450L
PRODUCT DESCRIPTION:	BOILING STONES, TFE, 454GMS
QUANTITY:	10 EACH
LOT NO.	W126678
SPECIFICATION (S):	Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.

Laura Valencia

Laura Valencia
Quality Assurance Inspector

F:U:J:CF:PCISCI:COC-68118-BOI5021-061223

3773 NW 126th Avenue • Coral Springs, Florida 33065 • Fax (954) 344-2008 • 1-800 446-3781
Email: jensen@jenseninert.com Visit our Web Site at www.jenseninert.com

JENSEN INERT PRODUCTS

MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER:	PCI SCIENTIFIC SUPPLY, INC
PURCHASE ORDER NO.	6054931
CATALOG NO.	BOI5021-450L
PRODUCT DESCRIPTION:	BOILING STONES, TFE, 454GMS
QUANTITY:	10 EACH
LOT NO.	W126678
SPECIFICATION (S):	Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.

Laura Valencia

Laura Valencia
Quality Assurance Inspector

F:U:J:CF:PCISCI:COC-58118-BOI5021-061223

3773 NW 126th Avenue • Coral Springs, Florida 33065 • Fax (954) 344-2008 • 1-800 446-3781
Email: jensen@jenseninert.com Visit our Web Site at www.jenseninert.com

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5658 R ! 8/25/23

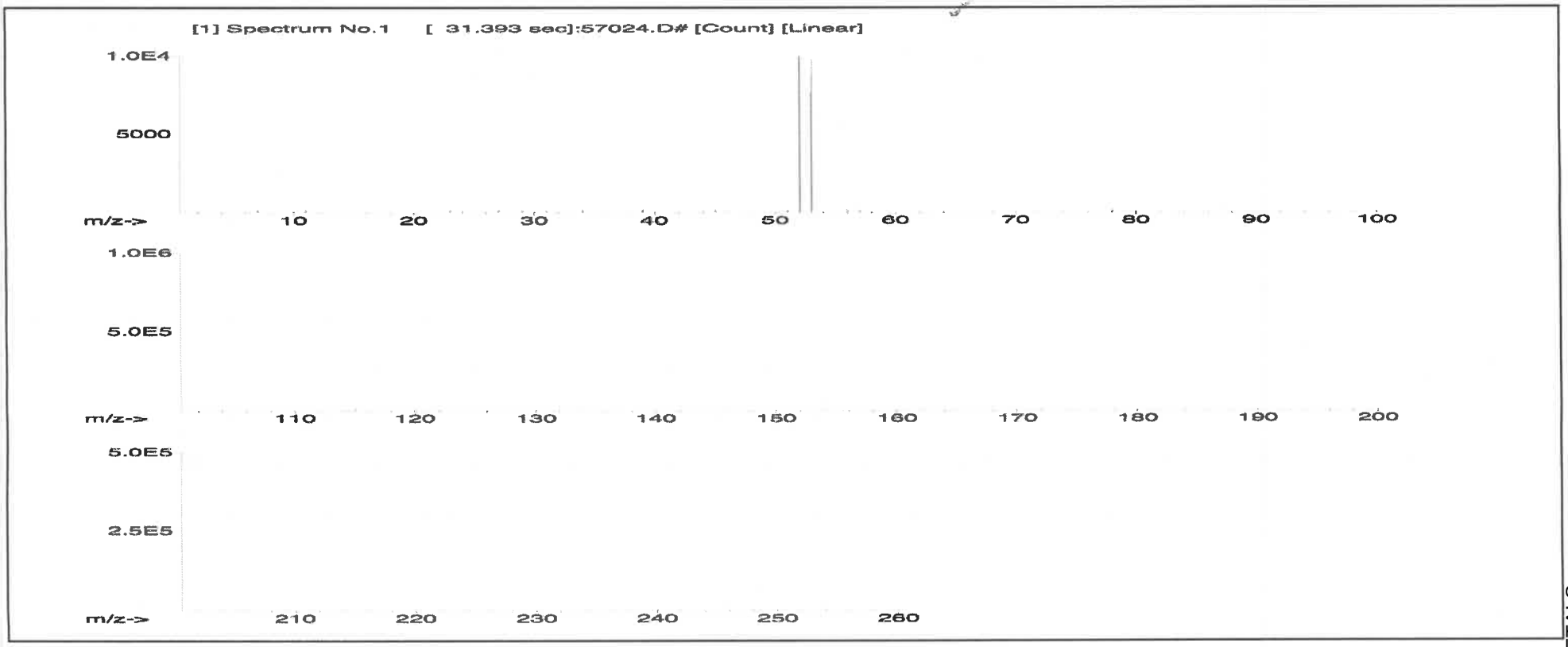
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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 M5747

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

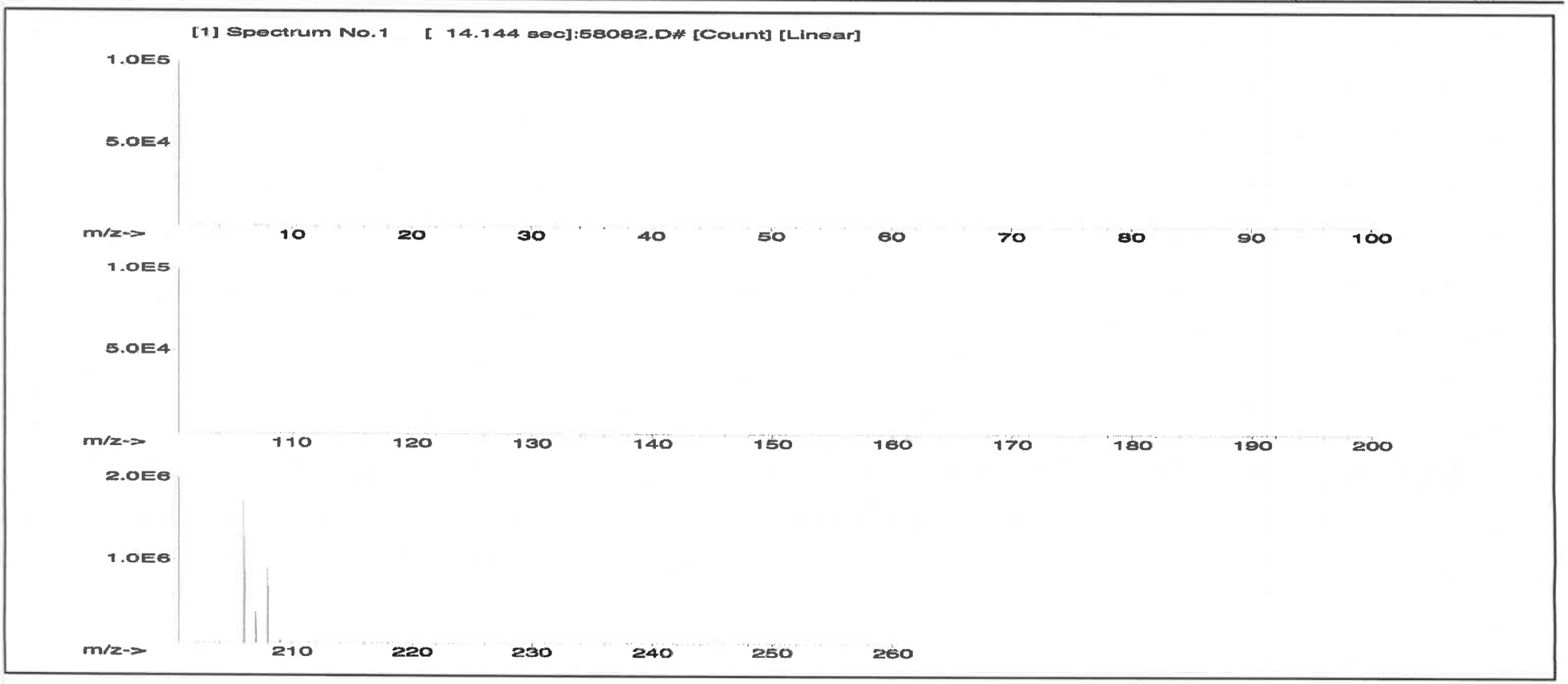
Part Number: 57082
Lot Number: 100923
Description: Lead (Pb)

Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 5E-05 Balance Uncertainty 0.06 Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	60.0 (mL)	Nitric Acid

Formulated By:	Lawrence Barry	100923
Reviewed By:	Pedro L. Rentas	100923

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	4.80071	4.80077	**1000.0**	**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	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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 12/20/23 M5748

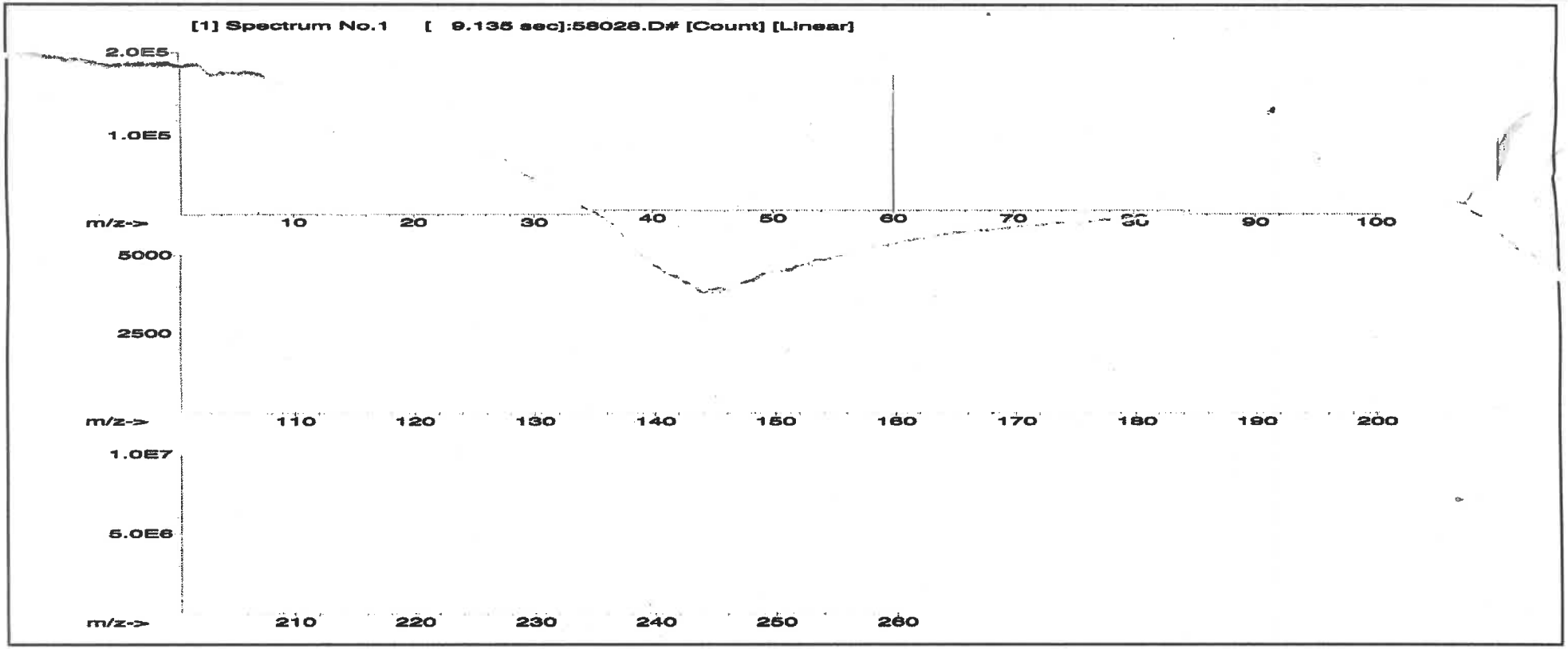
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

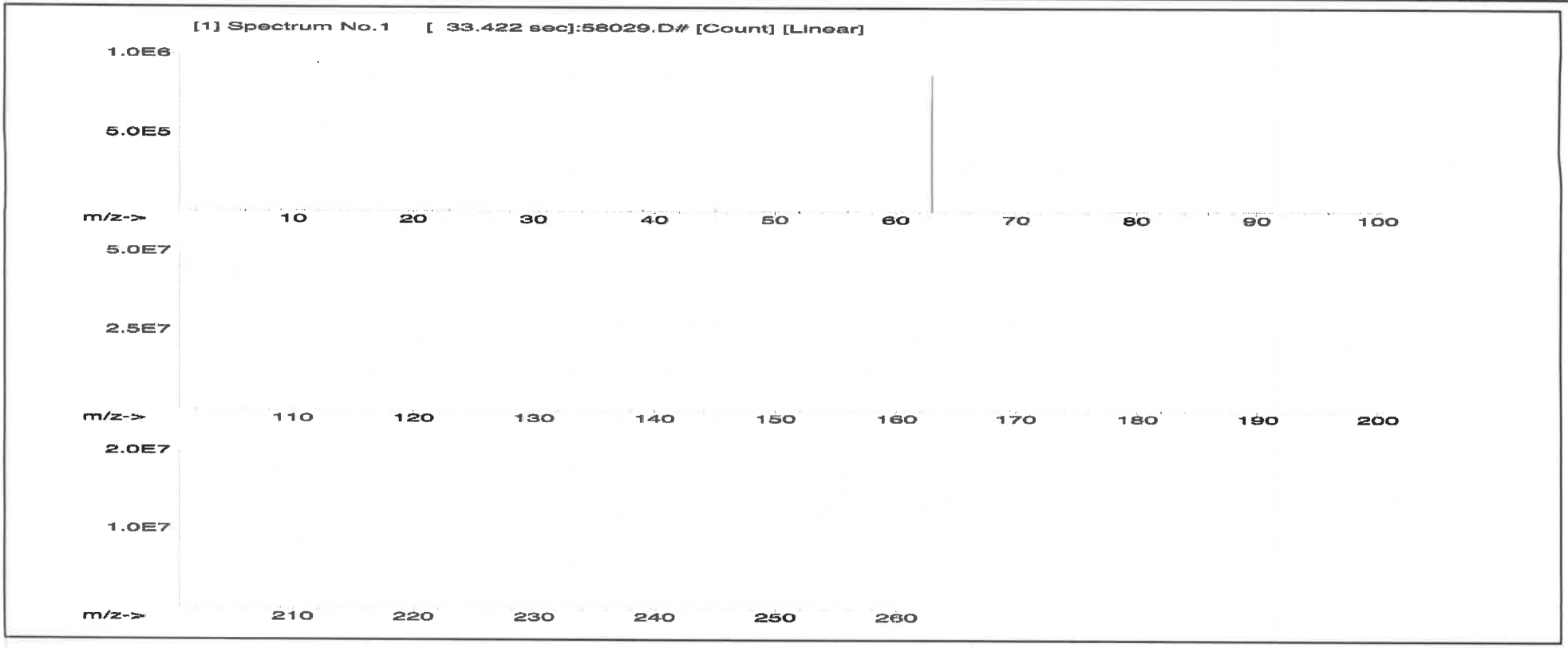
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

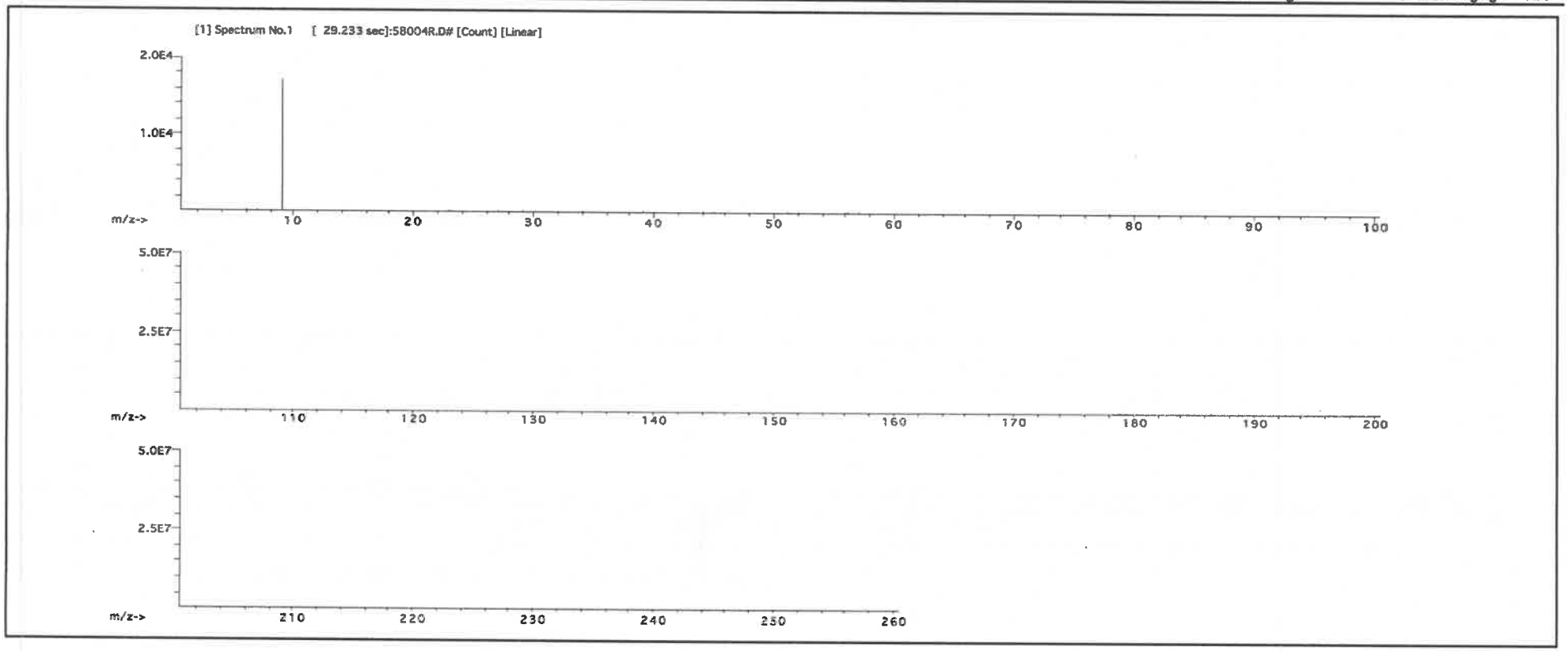
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57004**			
Lot Number:	**102523**	24002546	Nitric Acid	
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



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	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)

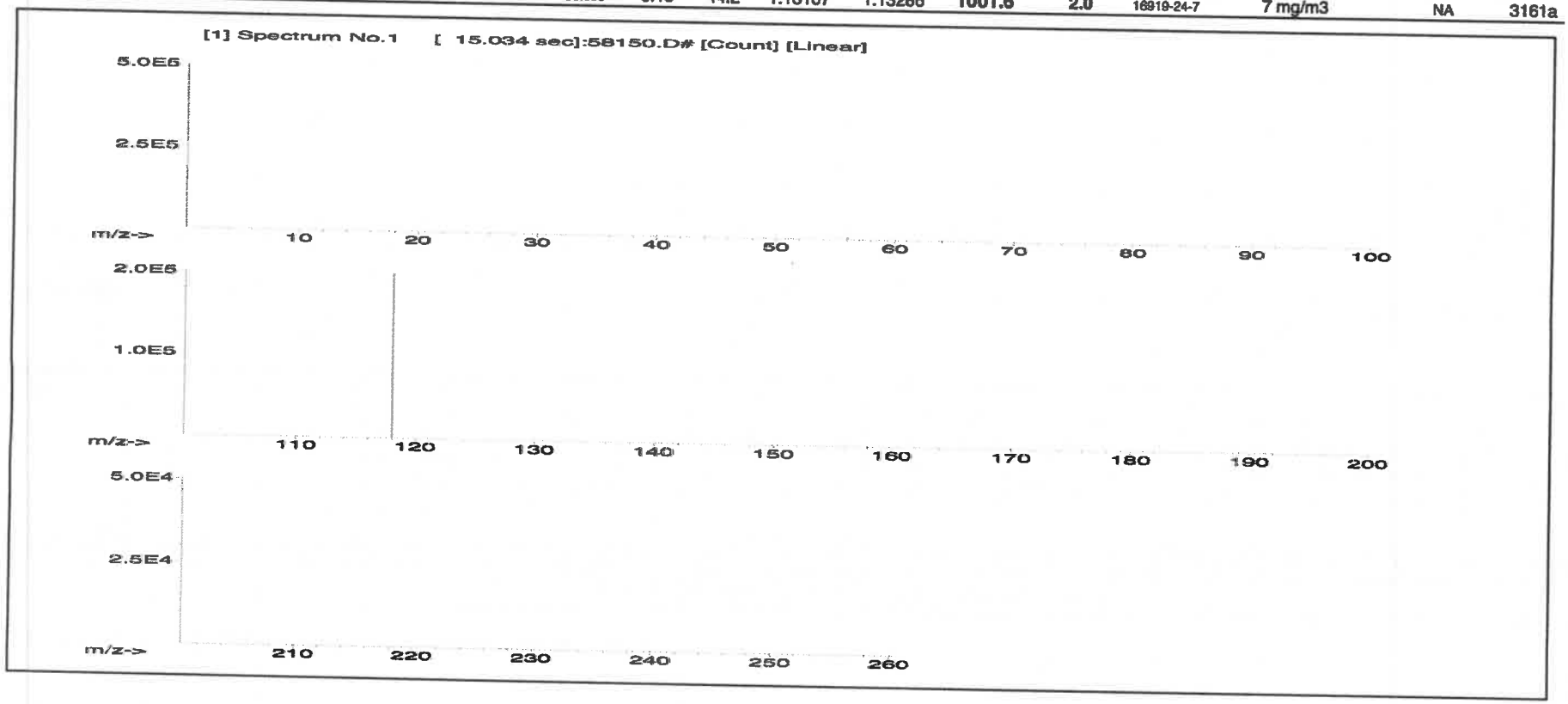
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	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 M5800 BH

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

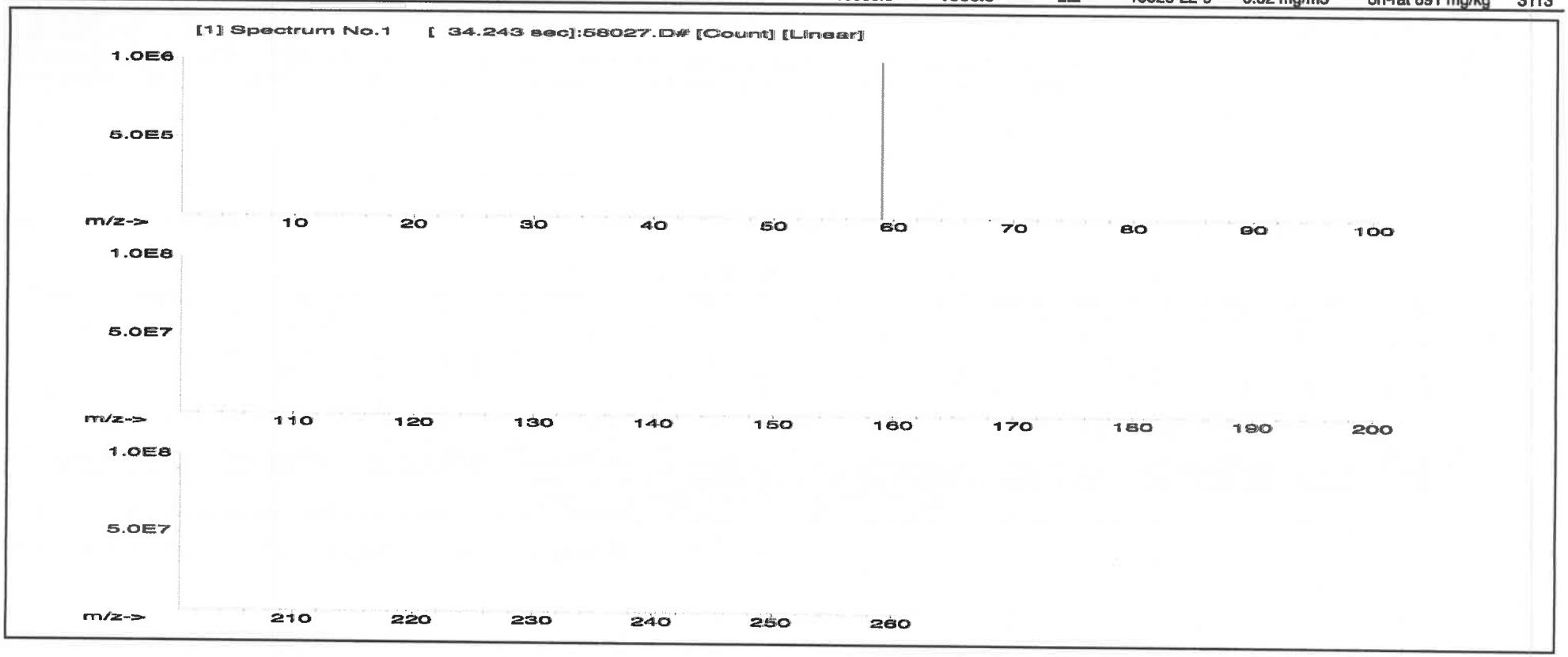
CERTIFIED WEIGHT REPORT:

		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

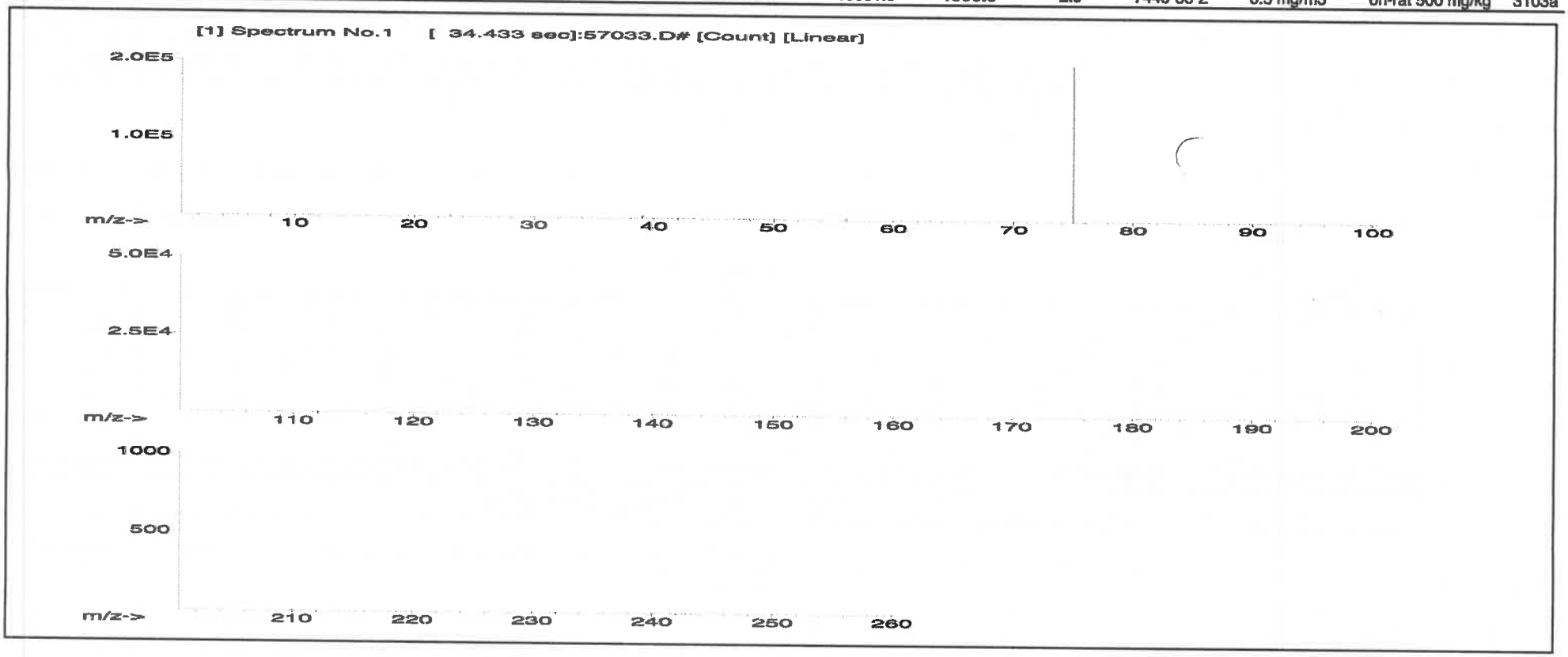
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

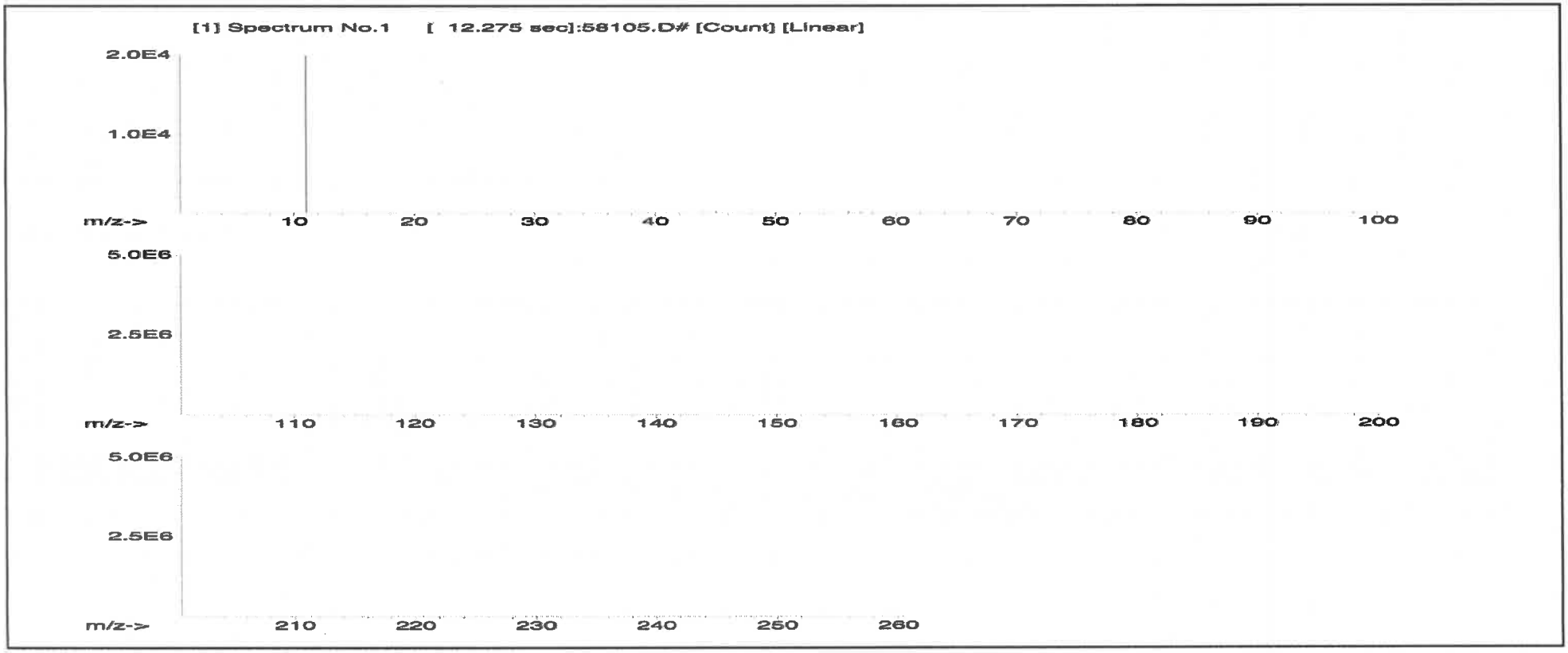
	Lot #			
Solvent:	MKBQ8597V	Ammonium hydroxide		
	2.0%	40.0 (mL)	Ammonium hydroxide	

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)

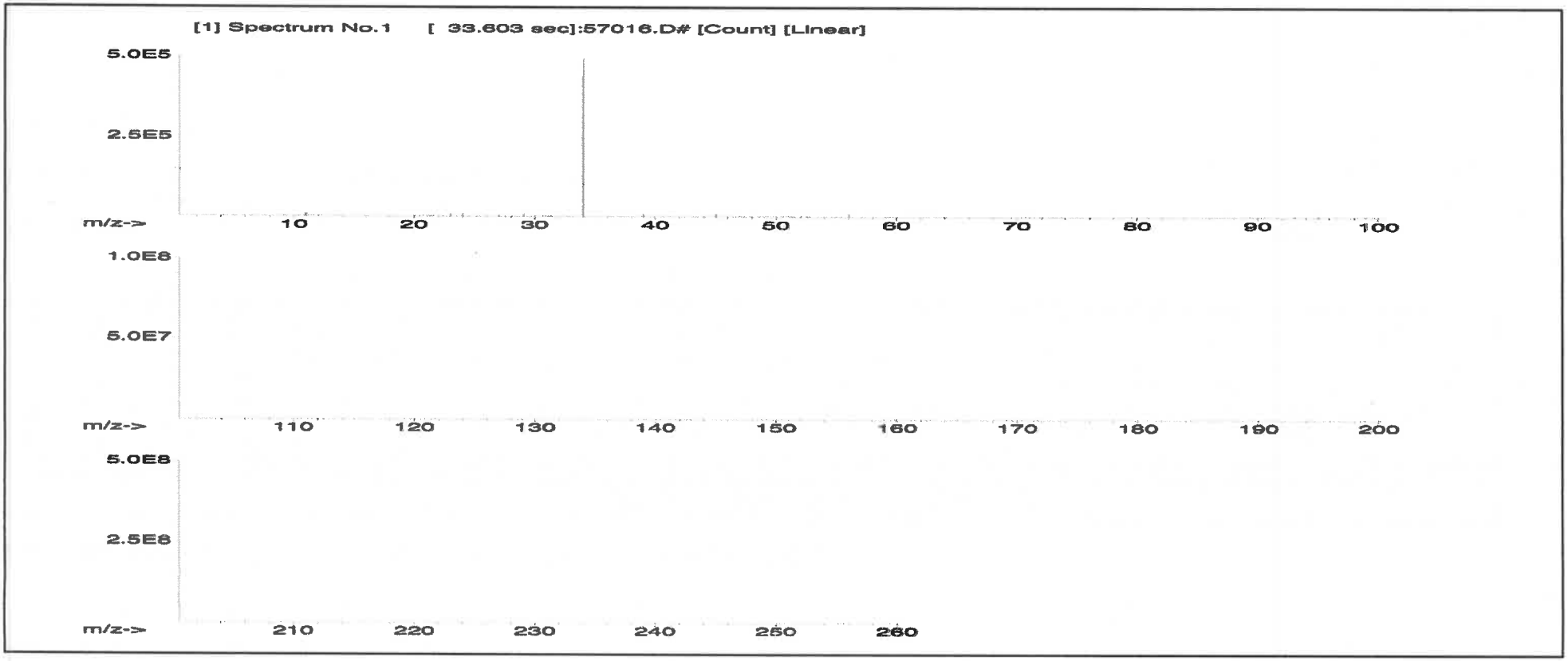
Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 4000.0

Lot #		
Solvent:	122923	ASTM Type 1 Water
	5E-05	Balance Uncertainty
	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

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 M5820

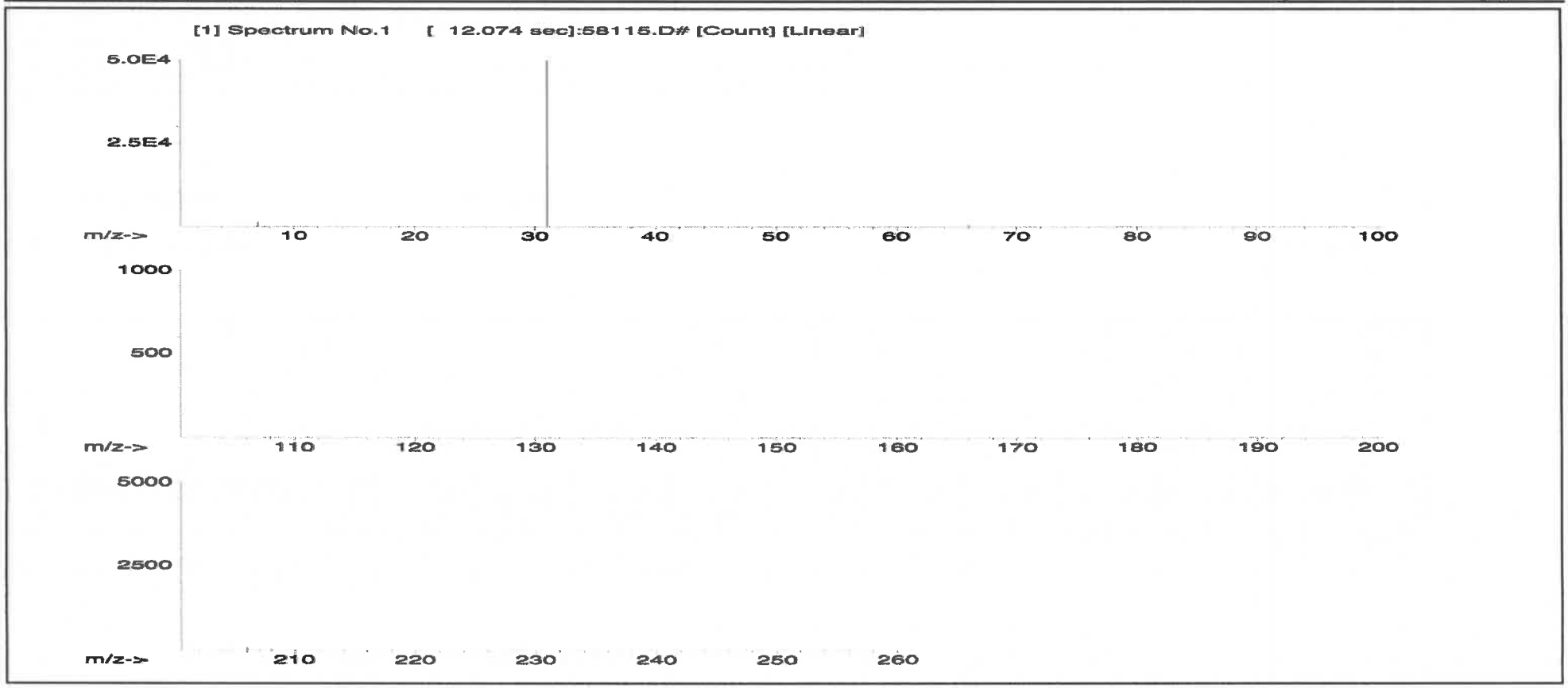
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57015**		**Solvent:**	**Lot #** 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

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

R: 02/22/24 M5942

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:	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, $X_{CRM/RM}$, 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	<	0.000536	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 chemically stable for years in 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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5962 R! 06/14/24.

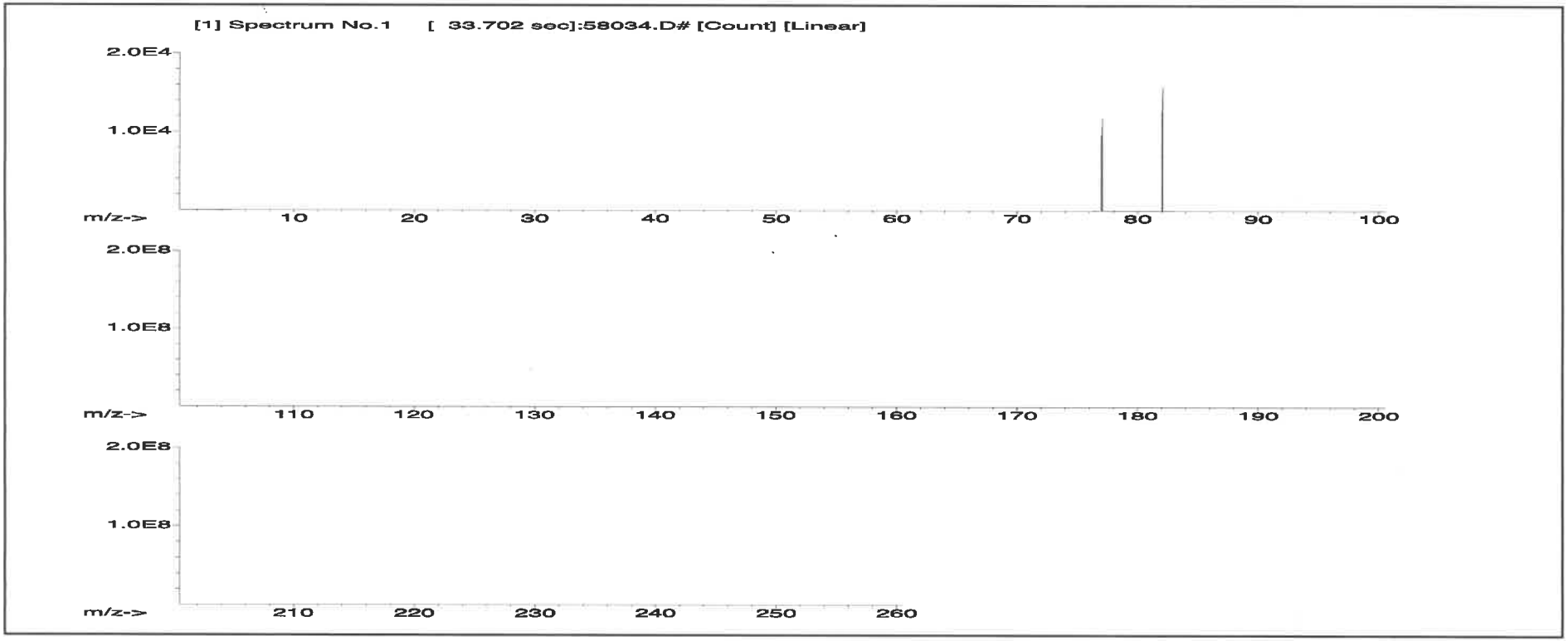
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

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		

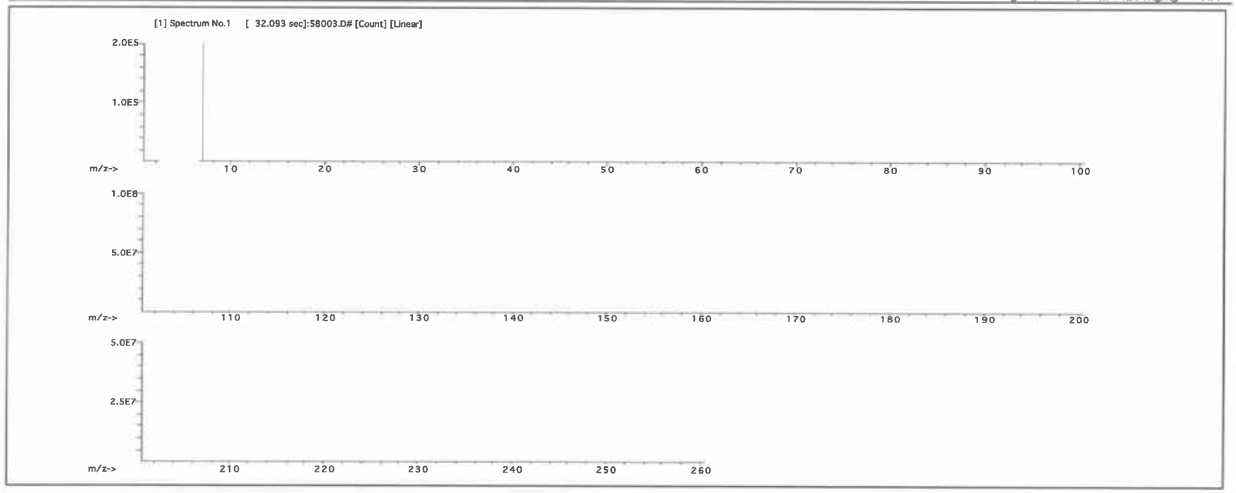
Giovanni Esposito

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).

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

MS984
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 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

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

R: 2/22/24
M5996

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).

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-1
Lot Number:	T2-MEB714417
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	50.00 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 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
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
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
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	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC 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

- 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**

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

January 27, 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

- January 27, 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

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

M6074
M6075
M6076
M6077

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

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:

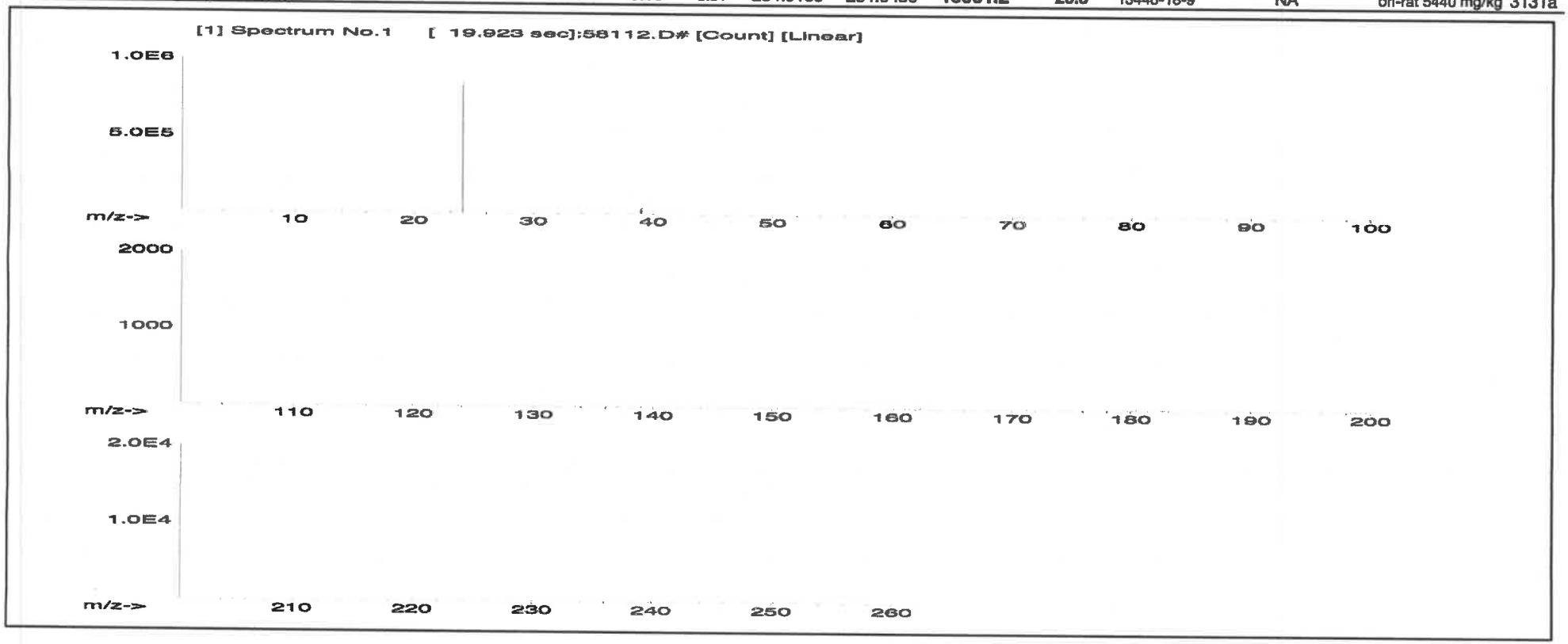
R -> 1/13/25
M 6127

			Lot #	
Part Number:	**58112**	**Solvent:**	24012496	Nitric Acid
Lot Number:	**112124**			
Description:	**Magnesium (Mg)**	2%	40.0 (mL)	Nitric Acid
Expiration Date:	112127			
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):	2000.07	0.100	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	112124
Reviewed By:	Pedro L. Rentas	112124

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	234.9459	**10001.2**	**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:

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:

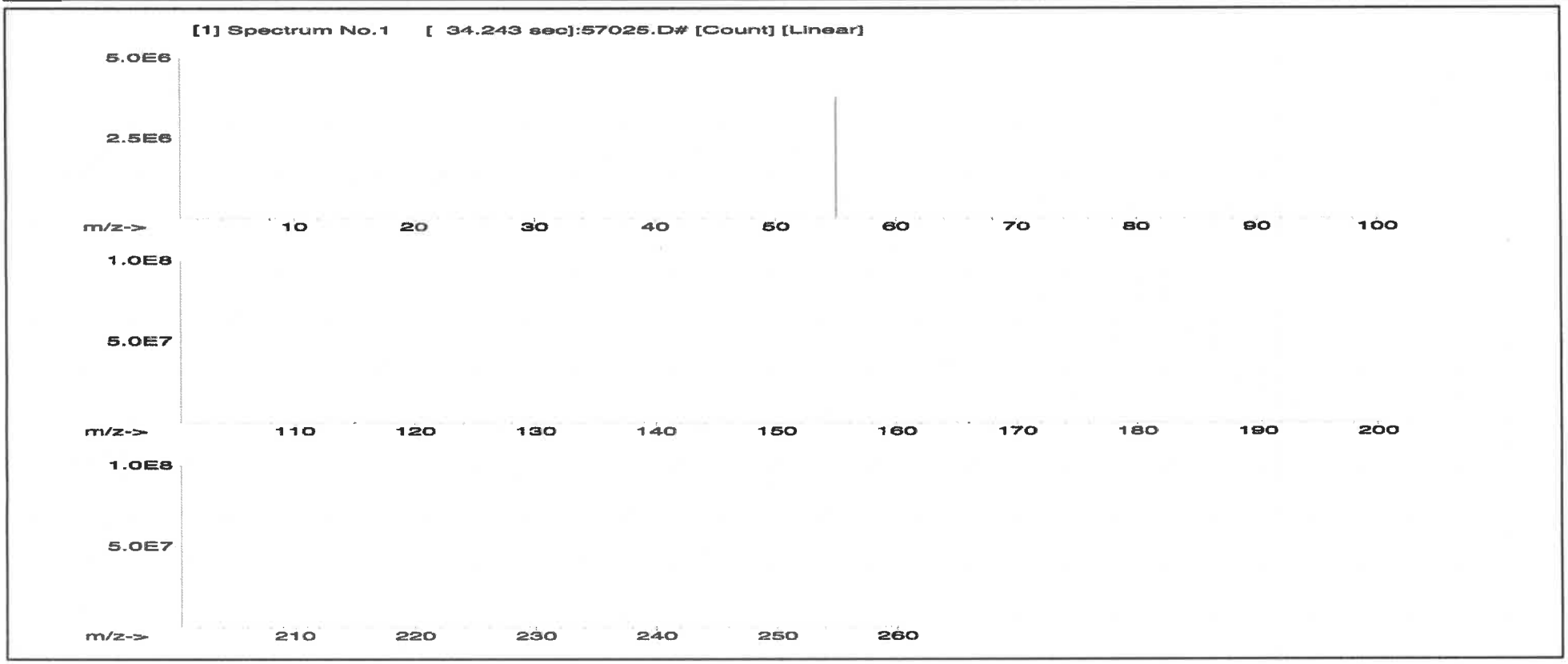
R->1/13/25
M6128

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
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

CERTIFIED WEIGHT REPORT:

R-> 1/13/25

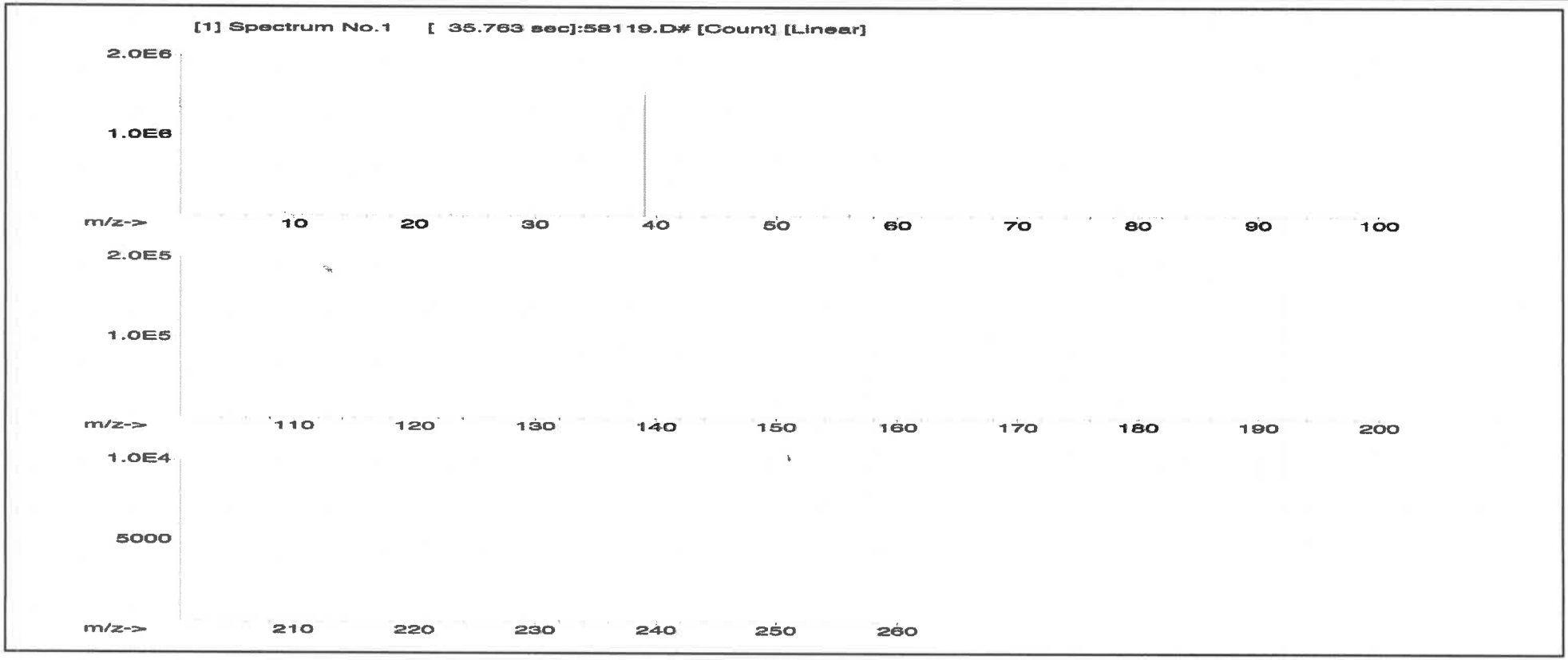
Part Number:	**57119**		**Lot #**		
Lot Number:	**103024**	**Solvent:**	24002546	Nitric Acid	
Description:	**Potassium (K)**				
		2%	80.0 (mL)	Nitric Acid	
Expiration Date:	103027				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance 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:

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:

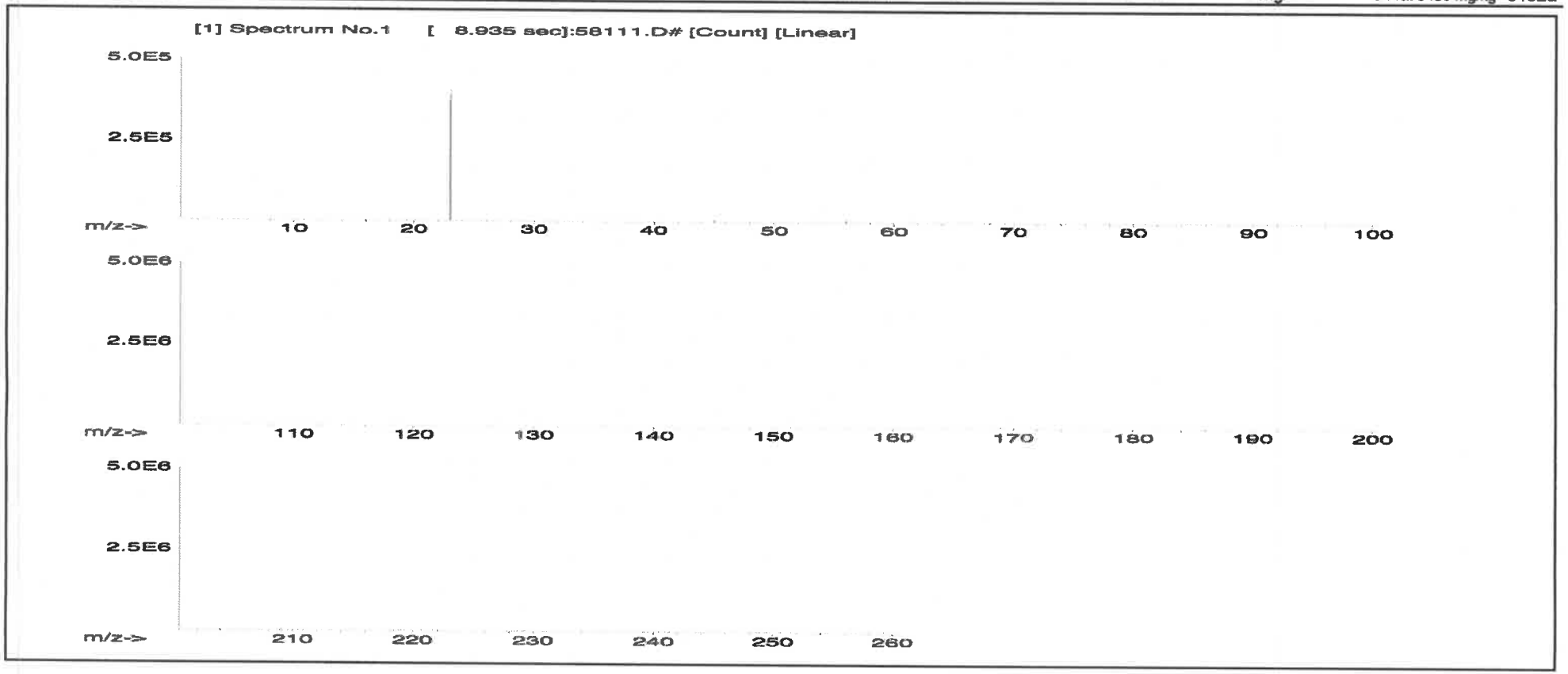
R->1/13/25

MG144

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

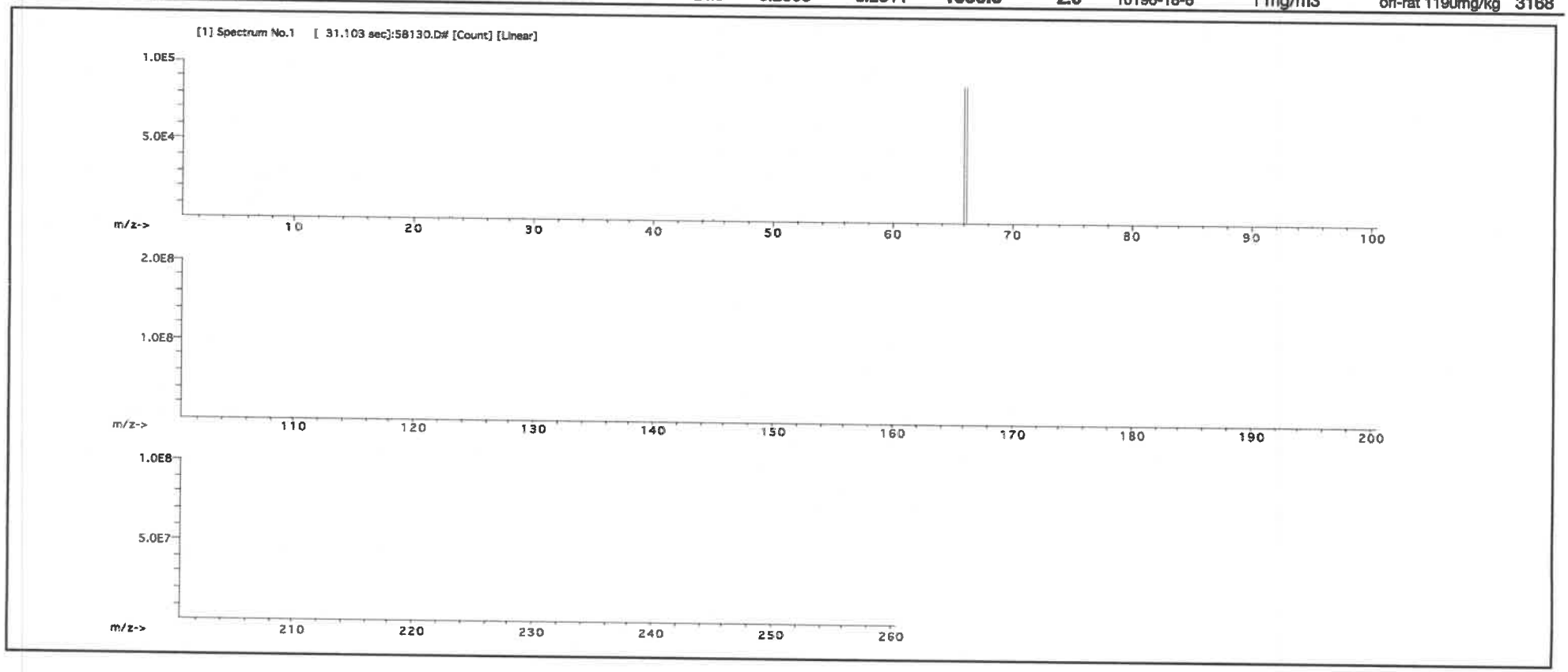
	Lot #		
Solvent:	24012496	Nitric Acid	
	2%	40.0 (mL)	Nitric Acid

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

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R-02102/2025

M-6158

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

M-6162

R. Date :- 04/27/2025

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	13 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
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

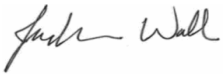
Certificate Prepared By:

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

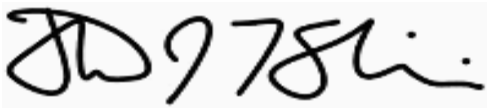
- Sealed TCT Bag Open Date: _____

- 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

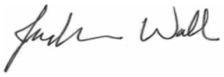
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrogen Peroxide, 30%
CMOS
(Stabilized)

M-6170

R.Date . 8-05/20/2025

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Niobium (Nb)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 600.0 ppb	176.7 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	190.0 - 500.0 ppb	272.3 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 50 ppb	< 1 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.2 µm and greater	≤ 1175 par/ml	202 par/ml
Particle Count - 0.5 µm and greater	≤ 100 par/ml	33 par/ml

>>> Continued on page 3 >>>

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

Michelle Bales
Sr. Manager, Quality Assurance

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™ | J.T.Baker®

Material No.: 2190-03
Batch No.: 24D1961001
Manufactured Date: 2024-04-17
Expiration Date: 2025-10-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (H_2O_2)	30.0 - 32.0 %	31.6 %
Color (APHA)	≤ 10	< 5
Free Acid (µeq/g)	≤ 0.2	0.1
Residue after Evaporation	≤ 10 ppm	2 ppm
Ammonium (NH_4)	≤ 3 ppm	< 3 ppm
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Nitrate (NO_3)	≤ 2 ppm	< 2 ppm
Phosphate (PO_4)	≤ 1 ppm	1 ppm
Sulfate (SO_4)	≤ 3 ppm	< 3 ppm
Trace Impurities - Aluminum (Al)	≤ 70.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Barium (Ba)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Chromium (Cr)	≤ 20.0 ppb	1.5 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Gold (Au)	≤ 10.0 ppb	< 5.0 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 250.0 ppb
Trace Impurities - Iron (Fe)	≤ 50.0 ppb	4.6 ppb
Trace Impurities - Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

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

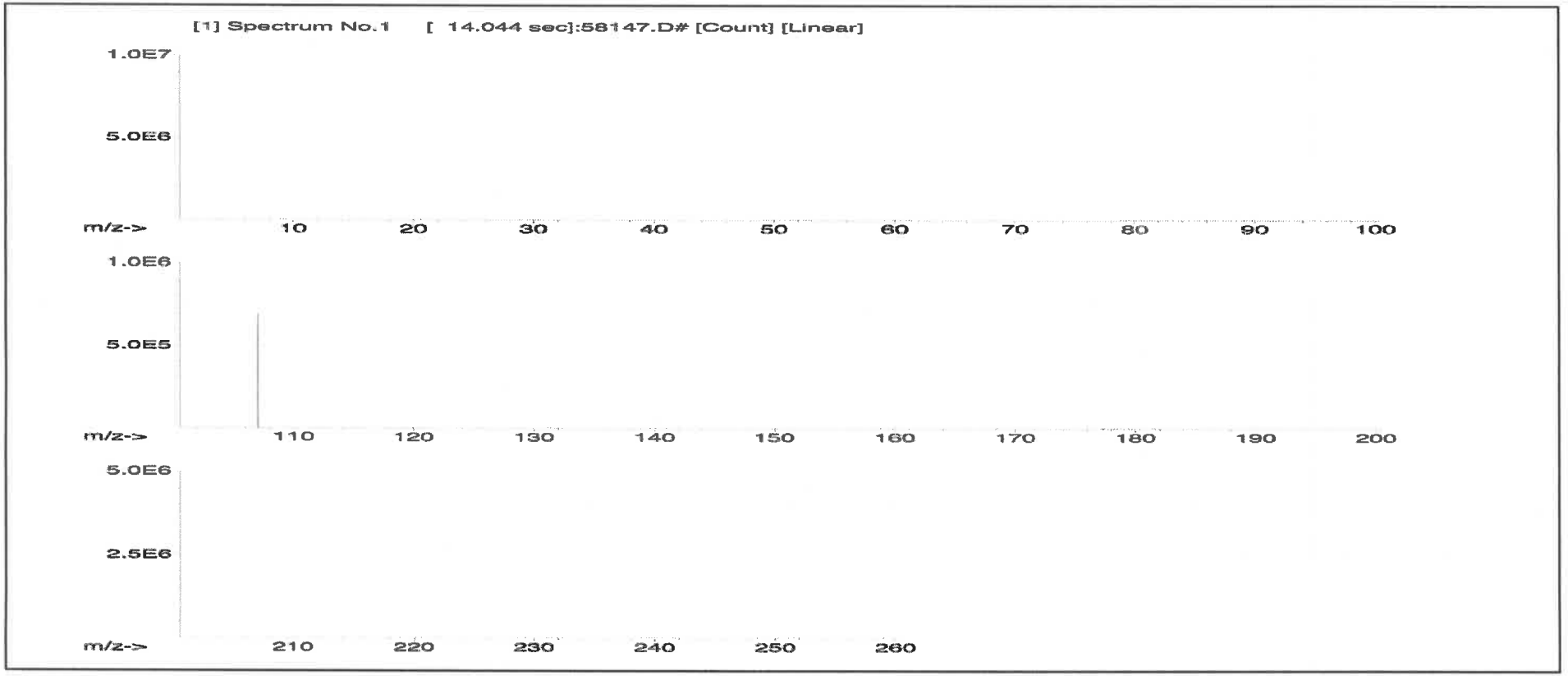
Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

	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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 10/18/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

MG146

		Lot #	Solvent:	
Part Number:	**57051**	24002546	Nitric Acid	
Lot Number:	**071724**			
Description:	**Antimony (Sb)**	2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	071727			
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):	2000.26	0.058	Flask Uncertainty	

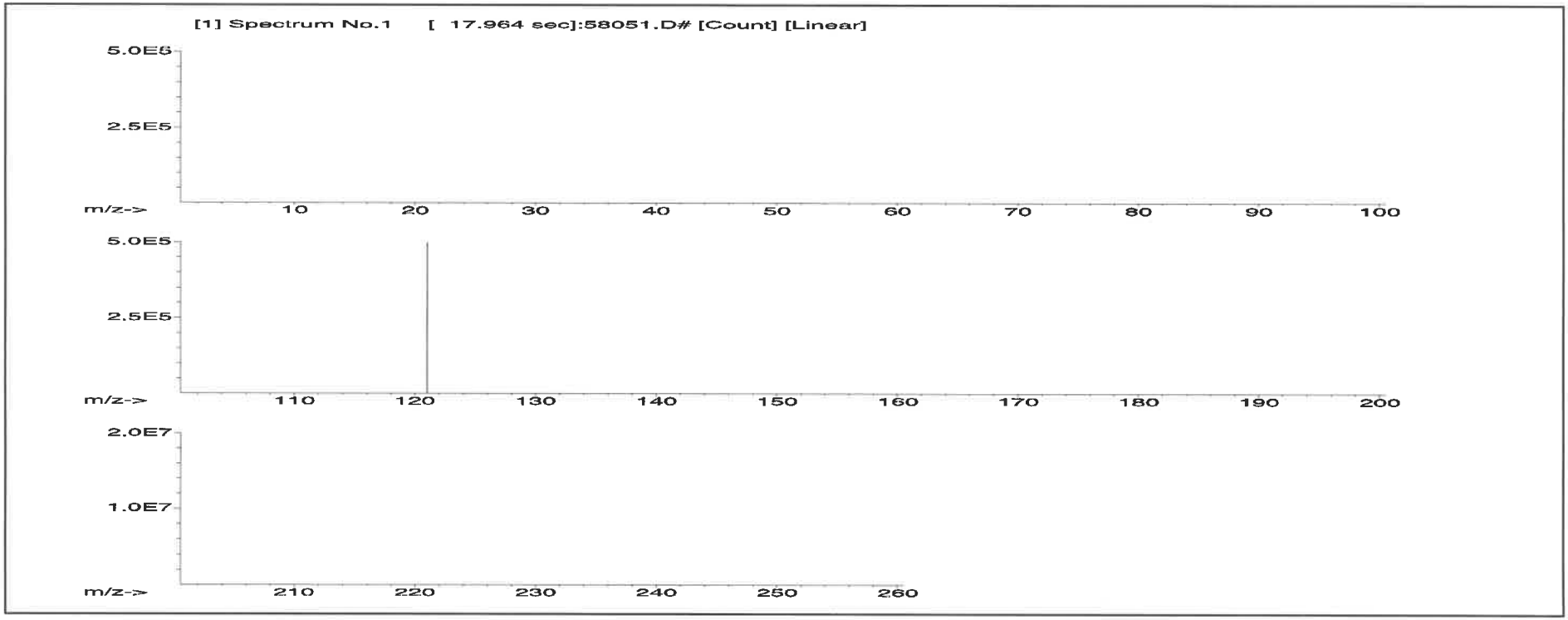
Giovanni Esposito

Formulated By:	Giovanni Esposito	071724

Pedro Rentas

Reviewed By:	Pedro L. Rentas	071724

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	**Final Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	**SDS Information** (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	**1000.0**	**2.2**	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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).

APTIM

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: *ICP-AES ICS*

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.

M6152

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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

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.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

APTIM

Instructions for QATS Reference Material: *ICP-AES ICS*

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.

M6155

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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

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.

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 888.01
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		

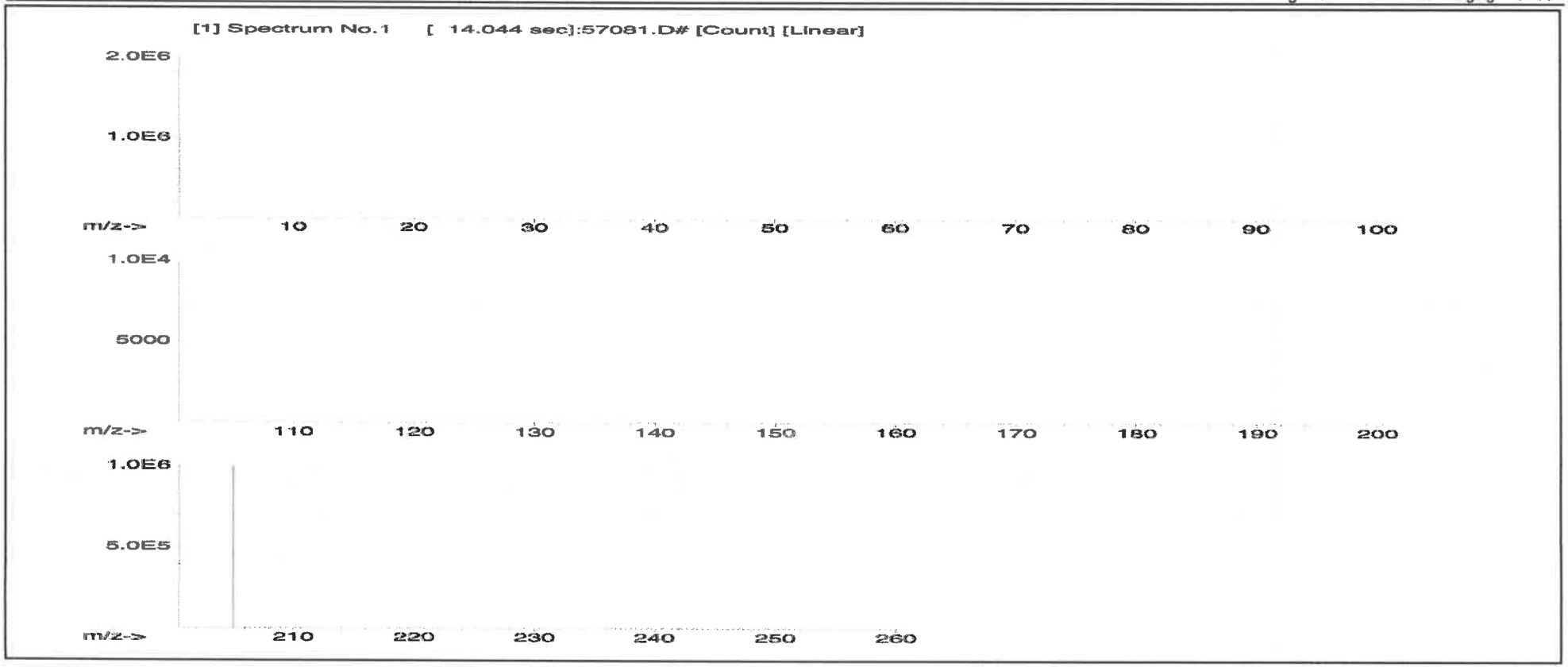
Aleah O'Brady

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



393 of 401
Q2638-METALS

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**			
Lot Number:	**062424**	24002546	Nitric Acid	
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.3	0.06	Flask Uncertainty	

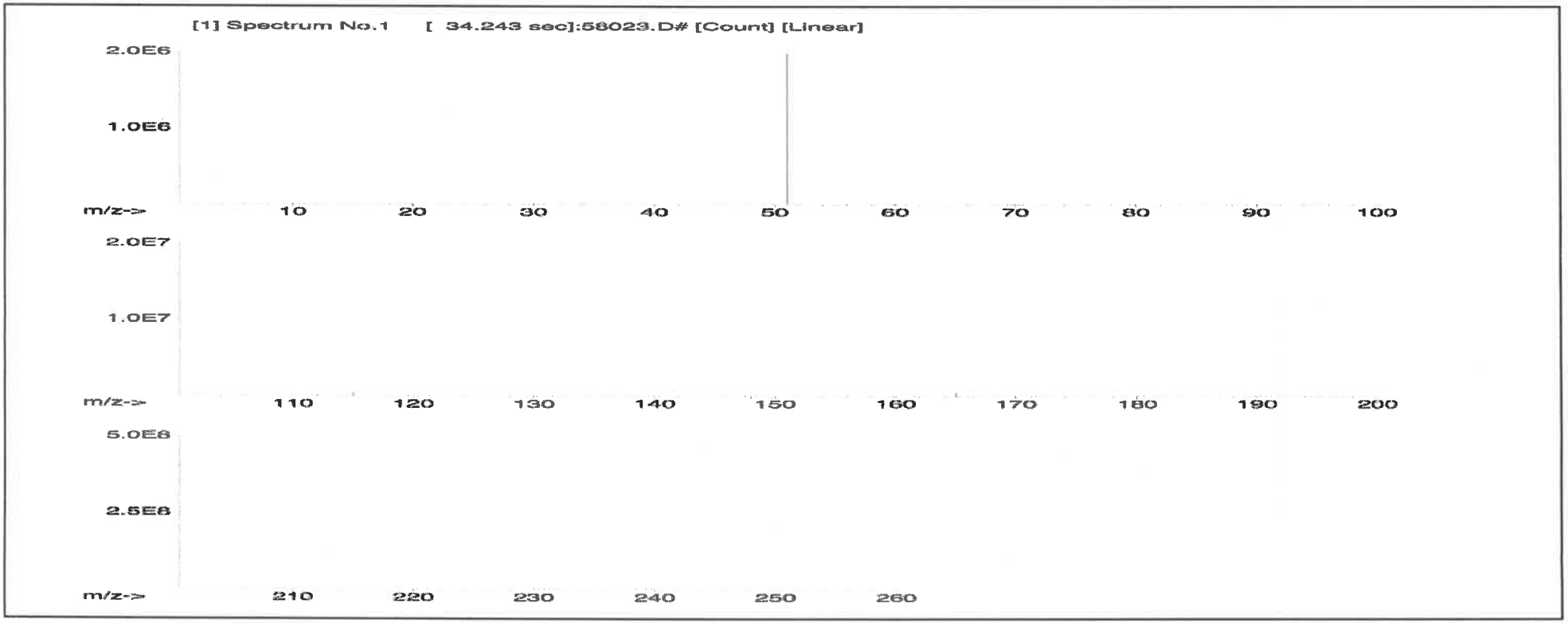
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)	58123	021224	0.1000	200.0	0.084	1000	10000.3	**1000.0**	**2.2**	7803-55-6	0.05 mg/m3	orl-rat 58.1mg/kg	3165



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
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

Q 2638

Chemtech

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

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 4_01/08/2020

39 Spruce Street
East Longmeadow, MA 01028

Page __1__ of __1__

Company Name:	Nobis Group
Address:	55 Technology Dr Suite 101, Lowell, MA 01851
Phone:	978-703-6014
Project Name:	Raymark
Project Location:	Stratford, CT
Project Number:	95700
Project Manager:	Adam Roy
Con-Test Quote Name/Number:	
Invoice Recipient:	
Sampled By:	A. Brittingham

Requested Turnaround Time
5-Day ☑ 10-Day ☐
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐ No
Email To: aroy@nobis-group.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☑
NON SOXHLET ☐

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	M/O	RCP VOCs	% Solids	PAHs	Herbicides	Pesticides	PCBs	Metals ICP + Hg - 6010	Cyanide	SPLP RCP Metals - 6020
	OU4-TS-31-071725	7/17/25	10:30	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-32-071725	7/17/25	10:40	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-33-071725	7/17/25	10:50	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-34-071725	7/17/25	11:00	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-35-071725	7/17/25	11:10	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-36-071725	7/17/25	11:20	G	SO		3	2					X	X	X	X	X	X	X	X	X
	OU4-TS-37-071725	7/17/25	11:30	G	SO		3	2					X	X	X	X	X	X	X	X	X

[2] Preservation Code

Total Number Of:
VIALS_____
GLASS_____
PLASTIC_____
BACTERIA_____
ENCORE_____

Glassware in the fridge? Y / N

Glassware in freezer? Y / N

Prepackaged Cooler? Y / N

*Contest is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time: 7/17/25 1500
Received by: (signature)	Date/Time: 7/18/25 0755
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Detection Limit Requirements
MA
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☑ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

Lab Comments: 5.1°C - 4.7°C

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2638 NOBI03
Client Name : Nobis Group
Client Contact : Adam Roy
Invoice Name : Nobis Group
Invoice Contact : Adam Roy

Order Date : 7/18/2025 10:07:00 AM
Project Name : Raymark Superfund Site
Receive DateTime : 7/18/2025 9:55:00 AM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2638-01	OU4-TS-31-071725	Solid	07/17/2025	10:30					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-03	OU4-TS-32-071725	Solid	07/17/2025	10:40					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-05	OU4-TS-33-071725	Solid	07/17/2025	10:50					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-07	OU4-TS-34-071725	Solid	07/17/2025	11:00					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-09	OU4-TS-35-071725	Solid	07/17/2025	11:10					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-11	OU4-TS-36-071725	Solid	07/17/2025	11:20					
					VOCMS Group3		8260D		5 Bus. Days
Q2638-13	OU4-TS-37-071725	Solid	07/17/2025	11:30					
					VOCMS Group3		8260D		5 Bus. Days

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2638 NOBI03
Client Name : Nobis Group
Client Contact : Adam Roy
Invoice Name : Nobis Group
Invoice Contact : Adam Roy

Order Date : 7/18/2025 10:07:00 AM
Project Name : Raymark Superfund Site
Receive DateTime : 7/18/2025 9:55:00 AM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES

Relinguished By :
Date / Time : 7/18/25 1100

Received By :
Date / Time : 07/18/25 11:20
Storage Area : VOA Refridgerator Room

R6
F22